



Direção-Geral  
de Energia e Geologia

## **Reporting on Gas Demand Reduction (December 2023 – January 2024)**

*pursuant to article 8 (1) of Council Regulation (EU) 2022/1369*

**Portugal, February 2024**

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## 1. INTRODUCTION

Following the Russian invasion of Ukraine, in February 2022, the European Commission presented a set of instruments and measures to mitigate the weight of Russian fossil fuel supplies to Member States and to increase the security of energy supply in the EU.

The adopted measures include:

- Regulation (EU) 2022/1032 of 29 June 2022, on gas storage, which introduces targets and trajectories for underground gas storage facilities, seeking to ensure that European Union increases its level of preparedness, in particular to face the winter period. Subsequently, and to strengthen the mechanisms for action at Union level.
- Council Regulation (EU) 2022/1369 of 5 August 2022, on coordinated demand-reduction measures for gas, was adopted, establishing rules to address a situation of severe difficulties in the supply of gas, with a view to safeguarding Union security of gas supply, in a spirit of solidarity.
- Council Regulation (EU) 2022/1854 of 6 October 2022, on an emergency intervention to address high energy prices was adopted to mitigate the effects of high energy prices through exceptional, targeted and time-limited measures.
- Council Regulation (EU) 2022/2576 of 19 December 2022, enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders, including the implementation of a platform that will allow for demand aggregation and joint gas purchasing.
- Council Regulation (EU) 2022/2577 of 22 December 2022, laying down a framework to accelerate the deployment of renewable energy with a particular focus on specific renewable energy technologies or types of projects which are capable of achieving a short-term acceleration of the pace of deployment of renewables in the Union.
- Council Regulation (EU) 2022/2578 of 22 December 2022, establishing a market correction mechanism to limit episodes of excessively high gas prices in the Union which do not reflect world market prices and protect Union citizens and the economy against excessively high prices.

The Council Regulation (EU) 2022/1369 of 5 August 2022, defines a set of rules, namely a voluntary reduction of gas demand of at least by 15% compared to the average gas consumption during the five consecutive preceding years in the same period. The results achieved by the Union in the winter of 2022-2023 were positive and the joint effort made during that period allows to start this new period in a safer and better prepared way. However, despite the extremely positive results it is important to reaffirm that the effort must continue.

With this in mind, the Council Regulation (EU) 2023/706 of 30 March 2023 amending Council Regulation (EU) 2022/1369 was approved, extending the measures to reduce gas consumption by 15% for another twelve months, until 31 March 2024. Accordingly, the reference period has been changed to a full year, from April to March.

More recently, aiming to increase security of gas supply and strength market resilience, Council Regulations 2023/2919, 2023/2920 and 2024/223 were approved, extending the period of application of Council Regulations 2022/2576, 2022/2578 and 2022/2577, respectively, by one year.



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In accordance with the provisions of Article 8(1) of the Council Regulation (EU) 2022/1369 of 5 August 2022, amended by Council Regulation (EU) 2023/706 of 30 March 2023, **the present document is the fifth report on the reduction of gas consumption achieved by Portugal for the new assessment period from 1 April 2023 to 31 March 2024. On this report, maintaining the coherence with previous reports, there is also a chapter where some data related to preparedness to face the winter period is described.**

Directorate General for Energy and Geology is the National Competent Authority on energy security of supply issues, and as such it is the national entity responsible for monitoring and reporting the implementation of Council Regulation (EU) 2022/1369.

## 2. ASSUMPTIONS

### Reference gas consumption

The “reference gas consumption”, as defined in Council Regulation (EU) 2022/1369 of 5 August 2022, amended by Council Regulation (EU) 2023/706 of 30 March 2023, means the volume of a Member State’s **average gas consumption during the periods from 1 April to 31 March during the five consecutive preceding years, starting with the period from 1 April 2017 to 31 March 2018.**

The data for Portugal is presented in table 1. Considering the available data, disaggregation is made of overall consumption, considering the consumption of “dedicated power plants (CCGT)” and “other uses”. “Other uses” include the consumption of industry, households and services (including public administration) sectors.

