Final report

Study on energy subsidies and other government interventions in the European Union – 2024 edition

LEGAL NOTICE

PDF 978-92-68-23919-3 doi: 10.2833/2106228 Catalogue number: MJ-01-25-017-EN-N

Luxembourg: Publications Office of the European Union, 2025

EUROPEAN COMMISSION
Directorate-General for Energy
Directorate A — Energy policy: Strategy and Coordination
Unit A4 — Chief Economist
Email: ENER-ENERGY-SUBSIDIES@ec.europa.eu
European Commission
B-1049 Brussels

Contract details:
European Commission – DG Energy A.4.
Study on energy subsidies and other government interventions in the EU – 2024 edition
Contract No ENER/A4/2024-46/SI2.916677

Consortium led by:
Enerdata
47, avenue Alsace Lorraine,
38000 Grenoble,
France

Contact person:
Mr. Joseph Bon-Mardion
Phone: +33 (0)4 58 00 23 24
Email: joseph.bon-mardion@enerdata.net

Date of the final report:
Grenoble, 7 October 2024

Authors:
Joseph Bon-Mardion, Mélodie Mistre, Amélys Honvault, Esteban Drouet, Perrine Méziat-Burdin, Maylis Casteleyn, Maël Gouret, Lizzabetha Hernandez Rangel (Enerdata)
Long Lam, Liza Leimane, Matthew Smith (Trinomics)
Juraj Krivosik (SEVEn)

Note on figures
Due to rounding, individual figures may not add up exactly to the totals shown on the figures below and percentages may not correspond exactly to the figures shown.

Glossary of Key Terms

Subsidy inventory	Database which contains subsidy amounts for all countries
Commission study 2024	This year's study, named "Study on energy subsidies and other government interventions in the EU – edition 2024"
Commission study 2023	The previous edition of this study, issued in August 2023
Commission studies	Previous editions of the study (each year from 2019 to 2023)
MS Factsheet	Synthesis summary document written about each Member State
Energy Attachés	Staff at the permanent representations of Member States to the European Union in charge of energy policy who have been contacted for feedback in the consultation on the data collection 2023 round
All energies	This category is used to classify energy efficiency measures or to designate energy produced from a mix of both fossil fuel and low carbon sources or an unknown source
Cross-sector	This category is used to classify any subsidy which cannot be primarily categorized under a single economic sector

Abbreviations

CAGR	Compound Annual Growth Rate
DG ENER	Directorate-General for Energy
EC	European Commission
EHS	Environmentally harmful subsidies
EHES	Environmentally harmful energy subsidies
EHFFS	Environmentally harmful fossil fuel subsidies
EU	The European Union
EU27	The 27 members of the European Union
EUA	European Union Allowance
FF	Fossil Fuels
FFS	Fossil Fuel Subsidies
FiT	Feed-in tariffs
FiP	Feed-in premiums
HFO	Heavy Fuel Oil
LPG	Liquefied Petroleum Gas
MS / MSs	Member State / Member States within EU27
NECP	National Energy and Climate Plan
PP	Petroleum Products
RD&D	Research, Development and Demonstration
RES	Renewable Energy Sources

Executive summary

Energy subsidy trends in the EU27

The study identified the following key findings:

- In 2022 the overall amount of energy subsidies in the EU27 peaked at EUR 397 billion[1], as a direct result of implementing many temporary measures to protect households and economic sectors from the rising energy prices. In 2023, energy subsidies in the EU fell to EUR **354 billion** as several temporary measures were discontinued.
- Between 2021 and 2023, around EUR 348 billion have been distributed in the EU27 through temporary measures aimed at mitigating the costs of the energy price crisis. These measures represent 35% of total energy subsidy amounts during this period, households were the main beneficiaries of these subsidies.
- Fossil fuel subsidies (FFS) more than doubled in 2022 to reach EUR 136 billion, up from around EUR 59 billion on average between 2015 and 2020. This is mainly due to the temporary support measures implemented during price crisis. In 2023, FFS remained at a high level, above EUR 111 billion, as certain temporary measures favouring the use of fossil fuels (such as regulated prices and tax reductions) were prolonged. As the price crisis has largely passed by the time of finalising this report (August 2024), most of the temporary measures should be phased out before the end of 2024, and the next edition of this report would likely be more revealing of long term FFS trends.
- The distribution of energy subsidies by economic sector shows that, in 2023, the main direct beneficiaries were households with EUR 106 billion, followed by the energy industry (EUR 92 billion), the wider industry sector (EUR 32 billion) and the transport sector (EUR 20 billion). Cross-sectoral support (e.g. in the form of untargeted tax rebates etc.) reached EUR 79 billion.
- Subsidies for renewable energy sources (RES) continued their decreasing trend of the last three years, to approximately EUR 61 billion in 2023 from EUR 68 billion in 2022. This drop was influenced by favourable market conditions for support mechanisms that are sensitive to the wholesale electricity prices, such as Feed-in Premiums (FiPs) and Contracts for Difference (CfDs) agreements.[2]
- Historically, energy subsidies were oriented towards energy production. Since the 2021 price crisis, supporting energy demand has become the main purpose of subsidies, receiving EUR 213 billion in 2023 (60% of the total). In contrast, production of all energy types received only EUR 75 billion (21%).
- In 2023, the majority of energy subsidies (EUR 218 billion or 62% of the total) were assessed as environmentally not harmful. The total amount of environmentally harmful energy subsidies (EHES) in 2023 amounted to EUR 136 billion (or 38%).

Update and analysis of national phase out plans on fossil fuel subsidies

- As of August 2024, 43% of fossil fuel subsidies (EUR 48 billion) had a planned end-date before the 2026. A further 9% (EUR 10 billion) have an end-date in the medium term (between

[1] All figures expressed in this study are in 2023 EUR billions. Figures from previous editions were adjusted for inflation.

[2] These types of mechanisms guarantee a minimum revenue for producers, topping up the tariffs applied when wholesale prices are low. In the last years of elevated wholesale electricity prices, little or no such payments were necessary, and in some cases (for example for 2-sided CfDs in Ireland or France) producers have paid excess earnings back to the national treasuries.

2026 and 2030). For the remaining 48% (EUR 53 billion), there is either no end-date yet or the end-date has been set after the year 2030.

- Belgium, France, Germany, Italy, Latvia, Lithuania, Luxembourg, and Portugal have expressed an intention or made plans for an economy-wide phase out of FFS.
- Almost all EU Member States have expressed an intention to move away from fossil fuels, but without a clear indication to completely phase out fossil fuels, except for Denmark where most of the new policies have the clear aim of phasing out fuel and gas.

Résumé

Évolution des subventions à l'énergie dans les pays de l'UE27

L'étude a permis de mettre en évidence les éléments suivants :

- Avec 397 milliards d'euros[3], l'année 2022 marque un pic dans le montant global des subventions à l'énergie dans l'UE27 car de nombreuses mesures temporaires visant à protéger les ménages et les autres secteurs économiques de la hausse des prix de l'énergie ont été mises en œuvre. En 2023, une réduction de 10% des subventions énergétiques par rapport à 2022 a été observée avec 354 milliards d'euros.
- Environ 348 milliards d'euros ont été distribués entre 2021 et 2023 dans l'UE27 par le biais de mesures visant à atténuer les coûts de la crise des prix de l'énergie. Ces mesures représentent 35% du montant total des subventions à l'énergie au cours de cette période et ont bénéficié en priorité aux ménages.
- Le montant total des subventions aux combustibles fossiles (SCF) a plus que doublé en 2022 pour atteindre 136 milliards d'euros dans l'ensemble de l'UE27, contre environ 59 milliards d'euros en moyenne entre 2015 et 2020. Cette évolution est principalement due aux mesures de soutien temporaires mises en œuvre pendant la crise des prix. En 2023, elles sont restées à un niveau élevé, supérieur à 111 milliards d'euros, car les mesures favorisant l'utilisation des combustibles fossiles (telles que les prix réglementés et les réductions fiscales) ont été prolongées dans un contexte de prix toujours élevés. La crise des prix étant largement terminée en août 2024, les mesures temporaires devraient pour la plupart être progressivement supprimées avant la fin de l'année 2024, et la prochaine édition de ce rapport sera probablement plus révélatrice des tendances à long terme.
- La répartition des subventions énergétiques par secteur économique montre qu'en 2023, les principaux bénéficiaires sont les ménages (106 milliards d'euros), suivis par l'industrie de l'énergie (92 milliards d'euros, le secteur d'industrie (32 milliards d'euros) et le secteur des transports (20 milliards d'euros). Les subventions non ciblées ont atteint 79 milliards d'euros.
- Le niveau des subventions en faveur des sources d'énergie renouvelables (SER) a poursuivi une tendance à la baisse au cours des trois dernières années, pour atteindre environ 61 milliards d'euros en 2023. Cette baisse a été influencée par des conditions favorables pour les mécanismes sensibles aux prix de gros de l'électricité, tels que les contrats de rachat Premium (FiP) et les contrats de rémunération au prix marché plus prime (CfD)[4].
- Alors que les subventions étaient historiquement orientées vers la production d'énergie, depuis la crise des prix de 2021, le soutien à la demande d'énergie est devenu le principal objectif des subventions énergétiques, avec 213 milliards d'euros en 2023 (60 % du total). En revanche, la production de tous les types d'énergie n'a reçu que 75 milliards d'euros (21 %).
- En 2023, la majorité des subventions à l'énergie (218 milliards d'euros, soit 62 % du total) ont été jugées non dommageables pour l'environnement. Le montant total des

[3] Tous les chiffres exprimés dans cette étude sont en milliards d'euros de 2023. Les chiffres des éditions précédentes ont été ajustés en fonction de l'inflation.

[4] Ces types de mécanismes garantissent un revenu minimum aux producteurs, en complétant les tarifs appliqués lorsque les prix de gros sont bas. Au cours des dernières années où les prix de gros étaient élevés, ces paiements n'ont pas ou peu été nécessaires et, dans certains cas (par exemple pour les CfD bilatéraux en Irlande ou en France), les producteurs ont reversé les bénéfices excédentaires à l'Etat.

subventions énergétiques nuisibles à l'environnement en 2023 s'élève à 136 milliards d'euros (soit 38 % du total).

Analyse des plans nationaux de sortie des subventions aux énergies fossiles

L'étude a permis de mettre en évidence les éléments suivants :

- Seul 43 % (48 milliards d'euros) du total des subventions aux combustibles fossiles en 2023 avaient une date de fin prévue avant fin-2025. Environ 9 % seulement (10 milliards d'euros) des subventions aux combustibles fossiles ont une date de fin prévue à moyen terme (entre 2026 et 2030). Pour les 48 % restants (53 milliards d'euros), la date de fin n'est pas encore connue ou a été fixée après l'année 2030.
- La Belgique, la France, l'Allemagne, l'Italie, la Lettonie, la Lituanie, le Luxembourg et le Portugal ont exprimé leur intention de supprimer progressivement les FFS dans l'ensemble de l'économie ou ont élaboré des plans à cet effet.
- Presque tous les États membres de l'UE ont exprimé leur intention de s'éloigner des combustibles fossiles, mais sans indication claire de leur intention de les éliminer complètement, à l'exception du Danemark, où la plupart des nouvelles politiques ont pour objectif clair d'éliminer progressivement les carburants et le gaz.

Table of Contents

Table of Figures

List of Tables

1. Introduction

1.1. Objective

The aim of this study was to analyse energy subsidies and other financial support distributed in the EU27, at the national level, over the period 2015 to 2022 and, when data is available, to 2023. Quantitative analyses of the volume (in euros) and trends of subsidies are provided, with the subsidies categorised in various ways to give broader insights. The results are also analysed qualitatively to draw the main conclusions.

A second objective was to develop a methodology for classifying energy subsidies according to their environmental impact, and for calculating the amounts involved.

A third objective was to provide a clear overview of the fossil fuel subsidies (FFS) phase-out plans drawn upby each Member State (MS) looking at their state budgets for the upcoming years and, if possible, to quantify the ambition of these plans.

1.2. Tasks of the study

This report documents the work completed for the Directorate General for Energy (DG ENER) of the European Commission (EC) on the Study on energy subsidies and other government interventions in the EU – 2024 edition (Framework Contract MOVE/ENER/SRD/2020/OP/0008 Lot-2). The work was carried out by a three-member consortium: Enerdata, the project lead, Trinomics, and SEVEn. It is the latest in a series of DG ENER studies going back to 2014 documenting energy subsidies and related instruments. The work was structured around four tasks:

- Task 1: Literature review on applied methodology of subsidies
    - Methodological adjustment, literature review
    - Data source update
- Tasks 2-3: Energy subsidy trends in the EU27
    - Collection, control and harmonisation of energy subsidies data from 2015 to 2022, and 2023 where possible
    - Update and analysis of national phase out plans on subsidies
    - Distinguishing each subsidy according to its environmental impact: environmentally harmful, partially harmful, not harmful
- Task 4: Preparation of the study, including charts and dashboards
    - Analysis of energy subsidies data trends in the EU27
    - Analysis of national fossil fuel subsidy phase out plans
    - Preparation of deliverables, including support documents presenting the main graphs and dashboards.

This report starts with a brief background on energy subsidies in the EU, then analyses the trends and the national plans for energy subsidies. Annexes include:

- Theoretical framework (see section B.1 at the end)
- Country data controls and observations (separate document, in pdf format)
- Member State factsheets
- A publicly available version of the subsidy inventory

1.3. What's new in this year's study?

This year, the main change concerns the assessment of the environmental impact of *all* energy subsidies, with the aim of the identification of environmentally harmful energy subsidies (EHES). In the 2023 edition, a first definition was developed for EHES, focusing exclusively on fossil fuel subsidies. Since then, the European Commission's Directorate-General for Environment (DG ENV) has published a draft "Guidance document for reporting of non-energy Environmentally Harmful Subsidies (EHS)" (Non-energy EHS guidance)[5]. Under the guidance of DG ENV, the definition of EHES has been adjusted to align with that of the non-energy EHS and broadened to cover all energy subsidies. The results are reported in detail in chapter 3.7.

This study also proposes a potential method and indicators for comparing fossil fuel support across Member States. The comparison is complicated by the different national support policies, taxation regimes and the size and scope of the associated fiscal impact. Nevertheless, chapter 3.3.1 proposes two potential indicators.

1.4. Background

The term "energy subsidies and other government interventions" refers to specific initiatives to keep energy prices for consumers below market levels (e.g. reduced tax rates on road transport fuels) or for energy producers above market levels (e.g. feed-in tariffs), or to reduce energy costs for consumers or producers by granting specific benefits. Energy subsidies can consist of direct cash transfers to producers or consumers, indirect support mechanisms (e.g. tax exemptions and tax credits), or also market-based mechanisms providing cross-subsidies between economics actors (e.g. white certificate markets for energy efficiency, electricity capacity mechanisms, etc.) and other measures.

The most established and detailed categorization of government interventions related to the energy sector has been developed by the European Commission (EC) through the *Study on energy costs, taxes, government interventions and their impact on energy investments*[6] using the subsidy concept developed by the World Trade Organization through the *Agreement on Subsidies and Countervailing Measures* (ASCM)[7]. This agreement helped to define the classification of subsidies and government interventions into four main categories:

- Direct transfers are direct expenditures by governments to recipients, which could be either consumers or producers. Direct transfers include grants, low interest or preferential loans.
- Tax expenditures are the amount of tax benefits, or preferences, received by taxpayers and forgone by governments. Tax expenditures are relative preferences within a country's tax system that are measured with reference to a benchmark tax treatment set by that country. The amounts of tax expenditures are estimated by governments with reference to a benchmark national tax level. Five main different forms have been identified, namely: tax reductions, tax exemptions, tax refunds, tax credits and tax allowances. These instruments may apply to various types of energy-related taxes, such as excise duties, specific electricity taxes, fees financing certain types of technologies (i.e. renewables or cogeneration), carbon taxes, VAT etc.
- Income or price supports encompass various types of economic mechanisms, most of them can be considered as cross-subsidies, i.e. consisting of transferring amounts of money from

[5] The latest version is available online: Guidance document for reporting of nonenergy Environmentally Harmful Subsidies (EHS)

[6] Study on energy costs, taxes and the impact of government interventions on investments. (EU) 2020; Energy EC Publications Database. Available at : https://ec.europa.eu/energy/studies_main/final_studies/study-energy-costs-taxes-and-impact-government-interventions-investments_en

Agreement on Subsidies and Countervailing Measures (WTO); WTO online database, n.d. Available at: https://www.wto.org/english/tratop_e/scm_e/scm_e.htm

groups of people / technology / territory to another specific group. Most often, such measures are financed through final consumers' tariffs/prices. Twelve types of interventions have been identified: capacity payments, biofuels blending mandates, renewable energy quotas with tradable certificates, differentiated grid connection charges, energy efficiency obligations, interruptible load schemes, contract for difference, feed-in premiums, feed-in tariffs, consumer price guarantees (cost support and price regulation) and producer price guarantees (price regulation)[8].

- Research, Development and Demonstration (RD&D) budgets cover various types of provisions of financial aid and/or other preferential mechanisms to support innovation.

The WTO definition has been tailored specifically to address trade distortions and thus it may not be completely aligned with the analysis of energy subsidies from other (such as climate or environmental) perspectives. Work to better describe, conceptualize, define, and account for energy subsidies, and specifically fossil fuel subsidies (FFS), is currently ongoing in several EU Member States and in international organisations such as the OECD, IEA, IMF and the UN, as well as within the European Commission. While this work continues to provide useful insights, it may not be possible to (quickly) arrive at an updated definition that is uniformly applicable.[9]

EU commitment and international leadership

The use of subsidies is often justified by governments as a way to address market failures, even though the economic, social or political rationale behind subsidies in place can eventually become outdated.

International initiatives to rationalise and phase out fossil fuel subsisides were announced as early as 2009[10]. International commitments (G7, G20, Paris Agreement, etc.) have since then increased in number and importance. In June 2022, G7 leaders "*...stressed that fossil fuel subsidies are inconsistent with the goals of the Paris Agreement and [reaffirmed their] commitment to the elimination of inefficient fossil fuel subsidies by 2025...*". In November 2022 at COP 27, the Sharm-el-Sheikh Implementation Plan was adopted; which calls for *"...adoption of policies [..] including accelerating efforts towards the phasedown of unabated coal power and phase out of inefficient fossil fuel subsidies, while providing targeted support to the poorest and most vulnerable in line with national circumstances and recognizing the need for support towards a just transition*". In December 2023, at COP 28 in Dubai, participants agreed on a commitment to *"transition away from all fossil fuels in energy systems"* on a global scale.

The European Union (EU) has taken leadership on this issue with a set of actions and legislative tools to effectively phase out inefficient FFS. The Regulation on the Governance of the Energy Union and Climate Action of December 2018[11] enacts the EU's commitment to improve reporting and transparency by requiring MSs to report every two years on their progress in phasing out energy subsidies, in particular FFS. The Regulation also requires the European Commission to "*adopt*

[8] Definitions used for the last 3 mechanisms are:

- Consumer price guarantees (cost support): Price guarantees (by a public entity-government, regulator...) to a specific group of final customers (e.g. low income households, specific geographic area) for the consumption of energy products (fuels, electricity, heat...) at a certain level, which does not fully cover the total cost of the energy provided.
- Consumer price guarantees (price regulation): Price guarantees (by a public entity-government, regulator...) to all final customers for the consumption of energy products (fuels, electricity, heat...) at a certain level, which does not fully cover the total cost of the energy provided.
- Producer price guarantees (price regulation): Price guarantees (by a public entity-government, regulator...) to a producer of primary energy (fossil fuels, nuclear) or energy products (fuels, electricity, heat...) at a level above the market price.

[9] This argument follows a draft paper from the UN Subcommittee on Environmental Taxation for the Department of Economic and Social Affairs (ANNEX C to E/C.18/2024/CRP7).

[10] G20 Leaders Statement: The Pittsburgh Summit, September 2009, available at: https://www.oecd.org/g20/summits/pittsburgh/G20-Pittsburgh-Leaders-Declaration.pdf

[11] Governance of the Energy Union and Climate Action, December 2018, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2018:328:FULL&from=EN

implementing acts to set out the structure, format, technical details and process (…) [including a] methodology for the reporting on the phasing out of energy subsidies, in particular for fossil fuels"[12] – the first such implementing act was adopted in November 2022.[13] This measure aims at standardizing the reporting on the phase out of energy subsidies across MS, and easing the monitoring and benchmarking activities. The European Commission is also working with Member States to identify other environmentally harmful subsidies (EHS) and to develop a consistent methodology and reporting framework that covers all EHS, including non-energy ones. In addition, the EU Climate Law of June 2021, which amended the Governance Regulation, urges phasing out of all energy subsidies that are incompatible with the objective of climate neutrality in 2050.

The Governance Regulation and the EU Climate Law are complemented by the proposed revision of the Energy Taxation Directive in the Fit-for-55 package to align the taxation of energy products with EU energy and climate policies by promoting clean technologies and removing outdated exemptions and reduced rates that currently encourage the use of fossil fuels[14].

The Guidelines on State aid for climate, environmental protection and energy (CEEAG) of December 2021 also complement the previous legislative package by targeting the end of "*subsidies for the most polluting fossil fuels (…) in light of their important negative environmental effects*"[15]. Although the CEEAG tackles environmentally harmful subsidies, it does not forbid financial support provided it is in line with European climate objectives. Indeed, the text authorises MS to provide subsidies to some fossil fuels when they accelerate a "*shift away from coal, peat and oil shale activities*" such as "*aid for the closure of power plants using coal, peat or oil shale and of mining operations relating to coal, peat or oil shale extraction*"[16].

In July 2022, the Taxonomy Complementary Delegated Act to introduce gas and nuclear activities into the EU Taxonomy Regulation was published. The Taxonomy is the first international classification that defines, lists and organises the environmentally sustainable economic activities into a common language. This provides investors with appropriate definitions of economic activities that can be considered environmentally sustainable and therefore contribute to direct investments towards sustainable projects and activities. It also helps the EU to strengthen its global leadership on energy transition toward sustainable future as the EU Taxonomy could serve as a worldwide standard.

The Commission has renewed its commitment to phasing out fossil fuel subsidies in the Communication "*The Clean Transition Dialogues – stocktaking: A strong European industry for a sustainable Europe*"[17]. It called on Member States to take measures eliminating subsidies for using fossil fuels, including in the form of tax exemptions or reduced rates. The recast Energy Performance of Buildings Directive[18] also obliges Member States to discontinue any financial incentives for the installation of stand-alone boilers powered by fossil fuels as from 1 January 2025[19].

---

[12] European Union Climate Law, Article 17, paragraph 4, June 2021, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1119&from=EN

[13] COMMISSION IMPLEMENTING REGULATION (EU) 2022/2299 of 15 November 2022 laying down rules for the application of Regulation (EU) 2018/1999 of the European Parliament and of the Council as regards the structure, format, technical details and process for the integrated national energy and climate progress reports

[14] European Green Deal: Commission proposes transformation of EU economy and society to meet climate ambitions, available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3541

[15] Commission endorses the new Guidelines on State aid for Climate, Environmental protection and Energy, 21 December 2021, available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_21_6982

[16] Communication from the Commission on the Guidelines on State aid for climate, environmental protection and energy 2022, section 4.12.1 Aid for the early closure of profitable coal, peat and oil shale activities, available at: https://ec.europa.eu/competition-policy/system/files/2021-12/CEEAG_Guidelines_with_annexes_I_and_II_0.pdf

[17] COM(2024) 163 final

[18] Directive (EU) 2024/1275 (europa.eu)

[19] With the exception of those selected for investment, before 2025, in accordance with Regulation (EU) 2021/241, Article 7(1), point (h)(i), third indent, of Regulation (EU) 2021/1058 and with Article 73 of Regulation (EU) 2021/2115 of the European Parliament and the Council.

In that context, DG ENER has developed an extensive database (the *Subsidy inventory*) gathering a large set of information on all kinds of energy subsidies and government interventions. After a first approach in 2014, DG ENER reiterated its effort to better map the existence of energy subsidies by ordering five sequential studies on this topic in 2018 and then yearly from 2020 to 2023. The latest iteration of this study has been annexed to the *Eighth report on the state of the energy union report (SOEUR)*[20] and showed that progress to phase out fossil fuel subsidies in the EU27 still lags behind the ambitions.

[20] https://energy.ec.europa.eu/topics/energy-strategy/energy-union/eighth-report-state-energy-union_en

2. Approach and methodology

2.1. Approach

The study is based on a bottom-up inventory approach similar to the OECD's methodology, using information from national budget documents and reports. Each budget line and tax measure is scrutinised to identify energy subsidies, which are then aggregated at the EU27 level and cross-checked against data from recognised sources such as European or international institutions and specialised databases.

The study includes an inventory of explicit energy subsidies, as well as certain implicit subsidies, including preferential tax rates or exemptions. These "implicit" subsidies are linked to uncollected tax revenues that have an identifiable fiscal impact for the central budget. While the study does not assess the lack or presence of pricing of externalities (environmental or otherwise) associated with energy use[21] (which could also be considered as subsidies), it incorporates a methodological framework to classify subsidies based on their environmental impact (see also chapter 3.7).

The inventory approach, followed by the authors, depends on the baseline tax rates that are applicable in each country to calculate the fiscal impact of tax measures. Therefore, country A with higher taxes on fossil fuels and significant tax differentiation or exemption measures would have considerably higher levels of fossil fuel subsidies than country B with lower tax rates and fewer or no exceptions. As such, this approach is better suited to analyse subsidies and policies within a country rather than to compare across countries. Normal, regular changes in the tax code also mean that year-to-year comparisons or time series, even in one country, should be treated with caution.

Contrasting with other studies that utilise an external cost approach (such as the IMF) or seek to integrate effective energy pricing concepts (such as the IEA), this study offers a different yet complementary perspective. The inventory approach's distinct advantage lies in its reliance on actual fiscal amounts, providing a comprehensive overview of historical trends. It is particularly helpful in identifying policies that e.g. may directly or indirectly support the use of fossil fuels or undermine the goal of combating climate change. As noted above, this approach should not be used for evaluating subsidy amounts based on a direct comparison across Member States with different tax regimes and energy support policies. This edition proposes a possible approach for comparing fossil fuel subsidies across all EU27 Member States – see chapter 3.3.1.4.

The specific approach to negative amounts in relation to RES mechanisms is detailed in chapter 3.3.2.2.

2.2. Methodology

To achieve the objective of this study, the current energy *Subsidies inventory* inherited from the previous editions of the study was updated. The methodology used is inspired by the Agreement on Subsidies and Countervailing Measures (ASCM) framework developed by the World Trade Organization (WTO)[22]. Accordingly, the subsidy definitions and classifications have remained in line with those of the previous *Commission studies*. We have added a new classification to that well established methodological framework to differentiate subsidies along their environmental impact. The main axis of analysis, as well as classification, being the following:

[21] Externality costs of the EU energy system were estimated in earlier work for the EC, see Study on energy costs, taxes and the impact of government interventions on investments – External Costs – available at https://energy.ec.europa.eu/document/download/1e54ee1b-ad4b-4eff-a46e-982f27617559_en

[22] All documents related to WTO Agreement on Subsidies and Countervailing Measures are available at https://www.wto.org/english/tratop_e/scm_e/scm_e.htm

- Category
- Instruments
- Energy sources/carriers
- Purposes
- Source of financing
- Economic sectors
- Environmental impact

The methodology is detailed in-depth in Annex *B.1 Theoretical framework*.

2.3. Data quality

Following numerous commitments and calls by international institutions to phase out fossil fuel subsidies (see also Background section 1.3), comprehensive and specific reporting of energy-related subsidies has become a priority for many institutions and states. However, establishing a report on this topic remains challenging and requires many cross-controls. Specifically, as no common reporting standard has yet been agreed upon (partly due to the lack of a common definition), each actor (international institutions, states, regions) releases data according to their own understanding. The chapter below describes the hurdles encountered to update the inventory. Six main varieties of barriers were identified in addition to the lack of common rules and varying scopes of reporting.

2.3.1. Homogeneity and comparability

The homogeneity of the data is an essential factor in allowing for consistent analysis. In fact, achieving relevant comparisons across years and across countries requires the use of common methodologies. However, as the UNEP and IISD[23] acknowledge, the *"benchmarks are currently set on a country-by-country basis", and as estimation methods applied by countries differ, the international comparability of existing tax expenditure estimates is limited in the absence of a uniform international framework. Differences in the amount of subsidies reported can be due to a range of factors such as a higher tax benchmark, a stricter definition of the benchmark system, or a more complete set of tax-expenditure accounts."*

Although the UNEP and IISD focus on the issue related to tax expenditures, the same problem applies to many measures. This is true of, for instance, the various electricity capacity mechanisms for which no common reporting method has been enforced across the MS. Therefore, the *Subsidy inventory*, which is based on public information, includes many instances of subsidies whose content differs although the measures have the same name.

The lack of a uniform international framework can also have a large impact upon comparability between Member States as each country can classify similar measures as either subsidies or not. As an example, in the Netherlands, a degressive tax structure already exists since 1998 for gas and 2001 for electricity[24]. In 2022, the Dutch Ministry of Finance started reporting this item as a subsidy[25] and these newly defined subsidies represent substantial new amounts: EUR 3.7 billion for 2022 alone, and EUR 4.6 billion for 2021, which were not accounted before. While this type of degressive tax system might exist in other EU27 countries, no other country reported those amounts as a subsidy

[23] Measuring Fossil Fuel Subsidies in the Context of the Sustainable Development Goals, UNEP and IISD, June 2019. Available at https://www.unep.org/resources/report/measuring-fossil-fuel-subsidies-context-sustainable-development-goals

[24] https://zoek.officielebekendmakingen.nl/kst-30375-2.html

[25] The «Degressive Tax System» for gas and electricity in the Netherlands allows smaller consumers (i.e. households) to pay significantly higher tariffs per energy unit than large energy-intensive users. This tax system has been classified for the first time by the Dutch Ministry of Finance in its "rijksfinancien fiscale regelingen" in 2022. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.rijksfinancien.nl%2Fsites%2Fdefault%2Ffiles%2Fbestanden%2Fopen_data%2FFiscale%2520regelingen%25202023.xlsx&wdOrigin=BROWSELINK

(as per our investigations), which makes the Dutch decision the exception rather than the rule for the moment.

Methodological implications

The approach and the above-mentioned issues on homogeneity and comparability highlight the following implications for the study. These points should be kept in mind by the reader to avoid the risk of misinterpretation and misuse of the results.

- Subsidies amounts do not cover all implicit subsidies and the figures captured in the database represent a low estimate of total energy subsidies.
- Comparison between Member States, due to the absence of uniform reporting and different national tax policies, in a specific year, is not recommended. In this report, comparisons between MSs for fossil fuel support are made by reducing the analysis to comparable scope in chapter 3.3.1.4.

2.3.2. Accessibility and clarity

Another challenge we have encountered during the preparation of this study was to identify the sources of information on energy subsidies. Indeed, in many EU countries, the information is accounted for by different institutions and often no consolidated data is available. Although data on energy/excise tax expenditures are usually well structured, not all the Member States currently publish a dedicated report on this form of subsidy. When it comes to direct transfers, the data on subsidies is often divided among reports from many institutions - energy efficiency agencies, building agencies, funding organisations etc. - which provide grants, soft loans or other related subsidies. Information on income and price supports is similarly decentralized and often only available at the institutional level, in this case regulators, competition agencies, or energy efficiency agencies. Finally, the data dispersion over different official websites and/or in different documents makes it difficult to ensure the completeness of the amounts gathered[26]. At the same time, there is a risk of double counting, which requires care when introducing new data into our database.

Our team is already well acquainted with the various sources. However, constant reorganisations still represent recurrent challenges, e.g. the continuous re-location of the information due to numerous reorganisations of the websites of the many institutions providing data[27]. Consequently, we see these changes as a serious obstacle for the public to follow-up on energy subsidies developments even in their own countries. Therefore one of the most important achievements of this study is that it provides the clearest, most comprehensive and easly available review of energy subsidies for all 27 Member States of the EU in one single document.

Eventually, another major issue is the interruption in the provision of some documents because they are no longer produced or no longer made public. For instance, several Member States[28] have stopped or interrupted issuing their annual tax expenditure reports, even though these reports provide highly valuable information for our reporting on energy subsidies. This presents a serious obstacle as our analysis requires information produced and published by the MS governments and public administration.

[26] However, we have developed several processes to cope with this issue in order to ensure a good quality and completeness of the data provided. For more information, see section called *Data collect and control process* in the annexes.

[27] This issue has been overcome in most of the case during the study thanks to our network of country experts, however collecting data on energy subsidies is far from being easy for non-experts.

[28] For more information, please refer to Annex 2: Country data controls and observations

2.3.3. Transparency

Unsurprisingly, a continuous issue that we have faced was the lack of the transparency – or rather the non-user-friendly presentation of the available data. Indeed, in addition to the data dispersion issue mentioned above, most of the documents are provided as 'pdf', whereas they include quantitative data that would be better suited to a spreadsheet-based format. Data provided in a spreadsheet-based format is still uncommon, as well as the presence of subsidies data on government open-data platforms. This is a serious obstacle to compare the data over the years, and to detect new or ended subsidies.

In contracts, cases of good practice were also identified. For example, Italy does not yet provide a spreadsheet-based format to reference subsidies information but at least most of this information is published clearly within the 'Gestore Servizi Energetici' (GSE) reports. Ireland also makes efforts to present subsidy data in a transparent, accessible manner.

2.3.4. Consistency

The consistency of the data collected in the reports on subsidies published by MS vary significantly from one country to another. Indeed, very few countries provide the metadata that are required to set up consistent reporting. Quality reporting calls for the presence of the following metadata on each measure:

- title
- objectives
- description
- energy carrier / product concerned
- recipient(s)
- economic sectors
- legal reference
- exact scope covered
- changes in scope
- data collection methodology
- explanation on significant variations from one year to year
- retroactive changes applied to several years in the case of significant changes
- indication of new/ended subsidies
- start date
- end date

A.1. Indeed, without the above listed metadata, it can be difficult to understand potential changes over the years and analyse trends with accuracy. Especially, very few reports point out the list of subsidies that have been added (new ones) or removed (subsidies phased-out or purely removed for legislative or technical reasons) from year to year. Such information would be very useful to perform appropriate follow-up over a period and thus to provide insight on the trends followed by the Member States (see

Annex 3: Member State Factsheets).

2.3.5. Granularity

The issue of the granularity of the data is also essential to better analyse the evolution of energy subsidy policies and compare countries with each other. Indeed, the granularity of the data reported varies depending on the countries, making comparisons more difficult. For instance, where reporting exists, one single subsidy amount can cover all the technologies consolidated, several technologies grouped together or also only one single technology/carrier/product. This depends on the MS reporting rules. Similar issues also apply to tax expenditure reports. Overall, it is still rare to have a complete disaggregation of the subsidy amounts per energy carriers/products or by beneficiaries.

2.3.6. Timeliness and punctuality

The timing of publication of most recent subsidy data has been another challenge affecting this study. While for some Member States, data have been collected, controlled, and harmonised for 2023 based on data included in their budgets, for other countries, several sources of data were not yet published at the time of updating the *Subsidy Inventory*. Indeed, our report was written based on data collected up until 20 July 2024, while at this point, in some MS, certain subsidy amounts were still not available for 2023. This observation holds true for data provided by many national institutions within the Member States, but also for international organisations such as the OECD and even to official statistics published by the European Commission[29]. As a result, a portion of the data for the year 2023 could not be collected.

To address this issue, we have refined the approach used in the *Commission study 2023*: missing data for 2023 is estimated on the basis of the previous years, and labelled under the term *To be confirmed*. To mitigate the risk of biased estimates, particular attention was paid to entering accurate end-date values for these temporary measures.

Thus, if no data for 2023 is available from the sources while the subsidy scheme is still ongoing in 2023, it is assumed the following:

- By default, the 2023 subsidy amount is equal to that of 2022.
- For the specific renewables support scheme Feed-in-Premium and Contract-for-Difference, the 2023 subsidy amount is equal to the 2021-2022 average amount.

The second assumption is meant to anticipate and consider the effect of the decrease observed in the EU energy price market in 2023 relatively to 2022 prices. Indeed, in this case, application of the first assumption would very likely have overestimated the expected amounts. Still, this approach is rather conservative and allows for visual comparison across years. This approach is suitable for long term subsidies but not for temporary measures. To mitigate the risk of incorrect estimates, particular attention was paid to entering accurate end-date values for these temporary measures.

⁒To be confirmed : Amounts under such assumptions are indicated with hatching on graphs.

Where uncertainty is high, analysis of trends performed in the following sections are limited to the period 2015-2022. Moreover, we anticipate some data for 2023 to be adjusted retroactively by the responsible national authorities, therefore current estimates should be interpreted with caution.

[29] At the time we write the report, i.e. 28th July 2023.

2.4. Data control through consultation round

In the interest of improving data accuracy and completeness, a consultative stage involving MS Energy Attachés was a key part of the post-collection data control process. The objectives were to improve the robustness of the database, to better involve Member States, and to support the Commission in implementing more uniform reporting on the phasing out of energy subsidies, in particular for fossil fuels[30].

Once we collected and controlled the subsidy data, we submitted it to MS Energy Attachés to review, to comment on, and to update the data as needed. The table hereafter gives an overview of the feedback received on a country basis, with the following information:

- Feedback received – marks ✓ / ✗ means feedback was received / not received, respectively
- Marks ✓: green colored cell means that feedback was indeed received/ orange coloured cell means that feedback is under progress
- Information provided – Complete / Partial / Limited, along with details about information received and main messages, if any

Table 2-1: Feedback received at the end of consultation round (as of 1st of August)

Country	Feedback received		Information received	Main message provided
	2023 edition	2024 edition		
Austria	✓	✓	Partial feedback. Some additional data/correction.	-
Belgium	✗	✓	Partial feedback with data modification and addition	-
Bulgaria	✓	✓	E-mail delivered but need for more time	Deadline too tight
Croatia	✗	✓	E-mail delivered but need for more time	Deadline too tight
Cyprus	✓	✗	E-mail delivered but no reply received	-
Czechia	✗	✗	E-mail delivered but no reply received	-
Denmark	✗	✓	Feedback expected in August	-
Estonia	✓	✓	Limited feedback. Some additional data/correction. More time needed to carry on further check by end August.	Deadline too tight
Finland	✗	✓	Feedback received after deadline, will be included in next version of the report	Deadline too tight
France	✗	✗	E-mail delivered, but no reply received	-
Germany	✗	✓	E-mail delivered but need for more time	-
Greece	✗	✓	Limited feedback. Some additional data/correction.	-
Hungary	✓	✓	Complete feedback with additional data/ correction and sources.	-

30 In accordance with the 2021 State of the Energy Union report. European Commission, State of the Energy Union 2021 – Contributing to the European Green Deal and the Union's recovery, 26 October 2021. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0950#footnote115

Country	Feedback received		Information received	Main message provided
	2023 edition	2024 edition		
Ireland	✓	✓	E-mail delivered but need for more time	-
Italy	✓	✓	E-mail delivered but need for more time	-
Latvia	✗	✓	Limited feedback, just validating data.	Data considered as correct
Lithuania	✗	✗	E-mail delivered, but no reply received	-
Luxembourg	✓	✓	Partial feedback with some additional data/correction, as well as contact names.	-
Malta	✓	✓	E-mail delivered but need for more time	-
Netherlands	✓	✓	Limited feedback, just validating data.	Data considered as correct
Poland	✗	✓	Partial feedback, data addition/ correction.	Deadline too tight to gather all information
Portugal	✗	✓	Limited feedback, just validating data.	Data considered as correct
Romania	✗	✗	E-mail delivered, but no reply received	-
Slovakia	✓	✓	Limited feedback. Some additional data/correction.	-
Slovenia	✓	✓	Complete feedback. Barely no data modification but detailed comments on methodology as well as contacts provided.	Articulation of the methodology used with Council Directive 2003/96/EC of October 27, 2003
Spain	✗	✗	E-mail delivered, but no reply received	-
Sweden	✗	✓	Feedback with barely no data modification but detailed comments on methodology. Need for more time for further inputs.	Warning on tax expenditures and the definition of FFS. More time needed to revise subsidies.

In general, the responses provided through the Energy Attachés have brought valuable data modification and corrected some minor mistakes, thus ensuring the correctness of the inventory. Detailed comments remain very limited among all feedback received. A few MS (especially Hungary) made great efforts to provide sources as well as corrections on local names of subsidies.

The consultation round is intended to bring a higher reliability and quality level in the data. From a methodological point of view, it is worth mentioning that this process is time consuming for both Energy Attachés and the consortium. It has required checking and validating with Energy Attachés per country the sources used for the inventory before finalizing the inventory update.

The consultation of Energy Attaches and national experts has been complemented by an internal consultation with Commission Services. The main dataset, with focus on fossil fuel subsidies, was cross-checked against the subsidy data available from DG ECFIN, under the European Semester. This has resulted in numerous adjustments to FFS spending figures. Comments were received from other Commission services, such as the Secretariat General, DG CLIMA, DG ENV, DG MOVE, DG GROW and DG TAXUD.

3.Energy subsidy trends in the EU27

This section presents energy subsidies trends in the EU27 Member States for the period between 2015 and 2023. All values (unless otherwise indicated) stated are in 2023 euro (i.e. real inflation-adjusted values) and expressed in billion euro, noted **€2023**bn.

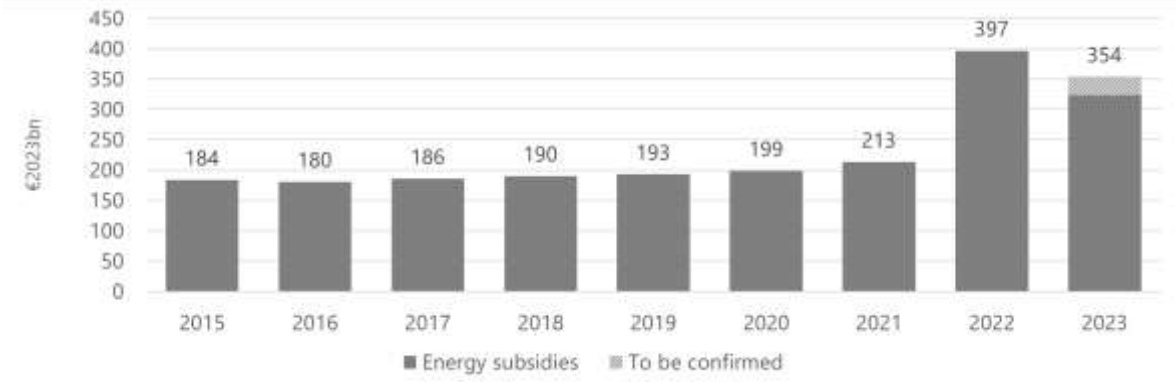
In general, the terms used in the analysis have been chosen to be as self-explanatory as possible. In this report, "all energies" applies to measures related to energy produced from a mix of sources or an unknown source. "Cross-sector" refers to any subsidy which cannot be primarily categorized under a single economic sector. For example, the Swedish subsidy "energy tax exemption for natural gas", which provides a tax exemption to both private and industrial customers is considered a cross-sector subsidy as it cannot be said to be primarily industrial or primarily for households. In particular, several subsidy measures adopted in the last two years in response to the energy price crisis (cf. section 3.1.1) were cross-sectoral in nature.

3.1. General overview and considerations

The updated *Subsidy inventory* currently includes almost 2,300 subsidies of which around 1,300 were still active[31] in 2023. The overall amount of energy subsidies in the EU27 has grown from EUR 184 billion in 2015 to EUR 213 billion in 2021, and then increased significantly in 2022, reaching EUR 397 billion, and then decreased to about EUR 354 billion in 2023 (Figure 1). Section 3.1.1 hereafter analyses the volume of temporary subsidies in 2022 and 2023.

Between 2015 and 2021, total energy subsidies in the EU27 MS increased by 16%, or approximately EUR 30 billion. In contrast, during the energy crisis, Member States have taken several national measures to shield households and industrial consumers. As a consequence, the total amount of subsidies dramatically increased in 2022 as a large number of temporary subsidies were created or existing schemes were expanded to alleviate the impact of high and volatile prices. Many of these measures were intended to last only until the end of 2022, triggering a reduction of such temporary subsidies in 2023 as Member States started to wind down their energy price containment measures (see Figure 1). This is reflected also in the number of active subsidies, which have decreased by 15% compared to the end of 2022.

Figure 1: Overall energy subsidies in the EU27 (2015-2023; EUR2023bn)



Source: Enerdata, 2024. NB: 2023 estimates amounted to 8% of the total and are represented with hatching

[31] A measure is considered 'active' if its amount is not equal to zero for the year in question.

3.1.1. Energy price-related policies

From mid-2021 until 2024, EU and global energy markets have registered sharp price hikes for natural gas and electricity, primarily driven by the strong economic recovery following the COVID-19 pandemic, combined with several additional factors such as the tightness of the global gas markets, Russian gas market manipulation, the low availability of the French nuclear fleet, a hot and dry summer resulting in increased energy demand for cooling, and low renewable and hydro availability. The geopolitical tensions after February 2022 and the weaponisation of gas supplies by Russia have considerably worsened the situation.

The European Commission and Member States have been tackling the issue of rising energy prices since 2021. In addition to EU-level policies (e.g. REPower EU plan in 2022), each MS adopted specific national measures to shield their citizens and their economy from high and volatile energy prices.

In the inventory, the measures specifically implemented to address energy price rises have been tagged and were identified under the term "exceptional" measures. Around 270 such measures were identified for the period of 2021-2023, and an estimated EUR 348 billion have been distributed, representing 36% of the total support amount during this period. 95% of these subsidies were earmarked for energy demand support, while less than 1% was allocated for energy efficiency support. In 2022, crisis measures accounted for EUR 187 billion or 47% of total energy subsidies in the EU27 (Figure 2). This massive support continued in 2023, absorbing EUR 145 billion or 41% of the total. According to first figures such support will start to decrease in 2024 to around 35% - EUR 78 billion – of the total.

Figure 2: Level of exceptional subsidies (2021-2024; EUR2023bn)

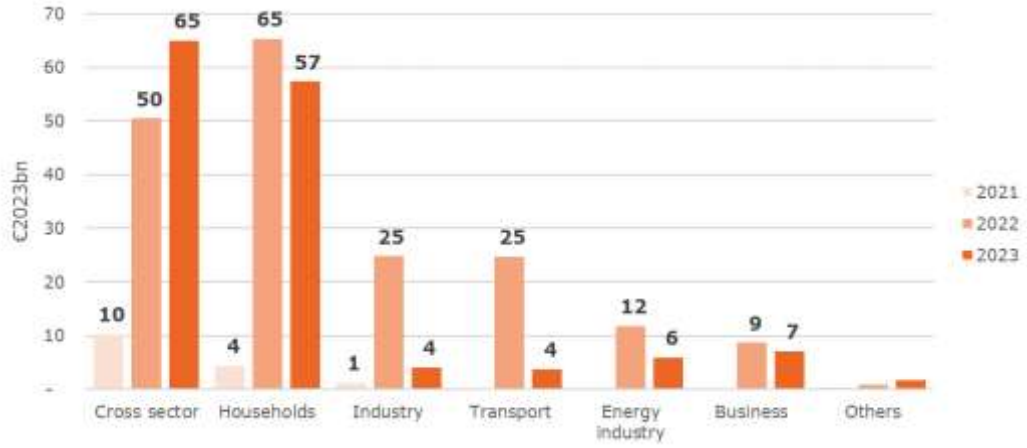
Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching; figures for 2024 are estimates. Share (right scale) represents the share of subsidies related to energy price rising in the total.

The trend suggests that the financial support for the energy crisis is partly of a temporary nature, since the amounts decreased in 2023 and 2024, but may also be partly structural – or at least semi-permanent – since the level of amounts in 2023-2024 have not yet fully returned to that of 2021.

Error! Reference source not found. highlights how exceptional subsidies are distributed across various sectors. A large part (EUR 126 billion over 2021-2023, 36% of the total) has not been targeted to any specific sectors (ie. "cross-sectoral support"). Before the crisis, cross sectoral subsidies only accounted for about 5% of the total amount.

Looking at the distribution of targeted subsidies by recipient sector, households received EUR 127 billion over 2021-2023 (i.e. 37% of the total exceptional subsidies), making this specific sector the most subsidised, far ahead of industry (EUR 30 billion) and transport (EUR 29 billion), which received most of their support in 2022 whereas support for households also remained high in 2023.

Figure 3: Exceptional subsidies, per sector (EUR2023bn)



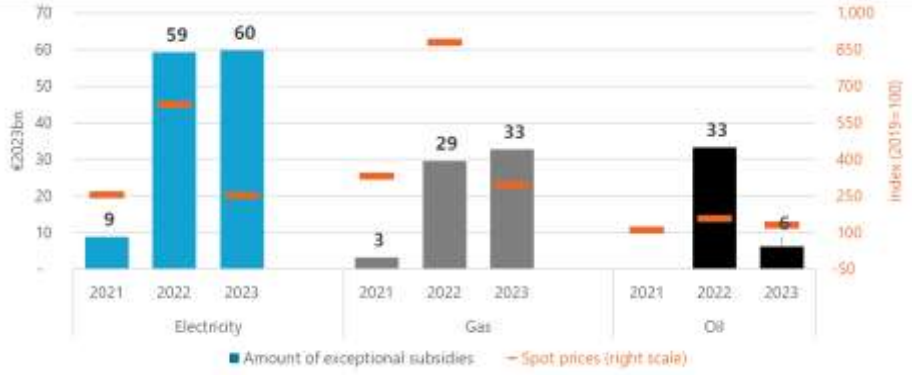
Source: Enerdata, 2024. "Others" include Agriculture, Public and Mining sectors

Post-crisis support

While 2023 was characterised by prices returning close to 2021 levels after the shock of 2022, the amount of support devoted to crisis measures remained high for two of the most important energy carriers: electricity and gas(see Figure 4). Exceptional aid for electricity reached EUR 59 billion in 2022 while its price increased six-fold compared to 2019. This level of support has remained constantin 2023 (EUR 60 billion) despite the fall in wholesale electricity prices. Exceptional subsidies for natural gas were lower (EUR 29 billion in 2022) although prices have increased even more sharply, but the exceptional subsidies even inreased above their 2022 levels, to EUR 33 billion, despite a lower gas price.

For Oil, Brent prices did not increase as much as gas and electricity prices, but exceptional support for oil was higher than for gas in 2022, reaching EUR 33 billion. However, in contrast to electricity and gas, these aids fell sharply in 2023, to EUR 6 billion.

Figure 4: Exceptional subsidies, by energy (left, EUR2023bn) and spot prices (right, index)



Source: Enerdata 2024. NB: Left axis corresponds to exceptional subsidies (in EUR2023bn) and right axis to spot prices (in index). The index is equal to 100 in 2019. Electricity and gas prices correspond to spot prices for Germany (evolution is similar in other EU countries). Brent prices were considered for Oil. Prices are an annual average.

3.2. Trends of energy subsidies by main energy sources

Almost all of the energy sources[32] were affected by the surge of subsidies levels in 2022 (see Figure 5). Subsidy amounts (incuding both exceptional and structural) sharply increased for fossil fuels (over two-fold increase to EUR 136 billion), for electricity (to EUR 68 billion) , and to all or several energy sources, inseparably (the "All energies" category, EUR 121 billion).

Support to renewables dropped in 2022 to EUR 68 billion (-18%), due to several effects including high prices on the power market (see section 3.3.2 for a broader analysis). In previous years, renewable support registered an upward trend since 2015: from EUR 79 billion in 2015 to EUR 89 billion in 2020.

Figure 5: Subsidies by main energy source in the EU27 (2015-2023; EUR2023bn)

Source: Enerdata, 2024

NB: 2023 estimates are represented with hatching

In comparison with 2022, a decrease in subsidies has been recorded for 2023 though subsidies for electricity and fossil fuels were still significantly higher than 2021 figures. Only subsidies allocated to "All energies" continued increasing, as high energy prices persisted together with untargeted containment measures implemented by Member States.

3.3. Subsidies by energy carrier

In this section, energy subsidies are analysed according to the energy carrier used (Figure 6). This classification[33] describes the medium used to transport, deliver or store the energy. It differs from the main energy sources, which are either fossil fuels, renewables or nuclear energy. For example, RES and nuclear technology are mostly found as sources for electricity as a carrier. It is important to bear this different classification in mind in order to avoid any comparison between sources and carriers, which do not cover exactly the same technologies and/or energies.

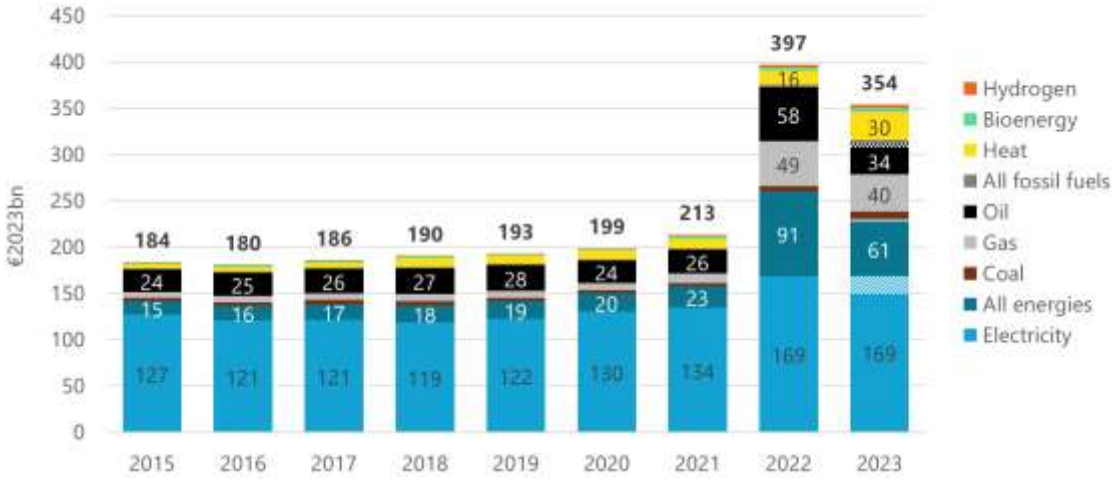
[32] In this section both primary energy sources (renewables, nuclear, fossil fuels) and electricity are shown. This methodological approach is explained by the fact that in Europe, many countries subsidise electricity in general, without considering the source fuel used for its production. However, when more detailed information on the source of this electricity production (e.g., nuclear or renewable) was available, it was deemed appropriate to indicate it.

[33] For more information regarding the main energy carriers' classification please refer to Annex B.1.1.

Over 2015-2021, the distribution of volumes by energy carrier remained relatively unchanged, with electricity capturing the most supporte in the EU27, around 60% on average of the total subsidies over the period.

2022 showed a clear rupture in the long-term trend, with a peak in subsidies for electricity, gas, oil and 'All energies'. At the same time, support for coal remained marginal. In 2023, electricity remained the most heavily subsidised carrier and has accounted for EUR 169 billion (close to 48%) of total energy subsides. Support to "All energies" and gas subsidies went down in 2023 to EUR 61 billion and 40 EUR billion (17% and 11% respectively). Oil support returned to its pre-crisis levels, at EUR 34 billion (9.5%), while support for heat energy almost doubled to EUR 30 billion (8.4%).

Figure 6: Energy subsidies by main carriers in the EU27 (2015-2023; EUR2023bn)



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

In the three following sections, deeper analyses are conducted for fossil fuel, renewables and nuclear subsidies.

3.3.1. Fossil fuel subsidies

The inventory approach adopted for this study allows for the identification of concrete government measures supporting energy production, transmission and consumption and assess their fiscal impact. This is especially interesting for identifying the supports for fossil fuels, i.e. oil, natural gas and coal and 'All fossil fuels'.[34] For energy subsidies targeting electricity as a main energy carrier, only support measures explicitly focusing on fossil fuels (specific sub-carrier or several sub-carriers) have been considered as FFS. Support to electricity without any further specification (e.g. electricity cheque) is therefore not considered as FFS irrespective of the power mix of the considered MS is.

As already mentioned in Section 2.1, great caution should be exercised when analysing the FFS amounts in this study, especially concerning any comparison among MS and interpretation of the FFS support's impact on climate. More precisely:

- The inventory compiles data from Member States which may apply different energy tax rates. A cross-country comparison restricted to an overview of tax expenditure levels may therefore be irrelevant without additional indicators on corresponding tax levels and energy prices.
- The collected data refers to fiscal amounts and do not include any climate impact assessment, thus differing from a climate pricing approach. Especially this approach differs

[34] A category that is applied to measures that cover all fossil fuels, or with no detail on any specific (fossil) energy carrier.

from the "Effective Carbon Rates" approach of the OECD but provides a complementary and more straight-forward analysis.

- Not all FFS should be considered as having negative environmental impacts, as some measures are related to the phase-out or abatement of fossil fuel use (see Section 3.7 of the study), such as
  - support measures for industry restructuring to reduce fossil fuel use, or to phase out coal-fired power plants (among others in Germany, Poland, Spain);
  - support measures to replace boilers of vulnerable customers, however without a switch to clean energy[35].

The following analysis is therefore decomposed in four parts. A first part provides a quick overview of the status of the FFS data. A second part examines the development of FFS at the EU27 level. A third part analyses the FFS amounts by Member States. And a fourth part, based on a reduced scope of FFS, proposes a set of indicators for comparing the level of support or dependence on fossil fuels from one country to another.

3.3.1.1. Status of the data collected

Fossil fuel measures include close to 780 FFS of which around 550 are still active in 2023, and of which around 20 are expected to be deactivated by the end of 2024. Since the 2023 *Subsidy inventory*, 39 new FFS have been identified and added while 68 subsidies have ended. These changes are listed in the country observations in Annex B.1.11. The following section analyses trends until 2023, while an overview of the ongoing fossil fuel phase out plans is presented in section 4.3.

The total amount of FFS reported for 2023 is composed of around 60% of actual costs (around 350 measures, from official documents) and 40% estimated costs (based on publications by national or international institutions). Data yet to be confirmed for 2023 were estimated at EUR 7 billion: (when no data for 2023 is available, the figures are estimated from the previous years. Estimated figures appear as hatched areas in the graphs. Please see details for type of data in Annex B.1.4.2.

Fossil fuel subsidies cover financial support to all fossil primary energies and electricity explicitly generated by burning fossil fuels. In many cases, multi-energy subsidies are not reflected into the fossil fuel category, but rather into "All energies" category (see allocation details in Annex B.1.7).

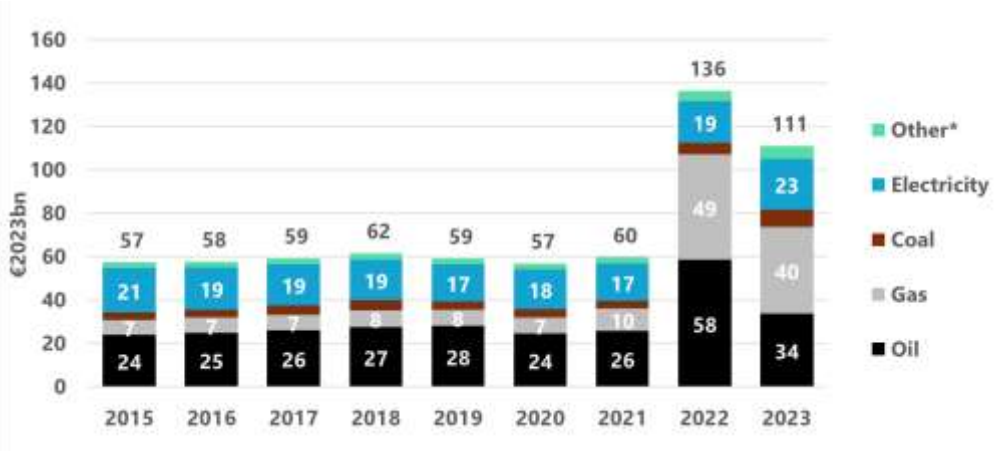
3.3.1.2. Analysis at the EU27 level

In 2022, the overall downward trend of fossil fuel subsidies – as highlighted in Figure 7 – was disrupted, as a direct consequence of the European response to the energy crisis, in which subsidy measures were one of the primary tools to counteract the effects of high energy prices on households and European industries.

As a result, fossil subsidies more than doubled between 2021 and 2022, from EUR 60 billion to EUR 136 billion, then somewhat decreased in 2023, by -16%, to EUR 111 billion. Support directed to natural gas and fuels derived from crude oil both dramatically increased in 2022, reaching EUR 49 and 58 billion respectively. The strong support continued in 2023, although at a lower level (EUR 40 and 34 billion, respectively), which reflects both the evolution of fossil energy prices as well as the still-important role fossil fuels play in the EU27 energy mix.

[35] As from 2025 MS shall not provide financial incentives to stand-alone FF boilers, with some exceptions.

Figure 7: Fossil fuel subsidies by energy source (2015-2023; EUR2023bn)



*Source: Enerdata, 2024. *Others category includes subsidies directed to all energies, all fossil fuels, and heat. NB: 2023 estimates are represented with hatching*

It is noteworthy that subsidies for oil in 2023 have reached levels approaching those observed prior to the crisis, whereas subsidies for gas remain 4x higher than before, indicating that the crisis primarily concerned gas prices.

When looking at the evolution of FFS distributed by economic sector (Figure 8), the 2022 increase is mainly caused by large increases in subsidies to the *energy industry*[36] sector (EUR +23 billion) and to *households* (EUR +16 billion) to counteract the effects of the energy price crisis. Support to *industry* fell in 2022, although these might have been shifted into the "All energies" category as many industry measures combined electricity and gas support[37].

Figure 8: Fossil fuel subsidies by economic sector (2015-2023; EUR2023bn)

Source: Enerdata, 2024. *Others includes construction, services, business, public, and mining sectors. NB: 2023 estimates are represented with hatching

It is worthwhile to note that in 2023, the level of support for two sectors, *Transport* and *Energy industry*, have quickly returned to their historical pre-crisis levels, highlighting the temporary nature of related measures. In contrast, *Households* and *Cross sectoral* supports have remained very

[36] The term covers energy extraction, conversion, refining, infrastructure, transmission, distribution, storage, waste management and retail.

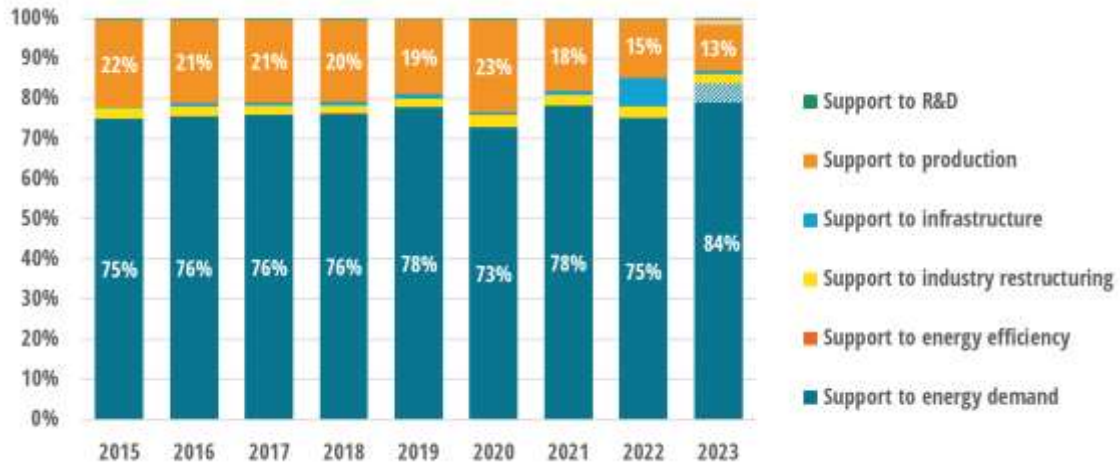
[37] For more information regarding the classification used for economic sectors please refer to Annex B.1.1.

important in 2023 compared to their historical values, reflecting a delay in the pass-through of lower wholesale energy prices to retail bills and therefore a longer need for continuing support.

Most of the FFS allocated throughout the EU27 countries since 2015 are intended to support energy demand, for example by limiting the costs of energy consumption through lower tax rates on energy products. The share of FFS support to energy demand varied between 70-75%[38] of the total FFS amount over the period 2015-2022, as can be seen on Figure 9.

In 2022, several countries implemented temporary measures aiming at securing gas supply, leading to an increase in the share of FFS supporting infrastructure. The increase totalled almost EUR 10 billion (a 7% share of the total FFS increase), principally because of the implementation of three subsidies securing gas storage facilities in Italy[39], Austria[40] and France[41].

Figure 9: Fossil fuel subsidies in the EU27 by purpose (2015-2023; %)



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

Since 2015, around 15% to 22% of the FFS were meant to support electricity production; this share is consistently decreasing, mainly due to lower support to cogeneration. Subsidies specifically directed to industry restructuring such as aids to close coal/lignite power plants and coal mines represent a small and decreasing share of the total FFS (1.7%) in 2022. The classification used for subsidy purpose is detailed in Annex B.1.1.

3.3.1.3. Distribution of fossil fuel subsidies by Member States

In 2022, around 40% of the FFS were delivered by France and Germany (EUR 31 billion and EUR 28 billion respectively). These two countries were followed by Italy (EUR 26 billion), Spain (EUR 13 billion), and Belgium (EUR 7 billion), as shown on Figure 10.

In 2023, the situation has changed significantly: in Germany, FFS continued to rise and reached EUR 41 billion (~1% of GDP), while in France, FFS halved to EUR 15 billion (0.54% of GDP). Italy has

[38] This share is slightly higher than the one presented in the *Commission study 2023*, due to the excise tax exemptions on kerosene consumed in intra-EU27 air traffic that were added retroactively to the Subsidy inventory this year.

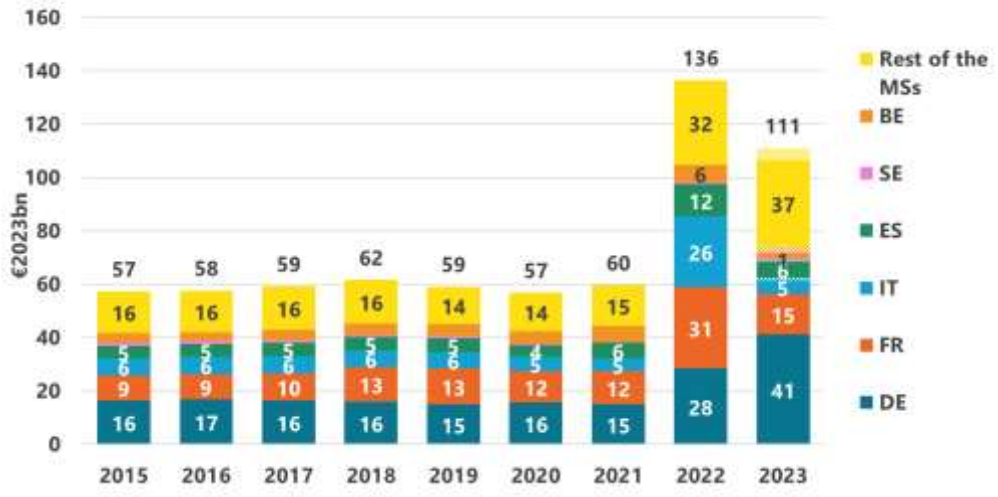
[39] Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis (DL2022/ n.50) - Provisions to accelerate the storage of natural gas (Art. 5 bis), EUR 4.2 billion

[40] Procurement of strategic gas reserve, EUR 3.7 billion

[41] Resiliency plan - Securing the filling of gas storage facilities, EUR 1.5 billion

radically decreased its spending on FFS, to EUR 6.2 billion (0.3% of GDP), while Spain and Belgium lowered it to EUR 6.4 and EUR 4.4 billion (0.45% and 0.76% of their GDP), respectively.

Figure 10: Fossil fuel subsidies in the EU27 by country (2015-2023; EUR2023bn)



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

In 2022, FFS in Germany nearly doubled (in comparison with 2021) mostly due to two support measures: the recapitalisation of SEFE GmbH (former Gazprom Germania GmbH) due to Russia's war against Ukraine (EUR 6.7 billion); and the temporary reduction of tax rates for diesel, gasoline, natural gas and liquefied petroleum gas fuels (EUR 3.7 billion). In 2023, Germany was one of the only MS where the total amount of FFS continued to further increase, reaching EUR 41 billion (+39%), particularly because of the implementation of a gas price cap in early 2023, representing an expense of almost EUR 14 billion.

In France, in 2020, during the lockdowns, the lower consumption of petroleum products (particularly in transport) coupled with the reduction of the partial reimbursement on gasoline used for road transport of goods led to a noticeable fall in fossil subsidies. In 2022, French FFS increased by almost 2.5 times to EUR 31 billion, mainly driven by two measures: the exceptional discount on fuel prices at the pump within the frame of the Resilience Plan (+EUR 8 billion), and the gas tariff shield for protecting households (+ EUR 7 billion). The year 2023 was characterised by a downward trend, even though the level of FFS remained higher than historical levels (+28% higher compared to the 2015-2021 average), because of the extension of temporary measures after 2022 such as the gas tariff shield (EUR 2.3 billion in 2023), or the creation of additional targeted support to vulnerable customers such as the allowance for fuel expenses for lowest income commuters (EUR 1.3 billion).

In Italy and Spain on the other hand, 2023 brought a return to historical trends, after a significant peak in 2022 (respectively 5x and 2x increase). Indeed, especially in Italy, almost all of the temporary fossil fuel supports aiming at addressing energy price rising stopped at the end of 2022. In Italy, the urgent measures to contain the effects of energy price, incl. the reduction of charges on gas bills for all users and the temporary cut of gas VAT from 22% to 5% (EUR 5.9 billion) as well as the provisions to accelerate the storage of natural gas the (EUR 4.2 billion) were the main drivers of the 2022 increase.

In Spain, this was mainly due to the direct fuel discount of EUR 0.2/l for all consumers (EUR 6 billion in 2022) which ended in 31 December 2022. Urgent measures have been implemented such as tax reductions (EUR 6.6 billion), the reduction of charges on gas bills for all users (EUR 3.2 billion), a price

cap (cut on VAT) on gas distribution (EUR 2.6 billion), and provisions to accelerate the storage of natural gas (EUR 4.2 billion). These temporary measures have largely been stopped in 2023.

In Belgium, financial support to fossil fuels increased by 6% in 2022 to EUR 6 billion. This increase was driven by measures designed to assist households grappling with rising energy prices. Among these measures were a temporary VAT reduction from 21% to 6% for gas and heat (EUR 630 million), the increased budget for the social tariff for gas (EUR 700 million), and the flat rates for natural gas (EUR 500 million).

In some Member States, the amount reported for FFS is uncertain due to poor data quality or lack of transparency. It was the case for example in Poland in the past few years, although some improvements were noticed recently (further details available in B.2) e.g. resulting in the improved estimation of around EUR 14 billion in FFS in Poland in 2023. This large increase in 2023 is explained by several measures e.g. the implementation of an electricity price cap (EUR 8.5 billion that year) for households, an excise duty reduction for electricity and heat (EUR 3.9 billion) for the agricultural sector, a gas price freeze (EUR 3.3 billion), and a one-off payment of 3,000 zlotys to households heating with coal (EUR 2.4 billion).

3.3.1.4. Comparing the support to fossil fuels (excl. tax advantages) – an attempt at the comparison between MS

The following analysis excludes tax advantages such as tax reductions, exemptions, refunds or allowances. As explained before, each MS uses its own national tax approach and policies, and the lack of harmonisation between these methodologies would make difficult to compare Member States. The remaining FFS account for about half of the total FFS amounts (or EUR 61 billion) in the following instrument categories: direct transfers, under-pricing of goods/services, income or price supports, and RD&D. Table 3-1 gives an overview of the results of this approach.

Table 3-1: Total FFS (excl. tax advantages) by MS, in 2023

	EUR mn	% of GDP	Per primary energy consumption (EUR/MWh)	Per capita (EUR)	As % of total govt. expenditure
Austria	196	0.0%	0.9	22	0.08%
Belgium	1,480	0.3%	3.9	126	0.46%
Bulgaria	946	1.0%	7.9	147	2.56%
Cyprus	11	0.0%	n.a.	8	0.09%
Czechia	181	0.1%	0.6	17	0.13%
Germany	24,704	0.6%	11.1	291	1.23%
Denmark	16	0.0%	0.2	3	0.01%
Estonia	2	0.0%	0.4	1	0.01%
Spain	3,796	0.3%	4.3	79	0.56%
Finland	91	0.0%	0.8	16	0.06%
France	6,490	0.2%	5.7	95	0.40%
Greece	993	0.4%	5.6	94	0.89%
Croatia	665	0.9%	n.a.	173	1.85%
Hungary	1,797	0.9%	n.a.	186	1.87%
Ireland	772	0.2%	n.a.	149	0.67%
Italy	2,582	0.1%	2.1	44	0.22%
Lithuania	208	0.3%	4.2	74	0.77%
Luxembourg	63	0.1%	2.4	95	0.17%
Latvia	73	0.2%	n.a.	39	0.43%
Malta	596	3.2%	77.6	1130	8.52%
Netherlands	981	0.1%	1.7	55	0.21%
Poland	10,587	1.4%	11.2	289	3.02%
Portugal	393	0.1%	2.9	38	0.35%
Romania	1,894	0.6%	7.6	100	1.46%
Sweden	13	0.0%	0.1	1	0.00%
Slovenia	59	0.1%	1.5	28	0.20%
Slovakia	1,791	1.5%	15.1	330	3.04%

Source: Enerdata, 2024. Colour-coding: for each indicator, the amounts were coloured with a gradient of red from white (lowest value) to red (highest value). GDP and deflator values: International Monetary Fund (IMF) and World Bank.

In interpreting the values presented in this table, it is essential to consider that these represent a specific year (2023 in this case) and that the results may vary significantly from one year to the next, particularly during the 2021-2024 period[42].

Several conclusions can be derived from this Table 3-1:

- Primarily, absolute FFS amounts are of interest from a climate change point of view because high FFS amounts imply more FF use and thus, higher CO_2 emissions. In absolute quantities, Germany is by far the most supportive of FF production and use, through financial incentives and advantages: nearly EUR 25 billion or 40% of the total amount provided in the EU27. Other large economies (France, Spain, Italy) or those with high shares of fossil fuel in their power mix (Poland, Italy) are also important contributors to the total FFS for production and use in the EU27. These results are complemented by the following analysis of distribution by fuel (Figure 11).

- When looking at FFS expressed as a percentage of the national GDP it is shown that, for the majority of countries, support to FF (excl. tax advantages) represents less than 0.5% of GDP. For some Member States, even a rather small amount of subsidies can represent a higher share of GDP because of their small GDP, such as Malta (3.2%) or Croatia (0.9%). In Germany and Poland, support to FF also represents more than 0.5% of their GDP, a relatively high value once again explained by a high fossil fuel consumption, and a carbon-intensive power mix. FF support in Slovakia, Bulgaria, and Romania also represents more than 0.5% of their GDP (1.5%, 1.0% and 0.6%, respectively) despite these MS not having an especially high carbon-intensive power mix.

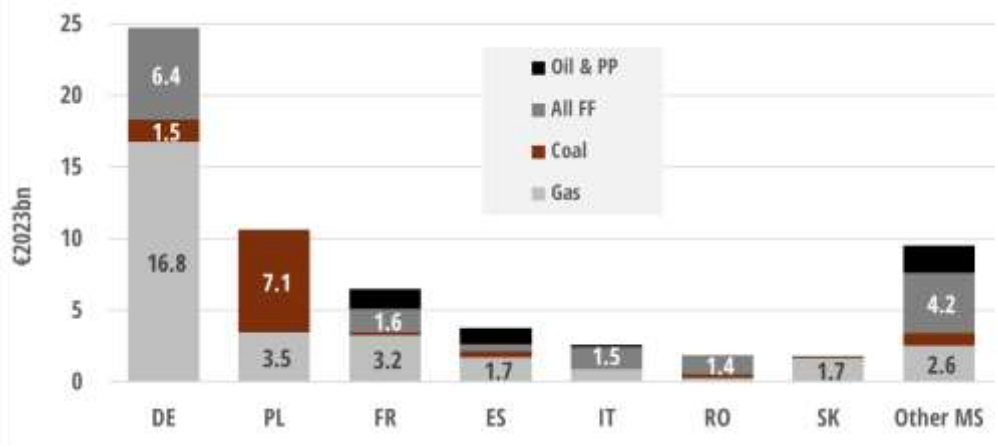
- For the third indicator, FFS excluding tax advantages is divided by the primary consumption of fossil fuel. It assesses the level of financial support per each MWh of fossil fuel consumed in the considered country. Malta, which has low FF consumption, is by far the highest with EUR 77.6/MWh, followed by Slovakia (EUR 15.1/MWh). Germany ranks third with EUR 11.1/MWh with both largest FFS in volumes and FF consumption within the EU.

In conclusion, to compare the level of financial support to fossil fuel between MSs is not straightforward. Thus, Table 3-1 demonstrates that the level of support varies from one indicator to another, highlighting the complexity of such analysis.

Figure 11 details the distribution of fossil fuel support (excluding tax advantages) for selected MSs in 2023. The surprisingly low reported amounts for petroleum products can be explained by their importance in taxation mechanisms, that have been removed here.

[42] For example, Total FFS for 2022 in Germany was half that indicated.

Figure 11: FFS excluding tax advantages by energy product, in selected Member States, 2023 (EUR2023bn)



Source: Enerdata, 2024

In 2023, Germany has mostly supported gas (around 68% of its total FFS), mainly through support to electricity production (which still mostly relies on natural gas- and coal-powered generation). The German total represents 55% of total EU support (excl. tax advantages) to natural gas. Moreover, Germany continued to provide large support to coal-fired power generation and more widely to the coal industry and miners. Subsidies aimed at the shut-down of coal-fired power plants and the rehabilitation of the old coal-mining sites peaked in 2020 and still amounted to EUR 1.5 billion in 2023. In 2020, Germany launched a tender mechanism for the phase-out of hard coal (around EUR 350 million subsidised in 2020 and around EUR 125 million in 2022), as well as compensation payments for the decommissioning of coal plants (around EUR 180 million per year expected until 2038).

In 2023, Germany was surpassed by Poland as the biggest subsidiser of coal, which gave direct support to coal amounting to EUR 7.1 billion, or around 67% of the total coal subsidies in the EU27. This sudden increase is due to the implementation of two measures[43] aimed at supporting coal demand in early 2023 totalling almost EUR 5.5 billion. It is also to be noted that, contrary to Germany, Poland is still highly dependent on coal, despite rapid recent growth in renewables, and that the coal-related measures implemented do not aim at transitioning out of coal, but rather at supporting households to heat their homes with coal. However, both measures are temporary subsidies implemented to cope with the energy crisis and ended at the end of 2023.

France and Spain have quite a similar profile in FFS spending. These two countries provided respectively EUR 6.5 billion and EUR 4 billion to FFS, with a majority being committed to gas (around 50%), followed by oil (around 25%) and coal. In France, oil subsidies encompass a few measures, the most important of which is a grant (direct transfer) for fuel expenses for low income commuters totalling EUR 1.3 billion.

[43] The two measures are i) 'Dodatek węglowy': allowance granted to households for which the main source of heating contain at least 85% hard coal (EUR 3 billion) ; and ii) a one-off €636 payment to households heating with coal (EUR 2.5 billion).

Textbox 3-1: Diesel vs gasoline tax difference

In almost every country of the EU27, gasoline has a higher taxation rate than diesel. In 2021[44], only Belgium had the same tax rate for both products, and Slovenia had a lower rate for gasoline. Elsewhere, the level of tax difference varied between EUR 0.03/l and EUR 0.30/l with a European average around EUR 0.12/l. This average has decreased very slightly over the 2015-2021 period (-1.1% in 2021 compared to 2015 levels), but without harmonized trend from MS to another: no change in this tax difference is observed in 7 MSs, it was increased in 9 MSs, and was decreased or removed in 11 MSs.

In line with the previous *Commission studies*, the excise tax difference between diesel over gasoline is not included in the *Subsidy inventory* that supplements the study[45]. Indeed, the definition of tax expenditure as the exemption, exclusion, or deduction from the base of a tax for a given product means that excise tax *difference* between gasoline and diesel does not fit within the subsidy framework.

We have estimated the favourable tax treatment for diesel to reach EUR 14.6 billion[46] for the EU27 in 2021, with five countries accounting for 73% of that amount: Germany (EUR 4.4 billion), France (EUR 1.9 billion), Italy (EUR 1.7 billion), Spain (EUR 1.7 billion) and Netherlands (EUR 1 billion). In 2021, this amount rose compared to 2020 (+6%) but has been globally decreasing since 2015 (-3% per year).

This difference in taxation is being addressed at both the national and EU-levels. At the national level some countries have begun transitioning their excise tax regimes to reduce diesel consumption for environmental and public health reasons. At the EU level there is an ongoing process to amend and update the Energy Taxation directive in the interest of taxation by fuel category, in which diesel and gasoline would have the same minimum rate. Part of the impetus for this change is to encourage countries to reconsider their taxation regimes on energy products, and thus reconsider the tax differences between fuels like diesel and gasoline.

As part of other ongoing changes to the treatment of fossil fuels and FFS, the EU is moving towards the adoption of a new regime for energy taxation. In the updated Energy Taxation Directive (ETD) it is proposed to set new minimum rates for fuel taxation across the EU. These proposed changes are explained in greater detail in the textbox below, but the broad implications are that minimum rates would more closely reflect a fuel's level of pollution per unit of energy, rather than their volume[47]. According to this ranking, conventional fuels would be taxed at the highest rate and electricity at the lowest rate.

[44] At the date of writing this report (July 2024), 2022-2023 data were not available.

[45] Although this tax difference could be seen as a form of tax expenditure as the level of taxation differs between the two fuels that are mainly consumed for the same purpose, i.e. road transport, we define tax expenditure as the exemption, reduction or refunds from the base of a tax for a given product (by opposition to different tax level for a given energy use, which would impose to compare the level of taxation to all the energy product for this given use, e.g. taxation of electricity, gas, gasoline, diesel, LPP for the energy use in road transport). Moreover, currently, most of the MSs do not consider the excise tax difference between diesel and gasoline as tax expenditure. We have identified Belgium, Denmark, Italy and Sweden reporting such measures.

[46] To estimate this amount we have collected, from the TAXUD CIRCABC database, the excise tax rates for gasoline and diesel in each country (effective rate at 1st January of each year) and calculate the tax difference between both, in euros. Then, we got energy consumption estimations from the Odyssee and Eurostat databases. We only considered diesel consumed by personal private vehicles, as freight transport that benefit from reduced tax rate was already covered by the main *Subsidy inventory*. Finally, we multiplied the excise tax differences with diesel consumption. As consumption data for 2022 were not yet available in Odyssee database, we use that of 2021.

[47] Legislative Train Schedule https://www.europarl.europa.eu/legislative-train/spotlight-JD22/file-revision-of-the-energy-taxation-directive

Textbox 3-2: Changes to the Energy Taxation Directive

The ETD formed the basis of regulating energy taxes in the European Union for 20 years without significant revision, nor adjustment for inflation[48]. As mentioned earlier, the differences in minimum rates between various fuels could be interpreted as tacit financial incentive for one fuel over another.

In July 2021, the Commission tabled a proposal to update this regime, initiating the legislative process to become EU law. As of June 2024, work in both the Council and the European Parliament remained ongoing[49]. The ETD revision is intended to have three effects on minimum tax rates for all member states: change in the scope, base unit, and intent of the tax regime.

1) The base unit of taxation will shift from volumetric measures (liters, kilograms) to energy content (GJ). While these two units are related, the change towards real energy content is designed to prioritize efficiency improvements and incentivize transitions away from the most polluting fuels.[50]

2) Change to scope mainly entails the creation of a set of four fuel "types" depending upon their level of emissions. Rather than having a specific rate for petrol vs. diesel, these types of carbon intensive fuels will have their minimum rates at an equal level. The four types currently proposed are further disaggregated based on 3 usage categories (propellants, motor fuel for non-road uses, and heating fuel). An example is listed below of minimum rates for propellants (along with % change compared to current minimums)[51]:

- EUR 10.75/GJ – Petrol (+2%), Gasoil/diesel (+22%), Kerosene (+23%), Non-sustainable biofuels
- EUR 7.17/GJ – Liquid Petroleum Gas (+47%), Natural gas (+176%), Non-sustainable biogas, Non-renewable fuels of non-biological origin
- EUR 5.38/GJ – Sustainable biofuels/biogas
- EUR 0.15/GJ – Low-Carbon Fuels (renewable fuels of non-biological origin, advanced sustainable biofuels/biogas)

*** Note: several "transition" fuels will have their minimum rates gradually increased in the 10 years following the directive's commencement. E.g., Natural gas will increase from EUR 7.17 to EUR 10.75 between 2023 and 2033.
Furthermore, the rates would undergo an annual inflation adjustment, based on Eurostat consumer prices figures.

