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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE
COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE
COMMITTEE OF THE REGIONS**

Report on energy prices and costs in Europe

1. INTRODUCTION

The 2024 edition of the energy prices and costs report emerges against the backdrop of a prolonged period of turmoil that has characterised the global and European energy markets since 2020. The energy price slump experienced during COVID-19 gave way to a sustained period of high energy prices from mid-2021 until end of 2023. Exceptionally high prices had, and continue to have, serious implications for European households, industry, the broader economy and public finances. The purpose of this report is to analyse the evolution of energy prices and to provide a clear understanding of their impact on energy costs for EU industry and households, on EU energy imports and energy taxes.

The European Union has established an ambitious energy policy framework under the European Green Deal, which requires further reinforcement in response to past crises and ongoing challenges. Furthermore, the geo-economic landscape necessitates tangible actions to guarantee competitive and affordable energy for both businesses and citizens, while ensuring continued progress towards decarbonisation. The Clean Industrial Deal and Affordable Energy Action Plan aim to address these challenges.

This report provides a comprehensive overview of the evolution of energy prices and costs in the European Union from 2010 to 2023, with additional data covering the first half of 2024 where available¹. Building on the approach used in previous editions², the report draws on data and analyses from an in-depth study³ and the Commission's own work, prioritizing publicly available statistical sources and supplementing these with targeted data collections.

Wholesale prices have stabilised on both electricity and gas markets since the energy crisis of 2021-2023, although at a level higher than their historical averages.⁴ On the other hand, due notably to the time lag in transmission of prices between the two market segments, **the drop in wholesale prices is yet to bring down retail energy prices**, which are still higher for households and enterprises than before 2021. Household gas prices were almost twice as high in 2023 than before the crisis. Similarly, industrial gas and electricity prices, while lower than during the crisis, are still 2-4 times higher than in the EU's main trading partners, which threatens the long-term competitiveness of European industry. Especially in the energy-intensive sectors, soaring energy prices are a key factor impacting their competitiveness.

The EU is dependent on imports to cover >90% of its oil and gas consumption. Aside from the energy security considerations, the **fossil energy import bill**, which reached EUR 427 billion in 2023 (2.5% of EU GDP), is a significant drain on the European economy. Crude oil remains the main import (with 56% share of the total bill), followed by natural gas and coal. Despite a sharp decrease as prices of these commodities came down, the import bill in 2023 was still 45% higher than the 2014-2020 average. The 2022 RePowerEU Plan proposed measures to enhance the security of energy supply, accelerate the deployment of renewables, moderate demand and increase energy efficiency to achieve a more flexible, cost-efficient, and resilient European energy system in the future.

¹ Depending on availability, some benchmarks were updated as of September 2024 to reflect latest available data

² COM(2016)769 final, COM(2019)1 final, COM(2020)951 final and COM(2024)136

³ The study will be published through the Publications Office.

⁴ In nominal terms energy price levels are higher than before crisis, but in real terms (deflated by price indices) they are moving down very close to the level of real prices before the crisis.

Finally, the energy crisis also had an impact on **energy taxation policy**. Together with other measures, energy tax revenues decreased at the same time as many Member States compensated household and industrial for higher energy costs.

2. TRENDS IN ENERGY PRICES

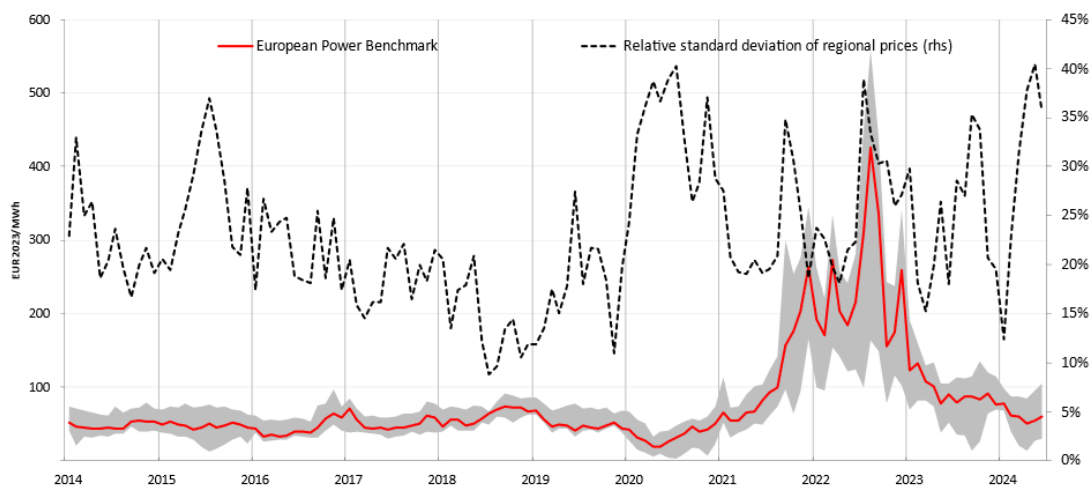
2.1. Electricity prices

From 2015 to 2019, European **wholesale electricity prices** fluctuated between 40 and 60 EUR/MWh. **Spot prices** were relatively stable until the end of 2018, then decreased in 2019 due to weak demand, lower fuel costs, and increased renewable generation. In 2020, COVID-19 led to a further significant drop in the demand for electricity, which, together with rising renewable generation, pushed wholesale prices to exceptionally low levels (17 EUR/MWh in May 2020), including increasingly frequent periods of negative prices during the day.

The energy crisis of 2021-2022 led to a widespread disruption in global and European energy markets. This also impacted wholesale electricity prices in the EU, as higher gas prices (see Chapter 2.2 on gas) drove electricity prices upwards⁵ to between 150 and 270 EUR/MWh (Figure 1). On the top of soaring gas prices that commanded higher electricity prices, low or variable levels of hydropower and renewable generation, as well as nuclear outages (due to maintenance), pushed electricity prices to record highs during 2022 (reaching 400 EUR/MWh in August 2022).

However, since the end of 2022, wholesale electricity market prices stabilised at lower levels on day-ahead markets, although at a level higher than their historical averages (85 EUR₂₀₂₃/MWh average in Q4 2023 compared to 56 EUR₂₀₂₃/MWh on average in 2008-2020 period). Prices on forward markets have in 2023 also stabilised above their historical average.

Figure 1: Evolution of monthly average wholesale day-ahead baseload electricity prices in Europe in EUR/MWh, showing the European Power Benchmark and the range of minimum and maximum prices across the main EU markets



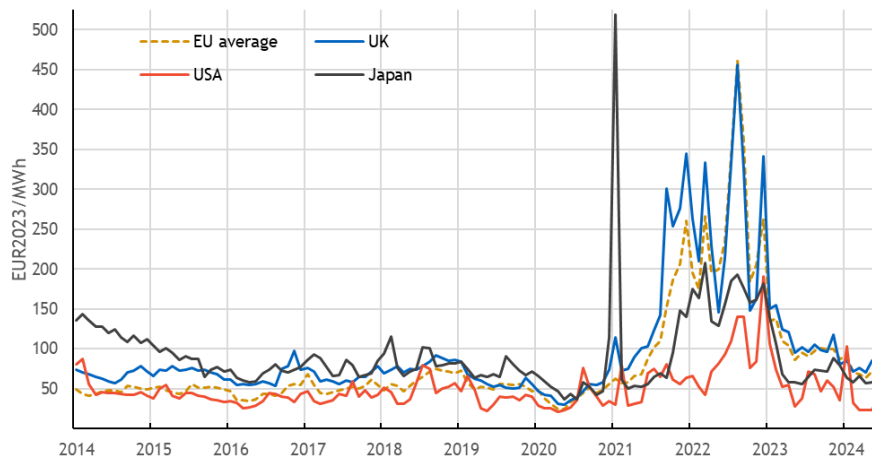
Source: Trinomics et al. (2024), based on data from S&P Platts, ENTSO-E

In the decade before the energy crisis, EU wholesale electricity prices were lower than, or comparable to, those in Japan and the UK (Figure 2) but somewhat higher than US prices. The energy crisis led to a convergence of prices between Europe and Asia. At the same time, prices in the US, due to cheap domestic gas supply, stayed comparatively low, further increasing the gap between European and US electricity wholesale prices⁶.

