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AGENDA

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   - 1.2. EUA
   - 1.3. Guarantees of Origin
   - 1.4. French nuclear availability
2. UK market overview
   - 2.1. Power and gas prices
   - 2.2. Power fundamentals
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3. Conclusions
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Energy market report

Fourth quarter 2023 / October - December

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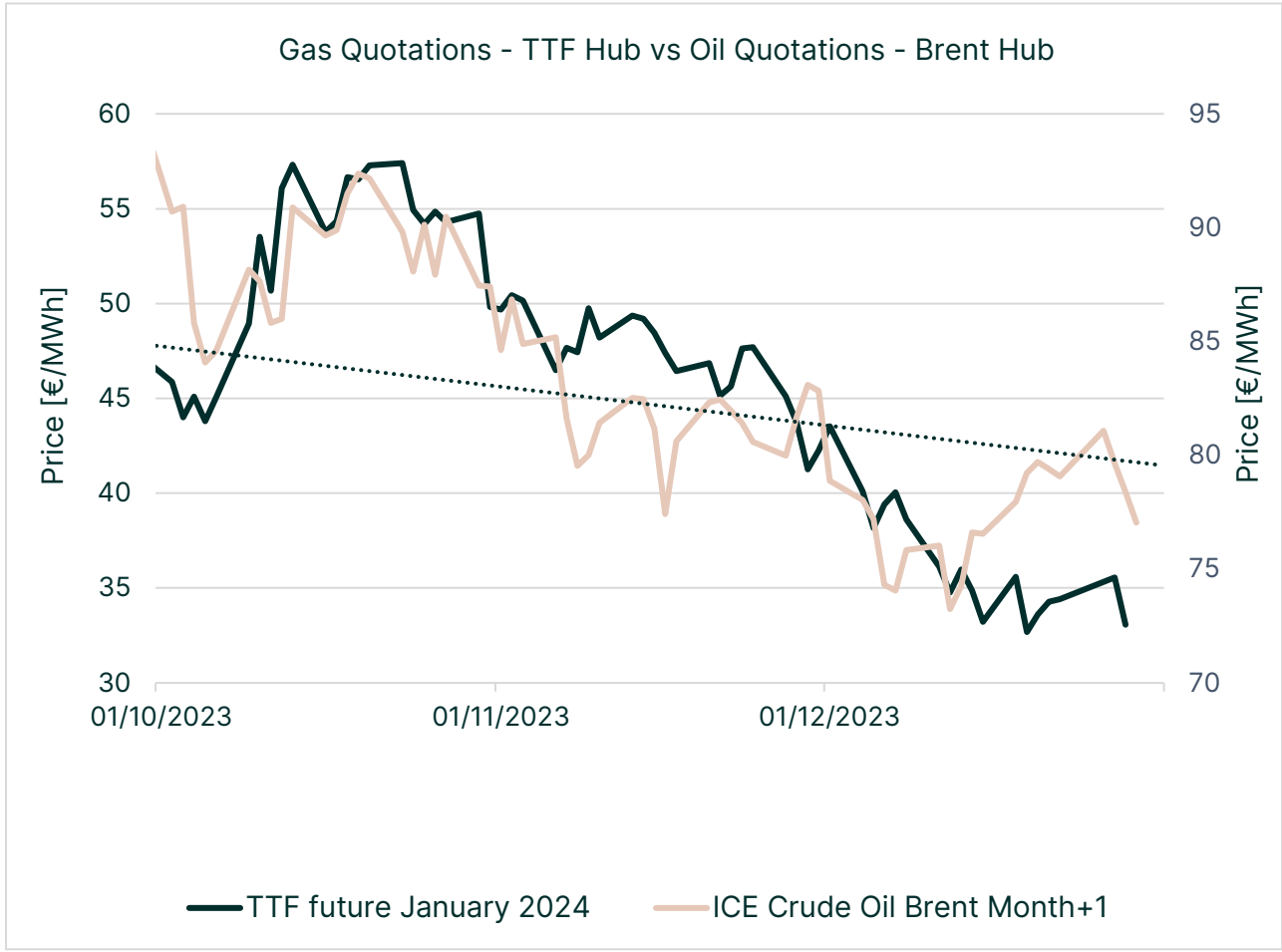
Main European energy market trends