3) The overall intent of this new regime is to align the taxation system with the green transition and environmental goals of the EU. These proposed changes are designed to close what EU legislators consider perverse fuel use incentives. Notably, the proposed ETD specifically introduces fuel taxation for fishing, maritime shipping, and aviation sectors for the first time, which have been slower in their decarbonisation efforts, with fuel tax exemptions playing a role alongside larger technical challenges.[52]

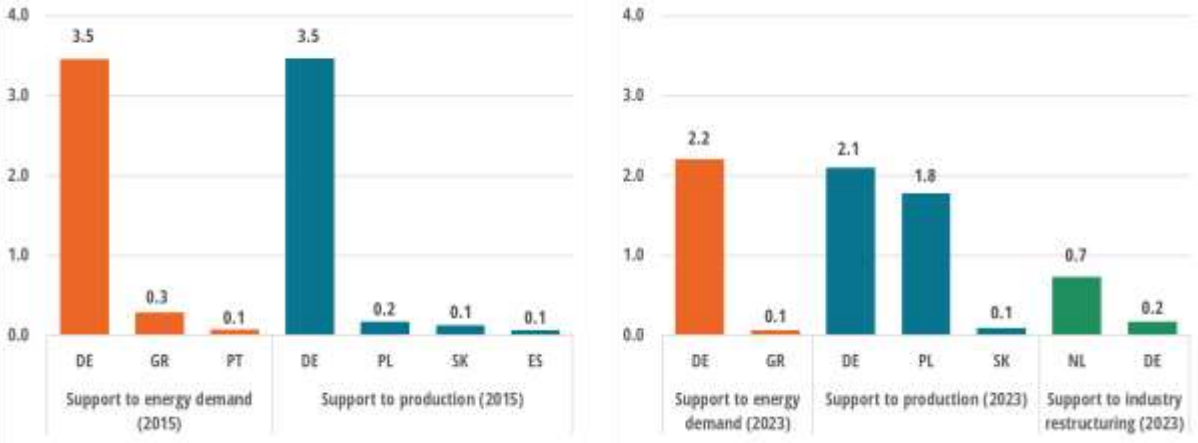
[48] Council Directive COM/2021/563 (EC). EUR-Lex Database2021. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0563
[49] EPRS | European Parliamentary Research Service https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)698883
[50] Council Directive COM/2021/563 (EC). EUR-Lex Database2021. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0563
[51] DRAFT REPORT on the proposal for a Council directive restructuring the Union framework for the taxation of energy products and electricity (recast). Available at: https://www.europarl.europa.eu/doceo/document/ECON-PR-719624_EN.pdf
[52] Council Directive COM/2021/563 (EC). EUR-Lex Database2021. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0563

3.3.1.5. Zoom-in on EU27 subsidies disbursed for coal-fired power plants

EU27 subsidies disbursed for coal-fired power plants reached EUR 7.1 billion in 2023 (a 6% decrease compared to 2015). Eight countries contributed to these subsidies, namely: Germany, Greece, the Netherlands, Portugal, France, Poland, Slovakia and Spain.

While all subsidies in 2015 were used either to support energy demand (EUR 3.9 billion) or production (EUR 3.8 billion), a change has been occurring and support to industry restructuring (i.e. to subsidise coal plants closures and land restoration) is sginificant, with around EUR 0.9 billion estimated in 2023, mainly concentrated in the Netherlands (Figure 12).

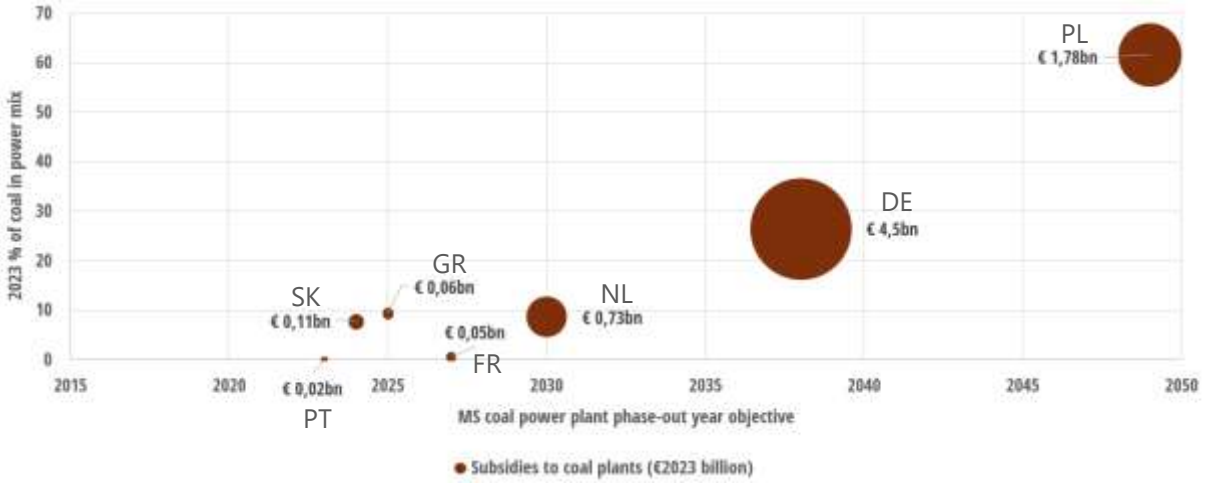
Figure 12 : Coal power plants subsidies in 2015 (left) and 2023 (right)**, in €2023 billion**



Source: Enerdata, 2024

To complement the analysis, Figure 13 below shows the volumes of subsidies allocated to coal, the share of coal in the power mix and the target dates for phasing out coal in the country.

Figure 13: Coal subsidies vs. coal in power mixes & coal phase-out objectives (2023)



Source: Enerdata, 2024

3.3.2. Renewable energy sources

3.3.2.1. Status of the data collected

Our inventory comprises more than 560 RES subsidies, of which 80% in 2023 are actual data provided by the responsible national authorities, indicating that they are closely monitored and result in good data quality. The remaining values were estimated to obtain disaggregated values, e.g., by breaking down the electricity mix by energy source, or to obtain values that were not provided by the authorities, e.g., values of certificate systems for which only Poland and Sweden have provided complete data.

For FiT/FiP/CfD and RES quotas, missing data for 2023 due to later publication dates have been estimated. Due to the volatility of electricity market prices, which have a major impact on support mechanisms such as the FiP and CfD, these estimated amounts are subject to a higher uncertainty. Therefore, whilst greater attention was paid to these mechanisms in 2023, the estimates for RES amounts should still be interpreted with caution.

Uncertain data represents 18% of the RES subsidies amount included in the *Subsidy inventory* for 2023. RES data for years 2015-2022 included a lower share of estimates (from 7% to 12%).

With the above element in mind, the general approach is to display 2023 amounts in most of the graphs, but to stop the analysis at 2022.

3.3.2.2. Approach about negative amounts related to certain RES subsidies

In some countries, the subsidies for electricity from renewables in 2021 have been reported by official sources with lower values compared to 2020, or even negative values; this phenomenon was amplified in 2022 and 2023. Since the second half of 2021, energy prices have indeed been rising, which leads to situations where wholesale electricity prices have exceeded the level of some FiT/FiP contracts concluded with project owners, which in turn create situations where suppliers owe money back to regulators instead of receiving money.

Negative values were observed for example in Ireland under the Renewable Energy Support Scheme (RESS). Consequently, total amounts targeting renewable energy production support to solar and onshore wind were negative in 2022 and 2023. In France, public energy service charges aiming at supporting renewable energies through FiT/FiP represented *revenue* of EUR 1.8 billion for the State in 2022. At EU level, subsidies for FiT/FiP/CfD decreased by 22% in 2022 and are expected to decrease further in 2023 (Figure 14).

This development highlights how renewable energies (particularly for electricity) may contribute to public finances in the context of high wholesale energy prices, which could partly finance the exceptional expenses linked to consumer protection measures.

Negative amounts can be of interest to assess the efficiency of a mechanism, or useful to assess the competitiveness of RES for example. But this is not the goal of this study, therefore it was agreed to integrate negative amounts as zero in the inventory, considering that a negative amount cannot be considered as a benefit for the consumer or the producer, nor as a subsidy in line with the definition for the study. While not considered here, some of these figures are reported in the Country observation annex.

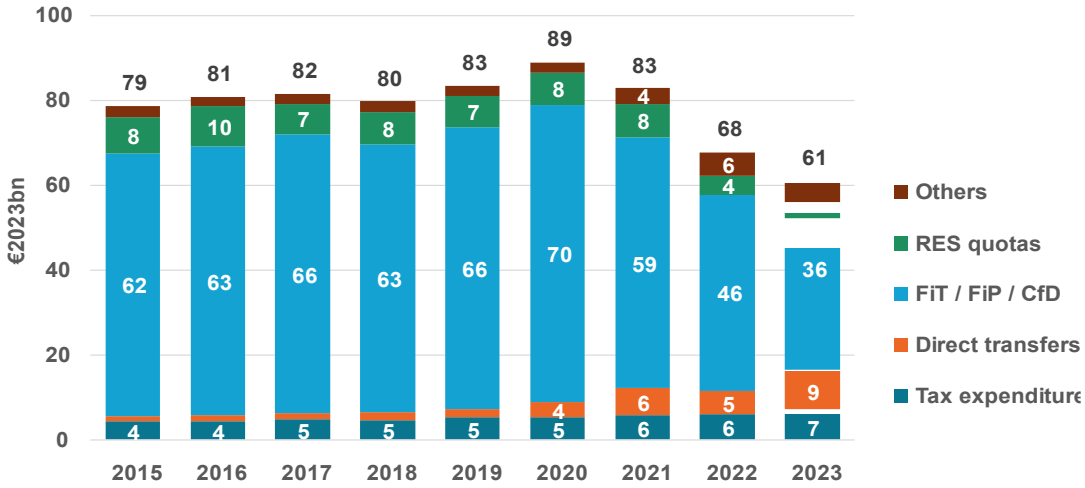
3.3.2.3. Analysis

Over 2015-2019, RES subsidies amounted to around EUR 81 billion per year on average; and peaked at EUR 89 billion in 2020. Subsidies to RES have been following a decreasing trend since 2021, when

RES subsidies fell by 7% compared to 2020. 2023 showed a continuation of this trend, when RES subsidies fell to EUR 61 billion (-9% compared to 2022).

This is mainly due to high wholesale prices on electricity markets, which have been close to or have even exceeded the reference tariffs set through feed-in premiums (FiP)/ contract for difference (CfD), thus leading to very low subsidy payments by MS. Beside this temporary effect leading to lower FiP/CfD subsidies, it should be noted that reference tariffs set by MS have been also continuously declining, as renewable technologies have become cheaper, more competitive and mature, thus also leading to the decrease of associated subsidies.

Figure 14: Renewable energy subsidies by instrument



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

Amongst all the identified subsidy instruments (see Table 4-2 in annex), feed-in tariffs (FiT) and feed-in premiums (FiP) remained the largest support schemes by volume for RES technologies in 2022 (see Figure 14). They represented nearly two thirds of total RES subsidies, i.e. EUR 43 billion in 2022 (EUR 46 billion including Contract for Difference).

Tax expenditures have increased regularly since 2015 by 5%/year to reach EUR 6 billion in 2022and 7 billion in 2023.

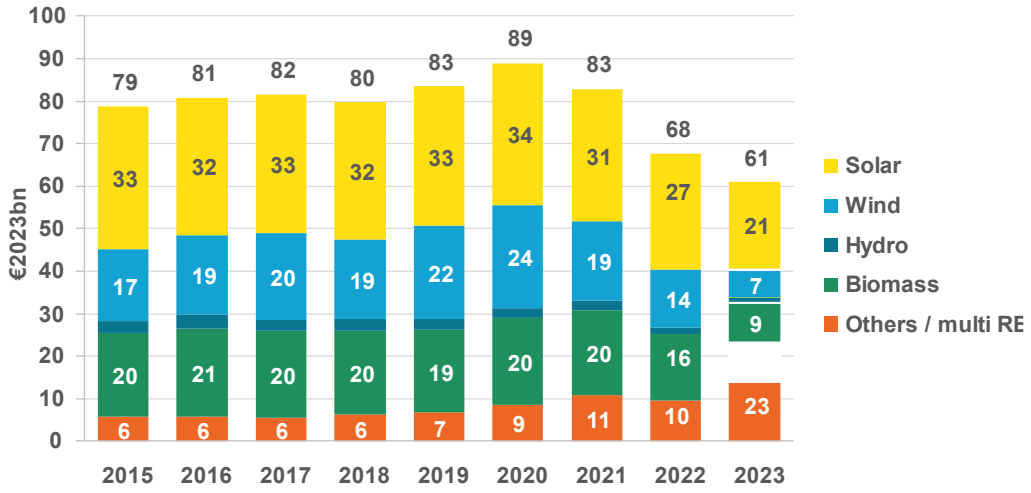
Direct transfers (mainly grants) reached a high level and almost doubled in 2023 compared to 2022, to EUR 9 billion. In 2022, the two biggest support measures were grants dedicated to RES production and electrical infrastructures included in Spain's Recovery and Resilience Plan (EUR 1.5 billion in 2022), as well as the France's Heat Fund to support heat production from renewable energy and waste heat (EUR 0.6 billion in 2022). In 2023, the two biggest sources of RES direct transfers were from Germany's industrial restructuring support and Spain's continued support for the deployment and integration of renewable energies.

Subsidies granted through RES quotas with tradable certificates fell considerably in 2022 to 4 billion (-44% compared to 2021) and provisional figures for 2023 do not show a rebound (EUR 3.8 billion). However, the level of support is strongly influenced by the market environment, i.e. supply interruptions, declines in demand or evolutions in prices. Given the market disruptions caused by the war in Ukraine and the resulting surge in prices, we expect data for 2023 to be adjusted retroactively by the responsible national authorities. These amounts must therefore be interpreted with caution.

It is also worthwhile to examine the distribution of renewable subsidies by technology. As shown in Figure 15, solar energy technology received by far the largest share of RES subsidies in 2023 (EUR

21 billion), followed by biomass (EUR 9 billion) and wind (EUR 7 billion). Hydro, which is mostly a mature and already broadly deployed technology, received marginal financial support (EUR 1 billion), while multi-RES subsidies doubled from 2022 and reached EUR 23 billion).

Figure 15: RES subsidies by technology (2015-2023; EUR2023bn)



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

Solar and wind generators are mostly supported through instruments such as FiT, FiP or CfD. Even though in 2022 solar provided only half the power generated by wind (421 TWh of electricity production from wind within the EU and 210 TWh of electricity and heat from solar[53]), it received a higher support to help accelerate its development. The production of electricity and heat from solar has been growing twice as fast (+14%/year) than that from wind power (+6%/year) over 2017-2022.

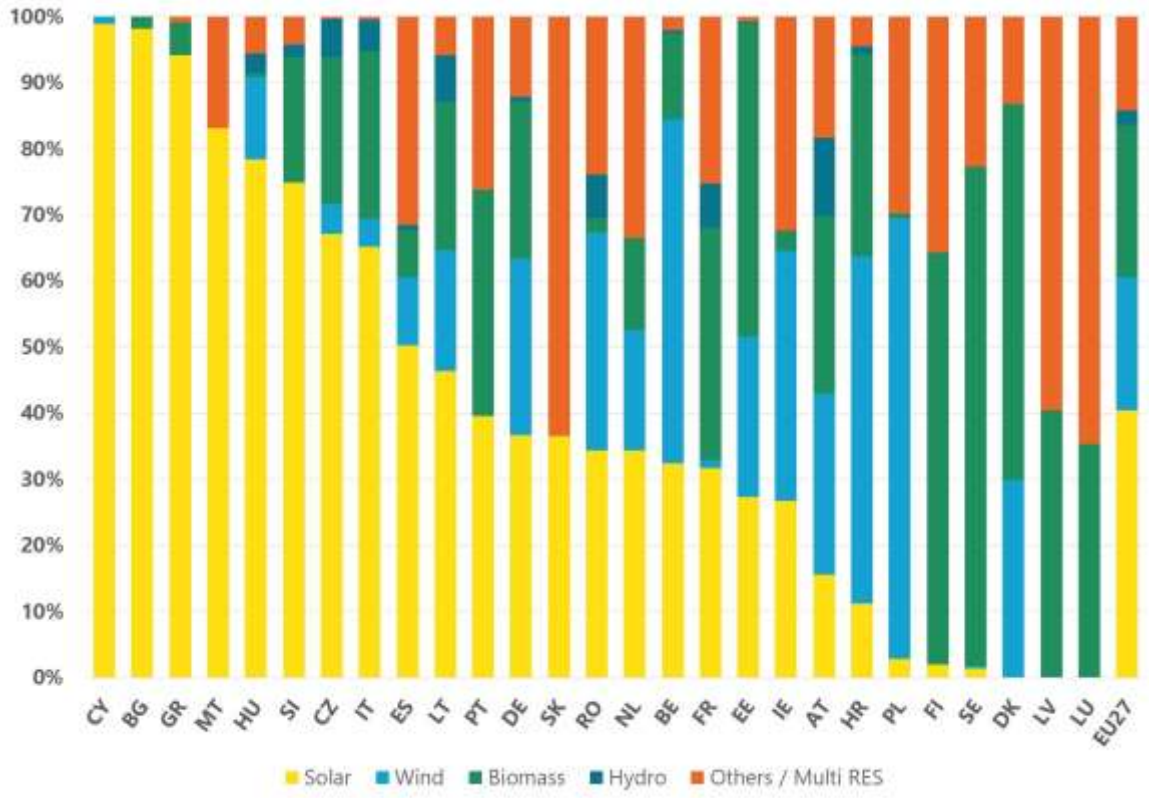
It is important to note that certain projects which involve renewable energy (e.g. green hydrogen) may or may not be included in the inventory as RES subsidies, depending on their conformity with the classifications used. Hydrogen in particular is interesting, as many present projects are greenlit with the intention of being low-carbon or even fully renewable but with some fossil fuel support at commencement, and as such hydrogen deserves its own analysis (cf. Textbox 3-3).

At MS level, the distribution of RES subsidies by technology (Figure 16) shows a heterogeneous situation, partly related to the local geographical and weather conditions and partly to the policy settings specific to each MS:

- Most MS opted for technologies with greater local potential, such as solar PV in countries with high solar irradiation (Greece, Malta, Cyprus, Portugal, Spain and Italy), or biomass in forested countries (Latvia, Finland, Estonia, and Sweden)
- Germany and France present a balanced spending across various RES technologies reflecting both their large and various territories, and their ambition to promote a mix of solutions
- Wind power constitutes a substantial proportion of RES subsidies in Poland and Belgium, reflecting national policies that are highly favourable to offshore wind power, such as the new Polish support scheme for offshore wind farms in place since 2021, which reached EUR 3 billion in 2022.

[53] Production of electricity and derived heat by type of fuel, Eurostat (July 2024). Available at; https://ec.europa.eu/eurostat/databrowser/view/nrg_bal_peh__custom_12265923/default/table?lang=en.

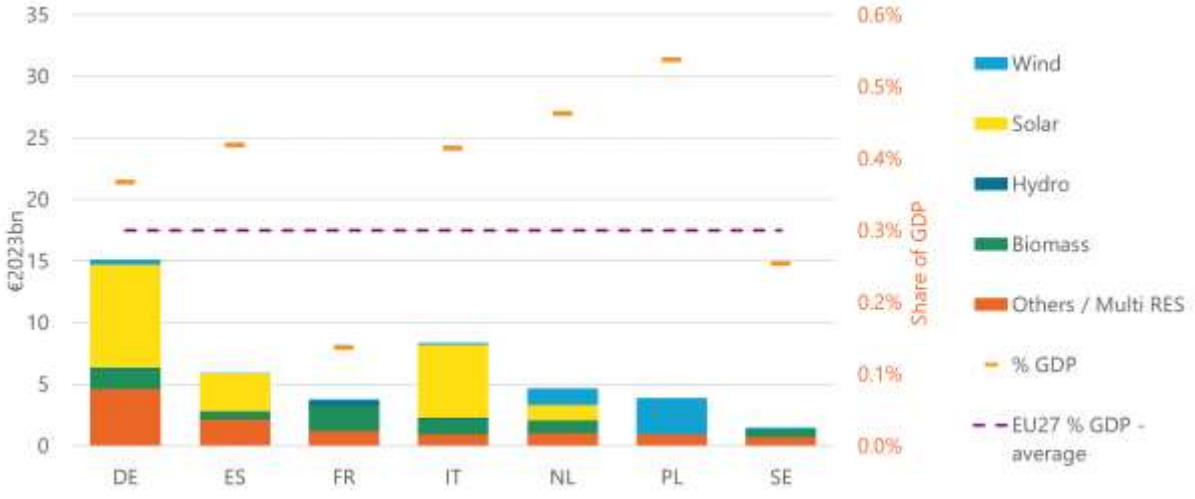
Figure 16: Share of RES subsidies by technology by Member State (2023)



Source: Enerdata, 2024

To enable a comparison of the level of MS's commitment in supporting the development of RES, we have divided the amount of RES subsidies by the GDP (Figure 17). In 2023, RES subsidies represented 0.30% of total EU27 GDP. From the seven MS selected, five has higher spending per GDP as the European average, and Poland had the highest ratio of RES subsidies to GDP, with RES subsidies accounting for 0.54% of its national GDP, followed by the Netherlands (0.46%).

Figure 17: RES subsidies in selected Member States (left - EUR2023bn; right - % of GDP)



Source: Enerdata, 2024

The four MS that were the largest RES subsidies providers in absolute terms in 2023 (Germany: EUR 15 billion, Italy: EUR 8.3 billion, Spain: EUR 5.9 billion and France: EUR 3.8 billion) rank lower in relative terms (0.37%, 0.41%, 0.42% and 0.14%, respectively). Other MS that have a relatively high

percentage of RES subsidies compared to its GDP even if absolute spending is much lower are Bulgaria (0.44%), Greece (0.45%) and Slovenia (0.78%).

On the other end of the scale, MS such as Croatia (0.07%), Hungary (0.01%), Ireland (0.02%), Portugal (0.08%), Luxembourg (0.05%) abd Slovakia (0.01%) spend much less in relative terms, significanly below the EU 27 average (0.30%).

Textbox 3-3: Hydrogen

According to the *Subsidy inventory* developed for this study, we were able to observe an emergence of hydrogen-related subsidies in the last few years. These subsidies were of minor scale until 2020, amounting to EUR 312 million at the EU27 level. Then, the sector experienced a substantial increase in financial support starting from 2021 and hydrogen-related subsidies reached EUR 1.4 billion, EUR 2.2 billion and EUR 4.0 billion in 2021, 2022 and 2023 respectively. Over 2023, 20 countries within the EU27 implemented subsidies dedicated to hydrogen (of all types). Prior to 2018, these subsidies were solely sourced from public research and development expenditures. In 2023, public subsidies for RD&D only accounted for one-third of total hydrogen subsidies, with a stronger focus now on supporting hydrogen production and project development. This shift can be attributed to the progressive maturation and commercialization of hydrogen technologies.

An important step for further support to electrolytic hydrogen production from renewable electricity has been taken by the European Commission with the launch of several Important Project of Common European Interest [54] (IPCEIs). Four IPCEIs in the hydrogen value chain have been announced: Hy2Tech and Hy2Use in 2022, Hy2Infra and Hy2Move in 2024. Collectively, these projects involve 99 companies across 16 Member States and Norway with up to EUR 18.9 billion of State Aid expected to leverage EUR 27.1 billion of additional private investment. Financial support through the IPCEI scheme for hydrogen reached EUR 677 million in 2023. Notable projects listed in the *Subsidy inventory* include a EUR 450 million grant for a 200 MW electrolyser being developed by Iberdrola in Spain for fertilizers production, a EUR 143 million support to the Hybrit initiative in Sweden for the development of a fossil-free value chain in steelmaking processes and EUR 114 million for two Power-to-X projects in Denmark aiming to produce hydrogen for the transport sector.

Moreover, the European Hydrogen Bank, a financing instrument run by the European Commission, awarded EUR 720 million to seven European renewable hydrogen projects through its first auction in April 2024. This funding is provided as a fixed premium in EUR/kg of renewable hydrogen produced. The winning projects were chosen from 132 bids. A second auction by the European Hydrogen Bank is scheduled for the end of 2024.

3.3.3. Nuclear energy

3.3.3.1. Status of the data collected

As observed in past *Commission studies*, there are not as many subsidies for nuclear energy in comparison to fossil fuels and renewables. According to the inventory, 43 nuclear subsidies were identified since 2015, of which 31 are actual amounts and 12 are estimates. Of the 21 Member States that have subsidies for the nuclear sector, Germany and France stand out as having the highest number of subsidies for this sector.

[54] *Important Projects of Common European Interest* programme: a European mechanism aimed at promoting innovation in strategic and promising industrial fields through transnational European projects.

3.3.3.2. Analysis

Total financial support provided to the nuclear energy sector in 2023 amounted to EUR 4.1 billion in 2023 (Figure 18). One of the main aspects to note is that 90% of this amount comes from only two countries: France and Germany. Previously, this group also included a modest contribution from Italy, which since 2022 has stopped subsidising nuclear energy.

- France has historically shown a strong commitment to nuclear and increased its contribution to the nuclear sector in the last two years, reaching a total of EUR 2.9 billion in 2023 (71% of total EU27 nuclear subsidies). These subsidies are mainly dedicated to R&D in the nuclear field, closely followed by the funding of long-term costs of nuclear energy use such as waste management, and incentives to develop demand side management capacities.

- Germany, the second largest contributor to nuclear subsidies, provided EUR 800 million in subsidies to the nuclear sector in 2023 (i.e. 19% of total EU27 nuclear subsidies), compared an average of slightly more than EUR 1.6 billion per year in the 2015-2023 period. This reduction is due to the country's nuclear phase-out policy that led to the shutdown of its last three remaining nuclear reactors in April 2023. In recent years the German nuclear subsidy package has been composed of early closure payments, including a EUR 2.4 billion settlement in 2021 with remaining nuclear operators, and R&D expenditures in the nuclear field.

Figure 18: Financial support to nuclear in the EU27, by instrument (2015-2023; EUR2023bn)

Source: Enerdata, 2024

Finally, Italy used to be the third country with the higher expenditures in nuclear subsidies contributing with about 12% of the total recorded expenditure during the 2015-2021 period, despite the country not having operational nuclear facilities since 1990. Most of these subsidies were related to decommissioning, waste management, and other post-closure costs, but these payments were stopped in 2022.

The peak in nuclear subsidies, observed in 2021, is largely due to an EUR 2.4 billion direct transfer granted by Germany to the nuclear operators as a compensation to close their nuclear plants following the decision of the German government to phase out nuclear power. Another factor that influenced the 2021 peak is the uncertainty observed in the French electricity system due to the announced decommissioning of coal-fired power plants, increasing prices for the French capacity mechanism. The rebound seen in 2023 is also attributed to an increase in capacity payments made

by the French government to limit the rise in electricity tariffs, practically doubling the amount recorded in 2022 (+ 97% to EUR 1.1 billion).

Apart from France and Germany, 12 other countries provided nuclear subsidies in 2023 and their contributions reach, together, EUR 423 million (see Figure 19). From this group, Spain (EUR 127 million) and Belgium (EUR 108 million) stand out, while other countries subsidising the nuclear sector Sweden, Slovenia, Czechia, Finland, Poland, Netherlands, Portugal, Estonia and Lithuania. Most of these subsidies are to fund R&D (estimated EUR 2.3 billion in 2023).

Figure 19: Distribution of subsidies to nuclear power by country (2023; EUR2023 bn)

Source: Enerdata, 2024

Nuclear energy's role in the broader EU energy system is evolving (see Textbox 3-4), with many countries still either operating reactors, choosing to build new facilities, or both.If all planned and under-construction nuclear reactors are built, the level of subsidisation is expected to increase to reflect a greater reliance on nuclear energy in the future.

Textbox 3-4 Changes to nuclear policy within the European Union

France's position as the first contributor to the total subsidy expenses is largely explained due to its high reliance on nuclear energy, which reached 41% of its installed capacity and 64% of total power generation at the end of 2023. The country had set a target to reduce nuclear energy's share of electricity generation to 50% by 2025, which was later postponed to 2035. Despite approving a cap in nuclear energy production in 2015 to diversify its power generation mix, France had to adjust, extend and even cancel some of its decommissioning plans due to the energy crisis in 2022. It should also be noted that many of the key actors in the French nuclear industry are partly or wholly owned by the government, e.g., EDF, Framatome (ex-AREVA).

A significant shift in French nuclear policy came in May 2023, when the French parliament passed a policy to end caps to production as well as the withdrawal of the country's goal to reduce nuclear energy's share in the electricity supply[55]. In April 2024, the European Commission approved a EUR 300 million French scheme to support the research and development of small nuclear reactors (SMRs), after the country decided to build 6 new EPR IIs (European Pressured Reactors II) and to launch studies for the construction of 8 additional EPRs as well as SMRs, to attain 25 GW of new nuclear capacity by 2050.

[55] Nuclear Expansion Law Passed by French Parliament. Le Monde 2023. Available at: https://www.lemonde.fr/economie/article/2023/05/16/nucleaire-ce-que-contient-le-projet-de-loi-d-acceleration-de-la-construction-de-nouveaux-reacteurs_6173610_3234.html

Germany, similar to France, had to delay its nuclear phase-out policy which was originally enacted in 2011 following the Fukushima Daichi accident in Japan and the subsequent German decision to phase out nuclear power. This meant a delay in the closure of the last 3 nuclear units (4.1 GW combined capacity) from December 2022 to April 2023. Since then, nuclear power has been totally phased out.

Spain also has a nuclear phase-out policy since 2019, as part of the country's objective to generate all its electricity from renewable sources by 2050, with a commitment to close all of its 7 operational reactors in 5 nuclear power plants (Almaraz 1 and 2, Asco 1 and 2, Cofrentes, Vandellos 2 and Trillo 1) between 2027 and 2035, which represent 20% of the country's generated electricity. In the case of Belgium, Slovakia and Slovenia, only Slovakia has a programme dedicated to the development and promotion of nuclear energy through direct transfers (up to EUR 6.3 million in 2023), with the other two countries focusing on R&D and decommissioning payments.

It is important to note the engagement of Czechia to develop its nuclear sector, since it aims to increase the share of nuclear power from 35% in 2013 to between 46% to 58% by 2040 (40% in 2023), with its current measures encouraging investment in this sector through R&D, nuclear CfD's and interest free loans for the construction of nuclear power plants. Specific data about the expenses incurred on these measures is, however, limited (average EUR 35 million in the 2015-2023 period).

Finally, other developments can be highlighted such as the Polish commitment to start building nuclear, commitments for new nuclear power in Sweden, and Hungary's intention to extend the operating lifetime of the Paks nuclear power plant and to build two new units at the same site.

3.4. Subsidies by purpose

Within the total amount of energy subsidies, financial support for *energy demand* experienced the largest decrease (Figure 20), from EUR 247 billion in 2022 to EUR 213 billion in 2023 (-16%). While financial support to *energy efficiency* continued to increase and reached EUR 44 billion (+32%), it still dwarfs the size of financial support for energy demand.

Support to *energy production* decreased by 15% to EUR 75 billion in 2023, while supports to *infrastructure development, industry restructuring,* and *R&D support* remained similar to previous years.

Figure 20: Energy subsidies by purpose

Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

Since 2022, support to *energy demand* has overtaken support to *production* as the most funded purpose category, as it represented 60% of total sum of subsidies spent in 2023, and is chiefly attributed to Member State governments' temporary measures to alleviate the impacts of the energy price crisis.

3.4.1. Zoom in on energy demand

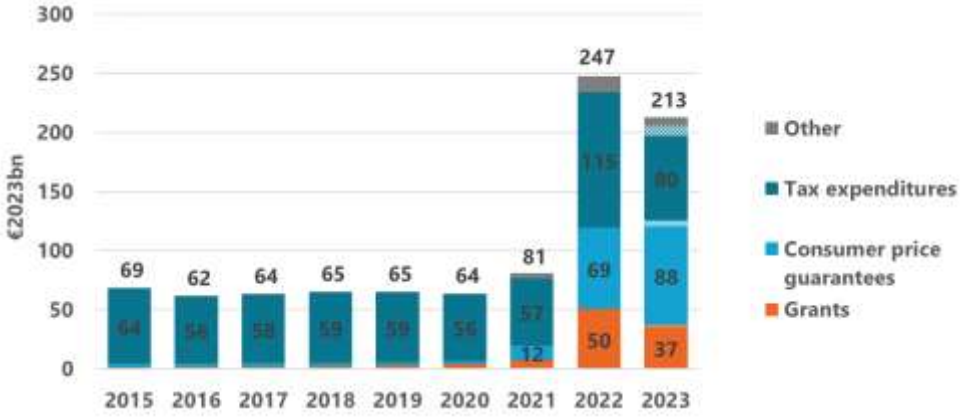
Subsidies for *energy demand* cover supports aimed at limiting the costs of energy consumption for the consumers. This can be through mechanisms like tax reductions or refunds and address a wide range of economic sectors and agents from energy intensive industries to households. These kinds of subsidies target all types of energy including renewables, fossil fuels, electricity, and heat, whichever their origin.

Data analysed in this section includes around 870 subsidies at the EU27 level of which almost 550 were still active in 2023. As of July 2024, the estimate of demand-oriented subsidies included EUR 16.1 billion of yet unconfirmed payments for 2023 (less than 8% of the total).

Until 2020, *energy demand* support was provided almost exclusively through tax expenditure mechanisms. In 2023, tax reductions represent almost half of these (48%), followed by tax exemptions (35%) and tax refunds (14%). Other tax expenditure measures are used less, except in 2022 where tax credits accounted for 15% of the support amount from tax expenditure mechanisms, largely in response to energy price increases.

Figure 21 presents subsidies aimed at supporting *energy demand* disaggregated by instrument used. *Consumer price guarantees* (both *price regulation* and *cost support*[56]) accounted for EUR 88 billion in 2023 (39% of the total), continuing to increase after an historical jump in 2022. Grants slightly decreased in 2023 to EUR 37 billion (16%), but remained well above historical trends. In 2023, the *energy demand* support through tax expenditures accounted for EUR 93 billion, i.e. 41% of the total.

Figure 21: Support to energy demand, by instruments

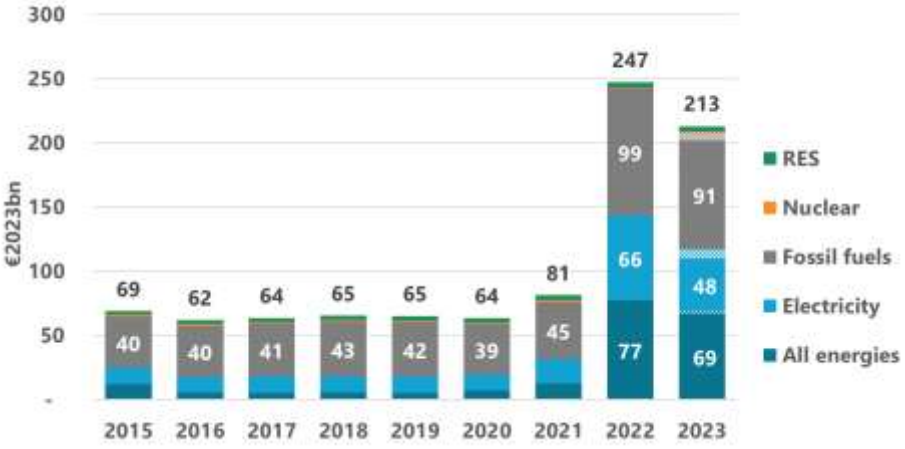


Source: Enerdata, 2024

NB: 2023 estimates are represented with hatching; "Other" includes direct transfers excepted Grants, income or price supports excepted consumer price guarantees and under-pricing of goods/services supports. See Table 4-2 for details.

When looking at *energy demand* support disaggregated by main energy source (Figure 22), it can be seen that fossil fuel support more than doubled in 2022, and remained high in 2023 compared to the historical average (EUR 104 billion, +89% compared to 2015-2021).

Figure 22: Support to energy demand by energy sources



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

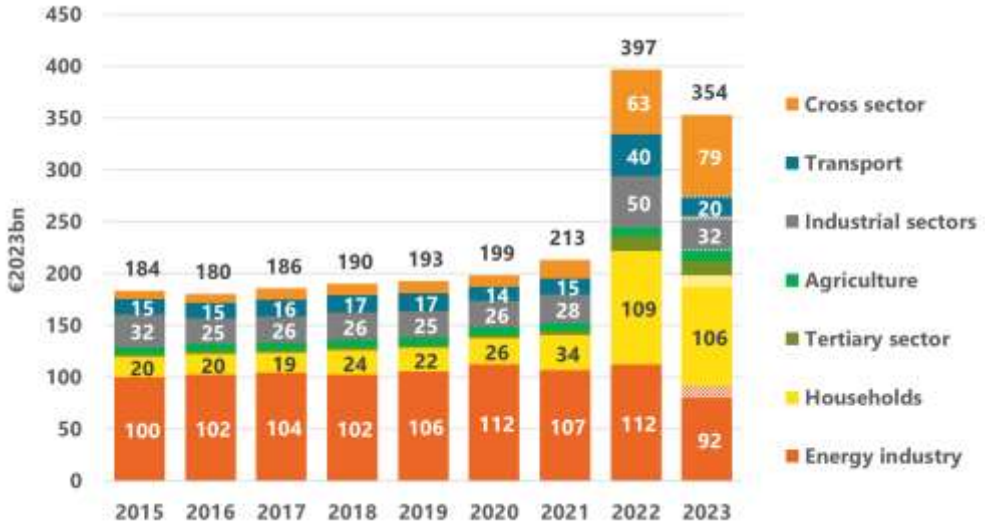
The share of FFS fell from over 70% in 2019 to 43% in 2023, while subsidies to several energies increased significantly over the last two years, reaching EUR 69 billion (32%) in 2023. Support for electricity decreased to EUR 48 billion (23%).

[56] In this context, price regulation is a price guarantees (by a public entity-government, regulator…) to all final customers for the consumption of energy products (fuels, electricity, heat…) at a certain level, which doesn't fully cover the total cost of the energy provided. And cost support is a price guarantees (by a public entity-government, regulator…) to a specific group of final customers (e.g. low income households, specific geographic area) for the consumption of energy products (fuels, electricity, heat…) at a certain level, which doesn't fully cover the total cost of the energy provided.

3.5. Subsidies by economic sector

In 2023, *households* were, for the first time, the sector receiving most subsidy support, with EUR 106 billion (30% of the total energy subsidies considered in this study), overtaking the *energy industry* (EUR 92 billion, 26%), which pre-crisis accounted for around half of all subsidies. Since 2022, subsidies aimed towards several sectors or no specific one (i.e. *cross sector* in Figure 23) have jumped, reaching EUR 79 billion (22%) in 2023. Supports for *Industrial sectors*[57] and *transport* were less important, with EUR 32 billion (9%) and EUR 20 billion (6%) respectively. *Tertiary*[58] (EUR 14 billion, 4%) and *agriculture* (EUR 11 billion, 3%) received much lower amounts in 2023.

Figure 23: Energy subsidies by economic sector



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

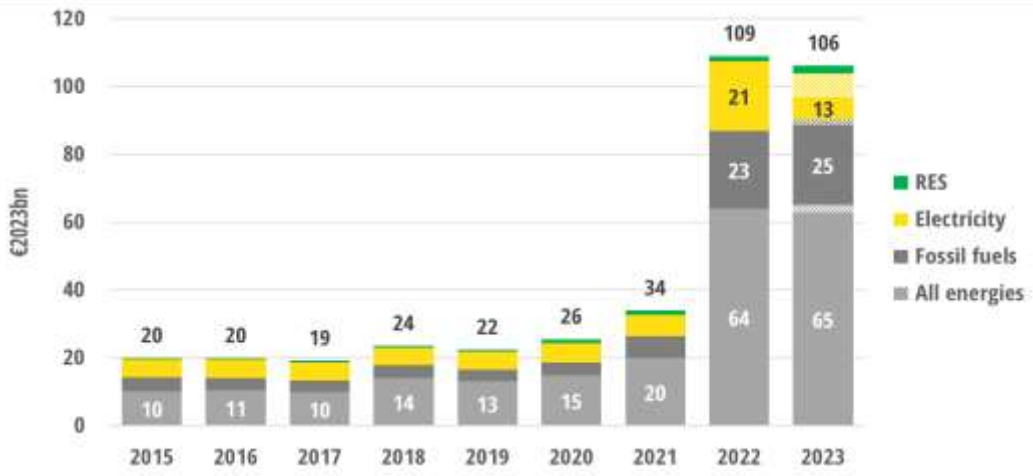
3.5.1. Households

Support to households more than tripled in 2022 compared to 2021 and has been maintained at a high level in 2023. 60% of these aids were designed to reduce the impact of rising energy prices, and this share increases to 67% for low-income households.

Figure 24 shows for which energy carriers these subsidies were granted. Almost the two third of the support went to several energy sources, noted "All energies" on the graph. Fossil fuels (mainly gas) received 24% of the support in 2023, while electricity and RES covered only 13% and 2% respectively.

[57] Industrial sectors cover industry, mining and construction.
[58] Tertiary sector covers services, public and business sectors.

Figure 24: Energy subsidies for households by main energy carrier (2015-2023; EUR2023bn)



Source: Enerdata, 2024

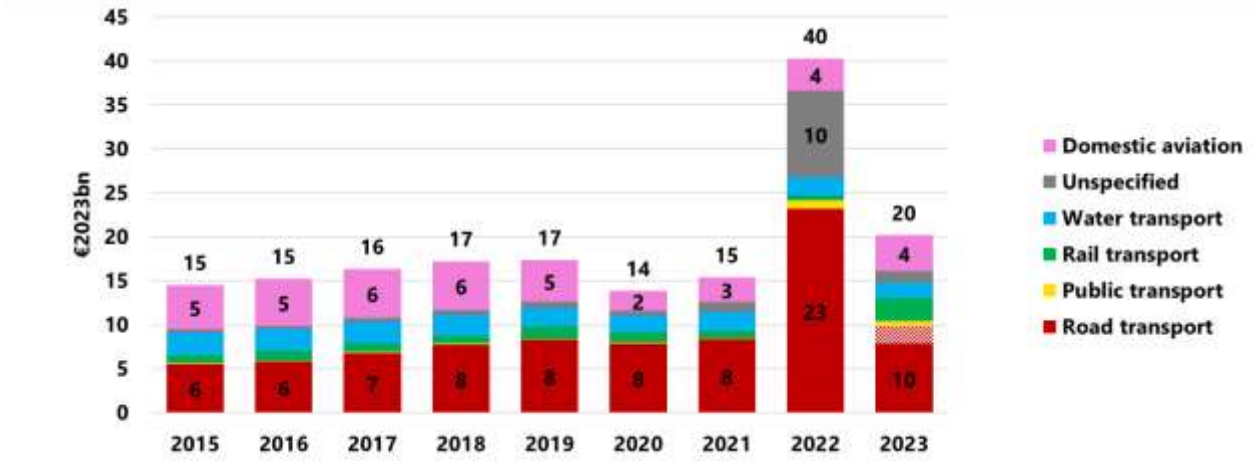
NB: 2023 estimates are represented with hatching

Most subsidies to households are aimed to support energy consumption: 80% in 2022 (EUR 87 billion) and 71% in 2023 (EUR 75 billion). At the same time, the share of energy efficiency measures in the total support reached only EUR 29 billion (27% in 2023), whereas the pre-crisis share had been above 40%.

3.5.2. Transport

In 2023, support for the *transport* sector returned to its pre- COVID-19 and energy price crisis levels (Figure 25). 2020 and 2021 were marked by significantly lower support for all transport modes[59] due to an unprecedented fall in mobility caused by COVID lockdowns and travel restrictions. After the restrictions were eased in 2022, three times more aid was granted to *road transport* than before (reaching EUR 23 billion). By 2023, support to road transport went back to historical levels at EUR 10 billion. Almost EUR 10 billion was provided in support for unspecificed transport sectors in 2022 (cf. *Unspecified* category), which has all but disappeared by 2023.

Figure 25: Energy subsidies by transport mode



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

[59] Domestic aviation and water (navigation) transport tax expenditures were estimated by using a unified method and external sources. The methodology used is detailed in Annex B.1.8.

It is worth noting that petroleum products[60] were by far the biggest beneficiary of transport energy subsidies with EUR 13 billion granted in 2023 (65% of total transport subsidies). Amongst petroleum products, *kerosene* (aviation fuel) was one of the main known beneficiaries with EUR 4 billion in 2023 (Figure 26Error! Reference source not found.), together with support to gasoil (diesel), which received EUR 3 billion in 2023.

2022 was marked by a large amount of subsidies (EUR 21 billion) dedicated to all petroleum products, but this untargeted support fell back to its historic level by 2023.

Figure 26: Petroleum products subsidised (2015-2023; EUR2023bn)

Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching; "Not detailed" includes all subsidies dedicated to several or all petroleum products.

Note from the authors

Transport, although not a purely energy sector, is largely subsidized through energy-related taxation and other subsidy measures. Its treatment/placement in this study is sometimes difficult to interpret. Indeed, certain aids and subsidies, although not directly energy-related, aim to reduce energy consumption by redesigning/modifying the use of transport modes.

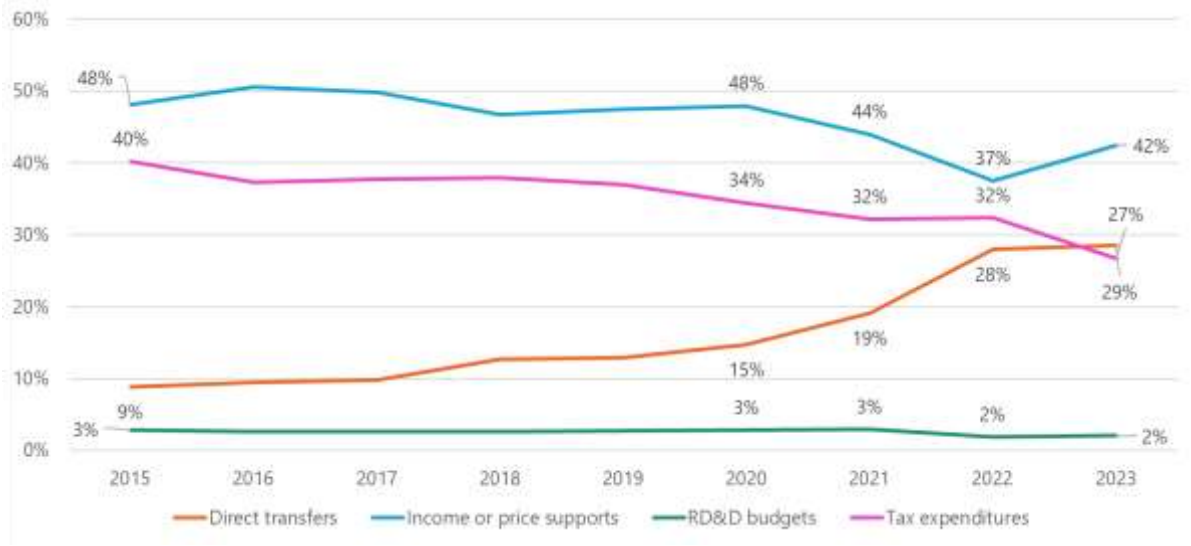
For example, aid for the purchase of electric vehicles is theoretically outside the scope of this study (as it supports the purchase of a manufactured product, not the direct use of electricity), but one of its objectives is clearly to reduce energy consumption through more efficient use of energy and support the shift away from fossil fuels. The same applies to support for the development of carpooling or the implementation of shared vehicle fleets.

[60] Including diesel/gasoil, fuel oil, and other petroleum derivatives

3.6. Subsidies by category

Over the period 2015-2019, the overall distribution of subsidies by instrument category evolved only slightly (Figure 27). Between 2020 and 2022 the relative share of *direct transfers* has increased (+13 pp) at the expense of *income or price support* (-11 pp) and *tax expenditures* (-2 pp).

Figure 27: Share of subsidy amounts between different instruments (%)



Source: Enerdata, 2024

In 2023, the relative share of *income or price supports* increased to 42% (+4 pp), while subsidies provided through tax measures decreased by 5pp to 27% and subsidies through direct transfers or R&D budgets remained constant. One reason for this change is that many governments of the EU27 rapidly re-adjusted their national tax levels in response to the energy market fluctuations (more details in Textbox 3-5).

Energy subsidies in 2023 were distributed primarily through income/price support (42%), tax expenditures (27%) and direct transfers (29%) (see Table 3-2). These expenditures are mainly directed towards the "All energies" category (34%) and fossil fuels (34%). Renewable energy sources captured only 17% of energy subsidies in 2023, while this share was 22% in 2022 and 40% in 2021.

Table 3-2: Subsidy amounts distribution by category and instrument (2023, %)

Subsidy category	All energies	Electricity	Fossil fuels	Nuclear	RES	Total
Direct transfers	17.3%	1.4%	6.8%	0.3%	2.7%	**29%**
Tax expenditures	5.0%	5.5%	14.0%	0.2%	2.0%	**27%**
Income or price support	12.1%	7.6%	10.3%	0.3%	12.2%	**42%**
Under-pricing of goods/	0%	0.03%	0.18%	0%	0%	**0.2%**
RD&D Budgets	1.2%	0.0%	0.1%	0.4%	0.4%	**2.1%**
Total	**36%**	**15%**	**31%**	**1.2%**	**17%**	**100%**

Source: Enerdata, 2024

3.6.1. Tax expenditures

After income/price mechanisms, tax expenditure measures were the second largest tool used to subsidise energy (Figure 28Error! Reference source not found.), amounting to EUR 95 billion in 2023.

In 2022, as governments introduced numerous crisis-related measures (tax exclusions, exemptions, deductions or preferential tax rates), tax expenditures significantly increased, to EUR 128 billion. Around half of these or EUR 70 billion (see Figure 28) were tax reductions including VAT reductions. Reduced VAT rates, as well as reduced excise taxes on energy products, were some of the most common measures used by Member States to address the energy price crisis (cf. Textbox 3-5 and Table 3-3). Tax credits also jumped in 2022 compared to their historic value, increasing from less than 1% to 14% (EUR 20 billion) of total tax expenditures. Indeed, 98% of tax credit measures were created to address the energy price crisis. The return to negligible levels in 2023 highlights the temporary use of these tax credits.

Figure 28: Tax subsidy measures in the EU27 by type of instrument

Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

In 2023, tax expenditures decreased to EUR 95 billion, as MSs started to re-adjust back towards their original tax rates and ended or reduced measures introduced in 2022. This points out the temporary effect of tax policies over the tax revenues and, by extension, on the subsidies derived from revenues not collected from tax. The textbox below provides additional details about VAT rates specifically.

Textbox 3-5: Value Added Tax (VAT)-related reduction measures introduced since 2022

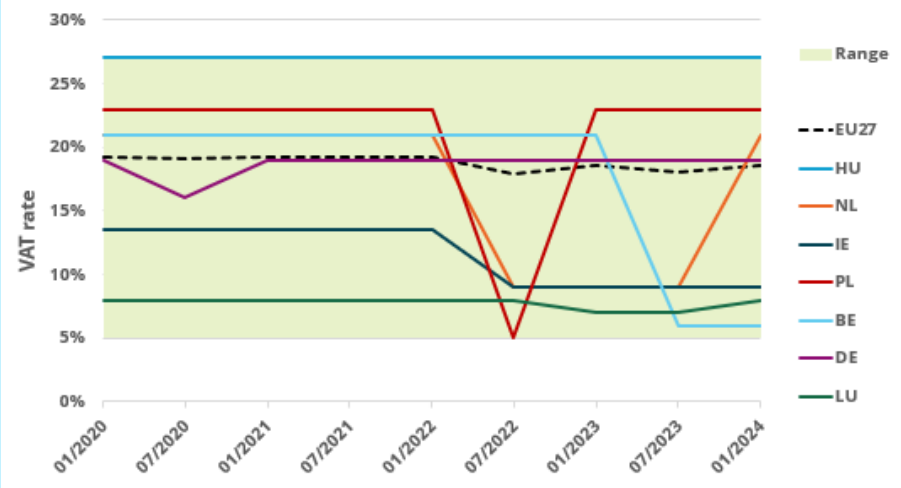
Record high energy price increases put significant pressure on the purchasing power of consumers. In April 2022, the Commission amended its VAT Directive allowing Member States to use reduced VAT rates below 5% (on a limited ranges of supplies) for the first time. Previously, Member States were free to set their standard VAT rate provided it was 15% or above (such a limit was designed to prevent distortions in the EU single market by actors seeking to gain advantage by shifting consumption to other EU states).

By 2030, the application of lowered VAT rates or exemptions on fossil fuels and other goods deemed "environmentally harmful" will have to be phased-out.[61]

[61] Council Directive (EU) 2022/542 ; article 105a, paragraph 4. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022L0542&from=EN

Since 2022, 5 countries introduced temporary cuts to their VAT rates (regardless of the energy). Most of these cuts were taken on electricity (Figure 29).

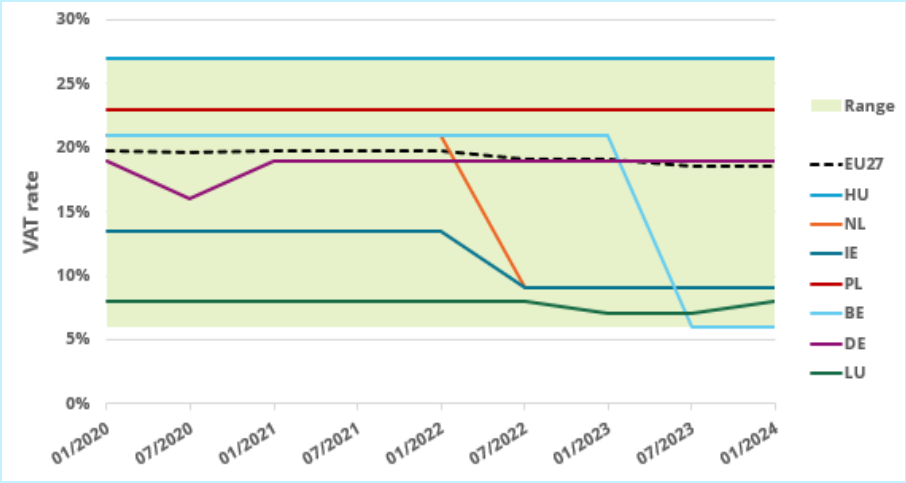
Figure 29 : VAT rates for electricity in the EU-27 (6-month step) between



Data source: European Commission, DG TAXUD

From 2022 until January 2024, average VAT rates in the EU27 decreased by 1.4 percentage points, led by four countries which massively reduced their VAT to fight against rising natural gas prices (Figure 30). Those four countries were namely: Belgium (from 21% to 6%), Ireland (14% to 9%), Italy (10% to 5%), and the Netherlands (21% to 9%). In April 2023, the Belgian Chamber of Representatives gave the green light to the permanent VAT reduction to 6% for supplies from gas and electricity.

Figure 30 : VAT rates for natural gas in the EU-27 (6-month step) between



Data source: European Commission, DG TAXUD

Only two countries (Poland and Luxembourg) took measures on transport fuels (diesel and gasoline). In January 2022, Poland reduced the VAT on diesel from 23% to 8% through its Anti-Inflation Shield 2.0, then increased it back to 23% in January 2023. Luxembourg reduced its VAT on diesel in January 2023 from 17% to 16%, to then increase it back to 17% in January 2024.

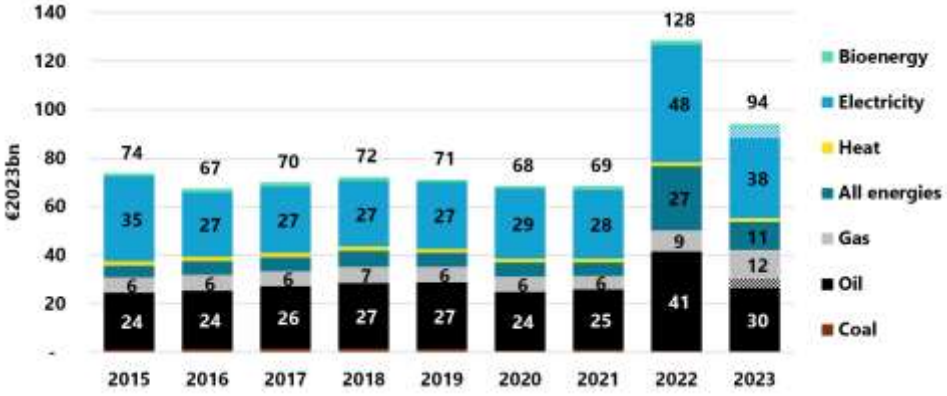
Table 3-3: Temporary energy VAT and excise tax chages in the EU27 from 2021

	Electricity		Natural gas		Transport fuels (Diesel)	
	VAT evolution	Excise tax evolution	VAT evolution	Excise tax evolution	VAT evolution	Excise tax evolution
AT	-	↘ from 15 to 1€/MWh in 01/22	-	↘ from 1.66 to 0.3 €/GJ in 07/22	-	-
BE	↘ from 21% to 6% in 07/23	↘ to 2.9€/MWh in 01/22 To ↗ 23.6€/MWh in 07/23	↘ from 21% to 6% in 07/23	↘ to 0.32€/GJ in 01/22 To ↗ 0.77€/GJ in 07/23	-	↘ to 455€/1000 l in 07/22 Back to↗ 600€/1000 l in 7/23
BG	-	-	-	-	-	-
CY	-	↘ from 10 to 5€/MWh in 07/21	-	-	-	↘ to 330€/1000 l in 07/22
CZ	-	↗ to 1.16 from 1.05€/MWh in 01/21	-	↗ from 0.33 to 0.35€/GJ in 01/24	-	↘ to 333€/1000 l in 07/22 To↗ 407€/1000 l in 01/24
DE	-	-	-	-	-	↘ to 333€/1000 l in 07/22 Back to↗ 470€/1000 l in 01/24
DK	-	↘ from 102.59 to 1.08€/MWh in 01/23 ↗ to 102€/MWh in 01/24	-	↗ from 9.81 to 10.73€/GJ in 01/24	-	↗ from 434€/1000 l in 01/21 to 475€/1000 l in 01/24
EE	-	-	-	-	-	-
EL	-	-	-	-	-	-
ES	-	↘ from 6.94 to 0.77€/MWh in 01/22 & 01/24	-	-	-	-
FI	-	-	-	-	-	↘ from 513€/1000 l in 01/21 to 492€/1000 l in 01/24
FR	-	↗ to 32.06 from 22.5€/MWh in 01/23	-	↗ from 2.34 to 2.35€/GJ in 01/23	-	-
HR	-	↗ to 1 from 0.99€/MWh in 01/22	-	↗ from 0.3 to 1.08€/GJ in 01/23	-	↘ from 406€/1000 l in 01/21 to 383€/1000 l in 01/24
HU	-	↘ from 3.35 to 1€/MWh in 7/22	-	↘ from 0.48 to 0.28€/GJ in 01/24	-	↘ to 259€/1000 l in 07/23 To↗ 367€/1000 l in 01/24
IE	↘ from 14% to 9% in 07/22	-	↘ from 14% to 9% in 07/22	↗ from 1.68 to 2.44€/GJ in 07/23	-	↘ to 405€/1000 l in 07/22 To↗ 526€/1000 l in 01/24
IT	-	-	-	-	-	↘ to 367€/1000 l in 07/22 Back to↗ 617€/1000 l in 01/23
LT	-	-	-	-	-	↗ from 372€/1000 l in 07/23 to 410€/1000 l in 01/24
LU	↘ to 7% in 01/23 Back ↗ to 8% in 01/24	-	↘ to 7% in 01/23 Back ↗ to 8% in 01/24	↗ from 1.41 to 2.26€/GJ in 01/24	↘ to 16% in 01/23	↗ from 404€/1000 l in 01/21 to 440€/1000 l in 01/24
LV	-	-	-	-	-	-
MT	-	-	-	-	-	↘ from 413€/1000 l in 07/21 to 330€/1000 l in 01/22
NL	↘ to 9% in 07/22 Back ↗ to 21% in 01/24	↘ from 124.3 to 67.29€/MWh in 01/22 ↗ to 108.8€/MWh in 01/24	↘ to 9% in 07/22	↗ from 12.33 to 18.42€/GJ in 01/24	-	↘ to 417€/1000 l in 07/22 To↗ 516€/1000 l in 01/23
PL	↘ to 5% in 07/22 Back ↗ to 23% in 01/23	↘ from 11.1 to 1€/MWh in 01/22 ↗ to 1.08€/MWh in 01/24	-	↗ from 0.28 to 0.3€/GJ in 01/24	Back ↗ to 17% in 01/24	↗ from 430€/1000 l in 01/21 to 360€/1000 l in 01/24
PT	-	-	-	↘ from 1.65 to 1.21€/GJ in 07/23, then ↗ 3.47€/GJ in 01/24	-	↘ to 333€/1000 l in 07/22 To↗ 442€/1000 l in 01/24
RO	-	↗ to 1.37 from 1.07€/MWh in 01/24	-	↗ from 0.34 to 0.44€/GJ in 01/24	-	↘ to 333€/1000 l in 01/23 To↗ 372€/1000 l in 01/24
SE	-	↗ to 36.95€/MWh in 01/24 from 33.95€/MWh in 01/21	-	↗ from 8.55 to 9.31€/GJ in 01/24	-	↘ to 330€/1000 l in 07/22 To↗ 362€/1000 l in 01/24
SI	-	↘ from 2.333 to 1.52€/MWh in 01/24	-	↘ from 1.85 to 0.74€/GJ in 01/24	-	↘ to 341€/1000 l in 07/22 To↗ 459€/1000 l in 01/24
SK	-	-	-	-	-	-

Source: Enerdata, 2024

The greatest amount of tax expenditures in 2023 were spent on *electricity*, i.e. EUR 38 billion, followed by *oil products* (EUR 30 billion), as shown on Figure 31. This can be partly explained by the fact that several Member States cut excise taxes on transport fuels and on electricity to contain prices increase as seen in Table 3-3. Subsidies to fossil fuels through tax expenditures accounted for EUR 53 billion of total tax expenditures in 2023.

Figure 31: Tax expenditures by energy type (2015-2023; EUR2023bn)



Source: Enerdata, 2024. NB: 2023 estimates are represented with hatching

3.7. Subsidies by environmental impact

This study introduces the assessment of the environmental impact of all energy subsidies, with the aim of the identification of environmentally harmful energy subsidies (EHES). In the 2023 report, a first definition was developed for EHES, focusing exclusively on fossil fuel subsidies. Since then, the European Commission's Directorate-General for Environment has published a "Guidance document for reporting of non-energy Environmentally Harmful Subsidies (EHS)" (Non-energy EHS guidance).[62] Under the guidance of the European Commission, the definition developed in the 2023 report has been adjusted to align with the Non-energy EHS guidance and broadened to cover all energy subsidies. This resulted in the following definition for EHES that is used in this study:

Energy subsidies are environmentally harmful if the price or cost reduction that they bring about, incentivises maintaining or increasing the availability of energy sources and/or use energy sources that cause significantly increased negative environmental impacts.

For this study the "significantly increased negative environmental impacts" are defined in alignment with the EU Taxonomy regulation, focusing on its two climate objectives, namely (1) climate change mitigation, and (2) climate change adaptation. However, we note that there are four further environmental criteria in the Taxonomy (the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control; and, the protection and restoration of biodiversity and ecosystems). Assessing the environmental impact of all six environmental objectives under the EU Taxonomy would have required a case-by-case assessment, which was not possible within the scope of this study.

The assessment is a first attempt at EHS classification for energy subsidies using available statistics and information from the Subsidies database. It should not be taken as final and it will continuously be refined in future editions of the study. Therefore, the results of the following chapter should be treated as preliminary.

3.7.1. Identifying environmentally harmful energy subsidies

This report uses the following definition for the environmental assessment of energy subsidies:

- Environmentally harmful: energy subsidies that incentivise maintaining or increasing in the availability of energy sources and/or use energy sources that cause significantly increased negative environmental impacts.
- Partially environmentally harmful: energy subsidies that are not targeted to one energy carrier and hence the environmental impact cannot be determined directly. Therefore, in this approach, the percentage of fossil fuels in the Member State's energy mix of each year[63] has been used to determine which portion of the subsidy is classified as environmentally harmful. This approach is applied for energy subsidies that fall in the categories *All energies* and *Heat*.
- Environmentally not harmful: energy subsidies that incentivise decreasing the demand of energy sources that cause significantly increased negative environmental impacts, or support the use of energy sources that are considered to contribute towards climate change mitigation or climate change adaptation. It is important to note that the overwhelming majority of support to "electricity" is considered as not harmful, in parallel with the goal of

[62] The latest version is available online: Guidance document for reporting of nonenergy Environmentally Harmful Subsidies (EHS)

[63] Based on Eurostat database Complete energy balances (nrg_bal_c) on the gross inland consumption per primary energy source. For the results of the year 2023, the energy mix of 2022 is used as that is the latest year for which data is available in Eurostat at the time of writing this report. Available at: https://ec.europa.eu/eurostat/databrowser/view/nrg_bal_c/default/table?lang=en.

increasing electrification of transport, heating, cooling and industry, as well as the increasing decarbonisation of the EU27 electricity mix. Only if the subsidy is clearly linked to supporting electricity generated from fossil fuel sources without an intention to lower carbon emissions, is the subsidy considered to be environmentally harmful.

The failure to internalise externalities (government inaction or implicit subsidies) is excluded from the current definition of environmentally harmful energy subsidies (EHES), in line with the definition of a subsidy used in this report (cf. Background).

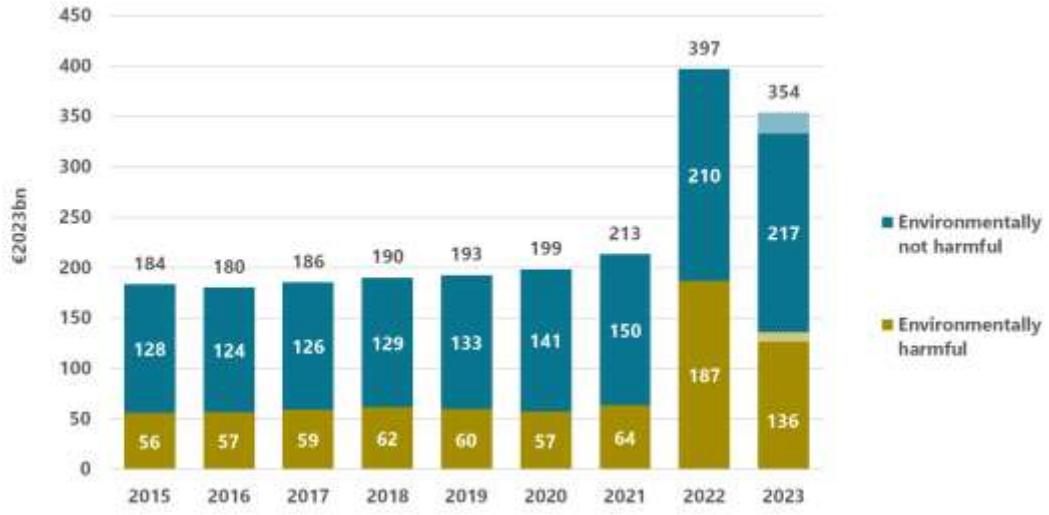
The underlying rationale for the definition for EHES and more detailed methodology to determine whether an energy subsidy is environmentally harmful or not is provided in Annex B.1.11.

3.7.2. Analysis

This section provides an additional energy carrier analysis from the perspective of whether a given subsidy is considered to be a environmentally harmful energy subsidy (EHES). For this analysis, subsidies identified as *partially environmentally harmful* are split into EHES and not-EHES, based on the percentage of fossil fuels in the Member State energy mix, and therefore are not referred to as a separate category. A more detailed methodology is included in Annex B.1.11.

Figure 32 shows that since 2015, the majority of energy subsidies (e.g. EUR 217 billion in 2023) can be considered as *environmentally not harmful*. Since 2021, the amount of *environmentally not harmful* energy subsidies has steadily increased, as subsidies shift towards electricity[64] and renewables.

Figure 32: Energy subsidies in the EU27 by environmental impact



Source: Enerdata, Trinomics, 2024. NB: 2023 estimates are represented with hatching

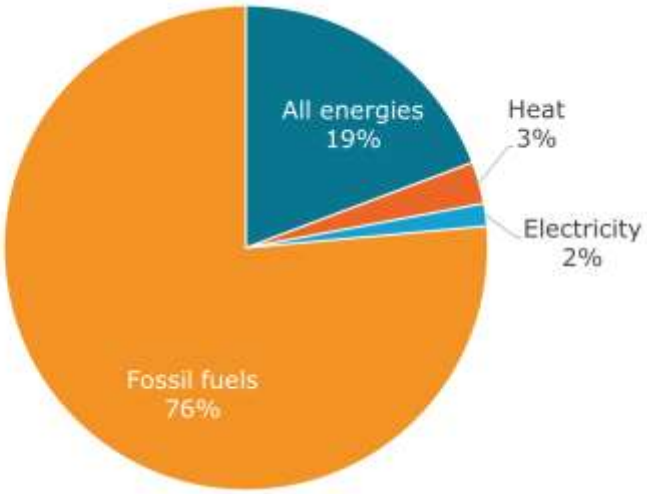
Energy subsidies that are not environmentally harmful are mainly related to electricity and renewable energy subsidies. Nuclear and hydrogen subsidies were assigned to environmentally not harmful energy subsidies. Additionally, this category also includes some FFS, primarily related to compensation to companies and workers for curtailment or closure of coal mines and coal-fired power plants, or funding for rehabilitation of the areas where such closures have taken place.

[64] Electricity is considered as "not harmful" in this study, inasmuch the subsidy is not identifiable aimed at fossil fuel generation.

The total amount of *environmentally harmful energy subsidies* in 2023 amounted to EUR 136 billion[65]. The total amount of EHES has decreased by 27% in 2023 compared to 2022, e.g. at a faster rate than total energy subsidies, which decreased by 10% in 2023, compared to 2022. The decrease in EHES can largely be attributed to the fact that many temporary subsidy measures implemented in 2022, meant to deal with the energy crisis, supported fossil fuels and were either stopped or have an end-date on the short-term, with some that expired in 2023.

Figure 33 shows that the majority of energy subsidies *considered as environmentally harmful* were related to fossil fuels, over 76% of the total (EUR 107 billion in 2023). 19% of EHES related to "all energies", while 3% is linked to heat generation and less than 2% to electricity.

Figure 33: Environmentally harmful energy subsidies



Source: Enerdata, Trinomics, 2024.

Analysis by Member State

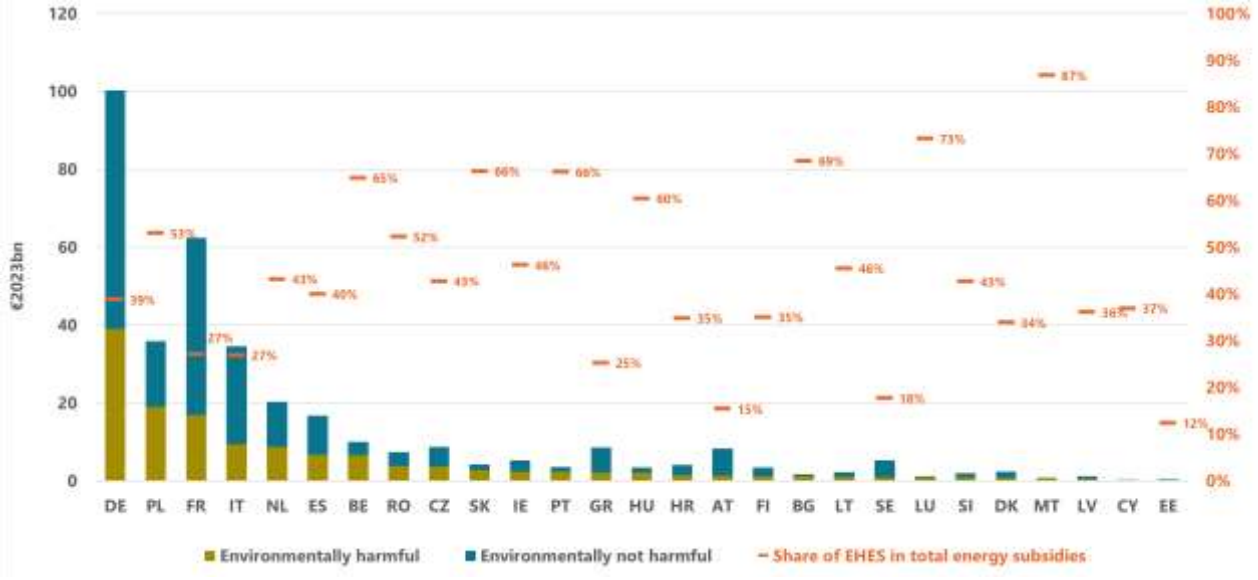
In 2023, Germany provided the highest absolute amount of EHES (EUR 39 billion), followed by Poland (EUR 19 billion), France (EUR 17 billion), the Netherlands and Italy (EUR 9.3 and 8.7 billion respectively), as shown in Figure 34.

In relative terms, the share of EHES was highest (compared to total energy subsidies) in Malta, where it reached 87%; followed by Luxembourg (73%) and Bulgaria (69%). The lowest share of EHES in total energy subsidies was recorded in Estonia (12%), Austria (15%) and Sweden (18%).

Compared to 2022, the amount of EHES provided in 2023 increased in 10 Member States, and decreased in 17 Member States. Preliminary data shows that the EHES increased the most in Poland (EUR 7.1 billion) and decreased the most in Italy (EUR -31 billion). In Poland, the increase largely relates to retrospective payments to support households and businesses with rising energy costs from the energy crisis. The decrease in Italy is related to the ending of emergency measures that were put in place to deal with the energy crisis. In relative terms the share of EHES ranged from 17% in Estonia to 88% in Malta. In 19 Member States, the share of EHES was between 40% and 70%.

[65] Of which EUR 10 billion are estimates based on 2022 data

Figure 34: Energy subsidies by environmental impact in 2023 (left) and share in total energy subsidies (right)



Source: Enerdata, Trinomics, 2024. The figures shown include EUR 11 billion unconfirmed subsidies.

Note from the authors

It is important to keep in mind that the results in this section are based on the definition of EHES introduced in this study, the methodology used in this study to identify energy subsidies and our interpretation of the description of each energy subsidy. A different definition of EHS could yield different findings on EHES. Therefore, the authors highlight the value in establishing a harmonised definition and methodology for determining when a subsidy should be considered as environmentally harmful.

3.8. Other financial supports

3.8.1. Support through freely allocated allowances in the EU ETS

Why are free allowances not considered to be a subsidy?

The free allocation of emission allowances is supposed to reduce the economic burden of carbon pricing on companies participating in the EU ETS in order to avoid a carbon leakage effect[66]. In the current phase of the EU ETS, allowances are auctioned, mostly at EU level and generate revenue which is distributed to national governments. Therefore, freely allocated allowances would impact the government budget and hence could be included in our database, similar to tax reductions or waivers on energy products. However, in agreement with the European Commission and continuing the methodology introduced in earlier editions of this report, freely allocated allowances will continue to be treated separately, due to the supranational character of the programme's administration and regulation.

Methodology about how free allowances were accounted in the following analysis are detailed in section B.1.9.

Overview

In 2005, the EU launched the world's first international emissions trading system (ETS). During its first phase (2005-2007) almost all allowances were given to businesses for free. The second period (2008-2012) saw the proportion of free allocation slightly reduced to around 90%[67]. Since the beginning of the third period (2013-2020), the EU ETS auctioning has become the default allocation method and the power generation sector is obliged to buy all of its allowances and no longer receives free allowances, except for eight countries[68] that made use of a derogation under Article 10c of the EU ETS Directive. This rule continues in the 4th phase (2021-2030), but only Bulgaria, Hungary and Romania decided to apply Article 10c of the EU ETS Directive in phase 4[69]. This derogation allows the country in question to provide free allocation to parts of the energy sector, with a process by which free allowances are to eventually be replaced by the auction mechanism.

The revised ETS directive adopted in May 2023 has set more restrictive ETS carbon emissions targets for 2030, changing from a 43% reduction to a 62% reduction compared to 2005. Free allocation will be gradually phased out between 2026 and 2034 in parallel to the gradual introduction of CBAM (see below). Additionally, in 2021, National Implementation Measures (NIMs)[70] became the standard method for determining the level of free allocation. These documents, based on data collected from 2014-2018, act as estimates of production activity and energy transfers, which then set the level of permitted free allocation based on a common ruleset established for the fourth stage of the ETS[71]. The ETS revision in 2023 has further revised these rules for the period from 2026 onwards. The use

[66] In some studies it is explicitly counted amongst the fossil fuel subsidies, for example CPB/PBL study "Abolishing fossil fuel subsidies".

[67] "Development of EU ETS (2005-2020)", European Commission (2022), https://ec.europa.eu/clima/policies/ets/pre2013_en (last access: 20.05.2022)

[68] Bulgaria, Cyprus, Czechia, Estonia, Hungary, Lithuania, Poland, Romania

[69] "Free allocation for the modernisation of the energy sector, European Commission (2022) https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/free-allocation-modernisation-energy-sector_en (last access: 23.05.2022) & "Report from the Commission to the European Parliament and the Council on the Functioning of the European carbon market in 2021 pursuant to Articles 10(5) and 21(2) of Directive 2003/87/EC (as amended by Directive 2009/29/EC and Directive (EU) 2018/410)" (2022)

[70] COMMISSION DECISION (EU) 2021/355 of 25 February 2021 concerning national implementation measures for the transitional free allocation of greenhouse gas emission allowances in accordance with Article 11(3) of Directive 2003/87/EC of the European Parliament and of the Council (2021) Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021D0355

[71] COMMISSION DECISION (EU) 2021/355 of 25 February 2021 concerning national implementation measures for the transitional free allocation of greenhouse gas emission allowances in accordance with Article 11(3) of Directive 2003/87/EC of the European Parliament and of the Council (2021) Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021D0355

of NIMs has been one of the ways that ETS accounting has become stricter to help ensure that the system functions as intended and to gradually reduce the number of free allowances.

In October 2023, the Carbon Border Adjustment Mechanism (CBAM) started to be implemented under a transitional phase planned to last until 31 December 2025, focusing on reporting[72]. This mechanism was adopted in 2023 to support from 2026 the gradual phase out of free allowances while lowering the risk of production outsourcing to jurisdictions with less stringent regulatory environments. Indeed, by ensuring that importers into the EU pay gradually the same carbon price as production taking place within the EU, the CBAM effectively makes any company exporting certain goods into the EU subject to a similar measure as the ETS. The CBAM was first implemented in sectors with high risk of carbon leakage such as iron and steel, cement, fertilisers, aluminium, electricity, and hydrogen. As part of the legislation regarding the CBAM, a review of the mechanism will be concluded before the end of the implementation period, at which point additional sectors under the EU ETS could be integrated into the adjustment mechanism.

The aviation industry has been one of the areas of focus for the European Union for reducing sectoral emissions, and an updated version of the ETS directive[73] was passed in May 2023 which stipulates that aviation emissions are to be subject to a gradual phase out of free allocation in 2024 and 2025, in order to fully end up in the auction system by 2026. The ETS directive revision of 2023 also introduces the gradual inclusion of the maritime transport sector in the EU ETS from 1 January 2024, in order to be fully included as of 2027.

Norway, Iceland, and Liechtenstein are also participating in the EU ETS and the system has been linked with the Swiss ETS since 2020. These non-EU27 countries are not considered under the following graphs and calculations, even though their activities also impact the market price.

Results

In phase 3, the number of freely allocated allowances decreased gradually. Between the start of phase 3 in 2013 and the end in 2020, free allocations fell from 955 $MtCO_2$ to 638 $MtCO_2$, a reduction of over 30% in 7 years (around 5%/year). In the beginning of phase 4 (2021), the amount of free allowances decreased by 14%. Since then, the market has seen a less precipitous trend: from 2021 to 2023, the amount of free allowances allocated declined only 1.7% between 2021-2023, to reach 546 $MtCO_2$ in 2023.

Preliminary data for 2024 estimates a free allowances allocation of 542 $MtCO_2$. It is to be noted that the May 2024 EEA dataset did not include 2024 free allocation data for aviation. Therefore, the amount of aviation free allowances allocated in 2024 shown in Figure 35 has been estimated as equal to the maximum quantity available in 2024 on the EU ETS, which was calculated according to the methodology described in the May 2023 revision of the ETS agreement mentioned above[74].

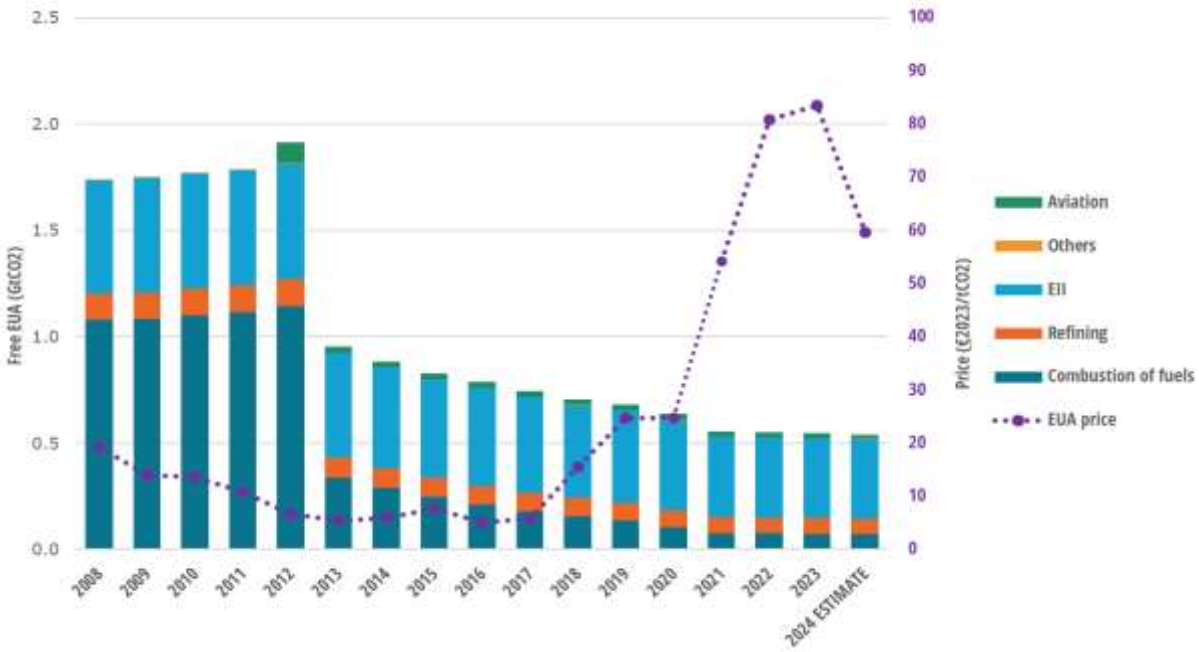
EUA prices were relatively low until the commencement of the 3rd phase of the EU-ETS in 2018. Evidence suggests that the price increase was not driven solely by the demand side. Rather, it seems more likely that the price increase was mainly triggered by regulatory changes, such as the revision of the EU ETS Directive (2018) and the beginning of the phase 4 of the EU ETS in 2021.

72"CBAM Latest developments. Available at: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en
[73]Directive 2023/958. European parliament 2023. Available at: https://eur-lex.europa.eu/eli/dir/2023/958/oj
74 Adoption of the Commission Decision on the total quantity of allowances to be allocated in respect of aircraft operators in the EU ETS for 2024, https://climate.ec.europa.eu/news-your-voice/news/commission-decides-2024-allowances-aircraft-operators-2023-10-31_en

In 2020 and 2021, during the COVID-19 pandemic, energy demand decreased sharply. However, the CO_2 market price remained stable in 2020 and doubled in 2021, reaching almost 55 €/tCO_2 on average in 2021. This could be attributed in part to the Market Stability Reserve (MSR), implemented in 2019. However, the impacts of the MSR need to be further analysed to determine the level of price impact it has[75].

2022 and 2023 data show that carbon prices have been climbing even higher, reaching a record annual average of 83.5 €/tCO_2 in 2023 (see Figure 35). Preliminary data for 2024[76] indicates that prices for allowances started to decrease, declining to around 60 €/tCO_2, around 30% lower than in 2023.

Figure 35: Free EUA and average annual EUA price in the EU ETS



Enerdata calculations based on data from the EEA and ICAP, 2024

Between 2013 and 2018, increasing prices and the increased reliance on auctions counteracted the absolute increase in foregone revenues (Figure 36), leading to a downward trend in the percentage of foregone revenue. The sharp increase of the market price from 2018 onwards has had a much bigger impact than the reduction in freely allocated allowances in 2013. A direct consequence of CO_2 market price increase was higher foregone revenue, which exceeded all prior years at an estimated EUR 45.5 billion in 2023. The sharp increase of revenue forgone since 2021 is also accompanied, due to the higher carbon price, by higher auction revenues for Member States.

While these figures would seem to indicate that the ETS system is foregoing huge amounts of revenue, even deep into the phase 3, there are some further points of analysis to mention. First, the ETS has contributed significantly to the reduction of emissions across the EU, and within the scope of the trading system itself emissions have fallen by 37.3% (2005-2022)[77]. As the ETS covers

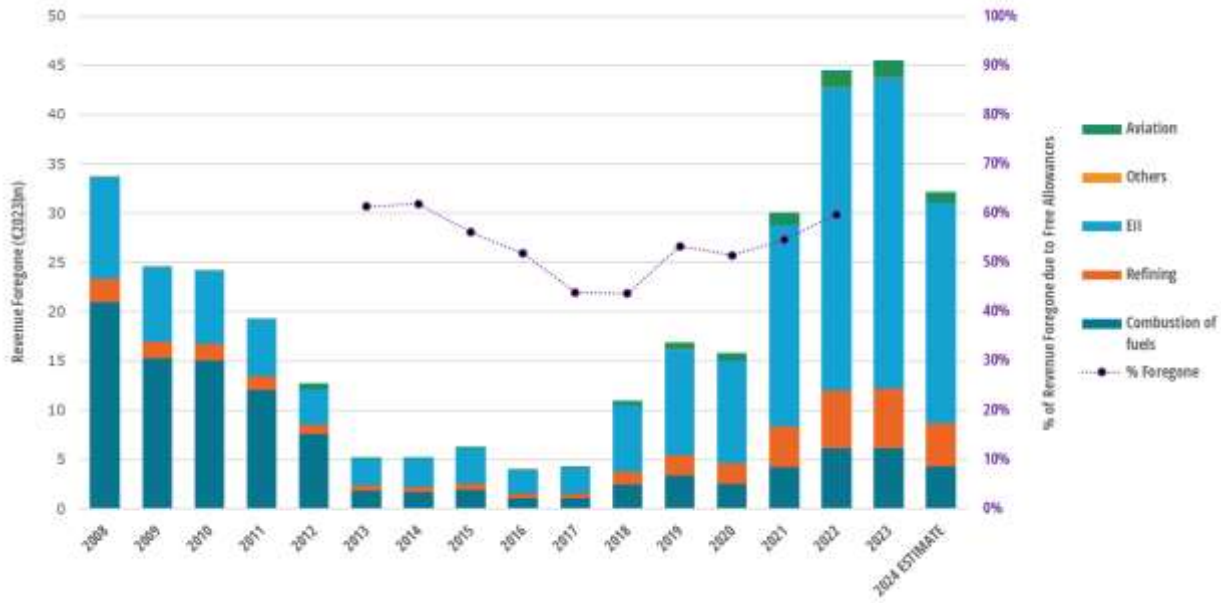
[75] "2022 State of the EU ETS Report", Marcu, A. et al. (2022), Available at: https://ercst.org/state-of-the-eu-ets-report-2022/

[76] Include data until the end of March 2024

77 European Environment Agency. "Greenhouse gas emissions under the EU Emissions Trading System" Available at: https://www.eea.europa.eu/en/analysis/indicators/greenhouse-gas-emissions-under-the

approximately 40% of EU-wide emissions, this corresponds to a Union-wide emissions reduction of 14.9%, directly related to the trading scheme.

