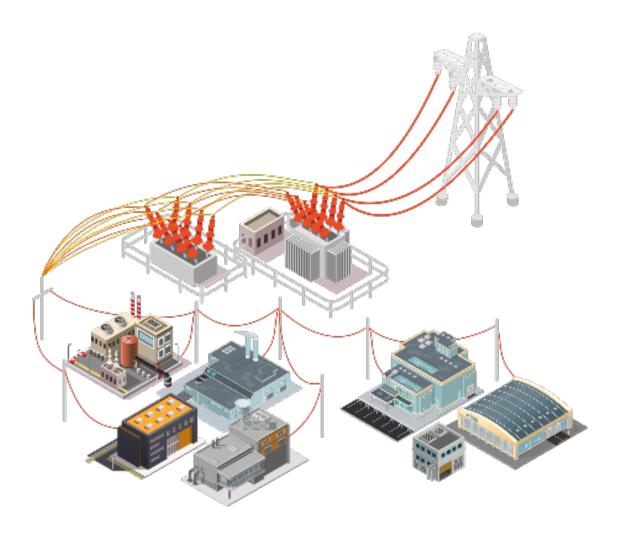


Energy market reportJanuary 2024



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Energy market report



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The analysis

The drop in gas prices and CO2 emissions lifts the bearish sentiment in the electricity futures market



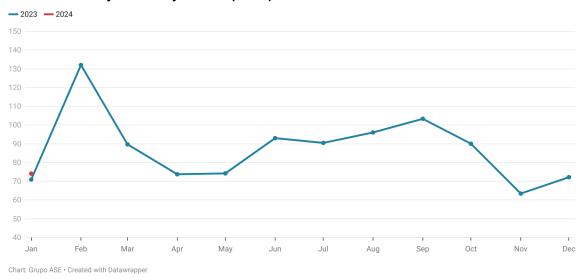
Juan Antonio Martínez & Leo Gago Grupo ASE Analysts

- » The cold snap in the first fortnight followed by high pressure prevents the drop in electricity prices, despite the cheaper gas.
- » Weak demand and mild weather quash any bullish signal for gas prices in Europe and support the downward trend in electricity futures.
- » Analysis: Futures markets in Spain are showing competitive signals.

The price of electricity rises by 2.7% to €74.10/MWh

The daily price of the Spanish wholesale market (POOL) for January stands at €74.10/MWh. It's up 2.7% compared to last December and is 4.5% more expensive than a year ago.

Price of the daily electricity market (OMIE)

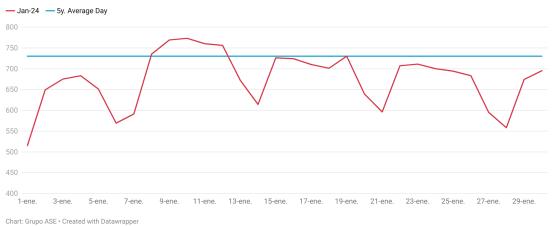


A cold first fortnight in January followed by a strong high-pressure system sustained electricity prices, despite low gas prices

Although gas prices have fallen by more than 50% compared to last year, the increase in electrical demand during the cold first fortnight and the scant wind generation recorded in the latter part of the month, due to a strong high-pressure system over the peninsula, have kept electricity prices slightly above last year (+4.5%).

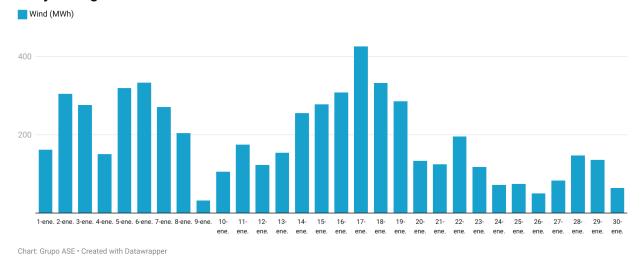
In the first 20 days of January, temperatures on the peninsula were below normal, leading to a rise in demand of more than 9%. However, the intense heat in the last few days of the month has left monthly demand growth at just 0.8%.

Daily electricity demand (GWh)



In the last ten days of the month, the high-pressure system that settled over the Iberian Peninsula, partly causing a rise in maximum temperatures well above the seasonal norm, also led to a sharp decline in wind generation. It was 22.2% lower than last year and is 4.1% below its average for the last five years.

Daily wind generation



The collapse in wind generation was so significant that it pushed renewable generation down by 9.4% compared with the same month last year, despite growth in photovoltaic (+9.1%) and hydroelectric power (+5.9%).