⁵ In Europe, gas-fired power stations are often the marginal technology setting the wholesale electricity prices.

⁶ No data available for China after 2020.

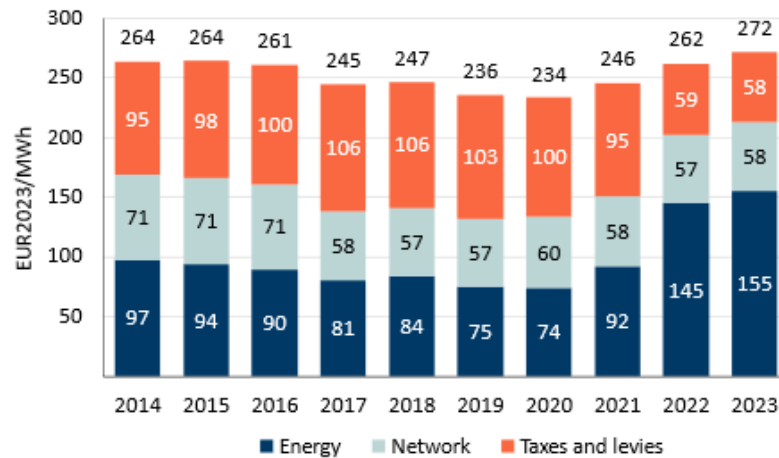
Figure 2: Comparison of monthly average day-ahead wholesale electricity prices in the EU with global trade (EUR₂₀₂₃/MWh)



Source: Trinomics et al. (2024), based on data from S&P Platts, ENTSO-E, JEPX, EIA

Retail electricity prices have also increased in 2022 and 2023, following the wholesale electricity prices, which were passed on to consumers with a time delay, despite the increasing use of dynamic price contracts. On average, the *energy component* of household retail prices increased considerably in this period, while the share of *taxes and levies* decreased, driven by temporary compensation measures taken by national authorities across the EU-27 (Figure 3).

Figure 3: Evolution and composition of the EU household electricity price (without VAT)



Source: Trinomics et al. (2024), based on data from Eurostat (nrg_pc_204_c), VaasaETT

In concrete terms, the average EU27 retail household electricity price increased by 12% to 262 EUR₂₀₂₃/MWh⁷ between 2020 and 2022. In 2023, prices increased by a further 4% to 272 EUR₂₀₂₃/MWh. During the crisis, retail electricity prices peaked above 500 EUR/MWh in Austria, Belgium, Denmark, Germany, Italy and the Netherlands.

The situation of retail household prices varies widely across Member States, in part due to their recently introduced retail market interventions⁸ (Figure 4). Many countries temporarily provided direct subsidies or reduced their taxes in 2023 to alleviate the impact of price increases and some MS had very low or even negative taxes for electricity for households,

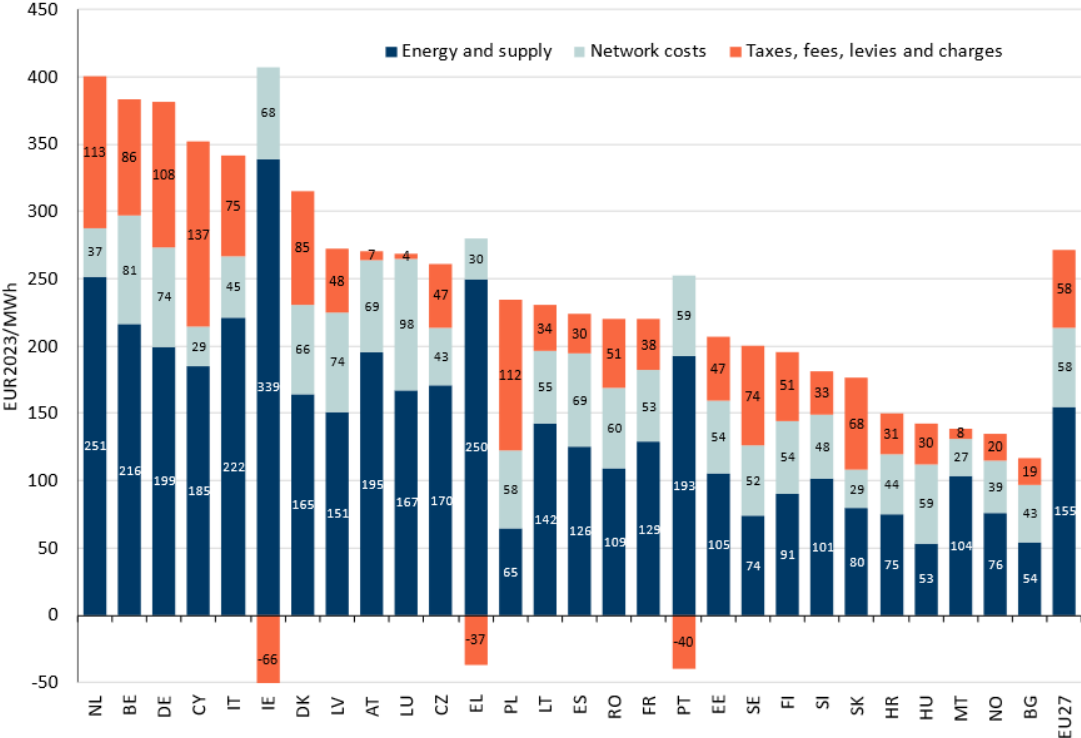
⁷Prices refer to DD consumption band, in real euros (EUR₂₀₂₃ means adjusted for inflation with 2023 as the base year)

⁸ Such as in Hungary, Malta or Bulgaria.

including Ireland (66 EUR/MWh subsidy), Portugal (40 EUR/MWh subsidy) and Greece (37 EUR/MWh subsidy)⁹.

Similar to previous years, there are significant differences in household electricity prices across Member States. In 2023, the highest average retail market price in the EU was recorded in Belgium with 383 EUR₂₀₂₃/MWh, whereas Bulgaria had the lowest at 116 EUR₂₀₂₃/MWh.

Figure 4: Household electricity prices in EU Member States¹⁰ (2023, DD consumption band)



Source: Trinomics et al. (2024), based on data from Eurostat (nrg_pc_204_c), VaasaETT

Industrial electricity prices followed a trajectory similar to household prices increasing from 132 EUR/MWh in 2020 to 238 EUR/MWh in the second half of 2022 (80.3%), reaching peak in first half of 2023 of 241 EUR/MWh, started decreasing in latter part of 2023, landing at 197 EUR/MWh in first half of 2024. But unlike household prices, industrial electricity prices are driven more by the wholesale market, because of their bigger exposure to the energy price component. The massive growth in the share of the energy price component was only partially counteracted by reductions in taxes and levies. In 2023, the energy price component represented 63% of the overall electricity costs for medium industrial electricity consumers (in the ID consumption band¹¹), while network charges’ share has shrunk to 12% of costs (from about 30% in 2018 and before), and taxes and levies represented only 25% of overall costs.