This division is justified by the periodicity of the reports, as defined in Council Regulation (EU) 2022/1369, since a greater disaggregation is only possible with annual data, and in the context of the provision of statistical information to the competent authorities. Furthermore, this disaggregation is important to highlight the weight of the power sector gas demand on overall demand, considering the well-known specificities of the Portuguese weather/climate conditions, National Electricity System functioning and the electricity mix.

**TABLE 1 – REFERENCE GAS CONSUMPTION**

**Monitoring on the implementation of the demand-reduction measures  
Council Regulation (EU) 2022/1369 of 5 August 2022**

**Period From April to March**

<b>Natural Gas consumption TJ</b>	<b>Apr/17- Mar/18</b>	<b>Apr/18- Mar/19</b>	<b>Apr/19- Mar/20</b>	<b>Apr/20- Mar/21</b>	<b>Apr/21- Mar/22</b>	<b>reference gas consumption Apr- Mar</b>
Overall consumption	246 677	229 753	254 199	231 849	234 326	239 361
Dedicated power plants (CCGT)	96 773	71 826	97 304	81 062	96 451	88 683
Other uses	149 904	157 927	156 896	150 787	137 875	150 678

**Note:**

2021, 2022 and 2023 data are provisional

It was not accounted on the reference gas consumption the rule predicted in §5 of Article 5

An effort has been made to allow for greater disaggregation of the information, seeking to respond to the breakdown of gas consumption by sectors listed in the new wording of Article 8(1). **However, until this is possible, and seeking to maintain the comparability of data with those previously provided, the structure referred to above is maintained.**

### Derogations

In accordance with Article 5 (9) of the Council Regulation (EU) 2022/1369 of 5 August 2022, although the Union's Alert State has not been declared, Portugal notified the European Commission (letter of

12<sup>th</sup> September of 2022) of evidence pertaining to the applicability to Portugal of derogations under paragraphs 5 and 7 of article 5.

*Limit to the reference gas consumption associated to gas storage volume (Article 5 (5)):*

- In the framework of the application of Regulation (EU) 2022/1032 of the European Parliament and of the Council of 29 June 2022, Portugal communicated the filling level of gas in Carriço's underground storage facility which, on 1 August 2022, was 107% (= 3827,1 GWh) exceeding the filling target of 72% (by 1 256,7 GWh).

In accordance with Article 5 (5) of the Council Regulation (EU) 2022/1369 of 5 August 2022, if a Union alert is declared, 1 256,7 GWh or 4 524 TJ will be deducted to the reference value, shown in Table 1 above.

*Derogation associated to Interconnection capacity limitations (Article 5 (7)):*

- Portugal has a firm technical export capacity of 45,7% compared to 2021 total gas consumption.
- The capacity of interconnections with Spain does not reach 90%, due to lack of demand. However, the capacity is maximized, according to article 6 of Commission Regulation (EU) 2017/459 of 16 March 2017.
- Sines LNG facilities are commercially and technically ready to re-direct gas to other Member States. To increase its capacity several infrastructure reinforcement investments have been approved (nr. 8 of the Council of Ministers Resolution No. 82/2022 of 27 September<sup>1</sup>).

**Portugal is still waiting for the assessment/opinion of the Commission on the notification submitted, but, in case of Union alert declaration, understands that the mandatory demand reduction target is 7%, instead of 15%.**

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<sup>1</sup> <https://dre.pt/dre/detalhe/resolucao-conselho-ministros/82-2022-201509699>

### 3. MEASURES TO SAFEGUARD SECURITY OF GAS SUPPLY

Portugal has been closely monitoring the developments in the energy price situation and has sought to implement measures to mitigate its effects, taking into consideration the specific functioning and characteristics of its gas system, as well as its electricity system.

#### 3.1. Measures to reduce gas demand

The Council of Ministers Resolution No. 82/2022, of 27 September, approved the Portuguese Energy Saving Plan 2022-2023 (PPE). This plan has foreseen mechanisms for periodic monitoring of the evolution of gas consumption and, if necessary, proposals for changing the measures adopted shall be presented. The measures are mandatory for the central public administration and recommended for all of the other sectors. In the event of a Union alert being declared, the PPE becomes mandatory for all sectors and may include exceptional measures.