Figure 36: Revenue foregone from free EUA allocations in the EU ETS



Enerdata calculations based on data from the EEA and ICAP, 2024

3.9. Conclusions

The most significant findings derived from the analysis of energy subsidies in the EU27 are presented below for each analytical perspective.

Overall trends:

- In 2022 the overall amount of energy subsidies in the EU27 at EUR 397 billion, 2022 showed a peak in, as many temporary measures to protect households and economic sectors from the rising energy prices on the markets have been implemented. In 2023, energy subsidies decreased to EUR 354 billion, as many temporary measures were terimated and energy prices fell back closer to their pre-crisis levels.
- Around EUR 348 billion have been distributed in 2021-2023 in the EU27 through measures meant to mitigate the costs of the energy price crisis, these measures representing 35% of the total support amount during this period, households being the main beneficiaries of these subsidies through measures supporting energy demand (EUR 324 billion).

Fossil Fuels Subsidies (FFS):

- Total fossil fuel subsidies (FFS) more than doubled in 2022 to reach EUR 136 billion, up from around EUR 60 billion on average between 2015 and 2021. This was due to the temporary support measures implemented during price crisis. In 2023, FFS remained at a high level but slightly declined to EUR 111 billion, as measures favouring the use of fossil fuels were partly discontinued.

Renewable Energy Sources (RES) subsidies:

- After three years of a decreasing trend, subsidies for renewable energy sources (RES) declined to approximately EUR 61 billion. This decline was influenced in large part by

favourable conditions for mechanisms sensitive to market prices, such as Feed-in Premium (FiP) and Contracts for Difference (CfD) agreements.

- Solar energy technology continues receiving the largest share of subsidies for renewables in 2023 (EUR 21 billion).
- 5 Member States covered more than 80% of the total RES subsidies of the EU27 in 2022, namely – ordered from largest to smallest – Germany, Italy, Spain, Poland and France.

Nuclear energy:

- Only two countries – France and Germany – accounted for 90% of the subsidies to the nuclear industry within the EU27, which increased to EUR 4.1 billion in 2023.

Measures by purpose:

- While subsidies were historically oriented towards *energy production*, since 2021, *energy demand* has become the main purpose of subsidies, with EUR 213 billion in in subsidies to energy consumers in 2023.
- Since 2021, energy demand subsidies are also significantly provided through grants and consumer price guarantees, in addition to tax expenditures.

Measures meant to fight against energy price rising:

- Around EUR 348 billion have been distributed in 2021-2023 in the EU27 through these measures, representing 35% of the total support amount during this period.
- Households are the main beneficiaries of these subsidies, receiving EUR 127 billion over 2021-2023, while EUR 125 billion in energy subsidies were distributed across two or more sectors. European industry and transport sectors received EUR 30 and 29 billion, respectively, in crisis support.

Measures by economic sector

- In 2023, households received EUR 106 billion, becoming the main beneficiary of energy subsidies. A large part of this support went to fossil fuels, mainly natural gas, which received 24% of the support. Energy industry was still a big beneficiary in 2023, with EUR 92 billion received.
- Close to EUR 80 billion in 2023 were dedicated to several or all sectors, a large part to face energy price rising.

Environmental impact assessment

- In 2023, the majority of energy subsidies (EUR 217 billion on 62% of the total) are considered environmentally not harmful, at similar levels to 2022.
- The total amount of environmentally harmful energy subsidies (EHES) in 2023 amounted to EUR 149 billion (38% of the total). The total amount of EHES has decreased by 25% in 2023 compared to 2022, largely driven by the phase-out of temporary measures that were introduced to deal with the energy crisis.
- The amount of EHES provided in 2023 increased in 10 Member States and decreased in 17 Member States compared to 2022.
- The majority of EHES were supporting fossil fuels (76%), followed by the "all energies" subsidies category (19%), heat (3%), and electricity subsidies (2%).

4.National plans on subsidies

4.1. Objective

The *General Union Environment Action Program to 2030*, also known as the 8th Environment Action Programme (EAP), requires the Commission and/or Member States to strengthen environmentally positive incentives as well as phasing out EHS and in particular FFS, by, amongst others:[78] by *"setting a deadline for the phasing out of fossil fuel subsidies consistent with the ambition of limiting global warming to 1.5 °C"*. With the 8th EAP running until 2030, this has been interpreted as a need to phase out FFS by 2030 in this study.

This chapter aims to provide an outlook of each MS's phase out plans for FFS by 2030 and beyond, comparing their efforts to reduce FFS and highlight trends for the EU27 as a whole. The analysis of the MS's plans for phasing out FFS is based primarily on MS fact-sheets (see Annex A.1) which provide the following information relevant for this section:[79]

- Situation about fossil fuel-related policies implemented or announced by the MS;
- List of FFS identified in the Subsidy inventory in the MS;
- Total amount of FFS;
- FFS amounts with a planned end-date;
- FFS amounts for which the end-date has yet to be planned.

Section 4.2 first analyses the concrete end-dates for each FFS that was collected and recorded in the *Subsidy inventory* using information accessible to the authors of this study. However, the policies of MS government continuously evolve and not all MS translate their FFS plans into concrete end-dates for specific subsidies. In addition, the development of the MS fact-sheets are accompanied by difficulties in capturing the same level of information from one MS to another due to different levels of accessibility, transparency, consistency, homogeneity, granularity, and timeliness of published information. Section 4.3 therefore complements the analysis of end-dates of FFS recorded in the *Subsidy inventory* with an outlook on the phase out plans for fossil fuels and related subsidies.

4.2. End-dates of FFS across Member States

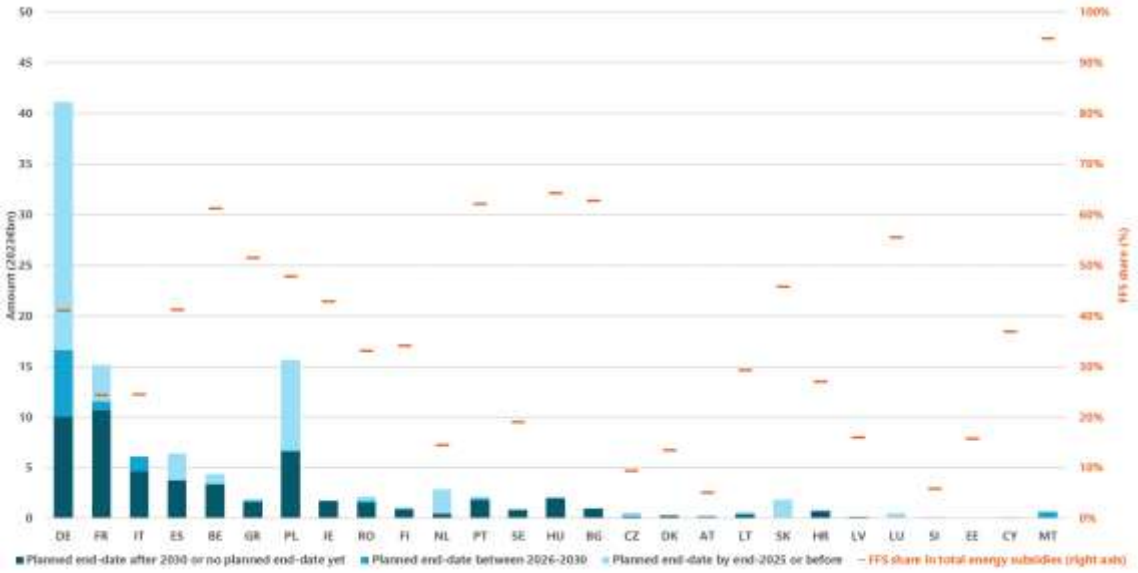
In 2023, the amount of fossil fuel subsidies[80] in the EU27 reached EUR 111 billion. For 43% of these (EUR 47.7 billion), there is a planned end-date in the short-term (by 2025) as shown in Figure 37. For subsidies worth EUR 10.1 billion (9%) the end-date is in the medium term (2026-2030). For the remaining 48% of fossil fuel subsidies (EUR 53 billion), there is either no end-date yet or the end-date has been set after the year 2030.

[78] Article 3 (h) (i) of Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030.

[79] The MS fact-sheets only covers FFS as identified in section 0 and multi-energy subsidies are not reflected in the fossil fuel category but the "All energies" category. The MS fact-sheets also contain plans on the subsidies to the nuclear industry. Relevant insights from these plans have been incorporated in section 3.3.3.

[80] Including subsidies for which no data was available and that are estimated at EUR 3 billion based on 2022 amounts.

Figure 37: FFS end-date (left, EUR2023bn) and share in energy subsidies (right, %) (2023)



Source: Enerdata, Trinomics, 2024

In general, Member States do not provide end-dates of implemented measures in tax expenditure reports, finance law or national budgets. Some measures include a minimum period for the subsidy to remain in place to provide certainty for the affected parties. However, the decision whether to continue the subsidy beyond the minimum period is generally left for the future. When end-dates are announced, these are often for endings in the short term, i.e. in the next year(s), rather than on the longer term. This is supported by the amount of fossil fuel subsidies with a short-term end-date (by 2025) being significantly higher than ones with an end-date on the medium term (between 2026 and 2030). The presence of intentions to end fossil fuel use and/or FFS supporting their use is further explored for each MS in section 4.3.

Nonetheless, there are substantial steps to be made to improve the transparency and accessibility of such information. The absence of information on FFS end-dates impedes the ability to assess whether the EU27 is on track with phasing out FFS consistent with the ambition of limiting global warming to 1.5 °C, and as mandated by the 8th EAP.

Figure 37 also shows the share of FFS in the total energy subsidies inventoried for each MS. The FFS share can serve as a potential indicator of the prominence of financial support to fossil fuels, compared to other forms of energy. This could be interpreted as a reflection of a government's efforts to incentivise the availability and/or use of energy other than fossil fuels. In addition, Member States with a high share of FFS may encounter more barriers in phasing out: a relatively high share of financial support to fossil fuels could hamper the development or quick uptake of alternatives to fossil fuels.

Without introducing alternative measures, phasing out FFS measures could therefore lead to a higher cost increase, as the cost of fuels for consumers would rise. This consequently could have stronger negative socio-economic impacts in Member States that have a relatively large FFS share, as households at risk of energy-poverty may not be able to afford energy at the same level as before – unless part of the support previously dedicated to FFS is transformed into support for RES or energy efficiency measures.

Overall, we can conclude from the data that there has been a decreasing trend in the share of subsidies going to fossil fuels in most Member States across the EU27 in the recent years up to 2021

(see Figure 32 in section 3.7). Several FFS measures also have a clear end-date, which contribute to decreasing the amount of FFS. However, in response to the energy crisis, FFS more than doubled in 2022 compared to 2021, and many of these supports have continued in 2023, though at a lower level (section 3.3.1). The decrease in FFS in 2023, compared to 2022, is indicative of the fact that a majority of the measures introduced to deal with the energy crisis were meant to be temporary and have an end-date on the short-term or already ended. As the price crisis has largely passed now, temporary measures should be mostly all phased out before the end of 2024, and the next edition of this report will likely be more revealing of long-term trends.

An important caveat to the findings in this section is that not all financial support to fossil primary energies and electricity generated by burning fossil fuels sources is reflected in FFS. Where financial support from multi-energy subsidies could not be attributed to fossil fuels or the energy source is unknown, this has been categorised in "All energies" subsidies. This means that the share of FFS in the total energy subsidies may be even larger than estimated.

4.3. Member States phase out plans for fossil fuels and related subsidies

The previous section only considered FFS with a clear end-date in the *Subsidy inventory*. However, MS could already have plans to phase out FFS and announced their intention or ambition to do so without a clear end-date. Furthermore, Member States could already have a planned end-date for fossil fuel use, which could be throughout the economy, or for a particular sector, fossil fuel or technology. This would also automatically end any subsidies for those fossil fuels. This section looks at other parameters that could serve as indicators for a Member States plans to phase out FFS. The analysis in this section is based on the MS fact-sheets provided in Annex 3, supplemented with other official announcements from Member States identified for this study and additional public sources.[81]

Table 4.1 provides an assessment of indicators affecting the phase out of FFS, building on the assessment done in the 2023 edition of this study. The indicators are the same as in the 2023 study, which looked at the phase out of fossil fuel use in different economic sectors. The indicators in Figure 38 are assessed based on a positive (in green), negative (in red) or and unclear or no contribution (in grey) to the phase out of FFS as follows:

- Intention to phase out (all) FFS: this is rated positive if a MS has publicly announced an intention or commitment to an economy-wide phase out of FFS and/or environmentally harmful subsidies (EHS). Otherwise unclear or no information.
- Intentions or ambitions to phase out fossil fuels: this is rated positive if a MS has publicly expressed the intention or ambition to stop the use of fossil fuels, with or without a clear end-date. This is also rated positive if the MS has a climate neutrality target in law or long-term plans. If a MS does not have a climate neutrality target or known intentions to phase out fossil fuels, this is rated not clear or no information. If a MS also has plans to expand fossil fuel availability and/or use on top of the absence of a target, this is rated as a negative contribution.
- Ambition written in laws or plans: this is rated positive if the ambition of a MS for an economy-wide phase out of fossil fuels has been included in law. This is also rated positive if there are policies or concrete plans in place with a clear aim to phase out all use of fossil fuels. If such policies or plans are not in place or the MS only has a climate neutrality target in law without an explicit intention to phase out fossil fuels, this indicator is rated not clear or no information.

[81] Including Ember's EU Power Sector 2030 Targets Tracker and Beyond Fossil Fuels' Coal Exit Tracker.

- Presence of end-dates for fossil fuel extraction: this is rated positive if a MS has a clear end-date for its fossil fuel extraction activities, even if it is only for a part of the activities. This is rated negative if the MS is expanding or has plans to expand its extraction activities. If no plans have been found or if it is unclear whether MS has fossil fuel extraction activities, this is rated not clear or no information. If no fossil fuel extraction takes place in a MS and there are no plans on extracting fossil fuels in the future, this is marked as No extraction.
- Presence of end-dates for fossil fuel use: this category looks at the presence of clear end-dates for the use of fossil fuels in different economic sectors, because end-dates are generally announced for specific sectors or fossil fuels:
  - Positive contribution: This is rated positive if an end-date is present or a measure to ban fossil fuel use has already been implemented. This does not have to be for the full sector but could also be for certain applications or types of fossil fuels in the sector (e.g., a ban on the sale and installation of new fuel-oil boilers). This could be implied by other targets , e.g., if a country has a target of 100% renewable electricity by a certain date. If there is a proposed end-date by the government but not yet fixed in law, this is also rated positive.
  - Negative contribution: If there is no end-date present and the MS has plans to expand fossil fuel use in the sector, even if another fossil fuel use is being phased out (e.g., using fuel oil or natural gas instead of coal for electricity generation), this is rated negative.
  - Not clear or no information: if there is no information to be found on the (intention) of phasing out the fossil fuel, this is rated as not clear or no information. If there is an intention to reduce fossil fuel use in the sector without an end-date, this is also rated as not clear or no information.

  For electricity generation, each MS has also been rated separately on the presence of an end-date for coal-fired power plants. If there is no coal-fired electricity generation in the MS or this has already been phased out as of 30th of June 2024, this is marked as No coal.

Figure 38: Overview of identified phase out of FFS indicators

Member State	Intention to phase out (all) fossil fuel subsidies	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	End-date for fossil fuel use in: Electricity generation	End-date for fossil fuel use in: *Coal-fired power plants*	End-date for fossil fuel use in: Industry	End-date for fossil fuel use in: Transport	End-date for fossil fuel use in: Heating (buildings)	End-date for fossil fuel use in: Agriculture
Austria						No coal				
Belgium				No extraction		No coal				
Bulgaria										
Croatia										
Cyprus				No extraction		No coal				
Czechia										
Denmark										
Estonia						No coal				
Finland										
France										
Germany										
Greece										
Hungary										
Ireland										
Italy										
Latvia						No coal				
Lithuania						No coal				
Luxembourg				No extraction		No coal				
Malta				No extraction		No coal				
Netherlands										
Poland										
Portugal				No extraction		No coal				
Romania										
Slovakia										
Slovenia										
Spain										
Sweden						No coal				

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

Figure 38 shows that 8 MS (compared to 6 in 2023) have expressed their intention or made plans for an economy-wide phase out of FFS: Belgium, France, Germany, Italy, Latvia, Lithuania, Luxembourg and Portugal. The remaining 19 MS have not (yet) published any information regarding their plans for an economy-wide phase out of FFS[82].

Italy plans to implement a reform of its fiscal system, that would lead to the phase out of EHS, which includes FFS, as a crucial aspect. In Portugal, the climate law states that the budgetary and fiscal policies should respect climate-related principles, including a progressive elimination of national subsidies related to fossil fuels or their use by 2030. Belgium made a commitment to draw up an action plan for phasing out FFS, Lithuania is aiming to reduce tax incentives for fossil fuels that lead to market distortions, Latvia indicated an intention to suspend fossil fuel subsidies in their NECP, Luxembourg has committed to stopping any kind of support to fossil fuels.

France's Second National Low Carbon Strategy aims at a gradual elimination of public subsidies for "environmentally harmful" activities, and **Germany's** long-term climate ambitions and transition policies show the country's commitment to phasing out FFS. As members of the G7, Germany, Italy and France have also reaffirmed their commitment to phasing out *inefficient* FFS by 2025.[83] To date, it still remains unclear what is considered as *inefficient* FFS.

Almost all MS expressed an ambition to reduce and eventually phase out fossil fuels, or have a climate neutrality target in place, from which the intention to phase out fossil fuels can be inferred. Various countries have also adopted their climate neutrality into law such as Germany, Ireland, Luxembourg, Hungary and Sweden. In most MS, these carbon neutrality targets are supported by various measures to incentivise the use of clean alternatives to fossil fuels (i.e., subsidies) or disincentivising fossil fuel use (e.g., via carbon taxes or energy efficiency requirements), but without a clear intention to phase out fossil fuels. So far only Denmark has expressed an explicit intention to be fossil fuel independent throughout the economy by 2050 and enacted policies with a clear aim to phase out fossil fuels. In Hungary, while it has a national climate target for 2050, its plans and strategies to do not align with achieving this target; some plans could even lead to an increase in fossil fuel extraction or use. In Poland, there is even the objective to expand the availability of fossil fuels and diversify its supply through the development of new infrastructure for natural gas, LNG and oil. For Bulgaria, Croatia, Cyprus, Czechia and Lithuania, domestic plans to phase out fossil fuel use or having a national climate neutrality target have been absent so far despite some having committed to supporting the EU ambition for climate neutrality.

Fossil fuel extraction does not take place in 5 MS (BE, CY, MT, LU, PT). In 9 MS, some of the fossil fuel extraction activities ended this year or these MS have put in place policies to end fossil fuel extraction by a certain dates. For example, Slovakia ended support to lignite mining in December 2023 and the Netherlands closed its largest natural gas field in 2024. Czechia is considering a coal phase-out for 2025-2026, Spain has a framework agreement for the just transition of coal mining for the period 2019-2027, Latvia is fully phasing out the extraction of peat for energy purposes by 2030, Romania is phasing out coal extraction by closing coal and lignite quarries and mines by 2032, Slovenia has adopted a national strategy for the complete cessation of coal mining by 2033, and Germany anticipates a gradual coal phase-out by 2038.

However, not all MS are reducing their extraction activities. Estonia is planning to produce shale oil after 2030 and its new shale oil processing plant is expected to reach full capacity in the first half of 2025. Italy is issuing new concessions for extracting natural gas off its coastline again after these

[82] At the time of writing this report – August 2024.

were previously suspended. France authorised the extraction of layer gas in East France until 2040. In Poland, the government has an agreement with the Polish Mining Company to maintain hard coal mining operations until 2049. Cyprus is also considering development of the Aphrodite offshore gas field.

On the fossil fuel consumption side, the phasing out of coal-fired power plants continues, with 10 Member States (unchanged from the 2023 study) not having any coal-fired electricity generation. Another 15 Member States have set a clear date for phasing out their coal-fired power plants. However, Hungary has extended its deadline for closure of its lignite-fired power plants from 2025 to 2029. Croatia originally also committed to phase out coal by 2033, but it has postponed this commitment and now foresees the use of coal-fired power plants until at least 2040. Only in Poland has there not been any consideration of phasing out coal-based electricity.

Far fewer Member States have intentions to phase out the use of other fossil fuels (gas, oil) in their power sector, with only 11 Member States having expressed an ambition for 100% renewable electricity or a full phase-out of fossil fuelled electricity generation by a certain date. Five Member States are even planning to expand their fossil-based electricity generation capacity without any indication to eventually phase them out including Belgium, Czechia, Hungary, Malta and Romania. In these countries, new natural gas-fired power plants are planned for energy security reasons and/or to serve as back-up to renewable electricity. In Ireland, coal-based electricity is being replaced by electricity generated from heavy fuel oil due to concerns over energy security, although there is an intention to eventually phase this out.

In the other fossil fuel consuming sectors (industry, heat, transport, agriculture), there are fewer MS with end-dates for fossil fuel use.

Heating: in total 14 MS have dates for phasing out fossil fuel-based heating or a part of it. This is either in the form of a commitment to phase out fossil fuel use in heating buildings by a certain date, or prohibitions on installing new gas connections, or fossil fuel-based heating systems or boilers in new and refurbished buildings. The recast Energy Performance of Buildings Directive obliges Member States to discontinue any financial incentives for the installation of stand-alone boilers powered by fossil fuels from 1 January 2025 (with some exceptions).

Transport: 3 MS expressed the intention to end fossil fuel use in the transport sector or have set a zero emissions target for a part of the transport sectors. Finland has expressed an ambition to achieve an entirely fossil-free transport sector by 2045. Estonia is planning for zero emission targets for its public transport, taxis and public administrative vehicles. In Greece, all new passenger and light commercial vehicles registered from 1 January 2030 have to be zero emissions vehicles.

Industry and agriculture: No end-date for the use of fossil fuels in industry and agriculture was found in any of the MS. The absence of end-dates in these economic sectors does not necessarily mean that the MS do not have the intention to phase out fossil fuels in those sectors; as noted above, most MS did express the intention to phase out fossil fuels or have a climate neutrality target in place. They also have policies and measures in place to incentivise switching to clean alternatives to fossil fuels. However, it does mean that further concrete plans are needed to set clear end-dates for fossil fuels that align with their climate ambitions.

4.4. Conclusions

Almost all EU Member States have expressed an intention to move away from fossil fuels. However, so far only Denmark has translated this into concrete plans that aligns with their ambition to become completely fossil fuel independent. Other MS have policies and measures to disincentivise fossil fuel

use and incentivise the use of clean alternatives, but without a clear indication to completely phase out fossil fuels. The power sector is where MS have the most concrete plans to reduce their reliance on fossil fuel use, with all MS except Croatia and Poland having already phased out coal-fired power generation or having planned to do this with clear end-dates. 11 MS have also set dates for phasing out fossil fuel-based heating in buildings or at least some part of it, and 3 MS have done so for their transport sector. For industry and agriculture, end-dates for fossil fuel use continue to be completely absent.

The ambition to move away from fossil fuels needs to be accompanied by an economy-wide phase out of FFS. In 2023, only France, Germany, Italy, Latvia, Lithuania and Luxembourg had expressed their intention to so do, and by June 2024 Belgium and Portugal have also joined them. However, concrete end-dates for FFS, including for these 8 Member States, are often not published by the authorities or are still unclear. In total, 53.4% of the FFS (by EUR amount) in our subsidy inventory do not have an end-date yet or the end-date has been set after the year 2030.

B. Annexes

B.1. Theoretical framework

B.1.1. Classifications

To be consistent with previous *Commission studies*, we have kept the subsidy definitions and classifications which are based on the Agreement on Subsidies and Countervailing Measures (ASCM) framework stated by the World Trade Organization (WTO)[83]. The said ASCM classifies the subsidies in four main categories (see Textbox below).

Textbox 4-1: Definition of a subsidy within the Agreement on Subsidies and Countervailing Measures (ASCM) of the World Trade Organization (WTO)

Article 1: Definition of a Subsidy

1.1 For the purpose of this Agreement, a subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:

(i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees);

(ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits);

(iii) a government provides goods or services other than general infrastructure, or purchases goods;

(iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;

or

(a)(2) there is "any form of income or price support, which operates directly or indirectly to increase exports of any product from, or to reduce imports of any product into, its territory" (Article XVI of GATT 1994);

and

(b) a benefit is thereby conferred.

The WTO typology is commonly used by several international institutions such the OECD, the IRENA and NGOs such as IISD as shows Table 4.1 which summarises the adaptation by these organisations to the WTO framework.

[83] All documents related to WTO Agreement on Subsidies and Countervailing Measures are available at https://www.wto.org/english/docs_e/legal_e/24-scm_01_e.htm

Table 4-1: Energy subsidy classifications (updated from the 2022 study)

WTO[84] (1994)	DG ENER (2020)	IRENA (2020)	UNEP - IISD - OECD (2019)	OECD (2013)
Agreement on Subsidies and Countervailing Measures	Study on energy costs, taxes, government interventions and their impact on energy investments	Energy subsidies, Evolution in the Global Energy Transformation to 2050	Measuring Fossil Fuel Subsidies in the Context of the Sustainable Development Goals	Inventory of Estimate Budgetary Support and Tax Expenditures for Fossil Fuels
A **government** practise involves a **direct transfer of funds**, potential direct transfers of funds or liabilities.	Direct transfers	Direct financial transfer	Direct transfer of government funds Transfer of risk to government (Indirect)	Direct transfer of funds Transfer of risk to government (Indirect)
Government revenue that is otherwise due is **foregone** or not collected	Tax expenditures	Preferential tax treatment	Tax expenditures, government revenue foregone	Tax revenue and other government revenue foregone
Government provides goods or services other than general infrastructure, or purchases goods	Under-pricing of goods/services	Energy-related services provided by government at less than full cost	Under-pricing of other goods and services	NA
There is any form of **income or price support which confers a benefit**	Income or price supports	Regulation of the energy sector	Induced transfers (price support)	Induced transfers

[84] The WTO proposes a fifth type of subsidy called « Government makes payment to a funding mechanism, or entrusts or directs a private body to carry out the function(s) which would normally be vested in the government and the practise does not differ from practises normally followed by governments » that is excluded from the table because no other study cover this type of subsidy.

In line with previous *Commission studies*, we renewed the defined set of classifications covering the typology of subsides by category and instruments (Table), energy sources/carriers (Table), purpose (Table 4-4), source of financing (Table 4-6) and economic sectors (Table 4-5). Fossil fuel subsidies will also be classified according to their environmental impact (Table).

Subsidy instruments inventoried in Table can be considered as the "positive list", i.e. the list of instruments covered by our study.

Table 4-2: Classification of subsidy category and instruments

Subsidy category	Subsidy instrument
Direct transfers	Soft loans
	Grants
	Others
Tax expenditures	Tax reduction
	Tax exemption
	Tax refund
	Tax credits
	Tax allowance
	Others
Under-pricing of goods/services	Under-pricing of government-owned resources or land
	Under-pricing of government-owned infrastructure
	Under-pricing of other government-provided goods or services
Income or price supports	Capacity payments (electricity capacity mechanisms)
	Biofuels blending mandate
	RES quotas with tradable certificates
	Differentiated grid connection charges
	Energy efficiency obligations
	Interruptible load schemes
	Contract for Difference (CfD)
	Feed-in premiums
	Feed-in tariffs
	Consumer price guarantees (cost support)
	Consumer price guarantees (price regulation)
	Producer price guarantees (price regulation)
	Others
RD&D	Support to Research, Development and Demonstration activities

Table 4-3: Classification of energy sources/carriers

Main energy sources	Main fuels and carriers	Products and carriers
All energies	All energies	All energies
Heat	Heat	Heat
Electricity	Electricity	Electricity
Nuclear	Nuclear	Nuclear
Fossil fuels	FF-All / several	FF-All fossil fuels
	FF-All / several	FF-Several fossil fuels
	FF-Coal / Lignite	FF-Coal / Lignite
	FF-Natural Gas	FF-Natural gas
		FF-Mine gas
		FF-Shale gas
	FF-Oil	FF-Crude oil & NGL
		FF-Oil & Gas
		FF-Petroleum products
		FF-PP-Gasoil
		FF-PP-Blended gasoil
		FF-PP-Gasoline
		FF-PP-Leaded Gasoline
		FF-PP-Unleaded Gasoline
		FF-PP-Blended gasoline
		FF-PP-LPG
		FF-PP-Kerosene
		FF-PP-Fossil-based marine fuels
		FF-PP-Heavy fuel oil (HFO)
	FF-Peat	FF-Peat
	Hydrogen	FF-All fossil fuels
Bioenergy		RES-Biogas
	RES-Biomass	RES-Biogas
		RES-Biomass & biogas
		RES-Biomass (solid)
		RES-Biomass MSW
		RES-Liquid biofuels
		RES-Liquid biofuels-Biodiesel
		RES-Liquid biofuels-Bioethanol
RES	RES-All / several / others	RES-All
	RES-All / several / others	RES-Several
	RES-Geothermal	RES-Geothermal
	RES-Heat	RES-Heat
	RES-Hydro	RES-Hydro
	RES-Marine energy	RES-Marine energy
	RES-Solar	RES-Solar
	RES-Wind	RES-Wind
		RES-Wind offshore
		RES-Wind onshore

Table 4-4: Classification of subsidy purpose

Subsidy by purpose
Support to energy demand
Support to energy efficiency
Support to industry restructuring
Support to infrastructure
Support to production
Support to R&D

Table 4-5: Classification of economic sectors

Economic sectors	Sub-sectors
Energy industry	Energy sector
	-ENER-Fossil fuel extraction
	-ENER-Energy crops
	-ENER-Conversion
	-ENER-Conversion-Refining
	-ENER-Conversion-LNG
	-ENER-Conversion-CHP
	-ENER-Conversion-Electricity production
	-ENER-Conversion-Heating & Cooling
	-ENER-Conversion-Liquid biofuels
	-ENER-Conversion-Biogas production
	-ENER-Conversion-Hydrogen production
	-ENER-Infrastructure
	-ENER-Infra-Transmission
	-ENER-Infra-Distribution
	-ENER-Infra-T&D
	-ENER-Infra-Storage
	-ENER-Assets decommissioning
	-ENER-Waste management
	-ENER-Retail
Agriculture	Agriculture
	-AGRI-Crop, animal production, hunting
	-AGRI-Forestry and logging
	-AGRI-Fishing and aquaculture
Construction	Construction
Mining	Mining
Industry	Industry
	-INDU- Energy-intensive industry
	-INDU- Not energy-intensive-industry
Transports	Transport
	-TRANS-Air transport
	-TRANS-Rail transport
	-TRANS-Road transport
	-TRANS-Water transport
	-TRANS-Public transport
Services (tertiary sector)	Services (tertiary sector)
Business	Business
Households	Households
	-HH-Low income
Public	Public
Cross sector	Cross sectors

Table 4-6: Classification of source of financing

Source of financing
Government / Public bodies
Final customers
Operators

Table 4-7: Environmentally Harmful Subsidies (EHS) classification

EHS classification
Harmful
Partially harmful
Not harmful

B.1.2. Negative list: data not collected

To be consistent with *Commission studies*, these subsidy types that are not covered are listed below:

- Transport is restricted to fuel tax reductions/exemptions and domestic transport. The study also does not cover:
  - Extra-EU27 international transport
  - Reductions/exemptions of distance-based road charges;
  - Reductions/exemptions or non-existence of potential urban road pricing schemes;
  - Reductions/exemptions of infrastructure charges, including rail, ports, airports.
- Support to nuclear plants decommissioning through:
  - The European Bank for Reconstruction and Development (EBRD), though the International Decommissioning Support Fund (IDSF) in Kozloduy (Bulgaria), Bohunice V1 (Slovakia) and Ignalina (Lithuania)
  - The Central Project Management Agency (CPMA) in Ignalina (Lithuania)
  - The Slovak Innovation and Energy Agency (SIEA) in Bohunice V1 (Slovakia)
- Financial support related to cost of integration of intermittent RES;
- Government ownership (of all or a significant part) in energy companies;
- Government equity infusions in private firms;
- Reduced VAT rates for transport companies (VAT reduction granted to companies involved in the service of shipping goods and/or transporting people);
- Zero-rate VAT for aircraft flights;
- Mileage allowance for employees.

B.1.3. Negative list: data collected apart from main inventory

For clarity matter, it is reminded that the following supporting schemes and measure are not considered as energy subsidy according to definition above (Section B.1.1) and therefore excluded from the *Subsidy inventory*. Nevertheless, we have collected and gathered these measures together and commented them all along this report.

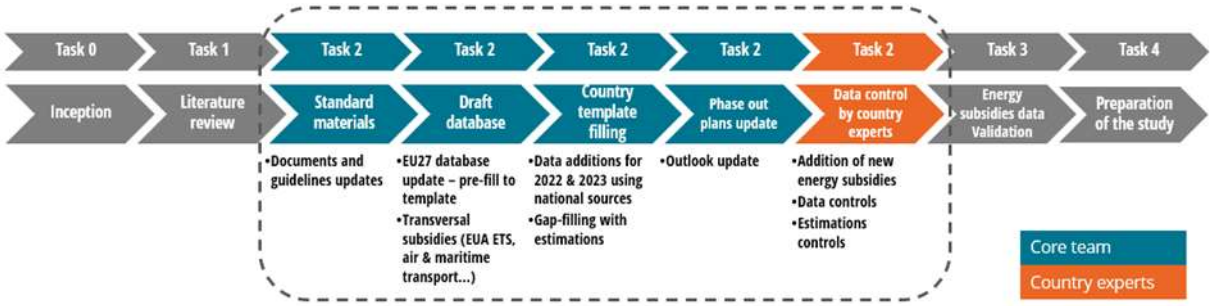
- Diesel vs gasoline tax difference (Textbox 3-1)
- Allocation of free Allowances from the EU ETS (3.8.1)

B.1.4. Data collect and control process

B.1.4.1. Data collection process

The data collection process was performed in the three steps highlighted below on Figure 39.

Figure 39: Data collection process



B.1.4.2. Data hierarchy

The subsidy data are made of three main types of information:

Actual data gather the amounts directly taken from official documents. They can be either amounts effectively paid (in previous years) or budget amounts assessed by official institutions.

Estimated data are subsidy amounts that have been estimated by either the core team or the country experts. Such estimations are cross-controlled within the consortium and are based on information (energy consumption, tax rates…) taken from official -national or international- institutions.

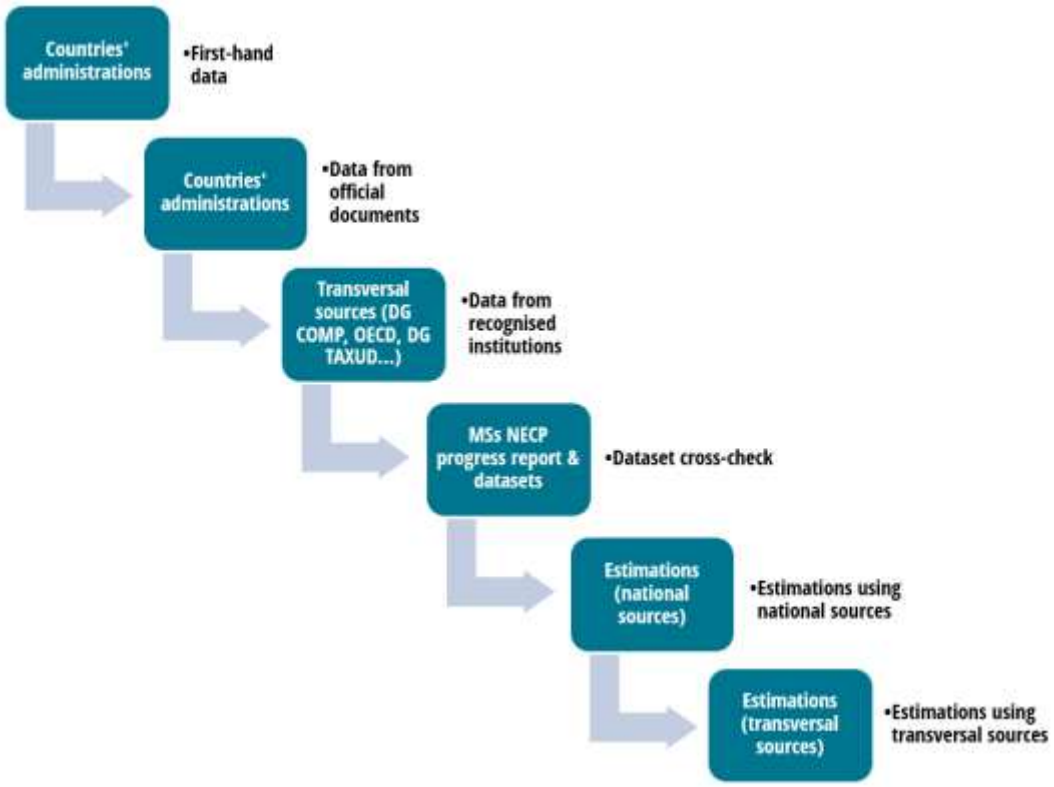
To be confirmed data are 2023 subsidy amounts that have been roughly estimated based on values from the previous years. These estimates are made when no data for 2023 is available from the sources while the subsidy scheme was ongoing that year.

All along the data collection process, we have used a default data hierarchy that organises and qualifies the data as follows:

1. Data taken from official documents (from ministries, government agencies, energy regulators, statistical offices, Court of Auditors…) are preferred over estimations:
    - Where we have already established direct contact with key employees in Ministries of Finance, we asked them to provide again first-hand information. If they deliver the required information, they are used as the preferred data.
    - Amounts collected in official documents (from ministries, government agencies, energy regulators, statistical offices, Court of Auditors…) from national sources have been preferred over amounts from transversal sources;
    - When official documents were not available, data from transversal sources (OECD, DG COMP State Aid Cases database, MURE….) have been retained.
2. When official data were not available, the core team performed estimations that have later been controlled by country experts:
    - Estimations use national statistics (for energy data) and national data from fiscal/custom/ministry administration;
    - When national data are not available for estimations, we use transversal sources (i.e. Eurostat for energy data, CIRCABC and TAXUD data for fiscal data).

The data hierarchy we suggest deploying during for this study is summarised below in Figure 40.

Figure 40: Data hierarchy chart



B.1.4.3. Data collection principles

The data collection exercise for each task followed principles built on international best practices[85] comprising:

- Relevance
    - Developed data templates according to task needs and following the scope defined in the inception phase with the DG ENER;
    - Address data gaps of previous *Commission studies*;
    - Focus completion of any gaps left after data collection according to the feedback from DG ENER on the most important issues (if applicable).
- Traceability
    - Include the raw data sources and a link or reference to the source;
    - Indicate the methodology used in estimations;
    - Use a colour code system to reflect the updates made in comparison to versions from previous *Commission studies*.
- Simplicity & functionality
    - Do not duplicate data – where this is needed, link the cells to ensure that changes are reflected;
    - Where calculations are made, this should be done linking the used cells;
    - Consolidate and simplify the databases in the end of each task;

[85] United Nations (2018) International Recommendations for Energy Statistics (IRES)

- Build upon tools from previous *Commission studies*.

- Coherence and comparability
  - Use defined concepts for data collection across countries;
  - Where possible, use the same source for as many items as available;
  - Cover as large period as possible, with attention to the most recent year available;
  - If a data series is updated using a different source, validate that the data for previous years is aligned with the previous source and – if it is – update the whole data series (if applicable).

- Accessibility and clarity
  - Present the data and metadata for each task in a coherent and clear format, improving on best practices from previous projects;
  - Provide databases, reports and supporting documentation in formats agreed with DG ENER in the shared document management and storage system;
  - Use common database structures across tasks when possible;
  - Indicate the confidentiality level for each dataset and resulting analysis.

B.1.5. Data validation through comparison against other institutions studies

Given the nature of the data collected, which is not well structured nor well transparent across countries, a key issue was to find means to control quality and to ensure the comparability of the data across countries ultimately leading to consistent and relevant analysis. To achieve good data quality, we have implemented several controls by benchmarking our data with that of existing external databases.

Please note that emojis used hereafter represent the status of the data availability:

- ☺ DG Competition State Aid Scoreboard: amounts provided cover years until 2023 for all MSs. Consequently, subsidy amounts for 2024 have not been verified.
- ☺ OECD fossil fuels inventory: Amounts provided by the OECD are covering a period ending in 2022 for all MSs. As a result, subsidy amounts for 2023 have not been verified. Five Member States, namely Bulgaria, Croatia, Cyprus, Malta and Romania are not covered. "A report is released every 3 years. It should however be noted that the data platform providing the corresponding detailed amounts is announced to switch off on June 19th; a check will be done to be sure that the new platform still provides similar data and aggregated levels"
- ☺ The State of the EU ETS Report has been released by the ERCST in May 2024. It covers amounts of "Compensation for the indirect costs of EU ETS" for the years 2022.
- ☺ Odyssee-MURE database alignment with the inventory has been continued on a country basis. Odyssee-MURE database for energy efficiency measures was updated in 2023.
- ☺ The CEER Status Review of Renewable Support Schemes in Europe, new report covering 2020-2021, has been published.
- ☺ DG TAXUD Excise Duty on Energy: excise duties are published every semester for many energy products (including petroleum products, natural gas, coal and electricity) for several uses. It has been utilised for estimation purposes.

- ☺ ACER-CEER Market Monitoring Report (MMR) 2022[86] provided an analysis regarding "Energy Emergency Measures" in Europe. Therefore, ACER's study has not been used in this study as the scope covered was less broad.
- ☺ The IEA energy technology RD&D budget database (October 2023) supplies with OECD Member States' spending on RD&D in the field of energy. Among the EU MS, eight of them are not covered by this source of information, namely Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Malta, Romania and Slovenia.
- ☺ The IEA Policies database provide numbers of energy related policies, of which some cover market-based instruments that are identified as subsidies by the Commission study 2022. This database is used for Member States not covered by the OECD.
- ☺ The Fossil Fuel Subsidy Tracker updated in November 2022 provides estimates from three international databases.

B.1.6. Data check through consultation round of MS Attachés

For this study, we gave to Member States' Energy Attachés a chance to crosscheck information collected for their respective country. After being controlled by country experts and validated, country files were shared with contacts named by DG ENER or, alternatively, with energy Attachés contacts (also provided by DG ENER). During a period of 15 days comments and modifications received in return were collected and used to adjust and strengthen country files.

The minority of Energy Attachés have provided valuable feedback as summarised in the table above (2.4). In general, it has confirmed or brought only few changes to the amounts delivered by our consortium. Nonetheless, far from being useless, we are rather convinced these feedbacks have contributed to significantly improve completeness of each of the country files, providing new details and sources that were not identified so far.

15 Energy Attachés have returned no feedback at all or were unable to complete the review due. Invoked reasons comprise the following:

- Lack of time
- Disagreement with methodology

In our opinion, the consultation round met its goal by strengthening the new *Subsidy inventory* and improving the overall quality of the *Commission study 2023*.

B.1.7. Subsidy amount allocations

In line with the methodology used in previous *Commission studies*, when relevant and feasible, we have allocated the subsidy amounts related to multi-sectors and multi-energy subsidies based on MS' energy balances. Subsidy amounts have been allocated according to the two following approaches:

B.1.7.1. Multi-energy subsidy

Amounts reported for multi-energy subsidies were allocated according to their respective shares in the energy mix. For instance, a subsidy amount covering, as a whole, feed-in tariffs for electricity

[86] The MMR 2022 reports a total of €800bn of estimated cost for energy support measures in 2022; a large difference from the amounts reported in this study. This difference is due to differences in the scope of study. Measures such as «Increased stored gas levels», «Obligations to increase lignite stocks», «nationalisation of energy suppliers», ... Available at : https://www.acer.europa.eu/Publications/Electricity_MMR_2022-Emergency_Measures.pdf and https://app.powerbi.com/view?r=eyJrIjoiNWJiZDlkYjMtNTMyNi00ZDU5LThkYzgtNTYzNWU5ODY5NGMyIiwidCI6ImU2MjZkOTBjLTcwYWUtNGRmYy05NmJhLTAyZjE4Y2MwMDA3ZSIsImMiOjI9

production from CHP burning fossil fuels was apportioned to each fossil fuel depending on their respective shares within the power generation mix.

B.1.7.2. Multi-sector subsidy

Similarly, multi-sector subsidies were allocated to each sector depending on their contribution to the said measure based on energy records in the national energy balance. For instance, a tax reduction on marked diesel (off-road consumption), reported as a whole, was broken down between the various consuming sectors (agriculture, construction, industry…) of off-road diesel according to their individual shares in the total consumption.

B.1.8. Transversal energy subsidies sources

Several types of energy subsidies were incorporated for all the MS using a single source of information to ensure homogeneous treatment across country.

To cope with the heterogeneous reporting methods across MS for air and maritime transport tax expenditures and, in line with previous *Commission studies*, we estimated domestic air and maritime transport subsidies using the following formulas:

Tax expenditure on fuel consumption in air transport

Air transport tax expenditure = kerosene consumption for domestic aviation (1 000 litres) x countries' standard excise tax rate for kerosene (in €/1 000 litres)

Tax expenditure on fuel consumption in maritime transport

Water transport tax expenditure = gasoline, diesel and fuel oil consumption for domestic navigation (in t or 1000 litres) x countries' standard excise tax rates for gasoline, diesel and fuel oil (in €/t or €/1000 litres)

In addition, intra-EU air transport subsidies were estimated for the first time in the Commission study 2024, using a similar formula as domestic air transport tax expenditure above.

Domestic energy consumption data are taken from Eurostat[87] and excise tax rates are extracted from TEDB[88]. Energy consumption amounts for 2023 were estimated as Eurostat does not yet provide annual data for this year and because monthly data were deemed not appropriate due to quality issues.

Regarding domestic air transport, we have chosen to estimate the energy consumption for year 2022 using the annual variation of air flights between 2022 and 2023, based on data from Eurocontrol[89], taking as assumption a perfect correlation between the number of flights and the energy consumption. The excise tax rates were updated using TEDB data. More data for gasoline excise tax were found for this study, enabling to update some figures before 2023.

Regarding intra-EU air transport, the methodology needs more calculation due to data available. Energy consumption from international aviation (i.e. both intra-EU and extra-EU) and kilometers travelled for "national+intra-EU" and for extra-EU are collected from Eurostat[90]. 2023 is estimated:

- from national aviation consumption for international aviation consumption,

[87] Available at https://ec.europa.eu/eurostat/data/database

[88] Available at https://ec.europa.eu/taxation_customs/tedb/#/home

[89] Data are available at https://ansperformance.eu/data/

[90] Energy consumption: Eurostat, Complete energy balances, available at https://ec.europa.eu/eurostat/databrowser/view/nrg_bal_c__custom_12066026/default/table?lang=en
Kilometres travelled: Eurostat, Passenger air transport over national territory (including territorial sea) - million passenger-km, available at https://ec.europa.eu/eurostat/databrowser/view/avia_tppa__custom_12066210/default/table?lang=en

- applying 2016-2019 growth average for extra-EU27 kilometres travelled (to avoid the special post-COVID 19 rebound),
- keeping the same ratio over 2022-2023 between national+intra-EU27 and extra-EU27 kilometres travelled for national+intra-EU27 kilometres travelled.
- Using domestic energy consumption (previously determined as explained see above), data (energy consumption and kilometres travelled) for the whole aviation is calculated. "national+intra-EU" energy consumption is calculated assuming the same energy consumption intensity (toe/km) than the one of total aviation. Finally, intra-EU energy consumption is determined by difference between "national+intra-EU" and domestic energy consumptions. The excise tax rates are the same as domestic air transport.

Regarding maritime transport, we have estimated roughly the energy consumption using the annual variation of "Goods transport by inland waterways" between 2021 and 2022, using data from Eurostat[91], assuming a perfect correlation between the variation of tonnes transported and the energy consumption. Only 15 MS reported data in 2022, therefore, we have used the average variation of these countries (-6.7%) and applied it to the other 12 MS. The excise tax rates were updated for the year 2023 using TEDB data.

The current inventory also comprises a subsidy corresponding to the tax expenditure on oil products for fishing purposes. This subsidy was estimated as the multiplication of the energy products supplied for use as fuel for fishing purpose with the excise tax rates used for navigation in the calculation above. The variation of the energy consumption for fishing purpose between 2022 and 2023 was aligned with that of the maritime transport sector.

Fishing tax expenditure = gasoline, diesel and fuel oil consumption for fishing (in t or 1000 litres) x countries' standard excise tax rates for gasoline, diesel and fuel oil (in €/t or €/1000 litres)

B.1.9. Other financial supports

Methodology

The total value of freely allocated allowances is the product of two factors: The certificate market price and the allocated quantity of free allowances. The European Environmental Agency regularly publishes an EU ETS database[92] where the number of freely allocated allowances is indicated. The allowances were allocated to the following sectors: Aviation (code 10 Aviation), Power plants (code 20 Combustion of fuels), Refineries (code 21 Refining of mineral oil), Energy-intensive industries (codes 22 to 44) and others (codes 45, 46 and 99). To estimate the foregone value of freely allocated allowances per year the difference of annual freely allocated allowances and corrections in the aviation sector of each year has been multiplied by the corresponding annual average market price of certificates.

Prices have been taken from EEA[93] and ICAP[94]. It should be noted that these prices are themselves the result of the market mechanism. If the freely allocated allowances had instead been auctioned, this would have an effect on the magnitude and scope of the ETS, in turn affecting the price of each share. Put another way, the free allocations both increase supply of carbon allowances and suppress demand for them, which will have an obvious price distorting effect. As such, the total value used in this report is an estimation based on publicly available information.

[91] Eurostat, Goods transport by inland waterways [TTR00007], available at https://ec.europa.eu/eurostat/databrowser/view/ttr00007/default/table?lang=en

[92] EEA (2023), European Union Emissions Trading System (EU ETS) data from EUTL, available at: https://www.eea.europa.eu/data-and-maps/data/european-union-emissions-trading-scheme-17 (last access 31.07.2024)

[93] EEA The EU Emissions Trading System in 2021: trends and projections, https://www.eea.europa.eu/publications/the-eu-emissions-trading-system-2

[94] ICAP (2022), ICAP Allowance Price Explorer, available at: https://icapcarbonaction.com/en/ets-prices (last access: 26.07.2024)

The corrections are due to the "Stop the clock" decision in 2012, when freely allocated allowances were returned by aviation companies because of the retroactive suspension of emission trading in international aviation. These corrections are verified each year, leading to annual adjustments as to how many allocations were freely given in the years in question. There is also a Brexit effect, in which a certain amount of freely allocated allowances need to be redistributed from the UK onto other countries, depending upon flight departure/arrival.

$$\text{Annual foregone revenue in €} = \text{Annual average market price } (€/tCO_2) \times \sum_c \text{Freely allocated allowances}_c(tCO_2) - \text{Corrections to freely allocated allowances}_c(tCO_2)$$

$c = \textit{EU27 country}$

Textbox 4-2: Allocation of free Allowances from the European Union Emission Trading System (EU ETS)

Consistent with the Commission Study, the allocation of free allowances from the EU ETS are not considered as an energy subsidy but they are monetized using the methodology outlined below:

EUA ETS support in EUR = ∑tCO2 of free allowances per year x EUA average annual prices in €/tCO2.

The corresponding amounts will be allocated to the five following economic sectors:

- Aviation (code 10 Aviation);
- Power plants (code 20 Combustion of fuels);
- Refineries (code 21 Refining of mineral oil);
- Energy-intensive industries (codes 22 to 44);
- Others (codes 45, 46 and 99).

EUA ETS volumes and average annual prices will be taken from the European Environment Agency (EEA).

B.1.10. Subsidies incorporated directly from external sources

In line with the previous *Commission Study*, the estimated amounts of total public energy research, development and demonstration (RD&D) budgets of the 20 MS covered by the IEA were incorporated into the *Subsidy inventory*, with treatment. As amounts for 2023 are only available for 9 countries, estimating the data for this year was the key treatment of our process. Our estimations relied on using the most holistically effective method of three options, that is to say that the option which conformed best to the trends of the prior years' data.

Our first estimation option was to simply replicate the data from 2022. This option was generally used in circumstances in which the data had little to no variance over the prior years.

The second estimation option was to use Excel's "trend" function on the data from 2020-2022, this was used in cases where the data had a clear increasing or decreasing trend and no unexplained variation.

The final option was to use a simple geometric mean of the period 2015-2019, which was used in the case of data having significant year-to-year variation and lacking clear trends, or in which the "trend" function would have resulted in a negative figure (e.g., a sharply decreasing trend from 2020-2022).

B.1.11. Approach to the environmental assessment of energy subsidies

In order to identify environmentally harmful energy subsidies (EHES) in this study, first it is necessary to define what an environmentally harmful subsidy (EHS) is. However, there is no universally agreed definition for an EHS, with this field still being in development. A literature review of recent methodologies used on the identification of environmental impacts of (energy) subsidies was therefore carried out, with the findings summarised in section B.1.11.1. Using this as a basis, section B.1.11.2 provides a definition of EHES and methodologies for identifying EHES for the purpose of this study, which was developed under the guidance of the European Commission.

B.1.11.1. Defining environmentally harmful energy subsidies

This section provides a summary of the definition for EHS in literature. Firstly, we summarise the literature that considers EHS and methodologies for identifying them. Then, we synthesise the findings, highlighting the key features of methodologies for identifying EHS.

Literature findings

Various international institutions and research organisations have developed definitions for EHS and methods for identifying them over the years. These describe or determine EHS in various ways, although they all built on each other:

- OECD (1998)[95] included a broad definition of EHS and developed the first tool—the quick scan approach—to enable governments to assess the environmental impacts of subsidies. The tool proved to be difficult to apply in practice as it required identifying all potential links between subsidy and environmental impacts.
- OECD (2005)[96] does not provide a definition for EHS. Instead, it provides a checklist for the initial identification of EHS. The checklist concentrates on answering the question whether the removal of a subsidy is likely to result in environmental benefits rather than determining if a subsidy is environmentally harmful.
- IEEP (2007)[97] report contributed to the work of the European Commission in developing a roadmap for EHS reform. The report builds on the work of OECD on environmentally harmful subsidies, focusing on the rationale of EHS reform, and identifying practical lessons for implementing such reforms. The report does not further define EHS.
- TEEB (2009)[98] report focuses on a subsidy reform framework, though it stresses that such reform should not be limited to only environmentally harmful subsidies. Additionally, it does not provide a definition for EHS, rather identifying impacts of subsidies across sectors and identifying tools that had been made available for reform, such as the OECD checklist mentioned above.
- The 2016 *Italian Catalogue of Environmentally Friendly Subsidies and Environmentally Harmful Subsidies* that recognises the lack of an agreed-upon EHS definition and lists a number of tools/methodologies for identifying EHS that already exist. The methodologies listed include those developed by the OECD and the TEEB framework as mentioned above, as well as The Driver-Pressure-State-Impact-Response (DPSIR) Framework.[99]

[95] OECD (1998). Improving the Environment through Reducing Subsidies: Part I: Summary and Conclusions - Part II: Analysis and Overview of Studies.
[96] OECD (2005). Environmentally Harmful Subsidies: Challenges for Reform.
[97] IEEP et. al. (2007). Reforming environmentally harmful subsidies.
[98] TEEB (2009). The Economics of Ecosystems and Biodiversity for National and International Policy Makers.
[99] Introduced by the European Environmental Agency in 1996. Smeets, E. & Weterings, R. (1996). Environmental indicators: Typology and overview.

Eurostat has also undertaken work to identify EHS within the context of statistics on environmental subsidies, so that these could be easily available from national accounts. With regard to this work, two guidelines are to be highlighted with regards to EHS:

- The 2015 guidelines on Environmental subsidies and similar transfers[100] does not establish a definition of EHS but provides two approaches for identifying EHS. The first approach identifies subsidies that according to some established method or checklist are assessed to have an environmentally harmful effect. The second approach identifies subsidies going to (producers in) certain activities or industries which are considered particularly polluting, i.e. based on the beneficiaries.
- Additionally, in 2022 Eurostat initiated work on Potential Environmentally Damaging Subsidies (PEDS) so that Member States could report data to the Eurostat PEDS data collection on a voluntary basis. The PEDS work also did not establish a definition of EHS, but instead relied on second approach from the 2015 guidelines mentioned in the previous point, i.e., based on the beneficiaries. In 2023,[101] Eurostat published an updated guidance. This guidance also did not establish a definition of EHS, but continued to focus on providing approaches to identifying PEDS. So far, the guidance provided by Eurostat for identifying PEDS is focussed on fossil fuel subsidies.

Under the 8th Environmental Action Programme (EAP), the European Commission was mandated to develop a methodology for identifying EHS to other than fossil fuel subsidies (FFS) in 2023.[102] Within this mandate, the European Commission has published the following:

- The 2022 European Commission study "a toolbox for reforming environmentally harmful subsidies in Europe"[103] (EHS reform toolbox) categorises a subsidy as environmentally harmful if the negative environmental impacts are increasing due to the existence of the subsidy.
- In 2023, RPA Europe[104] background paper concerning the preliminary findings of the study supporting the fitness check of the implementation of the polluter pays principle in EU environmental policy and for selected EU funding programmes.[105] It built upon the EHS reform toolbox, providing inputs for the development of a methodology for monitoring and reporting on non-energy environmentally harmful subsidies.
- In 2024, based on the input and discussions of the expert group on Environmentally Harmful Subsidies and the Polluter Pays Principle, the European Commission published a "Guidance document for reporting of non-energy Environmentally Harmful Subsidies (EHS)" (Non-energy EHS guidance).[106] Similarly to the EHS reform toolbox, the Non-energy EHS guidance defines a subsidy as harmful if it causes significantly increased negative environmental impacts. The Non-energy EHS guidance further specifies that if a subsidy has both significant negative and significant positive environmental impacts, it should be considered to be an EHS. The Non-energy EHS guidance also highlights that the identification of subsidies as environmentally harmful is not always straightforward. This is in particular due to the requirement of establishing a counterfactual (see in section below). The guidance therefore leaves it up to the Member States to determine if a subsidy meets the definition of an EHS.

[100] Eurostat (2015). Environmental subsidies and similar transfers – Guidelines.
[101] Eurostat (2023). Guidance material for the Eurostat PEDS compilation.
[102] Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030.
[103] Porsch et al (2022). A toolbox for reforming environmentally harmful subsidies in Europe.
[104] RPA Europe supported the European Commission on developing published a methodology for identifying EHS under the 8th EAP.
[105] RPA (2023). The Polluter Pays Principle: preliminary findings of the study supporting the fitness check & RPA (2023). Online workshop on the implementation of the 'polluter pays' principle and environmentally harmful subsidies.
[106] The latest version is available online: Guidance document for reporting of nonenergy Environmentally Harmful Subsidies (EHS)

Synthesis of literature

The literature highlights that identifying whether a subsidy is environmentally harmful is not always straightforward. This is due to two key aspects:

- The counterfactual: whether a subsidy is environmentally harmful needs to be considered against the hypothetical reference situation in absence of the subsidy. The counterfactual could be the situation where there is no government intervention, or where an alternative policy applies. The counterfactual would also have to consider the behaviour change of actors affected by the absence of the subsidy. For example, in the counterfactual where there is no subsidy on heat pumps, greenhouse gas (GHG) emissions related heating from natural gas boilers could be higher, but GHG emissions and resource use related to electricity production would be lower. In this case, the environmental impact in the counterfactual would also change over time as the electricity grid is decarbonised.
- Environmental impacts: some subsidies have both positive and negative environmental impacts. For example, subsidies for biofuels contribute to climate change mitigation but could lead to land-use change, deforestation and biodiversity loss if the sourcing of biofuels is not sustainable. To determine whether a subsidy should be environmentally harmful, both the EHS reform toolbox and the Non-energy EHS guidance refer to the EU Taxonomy. The EU Taxonomy provides a classification system of environmentally sustainable economic activities, as a reference point when considering whether environmental impacts exist and are significant. Delegated regulations establish technical screening criteria that establish when certain activities can be considered as contributing towards one of the environmental objectives. In accordance with EU Taxonomy Regulation, a subsidy can be considered as environmentally harmful if it causes significant harm to one or more of the six environmental objectives: (1) climate change mitigation, (2) climate change adaptation, (3) the sustainable use and protection of water and marine resources, (4) the circular economy, (5) pollution prevention and control and (6) the protection and restoration of biodiversity and ecosystem. This is also known as the Do No Significant Harm (DNSH) principle. The definition of what constitutes as *significant* is defined in the Taxonomy Regulation and its implementing acts, which differs for each of the six environmental objectives and different activities.

Due to abovementioned aspects, literature in general and the non-energy EHS guidance in particular, indicates that the application of the EHS definition needs to be considered on a case-by-case basis. The Non-energy EHS guidance therefore does not identify non-energy EHS, but leaves it up to the Member States to determine if a subsidy is an EHS.

B.1.11.2. Identifying environmentally harmful energy subsidies

This study introduces an assessment of the environmental impact of energy subsidies, with the aim of identifying the environmentally harmful energy subsidies (EHES). This is a first attempt of classifying EHES, building on work from the 2023 study.

The 2023 study[107] focused exclusively on environmentally harmful fossil fuel subsidies (EHFFS), as the methodology for identifying environmentally harmful subsidies (EHS) for energies other than fossil fuels was still under development by the European Commission as part of the 8th EAP. A definition of EHFFS was developed for use in the 2023 study, in line with the following principles:

[107] Bon-Mardion, J., Casteleyn, M., Queenan, J. et al. (2023). Study on energy subsidies and other government interventions in the European Union – Final report – 2023 edition, Available at: https://data.europa.eu/doi/10.2833/571674.

- Most fossil fuel subsidies (FFS) can be considered as having negative environmental impacts and therefore environmentally harmful. This is in particular true for all subsidies related to maintaining or increasing production, and distribution and use of fossil fuels;
- All subsidies supporting the use of unabated fossil fuels were considered as EHS;
- FFS were not considered environmentally harmful if they support a reduction in the production and/or consumption of fossil fuels;
- The failure to internalise externalities (government inaction or implicit subsidies) was excluded from the definition of EHFFS used in the study.

Since the publication of the 2023 study, the European Commission's Directorate-General for Environment has published Non-energy EHS guidance (see section B.1.11.1). The EHFFS definition used in the 2023 study does not fully align with the Non-energy EHS guidance since it also is in alignment with the EU Taxonomy Regulation.[108] The EU Taxonomy Regulation through its implementing acts, determines what activities may be defined as not environmentally harmful for all six environmental objectives. The Delegated Act to the EU Taxonomy Regulation on climate mitigation and adaptation[109] (Climate Delegated Act) establishes that electricity generation activities and co-generation of heat/cool and power activities where fossil gas is used, can be considered to not be environmentally harmful if certain criteria are met. One such criteria is the use of carbon capture and storage (CCS) at the facility that uses fossil gas. This is in contrast to the EHFFS definition used in the 2023 study, which considers all fossil gas-related activities and abated fossil fuels as environmentally harmful. Accordingly, in this study the definition of EHES will be aligned with the Non-energy EHS guidance, the EU Taxonomy Regulation and its Climate Delegated Act.

The Non-energy EHS guidance makes note that the EU Taxonomy Regulation and its implementing acts may provide an indication of the impacts of some subsidies, but not all. Hence, Member States may have to consider additional information in determining if a subsidy is environmentally harmful. Additionally, under the EHS guidance, in accordance with the Do No Significant Harm (DNSH) principle of the EU Taxonomy, a subsidy that significantly harms any of the six environmental objectives, even if it also provides positive impacts on any other environmental, social, economic or policy objective, it is considered an EHS. For these reasons, the application of the EHS definition as understood by the Non-energy EHS guidance would require a case-by-case assessment, to be done by the Member States. For energy subsidies in this study, such case-by-case assessment is not possible as the necessary data is not readily available.

Under the guidance the European Commission, a first attempt is made in developing a definition for energy subsidies that are environmentally harmful that can be applied in this study. Building on the definition of EHFFS used in the 2023 study and the 2024 Non-energy EHS guidance, this study uses the following definition for EHES:

Energy subsidies are environmentally harmful if the price or cost reduction that they bring about, incentivises maintaining or increasing in the availability of energy sources and/or use energy sources that cause significantly increased negative environmental impacts.

The understanding of "significantly increased negative environmental impacts" are defined in alignment with the EU Taxonomy Regulation focusing on the two climate objectives, namely (1) climate change mitigation, and (2) climate change adaptation. However, we note that there are four further environmental criteria in the Taxonomy (the sustainable use and protection of water and

[108] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0852&qid=1694686105592.
[109] Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02021R2139-20240101.

marine resources, the transition to a circular economy, pollution prevention and control, the protection and restoration of biodiversity and ecosystems). Assessing the environmental impact of all six environmental objectives under the EU Taxonomy would have required a case-by-case assessment, which was not possible within the scope of this study.

The definition provided above is broad, and the climate impacts may depend on the type of energy carrier. Based on the considerations mentioned above, we have identified the EHES classification per energy carrier as they are classified in the *Subsidy Inventory* for this study:

- All energies is a classification for energy subsidies to designate energy produced from a mix of both fossil fuel and low carbon sources or an unknown source, or subsidies that affect the energy demand without a clear designation of the energy source. These subsidies are considered to be *partially environmentally harmful* because it cannot be assumed, given the EU energy mix,[110] that these subsidies will have only positive or negative environmental impacts. In the assessment of subsidy amounts falling under "All energies" that are considered environmentally harmful, a split is being made between harmful and non-harmful amounts. This is based on the percentage of fossil fuel use in a Member State energy mix[111] to determine what portion of the subsidy is classified as environmentally harmful. Hereby the assumption is made that all fossil fuel use in the energy mix is considered environmentally harmful; the available data does not allow for a differentiation of the portion of "All energies" subsidies for fossil fuels that are not considered environmentally harmful. All other energy use in the energy mix is considered not harmful (see next points for the discussion regarding each energy carrier).
    - The only exceptions are subsidies for which the purpose is classified as "Support to energy efficiency". These subsidies are considered to be *environmentally not harmful*. An improvement in energy efficiency will in principle result in a decrease in energy consumption. If this would lead to less fossil fuel consumption, emissions would decrease in emissions and therefore environmentally not harmful in line with the definition for EHES used in this study. If the subsidy would lead to a reduction in energy consumption other than fossil fuels, although there is no decrease in emissions, it is also considered environmentally not harmful as all other energy use is considered not harmful.
- Heat, as defined in the *Subsidy Inventory* classification, is considered to be *partially environmentally harmful*. Similar to "all energies", the percentage of fossil fuel use in a Member State will be used to determine what portion of the subsidy is classified as partially EHS. This will be done based on the same data on the Member State energy mix as used for "All energies" subsidies, since the data on the heat consumption mix is not available in public statistics.[112] The only exceptions are subsidies for which the purpose is classified as "Support to energy efficiency". These subsidies are considered to be *environmentally not harmful* for the same reasons as "All energies" subsidies with a purpose classified as "Support to energy efficiency".
- Electricity is considered *environmentally not harmful*. While the EU electricity grid is not run 100% on renewable energy sources, less than 40% of electricity was generated from

[110] In the EU, less than one quarter of energy is produced from renewable energy sources. Eurostat (2024). Share of energy from renewable sources, https://ec.europa.eu/eurostat/databrowser/view/nrg_ind_ren/default/table?lang=en&category=nrg.nrg_quant.nrg_quanta.nrg_ind_share.
[111] Based on Eurostat database Complete energy balances (nrg_bal_c) on the gross inland consumption per primary energy source. For the results of the year 2023, the energy mix of 2022 is used as that is the latest year for which data is available in Eurostat at the time of writing this report. Available at: https://ec.europa.eu/eurostat/databrowser/view/nrg_bal_c/default/table?lang=en.
[112] Eurostat has data on the gross production of derived heat by fuel type. However, heat produced at the final place of consumption (e.g., in households) is not included in the gross production of derived heat but as the final energy consumption of the respective fuel instead. The data on the total energy mix of a Member State is therefore the best available reflection of the total heat consumption that is directly available for public statistics.

fossil fuels in 2022 in the EU[113] and electrification is a key policy for increasing energy efficiency and lowering emissions. Thus, unless the electricity subsidy is specifically targeted at electricity generation from fossil fuels without an intention to lower carbon emissions based on the description in the *Subsidy Inventory* (and thus not meeting the DNSH criteria), it will not be considered environmentally harmful for this study.

- Nuclear energy is considered environmentally not harmful in view of the two environmental objectives considered for the assessment in this study. During operation nuclear power plants emit no carbon emissions, which makes it a near-zero carbon technology. Due to the substantial contribution of nuclear energy towards climate change mitigation, as stated in the Climate Delegated Act, it is considered to not be environmentally harmful.
- Fossil fuels are, in principle, considered to be *environmentally harmful*. As mentioned above, under the definition of EHFFS in the 2023 study, all FFS were be considered as having negative environmental impacts, even if they were related to abated fossil fuel use. A different approach is used for the current study, considering most FFS as environmentally harmful but not all. Under the Climate Delegated Act, natural gas activities, under certain conditions, considered to provide a substantial contribution towards climate change mitigation. CCS is also considered as an activity that provides a substantial contribution towards climate change mitigation and so natural gas facilities that use CCS are not considered environmentally harmful under the Climate Delegated Act. In line with this, natural gas subsidies specifically may be considered as *environmentally not harmful* if they are intended to lower carbon emissions. Examples of FFS that are considered *environmentally not harmful* in this study include subsidies that supports the replacement of old gas-fired boilers with new ones, the replacement of coal-fired power plants with gas-fired ones, or a capacity mechanism for gas-fired power plants as part of an integrated renewable energy strategy.
- Hydrogen's environmental impact is determined by its origin and thus the classification whether hydrogen subsidies are environmentally harmful or not depends on whether the subsidy supports hydrogen of fossil or non-fossil origin:
    - If the supported hydrogen is of fossil origin, it is considered to be *environmentally harmful*. This is due to fossil fuels being involved in the production of hydrogen, which results in additional GHG emissions. Only if the subsidy requires the production process to involve CCS, it is considered to be *environmentally not harmful* for this study. Furthermore, some subsidies for hydrogen derivates (synthetic fuels) are also classified under "hydrogen" in the *Subsidy Inventory* if they involve carbon capture and utilisation (CCU). These subsidies are also considered *environmentally not harmful* even if the utilised carbon is of fossil origin as the manufacture of fuels from CCU is a key technology needed towards climate neutrality in the EU;[114]
    - If the hydrogen is of non-fossil origin, it is considered to be *environmentally not harmful*. The non-fossil origin means that no fossil carbon is directly released during production and they are not considered EHS for this study.
    - In addition, if the subsidy is intended to facilitate the use of hydrogen, including expenditure on research and development on hydrogen as well as support for the hydrogen infrastructure, this is considered to be *environmentally not harmful*. Renewable hydrogen is a key policy for lowering emissions and meeting the EU's climate neutrality goal. Subsidies that support the demand for hydrogen will also

[113] Eurostat (2024). Net electricity generation by type of fuel, https://ec.europa.eu/eurostat/databrowser/view/NRG_CB_PEM__custom_5180368/default/table?lang=en.
[114] European Commission (2021). Carbon Capture, Use and Storage: Overview, https://climate.ec.europa.eu/eu-action/carbon-capture-use-and-storage/overview_en.

facilitate the development of renewable hydrogen. Thus, unless the subsidy for the use of hydrogen is specifically for hydrogen from fossil origin, it is considered not to be environmentally harmful.

- Bioenergy is produced from organic material, known as biomass. Biomass is renewed either thanks to natural processes or re-planting efforts, which leads to carbon absorption equivalent to the rate at which carbon is released during combustion. This makes it a near zero-emission fuel. Under the Climate Delegated Act bioenergy activities provides a substantial contribution towards climate change mitigation and are considered to be *environmentally not harmful* for this study.
- Renewable Energy Sources (RES)[115] are considered to be *environmentally not harmful*. These energy sources do not involve combustion of any fuel that would release fossil carbon, and the avoided emissions compared to the counterfactual compensates for the carbon emissions associated with their fabrication and construction. Additionally, the Climate Delegated Act recognises renewable energy technologies as providing substantial contribution to climate change mitigation. Thus, for the purpose of this study RES is considered to be environmentally not harmful.

Three different methods have been used to classify energy subsidies based on the EHES classification above:

1. Subsidies categorised under *Nuclear energy*, *Bioenergy* and *RES* have been directly classified as "not environmentally harmful;
2. Subsidies categorised under *All energies* and *Heat* required a calculation of the share of the subsidy that is considered "environmentally harmful" and "environmentally not harmful" using the Member State-specific energy mix, except ones with the purpose of "Support to energy efficiency" which are classified as "environmentally not harmful";
3. Subsidies categorised under *Electricity*, *Fossil fuels* and *Hydrogen* required a manual scan of the *Subsidy inventory* to determine whether the description of their intended aim or objective leads to outcome(s) that meet the EHES definition.

For the last category of energy subsidies done by manual scan, an overview of descriptions on which basis a subsidy is considered "environmentally harmful" or "environmentally not harmful" is provided below.

Electricity

Subsidies for electricity are categorised as environmentally harmful include the following subsidies:

- Subsidies for electricity generated from natural gas, oil, coal, lignite and/or fossil fuels;
- Subsidies for the generation of electricity from combined heat and power plants, unless the subsidy excludes electricity generated from fossil fuels or is explicitly aimed at reducing GHG emissions.

For electricity subsidies categorised as environmentally not harmful, this includes the following types:

- Electricity generated from RES (solar, wind, hydro, biomass, geothermal);
- Electricity generation from nuclear energy.

Fossil fuels

[115] RES includes solar energy, wind energy and hydropower.

FFS categorised as environmentally harmful include the following subsidies:

- Exemptions, refunds or reduced tariffs on fossil fuel taxes, including tax credits or vouchers for fossil fuel use;
- Measures that lower the VAT paid on fossil fuels compared to the nominal VAT rate of the Member State;
- Subsidies to lower the cost of using fossil fuel, which could be economy-wide or specific to certain groups including public transportation;
- Compensation measures to mitigate rising energy costs, regardless of whether this is directly to the end-users such as households or distributors to lower the price they charge end-users;
- Subsidised sale of fossil fuels, e.g., compensation for having to sell fossil fuels for a lower price compared to selling it elsewhere;
- Caps or other forms of direct control of the price of fossil fuels;
- Subsidies for maintaining, upgrading and/or modernising the infrastructure for fossil fuel extraction or distribution, or fossil fuel-based power generation;
- Exemptions for paying royalties to the government for the extraction of fossil fuels;
- Capacity payments to fossil fuel-based power generation companies for balancing the electricity net;
- Financial measures to guarantee the capacity and security of supply of fossil fuels or electricity from fossil fuel-based power plants;
- Payments to supply fossil fuels to remote areas;
- Grants or concessional leans for fossil fuel extraction or storage;
- Financial support to building new LNG terminals and the necessarily infrastructure for distribution and storage of LNG;
- Financial support to the development and/or maintenance of district heating systems and combined heat-and-power plants (CHPs) that can use fossil fuels, including high efficiency CHPs;
- Subsidy for electricity generated from fossil fuel-based power plants, including CHPs;
- Funding for research and development for fossil fuel production and/or use.

For FFS categorised as environmentally not harmful, this includes the following types:

- Financial incentives for the closing or curtailment of coal mines or other fossil fuel extraction sites;
- Financial incentives for closing or curtailment of coal-fired power plants or other fossil fuel-based power plants;
- Measures to alleviate the costs for companies related to the closure or curtailment of coal mines and/or coal-fired power plants, which could include social costs and damages following closure;
- Income support to former workers of coal mines and/or coal-fired power plants;
- Financial support to the restructuring or rehabilitation of coal mines and fossil fuel-based power plants and/or their surrounding area, including restructuring a coal-fired power plant that results in a reduction in GHG emissions (e.g., to a oil-fired or gas-fired one);
- Financial gas-fired power plants that are part of an integrated renewable energy deployment strategy;

- Subsidies to disconnect from the gas distribution network;
- Subsidies to reduce heating that is based on fossil fuel use;
- Financial incentives to replace oil heating systems with natural gas ones;
- Compensation for restrictions on fossil fuel use;
- Subsidies to replace existing use of fossil fuels with renewable energy;
- Subsidies to replace existing coal power plants with gas;

- Financial support to energy efficiency that reduce current fossil fuel use, as long as the measure does not directly incentivises the use of other fossil fuels; Financial incentives to replace old natural gas boilers with new ones;
- Financial incentives that maintain the availability of fossil fuels and/or use of fossil fuels if these are made conditional to the implementation of environmental management systems or meeting certain energy efficiency targets, which would eventually result in a decrease in fossil fuel consumption.

Hydrogen

Hydrogen subsidies categorised as environmentally not harmful include the following types:

- Subsidies to support the production of green hydrogen;
- Subdidies to support the development and production of blue hydrogen;
- Subsidies to support the establishment of hydrogen networks/infrastructure;
- Financial incentive programmes for hydrogen-fuelled trucks;
- Expenditure on hydrogen research and development programmes.

No environmentally harmful hydrogen subsidies were identified.

The above is only a first attempt at an EHS classification per energy carrier above using available statistics and information from the Subsidies database. It should not be taken as final and it will continuously be refined in future editions of the study.

B.2. Annex 2: Country data controls and observations

Austria

Five (5) new or unreported subsidies have been identified and added to the current inventory:

- ✓ Procurement of strategic gas reserve (EUR 3.7 billion in 2022)
- ✓ Storage costs of strategic gas reserve (EUR 94 million in 2022, EUR 95 million in 2023)

As a result of Russia's invasion of Ukraine and the endangered gas supply to Austria in this context, the National Council has decided to introduce a national strategic gas reserve. Between May and August 2022, two public tender processes were conducted to procure the strategic gas reserve. The subsidies listed above are associated to this initiative.

- ✓ Climate and Energy Fund - Storage technologies (EUR 50 million in 2023)
- ✓ Climate and Energy Fund – Fossil free heat (EUR 10 million in 2023)
- ✓ Climate and Energy Fund - Climate neutral businesses (EUR 110 million in 2023)

Each year, **Climate and Energy Fund** programs continue to expand. **Storage technologies**, **Fossil-free heat**, and measures for achieving **Business climate neutrality** are new axes integrated in 2023 and therefore included in the inventory for the first time.

Two subsidies have been classified under Out of scope:

- ✗ Support for small and medium-sized companies with high fuel consumption: the inventory also includes a subsidy for ENIN – Emission-free commercial vehicles – Promotion of alternative, decarbonized forms of drive for companies with similar amounts. To avoid double counting, this subsidy has been removed from the current inventory.
- ✗ Renewable Energy Expansion Act Package: investments in renewable energy are documented through OeMAG publications, including Investment grants hydropower (small, < 10 MW), Investment grants hydropower (middle hydro 10 up to 20 MW), Investment grants PV, Investment grants power storage. To avoid double counting, this subsidy has been removed from the current inventory.

Estimations:

To calculate the Energy Tax Refund ('*Energieabgabenvergütung*') by energy carrier, the total amount has been broken down based on shares reported by Eurostat. No data is provided yet for 2023.

General observation

There is a high availability of data provided by the country regarding energy subsidies. Several publications provide detailed data, aggregating information into tables with clear figures spanning multiple years. However, a challenge arises from significant discrepancies in official publications, which report varying amounts for the same subsidy; these documents don't explicitly mention if reported amounts are budgets or paid amounts. Therefore, it can be hard to determine which value should be considered as the most accurate.

The federal government of Austria publishes each year an environmental promotion report (Umweltinvestitionen des Bundes). Data from 2022 has been collected, however the 2023 version has not been published yet as of July 2023. It is noteworthy how the allocation of subsidies to different categories within this report has evolved since 2020. Notably, there has been a significant increase in amounts allocated towards Renewable energy and efficient energy use, which accounted for 60% and 37% of the Environmental Support Act, respectively, in 2022.

A transparency database (Transparenzdatenbank) is regularly updated and covers regional and federal subsidies. Both federal, state and municipal subsidies are listed in this inventory. The amounts allocated to Renewable energy and energy efficiency measures have significantly increased, especially at the state and municipal levels. Since 2018, these allocations have quadrupled, reaching a total of EUR 239 million in 2023. However, the structure of the database makes it hard to understand how the numerous listed measures are articulated together (risk of overlap).

The energy tax refunds for coal, natural gas, petroleum, and electricity sharply decreased in 2022, reaching their lowest amount since 2015 and representing only 41% of the previous year's total. Examining the renewable energy supports, most feed-in tariffs (except of landfill gas and sewage gas or small hydropower) have significantly decreased since 2021. This decline is likely due to the shift towards premium market tariffs for newly installed plants above a certain size. Old feed-in-tariffs will get less relevant each year because plants reach the end of their subsidisation period. Additionally, in 2022, the Austrian legislature introduced the possibility to be paid by the market price instead of the feed-in-tariff. Therefore, many plant owners have opted-in in 2022, due to the high electricity prices surpassing feed-in tariffs. This effect could be reversed, as these plants can switch back to the tariff system (after a minimum time of 12 months) in the upcoming years.

For subsidies from the Climate and Energy Fund, most programs, particularly those for solar PV and mobility, have increased significantly, reaching their highest levels since being reported in this study.

Observation about FFS

The main policies to support fossil fuels are the Excise Tax Exemption for Oil-based Fossil Fuels (*Mineralölsteuerbefreiung*) and the Energy Tax Refund (*Energieabgabenvergütung*). In general, fossil fuel subsidies remain stable over the years, with no particular changes or decreasing signals.

Parallel to the introduction of CO2 pricing in July 2022, a Climate Bonus has been implemented in order to relieve citizens from the resulting cost increase in energy (i.e. additional financial burden resulting from the pricing of greenhouse gas emissions when using energy sources outside the EU emissions trading system). The subsidy has been increased due to high-inflation levels of 2022. Due to the fact that this measure targets fossil fuels decrease (CO2 pricing) and, taking into account that the country has an electricity mix with a relatively low carbon content, it has been considered as a subsidy to 'All energy' category. In total, Climate Bonus and anti-inflation bonus of 2022 amount to EUR 4.5 billion.

Policies implemented to address rising energy prices

Over 2022 and 2023, several measures have been published taking part in one of the three anti-inflation packages created by the Austrian government to support the production and consumption of electricity and gas. They include short-term and immediate relief measures and changes in the tax and transfer systems or in the structural infrastructure of the country.

Among the newly implemented measures, low-income households will be supported with an average of EUR 225, through the Housing and heating allowance. This grant, provided by the federal government to the states, is intended to ensure a socially equitable alleviation of increased housing costs.

Companies in energy intensive industries are also subsidized to relieve them from the energy cost burden. Additionally, an electricity cost compensation targets companies with a very high electricity consumption.

To increase the resilience of the economy, by reducing dependence on Russian natural gas, a measure has been created to support the gas diversification, by cushioning the additional costs of delivering natural gas from different non-Russian resources. Two further measures have been put in place to foster the strategic gas reserves in the country. Continuing with another measure that directly

appoints the energy structural system of the country, a relief from the substantially higher costs in connection with the physically caused grid losses will be provided.

Two measures have been created to support the conversion into emission-free vehicles, freight railways and their infrastructure, in a context where they both are losing competitiveness compared to road and fuel transport due to the high electricity prices and initial investment costs.

Finally, the Electricity Consumption Reduction Act aims to reduce electricity consumption by at least 5% on average during "peak periods", in order to reduce electricity prices and minimize fossil fuel consumption and the risk of supply shortages. On the date of writing of this report (14th June 2024), several measures created to address rising energy prices are planned to remain in place until at least 2025.

Belgium

Situation vs previous inventory

Six (6) new subsidies have been identified and added in the current inventory:

At the federal level:

- ✓ A Tax reduction for installing electric charging station (EUR 5.4 billion in 2023)
- ✓ The Capacity Remuneration Mechanism (EUR 18 million over 2022-2023)
- ✓ Fuel company cards (EUR 667 million in 2021, assumed constant in 2022 and 2023)

At Flanders-level:

- ✓ Financial support to investments in energy efficiency for residential and non-residential buildings: "My Renovation Premium" (EUR 32 million in 2023 and EUR 23 million in 2024)
- ✓ Grant aid to companies facing rising energy expenditure (EUR 125 million in 2022)

At Wallonia level:

- ✓ Premium for EE in residential buildings (EUR 1.7 million in 2023)

General observation

Data are spread among many institutions because of the constitutional organisation of the country (into federal and regional levels). At the federal level, an inventory of FFS has been released in May 2024 that gives a good overview of such measures. A yearly update of this document would be very helpful towards more transparency.

A significant improvement in the accessibility of information has been noted for Wallonia's 2024 budget. A document listing all expenditure is now published, with more detailed information than before.

Since April 2024, Wallonia has put online the "Cadastre des subventions de la Wallonie", which aims to list all subsidies in the region. For the moment, it is not easy to use, as the names of the subsidies are not clearly explained.

Flanders has had a subsidy register since 2023. However, not all subsidies are apparently on the register, or are easily identifiable.

The amount granted to the Social Energy Fund increased by 32% per year over 2021-2023. The amounts granted for social tariff for gas and electricity rose sharply in 2022 but returned to their previous levels in 2023. No other significant changes have been observed.