In **international comparison**, electricity prices increased significantly across all major

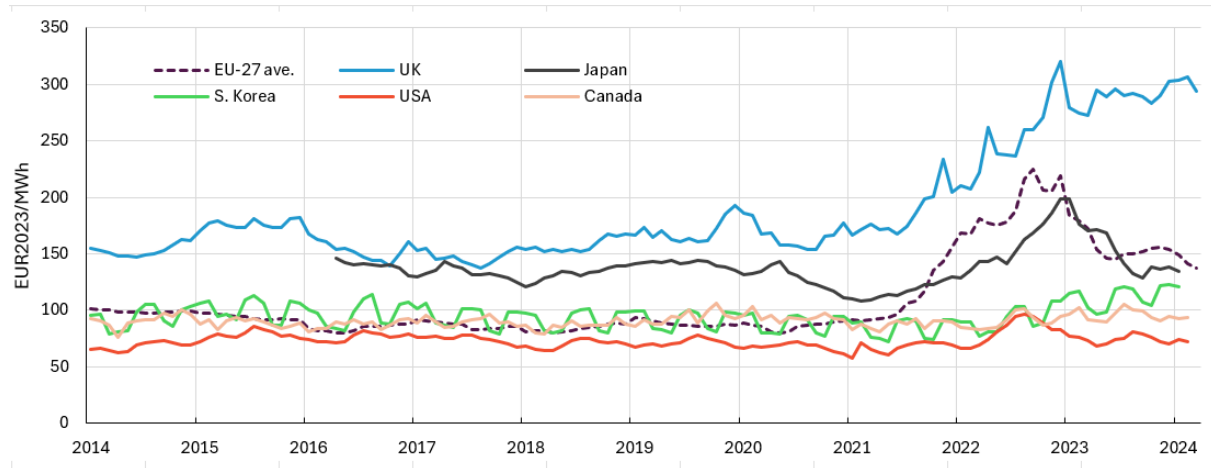
⁹ The Irish measure is particularly notable, where the consumption subsidy mitigated the exposure of retail prices (via the “Energy and supply” component of 339 EUR/MWh in 2023) to the high wholesale market prices.

¹⁰ The DD consumption band (Eurostat) is used as the main point of reference for this comparative analysis, in some Member States another might be the most representative.

¹¹ The ID consumption band (Eurostat) is representative for medium industrial electricity consumer companies; on average 24% of the total non-household electricity consumption in EU Member States falls in this band.

economies during the energy crisis, except in the US (Figure 5). The electricity prices faced by the EU industry were similar to those of Japan in 2023, whereas the EU industry used to have a competitive advantage before the energy crisis. The UK's electricity prices remained at very high levels throughout 2023, while prices in the USA were relatively stable and continued close to their historical levels.

Figure 5: Industrial electricity prices in the EU-27, USA, UK, Japan, Canada and South Korea (EUR₂₀₂₃/MWh)



Source: Trinomics et al. (2024), S&P Platts, Eurostat, Enerdata EnerMonthly

2.2. Gas prices

Wholesale gas prices in EU gas hubs fluctuated between 5 and 30 EUR/MWh in the period from 2015 to 2020, then fell in 2020, when a relatively mild winter and COVID-19 lockdowns depressed gas prices, below 5 EUR/MWh in May-July 2020. Increasing demand in the post-COVID recovery period started to drive gas prices higher from mid-2021 and by December 2021, tight European gas markets drove wholesale prices to 113 EUR/MWh. The Russian invasion of Ukraine, the weaponisation of its gas exports by Russia and subsequent uncertainty around gas supplies led to continuing high spot prices, staying above 100 EUR₂₀₂₃/MWh¹² throughout June-December 2022, while the share of Russian pipeline gas in European imports dropped from 51% in 2021 to 15% in 2023. Overall Russian gas imports' share dropped from 45% to 15%, the share of Russian LNG in EU LNG imports dropped to 15% from 20% in the same period of 2021-2023. Despite lower demand, prices increased further and reached an all-time high peak spot price on 26 August 2022 at 320 EUR₂₀₂₃/MWh.

Starting in September 2022, gas spot prices gradually decreased from the peak in August 2022 to 42 EUR₂₀₂₃/MWh by April 2023 due to several reasons – high storage levels, a mild winter, and reduced uncertainty about Russian pipeline supply (based on RePowerWU efforts to limit the gas consumption in EU, but also Russian resolve to stop supplying certain EU Member States) and positive developments in LNG import capacity. By early 2024, a new 'price equilibrium' has emerged at around ~30-40 EUR₂₀₂₃/MWh (Figure 6) reflecting the phasing out of Russian pipeline gas, reduced domestic production in the EU and the shift from pipeline supply to LNG (liquefied natural gas) imports.

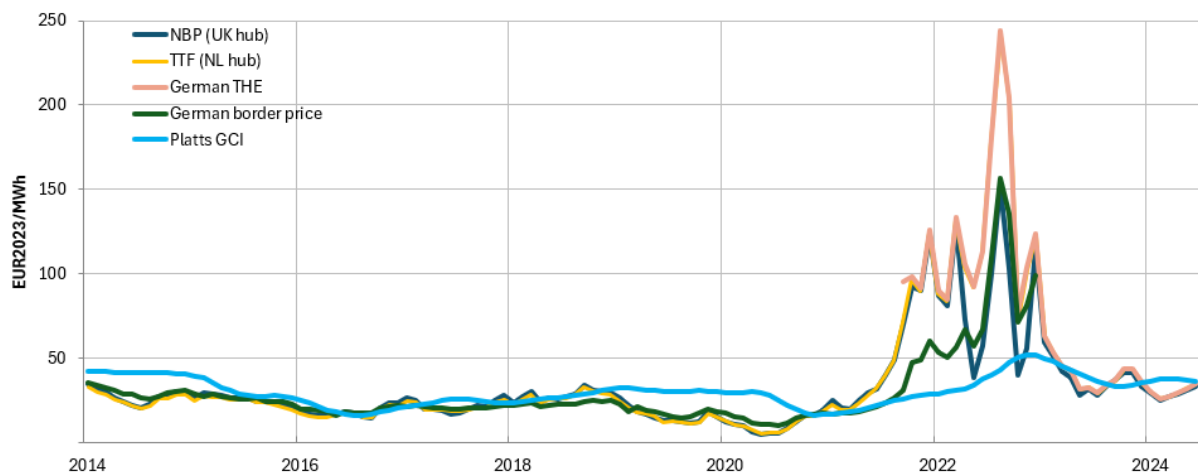
Regional wholesale price differences (e.g. between the TTF, NBP and THE hubs) are largely

¹² EUR₂₀₂₃ means in 2023 euros (real euros).

explained by the differences in market characteristics in terms of pipeline, LNG export and interconnection capacities with neighbouring regions. In general, markets with multiple import sources (e.g. several gas pipelines and access to LNG terminals) show a lower price level than markets with only one supply source.

Wholesale natural gas prices are influenced by a number of factors such as temperature (through heating demand), the level of industrial activities, the availability of renewable power generation (mainly through demand for gas-fired power generation), filling levels of gas storage facilities and injection rates to fill storages, pipeline and LNG imports. One of the most important recent factors defining gas prices was the shift of gas imports from pipeline gas to LNG imports, which further exposed European gas markets to global LNG markets and thus created higher price volatility.