Some of the plan's most relevant actions, due to the lasting impact they may have on consumption reduction, include training and capacity building, and communication and awareness raising.

Its period of application was recently extended (Order No. 1572/2024), bringing it into line with the end of the current period defined in the European Regulation, 31 March 2024.

- **Training and capacity building actions**

The PPE includes the implementation of training and capacity building actions, including training of public servants for the implementation, promotion and monitoring for resource efficiency measures, training and/or capacity building to enhance energy efficiency, and training and/or capacity building to enhance water efficiency.

**By the end of January 2024, 82 actions were carried out, covering about 1 867 people.**

- **Communication and awareness raising actions**

The PPE foresees the development of communication and awareness campaigns for different target audiences as pivotal agents for the reduction of energy consumption. Communication and awareness raising actions are planned for the adoption of more efficient behaviours aiming at reducing energy and water consumption. These are being carried out through the media, social networks, the “Rota da Energia” (*Energy Route*) initiative, among others, involving municipalities and parishes, signatories of the Sectoral Pacts, and other entities.

A national communication campaign through social platforms was carried out at the end of the first quarter of 2023. This campaign had a very significant impact on the scope of communication actions. The national communication campaign continued throughout the year on various media and platforms, seeking to reach a significant number of participants.

These actions, as well as those in the context of training and capacity building, began prior to the approval of the plan. **By the end of January 2024, 223 actions had been carried out, reaching approximately 2 795 965 people.**

**TABLE 2 – TRAINING AND CAPACITY BUILDING AND COMMUNICATION AND AWARENESS RAISING ACTIONS**

Month	Number of actions		Pax involved	
	Training and capacity building	Communication and awareness raising	Training and capacity building	Communication and awareness raising
<b>Subtotal 2022</b>	<b>21</b>	<b>84</b>	<b>1 016</b>	<b>22 910</b>
Jan/23 to Mar/23	22	49	341	1 933 493
Apr/23 to Nov/23	32	77	412	833 343
Dec/23	2	10	17	5 925
<b>Subtotal 2023</b>	<b>56</b>	<b>136</b>	<b>770</b>	<b>2 772 761</b>
Jan/24	5	3	81	294
<b>Subtotal 2024</b>	<b>5</b>	<b>3</b>	<b>81</b>	<b>294</b>
<b>TOTAL</b>	<b>82</b>	<b>223</b>	<b>1 867</b>	<b>2 795 965</b>

Source: ADENE

Although the savings associated with the implementation of the communication and awareness raising measures have not yet been quantified, it is expected that they will have a relevant and long-lasting impact on the pursuing of the objectives set out in the PPE.

The website dedicated to the PPE can be consulted in <https://planopoupancaenergia.pt/> and is updated regularly during its implementation.

### 3.2. Measures to improve preparedness

As noted above, issues associated with security of gas supply are interconnected through multiple regulations and obligations. Within the scope of Regulation (EU) 2022/1032 of the European Parliament and of the Council of 29 June 2022, Portugal has been communicating the evolution of the filling level of its storage facilities. The following tables show the evolution of the filling level of gas in Carriço's underground storage facility, as well as in Sines LNG Terminal, since December 2023.

**TABLE 3 – FILLING LEVEL OF CARRIÇO UGS**

Date	UGS Physical Quantity <sup>(1)</sup> (GWh)	UGS Commercial Capacity (GWh)	UGS Filling Level (%)
1 Dec 2023	3 716,8	3 570,0	104
1 Jan 2024	3 732,7	3 570,0	105
1 Feb 2024	3 671,1	3 570,0	103

(1) UGS filling level including balancing stock



**TABLE 4 – FILLING LEVEL OF SINES LNG TERMINAL**

Date	LNGT Physical Quantity <sup>(2)</sup> (GWh)	LNGT Commercial Capacity (GWh)	LNGT Filling Level (%)
1 Dec 2023	1 164,2	2 666,0	44
1 Jan 2024	1 534,9	2 666,0	58
1 Feb 2024	910,2	2 666,0	34

(2) LNGT commercial capacity, excluding dead-stock

The Commission Implementing Regulation (EU) 2023/2633 of 20 November 2023 sets the filling trajectories and the intermediate targets for 2024 aiming to achieve the objective of 90% filling level in November 2024.