According to the 2021 annual report of the Belgian energy regulator, no contracts have been signed for Strategic Reserve (Capacity) between 2019 and 2021. In the long term, the Strategic reserve should be replaced by the Capacity Remuneration Mechanism.

Policies implemented to address rising energy prices

Significant amounts of subsidies have been budgeted/granted to address the high energy price context in Belgium since 2021. In 2023, twenty-one (21) subsidies identified in the inventory have been created or modified to relieve households and companies with rising energy prices.

Most of the identified subsidies stand at the federal level. The Government took significant measures to relieve households' energy bills, such as the temporary reduction of the VAT rate from 21% to 6% for electricity, gas and heat from March 2022 to March 2023 (EUR 2.1 billion). This reduction finally became permanent since April 2023 (up to EUR 1.3 billion for the rest of 2023).

In order to limit the rise in road fuels prices, a reduction in excises duties, equivalent to EUR 0.175 per litre at the pump, was voted, amounting to EUR 927 million and EUR 248 million in 2022 and Q1 2023. This measure ended in March 2023.

The social tariffs for gas and electricity were extended to a larger basis of low-income households. It represented a EUR 1.4 billion budget for 2022 and 2023 and ended in July 2023.

From November 2022 to March 2023, several "basic flat-rates/packages for gas and electricity" were distributed to anyone with a residential gas / electricity contract (and beneficiary of the social tariffs). The total budget amounts up to EUR 845 million in 2022 and EUR 1.4 billion in Q1 2023.

Several "premiums" were also distributed to support the households such as the EUR 100 federal heating premium, the EUR 300 allowance for households heating with heating oil and the EUR 250 pellets check.

An additional aid of EUR 37 million was granted to the Gas and Electricity Fund to deal with high prices and/or to promote measures aiming at reducing energy consumption in 2023. This grant increases the total budget of the fund to EUR 114 million.

On April 1, 2023, a reform on taxation on energy bills was enforced, changing notably the excise duty system on electricity and gas invoices. A new and increased excise rate was introduced on the different consumption blocks on residential contracts. The increase in excise rates is supposed to offset the permanent decrease in VAT down to 6% and contribute to balance the federal budget. At the end, the fiscal changes should lower the end clients' energy bills, according to the Belgian Ministry of Finance.

Bulgaria

Situation vs previous inventory

One (1) new subsidy has been identified and added to the current inventory:

- ✓ **Granting of a loan to Bulgargaz EAD for the provision of working capital to purchase natural gas** (BGN 800 million in 2022)

General observation

The data is sourced from several agencies. The Sustainable Energy Development Agency (SEEA) publishes information on the implementation of policies and measures to enhance energy efficiency, consolidating all related programs into a single annual report. Additionally, the Energy and Water Regulatory Commission (DKER) releases official data annually on Feed-in Tariffs and long-term Power Purchase Agreements (PPA). While these publications specify preferential market prices for certain

technologies, they do not detail the volume of electricity being supported or the grants allocated to each technology, necessitating further research to estimate amounts allocated.

In the last few years, the Support for energy efficiency in multifamily buildings has fallen substantially. This program has ended in 2020. The funds paid in 2021, 2022 and 2023 are only for the completion of contracts concluded in the previous years. It is replaced by the Support for sustainable energy renovation of the housing stock under the National Recovery and Sustainability Plan. However, the first funds under this procedure have not been disbursed by the end of 2023.

The National Recovery and Sustainability Plan for 2022-2026 has been introduced with subsidies announced for 9 categories regarding energy. In 2021-2022, the National Recovery and Sustainability Plan underwent significant changes and delays. No financing was delivered for energy efficiency and RES under this plan in 2023 and several projects have been terminated.

Regarding Feed-in-tariffs for hydro, wind, solar, biomass and biogas, market prices of electricity increased 3-4 times compared to the beginning of the year and exceeded the preferential price of all RES by end of 2021 and throughout 2022. Therefore, subsidies for Feed-in-tariffs in 2021 are significantly reduced and are not relevant for 2022. The same applies for long-term PPAs. In 2023, amounts collected from Feed-in-tariffs for wind and hydro remained irrelevant. Feed-in-tariffs for solar reached their highest level in recent years, with a 40% increase compared to the 2015-2020 average. Examining Feed-in tariffs for CHP and district heating, the substantial rise of natural gas prices resulted in several increases in the preferential electricity prices from gas-powered CHP, exceeding market electricity prices in the second half of 2022. In 2023, amounts allocated to these tariffs attained their highest levels in recent years, with a fourfold increase compared to the average for the 2015-2020 period.

Policies implemented to address rising energy prices

Several sets of measures were introduced in 2021 and 2022 to face the rising energy price (both measures were regrouped under the "Instruments to compensate companies due to the energy price rise" scheme:

- In October 2021, the Government announced a EUR 225 million subsidy to compensate companies due to the rise in electricity price (the subsidy was set to function between November-end December 2021),
- In December 2021, a new compensation scheme was granted to fund EUR 460 million until end of April 2022.

Throughout 2022 and 2023, measures addressing rising energy prices include:

- Program for compensation of non-domestic end customers of electricity;
- Program for compensating the costs of the operators of the electricity transmission and distribution networks for the purchase of the amounts of electrical energy needed for technological costs;
- Program for compensation of domestic customers of natural gas and district heating companies using natural gas as the main fuel with support of a fixed amount per MWh;
- Program for compensating the unforeseen expenses of the water and sanitation sector companies for consumed electrical energy;

The data for all compensations is BGN 6,4 billion in 2022 and BGN 270 million in 2023.

Croatia

Situation vs previous inventory

Several subsidies have been added to the database, most of them being disaggregated measures part of the Rising energy prices packages. Besides these measures, three (3) new or unreported subsidies have been identified and added in the current inventory:

- ✓ Reduction of the renewable energy charge for final customers of electricity (EUR 11 million in 2024)

General observation

For several measures, updated figures have been found for only 2022, and not for 2023, due to the fact that the public reports usually used were not yet published (official statistical data and reports in the field of excise taxation as well as the HROTE report on FiTs).

The currencies HRK or EUR are used alternately to communicate a measure (even on Croatian websites). This can sometimes make it difficult to compare different sources as the chosen exchange rates are not always communicated.

Some sites offer an English version of the web pages. This is a good step towards international transparency and clarity, but, to date, English pages contain much less information than the corresponding Croatian pages. Finally, with regards to the policies on the rising energy prices packages, it seems that the amounts shown on the Croatian page and on its English version are different, without any information to understand why[116].

Since February 2022, the country published regularly – about every 6 months– a new package of measures against rising energy prices. The document has become clearer with each iteration, and the amounts are clearly indicated. A period of application is not always mentioned, leaving the reader free to interpret. In addition, no summary report on the total budget spent/ planned for the successive rising energy prices packages has been found to date, and only new measures for the coming months including forecasted amounts are published. The different iterations of this document do not make it easy to track the history of a measure through previous packages.

Policies implemented to address rising energy prices

As mentioned above, the government has published several packages to address rising energy prices since February 2022. From more than EUR 3.2 billion totalled in 2022 for the first packages, the value of the sixth package unveiled in March 2024 was still about EUR 500 million.

These packages include different measures, including price caps on electricity and heating, gas cost support, aids for specific socio-economic categories (farmers, fishermen), support to renewables and energy efficiency. The packages address the most vulnerable energy customers.

Czechia

Situation vs previous inventory

Five subsidies have been newly identified and added in the current inventory:

- ✓ Energy Savings Tariff (over CZK 17 billion in 2022)
- ✓ Temporary electricity and gas support to companies (over CZK 5 billion in 2022-2023)
- ✓ ENERG ETS program under the Modernisation Fund (European program)

[116] Links are: Government of the Republic of Croatia - A strong, fair and comprehensive package of measures worth HRK 21 billion will protect everyone and enable a peaceful autumn and winter (Croatian) ; and Government of the Republic of Croatia - €2.8bn aid package presented (English).

- ✓ Program for the replacement of old boilers - lower income households (ongoing since June 2023)
- ✓ Renewable energy fee exemption (over 2022-2023)

In addition, details were added to the inventory about the decomposition of the different calls of the New Green Savings Programme.

General observation

Excise tax refunds of natural gas, mineral oil and electricity are published monthly by the Customs Administration (Celní správa).

Feed-in tariffs and feed-in premiums for renewable energies are published annually by the Czech electricity and gas market operator OTE, at present the 2023 figures have yet to be published. Feed-in-tariffs decreased by 42% in 2022 to over CZK 7 billion total, particularly because of the important decrease of the component allocated to solar installations (from CZK 12.8 billion in 2021 to CZK 4.4 billion in 2022). On the other hand, amounts allocated within the feed-in premiums increase by 16% between 2021 and 2022.

Excise tax refund for degraded mineral oils and mineral oil used as production feedstock has seen a massive increase from CZK 42 million (2019) to CZK 758 million (2020) and back to CZK 26 million (2021). It stayed stable since.

The Excise tax refund for mineral oils used in agriculture/forestry fell from CZK 2.4 billion in 2022 to CZK 0.9 billion in 2023.

The amounts allocated within the "New Green Savings Programme" are largely from the 3rd call of the program (CZK 1.8 billion over the CZK 2.4 billion of the total program in 2022). The 2nd call version of the program continues to include some small expenditures, as a result of honouring contracts approved during the regime, as such they can continue to pay out up to 15 years after their "end" date. On the other hand, 1st call expenditures stopped in 2021.

No data were found on the financial consequences of some part of the electricity tax exemption (ecological power, self-consumption of generators, network losses) since their inclusion in the database several years ago.

Policies implemented to address rising energy prices

Already in November 2021 Czechia introduced a VAT exemption for electricity and gas for November and December to relief households from the recent price increase. The cost of this measure is estimated at CZK 5.4 billion.

Furthermore, vulnerable households are offered a modified housing allowance, taking into account the increased costs for energy. Businesses can benefit from a state-backed guarantee with low interest rate.

Additionally, price caps on electricity and natural gas for domestic consumers have been implemented to help shield customers from extreme prices, particularly in the "heating season". This measure was intended to only be used during 2023, and at a budget of CZK 52.8 billion.

Finally, temporary electricity and gas support was implemented for companies over 2022-2023, for a total budget of over CZK 5.4 billion.

Cyprus

Situation vs previous inventory

One new subsidy was identified for the current inventory. Of the 24 subsidies identified, 10 have been determined as suspended, cancelled, or terminated.

Three subsidies (Subsidy paid to RES producers for solar, wind and biogas) were replaced in 2020 by a net-metering program. The Net-Metering program, titled 'Grant Scheme for the encouragement of the use of R.E.S. and energy savings in dwellings', aims to subsidize small scale renewables adoption by allowing private individuals to sell back their electricity to the grid at an agreed rate minus that which they consumed, allowing the replacement of the aforementioned subsidies. This measure is one of the four schemes currently being run by the Cyprus RES and Energy Conservation Fund, that was established to provide financial incentives in the form of state grants or subsidy for various investments:

- ✓ Grant Scheme for the encouragement of the use of R.E.S. and energy savings in dwellings, estimated to have a EUR 35 million budget for 2023 with and is expected to increase further to EUR 45 million in 2024.
- ✓ Grant scheme for RES installation in dwellings for self-consumption (PV) with an estimated allocation of EUR 35 million 2023.
- ✓ Grant - Grant to vulnerable consumers to replace energy-intensive domestic appliances with an estimated allocation of EUR 3.6 million in 2023.
- ✓ Grant scheme for the encouragement of energy upgrading by local authorities and wider public sector organisation with an estimated budget of EUR 4 million in 2023.

The other measures that have been removed are:

- ✗ Scheme for Subsidizing Replacement of Old Solar Thermal Water Heaters
- ✗ Fuel and heating tax relief of 7 cents/liter and 8.3 cents/liter
- ✗ Grant scheme for RES installation in dwellings for self-consumption (PV)
- ✗ Reduced electricity consumption VAT rate
- ✗ Support scheme for upgrading non-SMEs energy upgrade
- ✗ Grant - Grant to vulnerable consumers to replace energy-intensive domestic appliances
- ✗ Energy efficient street lighting

General observation

Data source and information are generally difficult to identify, rarely available in English and sometimes published in poor quality documents (e.g. scans that make machine translation unavailable). Brugel sources help to improve this issue, however due to the nature of Brugel's research these are often merely estimates rather than retrospective accounts of spending.

Cyprus's particularities as an island energy market mean that fossil fuel phase out is a more complex process than in mainland energy systems. As such, measures such as grants for energy storage systems to aid renewables integration are under debate and consideration by the national legislation, but grid-scale measures have not been approved as of yet.

Policies implemented to address rising energy prices

Three specifics measures have been announced to address rising energy prices. Firstly, the government announced a 10% discount on the electricity bill of all households from November 2021 to February 2022.

Fuel (gasoline and diesel) as well as heating materials had their taxes reduced by 7 and 8,3 cents per liter respectively for the period of March 2022-April 2024, with an estimated allocation for that period of EUR 51 million.

On 4 November 2021, the cabinet approved a reduction of VAT from 19% to 5% on electricity bills for vulnerable groups for six months, providing a total aid of EUR 64 million until August 2022.

All measures are estimated to have been terminated by the beginning of 2024.

Denmark

Situation vs previous inventory

No new subsidies have been identified and added to the current inventory.

Two (2) measures were deleted from the inventory due to a double count:

- ✗ Disconnection scheme and district heating pool
- ✗ Pool for technologies with reduction potential in agricultural sector

The Danish Ministry of Finance provides a transparent list of the national budget on its website, detailing data by each renewable energy source and program. The planned annual budget is provided four years in advance and is continuously updated. Thus, planned expenditures are available up to 2027 as of the time of writing this report.

Feed-in premiums for renewable energies were relatively stable until 2021, fluctuating around DKK 7 billion. These feed-in premiums have fallen from DKK 7.7 billion in 2020 to DKK 2.7 billion in 2021. Feed-in premiums for all renewable energy sources were at DKK 0 in 2021, with the exception of biogas. Feed-in tariffs for biogas increased from DKK 1.8 billion in 2020 to DKK 2.7 billion in 2021. There are no subsidies reported for 2021 because the specific financial accounts are new entries starting from 2022. In 2023, Feed-in premiums for renewable energies amounted to DKK 4.3 billion. Feed-in-premiums for hydropower, solar PV and decentralized cogeneration remained at DKK 0 in 2023.

The PSO system is phased out from 2022 and onwards. Thus, there will be no expenditures in relation to the PSO system.

For the period from 2021 to 2024, Denmark has introduced a new support scheme for renewable energy based on a tendering procedure and a reference price set in an auction. The aid is granted in the form of a two-way-contract-for difference premium and has a total maximum budget of approximately EUR 400 million (DKK 3 billion). The maximum duration of the aid is 20 years after the connection to the electricity grid. The new scheme replaces the previous top-up payment in the form of a premium added to the market price from the tenders in 2018 and 2019.

Danish citizens receive a Green Check as a tax-free compensation for increased energy and environment costs. The total amount of these green checks is following a decreasing trend, from DKK 4.3 billion in 2017 to DKK 1.6 billion in 2023. Since 2023, the green check is only given to pensioners.

For consumption (final energy consumption of the industry, agriculture and rail transport), data has been used from Eurostat instead of Odyssee. The reason for this is that the Odyssee database is only updated every three years, which is why more recent data can be found at Eurostat.

Observation about FFS

Since 2020, the tax exemption for investments in the extraction of fossil fuels in the North Sea have fallen from DKK 270 million in 2019 to EUR 0, even though the tax reduction is planned to last until 2025. The tax exemption for fuels (diesel), used for trains and other public transportation has been decreasing continuously since 2016, from DKK 467 million to DKK 130 million in 2023.

Policies implemented to address rising energy prices

The government presented several measures to respond to the recent rise in energy prices.

The government provided Compensation for high energy costs "heat check" of EUR 270 million (DKK 2 billion) to low-income households in 2022, to relieve these households from increasing energy costs.

With the Agreement on compensation of citizens for rising energy prices, the government introduced a decrease of the general electricity tax with 4.0 øre/kWh in the 4th quarter of 2022 and 4.3 øre/kWh in 2023. This will cost EUR 13.4 million (DKK 100 million).

With the Agreement on Winter Help, the government introduced a freezing scheme for households and businesses where a temporary price ceiling is introduced for electricity, gas and district heating for energy bills. In addition, a temporary relaxation of the general electricity tax to the EU's minimum rate of 0.8 øre per kWh was introduced in the first half of the year 2023, which cost approximately EUR 14.8 million in 2022 (DKK 110 million).

The government provides support for smaller merchants and other energy-exposed food businesses in small towns, energy-intensive cultural institutions, and energy-improving initiatives at cultural institutions for a total amount of EUR 16,8 million in 2023 (DKK 125 million), across these three subsidies.

Estonia

Situation vs previous inventory

One (1) new subsidy have been identified and added to the inventory:

- ✓ Emergency support to ensure food security and maintain the competitiveness of agriculture (compensation for energy costs for the food industry) (EUR 4.9 million in 2023)

Three (3) subsidies have been removed from the inventory (either out of scope or out of time frame, double count):

- ✗ Programme for sparsely populated areas – out of scope
- ✗ Reduced excise duty rate for gas-intensive consumers – double count
- ✗ Reimbursement of network charges – double count

General observation

The data is sourced from a multitude of agencies, with varying degrees of detail and availability. The Ministry of Finance details amount from tax exemptions measures in its annual publication. Elering provides comprehensive information on electricity production subsidies from renewable energy sources, with data broken down monthly in downloadable Excel sheets, facilitating efficient data collection. PRIA (Agricultural Registers and Information Board) details programs for energy measures in the agricultural and fishery sectors. While the website lists all available applications supporting rural development, it offers limited data on actual amounts allocated and does not specify the start or end dates of programs over several years.

Kredex provides information on renovation programs, including those with energy efficiency measures, but rarely specifies annual allocations, focusing instead on overall budgets. Neither PRIA nor Kredex publishes annual reports on funded programs. KIK (Environmental Investment Centre) consolidates programs for a wide range of measures and beneficiaries, including municipal district heating renovations, biomethane development, and energy efficiency in businesses and schools. KIK maintains an online database detailing subsidy categories and amounts delivered. However, the evolution of this database in the last few years complicates tracking allocated amounts and necessitates extensive additional research to identify programs under new and previous names. Both PRIA, Kredex and KIK, operate with national and EU funds, though clarifications regarding the specific funds used could be improved.

In October 2021, the Estonian Competition Authority proposed to the Ministry of Economic Affairs and Communications to review renewable energy subsidies in light of rising electricity prices. The Ministry declined this proposition arguing that changing support schemes retrospectively will send a bad message to the sector and have long term negative effects. Subsidies for electricity produced from renewable energy sources decreased from EUR 87 million in 2022 to EUR 73 million in 2023, primarily due to a significant reduction in the amount allocated to biomass-based CHP.

The amount granted for Energy saving and energy efficiency in the agricultural sector is EUR 3.2 million for 2023, whereas it exceeded EUR 10 million in previous years until 2021.

The Reconstruction grant 2022-2027 is the continuation of the program Apartment Building Renovation Grants (2015-2020). In 2023, EUR 80 million are planned for this subsidy and overall EUR 366 million are planned under this program.

Policies implemented to address rising energy prices

Several measures have been but in place to face rising energy prices:

Compensation for district heating for household consumers, in February and March 2022, the state automatically compensated the home consumer for 65% of the part of the district heating bill that exceeded the unit price level of October 2021. (EUR 13.5 million in 2022)

Natural gas support measure for business consumers, in February to March 2022, non-domestic consumers were compensated for the natural gas price of 2.74 euros per megawatt hour. (EUR 2.6 million in 2022)

Price limit of electricity bills for domestic consumers, in January to March 2022, a price ceiling for household consumers of 12 cents per kWh (+ sales tax) for electricity consumption up to 650 kw/h per month has been established. This means that if the price of electricity, either on the stock exchange or in a fixed-price package, exceeds 12 cents/kWh, the state paid for this part of the electricity bill. (EUR 9.3 million in 2022)

Price limit of gas bills for domestic consumers, in January to March 2022, a price ceiling for domestic consumers of 6.5 cents per kWh or 0.6792 EUR /m3 (+VAT) for gas consumption up to 2.75 MWh per month has been established. The part exceeding the price floor was compensated. (EUR 7.4 million in 2022)

Through **electricity network fee compensation for everyone**, the electricity network fee was reimbursed to the extent of 50% to all electricity consumers, from October until December 2021. From January to March 2022, institutions/companies would be compensated 100% of the electricity network fee. (EUR 40 million in 2021 and EUR 63.7 million in 2022)

Through **gas network fee compensation for everyone,** all gas consumers were reimbursed 100% of the gas network service fee from December 2021 to March 2022. (EUR 6.4 million in 2021 and EUR 15 million in 2022)

With **reimbursement of electricity, gas and district heating bills for families with up to average income,** some households were reimbursed for 80% of the price increase of a specific type of energy (electricity, gas or room heating) on the basis of electricity, gas and heating bills from September 2021 to April 2022. (EUR 14.7 million in 2022)

The government also introduced several measures to mitigate the negative effects in the field of fishing and agriculture caused by the conflict in Ukraine. The total cost was budgeted at EUR 6.7 million in 2023.

Finland

Situation vs previous inventory

One (1) new subsidy has been identified and added in the current inventory:

- ✓ Support for the electrification of energy-intensive industry (EUR 63 million in 2022 and EUR120 million in 2023)

General observation

Most of the data for Finland are gathered on a website that lists the draft budgets from 2021 onwards, with details and explanations provided for each of the measures in the budget. Yearly amount allocated, both for the given year and previous years in general, are reported. A budget document is also published, including excise duties and taxes. A great amount of data is provided by the government and its various departments.

The compensation for indirect costs of the EU ETS no longer exists, last expenditures were paid in 2021 to retroactively compensate for 2020 expenses, program officially ended at the end of 2020. This measure was replaced by the Support for the electrification of energy-intensive industry, which aims to offset the indirect costs caused by emissions trading on electricity prices for sectors that are particularly exposed to a significant risk of carbon leakage due to the additional costs of emissions trading in electricity prices.

Several subsidies have been implemented since 2021 within the Sustainable Growth Programme, totalling nearly EUR 295 million in 2022, and around 160 million in 2023.

The costs of the reduced electricity tax for industry, agriculture, server halls, heat pumps and electrical boilers has increased from 2017 (EUR 590 million) to 2023 (EUR 749 million). The increase from 2020 to 2021 (+46%) could be explained by the addition of heat pumps and electrical boilers, as well as a larger amount of server halls to this subsidy.

Tax reduction on paraffinic diesel decreased from EUR 100 million in 2020 to 30 million in 2022. This subsidy seems to have been deleted since 2023, as planned by the government.

Investment aid (Energiatuki) is provided across several energy types, however figures are difficult to find, particularly in a disaggregated form (per energy carrier). The governmental budget granted a smaller expenditure in 2022, down from EUR 148 million in 2021 to EUR 99 million in 2022. The government has amended the Decree on the General Conditions for Granting Energy Aid (Energiatuki) to change the conditions for the period 2023-2027. It also added support for hydropower projects to the energy subsidies. The planned amount for 2023 is EUR121 million.

Policies implemented to address rising energy prices

Unlike many other MSs, very few energy subsidies have been implemented to face rising energy price. The temporary increase in the maximum amount of the commuter allowance (from EUR 7,000 to EUR 8,400), has been extended through 2023. For this measure, EUR 166 million have been earmarked by the government over 2022-2023. This measure has not been included as part of the subsidies inventory, because it applies to all forms of transport and therefore the energy part cannot be quantified.

France

Situation vs previous inventory

The measures to stem the rise in energy prices (detailed below) continue to have a strong impact on energy subsidies: they cost EUR 37.6 billion in 2022, EUR 34.2 billion in 2023 and are expected to cost EUR 14.5 billion in 2024. However, their cost is EUR 3.4 billion lower for 2022 than forecast in the previous edition, and EUR 13 billion lower for 2023 (update of official estimates).

Estimates of public service energy charges and actual charges have been revised several times by the regulator (CRE), with significant differences each time. In 2022, for the first time since the introduction of support for renewable energies, these charges represent a negative amount, i.e. a revenue for the State budget. This is mainly due to the increase in wholesale prices on the electricity markets. Indeed, when the wholesale price on the electricity markets exceeds the reference tariff set in the support contracts, the difference between the two is paid back to the State. On the contrary, when the wholesale price on the electricity markets is lower than this guaranteed tariff, the State compensates the difference.

Contracts for difference supporting electrical renewables and biomethane injection should have yielded EUR 11.5 billion in 2022, but they only brought in EUR 1.8 billion. An initial estimate for 2023 predicted revenue of EUR 19.3 billion, the most recent forecast only EUR 3.9 billion. However, in this analysis, these negative amounts cannot be considered as subsidies and are therefore set to 0 in the database. The CRE's corrections therefore have little influence on our analysis, except for photovoltaics (cost of EUR 1.1 billion in 2022), biomethane (cost of EUR 79 million in 2022 and of EUR 727 million in 2023), and cogeneration (additional cost of EUR 374 million in 2022).

In 2015, France decided to cap nuclear energy production capacity to diversify its energy sources. EDF was forced to close the Fessenheim plant, and the damage linked to the cap was covered by a compensatory protocol between the State and the operator. The protocol provides for several mechanisms for adjusting the amount of compensation: the fixed part, amounting to EUR 370 million, was paid in full on 14 December 2020; the amount of the variable part, determined by parameters set in the protocol, will be paid later and is yet uncertain. In 2021, EUR 37 million should be paid to EDF and no additional credits have been opened for 2022 and 2023.

The following tax expense has been removed from the inventory:

- ✗ Application to the department of Mayotte and in Guadeloupe, Guyana, Martinique and Reunion, instead of the domestic consumption tax on energy products, of the special consumption tax, with lower rates and a narrower scope (EUR 962 million in 2021), as this expense is in the scope but considered as a double count as long as we have no further information.

New subsidies have been added to the inventory:

- ✓ Capacity market - non hydro renewable capacity has been split into 7 subsidies: biogas, solid biomass, municipal solid waste, wind onshore, wind offshore, solar and other renewables, without affecting the total amount;
- ✓ "Electricity shock absorber" scheme - Assistance for businesses to pay their electricity bills (EUR 2.6 billion in 2023, EUR 0.8 billion in 2024).

General observation

The amounts for the recent years are well documented, often with actual numbers and otherwise with budget figures.

Policies implemented to address rising energy prices

The Resilience Plan took emergency measures following the conflict in Ukraine, among which was an exceptional discount on fuel prices at the pump from 1 April 2022. Initially announced to last 4 months (and cost EUR 3 billion), it has been extended until the end of the year (finally costing EUR 7.9 billion in 2022). This discount has been replaced in 2023 by an allowance for fuel expenses

(*indemnité carburant*), set at EUR 100 per person for the whole year, from which only the 10 million lowest income workers who use their car to get to work can benefit. The cost of the measure was estimated at EUR 1.3 billion in 2023.

Before the Ukrainian crisis, exceptional measures had already been taken to address rising energy price. In 2021, the public eligible for the energy vouchers aimed at households in fuel poverty (*chèque énergie),* created in 2018 to replace social energy tariffs, was extended from 3.7 million to 5.8 million households, and an additional exceptional voucher of EUR 100 was attributed to all beneficiaries. In addition to the standard scheme, another exceptional voucher was granted to 12 million households in 2022, as well as another exceptional voucher for households heating their dwelling with wood (2.6 million households) or fuel oil, for an additional cost of EUR 1.2 billion. The cost of the *chèque énergie* thus reached EUR 2 billion in 2022 (EUR 670 million in 2020, EUR 1.1 billion in 2021).

The Government also decided in 2021 to took measures to protect gas and electricity consumers from price rising by capping the regulated tariffs (*bouclier tarifaire*). For gas, individuals and small condominiums (consuming less than 150 MWh/year) have benefited from a tariff freeze between November 2021 and December 2022. The measure has been extended until December 2023 and limited the increase in regulated natural gas sales tariffs to an average of 15% including tax. Its cost is estimated at EUR 9.9 billion (EUR 400 million in 2021, EUR 6.7 billion in 2022, EUR 2.3 billion in 2023, EUR 500 million in 2024). Concerning electricity, the increase in regulated tariffs has been capped at 4% including tax between 1 February 2022 and 31 January 2023. From 1 February 2023, the increase is capped at an average of 15% including tax for the following year. To this end, the domestic consumption tax on electricity consumption (TICFE) has been reduced, as well as the municipal tax on electricity consumption (TCCFE) in 2023. The cost of this measure is estimated at EUR 54.6 billion (EUR 18.2 billion in 2022, EUR 24.7 billion in 2023, EUR 11.7 billion in 2024).

In addition to the tariff shield, in January 2023 the government created a scheme to cushion rising electricity prices for businesses by helping them to pay their electricity bills. The government directly covers half the extra cost of electricity bills (when the price exceeds EUR 180/MWh and up to a limit of EUR 500/MWh excluding tax and network tariffs), for small and medium-sized businesses and local authorities that request it. Suppliers are compensated directly by the government. Very small businesses also benefit from an electricity price cap guarantee under certain conditions. This measure has been extended to 2024 but revised downwards. The cost of this scheme is estimated at EUR 3.4 billion (EUR 2.6 billion in 2023, EUR 800 million in 2024).

The abolition of the tax niche on off-road diesel, scheduled for 2023, has been postponed. It still cost more than EUR 1 billion in 2023 and is expected to cost as much in 2024.

Germany

Situation vs previous inventory

In total, ten (10) new or unreported subsidies have been identified and added in the current inventory, the majority of collected amounts are reported in State Aids:

- ✓ Reactivation of hard coal and lignite power plants from security standby (EUR 450 million in 2023)
- ✓ Lignite phase-out (EUR 2.6 bn over 2020-2029)
- ✓ Investments in the decarbonisation of industrial production processes (EUR 2.6 bn in 2024)
- ✓ Grants for support of measures for energetic use of manure and for emission reduction in manure management (EUR 0.13 million in 2022, EUR 28.5 million in 2023)
- ✓ Production of green hydrogen in Just Transition Fund (JTF) regions (EUR 260 million budgeted over 2024-2025, for information)
- ✓ European Hydrogen Bank Auctions-as-a-Service (total budget over 2024-2040 is EUR 350 million)

- ✓ Replacement of registered capital in SEFE GmbH/ Recapitalisation of SEFE GmbH (EUR 6.3 billion in 2022)
- ✓ Carbon leakage compensation in the context of the German fuel emission trading system (EUR 274 million in 2022, EUR 329 million in 2023; total budget EUR 6.5 billion over 2022 - 2030)
- ✓ Aid for the construction and operation of the Brunsbüttel on-shore LNG Terminal (EUR 40 million over 2023-2038)
- ✓ H2Global measure for the market ramp-up of green hydrogen and its derivatives in Europe" (EUR 900 million over 2023-2030)

Two (2) subsidies reported in the previous inventory exercise are now considered as ended, as they have been officially merged with the Federal support for efficient buildings subsidy: Promotion of single measures for the use of renewable energy () and CO2 building restoration programme and incentive programme for energy efficiency. Amounts are now reported under Federal support for efficient buildings (EUR 6.5 billion in 2022, EUR 16.9 billion in 2023).

Three (3) subsidies reported in the previous inventory exercise has been merged with another identified subsidy: Second heating cost subsidy for low-income households merged with One-time heating cost subsidy for low-income households, as it can be seen as an extension of the first one. The Charging infrastructure for e-mobility in Germany and Publicly accessible charging infrastructure for electric vehicles in Germany measures have been merged under Subsidies for the construction of charging infrastructure for electric vehicles in Germany as the different measures are reported under a common subsidy and corresponding aggregated amount.

Estimations:

For certain subsidies that do not relate particularly to a single energy carrier, we have broken down the total amount based on the energy mix/electricity mix. The energy mix data was taken from the "evaluation tables", published by AGEB AG Energiebilanzen e.V. This method was used, for example, for the Energy tax exemption and reduction for electricity generation. However, the energy mix/electricity mix for 2022 is still provisional and the 2023's data has not yet been published, so we have estimated the amounts using the shares of the provisional 2022's energy mix.

Data collection boundaries:

No specific investigation has been led in the current inventory to collect additional federal subsidies in the mobility sector (e.g. electromobility, alternative fuels, etc.). Likewise, we focused the subsidy data research at the federal level only, leaving the regional level (i.e. Länder) aside.

General observation

There is a good availability and transparency on energy subsidies reporting in the country. With a good level of details. The Federal Office of Environment (Umweltbundesamt) releases a report on potentially environmental harmful subsidies ("*Umweltschädliche Subventionen in Deutschland*"), however with an irregular frequency. The latest report was published in October 2021. Every two years, the ministry of finance releases the federal subsidies report (Subventionsbericht), covering the actual subsidy amount for the past two years and estimates for the current and the following year. The last report was published in September 2023. However, the said document does not report all the subsidies, especially those related to EEG payments and exemptions/reductions, as they were not financed from the federal budget, but previously from the EEG-surcharge, and since July 2022, from the Climate and Transformation Fund (KTF), which is financed by revenues from auctions of certificates of the European Emission Trading System and the 2021 introduced carbon tax. This means that's the funding source has shifted from electricity consumers to KTF, with no impact on the amount paid to power plant operators related to the EEG feed-in tariffs/premiums.

In 2022, FiTs and premiums for renewables amounted to more than EUR 20 billion, with 8.6 billion only for solar power.

As part of the "Easter Package", on January 1, 2023, the EEG 2023 has come into force and amends the previous EEG versions with the strong ambition to accelerate the expansion of renewable energies and reach national energy and climate goals. Among other things, higher remuneration rates for new photovoltaic systems on rooftops have been enforced; innovative concepts for combining renewables with local hydrogen-based electricity storage and new RES auctions planning/volumes with new rules has been detailed in the law.

As part of the "Easter Package", the Offshore Wind Energy Act (WindSeeG) 2023 has also been amended to also accelerate the development of offshore wind projects. EUR 1.5 billion aid is notified to be allocated for the 2023-2026 period.

As part of the "Easter Package", the Energy Financing Act (EnFG) 2022, known in draft form as the Energy Surcharge Act (EnUG) brings together all the energy-related surcharges (i.e. EEG surcharge, KWK and Offshore surcharges) and rules out the abolition of the EEG surcharge for end consumers from July 2022. It also prolongs and redefines the surcharge reduction rules for electricity-intensive industry, railway industry and implements a surcharge exemption for green hydrogen-producing companies, starting from 2023.

The federal support for efficient buildings (***Bundesförderung für effiziente Gebäude "BEG"***) has been launched in 2021 and remains a significant federal grant amounting to EUR 6.5 billion in 2022. It combines previous programmes, such as the CO_2 building restoration programme and incentive programme for energy efficiency, the promotion of heating system optimization via highly efficient heat pumps and the promotion of single measures for the use of renewable energy for heating. The building sector has been increasingly supported, and this trend is accelerating: for 2023, EUR 16.8 billion are allocated to BEG (new BEG and out-payments from old programmes), compared to EUR around 2.6 billion in 2020.

Also, in the transport sector, the subsidies for charging infrastructure for electric vehicles have increased from EUR 11.5 million in 2019 to EUR 480 billion in 2022 and EUR 1.9 billion in 2023.

Besides, the government introduced a programme to decarbonise the industry ("climate protection agreements ") in 2021. The allocated amounts for this programme in 2022 are EUR 1.2 billion, and EUR 925 million in 2023.

Within the context of the Russian-Ukrainian crisis and its aftermath on the German energy security, the German government approved the provision of EUR 17 billion rescue package to bail-out utility company Uniper. In early September 2022, Uniper reported a EUR 12 billion loss from the energy stock that prompted the German government to buy a majority share of the company. After the publication of the new recovery package (29 September 2022), the company has been fully nationalized. The total provision included on this package finally rose up to EUR 34.5 billion, cleared by the European Commission (December 2022).

Likewise, in June 2022, a EUR 7.5 billion loan has been granted by the KfW to SEFE GmbH (ex-Gazprom Germania) to save the company from insolvency linked to Russian sanctions. It will be ensured that the loan can only be used for SEFE's business operations and to maintain gas supplies and cannot flow to Russia. In a next step, the Federal Government acquired all shares in SEFE by way of a capital cut, with injection of EUR 225 million in November 2022.

Observation about FFS

The subsidy for the selling of German coal to the electricity grid and steel industry as well as decommissioning costs (Zuschüsse für den Absatz deutscher Steinkohle zur Verstromung, zum Absatz an die Stahlindustrie sowie zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen) has followed a decreasing trend that was interrupted by a strong peak in 2020 (EUR1.9 billion). The peak is be explained by on-time payments to manage contaminated sites. For 2021 and 2022 payments of EUR 265 million are budgeted, while in 2017 the budget was at EUR1 billion. The continuous reduction is the result of the phase-out of coal subsidies by the end of

2018. With the closure of the last two hoard coal mines in 2018, subsidies for the sale of coal have ended and since then ongoing grants are only provided for decommissioning costs.

The most important fossil fuel subsidy in budget terms is the concession fee reduction and exemption for natural gas (Sondervertragskunden bei den Konzessionsabgaben) at EUR 3.1 billion in 2022, with a decrease to EUR 1 billion in 2023. Other fossil fuel subsidies, most of which take the form of benefits in tax expenditures, have remained constant over the years.

The electricity price compensation for companies for indirect costs from the EU-ETS has almost quadrupled between 2019 (EUR 218 million) and 2022 (EUR 828 million), and nearly quadrupled in 2023 (EUR 3 billion). The compensation is always paid for the costs of the previous year. The increase could be explained by the rising certificate prices. The electricity price compensation for companies for indirect costs from the EU-ETS for the next period: 2021-2030 has been notified to the European Commission and cleared in August 2022 for a total estimated budget of EUR 27.5 billion over 2021-2030. The measure will be financed by the Energy & Climate fund of the federal budget.

Policies implemented to address rising energy prices

2022 has been an exceptional year with significant amounts of subsidies to address the high energy context in Germany. The German State budgeted three (3) different "relief packages" (Entlastungspaket I, II & III) including strict energy-related aid programs and economy/inflation-related or specific ("tailor-made'") measures. According to the IFO Institute[117], the Government's three relief packages will cost around EUR 135 billion over 2022-2024 (energy and non-energy related subsidies included).

Besides the relief packages, the 2022 Tax Relief Act was approved by the Federal Parliament in May 2022, including among other things the Energy Tax Reduction Act ("EnergieStSenkG").

Eventually, in September 2022, the Federal Government announced a EUR 200 billion so-called "economic protective shield" ("Abwehrschirm"), including a major energy-related subsidy to cap the prices of gas and electricity ("Gas- und Strompreisbremse") up to EUR 99 billion.

Nota Bene: In our current inventory, we adopted a conservative approach to strictly include energy-related subsidies and exclude low income/economy/inflation/tailor-made subsidies. Therefore, we did not list all the aid measures from the consecutive relief packages, Tax Relief Act and Economic Protective Shield.

Greece

Situation vs previous inventory

Amounts of Service of General Interest (SGI) and Social Electricity Tariff for Domestic vulnerable Customers since 2018 have been revised and updated thanks to exchange with DEDDIE… In 2022, SGI decreased by 3% to EUR 583 million compared to EUR 601 million in 2021. Amount for 2023 have not been published yet by DEDDIE. SGI amounts have been relatively stable on the 2018-2021 period.

Three (3) new or unreported subsidies have been added to the inventory:

- ✓ Save for Business 2024 (EUR 177 million planned in 2024)
- ✓ Save 2024 – for households (EUR 422 million in 2023, EUR 106 million budgeted in 2024)

[117] https://www.ifo.de/en/press-release/2022-11-09/relief-packages-cost-german-government-eur-135-billion

- ✓ IPCEI on Batteries 'EuBatIn' (around EUR 50 million in 2021)

Three measures were deleted due to a double count:

- ✗ Natural gas bill subsidies - January 2022 package
- ✗ Electricity bill subsidies - January 2022 package – Business
- ✗ Electricity bill subsidies January 2022 package - Households

General observations

Information on measures can be found in State Budgets and Tax expenditure reports, but the country has not yet developed a dedicated subsidies report. Information is barely available in English, which makes collection difficult.

After a 25% decrease in 2022 (EUR 79 million), excise tax exemption on fossil fuels (including coal, natural gas, fuels used in transports, in agriculture, and for heating purposes) increased by 3% to EUR 81 million in 2023.

Heat has been significantly subsidized, with around EUR 525 million allocated in 2022, and EUR 370 million identified in 2023. Especially in 2022, heating allowance for households for space heating purposes (fossil fuels) surged by 65% to EUR 269 million (EUR163 million in 2021). In 2023, it decreased by 35% to EUR 175 million.

Amounts of Service of General Interest (SGI) and Social Electricity Tariff for Domestic vulnerable Customers since 2018 corresponds to amounts validated through exchange with DEDDIE from last year. Despite recurring effort, no updated figures were found.

Policies implemented to address rising energy prices

Policies implemented to address rising energy price are estimated to have cost around EUR 11.2 billion in 2022 and amounted to around EUR 1.3 billion in 2023. In 2022, the EUR 11.2 billion includes approximately EUR 5.5 billion to limit electricity prices to businesses, and a further EUR 3.5 billion to limit prices for households. Subsidies to power bills for households have been extended to November 2023.

The total energy subsidization package included a further 13 subsidies, listed with their amounts here:

1. Power to vulnerable households (EUR 100 million in 2022)
2. Tax return on excise duty for diesel fuel used by farmers (EUR 72 million in 2022)
3. Subsidy on natural gas consumption by households (EUR 94 million in2022)
4. Subsidy on natural gas consumption by businesses (EUR 246 million in2022)
5. Subsidy on 80% of the rise of electricity costs for rural residents (EUR 28 million in 2021)
6. Additional cost of CG operators for electricity and fuel (EUR 500 million in2022)
7. Prepaid fuel cards program (EUR 300 million in2022)
8. Diesel subsidy of 12 cents/litre (EUR 210 million in2022)
9. Tax driver grants of EUR 200 to offset elevated fuel prices (EUR 5 million in2022)
10. Refund of 60% of the increase in electricity costs for the first residence of households with an income of up to EUR 45,000 (EUR 296 million in2022)
11. Heating oil subsidy (20 cents per litre) (EUR 94 million in2022)12. Subsidy on household electricity consumption (EUR 3.5 billion in2022)13. Subsidy on business electricity consumption (EUR 5.5 billion in2022)

According to publicly available information, all identified subsidies implemented to address rising energy process should be discontinued by 2024.

Hungary

Situation vs previous inventory

One (1) new subsidy has been identified and added to the inventory:

- ✓ Home Renovation Program for the Implementation of Residential Energy Efficiency Investments (starting in 2024)

General observation

The data is sourced for a large portion of subsidies in the inventory from multi-year programmes, using the total budget figures. Due to the absence of detailed annual allocation amounts, estimated amounts are obtained by distributing the total budget evenly across the programme's duration. Linguistic barrier continues to be an issue, with Hungarian governmental websites lacking significant English language infrastructure and documentation. Furthermore, technical issues arise with using research links from past years as government websites tend to change and otherwise reorganize in such a way that makes links useless.

Publications from the Ministry of Finance are used for tax exemptions amounts, which provide clear annual tables for each programme detailing maximum and minimum values to be allocated. Tax expenditures are estimated by averaging these two values. The consistency of these documents across years facilitates the data collection process.

Some data is also sourced from the OECD database due to the lack of alternative sources. Notably, this data sometimes shows anomalous changes in expenditure, such as a spike in household utility subsidy expenditures in 2020, which was over ten times higher than in 2019. A 75% decrease in the expenditures of district heating units was observed in 2021. The data for the nuclear waste and powerplant policy also contained some anomalies, namely a large and temporary increase in the budget of the country's nuclear regulator by 300% for 2020, and 200% for 2021 when compared to 2022 and 2019 figures.

To date, many of the reported subsidies are still unknown for 2022 and beyond. A disaggregated overview of the Renewable Energy Support System (METÁR[118]) and feed-in tariffs (KÁT[119]) is not available for 2022 and 2023. From July 2021 to March 2023, no KÁT/ METÁR has been paid due to negative spread between subsidies and electricity prices on the market. Furthermore, it is important to make the distinction between KÁT and METÁR as separate systems. KÁT denotes the out-of-date Feed-in tariffs system that used to be the operating practice for alternative energy projects, this program began to be phased out at the beginning of 2017, after which date no new contracts would be written. Existing contracts which pre-date this however will be honoured, hence why KÁT continues to exist into 2023. METÁR acts as the new system for projects completed since the beginning of 2017, which uses a Feed-in premiums compensation method.

Further support to energy efficiency for businesses and households is in place from 2021 respectively through grants (EEEOP Plus) and soft loans (Green Home Program), totalling HUF 480 million in 2023.

Policies implemented to address rising energy prices

In November 2021, the government created a price-ceiling of EUR 1.30 per litre on petrol and diesel for consumer price protection. This Fuel price cap was extended until December 2022, totalling HUF 78 million in 2022 and HUF 338 million in 2023. It ended due to difficulties with importing fuel. Existing programs which capped residential gas and electricity prices have been reaffirmed, though

[118] METÁR: Megújuló Támogatási Rendszer

[119] KÁT: Kötelező átvételi tarifa

prices have been raised once certain usage limits are met (e.g., using more than a certain amount of kWh of electricity or gas in a year).

Italy

Situation vs previous inventory

During the previous inventory exercise, 29 subsidies had been added to the database and updated for the current inventory:

- ✓ Measures to contain the effects of price increases in the electricity and natural gas sectors with the strengthening of the electricity and gas social bonus (DL2021/ n. 130, Art.3 & Art. 5)
- ✓ Important Project of Common European Interest (IPCEI) on Batteries
- ✓ Urgent measures to contain the effects of energy price increases - Price cap on gas distribution (cut on gas VAT)
- ✓ Capacity market
- ✓ Urgent measures to [...] contain the effects of price increases in the electricity sector - Zeroing of system charges for electricity users (>16.5 kv)
- ✓ Zeroing of system charges for the electricity sector
- ✓ Urgent measures to [...] contain the effects of price increases in the electricity sector - Tax credit for energy-intensive companies
- ✓ Extraordinary contribution, in the form of a tax credit, in favor of companies with a high consumption of natural gas
- ✓ Extraordinary contribution, in the form of a tax credit, in favor of companies with a high consumption of electricity
- ✓ Urgent measures to counter the economic and humanitarian effects of the Ukrainian crisis (DL 2022 / n. 21) - Increase in the tax credit in favor of energy-intensive companies and companies with a high consumption of natural gas (Art. 5)
- ✓ Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis. (DL2022/n. 50) - Increase in tax credits in favor of companies for the purchase of electricity and natural gas (Art. 2)
- ✓ Contribution, in the form of a tax credit, in favor of companies for the purchase of natural gas
- ✓ Contribution, in the form of a tax credit, in favor of companies for the purchase of electricity
- ✓ Further urgent measures in the field of national energy policy, business productivity, social policies and for the implementation of the National Recovery and Resilience Plan (PNRR) (DL2022/ n.144) - Extraordinary contribution, in the form of a tax credit, in favor of companies for the purchase of electricity and natural gas (Art. 1)
- ✓ Urgent support measures in the energy sector and public finance (DL2022/n. 176) - Extraordinary contribution, in the form of a tax credit, in favor of companies for the purchase of electricity and natural gas, for the month of December 2022
- ✓ Interministerial decree Ministry of Finance (MEF) - Ministry of Ecological Transition (MITE) (Decree of March 18, 2022) - Reduction of taxes on certain energy products used as fuel
- ✓ Interministerial decree Ministry of Finance (MEF) - Ministry of Ecological Transition (MITE) (Decree of April 6, 2022) - Reduction of taxes on certain energy products used as fuel
- ✓ Reduction of taxes on certain energy products used as fuel
- ✓ Urgent measures regarding excise duties on fuel and support for local authorities and the territories of the Marche affected by exceptional meteorological events (DL2022/n.179) - Provisions regarding excise duties on certain fuels (Art.1)
- ✓ EUR 450m support scheme for the production of renewable hydrogen to foster the transition to a net-zero economy

- ✓ Urgent measures for the containment of electricity and natural gas costs, for the development of renewable energies and for the relaunch of industrial policies (DL 2022 /n.17) - Contribution in the form of a tax credit for energy efficiency in the southern regions (Art.14)
- ✓ Urgent measures for the containment of electricity and natural gas costs, for the development of renewable energies and for the relaunch of industrial policies (DL 2022/ n. 17) - Interventions in favor of the road haulage sector (Art. 6)
- ✓ Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis (DL 2022/n. 50) - Tax credit for road hauliers and measures in favor of companies providing bus passenger transport services (Art. 3)
- ✓ Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis (DL2022/ n.50) - Provisions to accelerate the storage of natural gas (Art. 5 bis)
- ✓ Urgent measures in the field of energy, water emergency, social and industrial policies (DL2022/ n.115) - Urgent provisions on transport (Art. 9)
- ✓ Further urgent measures in the field of national energy policy, business productivity, social policies and for the implementation of the National Recovery and Resilience Plan (PNRR). (DL2022/n.144) - Urgent provisions on local and regional public transport (Art. 6)
- ✓ Further urgent measures in the field of national energy policy, business productivity, social policies and for the implementation of the National Recovery and Resilience Plan (PNRR) (DL2022/n.144) - Provisions for the support of the transport sector (Art. 14)
- ✓ Urgent measures to counter the economic and humanitarian effects of the Ukrainian crisis (DL 2022 / n. 21) - Fuel bonus for employees (Art. 2)
- ✓ Support scheme for the promotion of biomethane

Out of those 29 subsidies, 26 were related to the rising energy price context and notably enacted by different "urgent aid decrees" (Aiuti Decreti):

Decreto-legge del 17/05/2022 n. 50 – "Aiuti Decreto" on urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis

Decreto-legge del 09/08/2022 n. 115 – "Aiuti-bis Decreto" on urgent measures in the field of energy, water emergency, social and industrial policies

Decreto-legge del 23/09/2022 n. 144 – "Aiuti-ter Decreto" on further urgent measures in the field of national energy policy, enterprise productivity, social policies and for the implementation of the National Recovery and Resilience Plan (PNRR)

Decreto-legge del 18/11/2022 n.176 – "Aiuti -quater Decreto" on urgent support measures in the energy and public finance sector.

In 2024, 4 new subsidies have been identified and added to the inventory:

- ✓ Support for the development of Renewable Energy Communities (EUR 5.7 billion in total), including two types of subsidies: a feed-in-premium scheme (EUR 3.5 billion over 20 years) and grants (EUR 2.2 billion over 2024-2025)
- ✓ National Recovery and Resilience Plan - Support for the promotion of agrivoltaic installations (EUR 1.6 billion over 2023-2043), including two types of subsidies as well: a contract for difference and grants
- ✓ Italian state aid scheme to support the development of electricity storage systems (EUR 17.7 billion over 2023-2033)
- ✓ Second Important Project of Common European Interest (IPCEI) on Batteries (around EUR 530 million)

Highlights

Significant increases/decreases have been noticed since the last inventory, including (non-exhaustive list):

- The *general costs of the electricity system* were cancelled in 2022 (from EUR 1.6 billion in total in 2021). Some components of the subsidy started again in 2023, but those for nuclear decommissioning remain cancelled.
- *Net Metering* subsidy continued to increase and doubled (from EUR 602 million in 2021 to EUR 1.2 billion in 2022), mainly because of the increase in energy prices in 2022.
- *"Ritiro Dedicato"* subsidy increased a lot (from EUR 975 million in 2021 to EUR 2.1 billion in 2022), particularly because of a huge increase of the Solar PV component (from EUR 658 million in 2021 to EUR 1.5 billion in 2022)
- *"CIP6"* subsidy was cancelled as well in 2022 (from EUR 82 million in 2021)

In the Ministry of Economy and Finance's 2024 budget, some important increases/decreases were noted compared to 2023 amounts:

- Tax deduction on building retrofit measures (EUR 11.6 billion budgeted in 2024 from EUR 4.7 billion in 2023)
- Deductible on product tax rates of natural gas and oil (EUR 102 million budgeted in 2024 from EUR 52 million in 2023)
- Excise tax reduction on natural gas for industrial uses (EUR 28.7 million budgeted in 2024 from EUR 8 million in 2023)

General observation

Italy has put strong effort on transparency and can be considered as a leading country in terms of transparency. For example, since 2017 the country (Ministero dell'Ambiente) has published regularly a catalogue of environmentally friendly and environmentally harmful subsidies.

Ireland

Situation vs previous inventory

Six (6) new or unreported subsidies have been identified and added to the inventory:

- ✓ Renewable Energy Support Scheme Communities (EUR 100,000 in 2022)
- ✓ Micro-generation Support Scheme (MSS), including two types of subsidies:
  - Clean Export Premium : overall EUR 47.2 million over 2022-2026
  - Capital Grants : overall EUR 62.7 million over 2022-2026
- ✓ Non-Domestic Microgeneration (NDMG) (EUR 137,000 in 2022)
- ✓ The third Electricity Costs Emergency Benefits Scheme (overall EUR 900 million over 2023-2024)
- ✓ Home Energy Upgrade Loan Scheme (EUR 500 million over 2024-2026)
- ✓ Programme for the EU Just Transition Fund (EUR 6 million in 2023)

General observation

The consolidated 2022 values show that energy subsidies more than doubled between 2021 and 2022, mainly due to the measures implemented to address the rise in energy prices.

In 2023, PSO levies for the subsidies Renewable Energy Feed-in Tariff (REFIT) remain at a low level compared to 2020, from when they decreased significantly from EUR 354 million to EUR 47 million in 2021 and finally to EUR 38.3 million in 2022 and 10.4 million in 2023. This is most probably related to increasing electricity price on the spot market.

The negative PSO Levy for this year arises from the design of the Renewable Energy Support Scheme (RESS) renewable support scheme, which means that renewable generators return market revenues above a certain level to Levy customers, and also from the return of overpayments from a previous period when wholesale prices and revenues increased above forecast levels. RESS also dropped significantly (-81%) from EUR -314 million in 2022 to EUR -59 million in 2023.

Since 2020, the subsidies for Natural Gas Carbon Tax (NGCT) Exemption and Solid Fuel Carbon Tax (SFCT) Exemption could not be updated in the inventory. No data has been found in the OECD statistics for taxes, nor in the latest Central Statistics Office publications on fossil subsidies.

Policies implemented to address rising energy prices

Several of the measures implemented to address the energy price rising in 2022 were extended to 2023 and even 2024:

- ✓ Additional VAT reduction on electricity (on top of existing VAT reduction) was extended to October 2024 (EUR 169 million estimated in 2023)
- ✓ Additional VAT reduction on gas (on top of existing VAT reduction) was extended to October 2024 (EUR 34 million estimated in 2023)
- ✓ Reduction excise duty petrol and green diesel was extended to June 2023 (EUR 275 million estimated in 2023)
- ✓ Electricity Costs Emergency Benefits Scheme III (overall EUR 900 million over 2023-2024)
- ✓ Add. VAT reduction on electricity and gas for hospitality was extended to August 2023 (EUR 290 million estimated in 2023)

The two largest subsidies, Electricity Costs Emergency Benefits Schemes and Temporary Business Energy Support Scheme, should respectively be ended since December 2023 and April 2024.

Latvia

Situation vs previous inventory

Eleven (11) new or unreported subsidies have been identified and added to the inventory:

- ✓ Implementation of measures to reduce air pollution by improving household heating systems (around EUR 11 million in 2023)
- ✓ Regulations Regarding the Support Programme for The Renovation and Energy Efficiency Improvement of One-Apartment Residential Houses and Two-Apartment Residential Houses (EUR 3 million in 2021)
- ✓ Improving the energy efficiency of multi-apartment buildings and transition to the use of renewable energy technologies (EUR 230.5 million over 2022-2029)
- ✓ Aid programme for construction works in multi-apartment buildings, improvement of their territories and redemption of alienable land for apartment buildings (EUR 34.5 million over 2021-2024)
- ✓ Development of public outdoor areas (EUR 27.8 million over 2023-2026)
- ✓ Loans to improve the energy efficiency of businesses (no amount found)
- ✓ Law on Aid for Energy Costs (EUR 1.3 million in 2023)
- ✓ Reduction of Payments for the Consumed Electricity (EUR 105 million in 2022, EUR 219 million in 2023)
- ✓ Aid to Households for Partial Compensation of Heating Expenditures if Electricity, Wood Pellets, Wood Briquettes, Firewood, Liquefied Petroleum Gas, and Diesel Fuel are Used for Heating (EUR 52 million in 2022, EUR 80 million in 2023)
- ✓ Open tender under Emission Allowances Auction instrument "Reduction of greenhouse gas emissions in the lighting infrastructure of public territories of local governments" (EKII-7)

General observation

On the whole, information is fairly difficult to collect. Limited information is available in English, and it seems that some sites have changed their structure recently, making it difficult to find the exact source of the information used for previous data collections. The scope for several subsidies is not clear.

Funding source for Feed-in tariffs (FiTs) has changed: they are subsidised by the government since March 2023, vs by the user formerly. The corresponding rows in the database are duplicated to highlight this change.

A substantial number of yearly amounts have been estimated (e.g. a few EKII subsidies) due to the lack of information on the period of application. Nevertheless, a total budget is generally provided.

The "Law on Measures to Reduce Extraordinary Increases in Energy Prices" measure (EUR 442 million over 2022-2023) has been removed as several measures detail the amounts spent by sector or fuel under this law.

Policies implemented to address rising energy prices

Several subsidies were introduced/announced in 2022 due to the energy price increase (to support households with the rising energy prices), totalling EUR 677 million in 2022, and nearly EUR 814 million in 2023. These measures cover 2022 and 2023 and should not be renewed in 2024.

Lithuania

Situation vs previous inventory

The following subsidies have been added in the current inventory:

- ✓ Installation of charging points for private electric vehicles of legal entities on the lighting pole (supports) near the apartment building or in it
- ✓ Compensation of part of the increase in the price of natural gas in households
- ✓ Free electric car charging
- ✓ The Introduction of Alternative Fuels in Industrial Enterprises in Kaunas, Šiauliai and Telšiai regions

General observation

On the whole, information is fairly accessible, even if limited information is available in English. Some subsidies (e.g. feed-in tariffs) are listed in a table with amounts for several years, making it easy to compare data with the previous collection. The information provided by some sources is difficult to collect because there is not filter or search function to facilitate the query.

Many subsidies related to the ES fondų investicijos 2021-2027 are available on a specific website, and an Excel file with all the measures can be downloaded, which is a good point in terms of accessibility and transparency. However, the information about the funding source – the EU, the country or both (with amounts for each in this case) – is not always provided or clearly stated. We have changed the type of jurisdiction for some subsidies listed here, which appear to be funded by the EU rather than the country itself.

Policies implemented to address rising energy prices

In 2022, the government took measures to compensate price increases in gas and electricity, mainly for residential and business consumers, representing EUR 1.3 billion. In 2023, the amount was still

about EUR 1.0 billion. There are separate measures for each sector, and some measures target a specific fuel (electricity or gas).

- ✓ Compensation of the increase in energy prices for household consumers
- ✓ Compensation of the increase in energy prices for business consumers
- ✓ Compensation of part of the increase in the price of electricity and natural gas in households
- ✓ Compensation of part of the increase in the price of natural gas in households
- ✓ Compensation of part of the increase in the price of electricity in other sectors other than households
- ✓ Compensation of part of the increase in the price of energy services in households
- ✓ Compensation of part of the increase in the price of energy services in business
- ✓ Subsidies for companies operating in the most affected sectors to mitigate the effects of energy price increases
- ✓ The Introduction of Alternative Fuels in Industrial Enterprises in Kaunas, Šiauliai and Telšiai regions

Luxembourg

Situation vs previous inventory

The following subsidies have been added to the current inventory:

- ✓ Aid for electric charging point in public spaces or within companies (EUR 6.7 million in 2022, EUR 10 million in 2023)
- ✓ Aid for construction of electric charging points for private vehicles (EUR 15 million in 2023)
- ✓ Compensation for limiting the increase in natural gas and heat prices (Solidaritéitspak 2.0, EUR 72 million in 2022, EUR 312 million in 2023)
- ✓ Exemption from CO2 tax for biofuels and bioliquids (no amount found)
- ✓ Stabilisation of electricity prices (Solidaritéitspak 2.0 , EUR 100 million in 2023)
- ✓ Energy bonus for low- income households receiving "allocation de vie chère" (Solidaritéitspak 2.0 and 3.0 EUR 8 million in 2023)
- ✓ Tax credit to offset the cost of the CO2 tax for people on low incomes (Solidaritéitspak 3.0, EUR 20 million in 2024)
- ✓ Subsidy for liquefied petroleum gas (Solidaritéitspak 2.0 and 3.0, EUR 2 million in 2024)
- ✓ Heating oil price subsidy (Solidaritéitspak 2.0 and 3.0, no details found)
- ✓ Temporary subsidy on the sale price of wood pellets for households (Solidaritéitspak 2.0 and 3.0, EUR 0.5 million in 2022 and in 2023)
- ✓ Bonuses for sustainable housing (EUR 0.6 million in 2024)

The instrument Compensation for the indirect costs of EU ETS after 2012 has ended as per 2020. It is continued under the new Compensation for the indirect costs of EU ETS for the period 2021 – 2030 (EUR 13.9 million in 2022, EUR 50 million in2023).

General observation

No tax expenditure report is provided by Ministry of Finance or Treasury.

Most of the amounts in the database come from the Draft budget for 2024, which provides the amounts associated with the provisional account for 2022, the budget voted for 2023 and the draft budget for 2024. This makes it possible to have clear yearly amounts associated with each subsidy and to track their development over the years.

For the largest subsidy programmes (i.e. Solidaritéitspak), associated documents are published where one can generally find details of the aid associated with this programme and the amount allocated.

However, particular care must be taken when making the inventory of subsidies, as some existing measures are included in these programmes under new names, or isolated name changes are made.

For DSO subsidies for RES electricity, the annual reports of a year are published at the end of the next year. Hence, no reports are available with data for the year 2023 at the date of this study. In 2022, EUR 22 million was paid back by producers under the compensation scheme for renewables.

One policy ("*Reduced excise rate for petroleum products*"), which was formerly calculated by the OECD, appears to no longer be included in their list of tax subsidies. This item is now calculated from OECD data by summing the subsidies allocated to petroleum products through reduced excise tax rates. Historical data was also updated according to this methodology.

Many subsidies are now gathered in the "Klimabonus" system, particularly for housing ("Klimabonus Wunnen"). Other subsidies relating to mobility and renewable energies are also part of this set.

Policies implemented to address rising energy prices

In the context of the energy price crisis the government has implemented the following measures (EUR 943 million in 2022, EUR 599 million in 2023):

- Coverage of natural gas network costs for residential customers as from 1 May 2022
- Compensation for limiting the increase in natural gas and heat prices
- Various support schemes, tax credits and reduction of fuel price
- Tax reductions on fuel of 7,5 cents per liter
- Energy bonus given to low-income households
- Aid to energy intensive companies
- Stabilisation of electricity prices

Malta

Situation vs previous inventory

Two (2) new or unreported subsidies have been added to the current inventory:

- ✓ 2024 Renewable Energy Sources Scheme (EUR 4.8 million in 2024)
- ✓ Energy Efficiency Support for Industry (EUR 0.9 million in 2022)

The following Instruments have been removed from the current inventory (either out of scope or out of time frame, double count):

- ✓ Energy Efficiency Scheme (PV Systems Grants)
- ✓ Energy Efficiency Scheme (Water Heaters, Double Glazing, Roof Insulation)
- ✓ 2022-2023 Energy subsidies (food subsidies also included)
- ✓ Provision of Spare Capacity

General observation

The total subsidies to address rising energy prices in 2023 is reported to be EUR 580 million. This is more than seven times the sum of all subsidies identified in 2020 (EUR 79 million). At the date of writing (12th, June 2024), most of the 2022 data was available. Official estimates from the 2024 Budget have been used to complete 2024 data point. The 2023 data point was prefilled with the current estimation from the 2024 budget and updated with the Financial Report 2023 from the Treasury, released the 28th of June 2024.

The particularities of the Maltese subsidization system are such that it tends to operate in short-term schemes (e.g., 2018 heat pump water heater subsidy). These schemes correspond to the year in which

the scheme was passed (i.e. the name of the bill which was passed would "2018 heat pump…") but at times may last several years depending upon whether the scheme is updated or replaced in following years. This means that a 2018 scheme can continue paying out until 2021 for example, whereafter it is largely replaced by the 2021 scheme. As such, these programs tend to have short periods of high budgets, with longer periods of smaller payouts due to contracts accrued during the scheme's length, (i.e., paying out lump sums in 2019, 2020, then paying smaller continuous payments for maintenance, etc. through from 2021-2026). This helps to explain the strange accounting of programs like "2016 Photovoltaic system – ERDF", "2019 Photovoltaic system – ERDF", et al.

As of September 2022, the Caruana government of Malta have committed to over EUR 1 billion in energy and food subsidies over the next several years. According to country experts, this is principally to help shield the country from energy price fluctuations due to LNG forming approximately 80% of the country's energy mix. Additionally, this policy is part of an inflation reduction strategy, to help keep inflation from exceeding the European average. At present, there is not enough data to disaggregate the different components of this subsidy package, as they were only implemented in the second half of 2022, for now they are listed as part of the 2022 estimates waiting to be confirmed once further documentation is available.

Total energy subsidies have doubled as 2023 estimates reach around EUR 660 million (vs around EUR 340 million in 2022).

Policies implemented to address rising energy prices

Energy support measures (energy prices frozen to their pre-COVID levels), implemented since 2021, are reported to amount to EUR 580 million in 2023 and EUR 320 million in 2024 (vs EUR 234 million in 2022).

Netherlands

Situation vs previous inventory

Four new subsidies have been identified and added to the current inventory:

- ✓ Hydrogen production through electrolysis (EUR 61.4 million in 2023)
- ✓ Prolongation of gas storage scheme Bergermeer (EUR 240 million in 2023)
- ✓ Hydrogen backbone investments (EUR 36.7 millon in 2023)
- ✓ Making social property more sustainable (EUR 284.5 million in 2024)
- ✓ Stimulation of construction and maintenance of sports facilities (BOSA) (EUR 79.7 million in 2023)

The following subsidy has been removed (out of the scope):

- ✗ BPM Tax exemption for zero emission vehicles
- ✗ Road tax exemption (MRB) for zero emission vehicles
- ✗ Income tax reduction on additional tax for zero emission vehicles
- ✗ Income tax reduction on additional tax for fuel efficient cars
- ✗ Half rate MRB tax plugin hybrid cars
- ✗ Subsidy scheme for electric cars for private individuals
- ✗ SEPP Subsidy scheme electric passenger cars
- ✗ Demonstration schema Climate technologies & innovations in transport
- ✗ Subsidy Scheme Zero Emission Company Cars
- ✗ Early closure of Hemweg coal-fired power plant
- ✗ Subsidy Scheme for the Sustainability of Inland Navigation Vessels (SRVB)
- ✗ Public Private Partnership

General observations

The Netherlands is a relatively transparent country and many subsidies can be found through Miljoenennota (Budget) or Fiscale regelingen.

Degressive tariff structure for gas, and electricity was mentioned by the Dutch government in 2022 as a subsidy in the 'miljoenennota'. Prior to 2018 this mechanism was NOT categorised and reported by the Dutch Government of as a "subsidy". This change in classification has allowed to report the amounts from 2018 until 2020. The country is the only one within the EU for which we have reported actual amounts related to this mechanism, while we suspect it might not be reported in other countries. Rather than a pure subsidy, our understanding is that this mechanism more reflects how the tax system is structured and therefore, it is excluded from the main inventory.

The new scheme Cooperative energy production subsidy replaces Energy tax rebate for locally generated sustainable energy scheme that ended April 2021.

In the 2021 inventory Input exemption coal tax for dual use was included in Tax exemption for energy intensive processes. However, the updated overview Tax Rules 2004 – 2022 now makes a distinction between the two.

Estimated values for Input exemptions from coal tax for electricity production have been replaced by actual values published in Tax Rules 2004 – 2023.

The 2021 inventory included a subsidy for Closing costs of brand-new coal power plants. However, this subsidy has never materialized. Power plants that were planned for closure have not been closed. Instead, the remaining fall under a new regulation as of 2022 in which the CO2 emissions are capped at 35% of the maximum emission. An emission cap comes down to a production cap and thus loss of revenue. Under the new regulation coal plants are compensated for this loss of revenue under the scheme Compensation for emission/production cap for coal power plants. Unfortunately, the compensation subsidy is confidential. The values for 2022 and 2024 are estimations from a national newspaper.

Data for the Feed in Premiums has again been regrouped, as was the case the previous year. Instead of categories by technology (i.e., solar, wind, etc.), the new categories are based on type of energy carrier (i.e., renewable electricity, etc). Though for the purpose of analysis and comparison with other countries the categories by technology have been kept. An estimation is made based on budget distribution per technology and the total foreseen budget for Feed in Premium for 2022 and 2023.

As per beginning 2022 the Dutch government has decided to end all subsidies for wood biomass. Subsidy estimations for wood biomass are thus exclusively based on biomass installations that have already secured a subsidy in the past. The estimation does not contain subsidies for new biomass installations. The budget to support the production of renewable energy through Feed in Premiums increases from EUR 0.541 billion in 2022 to EUR 3.2 billion in 2023.

As in previous years a large part of the total energy subsidies concerns reduction of energy taxes for households.

Policies implemented to address rising energy prices

Four subsidies were introduced due to the energy price increase since September 2022, and entered into force in 2023:

- Price ceiling for gas, electricity and district heating for households and SME with small consumption connection (EUR 3.8 billion in 2023) and just EUR 100 million in 2024, as the support measure ended in 2023.
- Compensation for high energy prices for households with block connection known (EUR 513 million)

- Compensation for energy costs for energy-intensive SMEs (TEK) (EUR 330 million) for 2023, which ended in 2023.
- Temporary Energy Emergency Fund (funded by the government and energy suppliers to EUR 50 million)

Six subsidies were introduced/announced due to the energy price increase in 2021 and 2022 to support households with the rising energy prices, the largest being the Temporary reduction of energy tax for households (first package of October 2021) with EUR 2.7 billion allocated in 2022.

The total budget to address rising energy price amounted to 6.7 billion in 2022. The total budget for energy subsidies increased in 2023 (+7.8%) mainly due to the cost of the price ceiling for gas, electricity and district heating for households for household and SME with small consumption connection (3.8 bnEUR).

Poland

Situation vs previous inventory

Eight (8) new subsidies have been identified and added in the current inventory:

- ✓ **Aid for social protection of employees in relation to the closure of lignite mining activities and of power plants using lignite or coal (no amount allocated in 2023 as it started in 2024)**. The scheme aims at mitigating the social impacts associated with the transformation of the sectors of lignite mining and electricity generated from lignite or coal in Poland by providing social protection for certain employees in those sectors.

- ✓ Aid for additional costs due to exceptionally severe increases in natural gas and electricity prices incurred in 2022 and Aid for energy-intensive industry related to natural gas and electricity prices in 2023 (total of EUR 4.3 billion in 2022, EUR 326 million in 2023) are part of the Polish scheme to support energy-intensive companies in the context of Russia's war against Ukraine, which was notified to the Commission, under the Temporary Crisis and Transition Framework, with associated cost of EUR 1.2 billion (PLN 5.5 billion).

- ✓ **Premiums for small biomethane plants** (EUR 672 million in 2023).
- ✓ **Energy efficiency and renewable energy in enterprises - investments with the greatest potential for reducing greenhouse gases** (EUR 1.3 billion expected by 2026)
- ✓ **Action FENX.02.01 Heat infrastructure** (EUR 62 million in 2022, EUR 374 million in 2023)
- ✓ **Action FENX01.01 Energy efficiency** (EUR 0.2 million over 2022-2025)
- ✓ **Action FENX.02.03 Energy infrastructure** (EUR 0.7 million over 2022-2025)

Several subsidies to coal have been removed from the inventory as they have identified as double count, one subsidy has been removed as it is replaced by more detailed measures:

- ✗ Early Retirement Benefits for Laid Off Miners
- ✗ Payment of financial equivalents
- ✗ Support for coal mine decommissioning - Liquidation and post-liquidation activities
- ✗ Support for coal mine decommissioning - Mining damage
- ✗ Polish scheme to support energy-intensive companies in the context of Russia's war against Ukraine

General observations

No centralised information or report on subsidies has been found. Many data are missing due to lack of transparency and reports which are not published on a regular frequency:

- The Ministry of Finance publishes a report on tax preferences (Preferencje podatkowe w Polsce). However, the last report dates from 2018.
- The Office of Competition and Consumer Protection (UOKiK) publishes an annual report on state aid to enterprises. The report provides information on subsidies in the energy sector to support energy production and infrastructure restructuring. The last report dates from 2023, with data until 2022 (2023 data will be published in December 2024).

The above-mentioned reports are transparent. However, regarding fossil fuel subsidies, especially coal, data is more difficult to access. The Ministry of State Assets provides information on the programme for the hard coal mining sector in Poland, (PROGRAM dla sektora górnictwa węgla kamiennego w Polsce) which is updated at irregular intervals. However, the presentation of the data is quite untransparent and some data seem to overlap with the UOKiK report.

To support renewable energies, a green certificate mechanism is in place since 2007. Since mid-2016, the measure is being gradually replaced by an auction-based contract-for-difference scheme.

Observation about FFS

Poland provides a high number of subsidies to the coal sector that stayed relatively stable over the years. Subsidies in the coal sector also include state aid for coal decommissioning as well as financial support for people that lost work because of the infrastructure restructuring. Unfortunately, there are no amounts available on excise duty on coal products even though this subsidy is mentioned in the annual report of tax preferences, the most recent publication of which is from 2018. In order not to lose information, these amounts have been estimated since then.

Investments aid for the coal mining sector was ended in 2023. A new subsidy to mitigate the social impacts associated with the transformation of the sectors of lignite mining and electricity generated from lignite or coal was launched. It represents PLN 1.3 billion, to be spent over 2024-2034.

Further Grants and other non-repayable benefits to the coal sector at a level of PLN 620 million were provided in 2021 -however there is no further information about more recent payments-
.

Policies implemented to address rising energy prices

A state aid was deblocked by the European Commission to support energy-intensive companies in the context of Russia's war against Ukraine. The scheme will help EIIs to fight against high energy prices. The scheme represents PLN 5.5 billion, to be spent over 2023-2024.

The Polish Government prepared a programme to relief vulnerable households from the energy price surge. For households at least EUR 320 million (PLN 1.5 billion) were budgeted for 2022. According to government, the plan aimed to allocate amounts increasing each year, from approx. PLN 1.5 billion to around PLN 1.7 billion for the years 2022-2031.

VAT exemption for natural gas (from 23% to 0%) was implemented from 1st of February to 31st of July 2022, as well as a tax reduction during the same time for petrol and diesel (from 23% to 8%), for heating (23% to 5%) and for electricity (23% to 5%). The government budgeted EUR 5.4 billion (PLN 25 billion) for its anti-inflation shield that also includes tax reduction on fuels and fertilizers.

Furthermore, coal mining companies have received state aid from the Polish Development Fund (PFR) to remain liquid under the Anti-Crisis shield. JSW received a preferential and a liquidity loan of 250 million (PLN 1.1 billion). PGG received a preferential and a liquidity loan of 375 million (PLN 1.75 billion).

Moreover, Poland has introduced a recovery and resilience plan. The plan includes subsidies of more than EUR 3.7 billion for offshore wind energy projects, EUR 3.5 billion for energy-efficient renovation

in buildings, EUR 800 million for the development of green hydrogen technologies and EUR 7.5 billion for green and smart mobility.

In 2023, Poland introduced three shields:

- Government Anti-Inflation Shield (Not related to energy subsidies)
- Government Energy Shield:
  - Limiting the increase in heat prices to a maximum of 40%
  - Frozen gas prices
  - VAT refund for gas for households with the lowest incomes
  - Households could benefit from:
    - shielding additive
    - an allowance for other heat sources
    - carbon supplement
    - electrical additive
  - Sensitive Actors could benefit from:
    - an allowance for other heat sources
    - the mechanism of the average production price with compensation.
- Government Solidarity Shield:
  - Cap electricity prices for enterprises, local governments and sensitive entities
  - Additional savings (incentive to reduce energy consumption)

Portugal

Situation vs previous inventory

Eleven (11) new or unreported subsidies have been included in the inventory, of which 9 were created to address the rising energy price:

- ✓ Reduction on the Electricity Network Access Tariff (EUR 183 million in 2022)
- ✓ Excise Tax Reduction on energy products used by economically vulnerable customers and beneficiaries of natural gas social tariff, totalling EUR 2.7 million in 2023
- ✓ Suspension of Carbon Tax Increase for Coal, oil excl. Biofuels, gas (totalling for all energy carriers EUR 409 million in 2022)
- ✓ Installation of electric vehicle charging stations for social green mobility (EUR 6 million in 2023)
  Support for the Heavy Public Passenger Transport sector (EUR 9 million in 2024)
- ✓ Regulated last resort tariffs for natural gas expected to end in June 2025 (EUR 2.2 million in 2023)

Several measures are expected to end during 2024:

- Compensation Mechanism for a Just Transition (EUR 1.4 million in 2024)
- Famílias Primeiro - VAT on electricity at 6% (EUR 90 million in 2024)
  Markup of 20% in corporate income tax on energy costs and 40% on agricultural production costs, with an estimated allocation of EUR 41 million in both 2023 and 2024.

General observations

Data sources and information may be difficult to identify since there is no single report reporting on subsidies, with several reports that may break down the same subsidies under slightly different titles, or with specific reports for main programs with little to no detail about the distribution of its budget among the different measures that compose it.

Several subsidies, especially recent measures dealing with energy price increase, could not be found in governmental reports, but come from OECD database.

Policies implemented to address rising energy prices

Eighteen (18) measures applied by the Portuguese government to address rising energy price in a context of an extremely high inflation have been identified, amounting to EUR 4.2 billion in 2022, 95% of which target FF. Most of these subsidies are still on-going, with estimated EUR 2.2 billion in 2023, the largest being:

- ✓ Mechanism for adjusting the costs of electricity production within the framework of the Iberian Electricity Market (EUR 1.5billion in 2023, vs EUR 360 million in 2022)
- ✓ Famílias Primeiro -Fuel tax reduction (EUR 335 million in 2023, vs 1.48 billion in 2022)
- ✓ Programme to Support Intensive Gas Industries (EUR 190 million in 2023, vs EUR 510 million in 2022)

Romania

Situation vs previous inventory

18 new subsidies have been identified and added to the current inventory, of those 4 are recent subsidies (introduced in 2024), and the remaining are subsidies which were introduced from 2013 and 2022 (thus the dataset is more precise than the previous edition of this work).

The 4 new subsidies introduced in 2024 (thus no funding in 2023) are namely:

- ✓ **Contracts for Difference support scheme for the production of renewable electricity from onshore wind and solar photovoltaic**
- ✓ **2 calls of New financing opportunities for the production of electricity from non-refundable funds**. The scheme is represented as 3 different subsidies in the inventory with a breakdown by energy: wind, hydro and solar. Through the scheme, the Romanian Government will allocate EUR 815m in grants to incentivise investments in solar, wind and hydropower production across the country.

The remaining 14 subsidies recovered in this new edition are namely:

- ✓ **Ceiling on electricity and natural gas prices (1 year + extension) (non-households)**. The latest inventory also included 2 lines lines which seemed similar but are not as only looked at household consumers (RON 7 billion estimated in 2022, RON 6 billion estimated in 2023).
- ✓ **SevenNRRP (local National Recovery and Resilience Plan) measures namely Investment Measures: 1, 2, 3, 4, 5, 6, as well as Component 10 and 5**. Romania's National Recovery and Resilience Plan is designed to ensure Romania's development, by supporting the level of adaptation to crisis situations, in the context of recovery after the COVID-19 crisis, as well as capitalizing on the potential for economic development, through major reforms and key investments. These subsidies allocated are meant to support energy demand and production. These 7 programmes allowed a total allocation of RON 2.39 billion in 2023.
- ✓ **State aid for restructuring/reorganization in the energy field**, a restructuration state aid allocated to Complexul Energetic Oltenia (RON 1.3 billion in 2023)
- ✓ **Coal mine conservation or closure program** to help with the closure of non-competitive coal mines (RON 30 million in 2023)
- ✓ **National Programme for Investment** (RON 90 million in 2023). The goal of the program is to modernize the polluting electricity generation sector with the aim of increasing energy efficiency and protecting the environment by reducing greenhouse gas emissions.

- ✓ **Modernization Fund** (RON 2.4 billion). The modernization fund provides funding for improvements in energy efficiency, the modernization of energy systems and the transition in regions dependent on coal in Member States.
- ✓ **Program on increasing energy efficiency in public buildings** (RON 15 million in 2023). The programme aims to modernise public buildings, by financing activities/actions specific to the realization of investments to increase their energy performance.
- ✓ **ElectricUp programme** (around RON 160 million allocated in 2023). The programme aims to increase the number of photovoltaic energy producing companies. For this, small and medium-sized businesses in the "HoReCa" sector (Café/Hotel/Restaurant) will be able to benefit from a non-refundable subsidy and covering up to 100% of expenses of the project. The programme is led under 2 different stages (the first stage lasted from Dec-2020 to Dece-2023; the second stage started in 2024 and will last till december 2026).

Some noticeable elements/ variations were noted:

The Electricity and Gas ceiling household consumer price schemes have been extended (previously expected to last only 1 year). The electricity ceiling cap was extended to end March 2025, and the scheme for natural gas has been extended to end August 2023. In total, both schemes amounted to around RON 15 billion in 2022, and around RON 9 billion in 2023. As mentioned previously, it has to be noted that in this edition a new line "Celling on electricity and natural gas prices (1 year + extension)" has been added but this one only applied to non-household consumers while the two other lines were only applied to household consumers.

The programme "Cleaner vehicles: The programme on improving air quality and reducing GHG emissions, using less polluting vehicles in local public transport of people - electric buses and trolleybuses / CNG" did not receive subsidies in 2023 as no request were made in 2023.

Within its "Recovery and resilience plan", Romania introduced various funds which included the aim to boost the development of RES in 2022 (see NRRP measures).

The Regional Operational Programme (2014-2020) subsidies for Public buildings as well as for Public lightening data from 2017 and before were "Not available" as the data has not been published by the Government either because: no money has been distributed before 2018-2019 for these categories, or the amount were too low.

General observations

No centralised information or report on subsidies found.

Spain

Situation vs previous inventory

Twelve (12) new or unreported subsidies have been added to the inventory, of which several programs to increase energy security by investing in renewable energy and new technologies with allocations starting in 2024:

- ✓ **TCTF - RRF - Reinforcement of the value chain of renewable energy and storage:** (EUR 1 billion over the period).
- ✓ **Recovery, transformation and resilience plan (PERTE VEC):** A program to fund projects for the transformation of the electric and connected vehicle value chain (overall budget of 559.7 million).

- ✓ **Grants for Innovative Energy Storage Projects (MRR):** (EUR 350 million over 2023-2026 of which EUR 150 million in 2024).
- ✓ **Deep Geothermal Programme** (EUR 25 million in 2024).
- ✓ **PREE 5000 (Energy rehabilitation program for existing buildings in demographically challenged municipalities)**: (EUR 22 million in 2022, 85 million in 2023).

3 subsidies are reported for information out of scope**:** Programme for electric mobility, MOVES-I Programme, MOVES II, III, MOVES Singulares II, MOVES FLOTAS Programme
2 subsidies ("Special tax hydrocarbon - Exemptions gasoil" and "Special tax hydrocarbon - Exemptions fuel oil") were removed since they were previously **reported under a consolidated basis.**

Some noticeable variations since the last inventory:

The aids dedicated to the coal mining districts seemed to have been decreasing in the last inventory since allocations were taken from estimations based on the Plan for alternative development of coal mining districts, which is not regularly updated. We were able to match them to their budgetary codes and the allocated amounts for these subventions have been increasing since 2019 only to drastically decrease for 2024 falling from almost EUR 296 million in 2023 to EUR 95 million.

In particular, the Aid to HUNOSA has drastically decreased (by 99.93%) between 2020-2021 due to a downsizing trend since 2020. There was a significant increase seen in 2023 since 2021, the year with the lowest registered allocation, passing from EUR 112,000 to EUR 1.3 million (+1084%), a change that may be due to the war in Ukraine.

There are a total of 14 special taxes, of which 11 correspond to hydrocarbons. These measures show different tendencies regarding the targeting product:

- There are 4 special taxes with the highest economic significancy, all of which correspond to hydrocarbons. These are: Exemptions on kerosene (EUR 331 million), reduced gasoil for certain motors (EUR 351 million), exemptions on gasoil for other uses (EUR 141 million) and refunds for agriculture (EUR 83 million).
- Special taxes in general seem to record a decreasing tendency, with reduced biogas for electricity production (-91%), biogas for stationary motors (-81%), reduced natural gas for electricity production (-65%) suffering the most dramatic reductions.
- On the other hand, the exemptions on kerosene (+191%), coal (+54%) and the refunds for transport (+23%) recorded the highest increases.

The Capacity payment to coal has also been brought to zero as in Spain's National Energy and Climate Integrated Plan (PNIEC) submitted to the European Commission in March 2020, Spain committed to phase out coal by 2030. The PNIEC mentions that by the time the report was submitted only the most recent gas-fired combined cycle plants and a couple of hydraulic power stations receive capacity payments.

General observations

The country publishes a Strategic Subsidy Plan (Plan Estratégico de Subvenciones 2022-2024, however the articulation with General State Budgets is very difficult – despite budgetary codes - as information is very disaggregated on an itemised basis. Still, there is a certain difficulty to assess the information due to sometimes contradictory information found in multiple official sources. The General State Budget was the preferred source used to obtain and verify information on the amounts granted to each subsidy in the present inventory.