Figure 6: Selected wholesale day-ahead gas prices in European gas hubs

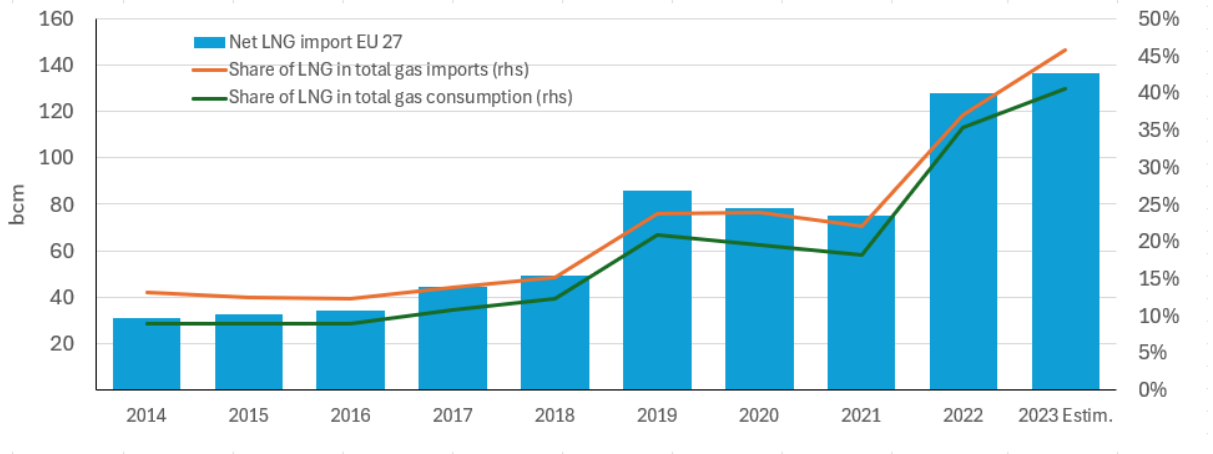


Source: Trinomics et al (2024), based on data from P Platts, Enerdata EnerMonthly

LNG only played a balancing role in the EU's gas supply prior to 2021, which can partly be linked to the cost competitiveness of Russian pipeline gas over LNG¹³, and the abundantly available European supply coming from the Netherlands (up until 2023). To replace Russian pipeline gas, Europe turned to increased imports of LNG, coming especially from the US (Figure 7), the share of which increased from 27% in 2021 to 43% in 2023, and other global sources, such as Qatar, which increased LNG exports to the EU by 22% in 2022 and by 12% in 2023. In the same period of 2021-2023, Russia's LNG exports' share decreased from 20% to 15% in the context of almost doubling overall EU LNG imports, while Russian LNG volumes increased by 32%. This is supplemented by increased pipeline imports from Norway, Algeria and Azerbaijan. As Russian pipeline gas imports shrank dramatically, the share of LNG in the overall imports doubled between 2021 and 2023 (from 15-20% to 35-40%).

¹³ [Baker Institute for Public Policy. \(2023\). Why is Europe not replacing Russian pipeline gas with long-term LNG contracts?](#)

Figure 7: LNG imports and their share in the EU-27 total gas imports and consumption

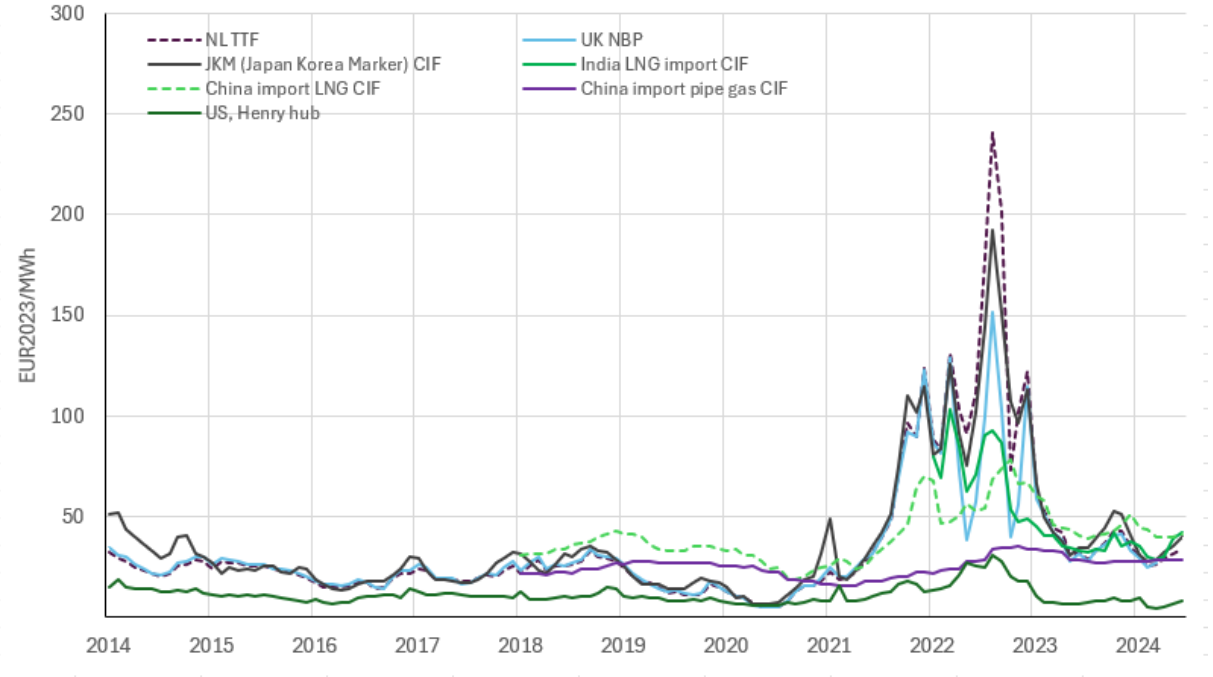


Source: Trinomics et al. (2024), based on data from ENTSO-G, Eurostat

This shift in European gas supply, in turn, impacted the global LNG markets as well, **as Europe became the biggest LNG importer in 2022-2023, overtaking Japan, China and South Korea.** Additional EU demand has driven up global LNG prices and redirected a significant amount of LNG shipments, which previously favoured Asian markets, to Europe.

A **comparison of international wholesale natural gas prices** clearly shows this impact: with the exception of the US, both the EU and major LNG importing countries (Japan, South Korea, China and India) experienced price spikes (Figure 8), while prices in the US did not change drastically during the same period.

Figure 8: Day-ahead wholesale gas prices in the EU (NL TTF) and its major trading partners¹⁴

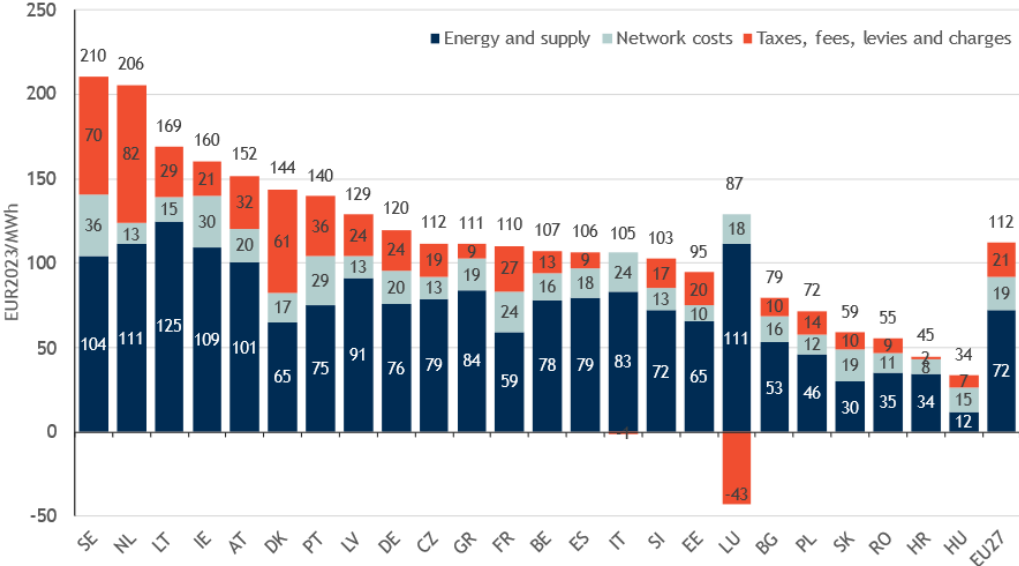


Source: Trinomics et al., based on data from S&P Platts

¹⁴ For Japan/Korea, India and China LNG CIF prices are used as proxy. All prices are EUR₂₀₂₃.