GAS

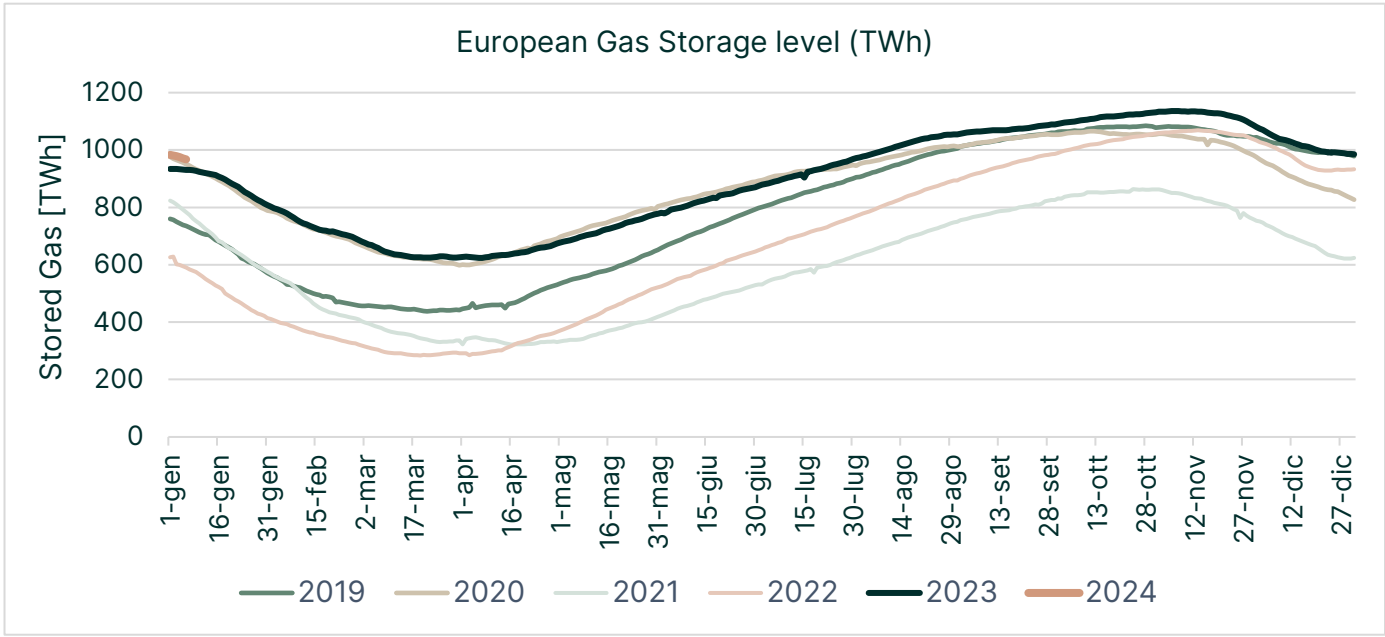
- The beginning of Q4 saw a sudden **spike in gas quotations**, due to the escalation of the Israeli–Palestinian conflict. Gas price went **from 46 €/MWh to 57 €/MWh** for the *future* product with delivery in January 2024.
- A strong **correlation between TTF* and Brent**** guided the gas movement. Brent Oil immediately suffered the effects of war news, since the Middle East is the most crucial region for the oil market. Brent future quotations of the month ahead reached a peak of 92.16 USD/Barrel. This increase spread to LNG*** - and then to European gas (TTF) - since many LNG long-term contracts are priced according to oil price.
- As happened for the conflict in Ukraine, after a first period of great market volatility, **the situation has stabilized**. In the second part of Q4, bearish fundamentals prevailed.
- It is necessary to **monitor** the situation in the **Red Sea area**, since the involvement of LNG flows towards Europe could cause a rise in gas quotations.

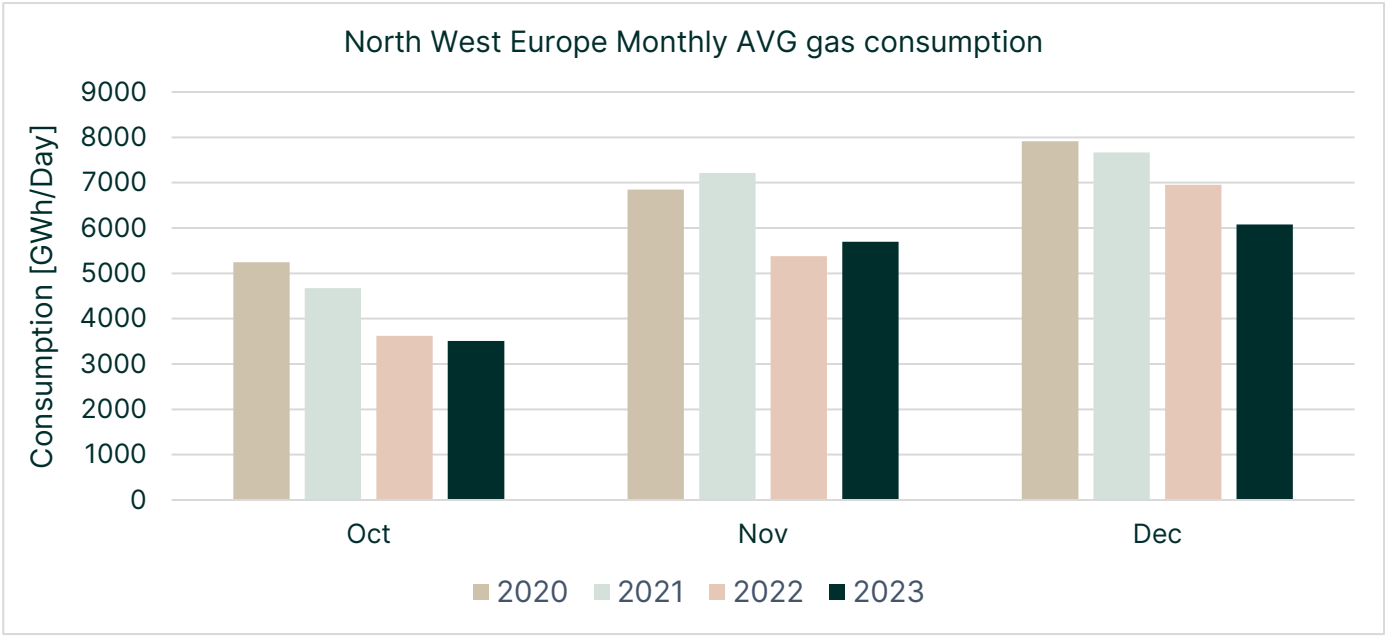


*Title Transfer Facility (main hub for gas trading in Europe)
**One of the main hubs for oil trading
***Liquefied Natural Gas

GAS

- **Gas storage reached its maximum level** at the end of November. Despite a steep reduction in gas storage due to a cold December, the filling level is still very good.
- As a consequence of mild temperatures and low industrial consumptions, **gas demand decreased compared to previous years**, causing gas quotations to go down as well. It is interesting to notice that gas consumption was lower than 2020, which was characterized by the Covid pandemic.
- The risk premium created during summer in prevision of a cold winter proved to be unjustified, because of the mild temperatures observed in Q4. Once the high market volatility caused by the escalation of the Israeli–Palestinian conflict was absorbed, a **bearish trend prevailed until the end of the year**.