Policies implemented to address rising energy prices

11 measures were created to address the energy price rising:

- ✓ **Social Bonus for electricity (including Energy Justice Electric Bonus):** A temporary social intervention designed for favorizing vulnerable consumers through a discount on their electricity bill that is in place until June 30, 2024. The measure had an estimated allocated budget of about EUR 191 million in 2023 and EUR 196 million in 2024, with an increase of 31% compared to 2022.
- ✓ **Measures to mitigate the impact of rising natural gas prices on the retail gas markets and on the electricity market:** these measures started from 16th September 2021 to mitigate the impact of rising natural gas prices on the retail gas markets and electricity market, (EUR 642 million for the retail gas markets in 2023, corresponding amount for the electricity market not found). The measures were extended until April 2024.
- ✓ **Reduction in the tolls paid by the electricity-intensive industry for the use of electricity transmission and distribution networks:** Temporary reduction of eighty percent of the costs corresponding to the access tolls to the electricity transmission and distribution networks, as part of the regulated costs included in the electricity bill associated with such consumption (EUR 225 million in 2022). The measure was extended until April 2024.
- ✓ **Direct fuel discount for all consumers** extended until December 2024 in the Canary Islands, it consists of a discount on fuel set at 0.2 EUR /litre maximum. The measure is speculated to be extended further in the Canary Islands until the early months of 2025. Estimated allocated amount in 2023 of EUR 1,175 million (-20% compared to 2022).
- ✓ **Adjustment on the production cost mechanism for reducing the electricity price on the wholesale market (price cap)**: no amount found so far.
- ✓ **Public aid for the transport sector:** As part of Royal Decree-Law 6/2022, the government established a direct aid under the form of fuel price bonus for road transport with an allocated amount of EUR 450 million in 2023.
- ✓ **Reduction of VAT rate to 10% on electricity supplies**: A measure originally meant to last until 31 December 2021and later on extended until 1 January 2025, it establishes that electricity contracts whose fixed power term does not exceed 10 kW, a reduction from 21% to 10% in the VAT rate (5% in 2022) applicable to all components of the electricity bill, when the average monthly wholesale market price in the month prior to the billing month has exceeded 45 EUR /MWh. The estimated amount allocated in 2022 for this measure is EUR 98.6 million.
- ✓ **Add. Reduced VAT for electricity**: Extension of the measures to contain energy prices established under the Royal Decree Law 6/2022, implementing a cut on VAT rate on electricity from 10% to 5%. The estimated amount allocated in 2022 for this measure was EUR 99 million in 2022.
- ✓ **Reduced VAT for natural gas from 21% to 5%** on supplies of natural gas, pellets, briquettes, and firewood. **An addition to the approved tax cuts which have also left VAT at 5%,** set the electricity tax rate at 0.5% and suspended the 7% tax on generation. The allocated amount was EUR 340 million in 2022.
- ✓ **Deduction of market revenues to reduce households' natural gas bills**: A cap on gas price reviews was introduced for the regulated tariff of natural gas, known as the ""last resort tariff"" (TUR) for customers that have annual consumption of less than 50 MWh and are not in the liberalised market. Set to last from 15 September 2021 **until 31 March 2022**. The identified value of this subsidy was 1.1 billion in 2022.

Through the direct fuel discount for all consumers, the government has applied a maximum discount of EUR 0.2 /liter for all consumers during a six-month period in 2022. This measure is now extended for certain beneficiaries until December 2024, and it had an estimated allocation of EUR 1,175 million.

The reduction in the tolls paid by the electricity-intensive industry for the use of electricity transmission and distribution networks is a temporary measure that will benefit electro-intensive consumers over 2022. Additionally, the regulated gas heating tariffs will help any consumer

connected to the natural gas networks (less than 50MWh/year). The measure was extended until June 2024, and it had an allocation of EUR 225 million in 2022.

Measures to mitigate the impact of rising natural gas prices on the retail gas markets cuts the price of the natural gas tariff up to a defined ceiling and reduce the Value Added Tax rate applicable to all natural gas deliveries. It continues the prohibition of cutting off basic supplies for vulnerable consumers until April 2024 with a last recorded allocation of EUR 642 million in 2023.

Finally, measures to mitigate the impact of rising natural gas prices on the electricity markets are formed by a combined package of measures reducing the taxable base of electricity production and certain electricity supplies or charges, fees and tools of the electricity system in certain contracts and remuneration regimes that were implemented until April 2024

The social bonus subsidy has continued increasing in 2024, targeting a larger number of vulnerable consumers (households with low-income revenues), budget passing from EUR 149 million in 2022 to EUR 196 million in 2024. The measure is set to end in June 2024.

Slovakia

Situation vs previous inventory

The present inventory lists a total of 76 subsidies, of which 5 subsidies were added:

- ✓ TCTF/RRF - Slovakia: Investment support for electricity storage
- ✓ Slovakia program aimed at reducing energy consumption and the use of renewable resources in public buildings
- ✓ Tariff for reserved capacity
- ✓ Tariff for transferred electricity
- ✓ Aid to cover the exceptional costs of Hornonitrianske bane Prievidza (HBP) related to the closure of its mining operations.

General observations

In 2024, the quality of data provision drastically declined in Slovakia. Generally, there have been delays with some data due to the new government. In comparison to last year, there are not any further subsidies: the next wave of subsidies will likely come on the back of the EU SCF implementation to soften impact of the EU ETS 2.

Responsibilities for the administration of the renewables and CHP FiTs scheme have been shifted to a different entity since 01.01.2020 (from URSO to OKTE). Data are therefore provided under another desegregation level with a more detailed representation by energy type from 2019 on; historical data are however not provided under this format.

Regarding exemption from excise duty on electricity, natural gas and coal, a methodological change has been introduced to improve data consistency: all historical data (2015-2021) are now based on national statistics from Financial Administration of Slovak Republic (FS SR).

In 2022, the total amount of exemption from excise duty on electricity decreased by 12% (EUR 217 million in 2021, EUR 215 million in 2022). Estimations for total exemptions attributed to natural gas and coal more than doubled in 2022 to EUR 133 million (EUR 59 million in 2021).

Transparency and continuity in reported data has been degraded, especially due to some administrative changes (see paragraph above).

System operation tariff have not been updated for 2022 because of data not yet published (total amount of operation tariff support was of EUR 262 million in 2021).

In 2022, the amount of support to electricity produced from renewables and combined production was paid almost entirely to solar producers only, while hydroelectricity producers and wind producers received EUR 4700 and EUR 0 respectively. In 2022, system operation tariff for solar dropped by 85% from EUR 177 million to EUR 26 million. This significant decline is explained by the high market prices of electricity in 2022 (OKTE Report). Renewables producers often did not receive the surcharge (it was zero) since the minimum fixed price for determining the surcharge was lower than the market price of electricity.

Policies implemented to address rising energy prices

Since 2022, the government has implemented several measures to shield households and firms from the energy crisis, such as capping energy prices, as detailed above in the part "Situation vs previous inventory".

Some of these measures, like a one-off aid to low-income groups, have been classified as "out of scope" because they do not focus explicitly on energy prices inflation.

Total amount of identified measures to face energy crisis are EUR 530 million in 2022 and EUR 2.6 billion in 2023 (Government budgeted EUR 3.5 billion of additional measure to address rising energy prices for year 2023).

Slovenia

Situation vs previous inventory

The update of the inventory led to add one (1) new subsidy:

- ✓ Investment aid for accelerating the introduction of energy from renewable sources, storage and heat from renewable sources (EUR 150 million between 2023 and 2025)

13 measures to address rising energy prices accounting for EUR 634 million in 2022 have been implemented, and 6 measures accounting for EUR 1,33 billion in 2023. These measures are detailed below, in the part "Policies implemented to address rising energy price".

General observations

Several reports needed to our assessment were still not available at the time of redaction of this report. Especially, the final NECP of the country, only the Draft updated NECP (July 2023) was available.

In 2022, total energy subsidies have more than doubled (EUR 948 million in 2022, compared to EUR 291 million in 2021). In 2023, their increase persisted with EUR 1.6 billion of public support identified.

In 2023 and in 2022, feed-in tariffs for electricity from renewable energies (solar, wind, hydropower, biomass and biogas) decreased for two consecutive years due to high reference electricity market prices. Feed-in tariffs for electricity from wind even reached zero in 2022 and 2023. The only exception were the amounts of feed-in tariffs from "other RES" and from high-efficiency cogeneration (CHP, fossil fuels) plants, which respectively increased by 57% and by 9% in 2022. In 2023, feed-in tariffs from high-efficiency cogeneration (CHP, fossil fuels) more than doubled to EUR 55 million.

Policies implemented to address rising energy prices

Since the beginning of 2022, the Slovenian government introduced several measures to address the energy price crisis.13 measures in the inventory concern the rise of energy prices and amount to EUR 634 million in 2022, vs 6 measures amounting to EUR1.3 billion in 2023.

List of the measures with the detailed budget:

- Exceptional aid to energy-intensive companies due to the rise of energy prices (EUR 54 million in 2022, EUR 8 million in 2023)
- Solidarity allowance to alleviate the consequences of energy poverty (EUR 106 million in 2022, ended in 2023)
- Temporary exemption from paying the RES & CHP for households and some other low-voltage-network connected consumers (EUR 18 million in 2022, EUR 17 million in 2023)
- Reduction of the electrical energy network tariff rates (EUR 63 million in 2022, ended in 2023)
- Energy allowance to the weakest categories of disabled people (EUR 6 million in 2022 and 14 million in 2023)
- Aid for small, medium-sized, and large enterprises (86 million in 2022, ended in 2023)
- Act Governing Aid to Businesses (EUR 57 million in 2022, temporary estimate of 850 million in 2023 to the date of June 2024 to be confirmed in August 2024)
- VAT reduction for electricity, natural gas, district heating and firewood (EUR 40 million in 2022 and EUR 90 million in 2023, no reconduction in 2024)
- Temporary excise duty reduction on gasoil, gas and electricity for households and businesses (EUR 18 million in 2022, ended in 2023)
- Temporary excise duty reduction on petrol and diesel oil (EUR 36 million in 2022, ended in 2023)
- Temporary capping of petrol and diesel oil prices (EUR 150 million in 2022, ended in 2023)
- Electricity and natural gas prices cap for households, protected consumers, and small and medium enterprises (EUR 350 million in 2023, ended in 2024)

Sweden

Situation vs previous inventory

Three new subsidies have been identified and added to the current inventory:

- ✓ State aid for energy efficiency in industry – the Energy Step (EUR 6.95 million (SEK 80.7 million) over 2018-2020)
- ✓ Temporary tax exemption for benefits of workplace charging electric vehicles (EUR 4.31 million (SEK 50 million) in 2023)
- ✓ Regional electrification pilots for heavy-duty transport (EUR 242 million (SEK 2.8 billion) since 2022)

General observation

The Swedish government and the various agencies responsible for subsidies, such as the energy, environment and tax agencies, are very transparent about the amounts allocated to subsidies. A draft budget detailing the subsidies granted by the government and a tax expenditure report are regularly published. The data is up to date and most documents also mention the budgets planned for the following years.

The certificate price of the Electricity Certificate System decreased sharply from 0.018 SEK/kWh (2020) to 0.002 SEK/kWh (2022).[120] The price decrease is explained with the supply of electricity certificates being higher than the demand from the set quotas. In 2023, the price rose to 0.0047 SEK/kWh and the number of certificates issued increased significantly. Over 262 million certificates were issued in 2023, compared with 37 million in 2022. This considerable increase is mainly due to wind certificates, which account for 96% of certificates issued. The value for renewable energy support through certificates in 2023 was EUR 142 million (SEK 1.6 billion), compared with EUR 6.5 million in 2022 (SEK 75 million).

The government has announced a strengthening of the Climate Leap programme (Klimatklivet) with additional funding of EUR 69 million (SEK 800 million) in 2024, EUR 172 million (SEK 2 billion) in 2025 and EUR 215 million (SEK 2.5 billion) in 2026. The programme will also be extended until 2028.

In 2023, subsidies under the Climate Leap programme have been reduced overall for all sectors except infrastructure, totalling EUR 73.5 million (SEK 853 million). However, the Klimatpremier programme, which aims to promote environmentally friendly vehicles, will also be strengthened, with EUR 85 million (SEK 992 million) in 2024, EUR 129 million (SEK 1.5 billion) in 2025 and EUR 174 million (SEK 2 billion) in 2026. New support for light electric trucks has also been introduced with EUR 39 million (SEK 450 million) in 2024.

The support to biogas production is expected to increase from EUR 32.5 million (SEK 378 million) in 2023 to EUR 85.5 million (SEK 993 million) in 2024.

The amount allocated to the tax reduction for the installation of green technologies has been increased from EUR 84 million (SEK 960 million) in 2021 to EUR 240 million (SEK 2.8 billion) in 2022 and EUR 600 million (SEK 6.9 billion) in 2023.

Observation about FFS

Sweden has eliminated several fossil fuel subsidies and is expected to eliminate more in the near future.

After the CO2 Tax Reduction for Energy Intensive Companies (phased out in 2015), and the Reduced CO2 Tax Rate for Natural Gas and LPG Used as a propellant (in 2014), Sweden phased out CO2 tax reductions on heating fuels in industry outside the EU ETS and CO2 tax reduction on heating in the agriculture sector both in 2017. In 2019, Sweden ended three other subsidies on CO2 tax reductions on diesel fuel in mining industry activities, Energy tax reduction on fuels in CHP and Energy tax reduction for diesel in mining industry. In 2017 these measures cost together EUR 86 million (SEK 940 million).

In 2022 Sweden phased out subsidies on Energy tax reduction on heating fuel in the agricultural sector, Reduced energy tax on heating fuels in industry and Energy tax reduction for industrial district heating supply, amounting together EUR 44 million (SEK 490 million) in 2020.

Policies implemented to address rising energy prices

The government presented a couple of measures to respond to the recent rise in energy prices. The Support to relieve vulnerable households from electricity price rise (EUR 594 million/ SEK 6.9

[120] https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111480-om-elcertifikat_sfs-2011-1480, https://cesar.energimyndigheten.se/WebPartPages/AveragePricePage.aspx

billion) grants EUR 195 per months, for households that consume more than 2000 kWh per months. This measure ended in 2023.

The government introduced a Temporary tax reduction for diesel and petrol from 1st June 2022 to 31st October 2022 to the minimum tax level permitted under EU regulation. This tax reduction was extended, with an estimated budget of EUR 503 million (SEK 5.6 billion) in 2024.

Other measures were taken as a compensatory payment for car owners, an additional fund to purchase electric vehicles, an increase in housing allowance for families with children. A significant general compensation for households as well as targeted support measure for energy intensive industries to address rising energy prices were adopted, for a total amount of over EUR 1.2 billion (SEK 13 billion) over 2022-2023.

B.3. Annex 3: Member State Factsheets

General information applicable to all Member States

According to the *General Union Environment Action Programme to 2030*[121] adopted by the European Parliament and the Council the 6 April 2022, an objective is to phase out "environmentally harmful subsidies, in particular fossil fuel subsidies, at Union, national, regional and local level". Consequently, we have considered that each Member State must cut the portion of its FFS that are considered harmful to the environment according to our consortium understanding of the measures, by reaching zero euros target in 2030.

Austria

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024						*No coal*				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

The current government has announced their goal of achieving Austrian climate neutrality by 2040 within their government programme for 2020-2024[122].

The past year has seen the enactment of further anticipated legislation. In June 2023, an amendment of the energy efficiency act ("Energieeffizienzgesetz") was passed and enacted by the parliament, after provisions of the previous existing act had expired in 2020. The amendment includes transitory regulation for the years 2021, 2022 and 2023 and nominates the national regulator for electricity and gas, E-Control Austria, as responsible authority[123].

In February 2024, the Renewable Heating Act ("Erneuerbare Wärme Gesetz") dealing with the decarbonisation of the heating sector was enacted, following a long negotiation process. Contrary to early drafts, the replacement of existing fossil heating systems was not mandated by the final version, as only heating systems in new buildings are banned from fossil energy use. However, existing subsidisation programs ("Raus aus Öl und Gas") for replacement of fossil heating systems by renewables were renewed and extended[124].

[121] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022D0591
[122] https://www.bundeskanzleramt.gv.at/dam/jcr:7b9e6755-2115-440c-b2ec-cbf64a931aa8/RegProgramm-lang.pdf
[123] https://www.bmk.gv.at/themen/energie/effizienz/recht/effizienzgesetz.html
[124] https://www.bmk.gv.at/themen/klima_umwelt/energiewende/waermestrategie/ewg.html

In the beginning of 2024, Austria introduced a two-year exemption (until the end of 2025) from value added tax regulation of residential photovoltaic systems with an installed capacity of up to 35 kW to incentivise further private investment in solar power[125].

Apart from these initiatives, the development of a new climate protection act ("Klimaschutzgesetz") setting binding emission reduction targets affecting the phase out of fossil fuels has not been finalised yet. The previously existing act has expired in 2020.

Austria has published a first version of its hydrogen strategy in 2022[126]. In May 2024, an updated draft of the hydrogen subsidy act ("Wasserstofförderungsgesetz") was presented. The new legislation intends to promote the installation of electrolysers as part of the decarbonisation effort of sectors that are still reliant on fossil gas.

Subsidies to fossil fuels

In its integrated national energy and climate plan (Nationaler Energie- und Klimaplan, NEKP) from 2019, Austria declared to examine subsidies that contradict the climate and energy objectives. In December 2022, a study on climate productive subsidies in Austria funded by the Austrian Ministry of Climate Action was published by the Austrian Institute for Economic Research (WIFO)[127]. The overall intention to reduce climate counterproductive subsidies has since been affirmed in various contexts. However, a concrete plan on how to reduce the subsidies has not been published so far. A revised version of the integrated national energy and climate plan has to be submitted to the European Union by end of June 2024[128]. A public consultation draft version has been published in August 2023[129].

Phase out of fossil fuel extraction

Fossil energy resources crude oil and natural gas are found in economically relevant quantities in the rocks of the Vienna Basin and the molasse zone. The production areas are located in Lower Austria, Upper Austria and Salzburg[130]. In 2022, Austria covered about 8% of its natural gas demand from domestic sources[131]. To date, there are no dedicated energy policies towards the phase-out of existing or banning of new production sites. As there was further extraction potential identified in 2023[132], there is the potential of additional fossil fuel extraction in the mid-term future.

Phase out of fossil fuel use

A renewal of the Climate Protection Act ("Klimaschutzgesetz"), which has expired in 2020, could not be reached so far. The Climate Protection Act set sector-specific emission targets, implying a phase-out of fossil fuel use. As a result, the following subsections do not contain mandatory phase-out plans for different sectors, but focus on subsidy programs and other action plans.

As a general cross-sector measure to reduce emissions and thus fossil fuel usage, Austria introduced a CO2 price for non-ETS sectors (including heating and transport) in 2022 as part of an eco-social tax reform ("Ökosoziale Steuerreform"). Among other tax reforms, it includes the so-called climate bonus

[125] https://www.bmk.gv.at/themen/klima_umwelt/energiewende/erneuerbare/foerderungen/pv/foerderung2024.html
[126] https://www.bmk.gv.at/dam/jcr:0eb2f307-1e4d-41b1-bfd8-22918816eb1b/BMK_Wasserstoffstrategie_DE_UA_final.pdf
[127] https://www.bmk.gv.at/themen/klima_umwelt/klimaschutz/nat_klimapolitik/kontraproduktiv.html
[128] https://www.bmk.gv.at/themen/klima_umwelt/klimaschutz/nat_klimapolitik/energie_klimaplan.html
[129] https://www.bmk.gv.at/dam/jcr:34c13640-4532-4930-a873-4ececc4d3001/NEKP_Aktualisierung_2023_2024_zur_Konsultation_20230703.pdf
[130] https://www.geologie.ac.at/forschung-entwicklung/kartierung-landesaufnahme/energie/erdoel-und-erdgas
[131] https://www.bmf.gv.at/themen/bergbau/bergbau-in-oesterreich/energietraeger2/erdgas.html
[132] https://www.omv.com/de/news/232728-omv-gibt-neuen-gasfund-in-oesterreich-bekannt

("Klimabonus") as a cushioning payment to protect low-income households from welfare losses induced by the CO2 price.

Electricity generation

In July 2021, Austria passed a package introducing the Renewable Energy Expansion Act, which establishes core instruments, including auctions and a market premium model, in order to achieve Austria's 2030 100% renewable electricity goal, aiming at additional 27 TWh of renewable electricity. The added renewable capacity is intended to substitute electricity from fossil fuels.

Austria has closed down its last coal power plant in Mellach (Styria) in 2020. While the preparation of a reactivation of this most recently phased-out coal power plant has been proposed at the height of the energy crisis in summer 2022 by the Austrian government, this plan did not find support in the Austrian parliament and was finally abandoned in January 2023[133].

The recent energy crisis has brought the phasing out of natural gas into attention. The Austrian government has announced a goal of 100 % renewable electricity[134] until 2030 in its government programme 2020-2024[135].

Industry

Austria has started a climate and transformation initiative ("Klima- und Transformationsoffensive") in 2022. About 3 billion Euro of subsidies are budgeted for the climate neutral transformation of the industry as part of the environmental support act ("Umweltförderungsgesetz"). Besides investment cost subsidisation, the package contains provisions for an ongoing subsidisation of prolonged increased costs connected to investments into climate-friendly technologies ("transformation subsidy"). The aid measure's authorisation by the European Commission is still pending[136].

The development of action programs on industry decarbonisation are complemented by a stakeholder process including emission intensive companies within the so-called the climate neutral industry Austria process ("Prozess Klimaneutrale Industrie Österreich"). This platform intends the development of joint action concepts as basis for industry energy policies[137].

Transport

A roadmap for the decarbonisation of the transport sector was presented with the Austrian mobility master plan ("Mobilitätsmasterplan") in 2021[138]. Central already implemented measures have been the enhancement and extension of public transport by an increase of budgets and the subsidisation of public transport tickets by the creation of the subsidised Climate Ticket ("Klimaticket") as single yearly ticket for public transport virtually all over Austria.

Electric mobility of companies and other organisations is subsidised by means of the E-mobility subsidy ("E-Mobilitätsförderung für Betriebe") and was renewed for 2024[139]. Private individuals may get up to 50% of the environmentally relevant investment costs for electric vehicles by the climate and energy fund under the program E-mobility for private individuals ("E-Mobilität für Private")[140].

---

[133] https://steiermark.orf.at/stories/3191002/

[134] 100 % are hereby defined as 100% coverage of domestic electricity demand from renewable sources ("national balance sheet"). The electricity production from natural gas is thus still possible, if Austria exports this electricity in 2030.

[135] https://www.bundeskanzleramt.gv.at/dam/jcr:7b9e6755-2115-440c-b2ec-cbf64a931aa8/RegProgramm-lang.pdf

[136] https://www.bmk.gv.at/themen/klima_umwelt/klimaschutz/ufi/industrie.html

[137] https://www.bmk.gv.at/dam/jcr:34b979ca-b2af-4fe9-91dd-f688379f3737/Prozess_Klimaneutrale_Industrie_Ergebnispapier.pdf

[138] https://www.bmk.gv.at/dam/jcr:eaf9808b-b7f9-43d0-9faf-df28c202ce31/BMK_Mobilitaetsmasterplan2030_EN_UA.pdf

[139] https://www.usp.gv.at/betrieb-und-umwelt/transport-und-verkehr/weitere-informationen-transport-und-verkehr/e-mobilitaetsfoerderung-fuer-betriebe.html

[140] https://www.umweltfoerderung.at/privatpersonen/e-mobilitaet-2024

The subsidy program emission-free commercial vehicles and infrastructure ("Emissionsfreie Nutzfahrzeuge und Infrastruktur", ENIN) bundles European and national subsidies in order to establish a zero-emission vehicle fleet combined with the needed charging and/or fuelling infrastructure. The program has been renewed in 2023[141]. The subsidy emission-free buses and infrastructure subsidy ("Emissionsfreie Busse und Infrastruktur", EBIN) focuses on emission-free infrastructure for public transportation[142].

Heating in buildings

The Austrian government aims to phase out all fossil fuel-based heating systems by 2040. However, after a long negotiation process on the Renewable Heating Act ("Erneuerbare Wärme Gesetz")[143] , the legislation passed does not include the compulsory replacement of existing heating systems. The act includes a ban on fossil fuel heating systems in new buildings. Existing support mechanisms such as the "out of oil and gas" ("Raus aus Öl und Gas") initiative have been renewed and expanded.

Agriculture

The subsidy program emission-free commercial vehicles and infrastructure ("Emissionsfreie Nutzfahrzeuge und Infrastruktur", cf. section "Transport") also targets agricultural vehicles.

Since 2023, the climate and energy funds additionally subsidies energy self-sufficient farming to increase energy security in rural areas, including subsidies for PV and battery storages, as well as energy-efficient lighting[144].

Subsidies to the nuclear industry

There are no nuclear power plants in Austria and the Austrian government also clearly states in its current government programme that nuclear power is not an alternative and that they want to continue to rely fully on renewable energy sources in the future to achieve their climate targets. Accordingly, there are no subsidies in Austria here either, and none are planned.

Other energy subsidies

The Austrian government has lowered the electricity tax to the allowed minimum of 0,1 ct/kWh amid the energy crisis of 2022, creating an indirect subsidy. This temporary relief measure is planned to end by the end of calendar year 2024, reinstating the previous tax value of 1,5 ct/kWh.

[141] https://www.bmk.gv.at/themen/mobilitaet/alternative_verkehrskonzepte/elektromobilitaet/publikationen/enin.html
[142] https://www.ffg.at/EBIN
[143] https://www.bmk.gv.at/themen/klima_umwelt/energiewende/waermestrategie/ewg.html
[144] https://www.klimafonds.gv.at/call/lw/

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Austria

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Energy tax refund - coal	Energieabgabenvergütung Kohle	Ongoing	Unknown
Energy tax refund - natural gas	Energieabgabenvergütung Erdgas	Ongoing	Unknown
Energy tax refund - petroleum	Energieabgabenvergütung Öl	Ongoing	Unknown
Tax exemption for natural gas for the transport and processing of fossil fuels	ErdgasAbgG 1 - Steuerbefreiung für Erdgas zum Transport und zur Verarbeitung von fossilen Energieträgern	Ongoing	Unknown
Support for gas diversification	Gasdiversifizierung	Ongoing	2025
Procurement of strategic gas reserve	Beschaffung strategische Gasreserve	Ended	2022
Storage costs of strategic gas reserve	Speicherkosten strategische Gasreserve	Ongoing	2025
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

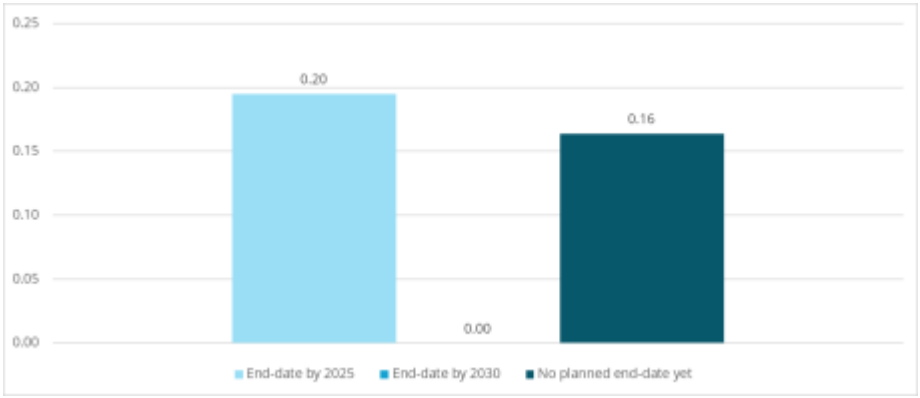
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target for Austria.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 41: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.36 billion, accounting for 5% of total energy subsidies in Austria. 46% of fossil fuel subsidies have no firm end-date.

Belgium

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024				No extraction		*No coal*				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

According to the integrated Belgian NECP 2021-2030 approved by the federal and regional governments in December 2019, Belgium would draw up by 2021 an action plan to gradually phase out subsidies for fossil fuels, taking into account among others, the need to guarantee the country's security of energy supply.

The updated draft NECP submitted in 2023 to the European Commission reiterated this commitment and emphasised the need for a clear trajectory for the phasing out of fossil fuel subsidies, taking into account the specific objectives of the different subsidies, and the possibility to reach these socio-economic objectives by other policy options that do not harm the environment.

Notwithstanding the tax rebates and exemptions on fossil fuel use, the overall tax revenues recovered via excises (and VAT) on fossil fuels sales are in Belgium quite high; phasing out all subsidies and eventually the use of fossil fuels will hence have a major impact on the state budget. According to a study published by the Belgian Federal Planning Office in April 2024, the total environmental taxes increased in Belgium from € 8,1 billion (2,30% of GDP) in 2008 to € 12,3 billion (2,22% of GDP) in

2022, of which taxes on energy represented 68%.[145] The environmental energy related taxes are hence substantially higher than the subsidies on fossil fuels.

Subsidies to fossil fuels

In line with their commitment in the Belgian NECP 2021-2030, the authorities have drafted in May 2021[146] an inventory of the existing fossil fuel subsidies at federal level; this overview has been updated in April 2023 and in May 2024.[147][148] Major concrete measures to effectively reduce and eventually phase out the fossil fuels subsidies have however not yet been taken, also due to the new context of sharply increased energy prices in 2021-2023, which substantially affected the affordability of energy to households, and the energy cost of industries.

Phase out of fossil fuel extraction

There is no fossil fuel extraction in Belgium.

Phase out of fossil fuel use

Electricity generation

Belgium has already stopped in 2016 using coal for power generation.

The reduction and eventual phase out of natural gas use for power generation is in Belgium not yet considered. Due to the phase out of nuclear power plants, new natural gas power plants are being constructed to replace part of the nuclear capacity and to serve as back-up to renewables. However, in order to be eligible for support via the CRM scheme, these new gas fired power plants must gradually reduce their GHG emissions and be fully climate neutral by 2050.

Industry

The most important fossil energy subsidy for the industrial sector is the reduced taxation on natural gas used by industrial enterprises that have concluded an energy management agreement with the regional authorities. According to the NECP this measure will be continued to enable companies to undertake further sustainability efforts by 2030. This should be done in the framework of continued improvement, adequate monitoring and reporting, while avoiding lock-in and taking into account the need for accelerated phasing out of fossil fuel subsidies.

Transport

Fossil fuel use for transport purposes is at present still subsidised, in particular for professional use. However, the federal government has initiated several tax reforms, including a reduction of the subsidies for professional fuel oil use and support for electric vehicles used in the professional market segment.

The regional governments have taken specific measures to also stimulate the electrification in the non-professional transport market segment.

Heating in buildings

Fossil fuel use for heating is mainly subsidised through specific social measures. As mentioned in the NECP, several policy initiatives are being taken to gradually reduce the use of fossil fuels in the buildings sector, e.g. by legally imposing high energy efficiency standards for new and renovated

[145] 202404300856440.REP_ETEA2024_12990_F.pdf (plan.be)
[146] Complementary analyses (klimaat.be)
[147] Inventory of fossil fuels subsidies | FPS Finance (belgium.be)
[148] 3de federale inventaris van subsidies voor fossiele brandstoffen (klimaat.be)

buildings, by stimulating/imposing building renovation and the use of sustainable heating techniques, and by forbidding the installation of fossil fuel boilers in new or renovated buildings[149].

Agriculture

Fossil fuel use in the agriculture sector is still subsidised but the overall public budget impact is limited. No information is publicly available regarding specific initiatives to reduce/abolish these subsidies.

Subsidies to the nuclear industry

In Belgium, there are no direct subsidies for nuclear power plant operators; they are financially liable for the full cost of their operations including decommissioning of installations and treatment of nuclear waste. The liability of nuclear power plant operators for consequences of accidents is by the law of 27 July 1985 (revised and complemented by the Royal Decree of 19 December 2017) limited to the levels agreed on in the Treaty of Paris. The residual risk coverage by the state could be considered as an indirect subsidy but is difficult to quantify.

Other energy subsidies

No specific information is publicly available on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Belgium

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Heating grant for oil products	Fonds Social Chauffage / Fonds Social Mazout or Sociaal Verwarmingsfonds	Ongoing	2030
Social tariff for gas	Tarif social pour le gaz	Ended	2023
Reduced energy excise duty for kerosene used as fuel	Pétrole lampant utilisé comme combustible Kerosine gebruikt als verwarmingsbrandstof	Ongoing	Unknown
Reduced energy excise duty for kerosene used as fuel for industrial and commercial uses	Pétrole lampant utilisé comme carburant pour utilisations industrielles et commerciales - taux réduits Kerosine gebruikt als motorbrandstof voor industriële en commerciële doeleinden - verminderde tarieven	Ongoing	Unknown
Partial tax refunds of excise duty on diesel for taxi drivers and freight	Remboursement de diesel professionnel (exemption augmentation droit d'accise spécial pour transport de marchandises, etc.) Terugbetaling beroepsdiesel (vrijstelling verhoging bijzondere accijns voor goederenvervoer, enz.)	Ongoing	Unknown

[149] E.g. Flanders: Verbod op het plaatsen en vervangen van stookolieketels | Vlaanderen.be
Wallonia: Interdiction des chaudières au mazout : quelles sont les mesures prévues ? (wallonie.be)

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced energy excise duty on light fuel oil	Gasoil faible teneur en soufre - utilisé comme combustible Gasolie laag zwavelgehalte - gebruikt als verwarmingsbrandstof	Ongoing	Unknown
Reduced energy excise duty for gasoil used as a fuel for industrial and commercial uses	Gasoil utilisé comme carburant pour utilisations industrielles et commerciales - taux réduits Gasolie gebruikt als motorbrandstof voor industriële en commerciële doeleinden - verminderde tarieven	Ongoing	Unknown
Reduced energy excise duty on heavy fuel oil	Gasoil haute teneur en soufre - utilisé comme combustible Gasolie hoog zwavelgehalte - gebruikt als verwarmingsbrandstof	Ongoing	Unknown
High Sulphur Gas Oil - used as fuel for industrial and commercial uses - reduced rates	Gasoil haute teneur en soufre-utilisé comme carburant pour utilisations industrielles et commerciales - taux réduits Gasolie gebruikt als motorbrandstof voor industriële en commerciële doeleinden - verminderde tarieven	Ongoing	Unknown
Reduced energy excise duty on LPG	Gaz de pétrole liquéfié utilisé comme combustible Kerosine gebruikt als verwarmingsbrandstof	Ongoing	Unknown
Certificates for CHP	Certificaten voor WKK	Ended	2023
Compensation for the indirect costs of EU ETS	Compensatie indirecte emissiekosten	Ongoing	Unknown
Compensation for the indirect costs of EU ETS	Aide aux entreprises en compensation des coûts des émissions indirectes en application des lignes directrices relatives au SEQE	Ongoing	Unknown
Support for CHP	Soutien aux unités de cogénération	Ongoing	Unknown
Certificates for CHP	Certificaten voor WKK	Ongoing	Unknown
Temporary VAT reduction from 21% to 6% for gas and heat	Réduction TVA de 21% à 6% pour le gaz et la chaleur	Ended	2023
Reduced VAT on electricity	TVA réduite sur l'électricité	Ended	2016
Basic flat rates for natural gas I	Forfaits de base pour le gaz I	Ended	2022
Excise duty reduction to limit the rise in road fuel prices	Réduction d'accises pour limiter la hausse des prix des carburants routiers	Ended	2023
€300 allowance for households heating with heating oil or bulk propane (€300 heating oil cheque)	Allocation de 300 euros pour les ménages se chauffant au gasoil de chauffage ou au propane en vrac (Chèque mazout €300)	Ended	2023
Fuel company cards	Cartes carburant entreprises	Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

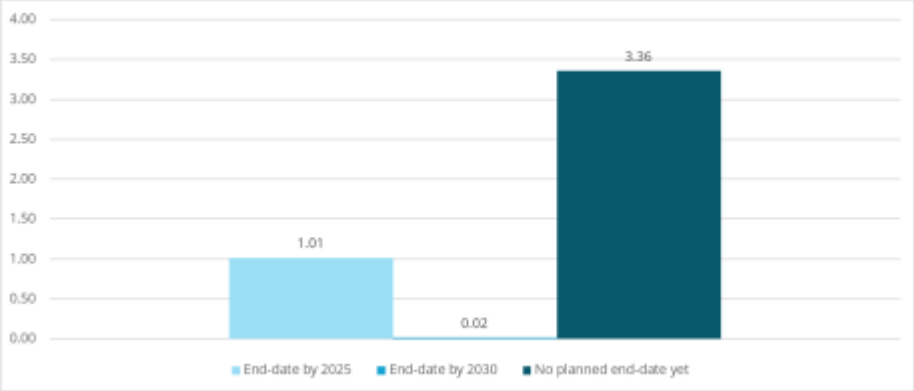
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries") ahead of the *General Union Environment Action Program to 2030*, the phasing out of all FFS identified above is expected by 2030.

We have not identified another quantified target regarding FFS phase out.

The Figure below summarizes the FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 42: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 4.39 billion, accounting for 61% of total energy subsidies in Belgium. 77% of fossil fuel subsidies have no firm end-date.

Bulgaria

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

National targets have been set in NECP for achieving a 27.89 % reduction in primary energy consumption and a 31.67 % reduction in final energy consumption by 2030 as compared with the PRIMES 2007 reference scenario.

Bulgaria target specified in NECP regarding the share of energy from renewable sources in gross final energy consumption to 2030 is 27.09 %.

Subsidies to fossil fuels

Feed-in tariffs for CHP electricity[150]

Due to the very high prices of natural gas, the preferential prices of electricity from CHP on natural gas were increased many times on 01.07.2022 and were higher than the market prices of electricity in the second half of 2022. These premiums (for electricity from highly efficient cogeneration) are included in the total amount of the subsidy from the Energy Security Fund and are used by the CHP plants themselves to subsidize the prices of heat energy for district heating. This high preferential prices and premiums for CHP on natural gas continue (ongoing) in 2023 and 2024.

Zero or reduced excise tax[151]

There is a reduced excise rate on natural gas used as motor fuel and heating fuel. The tax measure was introduced in 2006 at a tax rate of BGN 0 per 1 gigajoule. In April 2012 it was changed to BGN 0.85 per 1 gigajoule. Additionally, there is a refund of excise duty for diesel fuel used by the agricultural producers. In the period from 2010 to 2013, the measure was cancelled, and replaced with a special procedure for deducting excise duty in return for fuel vouchers in the form of state aid for the agricultural sector. Also, there is a zero-rate excise duty on sales of coal and coke to individuals for heating.

Phase out of fossil fuel extraction

No information found.

Phase out of fossil fuel use

Electricity generation

As a result of the energy crisis, the government decided to roll back an early phase-out of coal-fired power plants.[152] Nonetheless, the commitment to phase out coal by 2038 remains.[153]

Subsidies to the nuclear industry

National funds were created in 1999 to cover decommissioning and radioactive waste liabilities. The "Radioactive Waste Fund" and the "Nuclear Installations Decommissioning Fund" were established as the legal successors to the abovementioned funds under the "Safe Use of Nuclear Energy Act" adopted in 2002.The funds are independent from the nuclear industry and managed by the government. The main contribution to the two funds comes from an electricity price levy specified by the Bulgarian Council of Ministers. The Kozloduy nuclear plant pays 3% of the price of its power into the waste management fund and a further 7.5% into the decommissioning fund.

The organisations responsible for the decommissioning of the units of KNPP is the State Enterprise “Radioactive Waste” (SE RAW). The third specialized division within the State Enterprise “Radioactive

[150] http://www.dker.bg/bg/za-kevr/normativka-baza/zakoni-3.html
[151] https://www.minfin.bg/en/1300
[152] https://www.euronews.com/green/2023/01/13/bulgaria-rolls-back-plans-to-phase-out-coal-amid-fears-over-energy-and-job-security
[153] https://bnr.bg/en/post/101844531

Waste" was established in response to the objective of safe management and subsequent decommissioning of closed nuclear units 1 to 4 of Kozloduy NPP.

International fund - In November 1999 the Bulgarian government and the European Commission signed an agreement according to which the Bulgarian government undertook the obligation to early shut down and decommission Units 1-4 . The EBRD-managed International Kozloduy Decommissioning Support Fund (KIDSF), in which the European Union provided more than 95 per cent of the contributions, to finance decommissioning activities of Kozloduy 1-4 as well as support energy projects in the country. The overall compensation package to Bulgaria between 1999 and 2013 was foreseen to be €850 million. From this amount only €510 million are for nuclear sector and €340 million is for other energy projects outside nuclear sector(energy efficiency, RES etc)[154].

At the end of 2013 with Council Regulation (Euratom) of 13 December 2013 a further €293 million was made available by the EU for units 1-4 of NPP Kozloduy, with support continuing to 2020. This amounts are only for decommissioning and radioactive waste management.

The income in the Energy security fund to compensate for rising energy costs was raised mainly from the increased profits of Kozloduy NPP. These contributions far exceed the subsidies for decommissioning the plant 1-4 units in 2022.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Bulgaria

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced excise rate on natural gas used as motor fuel and heating fuel	Намалена акцизна ставка за природен газ, използван като моторно гориво и гориво за отопление	Ongoing	Unknown
Refund of excise duty for diesel fuel used by the agricultural producers	Възстановен акциз върху закупен газьол, използван в първично селскостопанско производство	Ended	2023
Zero-rate excise duty on sales of coal and coke to individuals	Нулева акцизна ставка върху въглищата и кокса при продажба на физически лица	Ongoing	Unknown
Feed-in tariffs/ Contract for premium CHP and district heating	Преференциални цени за енергия от ВИ	Ongoing	Unknown
Long term Purchase Power Agreements (PPAs)	Споразумение за изкупуване на електроенергия.	Ongoing	Unknown
Granting of a loan to Bulgargaz EAD for the provision of working capital to purchase natural gas		Ended	2022
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown

[154] http://www.oecd-nea.org/law/legislation/

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

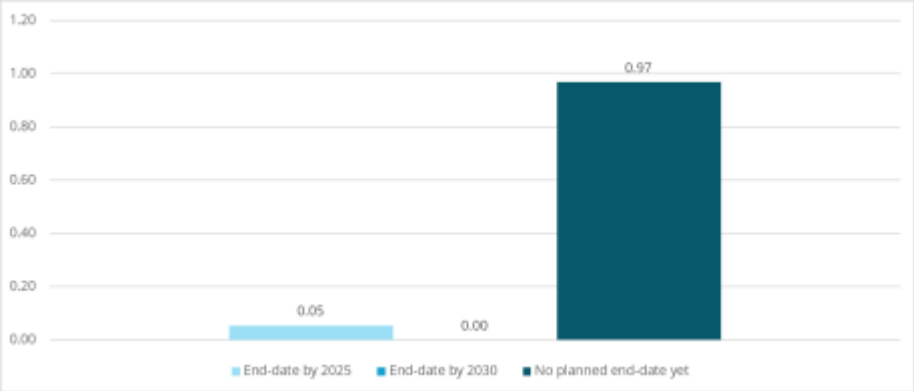
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 43: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 1.02 billion, accounting for 63% of total energy subsidies in Bulgaria. 95% of fossil fuel subsidies have no firm end-date.

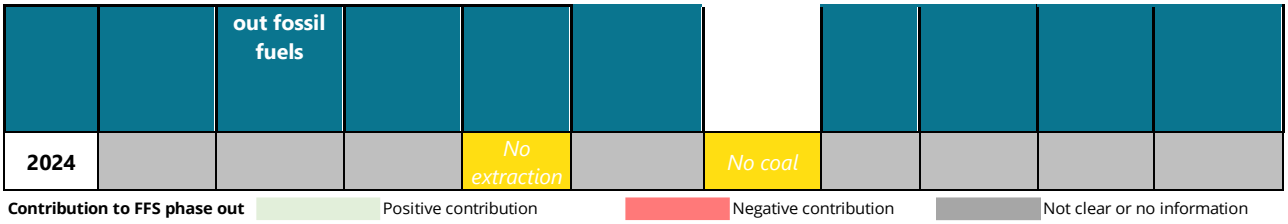
Cyprus

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture



The National Energy and Climate Plan (NECP) of Cyprus[155] states that fossil fuels subsidies are provided for generation and consumption through tax exemptions and subsidies to energy-intensive industries. These are captured in the database as well. On the other hand, Cyprus provides significant subsidies to promote the use of RES in residential and industrial sector, for heating and cooling and decarbonization of the buildings (also captured in the database).

Subsidies to fossil fuels

At the moment, the majority of Cyprus' energy consumption still comes from fossil fuels and specifically from oil, and the country is heavily dependent on them. As such, Cyprus still provides subsidies in the form of excise tax exemption for several fossil fuels such as gas oil.

Phase out of fossil fuel extraction

There is no fossil fuel extraction in Cyprus.

Phase out of fossil fuel use

Electricity generation

Cyprus does not have any coal-fired power plants.

The following measures that promote RES for electricity generation (therefore indirectly phasing out fossil fuels) are mentioned in the NECP:

- Plan for electricity generation from RES for own consumption (net metering, net-billing, virtual net-metering, virtual net-billing)
- Provision of financial support for installation of photovoltaic and
- solar systems in dwellings
- Installation of RES systems in public buildings, commercial and industrial premises combined with energy upgrading measures
- Promotion of high-efficiency heat pumps
- Sponsorship projects for electricity storage
- Promotion of RES energy communities
- Simplification and acceleration of authorisation procedures for RES projects, operation of a one-stop shop

Industry

The following measures are mentioned in the NECP:

- Economic incentives for refrigeration recovery
- Campaigns for the collection and destruction of recovered cooling gases

Transport

The following measures are mentioned in the NECP:

[155] https://www.energy.gov.cy/assets/modules/wnp/articles/202307/226/docs/esek29012024.pdf

- Sustainable Urban Mobility Plans (studies and implementation)
- Telematic Transport System
- New Low/Zero Pollutant Bus Contracts/project for shelter stops
- Tree planting along the road network
- Amendment of the Motor Vehicles and Road Traffic Act
- Promotion of 'The Determination of Special Measures for the Reduction of Air Pollutants and Greenhouse Gas from Road Transport Act of 2023'
- Incentive scheme for the purchase and use of low/zero emission vehicles and scrapping of old polluting vehicles
- Deployment of recharging infrastructure for electric vehicles
- 17 actions to promote urban cycling and the micro-mobility
- Techno-economic and feasibility studies for light trains
- Pricing policy for urban parking
- Information campaigns and public education targeting large
- groups
- Promotion of alternative fuels (e.g. biomethane, hydrogen)
- Establishment of planning obligations for sustainable development for planning permission
- Upgrading urban environment and transport network design standards

Heating in buildings

The main support schemes intended for the heating sector are the financial scheme for installing or replacing the solar water heaters, as well as the support scheme for upgrading existing buildings that include also subsidies for heating and cooling systems.[156] The NECP also mentions the intention to promote high-efficiency heat pumps.

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Cyprus

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Gasoil excise tax exemption for power generation	Απαλλαγή ειδικού φόρου κατανάλωσης πετρελαίου για την ηλεκτροπαραγωγή	Ongoing	Unknown
Heavy fuel oil excise tax exemption	Απαλλαγή ειδικού φόρου κατανάλωσης μαζούτ	Ongoing	Unknown
Excise tax on gasoil and heavy fuel oil for cement industry	Ειδικός φόρος κατανάλωσης στο πετρέλαιο και στο μαζούτ για την τσιμεντοβιομηχανία	Ongoing	Unknown

[156] https://resecfund.org.cy/el

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax on gasoil for agriculture	Ειδικός φόρος κατανάλωσης στο μαζούτ για την γεωργία	Ongoing	Unknown
Excise tax on gasoil for heating	Ειδικός φόρος κατανάλωσης στο μαζούτ για την θέρμανση	Ongoing	Unknown
State support to an LNG terminal	Κατασκευή χερσαίου τερματικού LNG	Ongoing	2043
Fuel and heating tax relief of 7 cents/liter and 8,3 cents/liter	Ελάφρυνση φόρου καυσίμων και θέρμανσης 7 σεντ/λίτρο και 8,3 λεπτά/λίτρο	Ongoing	2024
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

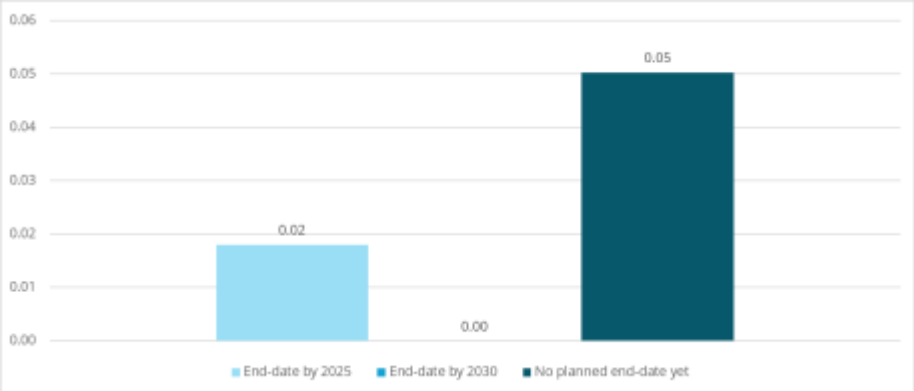
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target for Cyprus.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 44: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.07 billion, accounting for 37% of total energy subsidies in Cyprus. 74% of fossil fuel subsidies have no firm end-date.

Czechia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

In their National Energy and Climate Plan, Czechia indicated that it would contribute to the achievement of the EU energy and climate targets.[157] The National Energy and Climate Plan from 2019, building on the strategic document "Climate Protection Policy of the Czech Republic"[158] from 2017, set out main targets for the "Decarbonisation" dimension by 2030 and indicative targets by 2040 and 2050. For 2050, the target corresponds to a reduction of 80% of GHG emissions compared to 1990).

Following the approval of the Fit for 55, the implementation package for the European Green Deal, and updated energy and climate targets, key strategic documents are being updated in the Czech Republic. These are 3 interconnected and complementary documents - the National Climate and Energy Plan (draft from the end of 2023, final version to be released by June 2024)[159], the State Energy Policy[160] (draft from February 2024)[161] and the Climate Protection Policy (draft from February 2024)[162].

The main purpose of the State Energy Policy (SEP) is to ensure reliable, secure and environmentally-friendly supplies of energy to meet the needs of the populace and economy of the Czech Republic, at competitive and acceptable prices under standard conditions. The Climate Protection Policy of the Czech Republic is the basic strategic document of the Czech Republic in the area of reducing greenhouse gas emissions and sets out the main objectives in this area and measures to achieve them. The National Climate and Energy Plan contains the objectives and main policies in all five dimensions of the Energy Union. Through this document, Member States are obliged, among other things, to inform the European Commission of their national contribution to the agreed European targets on greenhouse gas emissions, renewable energy, energy efficiency and electricity and transmission system interconnection.

[157] https://energy.ec.europa.eu/system/files/2020-03/cs_final_necp_main_en_0.pdf

[158] Executive summary in English: https://www.mzp.cz/en/climate_protection_policy
Full document in Czech: https://www.mzp.cz/cz/politika_ochrany_klimatu_2017

[159] https://www.mpo.gov.cz/cz/energetika/strategicke-a-koncepcni-dokumenty/aktualizace-vnitrostatniho-planu-ceske-republiky-v-oblasti-energetiky-a-klimatu--277532/

[160] https://www.mpo.gov.cz/en/energy/state-energy-policy/state-energy-policy--233258/

[161] https://www.mpo.gov.cz/cz/rozcestnik/pro-media/tiskove-zpravy/aktualizace-statni-energeticke-koncepce-sek--279668/

[162] https://www.mzp.cz/cz/news_20240206_MZP-aktualizovalo-Politiku-ochrany-klimatu-v-CR-Do-roku-2030-budeme-ziskavat-tretinu-energie-z-obnovitelnych-zdroju-a-spotrebu-snizime-o-petinu

Subsidies to fossil fuels

The main area where the government aims to support fossil fuels is co-financing the transformation of heat cogeneration units (for district heating) from coal to natural gas. This subsidy will be financed from the modernisation fund resources, and in the first call for projects, CZK 6.4 billion were made available.[163] According to the Ministry of the Environment, CZK 14 billion are allocated for the modernization of heating plant systems under the HEAT programme[164].

Apart from that the Czech Republic plans to provide support of CZK 13.26 billion for gas and coal heating plants to compensate for the prices of emission allowances back for 2021 and 2022[165]. Another roughly CZK 8 billion a year is to be followed in 2023 and 2024[166]. The operating support is also provided under the Modernisation fund.

Other fossil fuel subsidies include boiler subsidies for lower income households support heat pumps, which may include gas heat pumps (min. energy class A+ and parameters according to EU Commission Regulation 813/2013)[167].

The National Climate and Energy Plan further identifies a fossil fuel subsidy housing assistance granted pursuant to Act No 117/1995 Coll. on State Social Support[168] (as it cannot be excluded that the recipients these allowances are not used to cover fossil fuel heating costs)[169].

Phase out of fossil fuel extraction

In the case of coal, a phase-out is being considered for 2025-2026[170]. In the case of lignite, there is no known phase-out plan, but a decline in the use of coal for power and heat generation by 2033 is planned, and mining will have to respond to this situation[171]. Oil and natural gas are also extracted in small quantities (roughly 1-2% coverage of Czech needs) in the Czech Republic[172], but information on the phase-out is not known.

Phase out of fossil fuel use

According to the Czech National Climate and Energy Plan (draft from the end of 2023)[173] "*The Czech Republic's strategic objective is to reduce the share of fossil fuels (used without capture technology) in primary energy consumption to 50 % by 2030 and 0 % by 2050 and to completely reduce the use of coal for electricity and heat generation by 2033.*"

Electricity generation

The Czech government is currently discussing the timeline for phasing out coal power plants. In 2019, a so called 'Coal Commission[174]' was established, as an advisory body of the Czech Government, with the objective to provide the government, to the maximum extent possible, consensus outputs with

[163] https://oenergetice.cz/teplo/v-prvnich-vyzvach-modernizacniho-fondu-je-k-dispozici-64-mld-kc-pro-teplarny
[164] https://ekolist.cz/cz/zpravodajstvi/zpravy/modernizacni-fond-podpori-temer-30-mld.kc-dalsi-upravy-teplaren-i-rozvoj-oze
[165] https://apps.odok.cz/veklep-detail?pid=KORNCANFFJKE
[166] https://www.hybrid.cz/do-fosilni-energetiky-maji-zamirit-dalsi-miliardy-co-na-to-evropska-komise/
[167] https://www.sfzp.cz/dotace-a-pujcky/kotlikove-dotace/domacnosti-s-nizsimi-prijmy/
[168] Page 328: https://commission.europa.eu/document/download/caa18b5a-3c07-46b5-8089-2c2753ff68e5_en?filename=Czech%20Draft%20Updated%20NECP%202021%202030_en.pdf
[169] https://www.cde-org.cz/media/object/2284/cde_fosilni_dotace_v3.pdf
[170] https://www.okd.cz/cs/o-nas/historie-spolecnosti ; https://www.newstream.cz/zpravy-z-firem/posledni-dul-kde-se-v-cr-tezi-cerne-uhli-zavre-za-dva-roky
[171] https://oenergetice.cz/energetika-v-cr/vlada-potvrdila-konec-uhli-v-roce-2033-ale-obnovitelne-zdroje-podcenila-tvrdi-neziskove-organizace
[172] From the document on import dependency: https://www.mpo.gov.cz/assets/cz/energetika/statistika/energeticke-bilance/2024/3/Dovozni_zavislost_2012-2022_1.pdf
[173] https://commission.europa.eu/document/download/caa18b5a-3c07-46b5-8089-2c2753ff68e5_en?filename=Czech%20Draft%20Updated%20NECP%202021%202030_en.pdf
[174] https://www.mpo.cz/cz/energetika/uhelna-komise/uhelna-komise--248771/

regard to the future use of coal in Czechia. The current recommendation of the Commission is to set 2038 as a realistic year of reduction in the use of coal for production purposes of electricity and heat in the country.[175] The most recent Policy Statement of the Government[176] states that 'coal-fired power plants will be shut down under the condition of ensuring sufficient backup capacities. The aim is to create the conditions for the energy transformation and development of coal regions in such a way that a shift away from coal is possible by 2033.

In January 2022, the Czech Republic has announced it will exit coal by 2033.[177] This is also confirmed within the proposals of the National Climate and Energy Plan (2023) and State Energy Policy (2024), which also shows the roadmap of the energy mix for gross electricity generation[178]. At the same time, a law is being drafted to ensure a controlled phase-out of coal in the power sector by 2033[179].

However, according to news from June 2024, an adjustment will be added to one of the amendments (LEX OZE III) to the energy law that would allow the operation of coal-fired power plants to be supported under certain circumstances[180]. The point is that one of the companies operating coal-fired power plants in the Czech Republic has announced the imminent closure of operations due to unprofitability of production (due to falling electricity prices and rising prices of emission allowances). Therefore, a new mechanism has been proposed whereby, in the event of an assessment showing that the operation of a coal-fired power plant is necessary to maintain the stability of the electricity grid, temporary forced operation can be ordered. Loss-making operations would then be subsidised by the state. The new mode is meant to act as a failsafe so that coal doesn't drop out of the game too soon until it is replaced by gas (nature gas is to be used as a transit fuel).

At the same time, gas-fired power plants are offered a financial guarantee in the form of capacity payments. In addition, the construction of gas-fired power plant is being supported. However, these power plants are expected to be ready for the transition to hydrogen.

Transport

The National Clean Mobility Action Plan[181] considers the development of alternative fuels incl. LNG and CNG. The implementing programme is then mostly the Operational Programme Transport 2021-2030, which supports CNG and LNG in the programme document. However, no calls have been issued for this area so far. In addition, there has been a rather slow transition to support for bioCNG and bioLPG.

Heating in buildings

The targets are defined at the EU level, but there are no deadlines at the Czech level, or the new EU requirements from 2023 and 2024 have not yet been transposed into Czech legislation.

Subsidies to the nuclear industry

The Czech government plans to build a new reactor unit on the site of existing NPP Dukovany. Regarding the construction of a new reactor, a special law was adopted, which entered into force in

[175] https://www.mpo.cz/assets/cz/energetika/uhelna-komise/2021/12/Prubezne-vystupy-a-doporuceni-Uhelne-komise.pdf
[176] https://www.vlada.cz/en/jednani-vlady/policy-statement/policy-statement-of-the-government-193762/ last updated 1 March 2023
[177] https://beyondfossilfuels.org/2022/01/07/czech-republic-commits-to-2033-coal-exit-which-will-need-to-be-sped-up/
[178] Table 2: https://www.mpo.gov.cz/cz/rozcestnik/pro-media/tiskove-zpravy/aktualizace-statni-energeticke-koncepce-sek--279668/
[179] https://www.ceskenoviny.cz/zpravy/2487624
[180] https://www.seznamzpravy.cz/clanek/ekonomika-firmy-vlada-dohodla-velke-sachy-v-energetice-podpori-plyn-v-nouzi-i-uhli-253820
https://archiv.hn.cz/c1-67333610-lex-tykac-neni-lex-tykac-dosahnout-na-dotace-pro-uhli-bude-hodne-obtizne
https://denik.obce.cz/clanek.asp?id=6972394
[181] https://www.mdcr.cz/getattachment/Media/Media-a-tiskove-zpravy/Vlada-schvalila-aktualizovany-Narodni-akcni-plan-c/Aktualizace-NAP-CM.pdf.aspx

2022[182]. This new reactor will be built and operated by the majority state-owned company ČEZ. Till 2029, when the construction should start, all planning costs of the project are paid by ČEZ.

The government plans to provide repayable financial assistance for the construction of this project[183]. According to some media reports, the state subsidy is expected to amount to EUR 7.5 billion[184], but the final amount is still in the preparation stage and will be determined on the basis of the outcome of the tender for the contractor for the construction of the first unit of the nuclear power plant. A specific statement from the government has not yet been given. Based on the Decision text (page 19) from 04/2024 according to SA.58207, amount to be financed via State loan should be EUR 7.56 billion[185]. The investment costs are officially estimated at CZK 160 billion, however some estimates are significantly higher, from CZK 350 to 400 billion[186].

The government also intends to support the operation of the new block with price guarantees. This consists of a two-way contract-for-difference and strike price on the basis of a discounted cash flow model. Duration of the direct price support should be 40 years[187].

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Czechia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Exempt from tax on natural gas	Osvobození od daně ze zemního plynu - metalurgie/mineralogie	Ended	2023
Exempt from tax on solid fuels	Osvobození od daně ze zemního plynu - metalurgie/mineralogie	Ended	2023
Excise tax refund for mineral oils used in agriculture/forestry	Zelená nafta - vracení daně z minerálních olejů osobám užívajícím tyto oleje pro zemědělskou prvovýrobu/pro provádění hospodaření v lese	Ongoing	Unknown
Excise tax refund for mineral oils used for heating	Vracení daně z minerálních olejů osobám užívajícím tyto oleje pro výrobu tepla	Ongoing	Unknown
Excise tax refund for mineral oils used in mineralogy/metallurgy	Vracení daně z minerálních olejů osobám užívajícím tyto oleje v mineralogických postupech a metalurgických procesech	Ongoing	Unknown
Excise tax refund for gasoline used for other activites	Vracení daně z ostatních benzinů	Ongoing	Unknown

[182] https://www.zakonyprolidi.cz/cs/2021-367
[183] https://www.zakonyprolidi.cz/cs/2021-367
[184] https://archiv.hn.cz/c1-67294720-bruselske-razitko-na-statni-pomoc-pro-jaderny-blok-v-dukovanech-dostane-vlada-v-breznu
[185] https://competition-cases.ec.europa.eu/cases/SA.58207
[186] https://www.ceskenoviny.cz/zpravy/analytik-vyhlaseni-tendru-na-dukovany-je-zatim-nejvetsi-chybou-soucasne-vlady/2179583
[187] https://ec.europa.eu/commission/presscorner/detail/en/IP_24_2366

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax refund for degraded mineral oils and mineral oil used as production feedstock	Vracení daně z minerálních olejů plátci	Ongoing	Unknown
Environmental subsidy from the annual fee for the extracted minerals	"Ekologická dotace" z roční úhrady z vydobytých nerostů (EkD SR)	Ongoing	Unknown
Subsidies to erase consequences of mining	Zahlazování následků hornické činnosti - dotace (ZNHČ)	Ongoing	2042
Exemption from gas tax (persons enjoying privileges and immunities)	Osvobození od daně ze zemního plynu (osobám požívajícím výsad a imunit)	Ongoing	Unknown
Support to RES - secondary sources (mining and degassing gas)	Poskytnuta podpora OZE - druhotné zdroje (důlní a degazační plyn)	Ongoing	Unknown
Support to CHP	Poskytnuta podpora KVET	Ongoing	Unknown
Financing of some social and health benefits of miners	Financování některých sociálně zdravotních dávek horníků	Ongoing	Unknown
Allowance to mitigate the social impact of restructuring and downturn of legal entities in insolvency dealing with hard coal mining	Příspěvek ke zmírnění sociálních dopadů souvisejících s restrukturalizací a útlumem činnosti právnických osob v insolvenci zabývajících se těžbou černého uhlí	Ongoing	2031
Allowance to mitigate the social impact of restructuring and downturn of legal entities in insolvency dealing with lignite and uranium mining	Příspěvek ke zmírnění sociálních dopadů souvisejících s restrukturalizací a útlumem činnosti právnických osob v insolvenci zabývajících se těžbou uhlí nebo uranu	Ongoing	2031
Support for the development of CNG filling station infrastructure	Podpora rozvoje infrastruktury CNG plnících stanic	Ended	2020
Support for the development of LNG filling station infrastructure	Podpora rozvoje infrastruktury LNG plnících stanic	Ended	2020
ENERG ETS program under the TCTF: Modernisation Fund	TCTF: Modernizační fond - program ENERG ETS	Ongoing	2025
Programme for the replacement of old boilers - lower income households	Kotlíkové dotace – dotace pro domácnosti s nižšími příjmy	Ongoing	Unknown
Temporary reduction in excise on gasoline and diesel	Dočasné snížení spotřební daně z benzinu a nafty	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

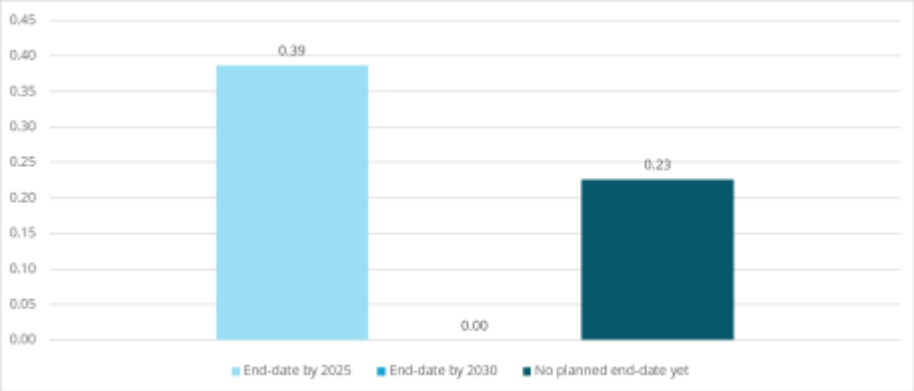
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target for Czechia.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 45: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.61 billion, accounting for 9% of total energy subsidies in Czechia. 37% of fossil fuel subsidies had no firm end-date.

Germany

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

Germany aims to achieve climate neutrality by 2045, as outlined in its revised Climate Protection Act. Its ambition to decarbonise energy systems relies on expanding renewables, electrification, improving energy efficiency, and increasing the use of bioenergy, green hydrogen, and synthetic fuels ('Power-to-X'). Accordingly, the government intends to phase out coal by 2030, but no later than 2038. It also

aims to increase the share of renewables in electricity (mainly wind and solar power) to 80% by 2030. To this end, the government enacted comprehensive legislative measures in 2023.[188]

Gas has become a key energy technology for the time being. In 2023, after several delays, the German government concluded the use of nuclear power, fulfilling longstanding plans.[189] In addition, while hydrocarbon imports make up half of total energy supply, Russian gas imports officially ceased in 2022. The government, therefore, planned to install six new mobile terminals to import liquefied natural gas (LNG), four of which came online by the end of 2023.[190]

Coal-fired power generation hit its lowest level since the 1960s. Due to a weaker economy, improved conditions in the European electricity market, and a record year for renewables, lignite use dropped by 25% and hard coal by 31%, contributing to the bulk of emission reductions in 2023.[191]

Subsidies to fossil fuels

Germany is committed to phasing out fossil fuel subsidies, as evidenced by its long-term climate commitments and transition policies. For example, federal law supports structural industrial transformation in Eastern and Western Germany as affected regions phase out coal.[192] However, last year witnessed substantial short- to medium-term fossil fuels subsidies in response to heightened energy expenses.

To mitigate the price hikes for gas and electricity, in late 2022 the federal government allocated €200 billion for comprehensive price guarantee schemes throughout 2023 ('Abwehrschirm').[193] Firstly, next to lump-sum payments for different groups of society, all energy consumers received a one-time waiver of monthly down payments in end-2022. Secondly, the gas price for households and small and medium-sized businesses (SME) (less than 1.5 million kWh per year) was capped at 12 ct/kWh and for district heating at 9.5 ct/kWh, applied to 80% of annual consumption. For around 25,000 energy-intensive industrial companies (more than 1.5 million kWh per year), the price was capped at 7 ct/kWh, applied to 70% of annual consumption. Thirdly, the electricity price for SMEs (less than 30,000 kWh per year) was capped at 40 ct/kWh, applied to 80% of annual consumption; for energy-intensive companies (more than 30,000 kWh per year), it was capped at 13 ct/kWh, applied to 70% of consumption. Moreover, the tax on gas was reduced from 19 to 7%.[194]

At the same time, the German government has expanded LNG capacities. To diversify and secure energy supplies it has expedited the installation of new LNG terminals. The federal government is

[188] Federal Ministry for Economic Affairs and Climate Action (BMWK) (2022), Climate Action in Figures. https://www.bmwk.de/Redaktion/EN/Publikationen/Klimaschutz/climate-action-in-figures.pdf; BMWK (2016): Klimaschutzplan 2050. https://www.bmwk.de/Redaktion/DE/Publikationen/Industrie/klimaschutzplan-2050.pdf; Climate Action Tracker, Germany Policies and Actions (2024). https://climateactiontracker.org/countries/germany/policies-action/

[189] Federal Ministry for the Environment (2023), Press Release. https://www.bmuv.de/en/pressrelease/germany-brings-era-of-nuclear-power-to-an-end

[190] European Commission (2023). State aid: Commission approves €40 million German support for on-shore LNG terminal in Brunsbüttel. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3612; Bundesnetzagentur (2024), Press Release, gas supply figures for 2023, https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2024/20240104_Gasversorgung2023.html

[191] Agora Energiewende (2024). Die Energiewende in Deutschland: Stand der Dinge 2023. Rückblick auf die wesentlichen Entwicklungen sowie Ausblick auf 2024. https://www.agora-energiewende.de/fileadmin/Projekte/2023/2023-35_DE_JAW23/A-EW_317_JAW23_WEB.pdf

[192] Bundesregierung (2023). Kohleausstieg und Strukturstärkung. Von der Kohle zur Zukunft. https://www.bundesregierung.de/breg-de/schwerpunkte/klimaschutz/kohleausstieg-1664496; European Commission (2022), Directorate-General for EU regional and urban policy. EU Cohesion Policy: €2.5 billion for a just climate transition in Germany. https://ec.europa.eu/regional_policy/whats-new/newsroom/21-10-2022-eu-cohesion-policy-eur2-5-billion-for-a-just-climate-transition-in-germany_en

[193] https://www.bundesregierung.de/breg-de/aktuelles/abwehrschirm-2130944

[194] Bundesregierung (2023). Wir entlasten Deutschland. https://www.bundesregierung.de/breg-de/schwerpunkte/entlastung-fuer-deutschland

thereby seeking alternative gas suppliers, including from Qatar, the US, and Senegal which, however, could perpetuate dependence on this energy source among providers and consumers.[195]

Overall, significant funds are allocated to the long-term decarbonization of the energy system. These focus on a just transition, on the one hand, and on innovation in grids, heating, and storage, on the other. However, substantial support for coal and gas remained in place in the short term.

Phase out of fossil fuel extraction

Coal-fired power generation, linked to domestic extraction, continues to play a significant role. Despite coal's share in the electricity system being halved over the past five years, it still accounted for a quarter in 2023. Two-thirds were sourced from lignite, amounting to 102 million tonnes, traditionally the largest supply in the EU.[196]

The extraction of coal is on a phase-out trajectory, albeit a turbulent one. The Coal Exit Act (Kohleausstiegsgesetz), enacted in 2020, anticipates the gradual coal phase-out by 2038, providing €40 billion in compensation to affected regions and €4.35 billion for plant operators (RWE, LEAG). Furthermore, during the 2022 energy crisis, the state government of North Rhine-Westphalia struck a deal with RWE, one of the four major utilities, to accelerate the coal exit from 2030. In this vein, RWE receives €2.6 billion in state aid, paid in instalments over 15 years, for the early closure of lignite-fired power plants. However, the agreement also entailed contentious concessions for extraction (Lützerath/Hambach forest) and the postponement of other plant closures from 2022 to 2024.[197]

Historic fossil fuel extraction still requires reparations. To cope with the consequences from open-pit mining in Eastern Germany, the federal and state governments plan to spend a total of €1.44 billion on re-naturalisation in former extraction sites from 2023-2027.[198]

Phase out of fossil fuel use

Electricity generation

Conventional electricity sources ranked second to renewables in 2023. For the first time, renewable sources contributed more electricity than conventional ones for almost the entire year. Overall, renewables reached 252 billion kWh, a new peak, making up 56% of total electricity supply. Coal-fired electricity generation (26%) has significantly decreased, while the share of gas (14%) has

[195] European Commission (2023). State aid: Commission approves €40 million German support for on-shore LNG terminal in Brunsbüttel. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3612; Bundesnetzagentur (2024), Press Release, gas supply figures for 2023, https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2024/20240104_Gasversorgung2023.html

[196] Climate Action Tracker, Germany Policies and Actions (2024). https://climateactiontracker.org/countries/germany/policies-action/; Statistisches Bundesamt (2024). Stromerzeugung 2023. 56 % aus erneuerbaren Energieträgern. https://www.destatis.de/DE/Presse/Pressemitteilungen/2024/03/PD24_087_43312.html; IEA (2023). Germany Energy Supply. https://www.iea.org/countries/germany/energy-mix; Statistisches Bundeamt (2023). Deutschland größter Kohleproduzent in der EU. https://www.destatis.de/Europa/DE/Thema/Umwelt-Energie/Braunkohle.html

[197] European Commission (2023). Commission approves €2.6 billion State aid to RWE for early closure of lignite-fired power plants in Germany. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5815; Climate Action Tracker, Germany Policies and Actions (2024). https://climateactiontracker.org/countries/germany/policies-action/

[198] In Eastern Germany, of which large parts are characterized by coal mining, the Federal-State Office for Lignite Remediation (Bund-Länder-Geschäftsstelle für die Braunkohlesanierung) is in charge of the reclamation of areas used for mining. Since 1993, more than €10 billion have been used for this purpose in total. Bundesfinanzministerium (2023). Bundesministerien und Länder schließen neues Verwaltungsabkommen zur Braunkohlesanierung. https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2022/12/2022-12-08-neues-verwaltungsabkommen-zur-braunkohlesanierung.html

rebounded from the energy crunch in 2022.[199] Still, for coal- and gas-powered electricity, several subsidies were in place across the value chain.

Operators of fossil fuel power plants receive payments to maintain them in stand-by mode ('Kapazitätsreserve'). This capacity reserve costs €68 million (1,086 MW) for the period from 2022-2024.[200] Moreover, power generators received energy tax reductions or exemptions subsidising the use of fossil fuels in the production of electricity or combined heat and power ('Energiesteuerbegünstigung für die Stromerzeugung' and 'Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme').

These measures generally benefit fossil fuels since coal and gas use are co-subsidized. Yet, subsidies are also in place to directly phase out coal power. In addition to direct payments from the federal budget for development in coal regions under the Coal Exit Act, the European Commission approved a competitive coal phase-out tender mechanism in 2020. By mid-2023, bids for around 542,000 MW of capacity were awarded, with operators receiving compensation of €54,038 per MW for phased-out capacity by 2026. For comparison, in 2023, a total of 433,016 MW of coal capacity had to be retired for €93,482 per MW based on an earlier bid.[201]

Industry

The government stepped-up support for energy-intensive industry ('Strompreispaket'). Worried about Germany's manufacturing sector reducing or relocating production abroad, the government introduced measures in late-2023 to lower electricity costs for the industry. Firstly, it lowered the electricity tax for manufacturing from 1.537 ct/kWh to the EU minimum of 0.05 ct/kWh for 2024 and 2025. Secondly, it expanded the electricity price compensation, which covers indirect carbon emission costs of 350 companies, by five years and removed the requirement for companies to bear the costs for one gigawatt-hour. Additionally, it extended supplementary aid ('Super Cap') for 90 particularly energy-intensive companies.[202] A study estimates this measure to cost around €10 billion through 2030.[203]

However, under the price compensation scheme, energy-intensive companies will have to allocate half of their savings towards energy efficiency and decarbonization.[204]

Heating in buildings

In September 2023, the Bundestag passed the Building Energy Act ('Gebäudeenergiegesetz'). It initiates a comprehensive transition to low-carbon heating. Starting in 2024, newly installed heating

[199] Statistisches Bundesamt (2024). Stromerzeugung 2023. 56 % aus erneuerbaren Energieträgern. https://www.destatis.de/DE/Presse/Pressemitteilungen/2024/03/PD24_087_43312.html

[200] Netztransparenz (2022). Veröffentlichungen zum Erbringungszeitraum 2022-2024. https://www.netztransparenz.de/de-de/Systemdienstleistungen/Betriebsf%C3%BChrung/Kapazit%C3%A4tsreserve/Ver%C3%B6ffentlichungen-zum-Erbringungszeitraum-2022-2024 ; Bundesnetzagentur (2024). Kapazitätsreserve. https://www.bundesnetzagentur.de/DE/Fachthemen/ElektrizitaetundGas/Versorgungssicherheit/KapRes/start.html

[201] Bundesnetzagentur (2024). Informationen zu den beendeten Ausschreibungsverfahren des Kohleausstiegs. https://www.bundesnetzagentur.de/DE/Fachthemen/ElektrizitaetundGas/Kohleausstieg/BeendeteAusschreibungen/start.html

[202] Bundesregierung (2023). Presseartikel 239, Strompreispaket für produzierende Unternehmen – Bundesregierung entlastet stromintensive Unternehmen. https://www.bundesregierung.de/breg-de/aktuelles/strompreispaket-fuer-produzierende-unternehmen-bundesregierung-entlastet-stromintensive-unternehmen-2235602; EWI (2023). Strompreisbestandteile, Strompreispaket und Verteilungseffekte. https://www.ewi.uni-koeln.de/cms/wp-content/uploads/2023/12/Policy_Brief_Strompreisbestandteile.pdf

[203] https://www.spiegel.de/wirtschaft/soziales/strompreis-regierung-einigt-sich-auf-paket-fuer-industrie-a-b1d02493-0b0b-47e2-aab1-14027bede32d

[204] European Commission (2023). State aid: Commission approves €6.5 billion German scheme to address carbon leakage risk for energy-intensive companies resulting from national fuel emission trading system. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4105; Bertelsmann Stiftung (2023): Reform umweltschädlicher Subventionen. Auswirkungen auf Klima, Gesellschaft und Wirtschaft. https://foes.de/publikationen/2023/W_Reform_umweltschaedlicher_Subventionen.pdf

systems must use at least 65% renewable energy, with transition periods, exemptions, and different subsidies for retrofitting and clean energy technology in place.[205]

Agriculture

In late 2023, the German government proposed cutting the tax subsidy on agricultural diesel. The measure, which is part of an austerity package, has angered farmers who contest the measure and joined in a series of protests.[206]

Subsidies to the nuclear industry

In 2023, Germany exited nuclear energy after a brief postponement. Following a short-term extension of the licenses for three power plants to secure electricity supplies amid the 2022 energy crunch, the last nuclear power plants shut down in April 2023. Operators have begun decommissioning their plants. Consequently, subsidies benefiting nuclear power usage have also been effectively phased out.[207]

The phase-out from nuclear builds on the country's distinct history with the technology. The oil crisis of the 1970s, along with the 1986 Chernobyl disaster and the Fukushima accident in 2011, threatened the economic order by casting doubts on reliable energy supplies. These events accelerated the early adoption of renewable energy research and development and sparked anti-nuclear movements questioning the safety of nuclear technology. Environmental politics began to significantly shape public opinion and policy decisions, further complicated by the ongoing debate over nuclear waste disposal among federal states. Following multiple attempts, in 2011, the concerns culminated in the decision to end nuclear power generation by 2022.[208]

The government pays its share for the accelerated nuclear exit while also adhering to the polluter pays principle. In 2021, a ruling by the Federal Constitutional Court determined the permissible size and form of federal support for the phase-out of nuclear energy. Consequently, the federal government and nuclear power plant operators agreed on €2.4 billion in compensation payments, with €1.4 billion going to Vattenfall, €0.9 billion to RWE, and the remainder to EnBW and PreussenElektra (a subsidiary of E.ON).[209]

Other energy subsidies

No information found on the phase out of other energy subsidies.

---

[205] Bundesministerium für Wirtschaft und Klimaschutz (2023). Startschuss fürs Heizen mit erneuerbaren Energien – Bundestag beschließt Novelle des Gebäudeenergiegesetzes. https://www.bmwk.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2023/10/03-novelle-des-gebaeudeenergiegesetzes.html

[206] Deutsche Welle (2024). German Bundestag approves controversial diesel subsidy cuts. https://www.dw.com/en/german-bundestag-approves-controversial-diesel-subsidy-cuts/a-68150614

[207] On 31 December 2021, the Grohnde, Gundremmingen C and Brokdorf nuclear power plants were shut down. By 31 December 2022, the last three nuclear power plants should have been shut down: Isar 2, Emsland and Neckarwestheim 2. Bundesamt fuer Sicherheit der nuklearen Entsorgung (2022) Der Atomausstieg in Deutschland. https://www.base.bund.de/DE/themen/kt/ausstieg-atomkraft/ausstieg_node.html;jsessionid=3353481544CF28FA5E599E9AA5EA0828.internet951

[208] Kungl, G. (2015): Stewards or sticklers for change? Incumbent energy providers and the politics of the German energy transition. Energy Research & Social Science, 8, pp. 13-23; Morton, T., and Müller, K. (2016): Lusatia and the coal conundrum: The lived experience of the German Energiewende. Energy Policy, 99, pp. 277-287.

[209] Kommission zur Überprüfung der Finanzierung des Kernenergieausstiegs (2016). Verantwortung und Sicherheit - Ein neuer Entsorgungskonsens, Abschlussbericht. https://www.bmwk.de/Redaktion/DE/Downloads/B/bericht-der-expertenkommission-kernenergie.pdf;
Bundesfinanzministerium (2021). Bundesregierung und Energieversorger verständigen sich auf finanziellen Ausgleich und Beilegung aller Rechtsstreitigkeiten zum Atomausstieg.
https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2021/02/2021-03-05-finanzieller-ausgleich-atomausstieg.html

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country. The potential compatibility with EU taxonomy has been assessed and policies sorted out accordingly in two categories: Subsidies compliant with taxonomy / Subsidies non-compliant with taxonomy.