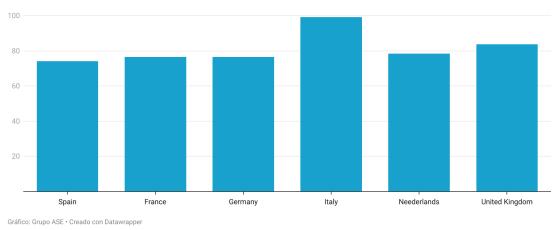
Furthermore, to offset the reduced wind generation, combined cycle gas turbines (CCGT) increased their output by 19.2%, and cogeneration rose by 39.5%. This is what caused the slight uptick in electricity prices, moderated thanks to the cheaper gas.

This month, electricity generation fell by 2.2% due to a sharp decrease in the export balance (-48.1%) and pumping consumption (-21.9%), coinciding with weak demand growth (+0.8%).

Spanish prices, slightly more competitive than EU benchmark markets

The average price of electricity in Spain was the most competitive among the major EU economies, although its discount premium over major European markets has decreased compared to previous months. The Spanish price (€74.10/MWh) was slightly more competitive than the French (€76.59/MWh) and the German (€76.57/MWh). Compared to Italy (€99.16/MWh), it is significantly lower.





Weak demand and mild weather eliminate any bullish signal for gas prices in Europe

Despite a cold start to the year across Europe and minor disruptions in the supply of Liquefied Natural Gas (LNG) from Europe due to the situation in the Red Sea, gas prices in Europe (TTF) have dropped in recent weeks to below €30/MWh.

Meanwhile, the daily gas price in Spain (PVB) has followed the same trend as the benchmark market in Europe (TTF), albeit with a slight discount premium in the latter part of the month.



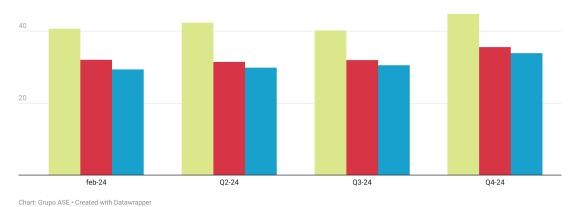
Gas futures markets also reflect a drop in prices compared to December, although in recent days there has been a slight uptick, which could be due to a slowdown in LNG shipments to Europe.

Diverted routes due to the situation in the Red Sea have reduced deliveries from Qatar to European ports. In January, only 700 thousand tonnes arrived, which is a significant decrease compared to the 1.21 million tonnes received in December and the 1.34 million tonnes that arrived in January last year.

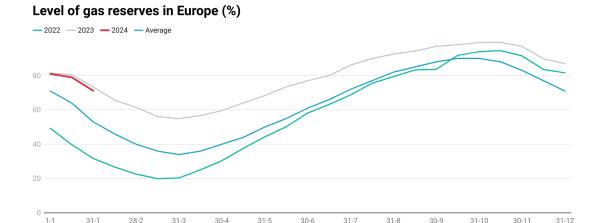
Gráfico: Grupo ASE · Creado con Datawrapper

TTF Futures Curve (€/MWh)

In yellow, the price as of 30/11/2023; in red, the price as of 31/12/2023; in blue, the price as of 31/1/2024



This reduction in gas prices in Europe, in both spot and futures markets, is largely due to temperature forecasts. It's expected to be very mild for the remainder of winter, and the market interprets this as a clear sign of falling demand, meaning that Europe could reach the end of April with high levels of gas reserves.



Although EU gas withdrawals from storage tripled to 6 TWh/d in the first fortnight of January due to intense cold, stock levels at the end of the month are at 71%. This is a very high level compared to the average of the last 5 years (53%) for this time of year. If the forecasts for mild temperatures in February are confirmed, some countries like Germany could even start injecting gas back into their storage by the end of this month.

The American International Agency forecasts a 3% year-on-year increase in demand in Europe for 2024

European gas demand fell in 2023 to its lowest level since 1995, but the year started cold in much of Europe, significantly increasing gas consumption in the first fortnight of January.

The cold wave has practically passed, and the climate forecasts across Europe generally seem mild for February, which will contain the demand for gas for household heating, which in 2023 was already reduced by 4%.

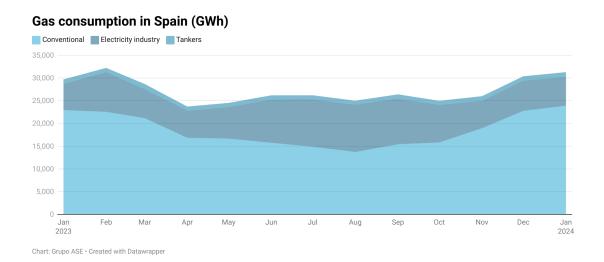
In the second half of 2023, as prices started to level off, industrial gas demand in Europe increased by 7%, compared to the 11% drop recorded in the first half of the year.