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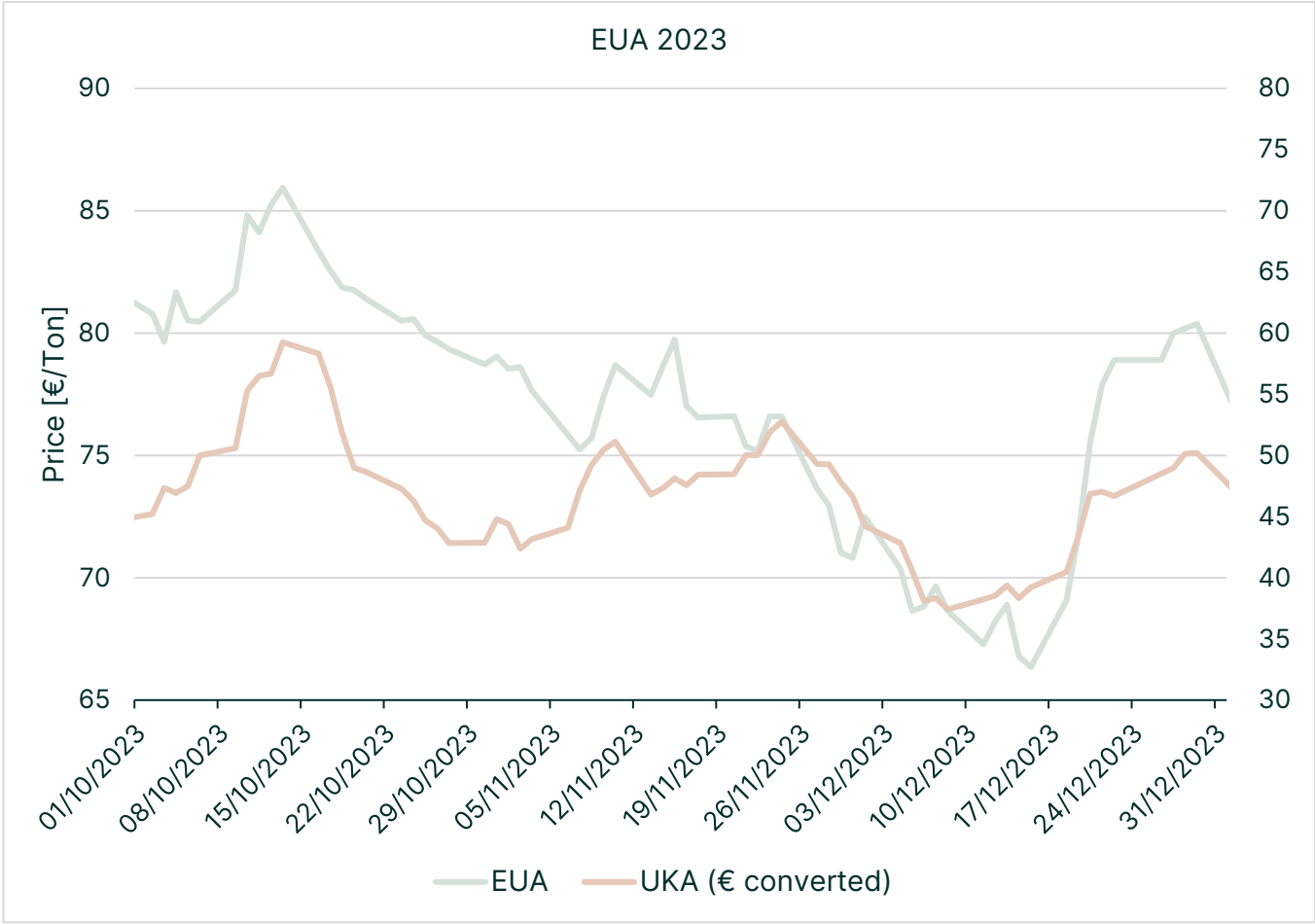
EUA