List of identified subsidies that support fossil fuels use in Germany

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Energy tax reduction for manufacturing businesses and agricultural businesses - PP	Energiesteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land- und Forstwirtschaft - Öl	Ongoing	Unknown
Energy tax reduction for manufacturing businesses and agricultural businesses - Natural gas	Energiesteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land- und Forstwirtschaft - Gas	Ongoing	Unknown
Tax reduction for agriculture and silviculture businesses ('Agrardiesel') - Agriculture	Steuerbegünstigung für Betriebe der Land- und Forstwirtschaft (Agrardiesel)	Ongoing	Unknown
Tax reduction for agriculture and silviculture businesses ('Agrardiesel') - Silviculture	Steuerbegünstigung für Betriebe der Land- und Forstwirtschaft (Agrardiesel)	Ongoing	Unknown
Subsidy for the selling of German coal to the electricity grid and steel industry (as well as decommissioning costs)	Zuschüsse für den Absatz deutscher Steinkohle zur Verstromung, zum Absatz an die Stahlindustrie sowie zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen	Ended	2022
Energy tax exemption for CHP - Coal/Lignite	Vollständige Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Energy tax exemption for CHP - PP	Vollständige Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Energy tax exemption for CHP - Natural gas	Vollständige Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Energy tax reduction for CHP - Coal/Lignite	Teilweise Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Energy tax reduction for CHP - PP	Teilweise Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Energy tax reduction for CHP - Natural gas	Teilweise Energiesteuerentlastung für die gekoppelte Erzeugung von Kraft und Wärme (KWK)	Ongoing	Unknown
Reductions in electricity tax for the manufacturing industries and for agriculture and forestry - Electricity from Coal/Lignite	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land- und Forstwirtschaft	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reductions in electricity tax for the manufacturing industries and for agriculture and forestry - Electricity from Gas	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land- und Forstwirtschaft	Ongoing	Unknown
Reductions in electricity tax for the manufacturing industries and for agriculture and forestry - Electricity from Oil	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land- und Forstwirtschaft	Ongoing	Unknown
Energy tax reduction of machinery and vehicles that are exclusively used for cargo handling in sea ports	Energiesteuerbegünstigung von Arbeitsmaschinen und Fahrzeugen, die ausschließlich dem Güterumschlag in Seehäfen dienen	Ongoing	Unknown
Tax reduction for public transport - Unleaded Gasoline	Steuerbegünstigung für den öffentlichen Personennahverkehr	Ongoing	Unknown
Electricity tax reduction for railway and overhead line busses - Electricity from Coal/Lignite	Stromsteuerbegünstigung für den Fahrbetrieb im Schienenbahnverkehr und den Verkehr mit Oberleitungsomnibussen	Ongoing	Unknown
Electricity tax reduction for railway and overhead line busses - Electricity from Gas	Stromsteuerbegünstigung für den Fahrbetrieb im Schienenbahnverkehr und den Verkehr mit Oberleitungsomnibussen	Ongoing	Unknown
Electricity tax reduction for railway and overhead line busses - Electricity from Oil	Stromsteuerbegünstigung für den Fahrbetrieb im Schienenbahnverkehr und den Verkehr mit Oberleitungsomnibussen	Ongoing	Unknown
Electricity tax reduction for land-based electricity supply to watercrafts - Electricity from Coal/Lignite	Stromsteuerermäßigung für Landstromversorgung von Wasserfahrzeugen	Ongoing	Unknown
Electricity tax reduction for land-based electricity supply to watercrafts - Electricity from Gas	Stromsteuerermäßigung für Landstromversorgung von Wasserfahrzeugen	Ongoing	Unknown
Electricity tax reduction for land-based electricity supply to watercrafts - Electricity from Oil	Stromsteuerermäßigung für Landstromversorgung von Wasserfahrzeugen	Ongoing	Unknown
Reduction of aviation tax for air traffic with islands in the North Sea	Ermäßigung der Luftverkehrsteuer für Inselflugverkehre mit bestimmten Nordseeinseln	Ongoing	2026
Capacity payments to lignite-fired power plants	Stilllegung deutscher Braunkohlekraftwerksbloecke (Braunkohlereserve, Kapazitätsreserve)	Ended	2023
Energy tax exemption for certain processes and procedures - Coal/Lignite	Energiesteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Energy tax exemption for certain processes and procedures - Petroleum products	Energiesteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Energy tax exemption for certain processes and procedures - Natural gas	Energiesteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Tax reduction for liquid gas and natural gas that is used as fuel	Steuerbegünstigung für Flüssiggas und Erdgas, das als Kraftstoff verwendet wird	Ongoing	2026

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Tax exemption for energy that is used in the operation of energy generation (“manufacturer privilege”) - Oil	Steuerbegünstigung der Energieerzeugnisse, die bei der Herstellung von Energieerzeugnissen zur Aufrechterhaltung des Betriebes verwendet werden ('Herstellerprivileg')	Ongoing	Unknown
Tax exemption for energy that is used in the operation of energy generation (“manufacturer privilege”) - Natural gas	Steuerbegünstigung der Energieerzeugnisse, die bei der Herstellung von Energieerzeugnissen zur Aufrechterhaltung des Betriebes verwendet werden ('Herstellerprivileg')	Ongoing	Unknown
Tax exemption for energy that is used in the operation of energy generation (“manufacturer privilege”) - Coal	Steuerbegünstigung der Energieerzeugnisse, die bei der Herstellung von Energieerzeugnissen zur Aufrechterhaltung des Betriebes verwendet werden ('Herstellerprivileg')	Ongoing	Unknown
Energy tax reduction for manufacturing businesses in special cases (Spitzenausgleich) - Petroleum products	Energiesteuerbegünstigung für Unternehmen des Produzierenden Gewerbes in Sonderfällen (Spitzenausgleich)	Ended	2023
Energy tax reduction for manufacturing businesses in special cases (Spitzenausgleich) - Natural gas	Energiesteuerbegünstigung für Unternehmen des Produzierenden Gewerbes in Sonderfällen (Spitzenausgleich)	Ended	2023
Hardware retrofit of diesel transporters from industry and craft	Hardware-Nachrüstung von gewerblichen Handwerker- und Lieferdieselfahrzeugen	Ended	2021
Electricity price compensation for the indirect costs of EU ETS	Zuschüsse an stromintensive Unternehmen zum Ausgleich von emissionshandelsbedingten Strompreiserhöhungen (Strompreiskompensation in 28. Subventionsbericht)	Ongoing	2030
Energy tax exemption and reduction for electricity generation - Coal/Lignite	Energiesteuerbegünstigung für die Stromerzeugung	Ongoing	Unknown
Energy tax exemption and reduction for electricity generation - PP	Energiesteuerbegünstigung für die Stromerzeugung	Ongoing	Unknown
Energy tax exemption and reduction for electricity generation - Natural gas	Energiesteuerbegünstigung für die Stromerzeugung	Ongoing	Unknown
Electricity tax exemption for certain processes and procedures - Electricity from Coal/Lignite	Stromsteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Electricity tax exemption for certain processes and procedures - Electricity from Gas	Stromsteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Electricity tax exemption for certain processes and procedures - Electricity from Oil	Stromsteuerbegünstigung für bestimmte Prozesse und Verfahren	Ongoing	Unknown
Electricity tax reduction for manufacturing businesses in special cases (Spitzenausgleich) - Electricity from Coal/Lignite	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes in Sonderfällen (Spitzenausgleich)	Ended	2023

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Electricity tax reduction for manufacturing businesses in special cases (Spitzenausgleich) - Electricity from Gas	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes in Sonderfällen (Spitzenausgleich)	Ended	2023
Electricity tax reduction for manufacturing businesses in special cases (Spitzenausgleich) - Electricity from Oil	Stromsteuerbegünstigung für Unternehmen des Produzierenden Gewerbes in Sonderfällen (Spitzenausgleich)	Ended	2023
CHP feed-in tariff - Coal/Lignite	KWKG-Umlage - Stein- und Braunkohle	Ongoing	Unknown
CHP feed-in tariff - PP	KWKG-Umlage - Öl	Ongoing	Unknown
CHP feed-in tariff - Natural Gas	KWKG-Umlage - Erdgas	Ongoing	Unknown
Concession fee reduction & exemption - Electricity from Coal/Lignite	Sondervertragskunden bei den Konzessionsabgaben (KAV § 2)	Ongoing	Unknown
Concession fee reduction & exemption - Electricity from Gas	Sondervertragskunden bei den Konzessionsabgaben (KAV § 2)	Ongoing	Unknown
Concession fee reduction & exemption - Electricity from Oil	Sondervertragskunden bei den Konzessionsabgaben (KAV § 2)	Ongoing	Unknown
Concession fee reduction & exemption - Natural Gas	Sondervertragskunden bei den Konzessionsabgaben (KAV § 2)	Ongoing	Unknown
Energy tax relief for own consumption	Energiesteuerentlastung für den Eigenverbrauch (nach § 47a Energiesteuergesetz)	Ended	2020
Rehabilitation of Lignite Mining Sites in East Germany-Payments by the state	Alliston/Sanierung Braunkohlebergbaugebiete der ehemaligen DDR. - Zahlungen des Bundes	Ongoing	Unknown
Tender mechanism for the phase-out of hard coal in Germany	Ausschreibung zum Kohleausstieg	Ongoing	2026
Rehabilitation of Lignite Mining Sites in East Germany-Payments by the federal states	Altlasten/Sanierung Braunkohlebergbaugebiete der ehemaligen DDR- - Zahlungen der Bundesländer	Ongoing	Unknown
Tax benefit for energy products used in domestic air transport	Steuerbegünstigung für Energieerzeugnisse, die im inländischen Flugverkehr verwendet werden.	Ongoing	Unknown
Tax benefit for energy products used in domestic vessels	Steuerbegünstigung für Energieerzeugnisse, die in der Binnenschifffahrt verwendet werden	Ongoing	Unknown
Assimilation payments ('APG') to employees in the coal industry	Gewährung von Anpassungsgeld (APG) an Arbeitnehmer des Steinkohlenbergbaus	Ongoing	2027
Mining Royalty Exemption for Hard Coal	Befreiung von der Bergbauabgabe für Steinkohle	Ongoing	Unknown
Mining Royalty Exemption for Lignite	Befreiung von der Bergbauabgabe für Braunkohle	Ongoing	Unknown
Water Fee Exemption for Lignite Coal Producers	Befreiung vom Wasserentnahmeentgelt für Braunkohleproduzenten	Ongoing	Unknown
Reduction of tax rates for diesel, gasoline, natural gas and liquefied petroleum gas fuels	Senkung der Steuersätze für die Kraftstoffe Diesel, Benzin, Erdgas und Flüssiggas	Ended	2022

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Electricity price compensation for indirect ETS costs in Germany for 2021-2030	Strompreiskompensation für indirekte CO2-Kosten (ETS) für 2021-2030 (Strompreiskompensation SPK)	Ongoing	2030
Mini-CHP plants grants	Mini-KWK	Ended	2020
Compensation payments for decommissioning of lignite-fired power plants (and rehabilitation of mining pits)	Kompensationszahlungen für den Phase-out deutscher Braunkohleproduktion und -verarbeitung	Ongoing	2038
Energy Industry Act to introduce fill level specifications for gas storage facilities	Energiewirtschaftsgesetzes zur Einführung von Füllstandsvorgaben für Gasspeicheranlagen	Ongoing	2027
Adoption of the December discount, Emergency aid for gas and district heating	Übernahme des Dezemberabschlags, Soforthilfe für Gas und Fernwärmekunden (EWSG)	Ended	2022
Gas and Electricity price brakes - Gas & Heating	Gas- und Strompreisbremse - Gas und Wärme	Ongoing	2024
Tax reduction on gas consumption	Steuersenkung auf den Gasverbrauch	Ongoing	2024
Creation of gas reserves to maintain security of supply in Germany	Anlegen von Gasreserven zur Aufrechterhaltung der Versorgungssicherheit in Deutschland	Ended	2023
Reactivation of hard coal and lignite power plants from security standby (Replacement Power Plants Readiness Act)	Reaktivierung Steinkohle- und Braunkohlekraftwerke aus Sicherheitsbereitschaft (Ersatzkraftwerkebereithaltungsgesetz, EKBG)	Ongoing	2024
investments in the decarbonisation of industrial production processes	investments in the decarbonisation of industrial production processes	Ongoing	2025
Replacement of registered capital in SEFE GmbH/ Recapitalisation of SEFE GmbH	Replacement of registered capital in SEFE GmbH/ Recapitalisation of SEFE GmbH	Ended	2022
Carbon leakage compensation in the context of the German fuel emission trading system	Carbon leakage compensation in the context of the German fuel emission trading system	Ongoing	2030
Aid for the construction and operation of the Brunsbüttel on-shore LNG Terminal	Aid for the construction and operation of the Brunsbüttel on-shore LNG Terminal	Ended	2023
Lignite phase-out	Braunkohleausstieg	Ongoing	2029
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

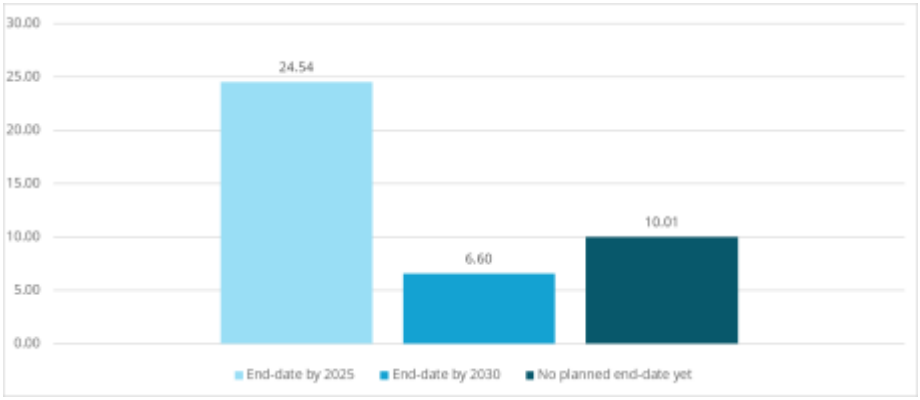
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 41.15 billion, accounting for 41% of total energy subsidies in Germany. 24% of fossil fuel subsidies had no firm end-date.

Denmark

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

The overall goal of Denmark to be free from fossil fuels in 2050. Energy and heating consumption should be free from using fossil fuels by 2035.

To achieve Denmark's overall climate agreement, decreasing the use of fossil fuels has been a part of the political agenda for many years, and especially since the climate summit in Copenhagen in 2009.

The current climate law stipulates that the government regardless of political composition is obligated to realise Denmark's goal of reducing the CO2-emission by 70 pct. by the year 2030 when comparing with the levels in 1990[210]. The government announced a new policy on September 2021 – "*Danmark*

[210] Ministry of Finance. "Agreement on climate law". https://kefm.dk/aktuelt/nyheder/2019/dec/klimalov

kan mere I"[211], in which an annual pool of mDKK 1.000 was earmarked for green transition purposes. The announced policy included a reduction of the tax levied on electricity, to strengthen private households' incentive to convert their energy sources to electricity.

The result of the above policies was a national climate agreement, which was reached June 2020, "Klimaaftale for energi og industri mv. 2020".[212] In the national agreement new policies were introduced which included investments in energy islands (generation from wind power), Power-to-X, Carbon Catch Storage and Utilization, support for biogas, face out of oil burner, energy saving measures, district heating and more. Most of the new policy had the clear aim of phasing out fuel and gas.

The latest announcement from the government made in April 2022 is called "Danmark kan mere II"213. The clear aim of this latest policy is obtaining independency of Russian gas. The Policy covers five overall areas: i) more green heating and phasing out natural gas, ii) more green gas and more gas to Europe, iii) more green electricity, iv) green tax reform and green transitioning of the industry, and v) green Danish solution transitioning Europe.

In 2024 the government has announced a plan for a greenhouse gas emission tax on agriculture. As of 1 June 2024, this tax has not been implemented and is still under negotiations.

Subsidies to fossil fuels

No information was found on the phase out of fossil fuel subsidies.

Phase out of fossil fuel extraction

No information found.

Phase out of fossil fuel use

Electricity generation

In 2022, the Danish authorities ordered Ørsted to continue and resume operations of three of its power station units which use oil and coal as fuel in operation until 30 June 2024 to ensure the security of the electricity supply in Denmark. These are the unit 3 at Esbjerg Power Station and unit 4 at Studstrup Power Station, which both use coal as their primary source of fuel, and unit 21 at Kyndby Peak Load Plant, which uses oil as fuel. The two latter units were already decommissioned but preserved. The Esbjerg Power Station was originally scheduled to be decommissioned on 31 March 2023.[214] This means that decommissioning of the fossil fuel power plants will take place after 30 June 2024.

Industry

From 1 January 2025, a CO_2 emissions tax has been implemented for all industrial companies. It was decided in June 2024.

[211] Danish Ministry of Climate, Energy and Utilities. "Denmark is capable of more I". https://fm.dk/udgivelser/2021/september/danmark-kan-mere-i/

[212] Danish Ministry of Climate, Energy and Utilities. "Danish Climate Agreement for Energy and Industry 2020". https://kefm.dk/Media/8/8/aftaletekst-klimaaftale-energi-og-industri%20(1).pdf

[213] Danish Ministry of Climate, Energy and Utilities. "Denmark is capable of more II". https://kefm.dk/Media/637859442788953982/Danmark%20kan%20mere%20II_final.pdf

[214] https://orsted.com/en/media/newsroom/news/2022/10/20221001568911

Transport

From 1 January 2025, a CO_2 emission tax has been implemented for trucks. The size of the tax rate increase with the weight of the truck.

The government has subsidised 8 billion DKK to private Power-to-X projects (implementations), which also include a high amount of green fuel. The projects are still under construction.

Heating in buildings

In the *"Danmark kan mere II"*-policy programme, the Danish government stressed two clear ambitions regarding the phasing out of gas in Denmark: By 2035, there will no longer be homes in Denmark that are heated by gas. Furthermore, the gas consumption in Denmark must be entirely green by 2030.[215]

To support these ambitions, the government plan to take several actions, e.g.:

- A planned shut-down or conversion of the gas distribution with support from the national gas distributor, Evida.
- Impose a ban on approvals of new project for district heating systems that are reliant on fossil fuels.
- Simplify the approval process for district heating projects in 2023 and 2024.
- Improve investment conditions for district heating projects as well as
- Introduce a price ceiling on district heating, which supports a reasonable heating price for the Danish citizens.

Subsidies to the nuclear industry

Denmark does not currently have nuclear power generation. The Danish government has not made any direct statements about the overall use of nuclear power recently, but the general perception is that Denmark will not allow nuclear power plants to be established.

In recent public statement from April 2022, the Government has stipulated that nuclear power plant is seen as a technology that will soon be faced out. The government plans to invest in wind power and solar panels, thus not going forward with nuclear power generation.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Denmark

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown

[215] Danish Ministry of Climate, Energy and Utilities. "Fact sheet: More green heating and phasing out of natural gas 2022". https://kefm.dk/Media/637917337579992546/Faktaark%20gr%C3%B8n%20varme%20og%20udfasning%20af%20gas.pdf

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Energy tax exemptions for agriculture, cement production and other process energy (agriculture estimated portion)	Bekendgørelse af lov om kuldioxiafgift af visse energiprodukter LBK nr 1353 af 02/09/2020	Ongoing	2025
Energy tax exemptions for agriculture, cement production and other process energy (EIIs estimated portion)	Bekendgørelse af lov om kuldioxiafgift af visse energiprodukter LBK nr 1353 af 02/09/2020	Ongoing	Unknown
Energy saving obligations by the grid and distribution companies - Natural gas	Bekendtgørelse om energispareydelser i net- og distributionsvirksomheder, Naturgasselskaber	Ended	2020
Green check - Oil	Bekendtgørelse af lov om skattefri kompensation for forhøjede energi- og miljøafgifter LBK nr 944 af 05/08/2015	Ongoing	Unknown
Green check - Natural gas	Bekendtgørelse af lov om skattefri kompensation for forhøjede energi- og miljøafgifter	Ongoing	Unknown
Green check - Coal	Bekendtgørelse af lov om skattefri kompensation for forhøjede energi- og miljøafgifter LBK nr 944 af 05/08/2015	Ongoing	Unknown
Higher tax deductions for investment in fossil fuel extraction infrastructure	Investeringsvindue for kulbrinteindvindingsvirksomhed i perioden 2017-25	Ongoing	Unknown
Tax exemption for fuels and electricity used for trains - diesel	Afgiftsfritagelse for brændsler og el til toge	Ongoing	Unknown
Pool for managing stranded costs / Dealing with the termination of the basic amount	Pulje til håndtering af strandede omkostninger / Håndtering af grundbeløbets ophør	Ongoing	Unknown
Market-based subsidy pool for capture and storage of CO2	Markedsbaseret tilskudspulje til fangst og lagring af CO2	Ongoing	2044
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

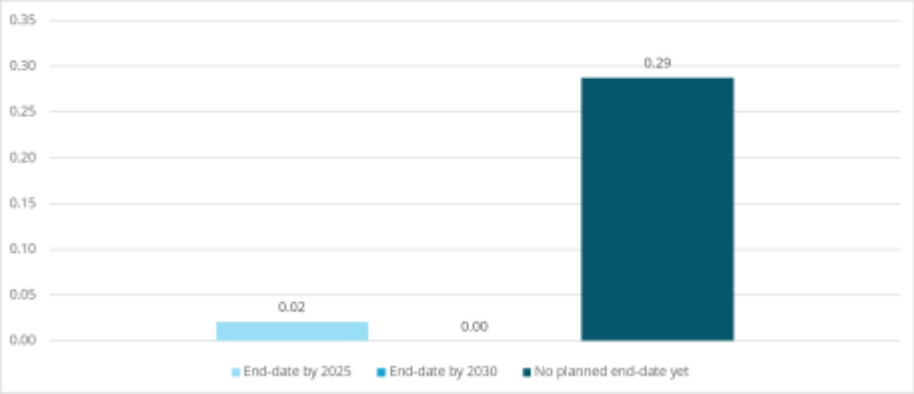
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.31 billion, accounting for 13% of total energy subsidies in Denmark. 93% of fossil fuel subsidies had no firm end-date.

Estonia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024						No coal				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

According to the "Estonia 2035", a long-term strategy adopted by the parliament of Estonia in 2021, Estonia will aim to be a climate-neutral country by 2050.[216] Estonia's target level for net greenhouse gas emissions (including LULUCF) by 2035 is 8 million tons of CO2 equivalent.[217] In 2022, new energy saving and renewable energy goals came into effect, aiming to cover 100% of Estonia's electricity consumption with renewable electricity by 2030.[218]

As of this year, 2024, the government is currently working on climate legislation that establishes the foundation for a climate-resilient economy by setting greenhouse gas emissions targets, promoting the adoption of clean technologies, and enhancing resource valuation. Sector-specific goals towards achieving climate neutrality by 2050 have been proposed for energy, industry, buildings, transport,

216 https://valitsus.ee/sites/default/files/documents/2021-11/Eesti%202035_PUHTAND%20%C3%9CLDOSA_210512_ENG_0.pdf

217 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

218 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

agriculture, waste, and land use. The important directions in the proposed law concerning the emissions in the energy sector are as follows: 1) By 2030, the amount of renewable electricity produced will equal total consumption; 2) Starting from 2040, electricity production, including supply security, will be CO2 emission-free; 3) Starting from 2040, heat production will be CO2 emission-free.[219]

Additionally, the working draft of "Energy Sector Development Plan until 2035" has been published in 2024, setting aims for energy security, accessibility and environmental sustainability.[220] Similarly, the NECP 2021-2030 includes governmental goals and measures regarding energy efficiency, energy security and internal energy market.[221]

The 2019 NECP does not include any financial measures that support the use of fossil fuels. The lower rate of excise duty is applied to diesel fuel used in agriculture, and support is also granted for generating electricity from peat or oil shale processing retort gas in efficient cogeneration mode. Estonia does not plan to amend these two measures, since the lower rate of excise duty for diesel fuels supports the competitiveness of the agricultural sector, and the Estonian government does not intend to promote the launch of additional cogeneration stations using fossil fuels.[222] The same statement is made in the NECP 2021-2030.[223]

Subsidies to fossil fuels

Among the measures of NECP 2021-2030, there is no measure that financially supports the introduction of fossil fuels.[224]

Phase out of fossil fuel extraction

Eesti Energia, which is the biggest electricity producer in Estonia, is planning to produce shale oil even after 2030. The new shale oil factory that is being built in Auvere was planned to start working in 2024.[225] As of this year, 2024, Eesti Energia resumes the construction of the oil plant in Ida-Viru County, which was temporarily halted in autumn 2023 due to a court ruling. It is expected to reach full capacity in the first half of 2025.[226]

The proposed new climate law sets a direction that new mining permits for oil shale extraction should only be issued for the purpose of producing oil shale chemicals or other products that are not usable as fuels or energy carriers[227]

---

219 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/Kliimaseaduse%20kokkuv%C3%B5te_viimane_0%20%282%29.pdf

220 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/ENMAK%202035%20eeln%C3%B5u%20t%C3%B6%C3%B6versioon%2021032024.pdf

221 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

222 https://ec.europa.eu/energy/sites/ener/files/documents/ee_final_necp_main_en.pdf

223 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

224 https://commission.europa.eu/system/files/2023-08/Lisa_III_REKK_2030_meetmete_seos_kava_eesm%C3%A4rkidega.pdf

225 Estonian Public Broadcasting: https://www.err.ee/1608623950/auveres-algas-eesti-energia-uue-olitehase-seadmete-paigaldamine

226 https://www.err.ee/1609232913/olitehas-valmib-vahepeal-peatunud-ehituse-tottu-neli-kuud-plaanitust-hiljem

227 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/Kliimaseaduse%20kokkuv%C3%B5te_viimane_0%20(2).pdf

Phase out of fossil fuel use

The proposed new climate law sets a direction that the public sector will stop the use of fossil fuels in 2040, except in sectors where technological alternatives are not available.[228]

Electricity generation

Estonia is aiming to cover 100% of Estonia's electricity consumption with renewable electricity by 2030. Since the last submission of the NECP in 2019, Estonia has taken significant steps in the field of energy towards achieving its goals. More ambitious targets have been set in the renewable energy sector, which include both overall and renewable electricity targets. Specifically, the overall target has increased from 42% to 65% of total energy final consumption, and the renewable electricity target has increased from 40% to 100% of electricity consumption. In line with raising these targets, legislations have been amended to make these goals legally binding.[229]

Eesti Energia plans to end the production of electricity from oil shale by 2030.[230] However, in light of the war in Ukraine, the oil shale reactors have been working to comply with the demand on the market: in May 2022 more than 700 GWh electricity was produced, which was more than in January before the war. It is expected by the state that at least 1000 MWh of controlled capacity is maintained until the end of 2023 and an agreement is being prepared with Elering, the system operator, to keep the capacity needed to operate the system and ensure security of supply. These capacities will be maintained until the end of 2026, until the final desynchronization of the Russian grid system. Since 1 January 2023, the import of natural gas from Russia has been prohibited in Estonia.[231]

Transport

The proposed new climate law sets a direction that in major cities, public transport will transition to zero emissions by 2040, including taxis in major cities transitioning to zero emissions by 2035. In addition, the administrative vehicles of the public sector will be zero-emission by 2035. The reduction of greenhouse gas emissions in the transport sector is not currently regulated by law in Estonia.[232]

The newly elected government in March 2023 has announced plans for several new taxes, which included higher taxes on petrol and diesel. Additionally, they announced plans of introducing CO_2 based vehicle taxes in coming years as Estonia is one of the few countries in Europe, where there no vehicle taxes, but no further specifics are yet given on the matter. Further details on that are planned to be made public by autumn of 2023.[233] As of this year, 2024, the motor vehicle tax is still under development and planned to take effect starting from 2025.[234]

228 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/Kliimaseaduse%20kokkuv%C3%B5te_viimane_0%20(2).pdf

229 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

230 Estonian Public Broadcasting: https://www.err.ee/1608232500/eesti-energia-lopetab-2030-aastaks-polevkivist-elektri-tootmise

231 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

232 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/Kliimaseaduse%20kokkuv%C3%B5te_viimane_0%20(2).pdf

233 Estonian Public Broadcasting: https://www.err.ee/1608963973/automaksu-sisu-selgub-sugiseks

234 https://www.fin.ee/riigi-rahandus-ja-maksud/maksu-ja-tollipoliitika/algatused?view_instance=0&current_page=1#uldised-eesmargid-ja

The European Commission's plans of ban internal combustion engine cars by 2035 is also directing the policies in Estonia, where similar target is set although the initial voting has been postponed in the EU.[235]

Heating in buildings

The proposed new climate law sets a direction that starting from 2040, heat production should be CO2 emission-free.[236]

EU's plan, partially due rising energy prices as well, have set a target to increase the effectiveness of insulation of buildings to achieve climate goals as well,[237] meaning that this is also one of the targets in Estonia.[238] NECP 2021-2030 states that the policies implemented by the state to improve energy efficiency increasingly encourage the adoption of energy-efficient buildings and the renovation of buildings to make them more energy-efficient, aiming to reduce greenhouse gas emissions and implement renewable energy solutions.[239]

Subsidies to the nuclear industry

There are no subsidies for the nuclear industry, but in April 2021, the Estonian Government gave the approval to form a Working Group on Nuclear Energy. The working group is chaired by the Chancellor of the Ministry of the Environment and, in addition to the Ministry of the Environment, the members of the working group are the Environmental Board, the Ministry of the Interior, the Ministry of Finance, the Ministry of Justice, the Ministry of Education and Research, the Ministry of Economic Affairs and Communications, the Ministry of Defence, the Ministry of Foreign Affairs, the Ministry of Social Affairs and the State Chancellery. Some of the main tasks of the working group are:

a. to provide an overview of the country's energy needs and energy security from a nuclear perspective, the potential of nuclear energy and its compatibility with the existing electricity grid;

b. to give an overview of the development of the energy economy of the neighbouring countries from a nuclear perspective and the possibilities for cooperation to achieve climate neutrality;

c. to analyse the technologies under development and the projects under implementation, their safety and waste management, together with an assessment and overview of the reactor types suitable for Estonia and their stage of development;

d. to analyse the options for the development of a nuclear power plant, i.e. whether it should be carried out by the state or the private sector, and the possibilities for cooperation;

e. to give an overview of the obligations (administrative, international treaty, financial, etc.) that would be imposed on the State by the construction of a nuclear power plant and their possible differentiation according to the type of developer.

235 Estonian Public Broadcasting: https://www.err.ee/1608903857/el-lukkas-sisepolemismootoriga-autode-muugi-keelustamise-haaletuse-edasi

236 https://kliimaministeerium.ee/sites/default/files/documents/2024-05/Kliimaseaduse%20kokkuv%C3%B5te_viimane_0%20(2).pdf

237 https://estonia.representation.ec.europa.eu/uudised/komisjon-tegi-ettepaneku-hoonete-energiatohususe-suurendamiseks-2021-12-16_et

238 Estonian Public Broadcasting: https://www.err.ee/1608914639/euroopa-parlament-kinnitas-hoonete-renoveerimise-sihid

239 https://commission.europa.eu/system/files/2023-08/Estonia_Draft_Updated_NECP_2021-2030_ee.pdf

The last meeting of the working group took place in April 2023 and the final report is set to be published in 2024. The war in Ukraine and the high electricity prices have put additional pressure on the issue. The working group submitted the first interim report to the government by autumn of 2022 and in April 2023, 15 suitable locations for potential nuclear power plant were mapped out.[240] Fermi Energia cooperation, the main candidate for building the nuclear plant considers only two of the 15 proposed locations. The main topics that the government expects for the autumn are energy security, an overview of existing or developing technologies, the international obligations of the country that has entered the nuclear program, opportunities for public-private cooperation and the issue of nuclear waste management.[241] As of this year, 2024, the final report has been published.[242]

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Estonia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Reduced excise duty rate for gas-intensive companies	Aktsiisisoodustus intensiivse gaasitarbimisega ettevõttele	Ongoing	2026
Closure and redevelopment of non-conforming oil-shale industry	SF: EU PK-seadmete toetus struktuuriabi läbi KIK-i 2009-2015	Ended	2015
Closure of oil-shale energy industry waste depositories (ash fields) and renewal of ash removal system	SF: EU PK-jäätmed toetus struktuuriabi läbi KIK-i 2009-2014	Ended	2014
Excise Duty Exemption for Fuels Used in Domestic Commercial Fishing	Kalurite kütuseaktsiisivabastus	Ongoing	Unknown
Excise tax exemption for heating fuels used by households	Maksuleevendus kodumajapidamiste kütusele	Ended	2015
Energy production subsidies (efficient cogeneration process, peat)	Elering>Elering tõhusa koostootmise toetus 2007-2020 (Turvast kasutavad jaamad)	Ended	2020
Excise duty exemption for fuel (natural gas) used in mineralogical processes	Kütus, mida kasutatakse mineraloogilistes protsessides	Ongoing	Unknown
Excise tax exemption for natural gas used in network operation	Maagaas, mida kasutatakse maagaasivõrgu töös hoidmiseks	Ongoing	Unknown

240 https://majandus.postimees.ee/7752656/eestis-on-15-tuumajaamale-sobilikku-asukohta

241 https://majandus.postimees.ee/7449115/tuumaenergia-tooruhma-lopparuanne-voib-saada-avalikuks-2024-aastal

242 https://kliimaministeerium.ee/sites/default/files/documents/2023-12/Tuumaenergia%20t%C3%B6%C3%B6r%C3%BChma%20l%C3%B5pparuanne.pdf

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax reduction for marked diesel	Eriotstarbelise diislikütuse ja kerge kütteõli soodsam aktsiisimäär	Ongoing	Unknown
Extraordinary support for a fishing company for fuel compensation	Erakorraline toetus kalapüügiga tegelevale ettevõtjale kütuse hüvitamiseks	Ended	2023
Natural gas support measure for business consumers	Maagaasi toetusmeede äritarbijale	Ended	2022
Price limit of gas bills for domestic consumers	Gaasiarvete hinnapiir kodutarbijatele	Ended	2022
Gas network fee compensation for everyone	Gaasi võrgutasu hüvitamine kõigile	Ended	2022
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

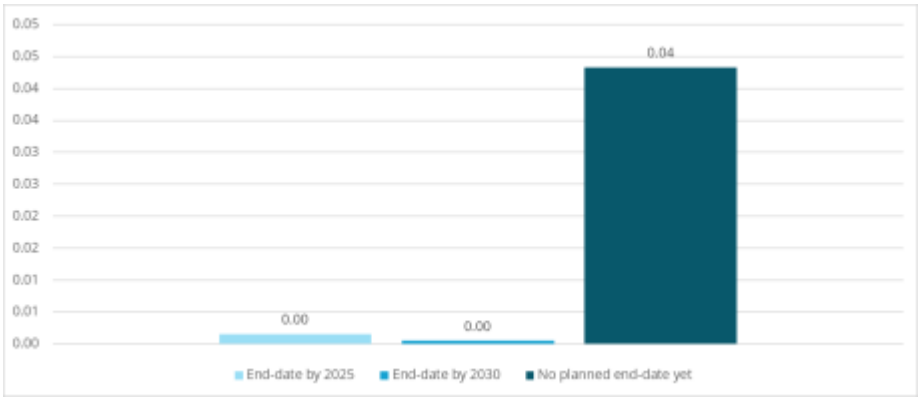
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, there are no FFS that are considered non-compliant with taxonomy in 2020.

We have not identified another quantified target for Estonia.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 46: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.05 billion, accounting for 16% of total energy subsidies in Estonia. 95% of fossil fuel subsidies had no firm end-date.

Spain

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

The objective set by Spain to achieve national climate neutrality by 2050 calls for renewables to provide 100% of electricity and 97% of the total energy mix. Current Spanish energy policies are centered on massive deployment of renewable energy, energy efficiency, electrification and renewable hydrogen.[243]

The National Integrated Energy and Climate Plan 2021-2030 (PNIEC) will provide a total funding of 241.412 million euros (M€) between 2021-2030 to promote GHG emissions reduction, energy efficiency and renewables development (including onshore and offshore wind, solar photovoltaic and solar thermoelectric, bioenergy, ocean energy, biomass, geothermal), energy saving and efficiency measures, and electrification and networks. Investments can be grouped by main measures or levers of the energy transition as follows: Savings and efficiency: 35% (83,540 M€); Renewables: 38% (91,765 M€); Networks and electrification: 24% (58,579 M€); Other measures: 3% (7,528 M€).[244]

In June 2021, the European Commission gave green light to the Spanish Recovery and Resilience Plan. The plan supports the green transition through reforms and investments to be implemented by 2026. Over €7.8 billion is directed to improving the energy efficiency of public and private buildings. €13.2 billion will be invested in sustainable mobility in urban and long-distance, notably by improving railway infrastructure, creating low-emission zones in urban areas, financing green public buses, deploying electric charging stations and developing urban public transport. The plan also supports the decarbonisation of the energy sector by investing €6.1 billion in clean technologies and infrastructure (including storage and electricity grids) and accelerating the development and use of renewables, including renewable hydrogen. The plan includes a new Law on climate change and energy transition establishing into law the renewable targets for 2030, as well as the objective of climate neutrality by 2050. It also includes a Renewable Hydrogen Roadmap, new strategies for building

[243] IEA (2021) Spain's extensive policy plans set to help underpin a successful energy transition powered by renewables and efficiency

[244] Gobierno de España (2020) Plan Nacional Integrado de Energía y Clima (PNIEC) 2021-2030.

renovation, decarbonisation and energy storage, and new procurement actions for renewable electricity.[245]

The Strategic Projects for Economic Recovery and Transformation (PERTE) are a new public-private collaboration instrument launched within the framework of the Recovery and Resilience Plan in which the different public administrations, companies and research centers take part. PERTE's objective is to promote large projects with the capability to boost economic growth, employment and the competitiveness of the Spanish economy. To date, 11 strategic projects have been approved and launched, which will mobilize public investment of more than 30 billion euros. The PERTE launched are developed in several key areas, among others renewable energies and green hydrogen and storage.

Spain has also an income tax deduction due to energy efficiency works in households. 450 million € of tax deductions were approved through Royal Decree-Law 19/2021, of October 5, on urgent measures to promote building rehabilitation activity in the context of the Recovery and Resilience Plan (PRTR), currently, Law 10/2022, of June 14. Deductions are applied to measures that reduce the demand for heating and cooling and to measures that reduce the consumption of non-renewable primary energy. Article 16 of the Royal Decree-Law 8/2023, of 23 December, adopting measures to address the economic and social consequences derived from the conflicts in Ukraine and the Middle East, as well as to alleviate the effects of the drought, extends the validity of the deductions from the Personal Income Tax (IRPF) for works to improve energy efficiency in homes has been extended until 31st December, 2024.The article further explains the specific situations in which deductions can be applied, depending on the type of energy efficiency measures applied, the levels of improvements reached (using Energy Performance Certificates as proof), the type of building as well as type of occupancy.[246] Furthermore, the Spanish Government keeps an updated page with the type of income tax deduction for energy efficiency works available for the general public in their website.[247]

The Carbon Fund FES-CO_2 is a fund for projects aimed to reduce GHG emissions in various sectors (e.g., transport, agriculture, residential, waste). It targets residential houses, industry, transport, retail. FES-CO2 has financed so-called "Climate Projects" since 2012 (9 calls). The last call has been in December 2021 and its available budget amounted 30 million euros to be distributed between two modalities:[248]

- Modality 1: budget available €10M for large projects leading to 50.000 tCO_2 reduction;
- Modality 2: available budget €20M for small to medium projects generating between 500 tCO_2/año and 50.000 tCO_2 savings.

As of 1 June 2024, there are ongoing plans to modify the FES-CO_2, in order to increase the type of actions that can be financed, as well as the legal instruments through which these might receive funding, responding to a broader purpose of scope and action.[249]

Subsidies to fossil fuels

On 24 October 2018, the Ministry of Ecologic transition, the mining industry representatives and trade unions signed the Framework Agreement for a Just Transition of Coal Mining and

[245] European Commission. Spain's recovery and resilience plan
[246] BOE» núm. 310, de 28/12/2023. Real Decreto-ley 8/2023, de 27 de diciembre, por el que se adoptan medidas para afrontar las consecuencias económicas y sociales derivadas de los conflictos en Ucrania y Oriente Próximo, así como para paliar los efectos de la sequía.
[247] Ministerio de Transportes y Movilidad Sostenible. Avales y deducciones fiscales para impulsar la rehabilitación.
[248] Gobierno de España. Cambio climático. Fondo de Carbono FES-CO2.
[249] Ministerio para la transición ecológica y reto demografico (2024). Información pública sobre el Proyecto de Real Decreto por el que se regula el Fondo de Carbono para una Economía Sostenible.

Sustainable Development of the Mining Regions for the period 2019-2027.[250] In line with this Framework, financial support would be provided to coal mining companies for covering exceptional costs associated with the closure of mining operations: social aid to encourage early retirement and incentivized leave, and aid for environmental restoration projects. This also marked the end to coal subsidies in Spain as per the end of 2018.

Spain also has a few environmentally harmful energy subsidies in place such as partial tax refunds for the mineral oil tax paid for the use of diesel in agriculture and livestock[251], as well as for the professional transport of goods, passengers and taxis (with certain limits), in line with Articles 9 and 51 of Law 38/1992 of 28 December 1992 on Excise Duty. The reduced tax rates set out in Article 50 of this law also includes reduced rates for several hydrocarbon uses. The European Commission estimated that the foregone government revenue for the fuel tax reductions and partial refunds for agriculture amounted EUR 530 million in 2020, and that if the subsidy were abolished, the fuel price for agriculture would increase by 25%, causing a decrease in consumption by 5%.[252]

Phase out of fossil fuel extraction

The Framework Agreement for a Just Transition of Coal Mining and the Sustainable Development of the Mining Regions for the Period 2019-2027 is accompanied by a fund of 250 million euros to be spread over five years (2019-2023). These funds are aimed to finance business projects and development actions such as the improvement, restoration and revaluation of degraded areas and spaces affected by mining operations, including forest recovery; the provision or renewal of telecommunication lines or energy diversification; and the creation of technological development centers.[253]

Phase out of fossil fuel use

Electricity generation

The new Law on climate change and energy transition includes the goal of a 100% renewable electricity system by 2050.

Spain is on track to phase out coal for energy production ahead of its initial planning of 2030.[254]

Transport

There is no end date or plans to phase out the existent general refund provisions regulated in Article 10 of the Special Taxes Law for all Manufacturing Special Taxes[255], updated on 3rd October of 2022 to set up the procedures for a partial refund of the paid fees of the Hydrocarbon Tax in two special cases: professional use of diesel, as well as its use in agriculture and livestock farming. (see Agriculture below).[256]

---

[250] Ministerio para la transición ecológica (2018) El Gobierno y el sector de la minería del carbón firman un acuerdo para la transición justa y el desarrollo sostenible de las comarcas mineras.

[251] Ministerio de Hacienda y Función Pública. Impuesto sobre hidrocarburos.

[252] European Commission. Economy and finance. Phasing out Environmentally Harmful Subsidies. Spain – EHS Candidate for Reform.

[253] Ministerio para la transición ecológica (2018) El Gobierno y el sector de la minería del carbón firman un acuerdo para la transición justa y el desarrollo sostenible de las comarcas mineras

[254] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7868

[255] Ley 38/1992, de 28 de diciembre,de Impuestos Especiales.

[256] Orden HFP/941/2022, de 3 de octubre, Por la que se establece el procedimiento para la devolución parcial del Impuesto sobre Hidrocarburos por el gasóleo de uso profesional y por la que se modifica la Orden EHA/993/2010, de 21 de abril, por la que se establece el procedimiento para la devolución parcial de las cuotas del Impuesto sobre Hidrocarburos soportadas por los agricultores y ganaderos.(BOE, 05-octubre-2022)

In the case of the partial refund for professional use of diesel in transport, this applies to motor vehicles exclusively used for road freight transport, as well as motor vehicles used for passenger transport and taxis. The maximum refund amount corresponds to up to 50,000 liters per vehicle per year, except for taxis, which are limited to 5,000 liters per taxi per year. Vehicle owners must register in the beneficiaries and vehicles census.[257].

Heating in buildings

The Programa de Rehabilitación Energética de Edificios known simply as PREE, was a programme for the energy renovation of buildings established by the Royal Decree 737/2020. PREE was the follow up to the programs, PAREER-CRECE and PAREER II which operated between October 2013 and December 2018. However, no clear end to the use of fossil fuels. PREE's initial budget was 300 million Euros and was increased eventually to 402,5 million Euros. [258]

In 2021, PREE was replaced on 3 August by Royal Decree 691/2021 with the new Energy Rehabilitation Programme for Existing Buildings in Demographically Challenged Municipalities (PREE 5000 Programme). PREE 5000 falls within the framework of the Recovery and Resilience Plan and is part of the National Energy and Climate Plan (PNIEC) 2021-2030 whose goal is to ensure that 74 percent of electricity is obtained through renewables in 2030. As such, the PREE finances upgrades to the thermal envelope of buildings, the replacement of old boilers with renewable options and the improvement in the efficiency of lighting. As PRE 5000 receives funds from the Recovery and Resilience Plan, therefore, some changes were introduced to comply with DNSH, requirements of 30% savings of non-renewable primary energy for all types of buildings, as well as other modifications to improve the programme.[259] Due to its increased demand, PRE5000 has been extended by Royal Decree 1178/2023, of 27 December until 31 July 2024. The initial budget for PRE 5000 was of €50 million, but after Royal Decrees, budget allocation has been increased to 175,798,244 €.[260]

Although these programmes support Spain's target for renewables in heating and cooling, there are no official plans to phase out or reduce fossil fuel -only boilers in buildings.[261]

Agriculture

Similarly to the Transport sector above, there is an ongoing refund provision for the Special Taxes Law, which allows for a partial refund of the paid fees of the Hydrocarbon Tax when it's used in agriculture and livestock farming.[262] The partial refund is available for diesel used in agriculture, including horticulture, livestock farming, and forestry. The refund amounts to €63.71 per 1,000 Liters without any consumption limit. [263]

Subsidies to the nuclear industry

Spain has no subsidies to the nuclear industry.

Spain is determined to phase out nuclear power. As we speak the Ministry for Ecological Transition is updating Spain's National Integrated Energy and Climate Plan (PNIEC) until 2030 (The Government

[257] Agencia Tributaria (n.d.). Devolución de gasóleo profesional
[258] IDAE. PROGRAMA PREE. REHABILITACIÓN ENERGÉTICA DE EDIFICIOS
[259] IDAE (n.d.) Cambios significativos entre el PREE y el PREE 5000.
[260] IDAE (2024). PREE 5000. REHABILITACIÓN ENERGÉTICA DE EDIFICIOS EN MUNICIPIOS DE RETO DEMOGRÁFICO
[261] EHPA (2023). Fossil fuel heating: too few EU countries have committed to phase-out
[262] Orden HFP/941/2022, de 3 de octubre, Por la que se establece el procedimiento para la devolución parcial del Impuesto sobre Hidrocarburos por el gasóleo de uso profesional y por la que se modifica la Orden EHA/993/2010, de 21 de abril, por la que se establece el procedimiento para la devolución parcial de las cuotas del Impuesto sobre Hidrocarburos soportadas por los agricultores y ganaderos.(BOE, 05-octubre-2022)
[263] Administracion (n.d.). Impuesto especial sobre los hidrocarburos

has until June 30 to bring the PNIEC to the European Commission). The Plan contemplates the gradual decommissioning of the seven Spanish nuclear reactors in the period 2025-2035.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Spain

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Plan for alternative development of coal mining districts - Aid to coal companies	Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras - Ayudas al funcionamiento y reducción de actividad de empresas productoras del carbón (subsidio a productos) Acuerdo marco para una transicion justa de la mineria del carbon y desarrollo sostenible de las comarcas mineras para el periodo 2019-2027	Ongoing	Unknown
Plan for alternative development of coal mining districts - Aid to business investment projects in the areas affected by the restructuring of the mining industry	Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras - Ayudas dirigidas a proyectos empresariales generadores de empleo, que promuevan el desarrollo alternativo de las zonas mineras del carbón Acuerdo marco para una transicion justa de la mineria del carbon y desarrollo sostenible de las comarcas mineras para el periodo 2019-2028	Ongoing	Unknown
Plan for alternative development of coal mining districts --> Institute for coal restructuring / Institute for the Just Transition	Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras --> Instituto para la Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras Acuerdo marco para una transicion justa de la mineria del carbon y desarrollo sostenible de las comarcas mineras para el periodo 2019-2027 / Insituto para la Transición Justa (ITJ)	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Plan for alternative development of coal mining districts - Reactivation of coal mining districts (investment aid)	Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras - Reactivacion económica de las comarcas mineras del carbón (ayudas a la inversión) Acuerdo marco para una transicion justa de la mineria del carbon y desarrollo sostenible de las comarcas mineras para el periodo 2019-2027	Ongoing	Unknown
Plan for alternative development of coal mining districts --> Grant of aid to mine workers	Reestruct. Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras - Infraestructuras en comarcas mineras del carbón (transferencia de capital a admin local) Acuerdo marco para una transicion justa de la mineria del carbon y desarrollo sostenible de las comarcas mineras para el periodo 2019-2028	Ongoing	Unknown
Aid to HUNOSA	Subvencion concedida por el estado a la empresa nacional Hulleras del Norte SA (HUNOSA)	Ongoing	Unknown
Environmental incentive for coal-fired power plants	Incentivo medioambiental para centrales térmicas de carbón	Ongoing	Unknown
Special tax hydrocarbon - Exemptions kerosene	Impuesto especial de hidrocarburos - Exencion queroseno	Ongoing	Unknown
Special tax hydrocarbon - Exemptions fuel oil for the production of electricity	Impuesto especial de hidrocarburos - Exencion fueloleos para producción de electricidad	Ongoing	Unknown
Special tax hydrocarbon - Exemptions fuel oil for other uses	Impuesto especial de hidrocarburos - Exencion fueloleos para otros usos	Ongoing	Unknown
Special tax hydrocarbon - Reduced gasoil for certain motors	Impuesto especial de hidrocarburos - Tipo impositivo reducido para gasoleos para determinados motores	Ongoing	Unknown
Special tax hydrocarbon - Exemptions gasoil for electricity production	Impuesto especial de hidrocarburos - Exencion para gasoleos para produccion de electricidad	Ongoing	Unknown
Special tax hydrocarbon - Exemptions gasoil for other uses	Impuesto especial de hidrocarburos - Exencion para gasoleos para otros usos	Ongoing	Unknown
Special tax hydrocarbon - reduced fuel oil for electricity production	Impuesto especial de hidrocarburos - Tipo reducido para fueloleos para produccion de electricidad	Ongoing	Unknown
Special tax hydrocarbon - Refunds for transport	Impuesto especial de hidrocarburos - Devoluciones a transportistas	Ongoing	Unknown
Special tax hydrocarbon - Refunds for agriculture	Impuesto especial de hidrocarburos - devoluciones a agricultores y ganaderos	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Special tax hydrocarbon - reduced natural gas for electricity production	Impuesto especial de hidrocarburos - Tipo impositivo reducido para gas natural para produccion de electricidad	Ongoing	Unknown
Special tax - Coal (tax exemption)	Impuesto especial sobre el carbon	Ended	2018
Capacity Payments	Pago por capacidad: Incentivo a la inversion & Incentivo a la disponibilidad	Ongoing	Unknown
Capacity Payments - coal	Pago por capacidad: Incentivo a la inversion & Incentivo a la disponibilidad - carbon	Ongoing	Unknown
Capacity Payments - CCGT	Pago por capacidad: Incentivo a la inversion & Incentivo a la disponibilidad - CCGT	Ongoing	Unknown
Elcogas - Feasibility Plan	Plan de VIabilidad de Elcogás	Ended	2016
Specific retributive regime - CHP	Regimen retributivo especifico - Cogeneracion	Ongoing	Unknown
Measures to mitigate the impact of rising natural gas prices on the retail gas markets	Medidas urgentes para mitigar el impacto de la escalada de precios del gas natural en los mercados minoristas de gas.	Ongoing	2024
Regulated gas heating tariffs - Tariff of Last Resort (TUR) for community boilers	Tarifas reguladas de calefacción de gas - Tarifa de Último Recurso (TUR) para calderas comunitarias	Ended	2023
Direct fuel discount for all consumers	Bonificación de 20 céntimos por litro de carburante	Ongoing	2024
Galician Gasification Plan 2015-2020	Plan de Gasificación de Galicia 2015-2020	Ended	2020
Adoptation of additional urgent social and economic measures to address COVID-19	Real Decreto-ley 11/2020, de 31 de marzo, por el que se adoptan medidas urgentes complementarias en el ámbito social y económico para hacer frente al COVID-19.	Ended	2020
Adjustment on the production cost mechanism for reducing the electricity price on the wholesale market (price cap)	Mecanismo de ajuste de costes de producción para la reducción del precio de la electricidad en el mercado mayorista.	Ended	2023
Public aid for the transport sector	Ayudas públicas al sector del transporte	Ended	2022
Deduction of market revenues to reduce households' natural gas bills	Deducción de los ingresos del mercado para reducir las facturas de gas natural de los hogares	Ended	2022
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

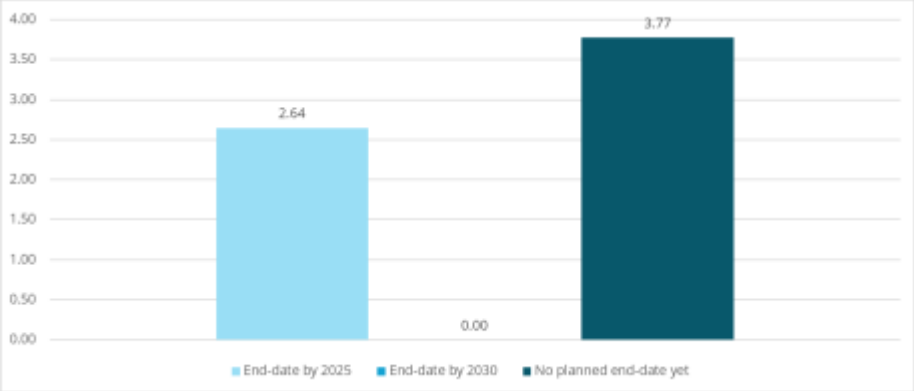
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 6.42 billion, accounting for 41% of total energy subsidies in Spain. 59% of fossil fuel subsidies had no firm end-date.

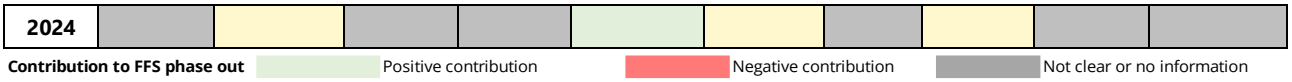
Finland

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture



According to the Government Programme 2023[264]: "The share of renewable energy in energy production will be increased, and action will be taken towards phasing out the use of fossil fuels in heat and electricity production by the 2030s at the latest".

Use of coal in electricity and heat generation in power plants will be forbidden from 1 May 2029 by Law 416/2019.

Subsidies to fossil fuels

No information was found on the phase out of fossil fuel subsidies.

Phase out of fossil fuel extraction

The only fossil fuel extracted in Finland is peat. There is no decision to stop the use. However, it's role is small with only 1.7% of total supply in 2023.

For security of supply reasons, the 2023 Government Programme states the following:[264] "To ensure security of supply, the availability of fuel peat will be secured during the transition period according to the needs estimated in the memorandum of the National Emergency Supply Agency dated 17 May 2023 (NESA/2023/00450-1)."

Phase out of fossil fuel use

Electricity generation

Coal accounted 5% of the primary energy supply in 2023 and Finland will phase out energy use of coal. In 2019, Finland passed a law prohibiting the use of coal in electricity and heat production 1 May 2029. Subsidies were provided for seven replacement investments in 2020-2021 with the total budget of 30.5 million euros. There is no more ear-marked subsidy for coal replacement investments, but it will be possible to apply other subsidies.

Industry

Low-carbon roadmaps describe the different sectoral paths towards a low-carbon economy.[265] They describe measures to be taken to reduce or phase out use of fossil fuels in different sectors. The roadmaps were introduced in 2020 and are currently under updating.

Transport

The Ministry of Transport and Communications prepared a Roadmap for fossil-free transport to reduce greenhouse gas emissions from transport (LVM/2021/62) and published it in May 2021[266].

The updated Medium-Term Climate Change Policy Plan Towards a carbon-neutral society in 2035 (KAISU) was issued on 2 June 2022[267]. KAISU repeats the objectives adopted in the above-mentioned Roadmap on fossil-free transport, i.e., by 2030, Finland will reduce emissions from domestic transport by at least 50 per cent compared to the 2005 level. The aim is to achieve an entirely fossil-free transport sector by 2045.

264 https://valtioneuvosto.fi/en/governments/government-programme#/

265 https://tem.fi/en/low-carbon-roadmaps-2035

266 https://julkaisut.valtioneuvosto.fi/handle/10024/163260, in English

267 https://ym.fi/julkaisu?pubid=URN:ISBN:978-952-361-262-4, in Finnish

The Government Programme of 2023 includes numerous provisions for emissions reduction from the transport sector to be taken into account in the 2024 update of the climate and energy strategy.

Heating in buildings

The Government Programme 2019 stated that the use of fossil fuel oil in heating will be phased out by the start of the 2030s. The Government Programme of 2023 does not repeat the objective, but measures to support the transition are still in place.

Subsidies to the nuclear industry

No subsidies are given to nuclear industry. For example, financing waste management and future decommissioning is based on a fund (The National Nuclear Waste Management Fund, VYR) where nuclear operators make annual payments which shall fully cover all these costs.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Finland

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Peat storage support coverage	Turpeen varastointituki	Ended	2021
Capacity Reserve (Peak Load Reserves)	Tehoreservijärjestelmä	Ongoing	Unknown
Lower tax rate for gasoil used in mobile machinery compared to the benchmark rate in transport	Kevyen polttoöljyn käyttö työkoneissa	Ongoing	Unknown
Energy tax exception for CHP production	Yhdistetyn sähkön ja lämmön tuotannon (CHP) verotuki	Ongoing	Unknown
Energy Tax Exemption for LPG	LPG verottomuus	Ended	2015
Energy tax refund for professional farmers and professional greenhouse growers	Maatalouden energiaveron palautus	Ongoing	Unknown
Lower tax rate for gas used in transport compared to the benchmark rate of transport use	Liikenteeseen käytetyn kaasun normia alempi verokanta	Ongoing	Unknown
Reduced CO2 tax for CHP production	Yhdistetyn sähkön- ja lämmöntuotannon hiilidioksidiveron puolitus	Ended	2018
Reduced Energy Tax Rate for Natural Gas Used in Heating	Lämmityksessä käytettävän maakaasun alhaisempi verokanta	Ended	2015
Lower excise tax on peat compared to the benchmark rate of heating use	Turpeen normalia alempi verokanta ja poikkeus varmuuvarastomaksuissa	Ongoing	Unknown
Tax reduction on fuel used for diesel engines in rail transport	Raideliikenteen dieselmoottereissa käytettävä kevyt polttoöljy	Ongoing	Unknown
Tax reduction on paraffinic diesel	Parafiinisen dieselin verotuki	Ended	2023

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Tax exemption on peat up to 10,000 MWh/year (before 2022 5,000 MWh/year)	Turpeen verottomuus alle 10,000 megawattitunnin käytöllä	Ongoing	Unknown
Subsidies for public infrastructure of refueling stations for gas and hydrogen cars	Tuet kaasu- ja vetyajoneuvojen tankkausasemien julkiselle infrastruktuurille	Ongoing	2025
Temporary fuel subsidy for transport companies	Kuljetusyritysten määräaikainen polttoainetuki	Ended	2022
Public subsidy to build a LNG terminal in Pori	Yksittäinen tuki nesteytetyn maakaasun terminaalille (Pori)	Ended	2015
Public subsidy to build a LNG terminal in Hamina	Yksittäinen tuki nesteytetyn maakaasun terminaalille (Hamina)	Ended	2016
Public Subsidy to build an LNG terminal in Tornio	Yksittäinen tuki nesteytetyn maakaasun terminaalille (Tornio)	Ended	2016
Reduced distribution obligation	Vähennetty jakeluvelvoite	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

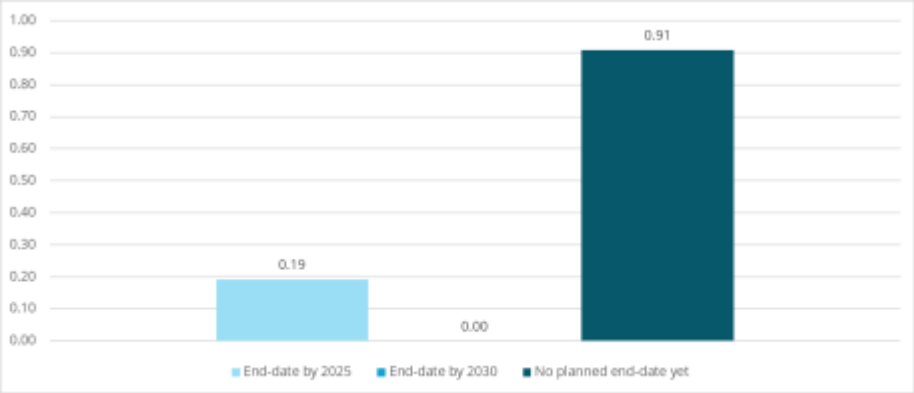
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 47: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 1.1 billion, accounting for 34% of total energy subsidies in Finland. 83% of fossil fuel subsidies had no firm end-date.

France

Energy policies announced or implemented by the government

France's ambition is to eliminate greenhouse gas emissions on national soil by 2050.[268]

The French government opened a public consultation end of 2023 on its new Strategy for Energy and Climate (SFEC), which aims to makes the country's energy system fossil free by 2050. The Energy and climate programming law (LPEC) which should have structured the energy transition, was abandoned in April 2024, and the third edition of the multi-annual energy plan (PPE 2024-2035, latest edition from 2020 with targets until 2028) has been delayed due to the political context (government without majority in Parliament). In January 2024, France published its bill on energy sovereignty, which reaffirms its ambition to move away from fossil fuels by 2050.

The draft Strategy for Energy and Climate set a phase-out of coal in the power sector by 2027 (compared to 2022 in the latest PPE).

The government continues to invest heavily in the nuclear industry through capacity mechanisms, research and development, or safety and disposal sites pre-emption. The third edition of the PPE no longer envisages the closure of nuclear reactors, unlike the previous PPE which aimed at a gradual reduction in the share of nuclear power in the electricity mix to 50% by 2035 and planned the closure of several reactors. The draft PPE aims at maintaining existing nuclear power plants beyond 50 or 60 years with the objective of producing 400 TWh per year by 2030. The government also proposes to build six new reactors with commissioning over 2035-2042.

Subsidies to fossil fuels

Since 2015, the government has announced reductions of tax expenditures for fossil fuels, such as the revision of excise taxes or the reduction of tax expenditure for the use of kerosene. Recent laws have helped to reduce these advantages : the excise on off-road gasoil (excluding the agricultural sector) has been increased in 2024 from EUR 18.82/hL to EUR 24.81/hL), the partial reimbursement on gasoline used for road transport of goods has been reduced in 2020 (from EUR 43.19c/L to EUR 45.19c/L); and the Law on Climate and Resilience requires to define a trajectory for eliminating the reduced excise rate on diesel used by heavy vehicles by 2030.

Per the latest NECP, published in July 2024, France purports not to have any fossil fuels subsidies - except "specific measures" due to the war in Ukraine- but does retain a set of measures which qualify as subsidies under OECD and this study definition.

The second national low carbon Strategy (SNBC 2, 2020) aims at a gradual elimination of public subsidies of "environmental harmful" activities. Regarding economic sectors subject to international competition such as aviation and maritime industries, the position of the French government is that legislation should be taken at a supra-national level (e.g., changes to the Energy Tax Directive). The country, in its latest NECP, outlines its willingness to support a strengthened carbon taxation in aviation and maritime transport sectors.

As member of the G7, France has committed to phase out "inefficient fossil fuel subsidies" by 2025.

[268] https://www.strategie.gouv.fr/english-articles/value-climate-action

Phase out of fossil fuel extraction

Although fossil fuel extraction activities in France have massively declines over the last decades, there are currently no plans to phase-out fossil fuel extraction. A decree of November 2023 has authorized extraction of layer gas in East France until January 1, 2040.

Phase out of fossil fuel use

Electricity generation

The finance law 2020 (budget 2021) introduced a dedicated fund to support the closure of coal-fired power plants (Cordemais, Gardanne, Le Havre and Saint-Avold), but gas access issues with Russian natural gas and the low availability of the French nuclear park led the government in June 2022 to announce a temporary reopening of the Saint-Avold plant during winter 2022. This resulted in consumption of coal power increasing for the first time since 2018 in 2022. At present, the plan of the government is to continue with the phase out process for coal power plants and close the two remaining units by converting them to biomass by 2027.

Industry

Since March 2024, France has been implementing tax credit for investment in green industries ("C3IV") with support of new industrial projects along the production chain in four key sectors of the energy transition: batteries, wind power, solar panels and heat pumps. EUR 3.7 billion of subsidies are budgeted until 2030. In 2021, the country launched its recovery plan ("France 2030") which includes support to Decarbonisation of industry through grants to industries improving energy efficiency or limiting their GHG emissions and through support to research and innovation decarbonation solutions for industry. As of 2023, EUR 4.5 billion are budgeted.

Transport

No information found.

Heating in buildings

The Heat fund, introduced in 2020, is providing assistance to convert industrial and residential (i.e. district heating) systems from coal to renewables including geothermal, biomass before 2025. The budget of the Heat Fund for 2022 was increased to EUR 522 million to cope with the energy crisis and to speed up the deployment of district heating networks; it was further increased to around EUR 600 million in 2023. Private residential heating using coal is to be eradicated by 2028 through the use of a grant scheme to help consumers switch to more sustainable options, such as heat pumps.

Renewable heat is considered as key for decarbonizing the economy, with a target of more than doubling the amount of renewable heat and recovery by 2035 mentioned in the NECP 2024.

Agriculture

No information found.

Subsidies to the nuclear industry

The current, regular and identified two supports to the nuclear civil industry are expenditure financed by public funds for Nuclear R&D, safety and security purposes (dépenses financées par crédits publics en matière de R&D et de sûreté/sécurité) and long-term nuclear costs of French Alternative Energies and Atomic Energy Commission (CEA) facilities (Charges nucléaires de long terme des installations du CEA). These two supports are borne by the State budget.

The early closure of the Fessenheim nuclear power plant has caused the fixed payment of EUR 370 million in December 2020, which will be followed by variable payments: a EUR 37.5 million has been announced for 2021 but no budgeted funds have been published for 2022 and 2023.

From 2023 onwards, major investments are expected as the revival of the nuclear sector is a key pillar of the French decarbonization pathway, with plans to continue operation of all reactors as long as safety permits, the construction of six EPR2 and the study for 13 GW of new nuclear capacities, and innovation programs.

The nuclear industry continues to capture most of the R&D budget for energy (41% in 2022), with around EUR 825 billion allocated in 2022 (compared to an average of EUR 775 billion over 2015-2021).

There is no consolidated reporting on subsidies for nuclear and, globally, accessing such information is difficult. The Court of Auditors is currently an important source of information regarding the support to this industry.

In 2023, the French government completed its process of renationalisation of EDF, the owner of France's fleet of nuclear reactors. While this does not constitute a subsidy by any meaningful definition, it does mean that the French government has effectively bought a controlling interest in its nuclear industry.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in France

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Reduced rate of domestic consumption tax applicable to water emulsions in diesel	Taux réduit de taxe intérieure de consommation applicable aux émulsions d'eau dans du gazole	Ended	2015
Partial exemption of excise tax for liquid biofuels incorporated in diesel or heating oil (methyl esters of vegetable oils, methyl esters of animal or used oil, synthetic biodiesels, vegetable oil ethyl esters) and alcohol content derivatives of ethyl alcohol and ethyl alcohol of agricultural origin incorporated directly into super-fuels or E85 superethanol	Exonération plafonnée de taxe intérieure de consommation pour les esters méthyliques d'huiles végétales, les esters méthyliques d'huile animale ou usagées, les biogazoles de synthèse, les esters éthyliques d'huile végétale incorporés au gazole ou au fioul domestique, le contenu en alcool des dérivés de l'alcool éthylique et l'alcool éthylique d'origine agricole incorporé directement aux supercarburants ou au superéthanol E85	Ended	2016

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Exemption from domestic consumption taxes for 10 years for deliveries of heavy fuel oil with a sulfur content of more than 1% used in combustion plants equipped with flue gas desulphurisation devices	Exonération de taxes intérieures de consommation pour 10 ans pour les livraisons de fioul lourd d'une teneur en soufre supérieure à 1% utilisé dans des installations de cogénération équipées de dispositifs de désulfuration des fumées	Ended	2017
Aid to Filling Stations	Soutien à la modernisation des stations-services indépendantes	Ended	2019
Reduced domestic consumption tax on LPG	Taux réduit de taxe intérieure de consommation sur le GPL	Ended	2020
Reduced tariff of rate of domestic consumption for butanes and propane used as a off-road fuel	Tarif réduit de taxe intérieure de consommation pour le gaz de pétrole liquéfié (butane, propane) utilisé comme carburant non routier	Ended	2020
Resiliency plan - Exceptional discount on fuel prices at the pump	Plan de résilience - Remise exceptionnelle sur les prix du carburant à la pompe	Ended	2022
Reduced rate of domestic consumption tax applicable to heating oil used as diesel fuel in certain sector - Construction	Taux réduit de taxe intérieure de consommation sur le gazole sous condition d'emploi, repris à l'indice 20 du tableau B de l'article 265 du code des douanes - BTP	Ongoing	2029
Reduced rate of domestic consumption tax applicable to heating oil used as diesel fuel in certain sector - Industry	Taux réduit de taxe intérieure de consommation sur le gazole sous condition d'emploi, repris à l'indice 20 du tableau B de l'article 265 du code des douanes - production industrielle	Ongoing	2029
Reduced rate of domestic consumption tax applicable to heating oil used as diesel fuel in certain sector - Others	Taux réduit de taxe intérieure de consommation sur le gazole sous condition d'emploi, repris à l'indice 20 du tableau B de l'article 265 du code des douanes - autres usagees	Ongoing	2029
Reduced rate of domestic consumption tax applicable to heating oil used as diesel fuel in certain sector - Residential	Taux réduit de taxe intérieure de consommation sur le gazole sous condition d'emploi, repris à l'indice 20 du tableau B de l'article 265 du code des douanes - Chauffage domestique	Ongoing	2029
Reduced rate of domestic consumption tax applicable to heating oil used as diesel fuel in certain sector - Transport	Taux réduit de taxe intérieure de consommation sur le gazole sous condition d'emploi, repris à l'indice 20 du tableau B de l'article 265 du code des douanes - Usage de transports	Ongoing	2029
Social support for the closure of coal-fired power plants	Accompagnement social de la fermeture des centrales à charbon	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced tariff for diesel fuel used to carry out static or earthworks for the needs of certain extractive activities subject to strong international competition	Tarif réduit pour le gazole utilisé pour réaliser des travaux statiques ou de terrassement pour les besoins de certaines activités extractives soumises à une forte concurrence internationale	Ongoing	Unknown
Reduced tariff for diesel used to carry out static or earthworks for the needs of the port handling activity in seaports and certain river ports exposed to international competition	Tarif réduit pour le gazole utilisé pour réaliser des travaux statiques ou de terrassement pour les besoins de l'activité de manutention portuaire dans les ports maritimes et certains ports fluviaux exposés à la concurrence internationale	Ongoing	Unknown
Energy poverty check - Gas-oil	Chèque énergie - part fioul	Ongoing	Unknown
Energy poverty check - Natural gas	Chèque énergie - part gaz naturel	Ongoing	Unknown
Reduced tariff of rate of domestic consumption (refund) for off-road diesel used in rail transport (TICPE)	Tarif réduit de taxe intérieure de consommation (remboursement) pour le gazole non routier pour le ferroviaire	Ongoing	Unknown
Capacity market - coal capacity	Marché des garanties de capacité - capacités charbon	Ongoing	Unknown
Capacity market - natural gas capacity	Marché des garanties de capacité - capacités gaz	Ongoing	Unknown
Capacity market - oil capacity	Marché des garanties de capacité - capacités pétrole	Ongoing	Unknown
Exemption from domestic consumption tax for fuels for vessels and aircrafts motors when used during construction, development, trials or maintenance stages	Exonération de taxe intérieure de consommation pour les carburants destinés aux moteurs d'avions et de navires lorsqu'ils sont utilisés dans le cadre de la construction, du développement, de la mise au point, des essais ou de l'entretien des aéronefs et navires et de leurs moteurs	Ongoing	2026
Reduced domestic consumption tax for gaseous natural gas used as a fuel.	Taux réduit de taxe intérieure de consommation applicable au gaz naturel à l'état gazeux destiné à être utilisé comme carburant	Ended	2019
Reduced domestic consumption tax for E10, a gasoline fuel that can contain up to 10% of ethanol	Tarif réduit de taxe intérieure de consommation pour l'E10, carburant essence pouvant contenir jusqu'à 10 % d'éthanol	Ongoing	Unknown
Reduced domestic consumption tax on energy products (excluding natural gas, methane and coal) to the benefit of energy-intensive installations and carrying out an activity considered to be exposed to a significant risk of carbon leakage	Tarif réduit pour les produits énergétiques (hors gaz naturel et charbon) utilisés dans les installations grandes consommatrices d'énergie exerçant une activité considérée comme exposée à un risque important de fuite carbone	Ended	2023

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced domestic consumption tax on natural gas and methane to the benefit of energy-intensive installations and carrying out an activity considered to be exposed to a significant risk of carbon leakage	Tarif réduit pour le gaz naturel et le méthane utilisés dans les installations grandes consommatrices d'énergie exerçant une activité considérée comme exposée à un risque important de fuite carbone	Ongoing	Unknown
Reduced rate of domestic consumption tax on coal in favor of energy-intensive installations subject to the greenhouse gas emission quota system of the EU ETS.	Tarif réduit pour les charbons utilisés dans les installations grandes consommatrices d'énergie et soumises au régime des quotas d'émission de gaz à effet de serre du dispositif ETS	Ongoing	Unknown
Reduced rate of domestic consumption tax on energy products in favor of energy-intensive installations subject to the greenhouse gas emission quota system of the EU ETS	Tarif réduit pour les produits énergétiques utilisés dans les installations grandes consommatrices d'énergie et soumises au régime des quotas d'émission de gaz à effet de serre du dispositif ETS	Ended	2023
Reduced rate of domestic consumption tax on natural gas and methane in favor of energy-intensive installations subject to the greenhouse gas emission quota system of the EU ETS	Tarif réduit pour le gaz naturel et le méthane utilisés dans les installations grandes consommatrices d'énergie et soumises au régime des quotas d'émission de gaz à effet de serre du dispositif ETS	Ongoing	Unknown
Domestic consumption tax exemption on coal for biomass valorization companies whose purchases of fuel and electricity used for this valuation represent at least 3% of their turnover	Exonération de taxe intérieure de consommation sur le charbon pour les entreprises de valorisation de la biomasse dont les achats de combustibles et d'électricité utilisés pour cette valorisation représentent au moins 3 % de leur chiffre d'affaires	Ongoing	2026
National Agency for the Guarantee of Miners' Rights	Agence nationale pour la garantie des droits des mineurs (ANGDM)	Ongoing	Unknown
Reduced tariff of rate of domestic consumption (refund) for natural gas and methane products used by farmers (TICPE)	Tarif réduit (remboursement) pour le gaz naturel et le méthane utilisés pour les travaux agricoles et forestiers	Ongoing	Unknown
Reduced tariff of rate of domestic consumption (refund) for off-road diesel, heavy fuel and liquefied petroleum gas products used by farmers (TICPE)	Tarif réduit (remboursement) pour le gazole non routier, le fioul lourd et les gaz de pétrole liquéfié utilisés pour les travaux agricoles et forestiers	Ongoing	Unknown
Cogeneration purchase contracts	CSPE - Contrats d'achat cogénération	Ongoing	Unknown
Exclusion of the Overseas Departments from the scope of the domestic fuel consumption tax applicable to fuels	Exclusion des départements d'outre-mer du champ d'application de la taxe intérieure de consommation applicable aux carburants	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced tariff of rate of domestic consumption (refund) for diesel fuel used by public road transport operators	Tarif réduit de taxe intérieure de consommation (remboursement) pour le gazole utilisé comme carburant des véhicules de transport public collectif de voyageurs (2019)	Ongoing	Unknown
Refurbishment applicable to super-fuel and gasoline consumed in Corsica	Détaxe applicable aux supercarburants et essences consommés en Corse	Ongoing	2024
Reduced tariff of rate of domestic consumption (refund) for diesel used in road freight transport vehicles weighing at least 7.5 tonnes	Tarif réduit de taxe intérieure de consommation (remboursement) pour le gazole utilisé comme carburant des véhicules de transport routier de marchandises de plus de 7,5 tonnes (TICPE) (2019)	Ongoing	Unknown
Reduced rate of domestic consumption tax for fuels used by taxis	Taux réduit de taxe intérieure de consommation pour les carburants utilisés par les taxis	Ongoing	Unknown
Exemption of certain products and raw materials as well as petroleum products (TICPE) in the departments of Guadeloupe, Martinique and Reunion	Exonération de certains produits et matières premières ainsi que des produits pétroliers (TICPE) dans les départements de la Guadeloupe, de la Martinique et de la Réunion	Ongoing	Unknown
Fossil fuels support in non-interconnected zones (ZNI) including purchase contracts and tariff equalization (Solidarity mecanism)	CSPE - Mécanismes de solidarité (péréquation tarifaire), soutien énergies fossiles dans les zones non interconnectées (ZNI)	Ongoing	Unknown
Reduced VAT rate on the subscription part of the natural gas bill	Taux de TVA réduit (5,5%) sur les abonnements relatifs aux livraisons de gaz naturel distribués par réseaux	Ongoing	Unknown
Special Tariff of Solidarity (TSS)	CSPE - Tarif Spécial de Solidarité (TSS)	Ended	2018
Gas tariff shield - Capping of the regulated gas tariff	Bouclier tarifaire pour le tarif réglementé du gaz naturel	Ended	2023
Reduced rate set at €1.60/MWh for natural gas used as fuel for the needs of the dehydration of certain vegetables and aromatic plants.	Taux réduit fixé à 1,60 €/MWh est destiné au gaz naturel utilisé comme combustible pour les besoins de la déshydratation de certains légumes et plantes aromatiques	Ongoing	Unknown
Resiliency plan - Securing the filling of gas storage facilities	Plan de résilience - Sécurisation du remplissage des stockages de gaz naturel	Ended	2023
Compensation for underground gas storage in France	Régime d'aide au stockage du gaz naturel	Ongoing	Unknown
Allowance for fuel expenses for lowest income commuters	Indemnité carburant pour les navetteurs aux revenus les plus faibles	Ongoing	2024
Support for installations producing electricity from mine gas	Soutien au développement des installations produisant de l'électricité à	Ended	2020

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
	partir de la combustion ou de l'explosion du gaz de mine		
Exemption for various gases (coal gas, water gas, lean gas and similar gases)	Exonération pour divers gaz (gaz de houille, gaz à l'eau, gaz pauvre et gaz similaires)	Ongoing	Unknown
Reduced rate (reimbursement) for diesel used for stationary equipment in goods vehicles and special purpose vehicles (recovery vehicles, crane trucks, etc.)	Tarif réduit (remboursement) pour le gazole utilisé pour les engins à l'arrêt équipant les véhicules de transport de marchandises et les véhicules à usages spéciaux (dépanneuses, camions-grues...)	Ended	2023
Reduced rate (reimbursement) for diesel fuel used in mountainous areas for grooming slopes and clearing snow from roads open to public trafic	Tarif réduit (remboursement) pour la gazole utilisé dans les massifs montagneux pour le damage des pistes et le déneigement des voies ouvertes à la circulation publique	Ongoing	Unknown
Reduced tariff for gas oil used to carry out static or earthmoving work for the needs of certain extractive activities subject to strong international competition	Tarif réduit pour le gazole utilisé pour réaliser des travaux statiques ou de terrassement pour les besoins de certaines activités extractives soumises à une forte concurrence internationale	Ongoing	Unknown
Reduced rate for gas oil used to carry out static or earthmoving work for the purposes of port handling activities in seaports and certain inland ports exposed to international competition	Tarif réduit pour la gazole utilisé pour réaliser des travaux statiques ou de terrassement pour les besoins de l'activité de manutention portuaire dans les ports maritimes et certains ports fluviaux exposés à la concurrence internationale	Ongoing	Unknown
Exceptional deduction for investment by small and medium-sized enterprises (SMEs) in the retail trade of non-road diesel fuel (NRG) in storage facilities and diesel fuel handling and distribution equipment	Déduction exceptionnelle en faveur de l'investissement des petites et moyennes entreprises (PME) de commerce de détail de gazole non routier (GNR) dans des installations de stockage et des matériels de manutention et de distribution de gazole	Ended	2022
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

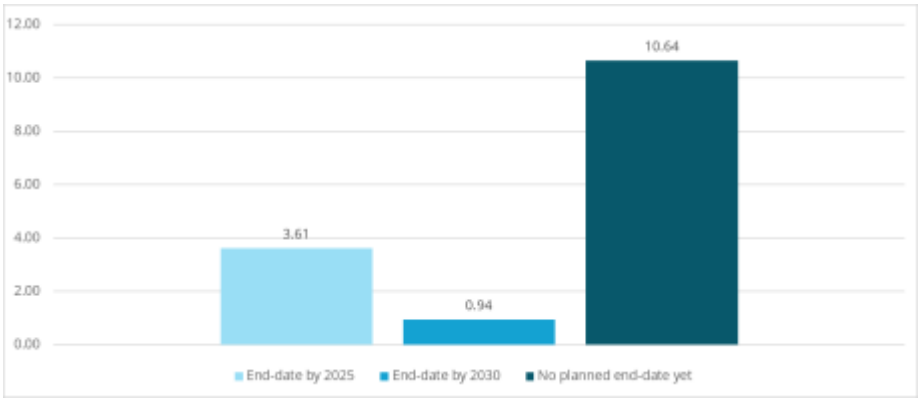
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 48: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 15.2 billion, accounting for 24% of total energy subsidies in France. 70% of fossil fuel subsidies had no firm end-date.

Greece

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

In Greece's NECP[269], the intention of phasing out fossil fuels, and especially lignite, is expressed mainly at a high-level, while at the same time the report provides a brief description of the policies and measures that still support the fossil fuels production and consumption. Some of the measures that favour fossil fuels aim at combating energy poverty, therefore they occur under the context of the country's social policy. To that end, the Greek government released in 2021 the Action Plan to

[269] Draft Updated NECP 2021-2030

Combat Energy Poverty[270], which outlines a number of measures that could aid vulnerable consumers to overcome energy poverty with the use of RES and energy efficiency measures. Nevertheless, this plan includes some measures that indirectly support the use of fossil fuels, such as the improvement of the Social Domestic Tariff (SDT) and the introduction of an "energy card"[271]. The implementation timeline of these measures is the period 2021-2030.

In 2021, the "Island Decarbonisation Fund" was established, using funds from the carbon emission rights from the ETS of the period 2013-2020, amounting to €800 million. The focus of this fund is on the non-interconnected islands targeting on the support of electricity network infrastructure, boost of RES production, support on energy efficiency projects etc[272].

In 2022, the National Climate Law passed the Parliament which creates a framework to improve the adaptive capacity, climate resilience and gradual transition to climate neutrality by 2050.[273] The Law introduces also the National Strategy for Adaptation to Climate Change, which should cover 10 years. The aim is to assess the expected climate changes and their impacts on various sectors, identify priority sectors that need adaptation measures, assess the adaptation costs, integrate adaptation policies into broader policies, taking into consideration the international dimension, and proposals for awareness-raising, education, and research actions. Furthermore, the Law introduces the Regional Plans for Adaptation to Climate Change, which identifies and prioritizes the adaptation actions at regional level. [274]. The Law includes also some provisions for the enhancement of EVs and the reduction of CO2 emissions from the building and industrial sectors.

Furthermore, the decarbonisation of the islands is foreseen to be achieved by the use of renewable sources, through hybrid power systems, storage of electricity, hydrogen production, increased energy savings in the building sector and in all sectors of activity, such as tourism. [275]

Subsidies to fossil fuels

Greece subsidizes fossil fuels, and specifically oil, in the form of tax exemptions, as it is stated under the State Budget of each year[276]. As an indication, those tax expenditures accounted for around EUR 250 million in 2023[277]. The oveall support to fossil fuels (tax expenditures, allowances, subsidies etc.) for 2023 is estimated at approximately EUR 1.1 billion.

Phase out of fossil fuel extraction

No information found.

Phase out of fossil fuel use

Electricity generation

The National Climate Law dictates that the production of electricity from fossil fuels will be forbidden starting the 31st of December 2028. To that end, in June, 2022 the European Commission approved the Greek Just Development Transition Plan (JDTP)[278] (introduced also in the NECP) which will make

[270] Ministry of Energy (2021) Action Plan to Combat Energy Poverty
[271] These measures will provide financial support to vulnerable consumers in order to cover the costs of fuels that are used by the households, which in most cases are fossil fuels at the moment.
[272] https://www.kathimerini.gr/economy/561574516/neo-tameio-gia-prasines-ependyseis-sta-nisia/
[273] National Climate Law - Transition to climate neutrality and adaptation to climate change, urgent provisions to deal with the energy crisis and environmental Protection
[274] https://www.patt.gov.gr/koinonia/perivallon/pespka/pespka_kentriki/
[275] Draft Updated NECP 2021-2030
[276] Ministry of Finance- State budget 2023
[277] This number corresponds only to the tax exemptions aiming at support to energy demand. Therefore, the amount might be underestimated.
[278] Ministry of Environment and Energy (2020). Just Transition Development Plan of lignite areas

use of a budget of €1.6 billion, from the Just Transition Fund, for the transition to a climate neutral economy. The JDTP summarises the transition to the post-lignite era for Greece through the implementation of several policies and measures, with the aim to withdraw 80% of the current lignite plants by 2023 and the totality of them by 2028. One of the priorities of JDTP (Priority 2) is focused on the green transition and climate neutrality, which is expected to be achieved through energy efficiency investments, clean energy generation and storage as well as he use of local communities.