Gráfico: Grupo ASE • Creado con Datawrapper

If European gas prices remain in the range of €25-35/MWh during this year, it is very likely that many sectors will be encouraged to return to natural gas as a means of production. However, this recovery could be limited because, in the last two years, some sectors have already taken measures for energy efficiency, relocation of their factories outside Europe, or decisions to change fuel, which may have destroyed future demand. This will be verified throughout 2024.

The demand for gas for electricity generation in Europe fell by 18% last year compared to 2022. This year there could be a slight recovery, but it's unlikely to return to the levels of 2022, given the forecasts for an increase in French nuclear production (up to 315-345 TWh in 2024) and the increase in renewable generation due to the growth of the European solar and wind park. This is compounded by CO2 emission prices (EUA) contained at ≤ 60 -70/t, which keep coal thermal cycles very competitive against gas (CCGT).

Our analysis undoubtedly points to lower prices that will increase gas demand in 2024, but it's difficult to estimate a figure due to the many uncertainties in climate and industrial recovery. For the moment, 2024 starts with a strong increase in gas demand in Spain, up 15.8% compared to January 2023.



LNG imports drop by 24%

Gas imports in January 2024 have been reduced to 318 mcm/d (-13.9%) compared to the same month last year. The cause is a 24% drop in LNG deliveries, due to the slowdown of some shipments from Qatar and the lower gas needs of Europe (due to its high reserves and the prospect of weak demand for the coming months).

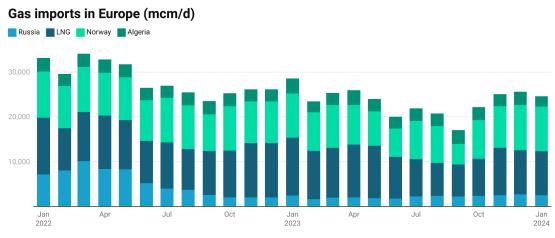


Chart: Grupo ASE • Created with Datawrapper

Pipeline injections from Norway have remained very high this month, in the range of 322 mcm/d. Meanwhile, gas imports from North Africa fell by 32.8% to 70 mcm/d, although their impact is very limited in the overall European imports.

Only 20 LNG vessels arrived in Spain in January, offloading 20,086 GWh. This is 6 vessels less and a reduction of 13.82% compared to a year ago (23,305 GWh).



To some extent, the reduction in LNG arrivals in Spain was offset by gas imports from France via pipeline (VIP Pyrenees), although this did not prevent gas reserves from falling by 9.5% compared to a year ago, due to the increase in gas demand this month in Spain (+15.8%).

LNG prices in Asia continue to fall due to high reserves and slow demand recovery

Liquefied Natural Gas (LNG) sold in Asian markets remained below \$10/MMBtu for most of January, due to high inventories and mild weather. Both factors prevented the conflict in the Red Sea from driving up prices.

However, prices could stabilize around the \$10/MMBtu level because certain price-sensitive Asian buyers are increasing their LNG purchases attracted by its low price, which could encourage a switch to this fuel.



The discount premium between TTF and JKM has narrowed to just \$0.57/MMBtu. This should raise JKM prices in the coming weeks to attract more shipments to Asia and offset the higher transportation costs.

A cold wave halts LNG exports from the U.S.

Both feed gas deliveries and LNG production were disrupted in January at some U.S. facilities, reducing the departure of tankers in the third week of the month to only 20 vessels.

Weekly LNG exports from the USA in number of shipments

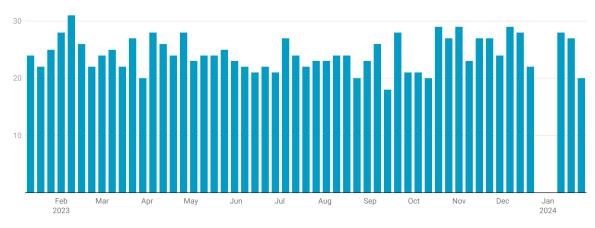


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Biden announced last week a moratorium on new U.S. LNG export projects. It could be an electoral gesture, in response to signals of resistance from some liberal politicians to the "net-zero" emissions reduction policies (near zero).

In any case, this moratorium will not prevent the United States from adding more than 60 mtpa to the global LNG market from 2026, which may lead to an oversupply in the latter part of this decade, joining other large projects pending operation in Qatar, Canada, and Mexico.

It remains to be seen if this new wave of supply, starting from 2026, can cause a collapse in prices and stimulate greater gas demand, replacing other fuels such as coal or oil to reach a new balance.