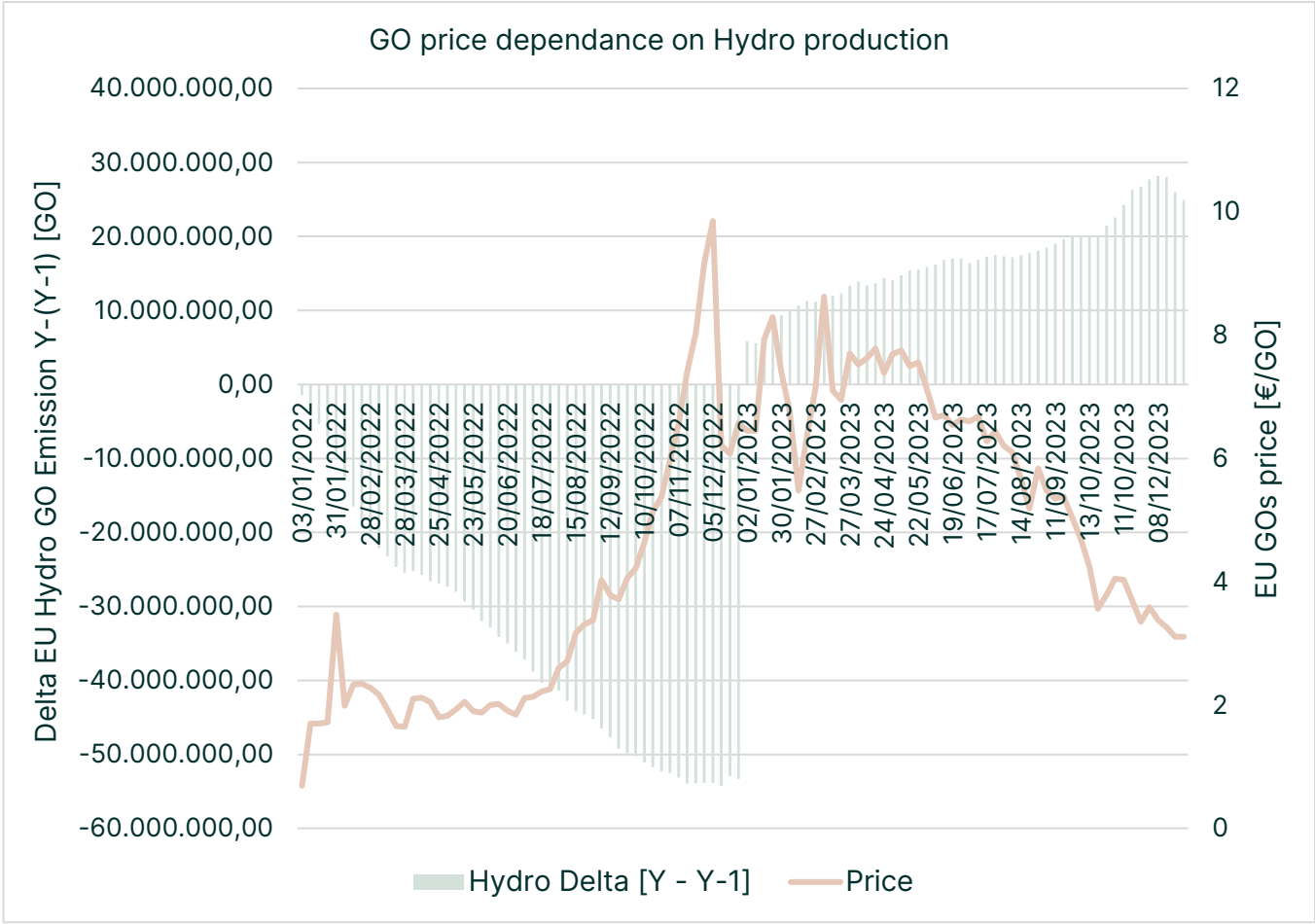
- ICE Exchange's COTR (Commitments Of Traders Report) observed an **increment in *short* positions** (sell net positioning of the operators) for the EUA* commodity starting from October. This trend has been driven by a **bearish market view**, which is the result of the gas trend and of weak macroeconomic indicators in the Eurozone.
- As a consequence, in November the EUA price reached its lowest level of the year.
- On 19/12/2023, close to the EUA product's expiry, operators closed part of their positions to switch them on the 2024 competence. This massive market movement **guided the price up**, close to the value of **80 €/Ton**.
- A similar trend has been observed for **UKA****.