In the context of phasing out the lignite plants in the two major Greek regions of West Macedonia and Peloponnese (Megalopoli), the government also introduced an amendment[279] on the regulations that support RES and facilitate the investments in those areas. However, in the end of 2022, a new lignite plant, "Ptolemaida V" started its commercial operation. According to the government, this plant will run until after 2028 and it will serve as a reserve unit in case of future energy crisis.[280]

Industry

According to the National Climate Law, businesses are required to report annually their carbon footprint, including voluntary targets and actions to reduce or offset emissions.[281]

Transport

As of January 1st 2026, in the region of Attica, Thessaloniki and Central Macedonia, one-third of the new vehicles registered should be zero-emission vehicles. The new company cars for private use should be purely electric or hybrid as of 1st of January 2024. As of the 1st January 2030 all new passenger and light commercial vehicles registered should be zero-emission vehicles. [282]

Heating in buildings

The National Climate Law dictates that from January 1st 2025 the installation of heating oil boilers will be prohibited, while the boilers sold from January 1st 2030 onwards should have a mix of at least 30% by volume with renewable liquid fuels. Furthermore, concerning the construction of new buildings of the refurbishments of existing ones, they are required to install electricity generation systems from PV or thermal solar systems covering at least 30% of the needs. Additionally, from Janually 1st 2023,the Building energy performance plan should include the carbon footprint of the buildings, according to the standard ISO 14064-1 :2018.[283]

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

[279] sdam.gr/el/node/239
[280] https://www.kathimerini.gr/economy/562279213/ptolema-da-v-paramenei-os-monada-efedreias-kai-meta-to-2028/
[281] National Climate Law - Transition to climate neutrality and adaptation to climate change, urgent provisions to deal with the energy crisis and environmental Protection
[282] National Climate Law - Transition to climate neutrality and adaptation to climate change, urgent provisions to deal with the energy crisis and environmental Protection
[283] National Climate Law - Transition to climate neutrality and adaptation to climate change, urgent provisions to deal with the energy crisis and environmental Protection

List of identified subsidies that support fossil fuels use in Greece

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Replacement of oil heating systems with natural gas ones in residential sector ((Attica Perfecture))	Αντικατάσταση των συστημάτων θέρμανσης πετρελαίου με φυσικό αέριο σε κατοικίες	Ongoing	2030
Capacity Mechanism	Μηχανισμός Διασφάλισης Επαρκούς Ισχύος	Ended	2015
Excise Tax and Other Tax Refunds for Fuel Used by Hospitals, Social Solidarity Institutions and Hotels	Επιστροφή Ε.Φ.Κ. και λοιπών φορολογιών πετρελαίου σε ξενοδοχειακές μονάδες και νοσηλευτικά και προνοιακά ιδρύματα (άρθρο 15 παρ.15 ν.2386/96 καιάρθρο 19 παρ.7 ν.2753/99)	Ongoing	Unknown
Excise Tax Exemption and Other Tax Refunds for Fuel Used by Hospitals and Social Solidarity Institutions	Απαλλαγή ειδικού φόρου κατανάλωσης πετρελαίου και άλλες επιστροφές φόρων για πετρέλαιο το οποίο χρησιμοποιείται από νοσοκομεία και ιδρύματα κοινωνικής αλληλεγγύης	Ongoing	Unknown
Excise Tax Exemption and Other Tax Refunds for Fuel Used by Hotels	Απαλλαγή ειδικού φόρου κατανάλωσης πετρελαίου και άλλες επιστροφές φόρων για πετρέλαιο το οποίο χρησιμοποιείται από ξενοδοχειακές επιχειρήσεις	Ongoing	Unknown
Excise tax Exemption on Aromatic Hydrocarbon Used as Raw Material	Απαλλαγή ειδικού φόρου κατανάλωσης σε υδρογονάνθρακες που χρησιμοποιούνται ως πρώτη ύλη	Ongoing	Unknown
Excise Tax Exemption on the Use of Coal and Coke	Απαλλαγή ειδικού φόρου κατανάλωσης στη χρήση Άνθρακα	Ongoing	Unknown
Excise Tax Exemption on the Use of Electricity in Agriculture	Απαλλαγή ειδικού φόρου κατανάλωσης ηλεκτρικής ενέργειας για αγροτική χρήση	Ongoing	Unknown
Excise Tax Exemption on the Use of Natural Gas	Απαλλαγή ειδικού φόρου κατανάλωσης στη χρήση Φυσικού Αερίου που χρησιμοποιείται ως καύσιμο κινητήρων	Ongoing	Unknown
Excise Tax on the use of diesel for heating purposes	Ειδικός φόρος κατανάλωσης στη χρήση πετρελαίου για θέρμανση	Ongoing	Unknown
Excise Tax on the use of kerosene for heating purposes	Ειδικός φόρος κατανάλωσης στη χρήση κυροζίνης για θέρμανση	Ongoing	Unknown
Excise Tax Reduction for Fuels Used in Agriculture	Μείωση ειδικού φόρου κατανάλωσης καυσίμων για αγροτική χρήση	Ended	2016

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax refund for fuels used in Agriculture	Επιστροφή ειδικού φόρου κατανάλωσης για καύσιμα που χρησιμοποιούνται για αγροτική χρήση	Ended	2020
Excise tax refund for fuels used in the production of energy products for intra-EU use	Επιστροφή φόρου κατανάλωσης καυσίμων που αναλίσκονται για την παραγωγή εγχωρίων προϊόντων με προορισμό ενδοκοινοτικές παραδόσεις	Ended	2018
Heating allowance for households for space heating purposes	Επίδομα θέρμανσης	Ongoing	Unknown
Excise tax reduction on LPG and methane used as heating fuels.	Εφαρμόζεται μειωμένος συντελεστής ει-δικού φόρου κατανάλωσης που ανέρχε-ται σε 60 ευρώ ανά χιλιόγραμμα για ταυγραέρια (LPG) και μεθάνιο που χρησι-μοποιούνται ως καύσιμα θέρμανσης.	Ongoing	Unknown
Excise tax reduction on LPG and methane used for industrial, craft and commercial uses.	Εφαρμόζεται μειωμένος συντελεστής ει-δικού φόρου κατανάλωσης που ανέρχε-ται σε 120 ευρώ ανά χιλιόγραμμα για ταυγραέρια (LPG) και μεθάνιο που προορί-ζονται για βιομηχανική, βιοτεχνική καιεμπορική χρήση σε κινητήρες.	Ongoing	Unknown
Excise tax reduction on natural gas used as a heating fuel for domestic.	Εφαρμόζεται μειωμένος συντελεστής ει-δικού φόρου κατανάλωσης που ανέρχε-ται σε 0,30 ευρώ ανά Gigajoule μεικτήθερμογόνος δύναμη για το φυσικό αέριοπου χρησιμοποιείται ως καύσιμο θέρ-μανσης για οικιακή χρήση.	Ongoing	Unknown
Subsidy for suppliers of fuels to remote areas	Επιδότηση εταιρειών εμπορίας πετρελαιοειδών για τον ανεφοδιασμό με πετρελαιοειδή των παραμεθόριων περιοχών της χώρας και των νησιών	Ended	2015
VAT on petroleum products and lubricants produced domestically or within EU	Φόρος Προστιθέμενης Αξίας σε πετρελαικά ήδη και λιπαντικά που παράγονται εγχώρια ή μέσα στην Ευρωπαική Ένωση	Ended	2019
Reduced Rate of VAT on natural gas	Μειωμένος Φόρος Προστιθέμενης Αξίας σε Φυσικό Αέριο	Ongoing	Unknown
Excise Tax on Natural Gas For Power Generation	Ειδικός Φόρος Κατανάλωσης στο Φυσικό Αέριο για Παραγωγή Ηλεκτρικής Ενέργειας	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
The Excise Tax for the Natural Gas used for Power Generation is paid by end users by uplift accounts (Wholesale Market) System operation Code.	Ο Ειδικός Φόρος Κατανάλωσης για το Φυσικό Αέριο που χρησιμοποιείται για Παραγωγή Ηλεκτρικής Ενέργειας πληρώνεται από τους τελικούς καταναλωτές από λογαριασμούς προσαυξήσεων (Χονδρική Αγορά)	Ended	2016
Subsidies for natural gas connections	Επιδοτήσεις για συνδέσεις Φυσικού Αερίου	Ongoing	Unknown
Cost recovery mechanism	Μηχανισμός Ανάκτησης Μεταβλητού Κόστους	Ended	2020
Compensation for the indirect costs of EU ETS	Διαρροή άνθρακά στις ενεργοβόρες βιομηχανίες	Ongoing	2030
Transitional Flexibility Remuneration Mechanism (FRM)	Μεταβατικός Μηχανισμός Αποζημίωσης Ευελιξίας	Ended	2017
New transitory flexibility mechanism	Παράταση του ελληνικού συστήματος διακοπτόμενου φορτίου	Ended	2021
Services of general interest (SGI) - use low voltage	ΥΚΩ Γενικής Χρήσης ΧΤ	Ongoing	Unknown
Services of general interest (SGI) - use medium voltage - Industry	ΥΚΩ Καταναλώσεις Νύχτας ΧΤ	Ongoing	Unknown
Services of general interest (SGI) - use medium voltage - Services (tertiary sector)	ΥΚΩ Αγροτικής Χρήσης ΧΤ	Ongoing	Unknown
Services of general interest (SGI) - use medium voltage - Agriculture	ΥΚΩ Φωτισμός Οδών και Πλατειών ΧΤ	Ongoing	Unknown
Services of general interest (SGI) - use high voltage	ΥΚΩ Υψηλής Τάσης (ΥΤ)	Ongoing	Unknown
The Operational Programme "Eastern Macedonia and Thrace" 2014 – 2020	ANATOLIKI MAKEDONIA, THRAKI Article 107(3)(a)	Ended	2021
Operational Programme (OP) of the Region of Central Macedonia - National financing part	Ανάπτυξη δικτύων φυσικού αερίου χαμηλής και μέσης πίεσης, Νομού Θεσσαλονίκης.	Ended	2023
Operational Programme (OP) of the Region of Central Macedonia - European financing part	Ανάπτυξη δικτύων φυσικού αερίου χαμηλής και μέσης πίεσης, Νομού Θεσσαλονίκης.	Ended	2023
Regional Operational Programme "Sterea Ellada" (2014-2020)	ΑΝΑΠΤΥΞΗ ΔΙΚΤΥΩΝ ΔΙΑΝΟΜΗΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΜΕΣΗΣ & ΧΑΜΗΛΗΣ ΠΙΕΣΗΣ	Ended	2021
Construction of LNG terminal in Alexandroupolis	Η Επιτροπή ενέκρινε 166,7 εκατ. ευρώ από το ελληνικό δημόσιο για την κατασκευή τερματικού σταθμού LNG στην Αλεξανδρούπολη	Ended	2021
Liquefied Natural Gas (LNG) flue gas compression station - National Financing part	Σταθμός συμπίεσης απαερίων Υγροποιημένου Φυσικού Αερίου (ΥΦΑ)	Ended	2022

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Liquefied Natural Gas (LNG) flue gas compression station - European Financing part	Σταθμός συμπίεσης απαερίων Υγροποιημένου Φυσικού Αερίου (ΥΦΑ)	Ended	2022
Development of low and medium pressure natural gas networks in the Western Region. Greece	Ανάπτυξη δικτύων φυσικού αερίου χαμηλής και μέσης πίεσης στην Περιφέρεια Δυτ. Ελλάδας	Ended	2021
Metering/Regulating (M/R) Stations in Karditsa, Trikala and Ag. Theodori	Μετρητικούς / Ρυθμιστικούς Σταθμούς σε Καρδίτσα, Τρίκαλα και Αγ. Θοδωρή (Κόρινθος)	Ongoing	2038
Metering Regulating Station in N. Mesimvria for the connection of NNGTS with TAP	Σταθμός M/P στην Ν. Μεσημβρία για την σύνδεση του ΕΣΜΦΑ με τον TAP	Ended	2021
Construction of a liquefied natural gas (LNG) tanker loading station at Revithoussa LNG station	Κατασκευή σταθμού φόρτωσης βυτιοφόρων Υγροποιημένου Φυσικού Αερίου (ΥΦΑ) στο σταθμό ΥΦΑ της Ρεβυθούσας	Ended	2022
Development of natural gas transmission and distribution systems in Western Macedonia - European Financing part	Ανάπτυξη συστημάτων μεταφοράς και διανομής φυσικού αερίου	Ended	2023
Development of low and medium pressure natural gas networks in the city of Megalopolis	Ανάπτυξη δικτύων φυσικού αερίου χαμηλής και μέσης πίεσης στην πόλη της Μεγαλόπολης	Ended	2022
Development of low and medium pressure natural gas networks in the city of Florina - National Financing paty	Ανάπτυξη δικτύων Φυσικού Αερίου χαμηλής και μέσης πίεσης στην πόλη της Φλώρινας	Ended	2023
Development of low and medium pressure natural gas networks in the city of Florina - European Financing part	Ανάπτυξη δικτύων Φυσικού Αερίου χαμηλής και μέσης πίεσης στην πόλη της Φλώρινας	Ended	2023
Return of Excise Duty on diesel fuel to farmers	Επιστροφή Ειδικού Φόρου Κατανάλωσης πετρελαίου κίνησης στους αγρότες	Ended	2023
Subsidy on natural gas consumption (in addition to DEPA subsidies) for households	Επιδότηση στην κατανάλωση φυσικού αερίου νοικοκυριών (επιπλέον των επιδοτήσεων της ΔΕΠΑ)	Ended	2023
Subsidy on natural gas consumption for businesses	Επιδότηση στην κατανάλωση φυσικού αερίου επιχειρήσεων	Ended	2023
Prepaid card for households to purchase motor fuel (fuel pass)	Προπληρωμένη κάρτα σε νοικοκυριά για αγορά καυσίμων κίνησης (fuel pass)	Ended	2022
Diesel subsidy (12 cents per liter)	Επιδότηση πετρελαίου κίνησης (12 λεπτά ανά λίτρο)	Ended	2023

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Taxi drivers subsidized by 200 euros in April due to increased fuel prices	Επιδότηση οδηγών ταξί με 200 ευρώ τον Απρίλιο λόγω αυξημένων τιμών καυσίμων	Ended	2023
Heating oil subsidy (20 cents per litre)	Επιδότηση πετρελαίου θέρμανσης (20 λεπτά ανά λίτρο)**	Ended	2023
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

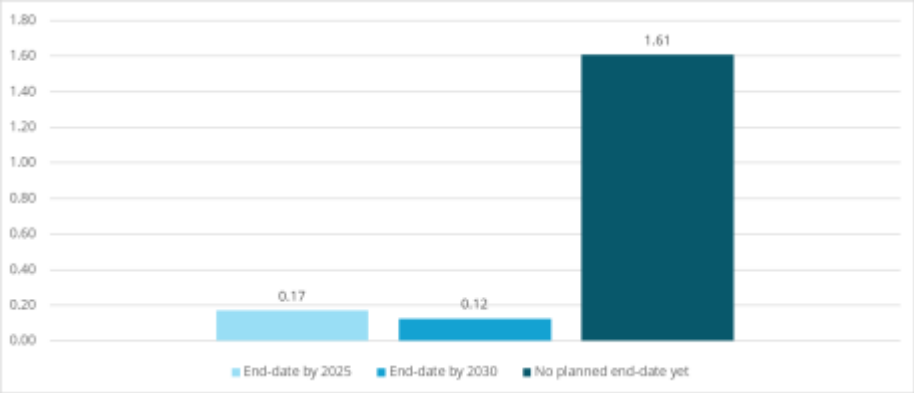
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 1.9 billion, accounting for 52% of total energy subsidies in Greece. 85% of fossil fuel subsidies had no firm end-date.

Croatia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

Croatia will have to contribute to the achievement of the EU climate neutrality target by 2050, but it does not have its own climate neutrality target.

Subsidies to fossil fuels

There is no clear plan to phase out fossil fuel subsidies in Croatia.

Excise duty exemptions are a type of energy subsidy in Croatia noted in the Excise Duty Act. Exemptions for the use of excise duty are provided for unleaded motor gasoline together with blue dyed diesel, both of which are used for fishing, aquaculture, navigation and agricultural purposes. Beneficiaries of the excise duty exercise their rights through a permit and a fuel card issued by the designated authority through a yearly quota that corresponds to approved annual quantities of blue-dyed diesel and unleaded motor gasoline.

With regards to fossil fuel subsidies, although, Croatia has not set an end date for fossil fuels subsidies, it plans to complete the analysis of the current system (mainly exemptions from excise duties in transport, agriculture and fisheries) by mid-2026 which will also cover economic impact on the most vulnerable groups, performance indicators and include a timetable.[284]

Phase-out of fossil fuel extraction

There is no plan to phase out fossil fuel extraction in Croatia.

Phase-out of fossil fuel use

Electricity generation

In 2021, Croatia committed to a phase out of coal by 2033.[285] However, this commitment appears to have been postponed as the updated integrated National Energy and Climate Plan (NECP) refers to the continued use of only coal-powered plants until 2040 when projecting energy grid requirements

[284] COMMISSION RECOMMENDATION on the draft updated integrated national energy and climate plan of Croatia covering the period 2021-2030 and on the consistency of Croatia's measures with the Union's climate neutrality objective and with ensuring progress on adaptation, Source: SWD_Assessment_draft_updated_NECP_Croatia_2023.pdf (europa.eu)

[285] Source: https://vlada.gov.hr/glavni-izbornik-14951/news/croatia-will-reduce-co2-emissions-by-45-by-2030-our-coal-phase-out-year-is-2033/33278, published in November 2021

and shares of coal-powered energy consumption.[286] Moreover, there is no timeline for the coal phase-out or any other type of fossil fuel phase-out in its updated NECP.[287]

Subsidies to the nuclear industry

The nuclear industry in Croatia is not subsidized.

Other energy subsidies

No information was found on the phase-out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Croatia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Feed in tariff - Cogeneration plants	Poticajna cijena	Ongoing	Unknown
Reduced (zero) excise duty rate on gasoil for use in agriculture, fish growing, and aquaculture and exemption for fishing	Snižena stopa trošarine na označeno plinsko ulje za namjene u poljoprivredi, ribogojstvu i akvakulturi te oslobođenje za namjene ribolova	Ongoing	Unknown
Reduced excise duty on natural gas for business entities	Diferencirana visina trošarine za prirodni plin, električnu energiju i kruta goriva	Ongoing	Unknown
Excise duty exemption for natural gas used in households	Oslobođenje za prirodni plin i električnu energiju koji se koriste u kućanstvima	Ongoing	Unknown
Excise duty exemption for natural gas for propulsion	Oslobođenje za prirodni plin koji se koristi za pogon	Ongoing	Unknown
Excise duty exemption for gasoil used in de-mining activities	Oslobođenje za plinsko ulje koji se koristi za pogon strojeva za razminiranje	Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation	Oslobađanje od plaćanja trošarine na naftne derivate utrošene u unutarnjoj plovidbi	Ongoing	Unknown
Rising energy prices package - Gas cost support for households	Ublažavanje rasta cijene plina, potpore građanima	Ongoing	2024
Rising energy prices package - Gas cost support for entrepreneurs	Ublažavanje rasta cijene plina, potpore poduzetnicima	Ended	2023
Rising energy prices package - Gas cost support (not detailed)	Ublažavanje rasta cijene plina	Ongoing	Unknown

[286] COMMISSION RECOMMENDATION on the draft updated integrated national energy and climate plan of Croatia covering the period 2021-2030 and on the consistency of Croatia's measures with the Union's climate neutrality objective and with ensuring progress on adaptation, Source: SWD_Assessment_draft_updated_NECP_Croatia_2023.pdf (europa.eu)

[287] COMMISSION RECOMMENDATION on the draft updated integrated national energy and climate plan of Croatia covering the period 2021-2030 and on the consistency of Croatia's measures with the Union's climate neutrality objective and with ensuring progress on adaptation, Source: SWD_Assessment_draft_updated_NECP_Croatia_2023.pdf (europa.eu)

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Rising energy prices package - Support for public passenger transport	Potpora javnom prijevozu putnika	Ongoing	2024
Rising energy prices package - HEP support measures (gas)	Podrška HEP-a	Ended	2022
Rising energy prices package - Fuel price cap	Granica cijene goriva	Ongoing	Unknown
Partial refund of the paid excise duties for diesel fuel in commercial transport of goods and passengers	Povrat dijela plaćene trošarine za dizelsko gorivo u komercijalnom prijevozu robe i putnika	Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

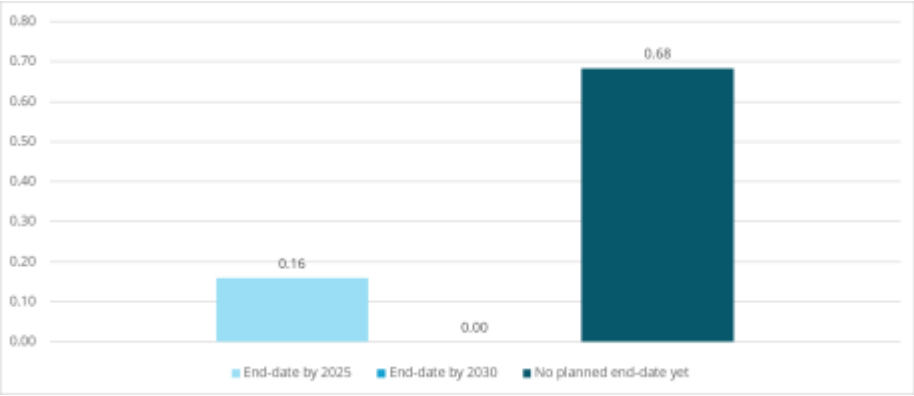
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the General Union Environment Action Program to 2030, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 49: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.84 billion, accounting for 27% of total energy subsidies in Croatia. 81% of fossil fuel subsidies had no firm end-date.

Hungary

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

Hungary has set a climate neutrality target for 2050.[288] However, Hungary's corresponding plans and strategies (including those laid out in its updated draft NECP[289]) do not keep the country on the required path for this, as they are still insufficiently addressing fossil fuel extraction, consumption and import dependency, shown by the continuous demand-side support for the use of these fuels as well as the lack of a comprehensive energy efficiency strategy to reduce overall consumption (e.g. in the residential and transport sectors). In its 2023 recommendations on Hungary's updated draft NECP (hereafter: recommendations), the Commission asks Hungary to complement the information on existing and planned policies and measures in multiple categories, including the transport sector and for non-CO2 emissions (including methane, N2O and F-gases, from energy, industrial processes and product use, agriculture, and waste management). The EC furthermore asks Hungary to clearly spell out the scope, timeline and expected GHG reduction impact of these measures[290].

Hungary is strongly dependent on foreign energy sources, especially Russian natural gas supplies, with 95% of its supply originating from the Russian Federation. It's energy mix consists of 33,5% natural gas, 28,5% oil and petroleum products, 15,5% nuclear energy, 11,3% renewables and 11,2% others[291]. There is no clear indication of when an eventual gas phase-out would happen. In September 2021, a long-term (15 year) purchase agreement has been signed with Gazprom that secures an annual 4.5 bn m3 natural gas supply from Russia, which amount equals to ca. 50% of the annual natural gas consumption of Hungary. [292] To reduce gas dependency, the Hungarian government also seeks to exploit renewable hydrogen on the long term (however the current market regulatory framework and market conditions are immature for this purpose).

In its recommendations, the EC asks Hungary to further assess the compatibility of its future gas infrastructure with the decarbonisation objectives, and *"assess the adequacy of the oil infrastructure (refinery, oil stocks) with the expected need to diversify from Russian oil as well as expected decline in oil demand and the move toward lower-carbon alternatives".*[293]

[288] https://www.iea.org/policies/12590-2050-climate-neutrality-law
[289] National energy and climate plans (europa.eu)
[290] https://commission.europa.eu/publications/commission-recommendation-assessment-swd-and-factsheet-draft-updated-national-energy-and-climate-17_en
[291] f51a47de-30f0-4176-bab0-89fca0244233_en (europa.eu)
[292] https://www.portfolio.hu/gazdasag/20210927/szijjarto-peter-alairtuk-az-uj-15-eves-gazszerzodest-a-gazprommal-502466
[293] 0c02a77c-c0c2-406c-bf80-f7f314ae2ae4_en (europa.eu)

In its updated NECP, Hungary expects *"an increase in domestic petroleum concessions and sets out to reduce import dependency, while a key goal is to maximise the increase of the use of petroleum products in transport at 10% by 2030",* which statement leads to questioning its intentions with regards to phase out fossil fuel use.

Subsidies to fossil fuels

The country's NECP claims that "there are no direct subsidies for fossil fuels in Hungary" (p. 227[294]), although several studies from civil and professional groups, as well as data collected for this study point to the contrary.

Phase out of fossil fuel extraction

Fossil fuel extraction in Hungary is decreasing, however there is no date set for a phase-out of the mining of coal or other hydrocarbons.

In parallel with revising and extending the closure dates of the Mátra lignite-fire power plant (see next section), the government published intentions in 2023 to continue exploiting its coal resources and "examine the application possibilities of 'clean coal technologies' in order to utilize Hungarian coal wealth"[295].

Phase out of fossil fuel use

Electricity generation

Hungary needs to phase out the remaining coal in its energy mix and transition to greener sources, however justified by the war in Ukraine and consequent energy security concerns, the government has revoked their commitment to the closure of the lignite fired units of the Mátra power plant (MPP) in 2023[296]. The closure is currently set to occur in 2029 instead of 2025 as previously announced (which has also sparked debates about the necessity to upgrade Hungary's National Environmental Operative Programme for 2020-2027 as well as its Territorial Just Transition Plans that were building on an anticipated phase-out and cessation of mining activities. Given the recent energy crisis, the power plant owner MVM Mátra Energy was directed to optimise its power output and increase lignite mining in the surrounding mining sites. Considering the age and technological features of the plant, it is unlikely that it can remain operational until 2029 without significant - stranded - investments going into its operation. In its recommendations, the EC asks Hungary to *"ensure alignment between the coal phase out timeline outlined in the Territorial Just Transition Plans (TJTPs) and the final updated NECP, with particular attention to the MPP and lignite extraction in the two associated open-cast mines (Visonta and Bükkábrány)."*

Until 2029, the plans are to construct a modern gas-fired unit at the Mátra Power Plant site, a new solar photovoltaic (PV) facility and an industrial energy storage unit, as well as a waste recovery unit.

The share of hydrocarbons in the energy mix is still dominant, with natural gas accounting for around 30% of final energy use. Even if lignite burning ceases, the planned natural gas-based investments at the MPP site would likely further aggravate Hungary's fossil-fuel dependency and compromise its energy security (especially if lignite mining continues at the affected sites, see section on fossil fuel extraction).

Industry

No fossil fuel phase-out goal identified in the industrial sector, nor is there a clear pathway for 2030 and 2050 with a view to support the decarbonisation of industrial processes. In fact, according to

[294] f51a47de-30f0-4176-bab0-89fca0244233_en (europa.eu)
[295] Magyar Közlöny (magyarkozlony.hu)
[296] Magyar Közlöny (magyarkozlony.hu), Telex: Még négy évig működhet a Mátrai Erőmű, a Greenpeace bírósághoz fordult

Hungary's revised draft NECPS, thanks to increased industrial production and new investments, oil, gas and electricity consumption are projected increase significantly, by 25 %, 42 % and 35 % respectively by 2030 compared to 2019297. By 2050, these increases will already reach 59 %, 57 % and 50 %. Coal consumption is set to increase as well due to growing demand for pig iron, with the emission impact of the processes claimed to be mitigated by CCUS technology.

However, Hungary's NECP has been positively evaluated for considering the impact of the new emissions trading system for industrial facilities.

Agriculture

Hungary's emissions from land use are expected to account for around 50% of total GHG emissions in the agricultural sector in 2050 according to its revised draft NECP. Achieving climate neutrality essentially depends on the agriculture and forestry sectors, however there are no pathways set towards the national LULUCF target (-5 724 kt CO2eq by 2030). In its recommendations, the EC asks Hungary to "*Provide clear information on how public funds (both Union funds, including the common agricultural policy, and State aid) and private financing through carbon farming schemes are consistently and effectively used to achieve the net removal national target*."

Subsidies to the nuclear industry

The government insists on the position that Hungary's future energy demand cannot be met without nuclear power, which is currently supplying ca. 37% of electricity demand, and thus Hungary aims to maintain a high share of nuclear energy in electricity generation. Two new planned units of the Paks II power plant would attract significant investment support from the state[298], a Russian loan[299] and nuclear fuel imports from Russia, which plans have not been compromised by the invasion of Ukraine by Russia (late February 2022). The new blocks, however, would only be commissioned after 2030.

Other energy subsidies

No information or confirmation found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Hungary

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Coal Penny - coal industry restructuring charge	szénfillér rendszer, szénipari szerkezetátalakítási támogatás	Ended	2018
Excise tax exemptions and refunds for energy products used as fuel for railway transportation and navigation on inland waterways	Vasúti szállítási tevékenységhez kapcsolódó jövedékiadó-visszatérítés	Ongoing	2029
Excise tax refund for Agriculture	Mezőgazdaságban felhasznált gázolaj utáni jövedékiadó-visszatérítés	Ongoing	Unknown

[297] f51a47de-30f0-4176-bab0-89fca0244233_en (europa.eu)
[298] https://ec.europa.eu/commission/presscorner/detail/en/IP_17_464
[299] https://balkangreenenergynews.com/hungary-russia-to-speed-up-construction-of-paks-ii-nuclear-power-plant/

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax refund for commercial use (carriage of goods or passengers)	Felhasznált gázolaj utáni jövedékiadó-visszatérítés	Ongoing	Unknown
Fuel price cap	Üzemanyagár-korlátozás	Ended	2022
Government price control intervention in public utility services	Rezsicsökkentési intézkedések	Ongoing	Unknown
Household Energy Bill Subsidy - Natural gas	Lakhatási települési támogatás (Lakásfenntartási támogatás)	Ongoing	Unknown
Household Energy Bill Subsidy - Oil	Lakhatási települési támogatás (Lakásfenntartási támogatás)	Ongoing	Unknown
Household Energy Bill Subsidy - Coal	Lakhatási települési támogatás (Lakásfenntartási támogatás)	Ongoing	Unknown
Support for Mine Decommissioning and Coal Sector Reorganisation	Szénipari szerkezetátalakítási támogatás	Ended	2020
Support to small gas stations and temporarily waiving energy efficiency obligation for all refill stations	támogatás a kis benzinkutaknak	Ended	2022
VAT reduction for district heating - Natural gas	Gázártámogatás	Ongoing	Unknown
VAT reduction for district heating - Oil	Gázártámogatás	Ongoing	Unknown
VAT reduction for district heating - Coal	Gázártámogatás	Ongoing	Unknown
Early-Retirement Payments for Coal Miners	átmeneti bányászjáradék	Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

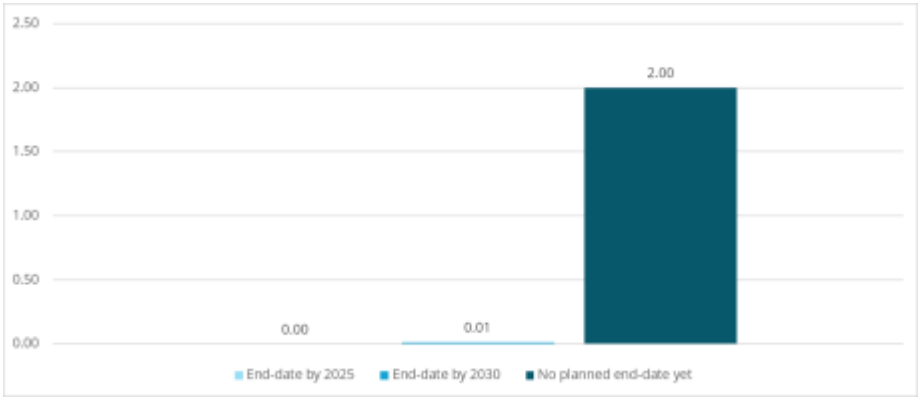
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 2.01 billion, accounting for 64% of total energy subsidies in Hungary. Practically none (99%) of the fossil fuel subsidies had a firm end-date.

Ireland

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

Policy is framed in the context of the Climate Action Plan 2024 (CAP24)[300] published by the Government of Ireland in December 2023 (annual updates are published).

The Climate Action Plan 2024 (CAP24) implements the carbon budgets and sectoral emissions ceilings and sets a roadmap for taking decisive action to halve emissions by 2030 and reach net zero no later than 2050, as committed to in the Programme for Government.

No gas phase out is foreseen at this stage in official policies. Gas still plays a major part in the energy mix and at least 2 GW of new flexible gas generation is foreseen by 2030 in the latest climate action plan, although the long term goal is that increasingly this is supplied from biomethane and hydrogen. Market arrangements that affect gas generation will be reviewed and could lead to new subsidy incentives for capacity and balancing services.

[300] https://www.gov.ie/en/publication/79659-climate-action-plan-2024/

Subsidies to fossil fuels

In Ireland, there seems to be a general push towards abolishing subsidies to fossil fuels. For example, the Public Service Obligation levy, formerly used to also support domestic energy generation from peat, is now entirely dedicated to renewable energy support.[301] As accounted by the Central Statistical Office of Ireland direct and indirect subsidies for fossil fuels have both declined since peaks in 2014 and 2019 respectively.

However, the Climate Action Plan 2023 (CAP23)[302] does not explicitly mention fossil fuel subsidy phase-out in its 284 pages.

Phase out of fossil fuel extraction

Ireland is a signatory of the Beyond Oil and Gas Alliance created at COP26 in 2021, which commits to prohibiting new oil and gas exploration.

It ended issuing new licenses for oil exploration and extraction in 2019 and for gas in 2021. This decision did not affect licenses already granted.

Phase out of fossil fuel use

Electricity generation

Ireland has only one coal power plant, the 915 MW Moneypoint plant, commissioned in 1987. It was upgraded for environmental reasons in 2008, extending the technical life of the plant to around 2025.

Ireland has signed up as a member of the Powering Past Coal Alliance, with an estimated phase out date of 2025[303]. However, in December 2022 it was announced by the Irish Government that by 2025 the plant will be converted from coal to oil, rather than decommissioned fully, due to concerns over energy security. This is intended to operate until 2029 by which time other capacity will have grown so that the balancing capacity of Moneypoint will not be needed. Applications for this conversion have been made but remain subject to public consultation.

Alongside the switch to oil there are also plans for the Moneypoint site to support wind energy development and manufacture and for green hydrogen[304].

For electricity generation there are mixed messages with a coal phase-out being now used to switch to heavy fuel oil. It is also the case that oil, once largely removed from the mix for electricity generation since 2010 has started to play a greater role again in generation.

No phase-out plans for gas as this stage, but some positive developments, e.g. rejection of application for a new LNG port terminal and associated gas-fired power plant on climate grounds.[305] However, the government appears to be trying to work-around this judgement to ensure some form of LNG capacity is built, with a proposal by the Minister for Energy following the planning rejection, for a similar LNG facility, on energy security grounds.

[301] CRU (2020). Decision Paper: Public Service Obligation Levy 2020/21 (CRU/20/086). Available at https://www.cru.ie/wp-content/uploads/2020/07/CRU20086-PSO-Decision-Paper-2020-21.pdf.
[302] https://assets.gov.ie/256997/b5da0446-8d81-4fb5-991e-65dd807bb257.pdf
[303] https://poweringpastcoal.org/members/ireland/
[304] https://esb.ie/what-we-do/generation-and-trading/green-atlantic-at-moneypoint
[305] https://www.bloomberg.com/news/articles/2023-10-02/ireland-denies-lng-port-despite-energy-security-concerns?srnd=green

Transport

Government had the intention to ban ICE vehicles by 2030, but believes it is unable to legislate for this as it would be incompatible with EU law. The targets for 2030 phase out are therefore aspirational, and rather focus on the increase of electric vehicles.

Policy will most likely rely on EU law, where stricter CO_2 performance standards are expected to lead to a de-factor fossil fuel phase-out for new vehicles by 2035.

Heating in buildings

Ireland is committed to accelerating the wider phase-out of fossil fuels for heating in all sectors and to putting in place the required supporting measures to achieve this. The CAP23 specifies that "*all buildings will need to switch to heat pumps or district heating by 2050, meaning that the gas grid will no longer supply existing homes and commercial premises. Ending of new gas connections or the installation of new fossil heating systems in new or refurbished buildings. The use of zero-emissions gas in heating will also contribute to decarbonisation of heat in buildings on our pathway to 2030.*"

A New Home Energy Upgrade Scheme has been announced in February 2022[306] which will provide a variety of new supports to make it easier for homeowners to undertake home energy retrofits.

The implementation of the Nearly Zero Energy Building regulations since 2019 have led to 95% of new builds having heat pumps, less than 5% using fossil fuel boilers, an effective phase-out[307]. NECP update (draft) outlines an 'effective' ban on oil boilers from 2022 and gas boilers from 2025.

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Ireland

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
EU LIFE: DEPOTEC	EU LIFE: DEPOTEC	Ended	2015
PSO Levy: Security of Supply	PSO Levy: Security of Supply	Ended	2016
Carbon Tax Repayments	Carbon Tax Repayments	Ongoing	Unknown
Excise duty reduction on fuel oil	Excise duty reduction on fuel oil	Ongoing	Unknown
Fuel Excise Repayment for Horticulture	Fuel Excise Repayment for Horticulture	Ongoing	Unknown
Fuel Allowance	Fuel Allowance	Ongoing	Unknown
Fuel Grant for Disabled Drivers and Disabled Passengers Scheme	Fuel Grant for Disabled Drivers and Disabled Passengers Scheme	Ongoing	Unknown

[306] https://www.gov.ie/en/press-release/government-launches-the-national-retrofitting-scheme/
[307] https://www.gov.ie/en/press-release/b368f-fossil-fuel-boilers-effectively-phased-out-in-new-dwellings/

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Gas Allowance	Household Benefits Package - Natural Gas Allowance	Ongoing	Unknown
Heat Allowance - Other Supplements (including Heating)	Heat Allowance - Other Supplements (including Heating)	Ongoing	Unknown
PSO Levy: Electricity Generation from Peat	PSO Levy: Electricity Generation from Peat	Ended	2019
Royalties on Gas and Oil Production	Royalties on Gas and Oil Production	Ongoing	Unknown
Autodiesel VAT Refund	Autodiesel VAT Refund	Ongoing	Unknown
Diesel Rebate Scheme	Diesel Rebate Scheme	Ongoing	Unknown
Reduced Rate on Marked Gas Oil - Agriculture	Reduced Rate on Marked Gas Oil - Agriculture	Ongoing	Unknown
Reduced Rate on Marked Gas Oil - Industry	Reduced Rate on Marked Gas Oil - Industry	Ongoing	Unknown
Reduced Rate on Marked Gas Oil - Rail	Reduced Rate on Marked Gas Oil - Rail	Ongoing	Unknown
Fuel Excise Repayment for Disabled Drivers/Passengers	Fuel Excise Repayment for Disabled Drivers/Passengers	Ended	2015
Marine Diesel Scheme (VAT)	Marine Diesel Scheme (VAT)	Ongoing	Unknown
Excise duty reduction on kerosene	Excise duty reduction on kerosene	Ongoing	Unknown
Excise duty reduction on non-auto LPG	Excise duty reduction on non-auto LPG	Ongoing	Unknown
Electricity Excise Exemption: Domestic Use	Electricity Excise Exemption: Domestic Use	Ongoing	Unknown
Excise duty reduction on business electricity use	Excise duty reduction on business electricity use. Ended in 2020, rates were equalised with domestic use. https://www.revenue.ie/en/tax-professionals/tdm/excise/excise-duty-rates/energy-excise-duty-rates.pdf	Ended	2019
Natural Gas Carbon Tax (NGCT) Exemption	Natural Gas Carbon Tax (NGCT) Exemption	Ongoing	Unknown
Solid Fuel Carbon Tax (SFCT) Exemption	Solid Fuel Carbon Tax (SFCT) Exemption	Ongoing	Unknown
VAT reduction on natural gas	VAT reduction on natural gas	Ongoing	Unknown
Capacity Payments Mechanism	Capacity Payments Mechanism	Ended	2018
Capacity Remuneration Mechanism (I-SEM)	Capacity Remuneration Mechanism (I-SEM)	Ongoing	Unknown
Add. VAT reduction on natural gas	Add. VAT reduction on natural gas	Ongoing	2024
Extra fuel allowance (on top of existing one)	Extra fuel allowance (on top of existing one)	Ended	2023
Programme for the EU Just Transition Fund	Just Transition	Ongoing	2027
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

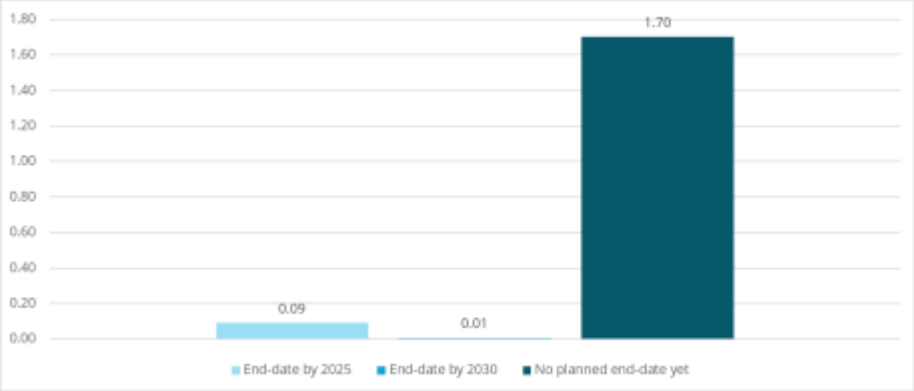
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 1.8 billion, accounting for 43% of total energy subsidies in Ireland. 95% of fossil fuel subsidies had no firm end-date.

Italy

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

End-date for fossil fuel use in

Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

The Italian government has stressed on several occasions its commitment to a national strategy for climate mitigation and adaptation, in line with the objectives set out in the Paris Agreement and the European Green Deal. These aims are echoed throughout several policy frameworks and strategies. These include as major outputs the National Plan for Recovery and Resilience[308], addressing the crisis of the coronavirus pandemic, as well as the Plan for the Ecological Transition[309], adopted in June 2022.

Pursuant to the Regulation approved by the European Council in August 2022, Italy obtained the right to a derogation from the 15% reduction in gas consumption to be implemented by each Member State until March 31st, 2023. Specifically, the concession enables the possibility of restricting such a reduction to 7%.[310] Despite of this, as of December 2022 Italy managed to reduce its gas consumption by up to 14.7%, compared to the previous 5 years consumptions.[311] Between 2022 and 2023, Italy reduced its gas consumption by a further 10%.[312]

Subsidies to fossil fuels

The government has put forward its intentions for a reform of the fiscal system driven by environmental motives. This foresees, as a crucial aspect, the phasing out of environmentally harmful subsidies. With this aim, the Ministry for the Environment and for Energy security (MASE)[313] publishes periodically an overview of the environmentally harmful and favourable subsidies ("Catalogo dei sussidi ambientali dannosi e favorevoli"[314]), the latest one available covering the years 2019-2020. For certain schemes, it was challenging to draw the line between environmentally harmful and favourable, hence the inclusion of the category of "uncertain subsidies" (sussidi ambientali incerti). This document provides policy analyses and financial figures for over 180 subsidy schemes. These are divided between direct and indirect subsidies: the former consists in direct transfers of funds to cover costs, while the latter comprise fiscal measures in the form of exemptions or fiscal discounts on certain categories of production and consumption.

The amount of environmentally harmful subsidies for 2021, and even more for 2022, is expected to increase, due to the policies adopted to contain the rising energy prices. These measures have been adopted by the Government with the law decree of March 1st 2022 (converted into law 27 April 2022 n. 34), on urgent measures on matters of energy costs[315]. While the increase in energy costs for end users has been substantial, it would have been even more drastic without the reduction of charges on gas bills, the strengthening of the social bonus for low-income households, as well as the reduction of the VAT on gas bills to 5%.

[308] Governo italiano, Piano Nazionale di Ripresa e Resilienza https://www.governo.it/sites/governo.it/files/PNRR.pdf
[309] Governo italiano, Piano di Transizione Ecologica, https://www.mase.gov.it/sites/default/files/archivio/allegati/PTE/PTE-definitivo.pdf
[310] Riduzione consumi di gas del 15%: entra in vigore il Piano del Consiglio UE - Rinnovabili.it
[311] L'Europa ha ridotto i consumi di gas del 20%, l'Italia ha quasi raggiunto l'obiettivo - Info Data (ilsole24ore.com)
[312] Eurostat: https://ec.europa.eu/eurostat/statistics-explained/images/b/b6/Natural_gas_consumption_statistics_2022-2023_%2828-05-2024%29_REV_SE_Corrected.xlsx
[313] Governo italiano, Ministero dell'Ambiente e della Sicurezza Energetica (MASE), previously Ministero della Transizione Ecologica
[314] Governo italiano, Catalogo dei sussidi ambientali dannosi e favorevoli,
[315] Gazzetta Ufficiale della Repubblica italiana, Testo del decreto-legge 1° marzo 2022, n. 17, coordinato con la legge di conversione 27 aprile 2022, n. 34.

While the edition of the *Catalogo* on the years 2021, 2022 and 2023 is not yet available, estimations have been provided by the Italian Observatory on Public Accounts (OPCI)[316] in 2022. It was estimated that, in light of the current urgent measures, the amount of expenditure allocated to environmentally harmful subsidies amounts in 2021 to €24 billion. In 2022, it is estimated that these subsidies would increase to €27 billion, in case the recent subsidies would be gradually withdrawn in the first trimester, and to €34 billion if they were to be extended.

It is worthwhile noticing that the subsidies introduced in the first trimester of 2022 have been partly financed, up to 1.5 billion, through the tax on the "extra-profits" of renewable energy producers, bringing about a net reduction in environmentally favourable subsidies. The tax is applied, for a determined period of time, to electricity produced by solar PV with a higher power than 20 kW. The most hit categories by this measure are the producers of geothermal, wind and hydroelectric power.

Phase out of fossil fuel extraction

The decree "Aiuti quater" (D.L. n. 176/2022)[317] published in September 2022 and converted into law in January 2023[318] includes provisions that allow the issuing of new concessions (previously suspended) for the cultivation of gaseous hydrocarbons between 9 and 12 miles from the coastlines and from the external perimeter of protected marine and coastal areas. This is limited to sites with gas mining potential of at least 500 million cubic meters, and is expected to generate 15 billion m^3 over 10 years.[319]

Phase out of fossil fuel use

Electricity generation

At the outbreak of the energy crisis in February 2022, the former Italian Prime Minister Mario Draghi announced the possibility for Italy to return to the use of coal power plants. The reference was to the 7 coal-fired power plants still existing in Italy but scheduled to be shut down by 2025 as part of the national ecological transition plan.[320] In September 2022, the former Ministry for the Ecological Transition authorised the maximisation use of such power plants until 31st March 2023 to ensure support during the emergency and limit dependency on Russian gas supplies.[321] This means that the scheduled shutdown remains unchanged.

Transport

The 2024 fiscal reform was expected to include a revision of road fuel duties' calculation methodology.[322] However, more recently a tax reduction was excluded by the Ministry for Enterprises and Made in Italy, replaced by a sectorial reorganisation.[323]

Subsidies to the nuclear industry

Nuclear has been decommissioned in Italy. Subsidies exist which support nuclear decommissioning and territories that host old nuclear plants. Nevertheless, on May 10th the Chamber of Deputies passed

[316] Università Cattolica, Osservatorio Conti Pubblici Italiani, February 11, 2022 "Se non per i conti pubblici, almeno per l'ambiente".
[317] https://www.gazzettaufficiale.it/eli/id/2022/11/18/22G00189/sg
[318] https://www.gazzettaufficiale.it/eli/id/2023/01/17/23G00010/sg
[319] https://www.unlaw.it/highlights/sblocca-trivelle-il-consiglio-dei-ministri-approva-il-dl-aiuti-quater-e-da-il-via-libera-alle-concessioni-di-coltivazione-di-gas-con-elevato-potenziale-minerario-entro-le-12-migli/#:~:text=176%2F2022)%2C%20pubblicato%20in,interventi%20normativi%20negli%20ultimi%20anni.
[320] Emergenza energia, in Italia 7 centrali a carbone pronte a ripartire - Il Sole 24 ORE
[321] https://www.arera.it/fileadmin/allegati/docs/23/352-23.pdf
[322] https://www.fiscal-focus.it/quotidiano/altre-tematiche/economia-societa/carburanti-il-taglio-delle-accise,3,159729#:~:text=Possono%20rappresentare%20circa%20il%2050,confermata%20nella%20riforma%20fiscale%202024.
[323] https://www.ticonsiglio.com/accise-benzina/

a motion requiring the Italian government to explore opportunities to introduce nuclear power as part of its long-term energy mix to speed up the national decarbonization process. Beside encouraging scientific and technological development through ad hoc academic and research training, the motion encourages the government to locate supra-national territories able to meet the Italian need for decarbonized energy through nuclear power.[324] The government has now officially included nuclear power into the 2030-2050 planned energy mix, and is now setting up a team to redesign the rules currently in force.[325]

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Italy

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Simplified purchase/resale arrangement of power - Fossil-fuels	Ritiro Dedicato (RID)	Ongoing	Unknown
New Green Certificates scheme - CHP	RITIRO CV	Ongoing	Unknown
CIP6 - Plants fueled by fossil fuels or hydrocarbons	CIP6 - Impianti alimentati a combustibili fossili o idrocarburi	Ongoing	Unknown
CIP6 - Plants fueled by process fuels or residues or energy recoveries	CIP6 - Impianti alimentati a combustibili di processo o residui o recuperi di energia	Ongoing	Unknown
Reduction of excise duty on diesel used in freight and other categories of passenger transport	Riduzione di accisa sul gasolio impiegato come carburante per l'autotrasporto merci ed altre categorie di trasporto passeggeri	Ongoing	Unknown
Reduction of the price of gas oil and LPG for heating in disadvantaged areas	Riduzione di prezzo del gasolio e GPL impiegati per il riscaldamento in aree geograficamente o climaticamente svantaggiate	Ongoing	Unknown
Reduced duty on emulsion on diesel / fuel oil in water	Riduzione dell'accisa sulle emulsioni di gasolio o olio combustibile in acqua impiegate come carburanti o combustibili	Ended	2019
Excise duty reduction on LPG used by centralized systems for industrail purposes	Riduzione dell'accisa sul GPL utilizzato negli impianti centralizzati per usi industriali	Ongoing	Unknown
Excise duty reduction on LPG used by urban and suburban buses used for public service	Riduzione dell'accisa sul GPL utilizzato dagli autobus urbani ed extraurbani adibiti al servizio pubblico	Ongoing	Unknown

[324] Nucleare, la maggioranza apre: valutare mix energetico - Il Sole 24 ORE
[325] https://www.hdblog.it/green/articoli/n581967/governo-italia-ritorno-energia-pulita-nucleare/

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax reduction on natural gas for industrial uses	Riduzione dell'accisa sul gas naturale impiegato per usi industriali da soggetti che registrano consumi superiori a 1.200.000 mc annui	Ongoing	Unknown
Tax Relief for Natural Gas Used in Hydrocarbon Exploitation	Riduzione dell'accisa sul gas naturale impiegato negli usi di cantiere, nei motori fissi e nelle operazioni di campo per la coltivazione di idrocarburi	Ongoing	Unknown
Reduction of excise duty on fuels for experimental tests and testing of aviation and marine engines	Riduzione dell'accisa sui carburanti per le prove sperimentali e collaudo di motori di aviazione e marina	Ongoing	Unknown
Tax Relief for Ambulances	Riduzione dell'accisa sui carburanti per le autoambulanze	Ongoing	Unknown
Excise reduction on fuel for taxi	Riduzione dell'aliquota normale dell'accisa sui carburanti per i Taxi	Ongoing	Unknown
VAT exemption on taxi used for urban transport (Gas/Diesel)	Esenzione IVA taxi adibiti al trasporto urbano (Gas/Diesel)	Ongoing	Unknown
VAT exemption on taxi used for urban transport (Motor gasoline)	Esenzione IVA sui taxi adibiti al trasporto urbano (Motori benzina)	Ongoing	Unknown
Tax Relief for National Army Forces	Riduzione dell'accisa su combustibili e carburanti impiegati dalle Forze armate nazionali	Ongoing	Unknown
Fuel Tax Reduction for Rail Transport	Riduzione dell'accisa per i carburanti utilizzati nel trasporto ferroviario di persone e merci	Ended	2022
VAT concession on petroleum products for use in agriculture and inland fisheries	Regime speciale IVA per i produttori agricoli – Detrazione forfetizzata	Ongoing	Unknown
Direct or indirect production of electricity by plants subject to the declaration provided for by the provisions governing tax on electricity consumption	Produzione, diretta o indiretta, di energia elettrica con impianti obbligati alla denuncia prevista dalle disposizioni che disciplinano l'accisa sull'energia elettrica	Ended	2020
Energy Tax Breaks for Agriculture	Impiego dei prodotti energetici nei lavori agricoli e assimilati	Ongoing	Unknown
Deductible on product tax rates of natural gas and oil (royalties).	Franchigia sulle aliquote di prodotto della coltivazione di gas naturale e petrolio (royalties)	Ongoing	Unknown
Excise exemption on electricity from gasification plants	Esenzione dall'accisa su prodotti energetici usati per la produzione di energia elettrica integrata con impianti di gasificazione	Ongoing	Unknown
Tax exemption for the drainage of flood plains	Esenzione dell'accisa sui carburanti per il prosciugamento e la sistemazione dei terreni allagati nelle zone colpite da alluvione	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Consumption Tax Exemption for Lubricating Oils Used in the Petrochemical Sector	Esenzione dall'imposta di consumo per gli oli lubrificanti impiegati nella produzione e nella lavorazione della gomma naturale e sintetica	Ongoing	Unknown
Fuel Tax Exemption for the Production of Magnesium from Sea Water	Esenzione dall'accisa sui prodotti energetici impiegati per la produzione di magnesio da acqua di mare	Ended	2022
Fuel Tax Exemption for Water Lifting	Esenzione dall'accisa sui carburanti per il sollevamento delle acque allo scopo di agevolare la coltivazione dei fondi rustici sui terreni bonificati	Ongoing	Unknown
Excise exemption on energy products in blast furnaces	Esenzione dall'accisa su prodotti energetici iniettati negli altiforni per la realizzazione dei processi produttivi	Ongoing	Unknown
Income tax deduction for petrol stations	Deduzione forfetaria dal reddito di impresa a favore degli esercenti impianti di distribuzione carburante	Ongoing	Unknown
Social energy tariff - gas	Bonus gas	Ongoing	Unknown
Reduced VAT rate for natural gas - agriculture	IVA agevolata per l'energia elettrica e gas per uso di imprese estrattive, agricole e manifatturiere	Ongoing	Unknown
Reduced VAT rate for natural gas - industry	IVA agevolata per l'energia elettrica e gas per uso di imprese estrattive, agricole e manifatturiere	Ongoing	Unknown
Reduced VAT rate for natural gas - mining	IVA agevolata per l'energia elettrica e gas per uso di imprese estrattive, agricole e manifatturiere	Ongoing	Unknown
Extraordinary contribution, in the form of a tax credit, in favor of companies with a high consumption of natural gas	Contributo straordinario, sotto forma di credito d'imposta, a favore delle imprese a forte consumo di gas naturale	Ended	2022
Contribution, in the form of a tax credit, in favor of companies for the purchase of natural gas	Contributo, sotto forma di credito d'imposta, a favore delle imprese per l'acquisto di gas naturale	Ended	2022
Interministerial decree Ministry of Finance (MEF) - Ministry of Ecological Transition (MITE) (Decree of March 18, 2022) - Reduction of taxes on certain energy products used as fuel	Decreto 18 marzo 2022 (Ministro dell'economia e delle finanza di concerto con il ministro della transizione ecologica) - Riduzione delle aliquote di accisa applicate alla benzina, al gasolio e ai GPL usati come carburanti.	Ended	2022
Interministerial decree Ministry of Finance (MEF) - Ministry of Ecological Transition (MITE) (Decree of April 6, 2022) - Reduction of taxes on certain energy products used as fuel	Decreto 6 aprile 2022 - Riduzione delle aliquote di accisa applicate alla benzina, al gasolio e al GPL usati come carburanti.	Ended	2022

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduction of taxes on certain energy products used as fuel	Riduzione delle aliquote di accisa applicate alla benzina, al gasolio e ai GPL usati come carburanti.	Ended	2022
Urgent measures regarding excise duties on fuel and support for local authorities and the territories of the Marche affected by exceptional meteorological events (DL2022/n.179) - Provisions regarding excise duties on certain fuels (Art.1)	Misure urgenti in materia di accise sui carburanti e di sostegno agli enti territoriali e ai territori delle Marche colpiti da eccezionali eventi meteorologici. (DL2022/n.179) - Disposizioni in materia di accisa su alcuni carburanti (Art.1)	Ended	2022
Urgent measures to contain the effects of energy price increases - Reduction of charges on gas bills for all users	Misure urgenti per contenere gli effetti dell'aumento del prezzo dell'energia - Riduzione degli oneri sulla bolletta del gas per tutti gli utenti	Ended	2022
Urgent measures to contain the effects of energy price increases - Price cap on gas distribution (cut on gas VAT)	Misure urgenti per contenere gli effetti dell'aumento del prezzo dell'energia - Limitazione dei prezzi della distribuzione del gas	Ended	2022
Capacity market	Mercato della capacità	Ongoing	2028
Emergency Support Scheme for Haulage Operators using liquefied natural gas (LNG) as fuel	Schema di supporto di emergenza per gli operatori di trasporti che utilizzano gas naturale liquefatto (GNL) come carburante	Ended	2022
Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis (DL 2022/n. 50) - Tax credit for road hauliers and measures in favor of companies providing bus passenger transport services (Art. 3)	Misure urgenti in materia di politiche energetiche nazionali, produttivita' delle imprese e attrazione degli investimenti, nonche' in materia di politiche sociali e di crisi ucraina. (DL2022/ n.50) - Credito d'imposta per gli autotrasportatori e misure in favore delle imprese esercenti servizi di trasporto di passeggeri con autobus (Art. 3)	Ended	2022
Urgent measures on national energy policies, business productivity and investment attraction, as well as on social policies and the Ukrainian crisis (DL2022/ n.50) - Provisions to accelerate the storage of natural gas (Art. 5 bis)	Misure urgenti in materia di politiche energetiche nazionali, produttivita' delle imprese e attrazione degli investimenti, nonche' in materia di politiche sociali e di crisi ucraina (DL2022/n. 50) - Disposizioni per accelerare lo stoccaggio di gas naturale (Art. 5bis)	Ended	2022
Urgent measures to counter the economic and humanitarian effects of the Ukrainian crisis (DL 2022 / n. 21) - Fuel bonus for employees (Art. 2)	Misure urgenti per contrastare gli effetti economici e umanitari della crisi ucraina (DL2022/n. 21) - Bonus carburante ai dipendenti (Art. 2)	Ended	2023

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

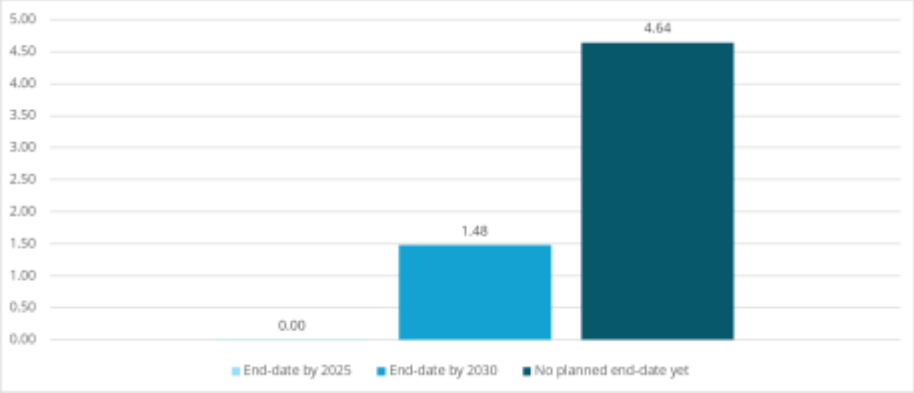
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 6.12 billion, accounting for 24% of total energy subsidies in Italy. 76% of fossil fuel subsidies had no firm end-date.

Lithuania

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

	End-date for fossil fuel use in

Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024						*No coal*				

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

Lithuania will aim to reduce polluting and wasteful energy consumption by 2025 and tax incentives for fossil fuels that lead to market distortions.

The latest geopolitical situation influenced regional and international energy market changes, accelerating inflation in Lithuania. In response, the expected removals of reduced excise tax rates were suspended, and historically approved rates were applied. The State reimburses VAT for district heating and hot water preparation in households from its budget. From 2022 Q1, households have not paid VAT tax for those services. Furthermore, the final prices for consumers grew due to the increasing market prices of natural gas and electricity and the liberalization of the electricity market in Lithuania. Seeking to manage the problem, in 2022, the Government from its budget decided to partially compensate the price of energy (electricity and natural gas) for households and businesses but not more than the determined threshold, which is 24 EURct/kWh with VAT (19.835 EURct/kWh without VAT) for electricity. Furthermore, in spring 2022, the Ministry of Finance prepared the "Package to Counter the Effects of Inflation and to Strengthen Energy Independence," in the framework of which 2.26 billion EUR will be additionally allocated to address the issues of amortization of the energy price shock, increasing people's income and strengthening resilience and energy independence.

Subsidies to fossil fuels

Based on the NECP, some subsidies for fossil fuels, especially those originating from the Law on Excise Duty, are planned to be phased out.[326] In Spring 2023, the Lithuanian Parliament approved the amendments to the Law on Excise. From 2023, fossil fuel concessions and subsidies applied to gas oil, coal, coke, lignite, diesel, and liquefied petroleum gas in cylinders will be phased out. Excise duty rates applicable to them will be consistently increased. From 2025, the excise rates for gasoline, kerosene, diesel, heating gas, petroleum gas and gaseous hydrocarbons, hard coal, coke, lignite, and heating gas will include a CO_2 component proportionally to the CO_2 emissions of the fuel type, taking into account the calorific value, and will increase proportionally each year. Preferential tariffs will remain valid for the time being for the green diesel used for agricultural machinery and the gas used for heating. The natural gas used for mixed heat and electricity production and transport will remain exempt from excise duty. An excise rate of 60 EUR/1000 l is set for red diesel used for heating and grain drying, equal to the green diesel rate. From 2025, the excise duty rate for diesel used in transport will be equalized with the gasoline excise duty, and from 2026 it will increase to the extent that it is higher than the excise duty imposed on gasoline. The increased excise duty on diesel will increase the final fuel price by 4-6 ct/l annually. From 2025, the CO_2 component introduced for motor fuel will increase the fuel price by 3 ct/l annually. Discussions about removing subsidies in the form of reduced VAT for heating residential spaces occasionally appear in the policy arena. Still, the public does not support this and, therefore, it has not been phased out yet.

[326] https://e-seimas.lrs.lt/portal/legalAct/lt/TAK/b1042130527211ec86bdcb0a6d573b32?jfwid=199cfef4ik https://am.lrv.lt/lt/naujienos/seimas-pritare-akcizu-istatymo-pataisoms-atsisakoma-iskastinio-kuro-lengvatu-ir-subsidiju/; https://www.delfi.lt/verslas/verslas/parlamentarai-emesi-didesniu-mokesciu-degalams-branginimo-plane-ir-akcizai-ir-co2-mokestis-93089383; https://www.15min.lt/verslas/naujiena/finansai/vyriausybe-palaiko-sukritikuota-akcizu-didinima-iskastiniam-kurui-ir-dyzelinui-662-1602884.

Phase out of fossil fuel extraction

No information found.

Phase out of fossil fuel use

Electricity generation

There is no coal power plants in Lithuania.

Subsidies to the nuclear industry

There is no nuclear industry that produces energy in Lithuania anymore.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Lithuania

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Reduced excise tax on gasoil for fishing and agriculture	Dėl mažesnio akcizų tarifo žemės ūkio veikloje naudojamam žymėtam dyzelinui	Ongoing	Unknown
Modification of aid for LNG Terminal in Lithuania	Pagalbos suskystintųjų gamtinių dujų terminalui Lietuvoje pakeitimas	Ongoing	2024
Financial resources to assure reserves for power system	Dėl Viešuosius interesus atitinkančių paslaugų elektros energetikos sektoriuje teikimo tvarkos	Ongoing	Unknown
Support for Klaipėda LNG terminal	Valstybės pagalba SA.36740 (2013/NN) – Lietuva pagalba AB „Klaipėdos nafta“ – SGD terminalas	Ongoing	2024
Reduced VAT rate for heating residential spaces	Dėl lengvatinio 9 proc. PVM tarifo, taikomo šilumos energijai, tiekiamai gyvenamosioms patalpoms šildyti, į gyvenamąsias patalpas tiekiamam karštam vandeniui arba šaltam vandeniui karštam vandeniui paruošti ir šilumos energijai, sunaudotai šiam vandeniui pašildyti	Ongoing	Unknown
Reduced excise tax on gasoil for heating	Dėl mažesnio akcizų tarifo šildymui skirtiems gazoliams	Ongoing	Unknown
Exemption from excise tax on petroleum gas and gaseous hydrocarbons	Dėl atleidimo nuo akcizų naftos dujų ir dujinių angliavandenilių, kai jie skirti buitinėms reikmėms	Ongoing	Unknown
Reduction of excise tax for natural gas used as fuel for heating for business purposes	Dėl mažesnio akcizų tarifo gamtinėms dujoms, naudojamoms kaip šildymui skirtas kuras verslo reikmėms	Ongoing	Unknown
Exemption from excise duty on natural gas used as motor fuel	Dėl gamtinių dujų, skirtų naudoti kaip variklių degalai, atleidimo nuo akcizų	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Exemption of excise tax for natural gas used in households	Dėl gamtinių dujų, tiekiamų buitiniams vartotojams ir asmenims, kurie yra paramos gavėjai, atleidimo nuo akcizų	Ongoing	Unknown
Exemption of excise tax for natural gas used in CHPs	Dėl gamtinių dujų, naudojamų mišriai šilumos ir elektros energijos gamybai, atleidimo nuo akcizų	Ongoing	Unknown
Reduced excise tax on coal, coke and lignite for business purposes	Dėl mažesnio akcizų tarifo akmens angliai, koksui ir lignitui, naudojamiems verslo reikmėms	Ongoing	Unknown
Fixed price - CHP production	Dėl Viešuosius interesus atitinkančių paslaugų elektros energetikos sektoriuje teikimo tvarkos	Ended	2016
Fixed price - production in Lithuanian thermal power plant (Lietuvos elektrine)	Dėl Viešuosius interesus atitinkančių paslaugų elektros energetikos sektoriuje teikimo tvarkos	Ended	2016
Modernisation and development of natural gas transmission system	ES struktūrinė parama 2007-2013	Ended	2013
Upgrade of Lithuanian thermal power plant	Lietuvos elektrinės modernizavimas	Ended	2012
Reduced excise tax on natural gas used for heating	Dėl mažesnio akcizų tarifo gamtinėms dujoms, naudojamoms kaip šildymui skirtas kuras	Ongoing	Unknown
Compensation of part of the increase in the price of natural gas in households	Dalinis gamtinių dujų sąnaudų kompensavimas buitiniams vartotojams	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

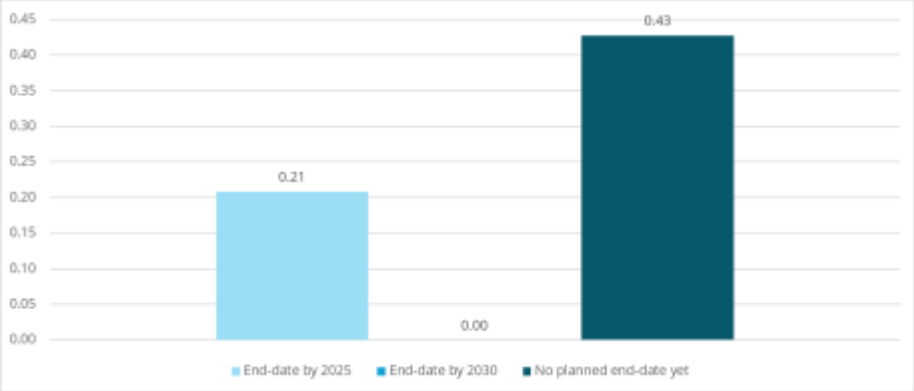
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding the FFS phase-out.

The figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 640 million, accounting for 29% of total energy subsidies in Lithuania. 67% of fossil fuel subsidies had no firm end-date.

Luxembourg

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024				No extraction		*No coal*				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

In December 2020, Luxembourg adopted its climate law, introducing a climate neutrality target for 2050 and a 55 % emission reduction target for 2030.[327,328]

In the natural gas sector, maintaining security of supply remains essential in the transition towards a decarbonised energy system. In the very short term, measures are taken to reduce gas consumption. On March 28, 2023, EU energy ministers approved the one-year extension of the emergency gas savings regulation; the objective of 15% natural gas savings therefore remained until March 31,

[327] Luxembourg's First Climate Law Passes Parliament (chronicle.lu)
[328] Loi du 15 décembre 2020 relative au climat et m... - Legilux (public.lu)

2024.[329] Cumulatively, the reduction in natural gas consumption reaches -26.3%, thus well beyond the EU MS' target of 15% reduction in natural gas demand.[330]

Subsidies to fossil fuels

Luxembourg is committed to stop any kind of support to fossil fuels.[331]

However, considering the exceptional increase in gas prices due to the international context, the government decided to limit the increase in natural gas prices for residential customers to +15% compared to the average natural gas price level of September 2022. This measure applies from October 2022 to December 2024. Similarly, the government continues paying the network costs until the end of December 2024.[332]

Phase out of fossil fuel extraction

There is no fossil fuel extraction in Luxembourg.

Phase out of fossil fuel use

Electricity generation

Coal was a major source of energy in Luxembourg from the 1970s to the 1980s, but has nearly been phased out of Luxembourg's energy supply. Luxembourg ceased coal-fired electricity generation in 1998.[333]

As illustrated by the figure below, from 2002 to 2016, natural gas was the dominant fuel in Luxembourg's electricity generation mix (among IEA member countries with the highest share of fossil fuels in electricity generation). Since the closure of the Twinerg CCGT in 2016, Luxembourg's share of renewables in electricity generation rose to the fourth highest in the IEA in 2018. The continuous development of renewable energy will increase this share, and reduce the share of fossil-based electricity. However, this only looks at the generation side, while Luxembourg became a large importer of electricity since the closure.

Source: *IEA, energy policy review 2020*

While by 2050 the use of fossil natural gas is expected to completely disappear, the existing gas infrastructure might play an important role in a transition period (e.g. for renewable gas).[334] Therefore, no specific measures are taken to remove natural gas from the electricity mix in the short term.

Industry

In 2017, within the industry, fossil accounted for around 55% of the energy demand, complemented by electricity (~41%) and bioenergy (~5%). The current trend towards electrification (in 2022

[329] Avec -26,3% en cumul, le Luxembourg atteint ses objectifs de réduction de la consommation de gaz naturel - gouvernement.lu // Le gouvernement luxembourgeois
[330] Communiqué de presse: Avec -26,3% en cumul, le Luxembourg atteint ses objectifs de réduction de la consommation de gaz naturel (gouvernement.lu)
[331] Luxembourg clearly states in its NECP "Luxembourg s'investira au niveau Européen pour développer la production d'énergies renouvelables et ne soutiendra pas de nouveaux projets basés sur les combustibles fossiles ou l'expansion de systèmes de production d'énergie fossile"
[332] Temporary subsidy of gas price - Ministry of the Economy // The Luxembourg Government (gouvernement.lu)
[333] Luxembourg 2020 - Energy Policy Review (connaissancedesenergies.org)
[334] Electricity, Gas, Oil & Electromobility - Ministry of the Economy // The Luxembourg Government (gouvernement.lu)

electricity represented 48% of energy demand in industry), will progressively reduce the share of fossil fuels.

Source: *IEA, energy policy review 2020*

Transport

Oil dominates transport sector consumption, accounting for 94% in 2017, while biofuels accounted for 6% of total transport demand the same year and electricity for only 1%, mainly used by rail transport. The stimulation to purchase electric vehicles will progressively reduce the share of fossil fuel use in transport.[335]

Heating in buildings

In buildings (residential and commerce), more than 63% of energy use is fossil based. To reduce this share the promotion of alternative appliances (wood fuels and heat pumps) will progressively reduce this share, while the expected reduction in demand will also intensify this trend.[336]

The 2019 NECP states that "*The "phase-out" aims to completely decarbonise heating systems in buildings. Initially, this will be done on a voluntary basis, with the support of financial aid and collective solutions such as the systematic neighbourhood renovations and the development of decarbonised heating networks. However, if the voluntary approach proves to be too slow or insufficient, only the replacement with heating installations using a minimum of 70% renewable energy will be authorised. It should be noted that the "phase-out" does not entail any obligation to replace a (fossil fuel) heating system that is still working properly. The "phase-out" applies when an existing boiler that is out of service or no longer authorised under current regulations is replaced.*"[337]

Premiums (Klimabonus[338]) are provided for the replacement of heating systems fuelled by fossil fuels[339] (fossil phasing out programme). The supported technologies are heat pumps and wood fuel boilers.

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

[335] Ibid.
[336] Ibid.
[337] Luxembourg's integrated national energy and climate plan for the period 2021-2030 (PNEC) - government.lu (gouvernement.lu)
[338] Klimabonus | Klima-Agence
[339] Klima-Agence : conseiller en énergie | Transition énergétique durable - klima-agence

List of identified subsidies that support fossil fuels use in Luxembourg

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Feed-in tariffs for CHP	Répartition de coûts engendrés pour l'achat d'électricité sur base de cogénération	Ongoing	Unknown
Reduced excise rate for petroleum products	Taux de taxe d'accise réduits pour certains usages de produits pétroliers	Ongoing	Unknown
Reduced VAT for natural gas	Taux réduit de TVA pour la consommation de gaz naturel des clients résidentiels	Ongoing	Unknown
Coverage of natural gas network costs for residential customers from 1 May 2022	Solidaritéitspak 2.0 - Prise en charge des frais de réseaux du gaz naturel pour les clients résidentiels à partir du 1er mai 2022	Ongoing	2024
Compensation for limiting the increase in natural gas and heat prices	Solidaritéitspak 2.0 - Contributions étatiques visant à limiter la hausse des prix d'approvisionnement en gaz naturel et en chaleur	Ongoing	2025
Gas network fee subsidy	Energiedësch Package (ménages à faible revenu)	Ended	2023
Reduction of 7.5 cents/€ per liter of fuel	Solidaritéitspak 1.0 - Réduction temporaire de 7.5 cents par litre de carburant	Ongoing	Unknown
Subsidy for liquefied petroleum gas	Solidaritéitspak 2.0 et 3.0 - Subvention pour le gaz de pétrole liquéfié	Ongoing	2024
Heating oil price subsidy	Solidaritéitspak 2.0 et 3.0 - Subvention du prix du gasoil de chauffage (mazout)	Ongoing	2024
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

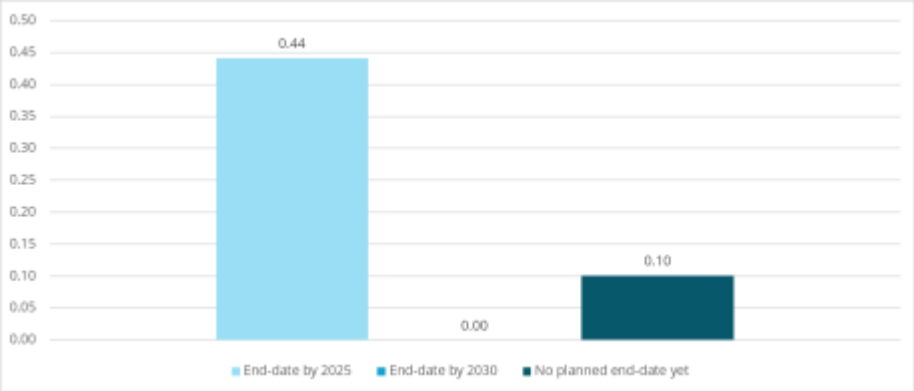
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 540 million, accounting for 55% of total energy subsidies in Luxembourg. 19% of fossil fuel subsidies had no firm end-date.

Latvia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024						No coal				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

Latvia has set an ambition to achieve climate neutrality by 2050 as part of their long-term strategy.[340]

Latvia has different support measures available for energy efficiency improvements (e.g., renovation of private or multi-family buildings) and switch from fossil energy sources or change low-efficiency heating units to energy efficient and renewables for individuals and private persons, public and commercial sector, and industry.

Now, there are concrete actions to replace Russian natural gas by LNG via Klaipeda (Lithuania), Inkoo (Finland) and Paldiski (Estonia) LNG terminals. But large natural gas fired capacities (thermal power

[340] https://likumi.lv/ta/id/342214-latvijas-strategija-klimatneitralitates-sasniegsanai-lidz-2050-gadam

plants, cogeneration plants and boiler houses) are still in operation in energy supply and district heating.

There is no permanent plan for phasing out of natural gas, but there is slight natural gas demand reduction mostly by switching to other energy sources, e.g., wood chips in district heating or pellet boilers or heat pumps in private buildings.

Subsidies to fossil fuels

Latvia indicated the intention for "suspension of fossil fuel subsidies" in their 2019 NECP. The 2023 updated draft NECP did not yet provide any more detailed information on energy subsidies, stating that national discussions are still ongoing. Thus, it remains to be seen if more concrete plans for phase-out are included in the 2024 NECP.

Nonetheless, Latvia has approximately/almost 20 fossil fuel support measures, mostly energy tax or excise exemptions. The largest support measure in Latvia is the Guaranteed Payment (Power Component) for installed capacity of Riga CHP1, CHP2 and Imanta CHP using Natural Gas, consistently receiving a direct support of around €90 million from 2014 until 2017. Starting from 2018 Guaranteed Payment was reduced to around EUR 30 million and was €26.2 million in 2021 and €23.6 million in 2022 and 2023.

Additionally, there is support via feed-in-tariff for effective cogeneration plants using Natural Gas in parallel with support for renewable energy cogeneration although in 2022 and 2023 no feed-in tariff was paid out[341]. Since the March 1st , 2023, the feed-in-tariff is no longer funded by final customers, instead it is now funded by the government. It is currently set to expire in 2028. [342]

Excise duty is not applied to the use of coal, lignite, brown coal, peat, because Natural Resource Tax (NRT) is applied to some uses of these energy sources. NRT for carbon dioxide emissions is not applied to:

1. the installations covered by EU ETS;
2. combustion of biomass;

In accordance with the territorial just transition plan, the extraction and use of peat for energy use is to be fully phased out by 2030.[343]

As of January 2020, excise tax increased for unleaded petrol, diesel fuel, petroleum gas, kerosene as well as diesel fuel for agricultural use.

On the other hand, excise duty was reduced for natural gas used as an engine fuel (e.g., as compressed natural gas) in 2021 for period till 2026.

Phase out of fossil fuel extraction

In accordance with the territorial just transition plan, the extraction and use of peat for energy use is to be fully phased out by 2030.[344]

[341] This was due to a combination of factors including high energy prices, cancellation, refusal from energy producers of feed-in tariff permits or/and end of tariff support period.
[342] https://ec.europa.eu/eurostat/documents/1015035/16177999/LV-Letter+for+advice+on+the+statistical+recording+of+the+mandatory+electricity+procurement+scheme.pdf/424797bf-a414-9cdc-4152-992b57209cc2?t=1680246284894
[343] https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu
[344] https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu

Phase out of fossil fuel use

Electricity generation

As Latvia (as well as Estonia and Lithuania) are still connected with BRELL[345] and not synchronized with European transmission grid (plan is to synchronize them till 2025), existing large thermal power plants are needed to ensure frequency stability and security of electricity supply in case of disconnection from BRELL.

In accordance with the territorial just transition plan, the extraction and use of peat for energy use is to be fully phased out by 2030.[346] This includes for electricity generation, although the use of peat for energy is almost negligible in the sector.

Heating in buildings

In accordance with the territorial just transition plan, the extraction and use of peat for energy use is to be fully phased out by 2030.[347] Important to note, that the use of peat for energy is almost negligible nationally. This includes for heating in buildings, although the use of peat for energy is almost negligible in the sector.

No information found regarding other energy sources.

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Latvia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Feed-in tariff (Natural Gas fired efficient CHPs)	Padeves tarifs (efektīvas ar dabasgāzi darbināmas koģenerācijas stacijas) - Obligātā iepirkuma komponente OIK	Ended	2023
Capacity payment for CHP using natural gas	Jaudas maksājums par koģenerāciju, izmantojot dabasgāzi	Ended	2023
Feed-in tariff (Natural Gas fired efficient CHPs)	Padeves tarifs (efektīvas ar dabasgāzi darbināmas koģenerācijas stacijas) - Obligātā iepirkuma komponente OIK	Ongoing	Unknown
Capacity payment for CHP using natural gas	Jaudas maksājums par koģenerāciju, izmantojot dabasgāzi	Ongoing	Unknown
Support for energy intensive industry	Atbalsts energoietilpīgai rūpniecībai	Ended	2023
Excise tax reduction (marked petroleum products or its susbtitutes to be used as fuel)	Iezīmēta dīzeļdegviela, petroleja vai deg¬vieleļļa, tā aizstājējprodukti un komponenti, kuru izmanto kā kurināmo	Ongoing	Unknown

[345] Energy systems of Belarus, Russia, Estonia, Latvia and Lithuania (BRELL)
[346] https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu
[347] https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise tax reduction (marked heavy fuel oil or its susbtitutes to be used as fuel, if it has 5% content of rapeseed oil or biofuel based on that)	Iezīmēta dīzeļdegviela, petroleja vai degvieleļļa, kuru izmanto kā kurināmo, ja 5% veido rapšu sēklu eļļa vai no tās iegūta biodegviela	Ongoing	Unknown
Fuel excise tax reduction on marked diesel used in agriculture sector	Iezīmēta dīzeļdegviela, kuru izmanto lauksaimniecības mērķiem	Ongoing	Unknown
Excise tax reduction for unleaded petrol containing 70-85% volume ethyl alcohol	Svinu nesaturošs benzīns, ja tas satur no 70 līdz 85 tilpum% etilspirta	Ongoing	Unknown
Excise tax reduction - Gasoil and other gaseous hydrocarbons	Naftas gāzes un pārējie gāzveida ogļūdeņraži, ko izmanto par kurināmo (izņemot dabasgāzi)	Ongoing	Unknown
Excise tax reduction - Natural gas to be used as fuel in industry and processing of agricultural products	Dabasgāzei izmantošanai par kurināmo rūpnieciskās ražošanas un lauksaimniecības izejvielu apstrādes procesos	Ongoing	Unknown
Excise tax exemption - Oil products to be used for other purpose than car fuel or heating	Naftas produkti, kurus piegādā un izmanto citiem mērķiem, nevis par degvielu vai kurināmo	Ongoing	Unknown
Excise tax exemption - Oil products used for electricity production or in cogeneration plants	Naftas produkti, kurus piegādā un izmanto elektroenerģijas ražošanai vai kombinētās iekārtās, kas ražo elektroenerģiju un siltumenerģiju	Ongoing	Unknown
Excise tax exemption - Natural gas to be used for other purposes than as fuel or for heating	Akcīzes nodokļa samazinājums - dabasgāze, ko izmanto citiem mērķiem, nevis kā kurināmo vai apkuri	Ongoing	Unknown
Excise tax exemption - Natural gas to be used for mineralogic processes	Dabasgāze, kuru izmanto mineraloģiskiem procesiem	Ongoing	Unknown
Excise tax reduction - Natural gas to be used in greenhouses	Dabasgāze, kuru izmanto lauksaimniecībā izmantojamās zemes segto platību (siltumnīcu) siltumapgādei	Ended	2021
Excise tax reduction - Natural gas to be used for heating in industrial poultry	Dabasgāze, kuru izmanto rūpniecisko mājputnu novietņu (kūts) un inkubatoru siltumapgādei	Ended	2021
Excise tax reduction - Natural gas for the heating of covered areas (greenhouses) on agricultural land and for the heating of industrial poultry houses (sheds) and hatcheries	Dabasgāzei - Lauksaimniecībā izmantojamās zemes segto platību (siltumnīcu) siltumapgādei un rūpniecisko mājputnu novietņu (kūts) un inkubatoru siltumapgādei (no 01.05.2020.)	Ongoing	Unknown
Excise Tax Exemption for Natural Gas for All Users	Akcīzes nodokļa atbrīvojums dabasgāzei visiem lietotājiem	Ended	2021
Electricity tax exemption for electricity used for electricity production, distribution, transmission	Elektroenerģija, kas izmantota elektroenerģijas ražošanai, sadalei un pārvadei	Ended	2016
Electricity tax exemption for electricity used for electricity production at CHP	Elektroenerģija, kas izmantota siltumenerģijas un elektroenerģijas ražošanai koģenerācijā (nav spēkā no 01.01.2017.)	Ended	2016
Electricity tax exemption for electricity directly used for electricity distribution and transmission	Elektroenerģija, kas tiešā veidā izlietota elektroenerģijas sadalei un pārvadei	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Electricity tax exemption for electricity supplied for street lightning	Apliekamais elektroenerģijas daudzums, kas piegādāts personām ielu apgaismošanas pakalpojumu sniegšanai, un kas atbrīvots no nodokļa saskaņā ar likuma 6.panta piekto daļu	Ongoing	Unknown
Electricity tax exemption for electricity used by households	Elektroenerģija, kas piegādāta mājsaimniecībām	Ongoing	Unknown
Electricity tax exemptions for passenger public transport and carriage of goods	Elektroenerģija, kas izmantota preču pārvadājumiem un sabiedriskajiem pasažieru pārvadājumiem	Ongoing	Unknown
Electricity tax - exemption for electricity produced by CHP	Atbrīvojums no elektroenerģijas nodokļa elektrībai ko ražo koģenerācijas stacijās	Ended	2016
VAT reduction for natural gas for households	PVN samazinājums dabasgāzei mājsaimniecībām	Ended	2011
Support for compensation of electricity prices	Atbalsts elektroenerģijas cenu kompensācijai	Ended	2023
Reduction of Payments for the Consumed Natural Gas	Maksas samazinājums par patērēto dabasgāzi	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

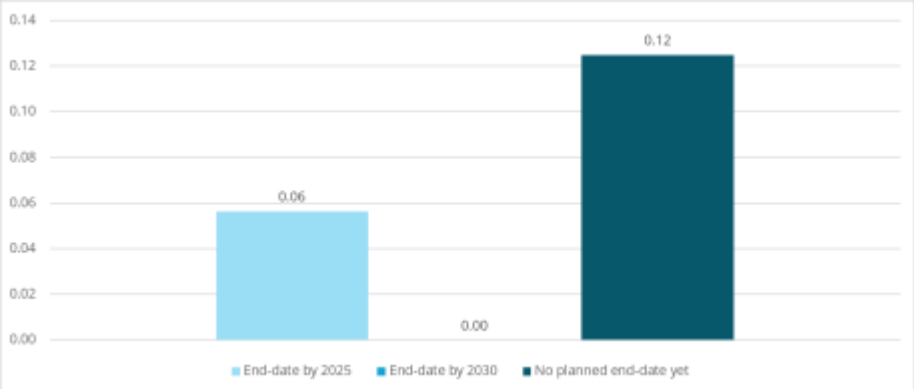
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 180 million, accounting for 16% of total energy subsidies in Latvia. 69% of fossil fuel subsidies had no firm end-date.

Malta

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024				*No extraction*		*No coal*				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

Malta is a small island economy with a total land area of approximately 320 km2 with a high population density of around 1300 persons km-2.[348] Malta's GDP in 2023 amounted to €17,653.7 million after registering a 4.6% increase in comparison to 2022.[349] The energy sector of Malta is largely disconnected from the broader European energy supply network and has rather low uptake of renewable energy sources (RES) at 8% of total production.[350] LNG provides 80% of Malta's energy production and fossil fuels around 12%, which means that most demand is met through importing energy resources.[351]

Malta aims to achieve climate neutrality by 2050 as part of its low-carbon development strategy.[352]

Subsidies to fossil fuels

The NECP states that Malta has no plans to phase out any energy subsidies at this particular juncture, while remaining committed to, inter alia, encourage the adoption of technologies that can help reduce greenhouse gas emissions. In Malta, there are no subsidies specifically aimed at supporting or discouraging consumption of fossil fuels. Further, the government has put in place a number of policies that support the use of energy in residential buildings by lowering the bill costs to consumers.

Phase out of fossil fuel extraction

There is no fossil fuel extraction in Malta.

---

[348] Borg, Simone. "93 DELIVERING ENERGY LAW AND POLICY IN MALTA". *Delivering Energy Law and Policy in the EU and the US: A Reader*, Edinburgh: Edinburgh University Press, 2016, pp. 495-501. https://doi.org/10.1515/9780748696802-097

[349] https://nso.gov.mt/gross-domestic-product-2023/

[350] Julia R. Kotzebue, Manfred Weissenbacher, The EU's Clean Energy strategy for islands: A policy perspective on Malta's spatial governance in energy transition, Energy Policy,Volume 139, 2020, 111361,ISSN 0301-4215, https://doi.org/10.1016/j.enpol.2020.111361.

[351] International Monetary Fund (IMF) Country Reports 23/079. Malta: Selected Issues. Feb (2023).

[352] https://unfccc.int/sites/default/files/resource/MLT_LTS_Nov2021.pdf

Phase out of fossil fuel use

Electricity generation

Malta has been granted an exemption from EU's plan to cut gas consumption by 15% overall. The approved plan features exceptions. Malta is one such country exempted from meeting the EU's gas phase out plan, as its network is not connected to the Europe's energy networks and the island is heavily reliant on gas for electricity production.[353] However, the NECP states that Malta plans to rely more heavily on gas (replacing fuel oil) due to the opening of the gas interconnector, and that gas will make 80% of energy mix for electricity generation until 2030. [354]

Heating in buildings

While not expressively stated as an objective, Malta is focusing on Solar Water Heaters to reduce fossil fuel use in water heating. Note that Water heating is the second highest category for energy use in residential buildings in Malta (25%)[355], higher than space heating, and that space heating is often provided via air-to-air heat pumps (most houses do not have central heating).