**TABLE 5 – FILLING TRAJECTORY OF UGS FOR 2024**

	1 Feb 2024	1 May 2024	1 July 2024	1 Sept 2024	1 Nov 2024
Filling Trajectory	70%	70%	80%	80%	90%
Filling Values	103%				

#### 4. GAS DEMAND REDUCTION

The present report seeks to evaluate the available data for the reporting period of December 2023 and January 2024. Table 6 shows the calculation of gas demand reduction for the referred period.

**TABLE 6 – NATIONAL GAS CONSUMPTION IN DECEMBER 2023 AND JANUARY 2024 AND RATES OF CHANGE**

**Monitoring on the implementation of the demand-reduction measures  
Article 8 of Council Regulation (EU) 2022/1369 of 5 August 2022  
Period from 1 December to 31 January**

Natural Gas consumption TJ	Dec/17- Jan/18	Dec/18- Jan/19	Dec/19- Jan/20	Dec/20- Jan/21	Dec/21- Jan/22	reference gas consumption Dec-Jan	Dec/23- Jan/24	Δ%
Overall consumption	42 144	38 818	42 299	39 148	38 147	40 111	28 620	-28,6%
Dedicated power plants (CCGT)	14 739	9 639	14 919	10 989	16 752	13 408	6 912	-48,4%
Other uses	27 405	29 179	27 379	28 159	21 394	26 703	21 708	-18,7%

**Note:**

2021, 2022 and 2023 data are provisional

From the analysis of the available data, it is possible to verify **that in the period from December 2023 to January 2024, comparing with the average of the five homologous periods of the reference period, a reduction of 28,6% in the global consumption of gas was attained.**

Considering the data provided on the previous reports and the data in the previous table, Table 7 below shows the cumulative gas demand variation since April 2023:

**TABLE 7 – NATIONAL GAS CONSUMPTION FROM APRIL 2023 TO JANUARY 2024 AND RATES OF CHANGE**

**Monitoring on the implementation of the demand-reduction measures  
Article 8 of Council Regulation (EU) 2022/1369 of 5 August 2022  
Period from April to January**

Natural Gas consumption TJ	Apr/17- Jan/18	Apr/18- Jan/19	Apr/19- Jan/20	Apr/20- Jan/21	Apr/21- Jan/22	reference gas consumption Apr-Jan	Apr/23- Jan/24	Δ%
Overall consumption	211 979	196 330	214 944	198 843	197 861	203 991	145 397	-28,7%
Dedicated power plants (CCGT)	88 759	66 116	85 386	75 444	80 268	79 195	48 776	-38,4%
Other uses	123 220	130 214	129 558	123 399	117 593	124 797	96 620	-22,6%