*European Union Allowance
**United Kingdom Allowance

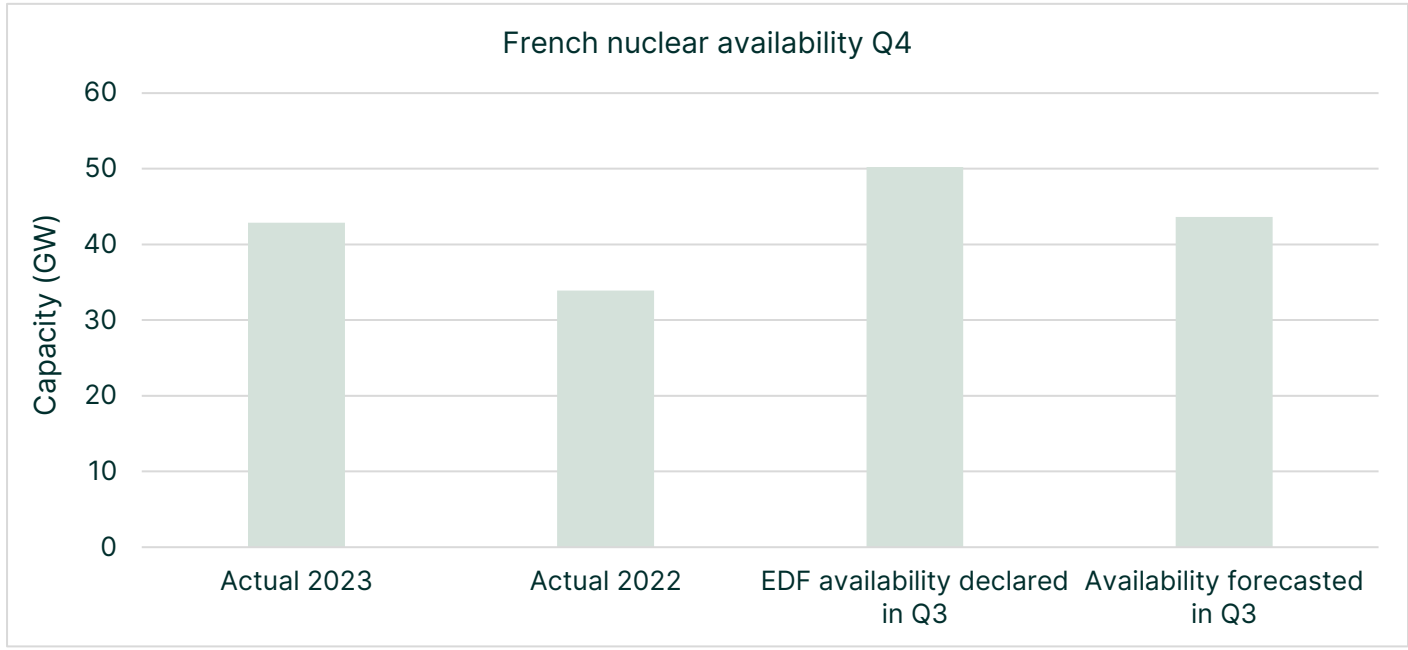
GUARANTEES OF ORIGIN

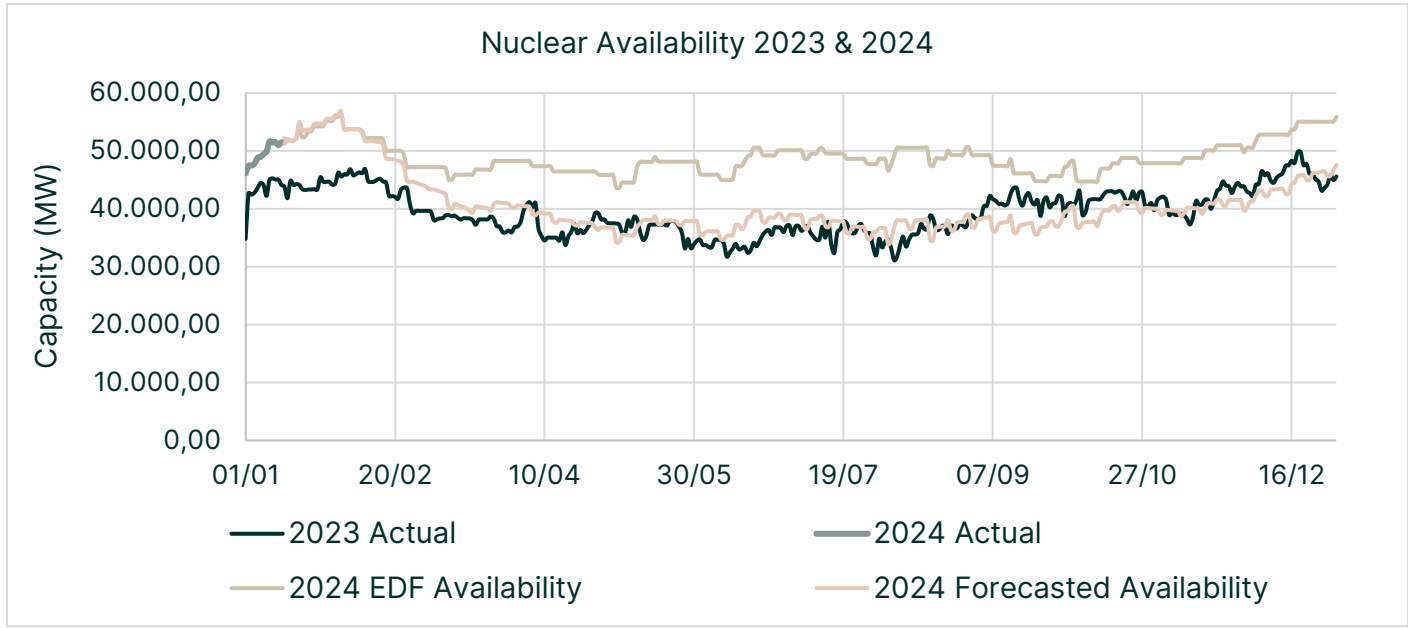
- The last two years have been a clear representation of how the **GO market** relies on **hydro production**, in particular from the Nordics.
- In the graph, that shows in green the cumulative delta of the hydro production of the year compared to the previous one, we can see that in **2022** the hydro production was much lower than in 2021. This led to a **constant increase in GO prices**, that reached an astonishing price of **10€** between November and December 2022.
- In 2023 the **hydro situation progressively improved** and this, combined with a good wind and solar energy production, led to a decrease in prices, that reached **around 3€** at the end of the year.
- We expect 2024 to follow the same trend, unless we experience a change in hydro production during the year.



FRENCH NUCLEAR AVAILABILITY

- The **French nuclear availability** in Q4 2023 was on average **9GW higher** than in Q4 2022.
- This value was in line with the forecast from Q3 and 8GW lower than **EDF availability** from Q3 (EDF does not take possible short-term outages into account).
- 2024 has just started, and for now we have **a few GW more than in 2023**. Forecasts say French nuclear availability should stick to 2023 levels, with possible variations depending on the duration of the **strikes** starting at the end of January.