The fall in gas, along with the collapse of CO2 (EUA) emissions and coal, support the bearish trend in electricity futures

The price of the European CO2 emissions rights market fell to €61/t on January 20th, although in the

EUA Emissions Quotation €/tCO2 (Dec 2024)

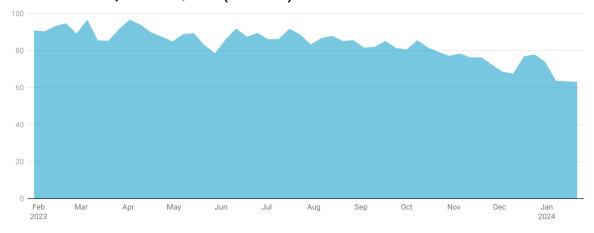


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last two days, it has recovered to the \le 64/t level. The downward pressure on emissions, due to the drop in international prices of gas, coal, crude oil, and its derivatives, and a fragile European economy have made emission prices fall 30% compared to a year ago (\le 90/t). They have retreated to levels from the end of 2021.

Coal front-month prices (API2) have dropped below \$100/t (reaching \$94.40/t on January 29th), pulled down by weak demand and low prices of gas and emissions. This decline has reduced the electricity generation cost of coal thermal cycles (with 40% efficiency). According to our calculations, they have been positioned at $\leq 83.74/MWh$ at the end of January.

In parallel, the generation costs of combined cycle gas plants (with 50% efficiency) have also fallen, reaching levels of €81.93/MWh. They are slightly more competitive than coal plants, due to the drop in gas prices.

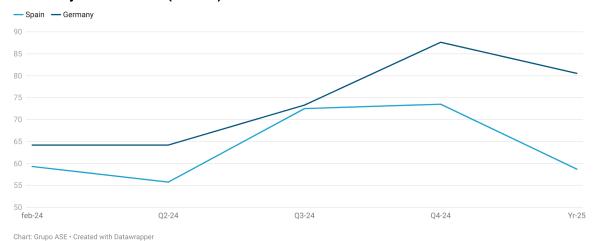
Currently, according to our estimates, the energy switching price is at a gas price of €31.26/MWh, very close to the quotation of the TTF front-month price, which is around €30/MWh. As long as gas remains below this figure, CCGTs will continue to be more competitive than coal.

This reduction in the generation costs of combined cycle gas is what is driving the bearish trend of the electricity futures markets in Europe.

The price of the future in Spain for the remaining products of 2024 (February-December) has continued its strong downward correction in January, with prices below \leq 60/MWh for the first half and around \leq 70-75/MWh for the second half of 2024.

It is noteworthy the significant discount premium that Spain maintains over the German electricity futures market, which is a reference in Europe. The Spanish Yr-25 reduced its price to \in 58.70/MWh, well below the variable costs of combined cycle gas plants (about \in 81/MWh) and the price of the German Yr-25, which trades around \in 80/MWh.

Electricity futures curve (€/MWh)



Grupo ASE analysis

Futures markets in Spain are showing competitive signals

Gas and electricity hedges for the remainder of 2024 and 2025 are priced very competitively in Spain. They offer a significant discount premium compared to the generation costs of combined cycle gas plants and the German market, which is a benchmark in Europe, as previously mentioned.

Although we're still far from the prices of two years ago, the current energy context presents much more volatility and risks. Securing prices in situations like the present can prevent further increases, but perhaps it should be done progressively, to not miss the opportunity to capture further falls later on, during spring.

At this moment, companies with a longer-term vision can find a significant reduction in PPA prices (2025-2029) to cover part of their consumption, aiming to secure competitive budgets in the long term and thus manage the risk of rising costs. The 5-year PPA prices starting in 2025 are trading at around €57/MWh, down from nearly €70/MWh at the end of last November.

Our recommendation might be more short-term, given that the energy situation of a tight market could extend during 2024 and 2025, although the European economic weakness and China's slow recovery will make it more bearable.

But beyond 2025, it's difficult to predict the impact of a new wave of LNG supply starting in 2026 from the United States and Qatar, which could sink gas prices. To this, we must add the new wave of solar photovoltaic and wind power pending execution in the Iberian Peninsula. This can also plunge generation prices, at certain times of the year, due to our limited interconnection capacity and the immaturity of storage.

For now, in the short term, gas markets seem "anesthetized" by geopolitical tensions in the Red Sea and a potential extension of the conflict in the Middle East. It might be time to take advantage.

Markets seem convinced that high gas reserves in Europe, weak gas demand, and the high supply of LNG from the United States will keep gas prices in a stable range around €30-35/MWh.

But, as we've been saying, in such a tight and volatile market, markets can surprise us and react strongly and quickly in the opposite direction.



Your energy protected by the group

We are the electricity sector company that champions the economic interests and rights of industrial consumers. We declare our independence, in basing our efforts on knowledge and technology.



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