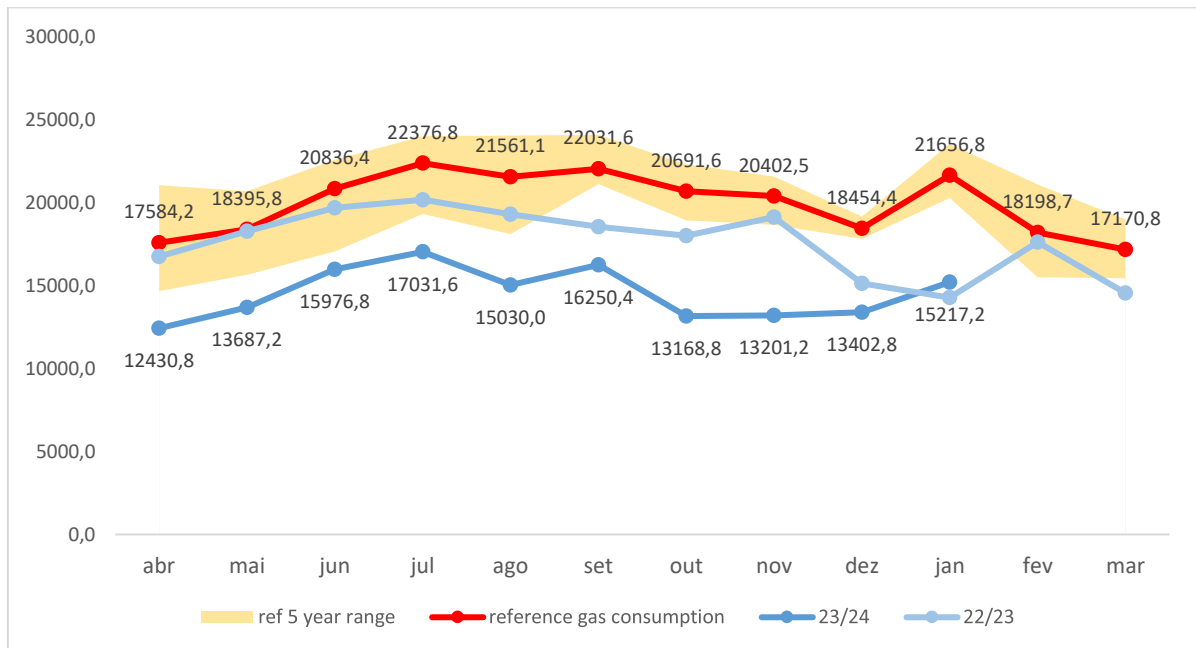
**Note:**

2021, 2022 and 2023 data are provisional

From the analysis of the available data, **it is possible to verify that in the ten months assessed period (April 2023 – January 2024), in comparison with the historical average of the last five homologous periods, a reduction in the global consumption of gas of 28,7% was achieved.**

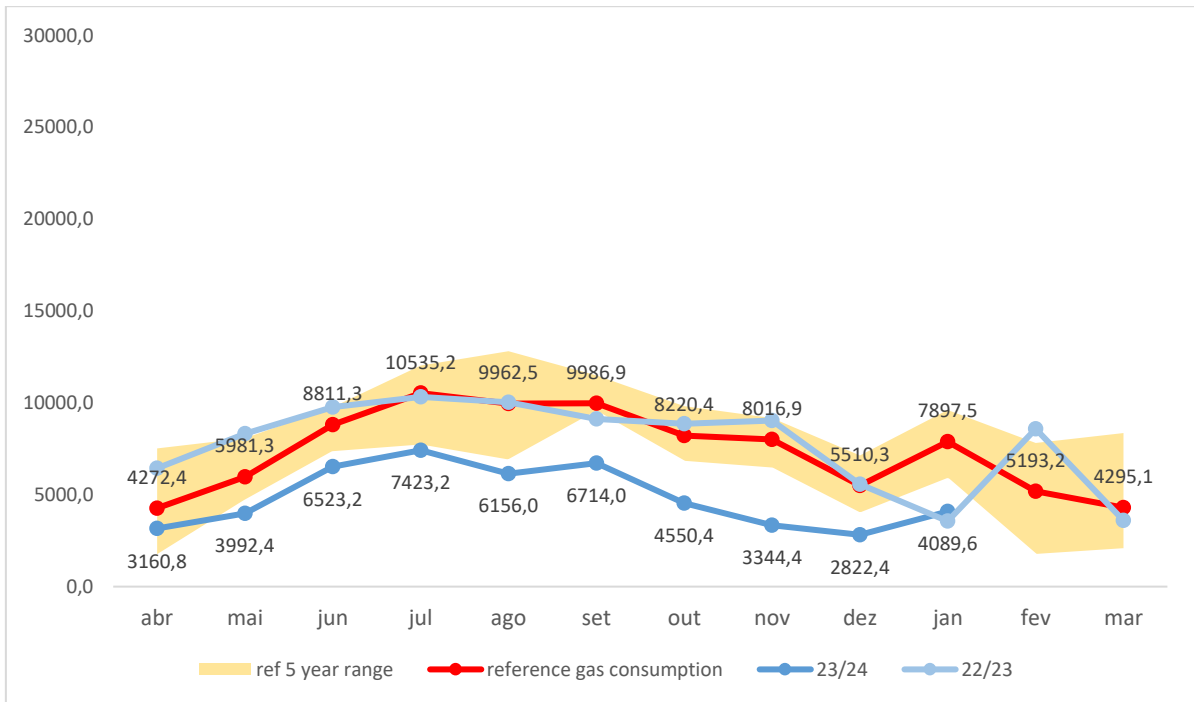
The following graphs show the evolution of gas consumption, disaggregated according to the previous tables, comparing the values for the 2023-2024 period (dark blue line) with the reference ones (red line). The consumption range shade during the 5-year reference period is also presented (light orange shade), as well as the evolution of gas consumption recorded in 2022-2023 (light blue line), so that possible trends can be verified.