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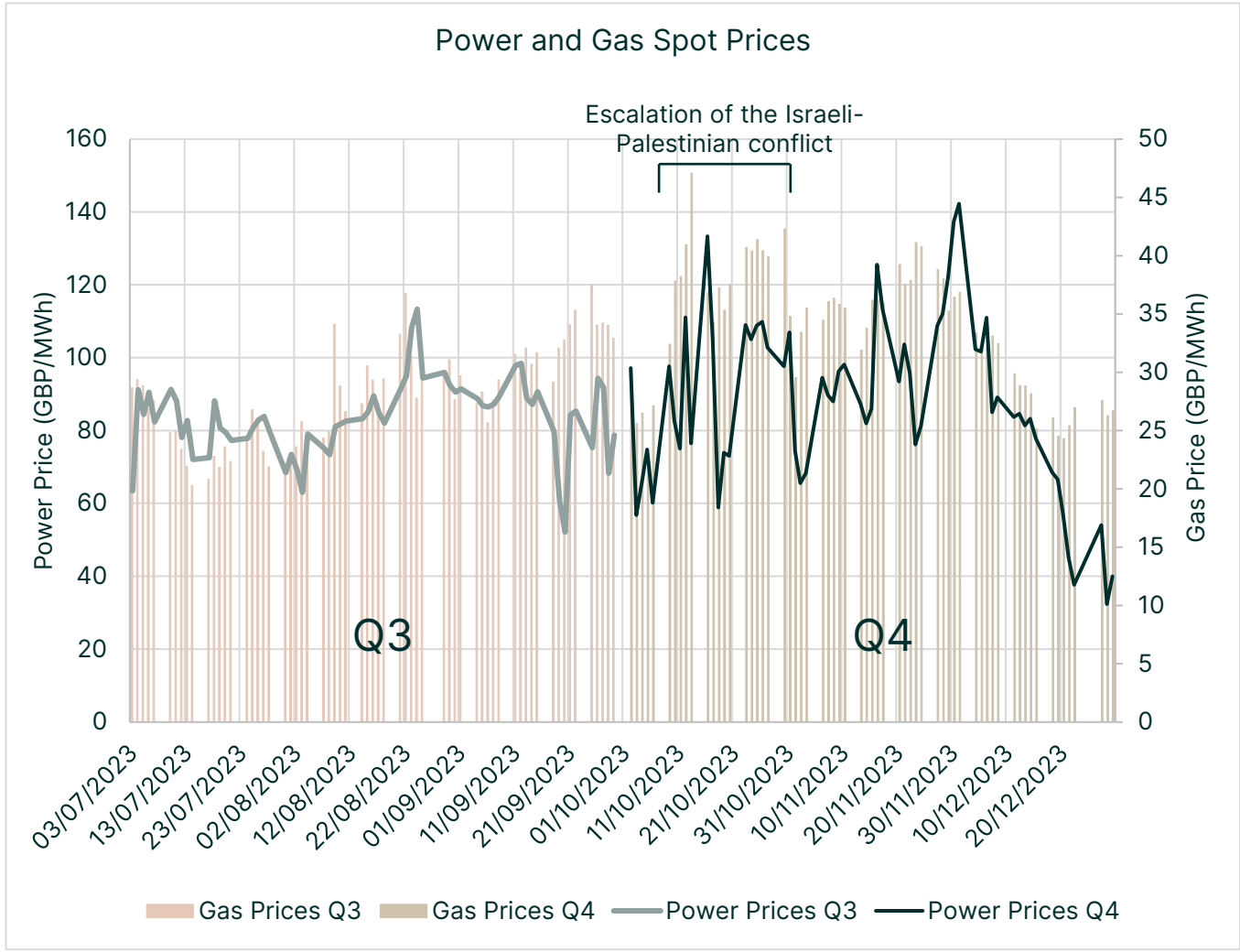
UK market overview

POWER AND GAS PRICES

- As anticipated in our Q3 report, **power price volatility has increased** due to renewables' penetration, ranging between 142 and 32 GBP/MWh for a spot baseload.
- Power prices have been **closely following gas prices**, which indicates that most of the time gas-fired generation is the marginal source.
- The **Israeli–Palestinian conflict** impacted the NBP* spot, especially during the first weeks following its escalation in October. This happened despite comfortable storage levels, highlighting the sensitivity of the market to geopolitical events.