Retail gas prices (Figure 9) are mainly driven by wholesale gas prices, but changes during 2021 and 2022 were reflected differently (in the magnitude and the speed of the pass through) across Member States. This was mainly due to differences in type and level of national crisis mitigation measures, but also to Member States' difference in contract-length structures and retailers' difference gas procurement strategies (long-term contracts, price hedging).

Figure 9: Average household gas prices in EU Member States¹⁵ in 2023 in the D2 consumption band



Source: Trinomics et al. (2024), based on data from VaasaETT, Eurostat

In parallel with the large increase in wholesale gas prices in 2021 and 2022, *average household prices* started to increase from their 2021 level of 70-80 EUR₂₀₂₃/MWh to 125 EUR₂₀₂₃/MWh¹⁶ by August 2022. Household prices were highest from Q3 2022 to Q2 2023 at 112 EUR₂₀₂₃/MWh, after which they decreased and stabilised in all Member States, at levels almost twice as high as pre-crisis (100 EUR₂₀₂₃/MWh instead of ~60 EUR₂₀₂₃/MWh).

Due to differences in retail market characteristics, national crisis measures and their consequences for the pass-through rate there are significant differences in household gas prices between Member States: in 2023 the highest prices were observed in Sweden and the Netherlands (~210 EUR₂₀₂₃/MWh) and the lowest in Slovakia, Romania, Croatia and Hungary (all lower than 60 EUR₂₀₂₃/MWh).

The relative shares of energy costs, networks charges and taxes and levies in household gas prices also changed significantly. The energy costs component (wholesale price plus a mark-up) accounted for 43% of the retail price in 2020 but reached 64% in 2023. During the same period, the share of the network charges component dropped from 24% to 17%, while the share of taxes and levies dropped from 33% to 19%, mostly as a result of government interventions (lower tax rates or refunds) in retail prices.

Industrial retail gas prices in the EU increased significantly during the energy crisis: prices for the medium industrial gas consumers (I3 consumption band)¹⁷ almost doubled from 40 EUR₂₀₂₃/MWh in 2021 to 76 EUR₂₀₂₃/MWh in 2023. For the largest industrial gas consumers

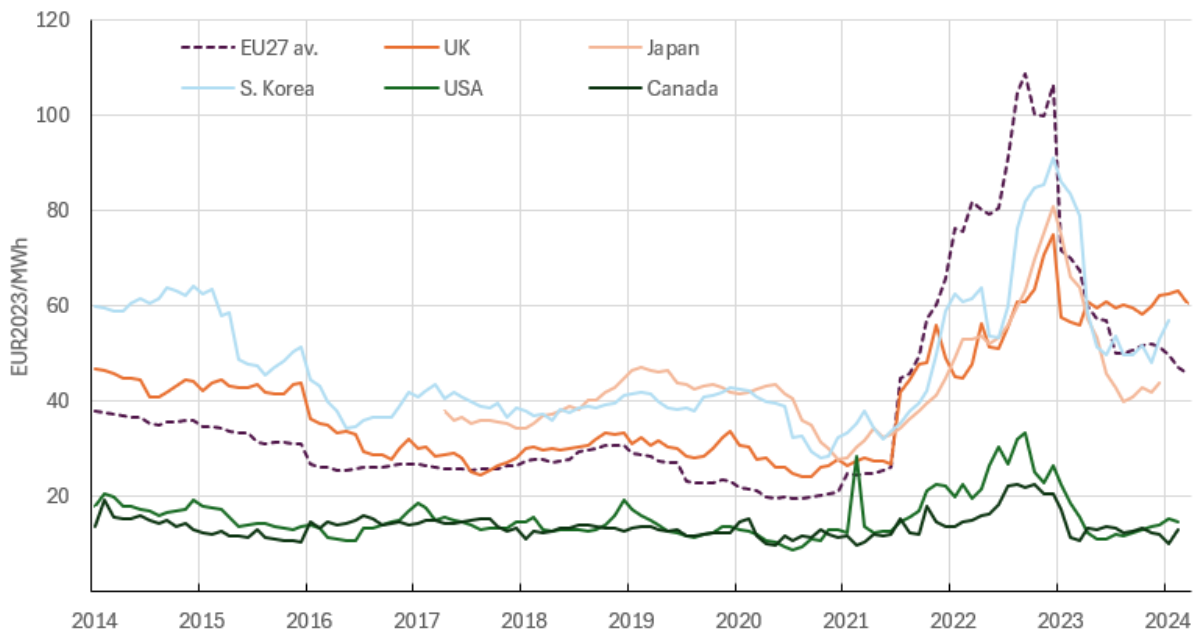
¹⁵ Eurostat does not report retail gas prices for Cyprus, Finland and Malta.

¹⁶ EUR₂₀₂₃ means in 2023 euros (real euros).

¹⁷ I3 consumption band (Eurostat) is for SME and middle companies with consumption between 10.000 GJ and 99.999 GJ

(I5¹⁸ band), prices jumped from 39 EUR₂₀₂₃/MWh in 2021 to 87 EUR₂₀₂₃/MWh in 2022 then fell to 59 EUR₂₀₂₃/MWh in 2023. Significant gas price increases led to large energy cost increases, especially for energy-intensive businesses. The higher gas price levels decreased the competitiveness of European industry, especially in energy-intensive sectors, compared with competitors such as the US and China, where prices remain substantially lower (Figure 10).

Figure 10: Industrial end-user (I5 band) natural gas prices in the EU and its major trading partners



Source: Trinomics et al (2024), based on data from Eurostat, Enerdata EnerMonthly

2.3. Oil and coal

Recent years have also seen new episodes of volatility in **crude oil prices**, which fell to less than 20 USD/barrel (dated Brent) in April 2020 due to significantly reduced demand and excessive supply during the first months of COVID-19 lockdowns. Crude oil prices started to rise in parallel with economic recovery and the easing of COVID travel restrictions, peaking at 130 USD/barrel in March 2022. Since then, prices fell to between 70-80 USD/barrel (Figure 11), despite OPEC+ production cuts and continuing geopolitical conflicts in the Near and Middle East, mostly due to increased production in the US and relatively low consumption in Asia.

¹⁸ I5 consumption band (Eurostat) is representative for big companies with consumption between 1.000.000 GJ and 3.999.999 GJ

Figure 11: Daily Europe Brent Spot Price FOB (USD and EUR per barrel, nominal prices)