**FIGURE 1 – TOTAL GAS CONSUMPTION FROM APRIL TO JANUARY (TJ)**



It is possible to see that the total gas consumption in the ten months analysed remains significantly lower compared to the reference consumption. Comparing the 2023/2024 consumption with the previous period it is possible to verify that January 2024 was the first month where the total gas consumption surpasses the consumption of the previous year. The cumulative reduction in the ten months compared to the reference consumption was 28,7%. On an annual basis (YoY), there is a reduction of 18,9% in total gas consumption verified from April to January. It seems also important to mention that the total gas consumption in these ten months was always below the minimum value of the range of the reference period. It should also be noted that there is a similar pattern of consumption over the ten-month period to that of the reference period, potentially suggesting that there is a structural reduction in gas consumption, although a more in-depth assessment of what will happen during the winter period is necessary.

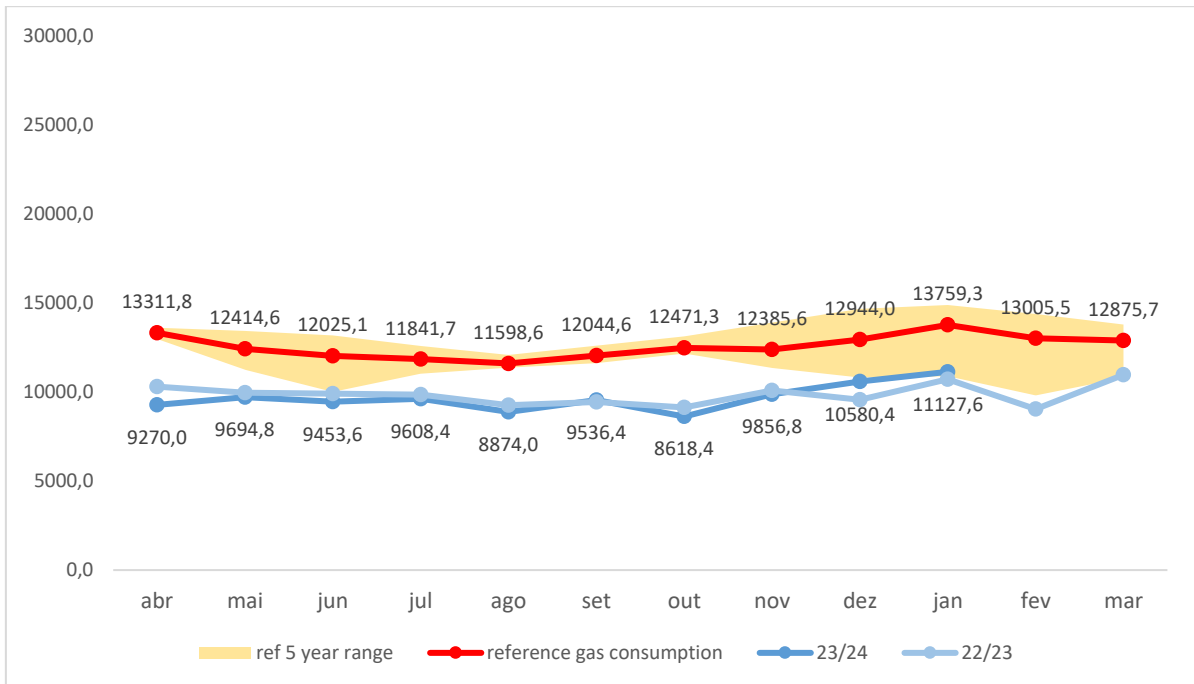
**FIGURE 2 – CCGT GAS CONSUMPTION FROM APRIL TO JANUARY (TJ)**



Gas consumption in dedicated power plants shows significant fluctuations throughout the year, highly dependent on the meteorological and climatic conditions observed. In the current hydrological year (starting in October), until the end of January, the hydroelectric producibility index was 1,44. This situation allowed hydroelectric production to reach significant values during the two months period, reducing the need to resort to natural gas powerplants. Hydroelectric production accounted for more than 48 per cent of electricity produced in December and almost 52 per cent in January. However, in January gas consumption for electricity generation increased compared to the previous month. This was due to periods of low wind and solar production, which meant that gas-fired power plants had to be used to meet electricity demand, which was also affected by a period of low temperatures. Despite this, the gas consumption in the CCGTs reduced by more than 48% compared to the same months of the reference period.

In cumulative terms, the gas consumption at the CCGTs during the ten-month period is significantly lower than during the same reference period (- 38,4%). The reduction compared to the same period in the previous year, despite the increased consumption in January, is still a little more significant (- 39,8%).

**FIGURE 3 – OTHER USES GAS CONSUMPTION FROM APRIL TO JANUARY (TJ)**



As for the consumption of gas in other uses than exclusive power generation, it is possible to verify the reduced seasonality in gas consumption throughout the year. The fluctuations are relatively small, allowing confirmation of the high dependence that fluctuations in the total gas consumption have on the production of electricity by the dedicated power plants.

The gas consumption in the group 'other uses' was always below the minimum value of the range of the reference period, until January. It is also possible to see that during December-January, in both months, the gas consumption was higher than in the previous year. This is a situation that was not seen since the beginning of the analysis period. However, the ten months cumulative consumption remains well below the reference consumption (- 22,6%), although comparing with the previous year the variation is significantly smaller (- 1,6%).