*National Balancing Point: UK gas hub



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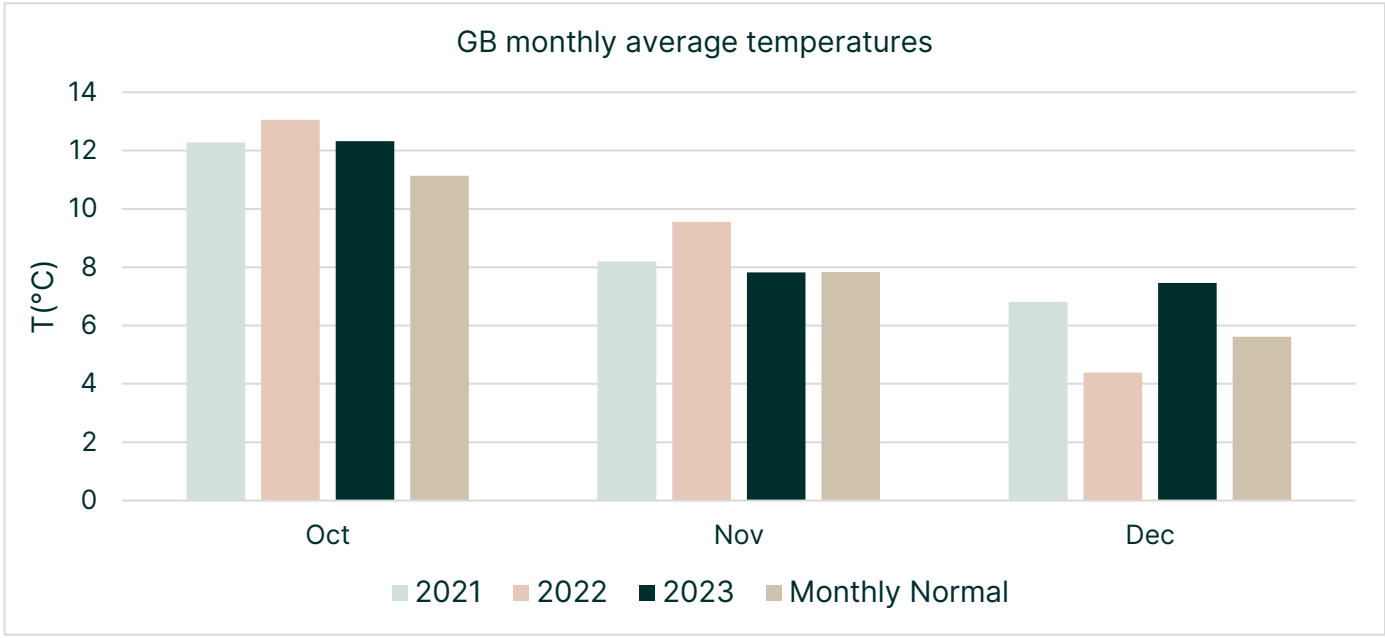
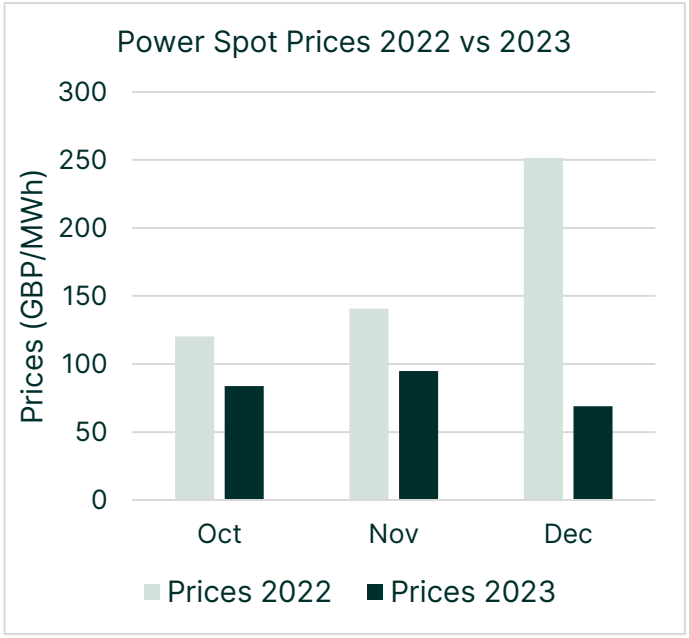
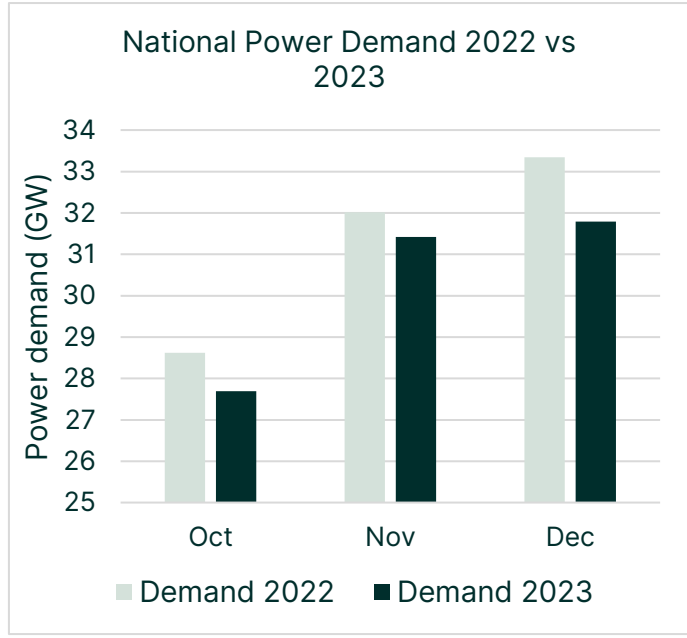
POWER FUNDAMENTALS

- Q4 temperatures were above average, which, along with increasing energy bills and a very high inflation rate, contributed to keep **a low demand in gas and power**.
- In Q4 2023 lower power demand and lower gas prices brought **power prices back to more reasonable levels** compared to the same period in 2022.