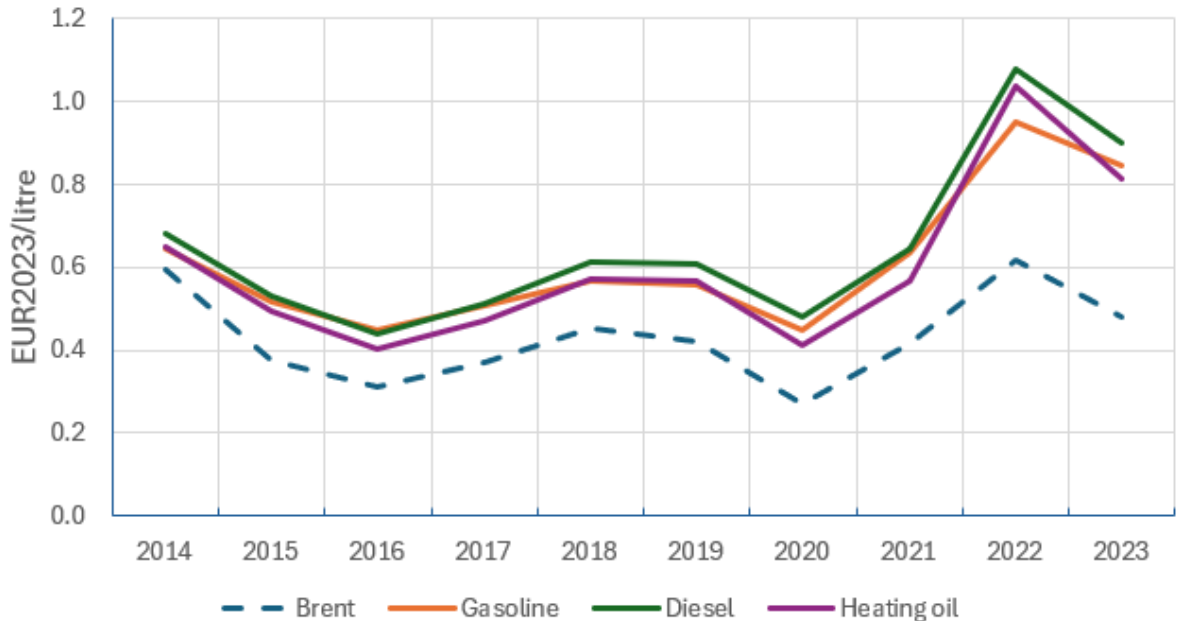


Source: DG ENER ENERScope, based on Energy Market Observatory database

Brent prices in 2023 averaged 82 USD/bbl and the year was characterized as a “stable year after three turbulent years” by the IEA. Oil supply remained high and is expected to stay high, with planned capacity expansions in non-OPEC countries. On the demand side, further global emission reductions, increased attention for energy security and subdued industrial demand, coupled with the transition to renewable energy in various economic sectors, created downward pressure on oil prices, which was still felt in 2024.

The retail prices of **oil-based fuel products** (Figure 12) closely followed the crude oil price trend, and significantly declined after the autumn of 2022. Diesel and heating oil experienced more severe price hikes mainly due to globally restricted refinery capacities.

Figure 12: Average annual retail price of oil products in the EU-27 in EUR2023/litre, excluding taxes and duties



Source: DG ENER ENERScope, based on Energy Market Observatory database

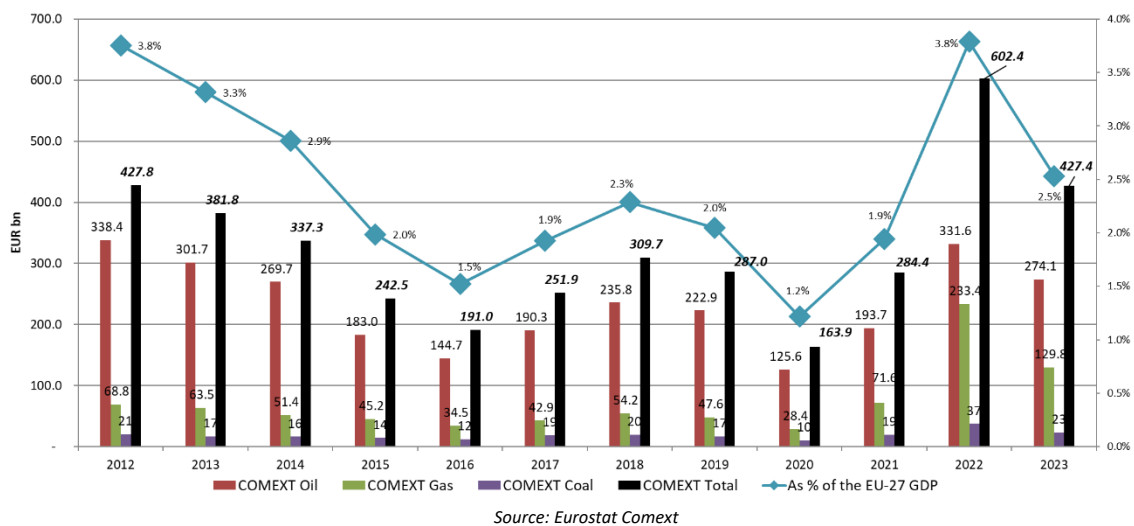
3. TRENDS IN ENERGY COSTS

3.1. EU energy import bill

The EU is a net importer of energy and depended on imports to cover 63% of its energy consumption in 2022. The energy import bill of the EU depends on the quantity of the fuels, the prices of these fuels (increasing set by global markets) and the EUR/USD exchange rate. In 2022, the energy import bill reached an estimated EUR 600 billion (3.8% of EU27 GDP). Both oil and gas prices contributed to the increase (Figure 13).

Following the drop in prices, the energy import bill decreased in 2023 to an estimated EUR 427 billion (2.5% of EU GDP), mostly attributable to lower natural gas and LNG prices. Nevertheless, the energy import bill is still significantly higher than before and the sharp increase in 2021-2022 shows how much fossil fuel prices are weighing on the EU economy.

Figure 13: Estimated EU energy import bill 2014-2024 (billion EUR; % EU GDP)



Putting this differently: if the clean energy transition had been accelerated before the crisis, the EU would have had fewer fossil fuels in the energy mix (still 69% in 2022) and the impact of volatile fossil fuel prices on European energy prices could have been lower.

3.2. Household energy expenditure

The energy expenditure of European households (determined by retail prices and households' consumption) fell for all income levels between 2012 and mid-2021, when the trend was reversed by the energy crisis. In 2020, low-income European households¹⁹ spent on average 7.3% of their total budget on energy, which increased to 7.5% (EUR 1250) by 2022²⁰ with significant differences between MS. Lower-middle- and middle-income households tend to have higher absolute energy expenditure, but this expenditure represents a smaller share of their household budget. In 2022, these households spent 6.9% and 6.4%, respectively, of their total budget on energy (down from 7.6% and 6.9% in 2010).

¹⁹ In this report, households in the first income decile are defined as low-income; low-middle income households are in the third income decile; and the fifth income decile is used as a representation of middle-income households. For those Member States where only quintile data is available the first, second, and third income quintiles are used.

²⁰ Based on latest data available from the Household Budget Survey.

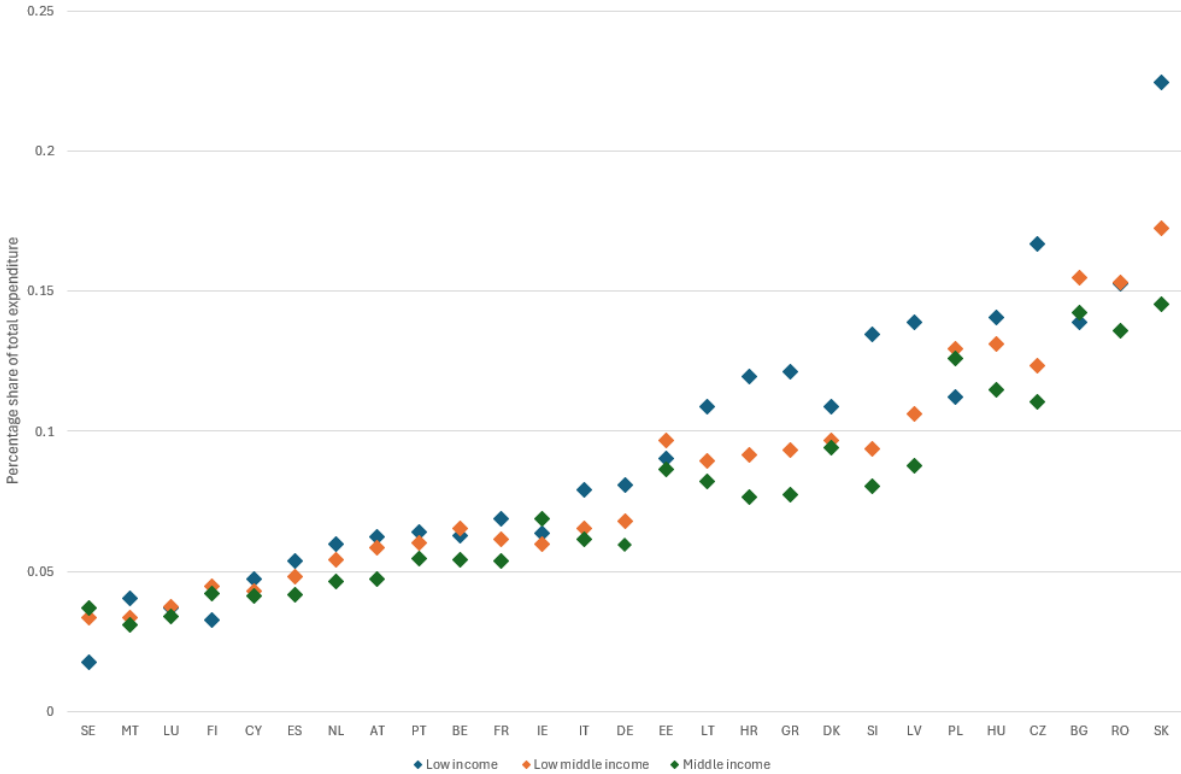
Rising energy prices, particularly in the second half of 2021 and during 2022, resulted in higher than usual energy expenditures for European households, with increasing number of households struggling to meet their energy needs. Energy costs increases in 2022 disproportionately affected the most vulnerable households. Across all Member States, an estimated 10% of households were unable to keep their homes adequately warm and had arrears on their utility bills²¹.