Analysing the above graph, and reflecting on YoY variation, despite the 7,1% increase in the December-January period compared with the previous year, it still appears to present a consistent downward trend in gas consumption. An assessment of the evolution of gas consumption should continue to be carried out, and where possible with a more detailed consumer sectors analysis, in order to verify whether there is a structural reduction in consumption.

## 5. CONCLUSIONS

Portugal has reduced until the end of January its total gas consumption by almost 28,7%, since April, when compared to the average consumption of the same period in the five years of the reference period.

The reduction in gas consumption in December and January, when compared to the reference period, -28,6%, is achieved in all sectors, although with greater significance in the electricity sector (-48,4%).

The consumption of "other uses" remains well below the consumption verified in the reference period but, when compared on an annual basis, the variations are less significant. This intra-annual situation, which stems from less flexibility in the variation of consumption, allows for a reduction in consumption of around 1,6% over the 10-month period, which could demonstrate that the reduction achieved in the 2022-2023 period was permanent. It will be crucial to continue monitoring the evolution of these categories of gas consumption in order to assess the structural extent of this reduction.

Regarding electricity generation, there is a significant decrease compared to the reference period, but the dependence of the electricity sector on weather conditions, particularly hydro, requires the permanent monitoring of consumption of CCGTs. As already mentioned, weather conditions since October, especially rainfall, have allowed the use of the installed hydroelectric capacity, significantly reducing the use of CCGTs.

The developments in new installed capacity, namely solar, and the use of the electricity interconnections with Spain may allow to maintain the reduction in the need to resort to electricity generation in CCGTs.

Also important to these results is the implementation of the Portuguese Energy Saving Plan 2022-2023. The consolidation of the plan and of its measures will bring persisting results, which are also reflected in actual consumption data.

It is necessary to continue monitoring the effects of the geopolitical situation on the volatility of gas prices, as several non-negligible risks continue to hang over the markets. Global gas markets are still very tight and several uncertainties persist, particularly in relation to the economic development of a significant number of gas consuming countries, as mentioned by various organisations. Despite the stabilisation of gas prices, it remains also crucial to continue monitoring potential changes in consumption trends, which can negatively affect the achievement of the ambitious targets approved at European level.

Portugal remains fully committed to the achievement of its reduction targets set by the Council Regulation (EU) 2022/1369. The data that has been collected also allows to optimistically reinforce the idea of a structural change in gas consumption in various sectors and, consequently, of the goodness of the measures adopted, both at European as national level.