Subsidies to the nuclear industry

Malta has no nuclear power plants or research reactors currently operating[356]. Therefore, no currently operational subsidies or nuclear taxes[357]. Also, there is no political discussion about it.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Malta

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
European Gas Network/Distribution (Interconnexion project btw Malta and Italy)	Netwerk/Distribuzzjoni tal-Gass Ewropew (Proġett ta' Interkonnessjoni btw Malta u l-Italja)	Ongoing	2028
Energy Support Measures	Miżuri ta' Appoġġ għall-Enerġija	Ongoing	2026
Gas Stabilisation Fund	Fond ta' Stabbilizzazzjoni tal-Gass	Ongoing	Unknown
Reduction of excise duties on petrol and diesel		Ongoing	Unknown
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

[353] https://timesofmalta.com/articles/view/eu-ministers-plan-cut-gas-use-response-russia-threat.970604
[354] https://melitatransgas.com.mt/
[355] https://www.odyssee-mure.eu/publications/efficiency-trends-policies-profiles/malta-country-profile-english.pdf
[356] https://knoema.com/data/nuclear-power-stations+malta
[357] Malta's 2030 National. Energy and Climate Plan (2019).

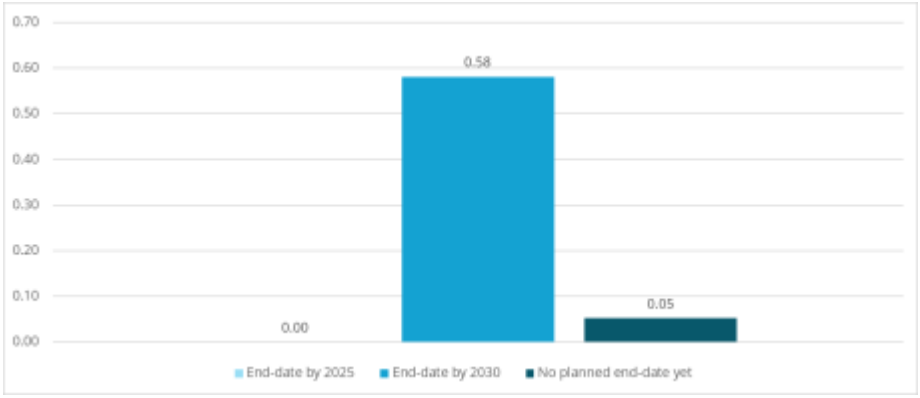
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 635 million, accounting for 95% of total energy subsidies in Malta. 8% of fossil fuel subsidies had no firm end-date.

Netherlands

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

The Netherlands still has several financial benefits in place for fossil fuel use in several sectors. On the other hand, several efforts are made to both phase out fossil fuel-based energy production

through closing down coal plants and limiting gas production, as well as through reducing incentives to the use of fossil fuels and energy in general.[358]

In 2025, the coalition aims to further reduce incentives that incentivise fossil fuel use and energy consumption, through:

- Abolishing the energy tax exemption for metallurgic and mineralogic processes.
- Reducing the input exemption for CHPs from a full exemption to an exemption only for the gas used to produce electricity delivered to the grid.
- Abolishing the reduced tax rate for greenhouse horticulture in the 2 lowest tax brackets. As a result, the tariff paid in this sector in these brackets will significantly increase.

Subsidies to fossil fuels

The Netherlands has a degressive energy tax framework in which large consumers of both gas and electricity receive significantly lower tax rates for the energy tax (including the sustainable energy surcharge: ODE). In addition, tax rates per unit of energy for electricity are in general higher than for gas. Thus, large industrial consumers that still mainly rely on fossil fuels pay a low tax rate relative to their emissions.

On top of the degressive tax system, there are several tax exemptions for large (fossil) energy users, including a full exemption for metallurgic and mineralogical processes (i.e. steel and cement production) and input exemptions for electricity production (both energy and coal tax) as well as combined heat and electricity production via CHPs. To reduce the tax burden for the greenhouse horticulture sector which mostly fall in lower tax brackets with higher rates than industry, energy use in greenhouses receives a reduced tax rate in the 1st and 2nd tax bracket.

In order to further incentivise the transition to renewable energy and (renewable) electricity, the coalition agreement of the government (as of 1 June, 2024) proposed several changes for the phase-out of fossil subsidies. An overview of the phase-out of fossil subsidies already under way and planned:

1. The refund scheme in the energy tax on electricity in favour of energy-intensive companies has been abolished from 1 January 2023.
2. The indirect cost compensation for ETS companies has been phased out to zero
3. The coalition agreement agreed to make the energy tax less degressive and to abolish a number of exemptions in the energy tax sphere. These include the abolition of the reduced rate in the energy tax on natural gas for the greenhouse horticulture sector, the exemption for mineralogical and metallurgical processes with regard to the energy tax on natural gas, the exemption for metallurgical processes with regard to the energy tax on electricity, and the exemption for electricity used for chemical reduction and electrolytic processes
4. agreed to limit the existing input exemption with regard to energy taxation on natural gas for use in so-called combined heat and power (CHP) plants
5. Abolish the dual and non-energy coal exemption (agreed in the "voorjaarspakket klimaat"), starting 1 January 2028
6. The tax rates for both electricity and gas will become less degressive.
7. In the first tax bracket —The tax bracket all households are in— the rate for electricity will decrease while the rate for gas will increase in order to stimulate electrification.
8. The renewable energy surcharge will be incorporated into the energy tax (this has no consequences for the overall tax rates).

[358] An overview of financial incentives for fossil fuel use in the Netherlands according to the government can be found here: Rijksoverheid (2020). Kamerbrief over financiële prikkels voor fossiele brandstoffen in Nederland

9. A small decrease of the tax reduction per grid connection, to compensate for higher grid costs resulting from a blending obligation for biomethane.

These measures are in addition to phasing out existing schemes, an air passenger tax and carbon tax on industry have been introduced nationally from 2021.

Even more so, in April 2023[359] the coalition presented its policy package (*"voorjaarsbesluitvorming"*) aimed at reaching the set 60% reduction target for 2030. [360] One of the proposed measures is to further make the energy tax for gas less degressive by raising the gas tariff in higher brackets; electricity tariffs will not increase to stimulate electrification. Further details are not known yet.

See the table below for an overview of fossil subsidies already being phased out

Regulation	Budgetary importance
Fiscal measurements	
Making energy tax on natural gas less degressive	Circa € 300M. (assuming 2030-tariffs from BP2023)
Making electricity energy tax less degressive	Circa € 5 mld. (assuming 2030-tariffs from BP2023) *
Abolish reduced energy tax rate for greenhouse horticulture (phase-out path 2025 - 2030)	€ 171 mln. (assuming 2023 rate)
Limit input exemption of natural gas in the energy tax (targeting CHPs, phase-in period 2025 - 2030)	€ 159 mln. (assuming 2023 rate)
Abolish energy tax exemption for metallurgical and metallurgical processes by 2025	€ 123 mln. (assuming 2023 rate)
Abolish exemption for electricity used for chemical reduction and electrolytic processes	€ 12 M (assuming 2023 tariff)
Abolish exemption in coal tax for dual and non-energy consumption by 2028	€ 71 M
Abolish energy-intensive processes refund scheme by 2023	€ 8 M (2020)
1st austerity of some special schemes in car taxes: -The quarter rate for camper van in the MRB will be scaled down to a half rate from 2026. -The quarter rate in MRB for horse transport will be abolished from 2026, -The MRB exemption for old-timers will be scaled down to an exemption for cars built up to 1988 from 2028.	Circa € 200 M

[359] Rijksoverheid (2023). Legenda voorjaarspakket Klimaat 2023.

[360] Important to note is that the Dutch national climate target includes both non-ETS/ESR *and* ETS sector, which is different to most EU member states.

-The refund for cash transport in BPM will be abolished from 2026. -The zero rate in MRB for public transport buses running on liquified petroleum gas (LPG) or natural gas will be abolished from 2030. -The reduced fuel surcharge for passenger cars and vans running on CNG, LNG or LPG will be abolished by 2026.	
Expenditure measures	
Abolish indirect cost compensation ETS companies	€ 82 M. (2022)
TOTAL	**Circa € 6,2 B**

Phase out of fossil fuel extraction

The Netherlands has been one of the largest gas producers of the EU. As a result of the risk of earthquakes and an inadequate government response to the risks, gas production from the largest Dutch field (Groningen field) has been drastically reduced since 2018 and in October 2022 base production has to become zero; the field will then be only used when there is a risk of major gas supply disruptions or for gas grid disruptions until 2023 or 2024.[361] From 19 April 2024, the law "sluiting Groningenveld" is active and since this moment the Goningenveld is permanently closed.[362]

There are also many smaller gas fields in the Netherlands apart from the major Groningen field. The production in these fields also reduces, although recently in June 2022 the government permitted the exploitation of a new field in the North Sea; the permitting process has taken several years, but due to the current situation permission was granted.[363] In addition, gas production in these small fields ('kleine Velden') is further stimulated through the 'kleine veldenbeleid' in which gas company Gas Terra (50% owned by the government) is obliged to buy gas from the small fields at the prevailing market price. In addition, offshore gas extraction is stimulated through a recently increased investment allowance for the exploitation of gas fields.[364] In the coalition agreement 2021-2025, it has been agreed that the State Secretary of Economic Affairs and Climate 1) will not issue any new licences for gas extraction under the Wadden Sea, 2) no licences will be issued to start searching for gas fields in areas that are not licensed and 3) the gas extraction procedure around Ternaard is being finalised. In the Netherlands, there are no companies extracting shale gas. The government does not want companies to search for or extract shale gas in the future either. This is stated in the Structuurvisie Ondergrond[365].

[361] Rijksoverheid (2022). Afbouw gaswinning Groningen.
[362] https://www.rijksoverheid.nl/onderwerpen/gaswinning-in-groningen/nieuws/2024/04/18/wet-sluiting-groningenveld-gaat-per-19-april-in
[363] Rijksoverheid (2022). Nederland en Duitsland gaan gas winnen op Noordzee
[364] Energeia (2021). Investeringsaftrek offshore gaswinning nu formeel en met terugwerkende kracht geregeld
[365] https://www.rijksoverheid.nl/onderwerpen/duurzame-energie/documenten/rapporten/2018/06/11/structuurvisie-ondergrond

Phase out of fossil fuel use

Electricity generation

The Netherlands announced in 2018 that all coal power plants have to be closed by 2030. Coal plants [366] In practice, already several (older) plants have closed (Amercentrale 8 in 2015, Maasvlakte I & II in 2017, Hemweg in 2019, Gelderland-13 in 2015).

In 2022 there are 4 coal power plants still operational of which three are less than 10 years old: the Onyx plant of Riverstone in Rotterdam, the MPP3 plant of Uniper in Rotterdam, the Eemshavencentrale of RWE and the older Amercentrale 9 of RWE in Geertruidenberg. They still have a few years to switch to clean fuels to be allowed to keep generating electricity (e.g. biomass, biofuels and hydrogen). The less efficient Amercentrale has to stop electricity generation by coal by the end of 2024. Currently, this Amercentrale co-fires a high percentage of biomass (receiving significant subsidy through the SDE+ scheme). The other 3 coal-fired power plants will have until the end of 2029 to switch.

Additionally, in order to reach national climate targets, for the period of 2022-2024 the CO_2-emissions of the 4 remaining plants were limited to 35% of their emissions at maximum capacity; in practice, this means that generation capacity of all plants is limited to 35%, except for the Amercentrale that co-fires biomass (which is assumed to be CO_2-neutral).[367] For the remaining 65%, the plants get compensated.

As a result of Russia's invasion in Ukraine and the subsequent current energy crisis in the EU, several measures have been taken by the Dutch government to ensure the security of gas supply. On the 20th of June 2022 the Minister for Climate announced that the above-mentioned emission cap of 35% will be lifted which means the remaining coal plants can run on full capacity; the closing data of 2030 will not be changed though.[368] Also driven by the current high energy prices, Riverstone revoked their earlier announced voluntary closure of the Onyx plant in March 2022 and will not use the max. €212 million compensation subsidy.[369] As of May 2023, no policies regarding coal plants have been announced: closure is still planned for 2030 and the 35% emission cap has not been re-introduced again (yet).

The April 2023 policy package (*"voorjaarsbesluitvorming"*)[370] proposed to phase out all (unabated) natural gas electricity plants in 2035, when they should be closed or converted to run on hydrogen, natural gas with CCS or other alternatives for flexible generation capacity. About 1 billion EUR is reserved for this switch to CO2-neutral flexible capacity.

Heating in buildings

Several measures are proposed to phase out fossil fuel (natural gas mostly) boilers in the built environment in the April 2023 policy package (*"voorjaarsbesluitvorming"*).[371] Most notable measure is the ban of natural gas boilers in ground-level homes from 2026 (apartments are not included); hybrid heat pumps (heat pump + gas boiler) are then the minimum energy efficiency required for new installations.

Agriculture

No information found.

---

[366] Rijksoverheid (2018). Kabinet verbiedt elektriciteitsproductie met kolen
[367] Rijksoverheid (2022). Kabinet legt uitstoot kolencentrales fors aan banden.
[368] Rijksoverheid (2022). Kabinet neemt maatregelen voor energiezekerheid
[369] Rijksoverheid (2021). Onyx kolencentrale gaat sluiten. and NOS (2022). Kolencentrale Onyx op Maasvlakte och niet dicht
[370] Rijksoverheid (2023). Legenda voorjaarspakket Klimaat 2023.
[371] Rijksoverheid (2023). Legenda voorjaarspakket Klimaat 2023.

Subsidies to the nuclear industry

The Netherlands currently has one operational nuclear power plant in Borssele which is currently scheduled to close in 2033. However, the coalition agreement of December 2021 expresses the commitment to keep Borssele open after 2033, which is emphasised in the April 2023 policy package[372] and is recently also emphasized in the draft mainline agreement of the coalition of 2024[373]. The current operator of the nuclear plant EPZ has already indicated to the Ministry September 2020 that it is technically feasible to extend the lifetime of the plant and that the main concern is a lack of a secure commercial business case after 2033.[374] Hence, subsidies are likely needed to enable the prolonged lifetime of the plant. As of June 2022, the Ministry has started early negotiations with the Province of Zeeland and other stakeholders to further discuss the prolonged opening of Borselle. [375]

In addition, the recent coalition agreement also reserves 5 billion EUR for the first steps towards building 2 new nuclear power plants in the Netherlands. The plans to open 2 new plants are currently worked out in more detail and it is expected that the two plants will at least not open before 2030. The preferred location for the 2 new plants was chosen in 2022 and is Borselle, the same location as the only current plant. Also, subsidies are available for further research into the development of the new plants (117 million in the April 2023 package). Next to this, for the first time dedicated budget has been reserved for SMR's: 65 million EUR to support the development of the SMR technology in the Netherlands.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Netherlands

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Closing cost Hemweg Coal plant	Sluiten nieuwe kolencentrales	Ended	2019
Compensation for the indirect costs of EU ETS	Compensatieregeling Indirecte emissiekosten ETS	Ended	2022
Obligation gas purchase from small gas fields (1998 Gas Act)	kleineveldenbeleid	Ongoing	Unknown
Investment allowance for the exploitation of offshore marginal gas fields	Regeling investeringsaftrek marginale gasvoorkomens Nederlands continentaal plat	Ended	2019
Reduced energy tax rate for horticulture	Verlaagd tarief glastuinbouw	Ongoing	2024

[372] Dutch Government (2021). Coalition agreement.

[373] https://www.kabinetsformatie2023.nl/binaries/kabinetsformatie/documenten/publicaties/2024/05/16/hoofdlijnenakkoord-tussen-de-fracties-van-pvv-vvd-nsc-en-bbb/20240515+Hoofdlijnenakkoord+PVV+VVD+NSC+BBB.pdf

[374] Ministry of Economic Affairs and Climate Policy (2020). Levensduurverlenging van de kerncentrale Borssele na 2033

[375] Energeia (2022). https://energeia.nl/energeia-artikel/40102369/zeeland-wil-garanties-uit-den-haag-voor-openhouden-borssele (source behind paywall).

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Energy tax rebate for religious institutions and for non-profit organisations	Teruggaaf kerkgebouwen en non-profit	Ongoing	Unknown
Tax rebate large commercial users	Teruggaaf energie-intensieve industrie	Ended	2021
Tax exemption for energy intensive processes	vrijstellingen voor energie-intensieve processen	Ongoing	Unknown
Compensation for emission/production cap for coal power plants	Compensatie emissieplafond kolencentrales	Ongoing	2025
Temporary reduction of excise duty on transport fuels for households	Tijdelijk verlaagde brandstofaccijns	Ended	2023
Compensation for rising energy costs in Dutch Caribbean	Compenseren stijgende energierekening Caribisch Nederland	Ended	2023
Reduced tax rate for natural gas used in district heating systems	Stadsverwarmingsregeling energiebelasting	Ongoing	Unknown
Input exemption coal tax for electricity production	Inputvrijstelling kolenbelasting voor elektriciteitsopwekking	Ongoing	2024
Input exemption coal tax for dual use	Inputvrijstelling kolenbelasting voor duaal verbruik	Ongoing	Unknown
Investment aid for energy infrastructure (2019)	Investeringssteun voor energie-infrastructuur	Ended	2019
Investment aid enabling undertakings to go beyond Union standards for environmental protection or increase the level of environmental protection in the absence of Union standards	Investeringssteun die ondernemingen in staat stelt verder te gaan dan de Unienormen voor milieubescherming of het niveau van milieubescherming te verhogen bij ontstentenis van Unienormen	Ended	2021
Prolongation of gas storage scheme Bergermeer	Uitbreiding van het Bergermeer gasopslagproject	Ongoing	2024
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

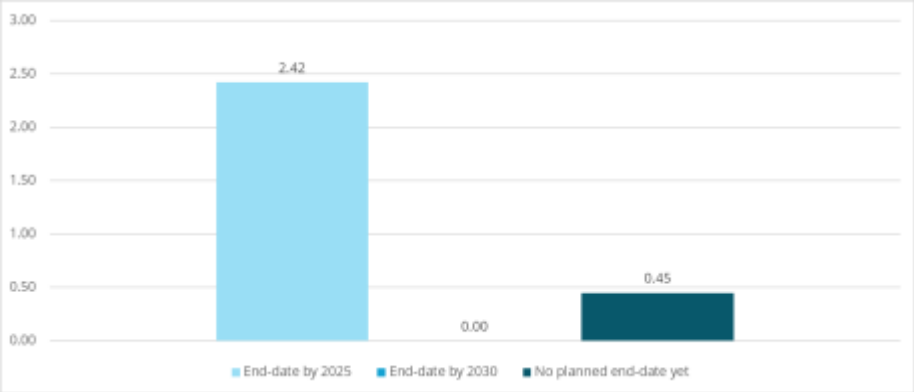
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 2.87 billion, accounting for 15% of total energy subsidies in Netherlands. 16% of fossil fuel subsidies had no firm end-date.

Poland

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

Based on the Polish Energy Policy to 2040 (PEP 2040) [376] and the Poland's National Energy and Climate Plan (NECP), Poland envisioned a major role for natural gas (mostly LNG) in supporting a secure transition from coal. The NECP does indicate government funding to develop new natural gas storage and funding for Liquified Natural Gas (LNG) and Compressed Natural Gas (CNG) vehicles and related fueling infrastructure. Among the EPP2040 objectives, one is the diversification of supply and development of network infrastructure for natural gas, crude oil and liquid fuels: increased oil and gas pipeline import capacity; expanded LNG import capacity; investment in oil and gas distribution and storage.[377]

[376] https://www.gov.pl/web/klimat/polityka-energetyczna-polski

[377] IEA (2022) Poland 2022 Energy Policy Review. https://iea.blob.core.windows.net/assets/b9ea5a7d-3e41-4318-a69e-f7d456ebb118/Poland2022.pdf

As part of the Strategy for Responsible Development Poland has a Program for the hard coal mining sector. The objective of the program is the fair transformation of the hard coal mining sector though a gradual liquidation of the power coal mining sector based on public support mechanisms.[378]

However, the role of gas in the Polish energy transition is being re-evaluated prompted by questions of energy-dependency triggered by the Russian invasion of Ukraine.[379] The Polish Government has proposed a new Bill to guarantee fixed coal prices to support household depending on coal for heat. The programme is not yet in place, but the Polish Parliament approved the proposed Bill on the 23rd of June, 2022.[380]

According to Eurostat data, Poland's natural gas consumption in 2021 was 23.3 bcm, with an import dependency rate of 83.6%.

Subsidies to fossil fuels

Poland's NECP and Energy Policy Plan until 2040 (EPP2040) do not include any details on the phase out of fossil fuel subsidies.

Phase out of fossil fuel extraction

Without public intervention and considering the downward trend from the last three decades, hard coal mining would end in Poland in the 2030s, a situation that is not attributable to Europe's climate policies.[381]

The Polish Supreme Audit Office has estimated that the total support for the coal mining sector in Poland in 2007-2015 amounted to EUR 14.8 billion. And from January to September 2020, PGG has been generating more than EUR 100 000 of losses per hour.

In September 2020, the Polish government and representatives of the Polish trade unions agreed on a rescue plan for the Polish Mining Company (PGG), the largest coal mining operator in Europe. The agreement aims to maintain hard coal mining operations until 2049, through state aid to be granted to fund current operations of the PGG. Specifically, the updated NECP states:

"In 2021, a social contract was concluded for the transformation of the hard coal mining sector and selected transformation processes of Śląskie Province (link) which includes, in particular, a mechanism to finance subsidies to reduce the production capacity of mining companies and defines social protection for employees of closed mines. The capacity reduction programme aims to systematically reduce hard coal production until it is completely extinguished. Shutdowns and closures will follow a fixed schedule. According to the social contract, the last mine will complete the mining activity no later than 2049. In the following years, coal and lignite-based blocks will gradually be removed from the capacity structure by 2049. The speed and sequencing of the deviations will depend both on the adequacy of the power system. The legal regulations adopted in 2023, i.e. the Act of 17 August 2023 on social protection for workers in the electricity sector and the lignite mining industry (Journal Of Laws, item 1737), which, in addition to providing social protection for workers, will aim to support actors in an evolving drive towards the energy transition by phasing out electricity generation in carbon-intensive units while developing low- and zero-carbon sources. The provisions of this Act were

[378] https://www.gov.pl/web/aktywa-panstwowe/program-dla-sektora-gornictwa-wegla-kamiennego-w-polsce#:~:text=Celem%20g%C5%82%C3%B3wnym%20Programu%20dla%20sektora,oparciu%20o%20mechanizmy%20wsparcia%20publicznego.

[379] https://www.reuters.com/business/sustainable-business/poland-looking-again-role-gas-green-energy-transition-2022-03-17/

[380] https://www.gov.pl/web/klimat/ustawa-gwarantujaca-ceny-wegla-i-zwiekszenie-jego-dostepnosci-dla-gospodarstw-domowych-przyjeta-przez-sejm

[381] https://www.euractiv.com/section/energy/opinion/poland-goes-all-out-on-coal-rescue-against-eus-higher-climate-goal/

notified to the European Commission, which declared the State aid provided for by the Act compatible with the EU market."

In 2022, the Polish Government submitted a request to the European Commission for approval of this new support system for the hard mining sector. The notification process is planned to be completed in 2024.

Phase out of fossil fuel use

Electricity generation

Approximately 80% of the electricity in Poland in 2020 was generated from fossil fuels, out of which solid fossil fuels constituted the largest share representing 68% of the total electricity mix. Before the invasion of Ukraine, fossil gas was seen as a potential stepping stone away from coal, however this is being reconsidered in light of the Russian invasion of Ukraine.

The Bloki+ 200 programme provided EUR 38 million in funding to support research on the modernisation, reconstruction or operation of coal-fired power plants with capacities around 200 MW.[382]

Heating in buildings

Poland's updated NECP states that a target was set in 2021 "to phase out coal from individual household heating by 2040 and even in urban areas by 2030." This is to be implemented together with the increasing thermal renovation of buildings by 2040, with a view to improving air quality in particular. Decarbonisation and "greening" of individual heating will largely take place by promoting the use of heat pumps, coupled with photovoltaic installations. The focus will be new buildings due to the increasing energy performance requirements for those buildings.

For this purpose, the Clean Air Priority Programme has been set up.[383] The programme includes funding for the comprehensive energy renovation of buildings and the replacement of old and inefficient solid fuel heat sources with modern heat sources meeting the highest standards.

Subsidies to the nuclear industry

Poland does not currently have nuclear energy. However, its plan to decarbonise the energy system in Poland and replace fossil fuels by clean energy sources is heavily reliant on nuclear energy. The first reactor with a capacity of 1 to 1.6 GW is planned to operate as soon as in 2033, with five more to follow by 2043, according to the government's official nuclear strategy (PPEJ). The climate ministry last year outlined that the aim is to have a total installed nuclear capacity of around 6 to 9 GW, "based on proven, large-scale, Generation III (+) pressurised water reactors". The total cost will run to an estimated 80 billion zloty (EUR 17 billion) over the programme's lifespan. It is estimated that by 2040, nuclear energy could account for up to 16% of generation.[384]

Nuclear energy has been identified in the updated NECP to be of particular importance in replacing gas units in the role of adequacy, with an aim to be deployed in the period 2030-2035.

[382] https://www.gov.pl/web/ncbr/program-bloki-200
https://iea.blob.core.windows.net/assets/b9ea5a7d-3e41-4318-a69e-f7d456ebb118/Poland2022.pdf
[383] https://commission.europa.eu/projects/update-clean-air-priority-programme_en
[384] IEA (2022) Poland 2022

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Poland

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Aid for high-efficiency cogeneration systems and for the promotion of energy from renewable sources	Pomoc na układy wysokosprawnej kogeneracji oraz na propagowanie energii z odnawialnych źródeł w ramach RPO na lata 2014-2020	Ended	2021
Amendment of state aid to the Polish coal sector in the 2015-2027	Zmiana pomocy państwa dla polskiego sektora węglowego w latach 2015-2023	Ended	2023
Capacity Auction - Coal	Aukcja mocy - węgiel	Ongoing	Unknown
Capacity Auction - Natural Gas	Aukcja mocy - gaz ziemny	Ongoing	Unknown
Carbon additive	Dodatek węglowy	Ended	2022
Coal allowances in Coal mining sector	Wsparcie likwidacji kopalń - Roszczenia pracownicze (węgiel + renty)	Ongoing	Unknown
Compensation for sectors and energy-intensive sub-sectors	Rekompensata dla sektorów i podsektorów energochłonnych	Ended	2021
Current production subsidies	Dopłaty do bieżącej produkcji	Ended	2016
Excise duty exemption on coal products - business entities with energy efficiency plans	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - przez podmioty gospodarcze, w których wprowadzone zostały w życie systemy prowadzące do osiągania celów dotyczących ochrony środowiska lub do podwyższenia efektywności energetycznej	Ongoing	Unknown
Excise duty exemption on coal products - CHP	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - do wytwarzania ciepła i energii elektrycznej w skojarzeniu.	Ongoing	Unknown
Excise duty exemption on coal products - cross sectors	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - przez gospodarstwa domowe, organy administracji publicznej, jednostki Sił Zbrojnych Rzeczypospolitej Polskiej, szkoły, przedszkola i inne podmioty systemu oświaty, żłobki i kluby dziecięce, szpitale, przychodnie i inne podmioty lecznicze, jednostki organizacyjne pomocy społecznej, organizacje pożytku publicznego	Ongoing	Unknown
Excise duty exemption on coal products - energy-intensive plants for heating purposes	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - przez zakłady energochłonne do celów grzewczych.	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Excise duty exemption on coal products - mineralogical, electrolytic, metallurgical and chemical	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - w pracach mineralogicznych, elektrolitycznych i metalurgicznych oraz do redukcji chemicznej	Ongoing	Unknown
Excise duty exemption on coal products in agriculture	Zwolnienie z podatku akcyzowego na wyroby węglowe zużywane - Wyroby węglowe zużywane w pracach rolniczych, ogrodniczych, w hodowli ryb, oraz w leśnictwie	Ongoing	Unknown
Exemption from excise duty on other gaseous hydrocarbons in a liquefied state, filled into gas cylinders	Zwolnienie od akcyzy pozostałych węglowodorów gazowych w stanie skroplonym, rozlewanych do butli gazowych	Ongoing	Unknown
Extension of the LNG Terminal in Swinoujscie	Rozbudowa Terminalu LNG w Świnoujściu	Ended	2023
Frozen gas prices	Zamrożone ceny gazu	Ongoing	2024
Fuel oil used for the following purposes is exempted from excise duty the production of electricity and heat in cogeneration, in agricultural, horticultural agricultural, horticultural, greenhouse and forestry activities	Zwalnia się od akcyzy olej opałowy wykorzystywany do produkcji energii elektrycznej i ciepła w skojarzeniu, w pracach rolnych, ogrodniczych, szklarniowych oraz leśnych	Ongoing	Unknown
Grants and other non-repayable benefits to the coal sector		Ongoing	Unknown
Initial Investment Aid for NATGAS investments	Pomoc indywidualna w formie dotacji z przeznaczeniem na inwestycje w układy przesyłowe gazu ziemnego udzielona przez dyrektora Instytutu Nafty i Gazu udzielił w ramach Programu Operacyjnego Infrastruktura i Środowisko	Ended	2017
Investment Aid for Coal Mining sector 2011-2015	Pomoc państwa dla sektora górnictwa węgla kamiennego w latach 2011 - 2015.	Ended	2015
Investment Aid for Coal Mining sector 2015-2027	Pomoc państwa dla sektora górnictwa węgla kamiennego w latach 2015 - 2023	Ended	2023
Liquidity support for PGG (coal company)	Wsparcie płynnościowe dla PGG	Ended	2022
One-off €636 payment to households heating with coal	Jednorazowa płatność w wysokości 636 euro dla gospodarstw domowych ogrzewanych węglem	Ended	2023
Purple certificates	Świadectwa pochodzenia energii elektrycznej produkowanej w wysokosprawnej kogeneracji z metanu kopalnianego i biogazu z biomasy	Ended	2018

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Red certificates	Świadectwa pochodzenia energii elektrycznej z wysokosprawnych źródeł kogeneracyjnych o mocy zainstalowanej większej niż 1MW	Ended	2018
Refund of excise duty included in the price of diesel used for agricultural production	Zwrot podatku akcyzowego zawartego w cenie oleju napędowego wykorzystywanego do produkcji rolniczej	Ongoing	Unknown
Restructuring of Polish mining companies	Restrukturyzacja polskich przedsiębiorstw górniczych	Ended	2019
Royalty exemption for hard coal mines	Sektor górnictwa węgla – pomoc na pokrycie kosztów nadzwyczajnych	Ended	2018
State Aid Construction of regasification LNG terminal in Świnoujście	Polska Budowa terminalu regazyfikacyjnego skroplonego gazu ziemnego w Świnoujściu	Ended	2015
Support for JSW (coal)	Pożyczka preferencyjna dla Jastrzębskiej Spółki Węglowej	Ended	2020
Tax exemption for coal	zwolnienie z podatku	Ongoing	Unknown
Tax reduction for coal	obniżka lub zmniejszenie, powodujące obniżenie podstawy, opodatkowania lub wysokości podatku	Ongoing	Unknown
VAT refund for gas for households with the lowest incomes	zwrot VAT dla gospodarstw domowych ogrzewających się gazem	Ongoing	2024
Yellow certificates	Świadectwa pochodzeni z jednostek kogeneracji opalanych paliwami gazowymi lub o łącznej mocy nieprzepraczającej 1MWe (żółte ceryfikaty)	Ended	2018
Aid for social protection of employees in relation to the closure of lignite mining activities and of power plants using lignite or coal	Pomoc na ochronę socjalną pracowników w związku z zamknięciem działalności w zakresie wydobycia węgla brunatnego i elektrowni wykorzystujących węgiel brunatny lub węgiel brunatny	Ongoing	2034
Freezing gas prices - compensation to gas sellers	Zamrożenie cen gazu - rekompensaty dla sprzedawców gazu	Ongoing	2025
Subsidies for the reduction of production capacity of mining enterprises	Dopłaty do redukcji zdolności produkcyjnych przedsiębiorstw górniczych	Ongoing	Unknown
Support to coal mining companies for the reduction of production capacity	Wsparcie dla spółek węglowych w celu zmniejszenia zdolności produkcyjnych	Ongoing	2031
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

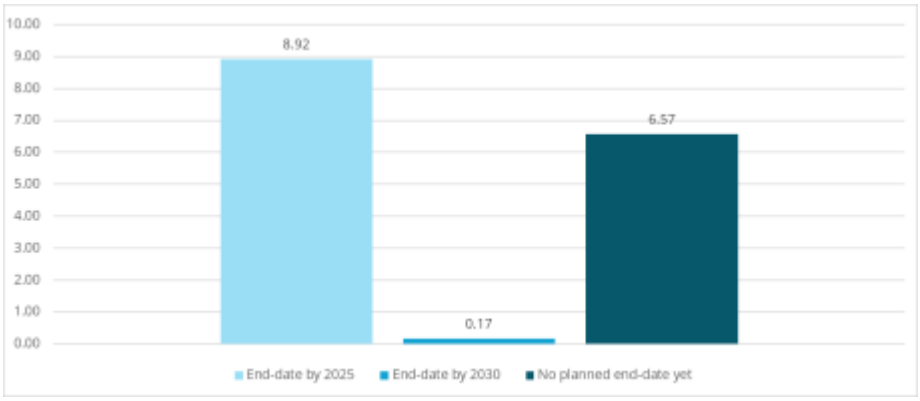
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with end-date already planned as of June 2024 and amounts with end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 15.66 billion, accounting for 48% of total energy subsidies in Poland. 42% of fossil fuel subsidies had no firm end-date.

Portugal

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024				*No extraction*		*No coal*				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

In its updated draft National Energy and Climate Plan (NECP) submitted in June 2023, Portugal indicated for 2030 the aim to reduce the emissions of greenhouse gases in 55% (compared to 2005 levels, and representing a target increase from to the 45-55% ambition of the final NECP submitted

in 2019), a penetration of renewable energy of 49% in final gross energy consumption (was 47% in the 2019 NECP) and 85% in electricity production (was 80% in the 2019 NECP), as well as a reduction of primary energy consumption of 35% (no change compared to the 2019 NECP). Portugal could even reach 100% of renewables in electricity by 2030 already. Portugal also aims to achieve net zero emissions by 2050, and should consider the anticipation of this target to 2045, following the adoption of the Climate Law in 2021.[385]

Portugal should revised its updated NECP based on the Commission recommendations, and there are various policy documents which support the attainment of these objectives, including the Roadmap for Carbon Neutrality 2050 (RNC2050), the Long-Term Strategy for Building Renovation (ELPRE), the National Recovery and Resilience Plan (RRP), or the Hydrogen National Strategy (EN-H_2). Furthermore, in April 2024 the government indicated it planned to develop a National Energy Storage Strategy by 2026,[386] although there has been a change of government since.

Portugal had to reduce its natural gas consumption by at least 7% between 1 August 2022 and 31 March 2023, as part of the EU voluntary target of reducing natural gas consumption by 15%. Besides measures adopted to meet this target specifically, measures which support the reducing of natural gas demand include the Support Program for More Sustainable Buildings, the Energy Efficiency in Central Public Administration Buildings Program, the Support for the implementation of Renewable Energy Communities and Collective Self-Consumption, the Renovation and Increase of the Energy Performance of Service Buildings and the Decarbonisation of Industry program.

Subsidies to fossil fuels

Portugal has set up in 2018 a Working Group to analyse energy taxation as a tool for the energy transition, especially for analysing environmentally harmful incentives and providing recommendations for their phasing out and to revive the carbon tax.[387]

Article 28 of the Climate Law in 2021[388] states that the Portuguese budgetary and fiscal policies should respect various climate related principles, including "Progressive elimination by 2030 of subsidies established in national legislation, whether direct or granted through tax benefits, relating to fossil fuels or their use" (article 28(e)).

In the field of phasing out fossil fuel subsidies, Portugal has various measures currently in place targeting various objectives, for example:

- Gradual increase of the carbon tax rate, although this has been suspended in various periods, including since September 2023
- Phasing out coal power plants (completed) and supporting workers affected
- Prohibition of use of fossil natural gas for electricity generation from 2040 on

Phase out of fossil fuel extraction

There is currently no relevant fossil fuel extraction in Portugal, and the government has indicated in 2020 it would not issue any more prospection licences.[389]

[385] https://dre.pt/dre/detalhe/lei/98-2021-176907481
[386] https://www.portugal.gov.pt/gc24/programa-do-xxiv-governo-pdf.aspx
[387] https://diariodarepublica.pt/dr/detalhe/despacho/2835-2018-114885103
[388] https://dre.pt/dre/detalhe/lei/98-2021-176907481
[389] https://www.jornaldenegocios.pt/empresas/energia/detalhe/exploracao-de-petroleo-e-gas-chega-ao-fim-em-portugal

Phase out of fossil fuel use

Electricity generation

The Power Purchase Agreement of Tejo Energia, S.A. for the Pego coal-fired power plant expired on 30 November 2021. The payments of the Just Transition Mechanism started in December 2021.[390] The other remaining Portuguese power plant in Sines closed in January 2021.[391] Associated to this, Portugal has the compensation mechanism for a just transition, supporting workers directly and indirectly affected by the end of electricity production from coal.

The government proceeded in 2021 with tendering the attribution of the Pego injection point in the Public Service Electricity Network (RESP) previously used by the power plant, given the current utilisation of the existing capacity of the network and limited ability to connect new renewable energy plants. The connection capacity award was focused on a project exclusively focused on the production of energy from renewable sources, which may present several solutions: the production of renewable electricity, the production of renewable gases, the production of advanced and/or synthetic fuels, or a mix of these, potentially including energy storage solutions.[392] Six offers were received for the connection capacity rights.[393]

The 2021 Climate Law introduces a ban on the use of fossil natural gas for electricity production from 2040 on. Portugal also foresees promoting the blending of hydrogen and other renewable gases in the gas system as one of the measures to decarbonise gas supply.

Subsidies to the nuclear industry

Not relevant.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Portugal

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
Fuel Tax Exemption for goods consumed by international agents	Isenção do ISP relativo às relações internacionais (inclui: diplomatas, organismos internacionais, NATO, acordos internacionais)	Ongoing	Unknown

[390] https://www.portugal.gov.pt/pt/gc22/comunicacao/comunicado?i=trabalhadores-recebem-primeiro-pagamento-do-mecanismo-de-compensacao-para-uma-transicao-justa
[391] https://observador.pt/2021/01/15/central-de-sines-encerra-esta-sexta-feira-antes-do-previsto-devido-a-evolucao-do-mercado/
[392] https://www.portugal.gov.pt/pt/gc22/comunicacao/comunicado?i=governo-lanca-concurso-publico-para-reconversao-da-central-a-carvao-do-pego
[393] https://www.portugal.gov.pt/pt/gc22/comunicacao/comunicado?i=apresentadas-seis-propostas-para-atribuicao-do-ponto-de-ligacao-a-rede-eletrica-do-pego

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Fuel tax exemption for electricity and cogeneration - coal	Redução do ISP para os produtos petrolíferos e energéticos utilizados na produção de electricidade ou de electricidade e calor (co-geração)	Ongoing	Unknown
Fuel tax exemption for electricity and cogeneration - fuel oil	Redução do ISP para os produtos petrolíferos e energéticos utilizados na produção de electricidade ou de electricidade e calor (co-geração)	Ongoing	Unknown
Fuel tax exemption for electricity and cogeneration - natural gas	Redução do ISP para os produtos petrolíferos e energéticos utilizados na produção de electricidade ou de electricidade e calor (co-geração)	Ongoing	Unknown
Fuel Tax Exemption for railway vehicles	Isenção do ISP para veículos de tracção ferroviária	Ongoing	Unknown
Fuel tax reduction for freight companies	Redução do ISP relativo às empresas de transporte de mercadorias	Ongoing	Unknown
Fuel Tax Reduction for agriculture machinery	Redução do ISP para equipamentos agrícolas	Ongoing	Unknown
Fuel-Tax Reduction for Fixed Engines	Redução do imposto sobre o gasóleo relativo a pequenos motores fixos	Ongoing	Unknown
Fuel Tax Reduction on autonomous refrigerators	Redução do ISP para motores frigoríficos autónomos instalados em veículos pesados de transporte de mercadorias	Ongoing	Unknown
Fuel-Tax Reduction for Heating	Redução da taxa do imposto especial sobre o combustível (gasóleo) para fins de aquecimento	Ongoing	Unknown
Fuel-Tax exemption for certain industrial processes - natural gas	Isenção de imposto para certos processos industriais	Ongoing	Unknown
Fuel-Tax exemption for certain industrial processes - heavy fuel oil	Isenção de imposto para certos processos industriais	Ongoing	Unknown
Fuel tax exemption on public transport	Isenção do ISP nos veículos de transportes públicos de passageiros	Ongoing	Unknown
Feed-in tariff for power generation from CHP using petroleum products	Produção em Regime Especial	Ongoing	Unknown
Feed-in tariff for power generation from CHP using natural gas	Produção em Regime Especial	Ongoing	Unknown
Regulated last resort tariffs for natural gas	Tarifas reguladas do comercializador de último recurso para o gás natural	Ongoing	2025
Energy Social tariff (natural gas)	Tarifa Social (GN)	Ongoing	Unknown
Support in the Public Passenger Transport Sector	Apoio no Setor dos Transportes Públicos de Passageiros	Ongoing	Unknown
Compensation Mechanism for a Just Transition	Mecanismo de compensação para uma transição justa	Ongoing	2024
Aid to Indirect Costs of EU ETS	Medida de Auxílio a Custos Indiretos do CELE	Ongoing	2030

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Programme to Support Intensive Gas Industries	Sistema de incentivos «Apoiar as Indústrias Intensivas em Gás»	Ended	2022
AUTOvoucher discount programme	Beneficio AUTOvoucher	Ended	2022
Extraordinary support for colored and marked diesel	Apoio extraordinário ao gasóleo colorido e marcado	Ongoing	Unknown
Famílias Primeiro - Fuel tax reduction	Famílias Primeiro - Redução nos impostos sobre os combustíveis	Ongoing	Unknown
Famílias Primeiro - Transition to the Regulated Natural Gas Market	Famílias Primeiro - Transição para o mercado regulado de gás natural	Ended	2023
Mechanism for adjusting the costs of electricity production within the framework of the Iberian Electricity Market	Mecanismo excecional e temporário de ajuste dos custos de produção de energia elétrica no âmbito do Mercado Ibérico de Eletricidade	Ended	2023
Transitional regime for the stabilization of gas prices by legal persons with consumption exceeding 10 000 m3	Regime transitório de estabilização de preços do gás por pessoas coletivas com consumos superiores a 10 000 m3	Ended	2023
Energy products used by economically vulnerable customers and beneficiaries of natural gas social tariff-Electricity based support- Natural gas	Redução do ISP para os produtos petrolíferos e energéticos e eletricidade que sejam utiliza dos pelos clientes finais economicamente vulneráveis, beneficiários da tarifa social - gas natural	Ongoing	Unknown
Suspension of Carbon Tax Increase - Coal - Other bituminous coal	Suspension of Carbon Tax Increase - Coal - Other bituminous coal	Ongoing	Unknown
Suspension of Carbon Tax Increase - Petroleum - LPG	Suspension of Carbon Tax Increase - Petroleum - LPG	Ongoing	Unknown
Suspension of Carbon Tax Increase - Petroleum - Gas/diesel oil excl. Biofuels	Suspension of Carbon Tax Increase - Petroleum - Gas/diesel oil excl. Biofuels	Ongoing	Unknown
Suspension of Carbon Tax Increase - Petroleum - Fuel oil	Suspension of Carbon Tax Increase - Petroleum - Fuel oil	Ongoing	Unknown
Suspension of Carbon Tax Increase - Petroleum - Petroleum coke	Suspension of Carbon Tax Increase - Petroleum - Petroleum coke	Ongoing	Unknown
Suspension of Carbon Tax Increase - Natural Gas	Suspension of Carbon Tax Increase - Natural Gas	Ongoing	Unknown
Support for the Heavy Public Passenger Transport sector	Apoio ao setor dos Transportes Públicos Pesados de Passageiros	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

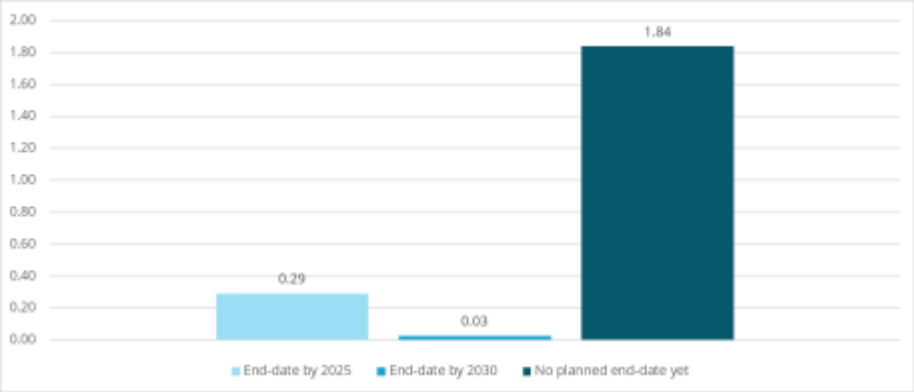
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 2.15 billion, accounting for 62% of total energy subsidies in Portugal. 85% of fossil fuel subsidies had no firm end-date.

Romania

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

Romania aims to become climate neutral in 2050, reaching a 99% reduction in net emissions in 2050 compared to the 1990 level. This aspiration appears in the first version of Romania's Long-Term

Strategy for Reducing Carbon Emissions Greenhouse Gases , published by the Ministry of Environment, Water and Forests.[394]

While the "old" Energy Strategy 2020-2030 defined coal as "a strategic fuel to sustain the national and regional energy security", a new Energy Strategy 2025-2035, with the perspective of 2050 was recently issued for public consultation by the Ministry of Energy, in which it is defined as a main objective the gradual transition from the use of fossil fuels to renewable and/or low-carbon energy sources, using natural gas as the transition fuel.

In June 2022 it was adopted the Emergency Ordinance no. 108 (EG no. 108/2022) regarding the decarbonisation of the power sector.

Through the EG no.108/2022 it was established the general legal framework for the gradual elimination of coal from the energy mix, the deadlines for the decommissioning and preservation of the total installed energy capacity based on lignite and coal (4,590 MW) until 31 December 2032, re-conversion and vocational training measures, as well as other socio-economic measures for the transition of the labor force and economic opportunities at the local level, including state aid to reduce the socio-economic impact .

Subsidies to fossil fuels

No information found on plans to phase out fossil fuel subsidies.

Phase out of fossil fuel extraction

Considering also natural gas as fossil fuel, an important policy decision was the **Law 157/ May 2022** (amending Law 256/2018) on the fiscal framework for oil exploration, development and exploitation carried out by holders of oil agreements for offshore and deep onshore oil fields – the "Offshore Law".

This law establishes some necessary measures for the implementation of petroleum operations of exploration, development, exploitation of oil deposits and abandonment, as well as works/works on wells related to petroleum operations, carried out by holders of petroleum agreements regarding offshore and onshore petroleum perimeters of depth, in accordance with the provisions of the oil agreements concluded between the holders and the National Agency for Mineral Resources.

The investors are entitled to trade freely the hydrocarbons produced from the respective petroleum blocks, at the prices and in the amounts determined by them, in line with the national law and the principles of the European Union on the free market. Other main provisions:

- the state will have the right of first refusal in gas purchases
- also apply to deep onshore petroleum blocks
- investors can deduct a maximum of 40% from the total tax on additional income for the investments carried out.

Black Sea gas reserves are estimated at over 200 billion cubic meters.

Regarding the phasing out the coal extraction, the EG no.108/2022 foresees among other measures:
- closing and securing the extraction of lignite and coal, for the quarries and mines to be included in the closing program; and
- rehabilitation and greening of the lands related to the closed power plants and the quarries and mines that serve them.

The execution of safety and quarries and mines closure and greening works shall be completed by 31 December, 2032.

394 https://www.mmediu.ro/app/webroot/uploads/files/Strategia%20%20pe%20Termen%20Lung%20a%20RO%20pentru%20Reducerea%20Emisiilor%20de%20GES.pdf

Phase out of fossil fuel use

Electricity generation

As stated in the new Strategy, in order to achieve the stability objectives and targets, the process of eliminating solid fossil fuels from the energy mix is a necessary action, thus Romania has proposed 2032 for the decommissioning of coal and lignite-based energy production capacities.
The total installed capacity of electricity based on lignite and coal that will be phased out by 2032 at the latest is 4,920 MW, of which 3,780 MW by the end of 2025.
The gradual elimination of coal-fired power plants is regulated by Emergency Ordinance no. 108 of June 30, 2022 regarding the decarbonization of the energy sector, with subsequent amendments and additions.

According to the Romanian Ministry of Energy, as reported within the Integrated National Energy and Climate Plan of Romania 2021-2030:
- 1.695 MW were decommissioned on 31.12.2021
- 330 MW were decommissioned on 01.06.2023*
- 330 MW were put in stand-by on 01.06.2023*
- 1,425 MW will be decommissioned by 31.12.2025
- 1,140 MW will be decommissioned / put in stand-by by 31.12.2025

*Decommissioning of Energy Unit no. 3 (330 MW) from the Rovinari Thermal Power Plant, starting from 01.06.2023, and putting under control Energy Unit no. 7 (330 MW) from the Turceni Thermal Power Plant for the period 01.06.2023 - 31.12.2025.

Since Romania will use natural gas as a transition fuel, Romania aims to put into operation new power plants with combined cycle natural gas groups and in power plants with cogeneration electricity production that will increase the flexibility of the system and replace electricity produced from coal.

Thus, until 2030, the aim is to build power plants in Combined Cycle Power Plant (CCGT) technology, powered by natural gas, with a total installed capacity of 2.6 GW and cogeneration plants (CHP) with a total installed capacity of 947 MW (the New Energy Strategy)

Industry

According to the new Energy Strategy, it is estimated that around 70 large energy-consuming companies, providing around 300,000 direct and indirect jobs, would be at risk of relocation in the absence of some form of energy cost support.

As the share of industry in the national economy is higher than the European average (20.5% vs. 17.9% in 2021) and Romania still has steps to go in terms of improving energy efficiency in industry and decreasing the intensity energy, substantial support must be given to large industrial energy consumers, all the more so as some regions and counties in Romania still have a mono-industrial character (eg: Galați, Gorj, Hunedoara, etc.).

In this context, an average of 70 companies annually benefit from the state aid scheme designed to support large enterprises, including heavy industry, which are affected by increased energy costs, with an annual budget of EUR 75 million.

The new Strategy set as one of its specific objectives "SO4. Ensuring cost affordability for industrial consumers", which means reforming the tariff structure for electricity and natural gas.

By 2035, adjusting the tariff structure to provide competitive prices for industrial consumers, including:

- Periodic assessment and adjustment of charges and taxes applied to energy consumption.
- Maintaining an adaptive pricing policy until 2050 that reflects technological and market changes, ensuring optimized costs for the industry.
- Introduction and expansion of energy cost compensation measures for industrial consumers
- Implementation of price capping schemes and compensation mechanisms to protect industrial consumers against price volatility in the energy market.
- Optimizing the management and allocation of emission certificates.
- By 2035, optimizing the allocation process and costs of emission certificates for industrial sectors, ensuring fair access and reducing the financial impact on industrial consumers.

Heating in buildings

The new Energy Strategy indicates that in the heating and cooling sector in addition to high-efficiency cogeneration, alternatives will be used such as biomass-based production in small urban areas, alternative renewable heating sources for individual homes and new housing complexes; neighborhood alternatives from renewable sources; individual or collective solutions such as heat pumps (either standalone or in a "hybrid" configuration, together with a condensing gas plant), or thermal and solar panels. Projects will also be promoted for the recovery of waste energy from industry, where it is available and possible to use in heating and cooling systems.

Thus, the Anghel Saligny National Investment Program targets investments in local centralized solutions in small towns for individual households that use biomass-based heating systems.

This program aims to provide alternative and sustainable heating solutions for households that cannot access centralized systems and that currently heat with firewood:

- Implementation of efficient heating systems: The installation of pellet stoves or other heating solutions using biofuels will be promoted. They offer superior thermal efficiency and reduced emissions compared to burning wood.
- Development of infrastructure for sustainable biomass: Projects will be initiated for the construction and optimisation of biomass production, processing and distribution facilities, as sustainable alternatives to firewood. This will include support for the development of local cooperatives or partnerships with private firms to ensure efficient production and distribution.
- Promotion of solar energy for heating: Initiatives will be implemented to install solar thermal systems in households without access to centralised systems. These systems can be used for water heating and thermal support, helping to reduce fossil fuel consumption.
- Implementation of generation micro-grids: The development of micro-grids using cogeneration to produce heat and electricity simultaneously will be encouraged. These will be particularly useful in isolated communities or rural areas where connecting to the national grid can be difficult.
- Facilitating access to financing and tax incentives: Accessible financing mechanisms and tax incentives will be created to help households invest in efficient and environmentally friendly heating solutions. Programs can include low-interest loans, grants and tax credits for those who choose to transition to cleaner heating technologies.

Subsidies to the nuclear industry

Subsidies for promoting the development of the nuclear industry are considered an essential component of the national energy policy. The Cernavoda nuclear power plant will be extended with reactors units 3 (to be commissioned in 2030) and 4 (USA, Canada, France consortium).

Recently an agreement between Nuclearelectrica and NuScale-USA was signed to develop technology of small modular reactors- SMR in Romania. A NuScale 6-module, 462 MWe power plant is intended to be installed on Doicesti site.

By supporting the EU's climate policy, Romania is simultaneously part of a coalition of states that persuaded the EU to include nuclear energy in its energy taxonomy.

Nuclearelectrica, the state nuclear power corporation operating the Cernavoda plant received only a subsidy in 2007, as cancellation of penalties and debts related to the loan agreements regarding unit no. 1 of the Cernavoda nuclear power plant. Grants are registered in the financial statements as income between 2007 and 2026, for the remaining depreciation period of Unit 1. The amount of income from grants registered in the Statement of Profit or Loss Account, under "Other income", in 2021 is in the amount of RON 14,354,155 (2020: 14.344.816 RON)[395].

The National Company for Uranium (CNU), also government owned, is responsible for the administration of the national uranium mineral resources and performs geological research and exploitation activities for uranium ores, ores processing and concentrates refining, their transport and marketing. CNU received a 95 million Euro state aid and within 5 years restructuring plan starting 2017, but the EC rejected this plan[396]. Therefore, CNU is in a liquidation process and the uranium mine from Crucea-Botusana will be closed[397]. The closure of the mine requires closing and ecological reconstruction costs, which are estimated at over 234 million lei, and costs for social protection - at 12.2 million lei. To these will be added annual expenses, at least until 2028 inclusive, of 18.6 million lei for conservation and 3.95 million lei with post-closure monitoring. For the current year, the necessary financing from the state budget is estimated at 45 million lei, of which 29.4 million lei for ecological closure and reconstruction and 15.5 million lei for the technical conservation program.

The new strategy states that investments in generation capacities from nuclear sources are one of the optimal solutions to cover the deficit of electricity production capacity forecasted for 2028-2035 as a result of reaching the operating limit of several existing capacities based on fossil fuels.

By 2035, Romania's objective is to complete the extension of the life of existing capacities, to build large new capacities, as well as generation capacities through RMM.

At the same time, the measures for the safe storage of radioactive waste at the producer and the correlation with the "Medium and long-term National Strategy on the safe management of spent nuclear fuel and radioactive waste" will continue.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Romania

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Bonus scheme for efficient CHP	Bonus Cogenerare	Ongoing	Unknown

[395] https://www.nuclearelectrica.ro/ir/wp-content/uploads/sites/9/2022/04/SNN_RO_SFI-31.12.2021.pdf
[396] https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:32020D1012&from=EN
[397] http://energie.gov.ro/wp-content/uploads/2021/02/Nota-de-fundamentare-inchidere-mina-Crucea-tabelar-clean-.docx

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Subsidies for the heat supplied to the population	Instituirea preturilor locale de referinta pentru energia termica furnizata populatiei prin sisteme centralizate	Ongoing	Unknown
Excise tax exemption on natural gas consumed by households	Scutirea de accize pentru unii consumatori de gaze naturale	Ongoing	Unknown
Excise tax exemption on natural gas consumed by public institutions	Scutirea de accize pentru unii consumatori de gaze naturale	Ongoing	Unknown
Allowance for the heating of dwellings in the cold season - heating with natural gas	Ajutoare de incalzire - gaze naturale	Ongoing	Unknown
Allowance for the heating of dwellings in the cold season - heating with firewood, coal and mineral oil fuel	Ajutoare de incalzire - lemne, carbuni sau combustibil petrolier	Ongoing	Unknown
Excise tax reduction on gasoil used in agriculture	Ajutorul de stat pentru reducerea accizei la motorina utilizata in agricultura	Ongoing	Unknown
State aid for the closure of coal mines Petrila, Paroseni, Uricani administered by SNIM Valea Jiului	Ajutor de stat pentru inchiderea minelor Petrila, Paroseni, Uricani din cadrul SNIM ValeaJiului	Ended	2017
State aid for the closure of coal mines Lupeni and Lonea administered by Complexul Energetic Hunedoara S.A. (CEH SA).	Ajutor de stat pentru inchiderea minelor Lonea si Lupeni din cadrul CE Hunedoara	Ended	2018
Excise tax reduction on diesel used in freight transport	Reducerea accizei pentru motorina utilizata drept carburant in transportul rutier de marfuri	Ended	2019
State aid for the restructuring of the Energy Complex Oltenia	Ajutor de stat pentru Planul de retructurare al Complexului Energetic Oltenia	Ongoing	2025
Funding support for gas interconnection between Moldova and Romania	Sprijin financiar pentru interconectarea gazelor dintre Moldova și România	Ended	2016
State aid scheme aimed at supporting the development of gas-fired capacities for the production of electricity and heat in HE CHP in district heating	Schemă de ajutor de stat care vizează sprijinirea dezvoltării capacităților pe gaz pentru producerea de energie electrică și termică în cogenerarea HE în termoficare	Ongoing	2028
Ceiling on natural gas prices (1 year + extension) (household consumers)	Plafon pe un an pentru prețurile la gazele naturale	Ongoing	2025

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
NRRP - Investment measure 3: The development of flexible and high-efficiency gas production capacities for the cogeneration of electric and thermal energy (CHP) in urban heating, in order to achieve deep decarbonization	Investitia 3: Dezvoltarea de capacitati de productie pe gaz, flexibile si de inalta eficienta, pentru cogenerarea de energie electrica si termica (CHP) in termoficarea urbana, in vederea realizarii unei decarbonizari profunde	Ongoing	2026
State aid for restructuring/reorganization in the energy field	Ajutoare de stat de restructurare in domeniul energetic	Ongoing	2025
Coal mine conservation or closure program	Program de conservare sau inchidere a minelor de carbune	Ongoing	2024
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

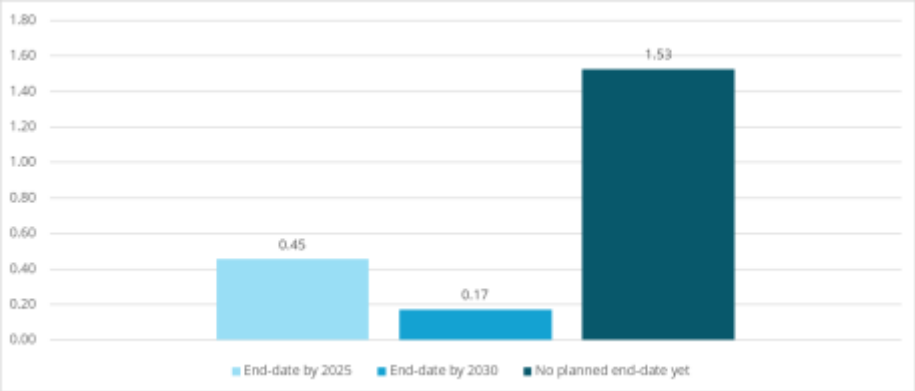
Fossil fuel policy / target alignment

According to our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 2.15 billion, accounting for 33% of total energy subsidies in Romania. 71% of fossil fuel subsidies had no firm end-date.

Slovenia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

A goal of Slovenia's climate strategy is to transition to net-zero emissions and become climate neutral by 2050.[398] The instruments/measures of the Slovenian energy policy as included in its National Energy and Climate Plan (NECP) aim to reduce the use of fossil energy sources and dependence on importing them.

Subsidies to fossil fuels

The subsidies for fossil fuels are in the form of support for electricity production in height-efficient cogeneration (CHP)[399] or in the form of exemption from excise duty[400] for fossil fuels (gas oil) used for driving static working machines and machinery in different economic sectors (industry, construction, agriculture, forestry) and in commercial transport of passengers and goods.

The subsidies for fossil fuels include direct subsidies as well as exemption from excise duty for used fuels.

The direct subsidy is in the form of a subsidy for electricity produced in height-efficient cogeneration (CHP): using fossil fuels for driving electricity generators.

Subsidies in the form of exemption from excise duty for fossil fuels (gas oil) used for driving static working machines and machinery in different economic sectors (industry, construction, agriculture, forestry) and in commercial transport of passengers and goods:

- Exemption from excise duty (50% of the average amount of excise on gas oil) for fossil fuels used to drive static working machines in industry, construction machinery, railway rolling stock and cableways and machinery and equipment on ski slopes (consumption for industrial and commercial purposes);
- Exemption from excise duty of 70% of the average amount of excise duty on gas oil used to drive agricultural and forestry machinery (including tractors);
- Exemption from excise duty on gas oil used as motor fuel for commercial transport in the amount of the difference between the amount of average excise duty determined for each calendar month by the Minister responsible for finance and the minimum amount set by Article 7 of Directive 2003 / 96 / EC.

[398] https://www.gov.si/en/news/2021-07-13-new-step-towards-slovenias-climate-neutrality/

[399] *Decree on support for electricity generated from renewable energy sources and from high-efficiency cogeneration, (OJ of Republic of Slovenia, No. No 26/2022, 25.02.2022)*

[400] *Excise Duty Act / Zakon o trošarinah (OJ of Republic of Slovenia, No. 47/16 and 92/21)*

Phase out of fossil fuel extraction

A national strategy for the complete cessation of coal mining in 2033 has been adopted[401]. There are subsidies for the gradual closure of the Trbovlje-Hrastnik Mine.

Phase out of fossil fuel use

Electricity generation

The NECP includes the aim for power plants to reduce the consumption of coal for electricity generation by at least 30% by 2030:

- Thermal power Šoštanj (TEŠ) will reduce the excavation and use of lignite by shutting down the fifth block,
- Thermal and heating power plant (TE-TOL) will phase out using imported coal for electricity production.

Complete stop of coal use for the production of electricity will be achieved in 2033[402].

Heating in buildings

The new Energy Act (EZ2)[403] (adopted on 23 April 2024) does not allow the design and installation of a natural gas or liquefied petroleum gas boiler in residential buildings and the residential part of the building in a commercial-residential building from January 2025.

Subsidies to the nuclear industry

There are no direct subsidies for nuclear industry in Slovenia, but the government established a fund for the decommissioning of the Krsko NPP[404], which is financed from a share of the price of the electricity produced in the Krsko NPP and sold in Slovenia.

The continued use of nuclear energy in Slovenia is one of the possible ways for ensuring security of supply, as defined in the Slovenian NECP. Finally, the decision about that has not yet been taken and is the subject of wider discussions.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Slovenia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Act Regulating the Gradual Closure of the Trbovlje-Hrastnik Mine and the Economic Development Restructuring of the Region.	Zakon o postopnem zapiranju Rudnika Trbovlje–Hrastnik in razvojnem prestrukturiranju regije (ZPZRT-H)	Ended	2023

[401] Ministry of Infrastructure: A national strategy for exiting coal and restructuring coal regions in accordance with the principles of a just transition, 2021

[402] Ministry of Infrastructure: A national strategy for exiting coal and restructuring coal regions in accordance with the principles of a just transition, 2021

[403] Energy Act (EZ-2), Official Journal of RS, No. 38/24

[404] Fund for financing the decommissioning of the Krško Nuclear Power Plant and for the disposal of radioactive waste from the Krsko NPP:

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Refund of excise tax for agriculture	Pravilnik o načinu vračila trošarine za energente, ki se porabijo za kmetijsko in gozdarsko mehanizacijo	Ongoing	Unknown
Refund of excise tax for commercial transport	Zakon o trošarinah (ZTro-1)	Ongoing	Unknown
Refund of excise tax for industry	Zakon o trošarinah (ZTro-1)	Ongoing	Unknown
Feed-in tariffs for electricity from high-efficiency cogeneration (CHP) - Fossil fuels	Uredba o podporah elektriki, proizvedeni iz obnovljivih virov energije in v soproizvodnji toplote in elektrike z visokim izkoristkom	Ongoing	Unknown
Temporary capping of petrol and diesel oil prices	Začasna omejitev cen bencina in dizelskega goriva	Ended	2022
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

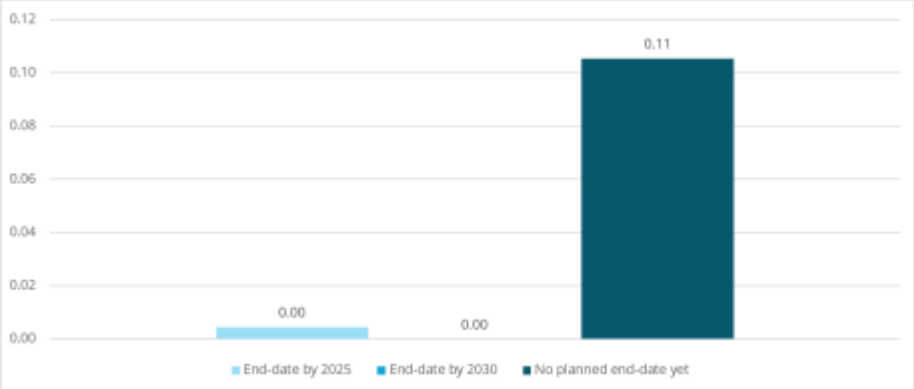
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 110 million, accounting for 6% of total energy subsidies in Slovenia. 96% of fossil fuel subsidies had no end-date.

Slovakia

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024										

Contribution to FFS phase out Positive contribution Negative contribution Not clear or no information

In 2019, Slovakia committed to achieving climate neutrality by 2050.[405]

Subsidies to fossil fuels

There are three specific fossil fuel subsidies in Slovakia: a) excise duty exemptions for fossil fuels aimed at reducing energy costs and increasing competitiveness for some user groups; b) reduction of system operation tariff provided for producers with combined fossil fuel and renewable energy installations; and c) brown coal/lignite mining support, designed to ensure maintenance of lignite plant for energy security purposes.

Excise duty exemptions for a broad range of fuels as well as energy use sectors is the first main fossil fuel subsidy in terms of costs via revenue expenditure (revenue foregone). The Slovak Republic levies specific excise taxes on mineral oil, coal, natural gas and electricity. A range of excise duty exemptions for electricity, gas, coal or mineral oil however mean that the tax burden falls almost completely on oil. Exemptions and reduced tax rates in the non-oil categories are available for:

- Electricity, gas and coal used by final household customers;
- Electricity used for some specified purposes (i.e. for industrial production if the electricity costs Represent more than 50% of the average own costs of the product manufactured);
- Electricity, coal and gas used for the transportation of persons and cargo by public;
- Transport (e.g. trains, underground and tramways);
- Electricity produced from renewable energy sources and co-generation;
- Pure biofuels;
- Natural gas and coal used (i) to produce electricity and co-generation as well as heat for domestic use, (ii) for operational and technological purposes and (iii) for any purpose other than motor fuel or as heating fuel.

Reduction of system operation tariff (under the renewable energy and combined heat and power scheme) is also provided for producers with combined fossil fuel and renewable energy installations. While the scheme is designed to support renewable energy, producers combining different sources of energy can obtain support for the entire installation, not just renewable component. Thus, the scheme

[405] https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698767/EPRS_BRI(2021)698767_EN.pdf

includes support to coal, gas and landfill gas and gas from sewage treatment plants. Most of applicants that fall into this category are district heating companies or industrial 'captive' power generators also connected to the grid, who have invested in renewables to diversify from fossil fuels.

Phase out of fossil fuel extraction

Lignite mining has been ceased in December 2023[406] following the coal phase out in Slovakia[407]. Lignite mining support was designed to ensure maintenance of lignite plant for energy security purposes. The subsidy was primarily provided to the electricity generator as a temporary reimbursement for non-economic baseload power generation for security of supply reasons.

The currently recorded support for mining regions is directed at mine rehabilitation and economic redevelopment of the Upper Nitra region. Extensive subsidies are envisaged for the region as it has been identified as one of the three key regions in Slovakia that will receive subsidies under the Slovak Just Transition Plan (JTP) under the Just Transition Fund (JTF). The JTF will help with the financing of the measures focused on creating new job opportunities for the workers in the coal sector following the lignite mine closure linked to the coal phase out.

Phase out of fossil fuel use

Electricity generation

The last coal fired power plant in Slovakia was phased out in December 2023[408]. The plant remained in operation to ensure energy security of the region until the completion of an important power connector in 2023. The subsidy provided for the un-economic coal-fired power plant has also been phased out in 2023.

However, coal use will remain in the electricity mix as the remaining of the coal is used the combined production of electricity and heat (CHP) plants for the so-called cogeneration.

Heating in buildings

The remainder of coal use in the energy mix is by the combined production of electricity and heat (CHP) plants for the so-called cogeneration.[409] In practice, these are mainly heating plants that use CHP technology to "green" their production. Roughly half of the district heat supplied to central heat supply systems is produced with this technology.

For the electricity produced in this way, heating plants collect the so-called surcharges under the CHP (KVET) subsidy. This is disbursed in the same manner as subsidies for producers of electricity from renewable energy sources (RES), for example operators of hydro or solar power plants. Similar to coal subsidies, this support is also financed through TPS collected from all electricity consumers.

The total share of coal in the fuel base of heating plants is gradually decreasing. While five years ago roughly a fifth of the heat produced came from coal, last year it was only around a tenth. It is envisaged that fossil fuel based CHP plants will gradually transition to lower carbon sources. This sector is expected to be one of the main sources of subsidies via the Modernisation Fund allocations for Slovakia[410].

[406] https://www1.pluska.sk/regiony/takto-vyzera-smutok-banikov-slzy-poslednou-vytazenou-tonou-uhlia
[407] *Press release : State aid for closing mines on the upper Nitra*, April 2022. Available at : https://www.hbp.sk/index.php/sk/Aktuality-2.
[408] https://www.seas.sk/novinky/novaky-koniec-uhlia-na-slovensku/
[409] https://www.energie-portal.sk/Dokument/uhlie-teplarne-110423.aspx
[410] https://www.minzp.sk/klima/modernizacny-fond/

Subsidies to the nuclear industry

Nuclear industry subsidies mainly include support measures for nuclear waste treatment. A state special-purpose fund, referred to as the National Nuclear Fund, was created in 1995 and is a subsidiary of the Ministry of Economy and Energy.

Finance provided for the National Nuclear Fund is guided by the principle that the costs of financing the final part are borne by the operator of the nuclear facility. The principle of "polluter pays", is applied following the EU directive. A specific issue in this area in Slovakia is that the decommissioned nuclear plant 'Jaslovske Bohunice' and part of the existing plan 'Mochovce' did not manage to accumulate during their operation sufficient funds for waste liquidation. The compensation for the disposal of these sources was transferred to all electricity consumers, who pay a levy intended to cover the so-called historical debt included in the price of electricity.

A reduction in the nuclear levy is being provided for electro-intensive users in Slovakia. This measure is being granted to trade intensive and energy intensive companies. It is justified on the competitiveness grounds, making these users pay the levy would disturb their competitiveness on the single EU market as their peers do not face such levy (and has been approved by the EC).

The Nuclear Fund secures, manages, distributes and provides the funds needed over time in a non-discriminatory and transparent manner. It also ensures adequate valuation of funds held in its accounts with the State Treasury. The direction of the activities of the Nuclear Fund, as well as all organizations involved in resolving the final part of the peaceful use of nuclear energy are guided by the strategic document "National Policy and National Program for Spent Nuclear Fuel and Radioactive Waste Management in the Slovak Republic".

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Slovakia

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
System operation tariff - Coal	TPS - Tarifa za prevádzkovanie systému - OZE	Ongoing	Unknown
System operation tariff - Gas	TPS - Tarifa za prevádzkovanie systému - OZE	Ongoing	Unknown
System operation tariff - CHP (total)	TPS - Tarifa za prevádzkovanie systému - KVET	Ongoing	Unknown
System operation tariff - CHP- Coal/ Brown Coal	TPS - Tarifa za prevádzkovanie systému - OZE	Ongoing	Unknown
System operation tariff - CHP-Oil	TPS - Tarifa za prevádzkovanie systému - OZE	Ongoing	Unknown
System operation tariff - CHP-Gas	TPS - Tarifa za prevádzkovanie systému - OZE	Ongoing	Unknown
Exemption from excise duty on electricity - CHP	Oslobodenie od spotrebnej dane z elektriny - VÚ KVET	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Exempt from excise duty on natural gas - power production	Oslobodenie od spotrebnej dane zo zemného plynu - výroba elektriny	Ongoing	Unknown
Exempt from excise duty on natural gas - CHP	Oslobodenie od spotrebnej dane zo zemného plynu - KVET	Ongoing	Unknown
Exempt from excise duty on natural gas - households	Oslobodenie od spotrebnej dane zo zemného plynu - domácnosti	Ongoing	Unknown
Exempt from excise duty on natural gas - trains	Oslobodenie od spotrebnej dane zo zemného plynu - železničná doprava	Ongoing	Unknown
Exempt from excise duty on natural gas - others	Oslobodenie od spotrebnej dane zo zemného plynu - ostatní	Ongoing	Unknown
System operation tariff - production of electricity from indigenous coal	TPS - Tarifa za prevádzkovanie systému - výroba elektriny z domáceho uhlia	Ongoing	2024
Exempt from excise duty on coal - power production	Oslobodenie od spotrebnej dane z uhlia - výroba elektriny	Ongoing	Unknown
Exempt from excise duty on coal - CHP	Oslobodenie od spotrebnej dane z uhlia - KVET	Ongoing	Unknown
Exempt from excise duty on coal - railways, water transport	Oslobodenie od spotrebnej dane z uhlia - železničná a riečna doprava	Ongoing	Unknown
Exempt from excise duty on coal - households	Oslobodenie od spotrebnej dane z uhlia - domácnosti	Ongoing	Unknown
Exempt from excise duty on coal - others	Oslobodenie od spotrebnej dane z uhlia - ostatní	Ongoing	Unknown
Reduced excise duty on mineral oil - Gasoline with biogenic substance	Znížená sadzba spotrebnej dane z minerálneho oleja - Motorový benzín s obsahom biogénnej látky	Ongoing	Unknown
Reduced excise duty on mineral oil - Gas oil with biogenic substance	Znížená sadzba spotrebnej dane z minerálneho oleja - Plynový olej s obsahom biogénnej látky - SA.49509 – Daňové zvýhodnenie biopalív	Ongoing	Unknown
Compensation for the indirect costs of EU ETS	Schéma štátnej pomoci pre podniky v odvetviach a pododvetviach, v prípade ktorých sa predpokladá značné riziko úniku uhlíka v súvislosti s premietnutím nákladov emisných kvót v rámci EUETS do cien elektrickej energie	Ended	2020
Construction of an LNG terminal in the public port of Bratislava - pre-project preparation	Vybudovanie terminálu LNG vo verejnom prístave Bratislava – predprojektová príprava	Ended	2019
Gas price cap for households	Strop ceny plynu pre domácnosti	Ongoing	2024
Support for mitigation and liquidation of the consequences of mining in coal mining - closure of mining fields	Podpora útlmu a likvidácie následkov ťažby v uhoľnom baníctve - uzatváranie ťažobných polí	Ongoing	Unknown
Support for technical works to mining	Support for technical works to mining	Ongoing	Unknown

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Coal Allowances for Former Miners and Miners' Widows		Ongoing	Unknown
Aid to cover the exceptional costs of Hornonitrianske bane Prievidza (HBP) related to the closure of its mining operations.	Aid to cover the exceptional costs of Hornonitrianske bane Prievidza (HBP) related to the closure of its mining operations.	Ended	2023
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

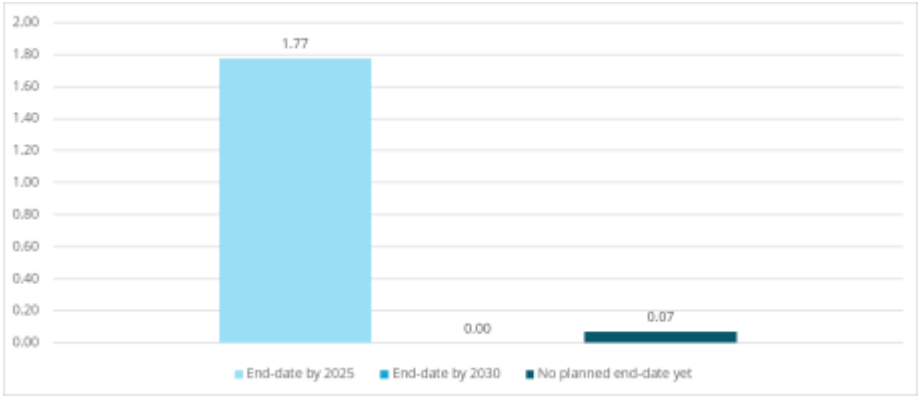
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 1.85 billion, accounting for 46% of total energy subsidies in Slovakia. Only 4% of fossil fuel subsidies had no firm end-date.

Sweden

Energy policies announced or implemented by the government

Overview

The table hereunder presents an overview of the intentions, ambitions or commitments of the country about energy phase out plans. Each category is detailed in the subsections below. Subsections on economic sectors using fossil fuels for which no relevant information was available have been omitted.

					End-date for fossil fuel use in					
Year	Intention to phase out (all) FFS	Intentions / ambitions to phase out fossil fuels	Ambitions written in laws / plans	End-date for fossil fuel extraction	Electricity generation	*Subsector: Coal-fired power plants*	Industry	Transport	Heating (buildings)	Agriculture
2024						No coal				

Contribution to FFS phase out Positive contribution | Negative contribution | Not clear or no information

The current Government has been in power since 2022. In its environmental policy, the Government has a strong focus on electrification, and the deployment of nuclear power. Furthermore, the Swedish Government has shifted focus away from new national climate policy to implementation of EU climate policy and the fit-for-55 legislative package in particular.

The Government published their climate action plan (Regeringens klimathandlingsplan – hela vägen till nettonoll), as required by the Swedish Climate Act, SFS 2017:720. The climate action plan has been heavily criticised by academia, and governmental agencies and expert councils such as the Swedish Climate Policy Council (Klimatpolitiska Rådet, an independent expert body in the field of climate established by Parliament and Government), as well as The Swedish Fiscal Policy Council (Finanspolitiska rådet, an independent expert body in the field of fiscal policy established by Parliament and Government).

Both the Climate Policy Council and the Swedish Fiscal Policy Council have noted that the measures and ambitions as described in the Government's climate action plan are insufficient to achieve Swedish climate targets, as well as EU climate targets. However, as part of their climate action plan, the Government has proposed the establishment of a parliamentary committee to identify a broad spectrum of measures to achieve the Swedish climate targets.

Subsidies to fossil fuels

No information found on plans to phase out fossil fuel subsidies.

However, Sweden is part of the Glasgow Climate Pact and First Global Stocktake. Sweden is also a founding and active member of the Friends of Fossil Fuel Subsidy Reform.

Phase out of fossil fuel extraction

No information found.

Phase out of fossil fuel use

Electricity generation

There is an explicit target to achieve 100% fossil free electricity production in 2040. This is a change from the previous Government's target to achieve 100 % renewable electricity production in 2040.

Industry

There is a government-initiated network called "Fossil Free Sweden" which gathers actors from across a wide range of sectors, including industry, energy, real estate etc. Through this initiative, sector specific action plans have been developed with specific targets including several relating to Net Zero

or fossil free operations. It is completely voluntary though, no actual requirements from the Government.

Subsidies to the nuclear industry

As part of the 2024 budget bill, the Government has allocated state credit guarantees totalling 400 000 000 000 SEK to investments in new nuclear power.

This measure is yet to materialize in its entirety. The Government seems to currently be in the process of assessment as regards EU state aid rules, while the Swedish National Debt Office has been tasked with preparing to issue state credit guarantees for nuclear power.

Though not a direct subsidy, the agreement states that the application fee for new nuclear reactors will be reviewed with a view to significantly lower them. More funding will also be directed towards legal entities involved in the application process to quickly handle the application process for new nuclear power. A new "fast-track" is to be established for applications related to nuclear energy.

Other energy subsidies

No information found on the phase out of other energy subsidies.

Analysis of fossil fuel subsidies

The following table summarizes subsidies that support fossil fuels use in the country.

List of identified subsidies that support fossil fuels use in Sweden

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Public R&D expenditures for fossil fuels		Ongoing	Unknown
CO2 tax reduction on diesel fuel to agricultural and agricultural machinery forestry sector.	Nedsatt koldioxidskatt för diesel till arbetsmaskiner och fartyg inom jord-, skogs- och vattenbruksnäringarna	Ongoing	Unknown
CO2 tax reduction on diesel in the rail transport sector	Koldioxidskattebefrielse på bränsle vid bandrift	Ongoing	Unknown
CO2 tax reduction on heating in the agriculture sector	Nedsatt koldioxidskatt för uppvärmningsbränslen inom jord-, skogs- och vattenbruksnäringarna	Ended	2017
Energy tax exemption for natural gas	Energiskattebefrielse för naturgas och gasol som drivmedel	Ongoing	Unknown
Energy tax exemption on diesel in the rail transport sector	Energiskattebefrielse för bränsleförbrukning vid bandrift	Ongoing	Unknown
Carbon tax reduction for industrial district heating supply	Nedsatt koldioxidskatt för fjärrvärmeleveranser till industrin	Ended	2019
CO2 tax reduction on diesel fuel in mining industry activities.	Nedsatt koldioxidskatt för dieselbränsle i gruvindustriell verksamhet	Ended	2019
Reduced carbon dioxide tax on heating fuels in industry outside the EU ETS.	Nedsatt koldioxidskatt för uppvärmningsbränslen inom industrin utanför EU ETS	Ended	2017
Energy tax reduction on fuels in CHP	Nedsatt energiskatt på bränsle i kraftvärmeverk	Ended	2019

Subsidy name (English)	Subsidy name (National Language, if available)	Status	End-date
Reduced energy tax for diesel in mining industry	Nedsatt energiskatt för diesel i gruvindustriell verksamhet	Ended	2019
Energy tax reduction on heating fuels in the agriculture sector	Nedsatt energiskatt på uppvärmningsbränslen inom jord-, skogs- och vattenbruksnäringarna	Ended	2021
Reduced energy tax on heating fuels in industry	Nedsatt energiskatt på uppvärmningsbränslen inom industrin	Ended	2021
Energy tax reduction for industrial district heating supply	Nedsatt energiskatt för leveranser av värme och kyla till industrin m.m.	Ended	2021
Strategic reserve	Lag (2003:436) om effektreserv	Ongoing	2025
The Electricity Certificate System - peat	Elcertifikatsystemet	Ongoing	2035
Tax reductions for fuel used in installations covered by EU ETS	Skattereduktion för bränslenförbrukning inom EU ETS	Ended	2022
Tax reduction for diesel and petrol	Sänkt skatt på bensin och diesel (exkl. jordbruk)	Ongoing	Unknown
Extended temporary tax reduction on diesel in agriculture, forestry and aquaculture	Förlängd skattenedsättning samt sänkt skatt på diesel för jord- och skogsbruk	Ongoing	2025
Excise tax exemption on kerosene consumed in domestic air traffic		Ongoing	Unknown
Excise tax exemption on petroleum products consumed in inland water navigation		Ongoing	Unknown
Excise tax exemption on petroleum products consumed for fishing purpose		Ongoing	Unknown

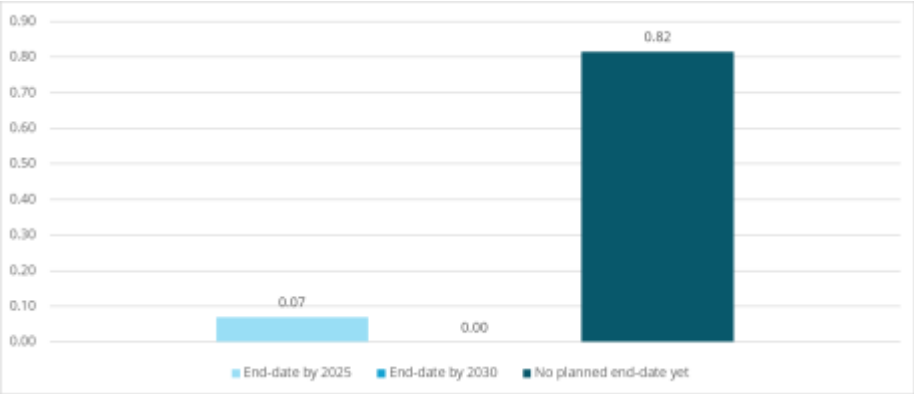
Fossil fuel policy / target alignment

According our interpretation (see "General information applicable to all countries" ahead) of the *General Union Environment Action Program to 2030*, it is expected the phasing out of all FFS identified above.

We have not identified another quantified target regarding FFS phase out.

Figure hereunder summarizes FFS amounts with an end-date already planned as of June 2024 and amounts with an end-date yet to be planned.

Figure 1: Target alignment end-date of FFS



In 2023, fossil fuel subsidies amounted to EUR 0.88 billion, accounting for 19% of total energy subsidies in Sweden. 92% of fossil fuel subsidies had no end-date.

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

– by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

– at the following standard number: +32 22999696, or

– by email via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from: https://op.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: http://eur-lex.europa.eu

Open data from the EU

The EU Open Data Portal (http://data.europa.eu/euodp/en) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial purposes.

MJ-01-25-017-EN-N

ISBN 978-92-68-23919-3

Publications Office
of the European Union