The increases in energy costs were mainly driven by the prices of natural gas, liquid fuels and electricity and could not be fully counterbalanced by households’ efforts to reduce energy consumption. National measures supporting households’ energy expenditures helped to mitigate the impact of the energy crisis, but very often these measures (for example a decrease in VAT rates) were not specifically targeted at the most vulnerable households.

The situation of households varied substantially across Member States, both in terms of absolute expenditures and expressed as a share of total expenditures.

- In relative terms, the poorest households spent over 20% of their household budget on energy in Slovakia and over 15% in Romania; and less than 5% of their budget in Sweden, Malta, Finland and Luxembourg.
- In absolute terms, low-income households spent less than EUR 500 on energy products in Latvia and Romania, while they spent more than EUR 1.500 in Luxembourg and more than EUR 3.000 in Denmark.

Figure 14: Energy share in total consumption expenditure by income group of Member States in the EU27



Source: Trinomics et al (2024), based on ad hoc data collection on household consumption expenditures

²¹ Source: EPAH (2024), except for Romania and Croatia (2022)

As regards consumer choice, electricity remained the most expensive energy carrier in 2023 (289 EUR/MWh) (Table 1). In comparison, both natural gas (at 116 EUR/MWh) and heating oil (116 EUR/MWh) were cheaper options for space heating. Despite the cost difference for the energy input, heat pumps can compete with oil and gas boilers on operational costs on EU average as they are much more efficient in producing heat. In a similar way, electric vehicles are using the energy input much more efficiently and especially with dynamic electricity prices already offer much lower operational costs. Upfront investment costs for heat pumps and electric cars could still pose a risk for the widespread adoption. The revised Energy Taxation Directive proposes significantly lower minimum tax rates for electricity²², thus giving MS the possibility to reduce electricity taxes (and prices) and support electrification in heating and transport. Member States will also have the possibility to exempt from electricity taxation households, thus providing further support for electrification.

Table 1: Comparison of various energy options for households in EU per MWh

Consumer type	Electricity		Gas		Gasoline		Diesel		Heating oil	
	Household (DC)		Household (D2)							
Component	Price 2023 per MWh	Share 2023	Price 2023 per MWh	Share 2023	Price 2023 per MWh	Share 2023	Price 2023 per MWh	Share 2023	Price 2023 per MWh	Share 2023
Energy/Gas/Fuel net price	133.5	46%	62.6	54%	93.1	48%	89.5	54%	81.3	70%
Network	59.6	21%	16.6	14%						
Taxes	95.4	33%	36.2	31%	102.4	52%	77.6	46%	34.8	30%
Total	288.5		115.6		195.5	100%	167.1	100%	116.1	100%

Source: Eurostat; for electricity NRG_PC_204 and NRG_PC_204_C, data for first semester; for gas NRG_PC_202 and NRG_PC_202_C, data for first semester DG ENER Weekly Oil Bulletin (for oil products), data for 2023. Conversion of gasoline to MWh was done using factor of 1.000 l = 8.9 MWh. Conversion of diesel and heating oil to MWh was done using factor of 1.000 l = 10 MWh

3.3. Industrial energy costs

Energy is critical to economic activity and energy costs play a significant role in determining European industrial competitiveness. In 2023, even as electricity and natural gas prices decreased from 2022 levels, energy costs for EU industries were still significantly higher than pre-COVID and pre-crisis levels. The highest share of energy cost (electricity and natural gas costs combined) was registered in the electro-intensive sectors such as *Primary aluminium* (38%) and *Ferro-alloys and silicon* (29%). These are followed by the *Flat glass* (25%) and *Mining* (20%) sectors that have both a relative high gas and electricity cost shares.

For the average European business, energy costs range between 1-3% of total production costs. For energy-intensive sectors (such as *Pulp and paper*, *Basic chemicals*, *Man-made fibres*, *Glass*, *Clay building materials*, *Cement, lime and plaster* and *Iron and steel*), energy costs reach between 5-10% of their total production costs, which makes them particularly vulnerable to price increases and import competition (Figure 15).

²² EUR 1/MWh for non-business use, which is replaced by one minimum rate of EUR 0,15/GJ or EUR 0,54/MWh for both business and non-business use under the proposed revision of the Directive.

Figure 15: Estimated energy costs (as shares of production costs) for manufacturing sectors in 2021–2023, EU average



Source: Trinomics et al. (2024), based on data from industrial plant operators.

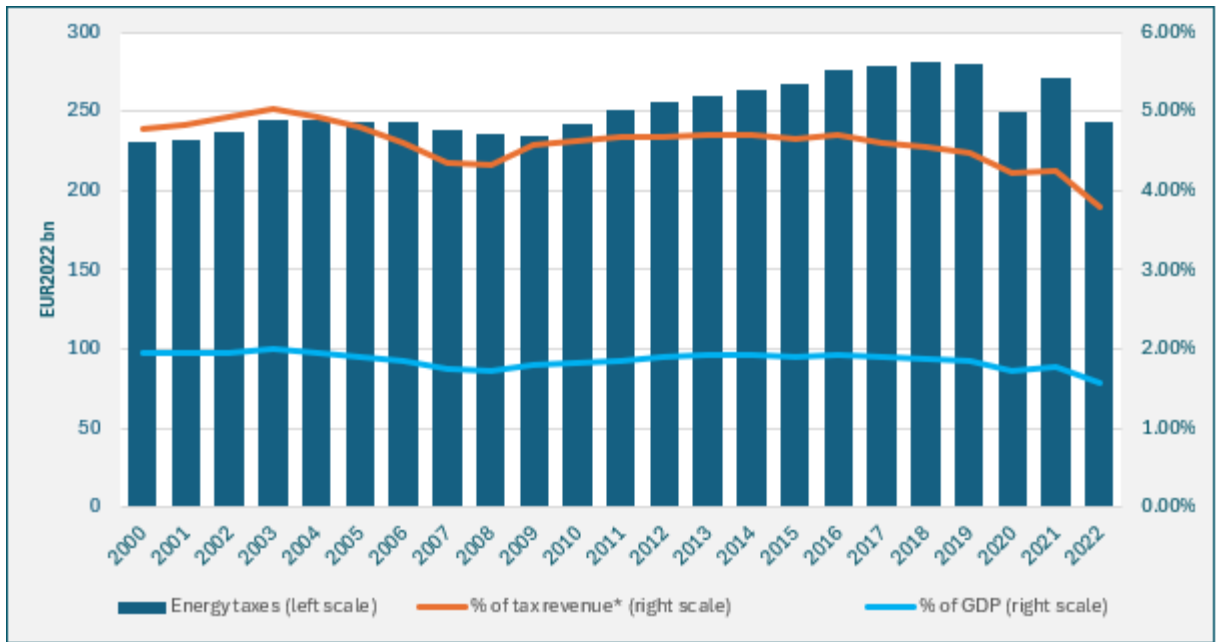
In most sectors, energy cost shares are reported to have increased in 2022 and 2023, compared to 2021, which is particularly noticeable in the energy intensive industries, (e.g. *Pulp and paper*, *Man-made fibres*, *Glass*, *Clay building materials*, *Cement, lime and plaster*, *Iron and steel* and *Non-ferrous metals*).

In the international perspective, manufacturing sectors in some non-EU G20 countries are often enjoying lower energy costs thanks to: (i) access to relatively more abundant domestic energy sources; (ii) differences in national policies, in particular regarding energy subsidies and governmental support measures. Energy intensities of EU industries tend to be comparable or lower than in the EU's main trading partners (with the exception of *Pulp and paper* and *Refineries*); but due in part to higher energy prices, the profitability of EU manufacturing sectors tends to be lower.

3.4. Energy taxation

Energy taxes, both on the production and on the consumption of energy, provide significant revenues to Member States' budgets. Energy tax revenue was stable in 2010-2019 at an average of 1.88% of GDP (Figure 16), but during COVID (2020), lower energy prices and lower consumption triggered a drop to 1.74% of GDP. In 2021, energy tax revenue started to increase, but by 2022, largely due to the measures to counteract energy prices increases, energy taxes collected in the EU decreased to EUR 248 billion (1.6% of GDP).

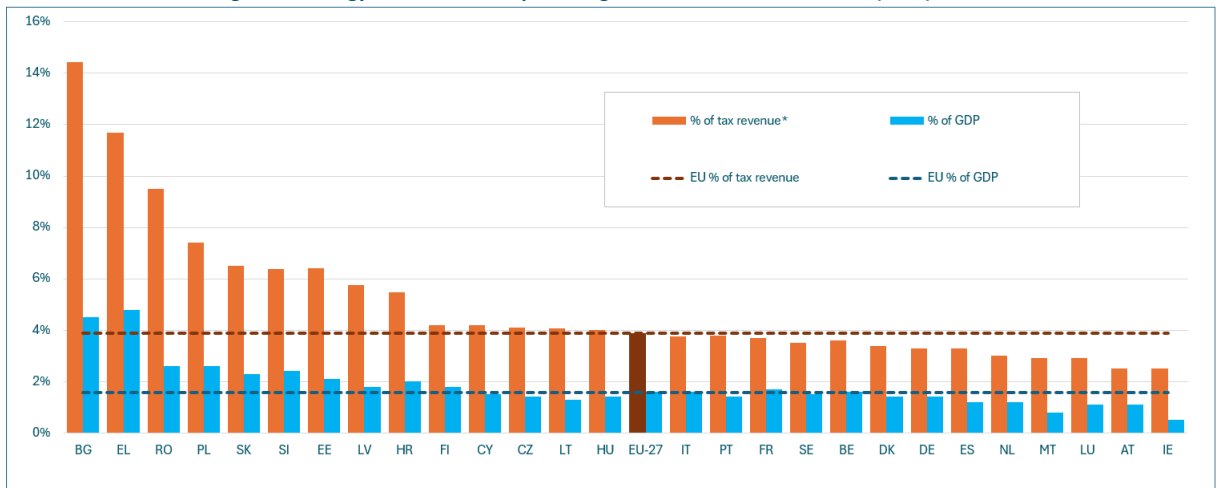
Figure 1617: Energy tax revenues in the EU27 (billion EUR; % of GDP)



Source: Trinomics et al. (2024), based on data from Eurostat (env_ac_tax)

The role of energy taxes in government revenue varies significantly between Member States. In 2022, energy taxes in Bulgaria made up over 14% of total tax revenue, while this share was only 2.5% in Austria and Ireland (Figure 18). Energy tax revenue in comparison to national GDP was the highest in Greece (4.8%) and the lowest in Ireland (0.5%). Generally, Member States with a lower GDP/capita have a higher share of energy taxes relative to both total tax revenue and GDP.

Figure 18: Energy tax revenue as a percentage of tax revenue and of GDP²³ (2021)



Source: Trinomics et al. (2024), based on data from Eurostat (env_ac_tax)

²³ Latest available figures are for 2020.

4. CONCLUSION

The EU responded with unity, solidarity and determination to overcome the potentially devastating energy crisis of 2021-2022. Member States agreed on measures to address excessive gas prices, to accelerate the rollout of affordable clean energy, and to plan for solidarity measures in the event of a gas emergency, which all played a role in stabilising EU markets. At the same time, Member States adopted several measures to protect their households and industries from the consequences of high and volatile energy prices.

Energy policy proved to be critical for driving the zero-carbon transition of energy systems, while maintaining energy security and affordability. It is also a cornerstone in the EU's efforts to decarbonise its economy while ensuring European industrial competitiveness and a just transition for everyone. During the past years, the EU has lived up to its commitments, taking firm actions to ensure its security and the progress in the clean energy transition. It has acted in unity to advance on the objectives of the REPowerEU Plan, with a view to building a more secure and decarbonised energy system for all Europeans in a rapidly changing geopolitical context.

While wholesale electricity and gas prices have fallen significantly since the end of 2022, they remain higher than before the crisis. Their impact on energy bills, particularly for the most vulnerable households and businesses²⁴, is still considerable. The rise in energy costs led to higher energy expenditure in particular for low-income households. Similarly, the previously observed decline in energy costs shares in -energy intensive industries stopped. The reversal led to a significant challenge for most energy intensive industrial sectors, in part cushioned by their efforts in improving energy efficiency and by public support. The impact on the entire EU economy has also been substantial, with a significant increase in the EU's fossil fuel import bill, mainly driven by soaring gas and oil prices.

The crisis of 2021/2022 has already induced long-lasting changes in the EU's energy system, starting with LNG, which now accounts for a much higher share (~40%) of gas imports, replacing Russian pipeline gas. The accelerated energy transition will progressively introduce further changes into energy supply and demand already in this decade and will help the EU achieve a greater degree of independence from fossil fuel imports, and ultimately to lower the EU energy bill.

The energy market outlook for 2024-2025 has improved but tensions remain. The measures put in place by Member States and the Commission to fight the energy crisis²⁵ significantly contributed to the improvement. However, the impact of high energy prices on the competitiveness of the EU's industry remains a major challenge. The EU has to act swiftly on the suggestions of Mario Draghi and Enrico Letta on enhancing industrial competitiveness. Furthermore, the EU needs to continue pursuing an active trade policy that contributes to increased diversification of supply and economic resilience.

In particular, the EU needs to accelerate the widespread adoption of clean technologies and energy efficiency measures to avoid fossil fuels-induced crises in the future. Technologies

²⁴ The impact on SMEs is detailed in the [SME envoy report: SMEs and rising energy prices - First findings & recommendations](#)

²⁵ These measures include supply diversification, demand reduction, expansion of LNG import capacity, obligations to fill in gas storages in advance, demand aggregation and joint purchasing and measures to address high prices and volatility (e.g. market correction mechanism, intra-day volatility mechanism).

such as heat pumps and electric vehicles, together with demand response, energy storage as well as sufficient grid interconnections and their efficient use, will play an important role in protecting households and industries from further energy shocks. In order to preserve their competitiveness, European companies, especially energy intensive industries, need to keep improving their energy efficiency, increase their flexibility for demand response, and adopt decarbonised energy technologies, while the EU is working on measures to enable them to benefit from the transition through continued investments in research and innovation, the new design for electricity markets and ensuring an international level playing field. Also, the EU should remain committed to tackling energy poverty, protecting vulnerable consumers and empowering consumers to actively participate in the green transition by implementing policies that promote energy efficiency, renewable energy sources, and affordable clean energy options.