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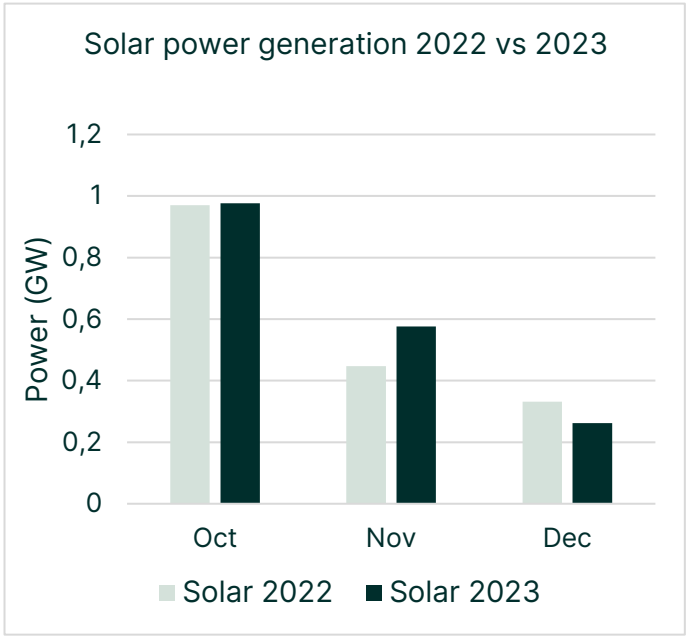
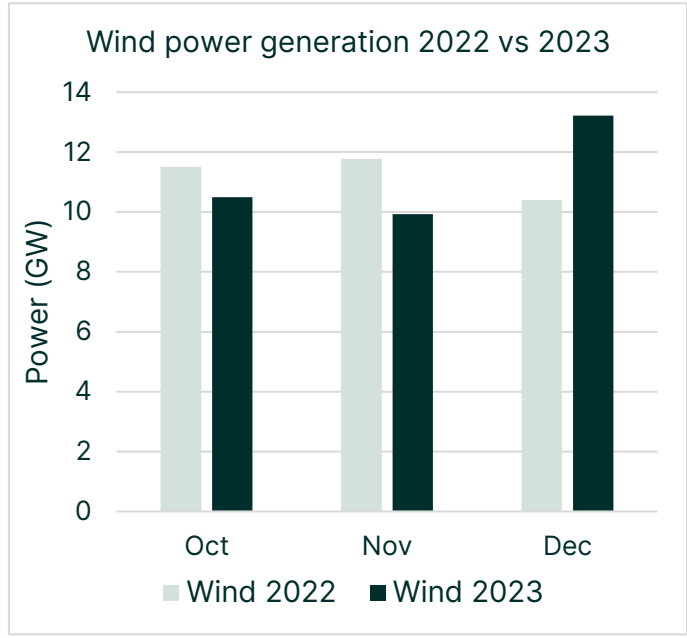
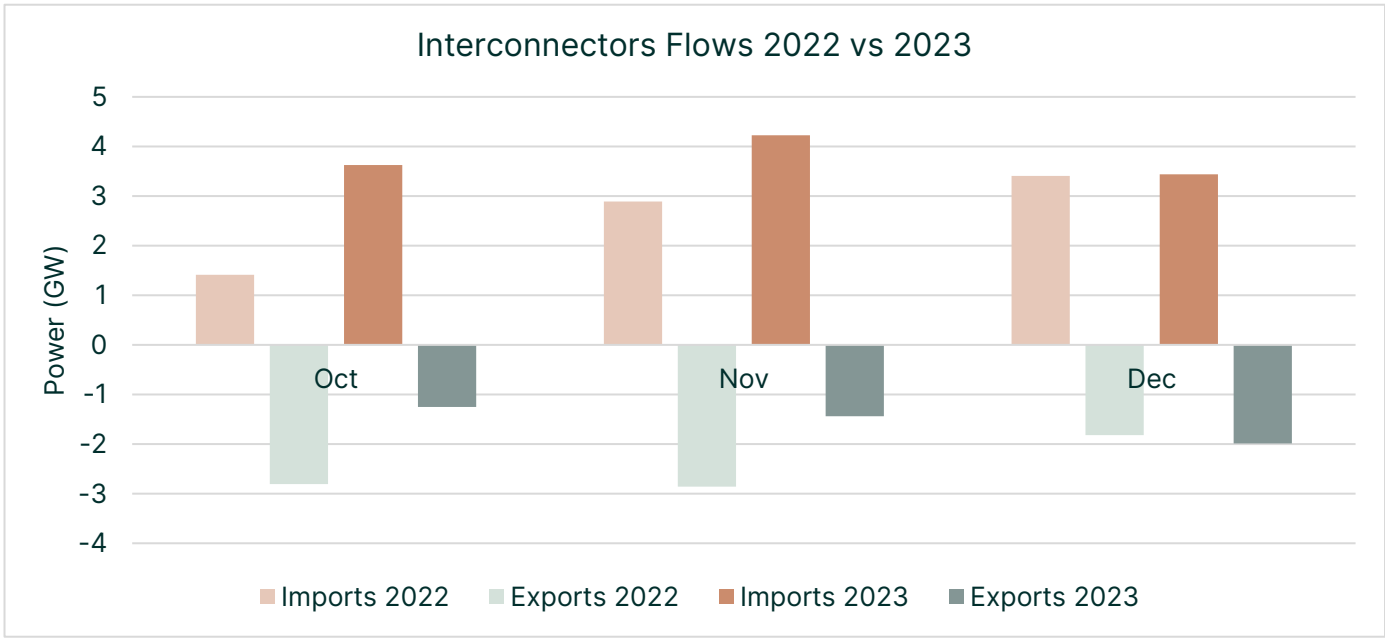
POWER FUNDAMENTALS

- **Solar power generation** was in line with previous years.
- **Wind power generation** was a bit lower than in 2022, except for December, which was a stormy month.
- In 2023, the **UK imported more and exported less** power (except for December, as mentioned) than in 2022. This was a consequence of the higher French nuclear availability.
- In December, the **Viking interconnector** (with its initial 0.8GW) was tested and commissioned, linking the UK and Denmark.
- Europe and the UK are working hand in hand to develop interconnections to the benefit of the environment and of energy costs.







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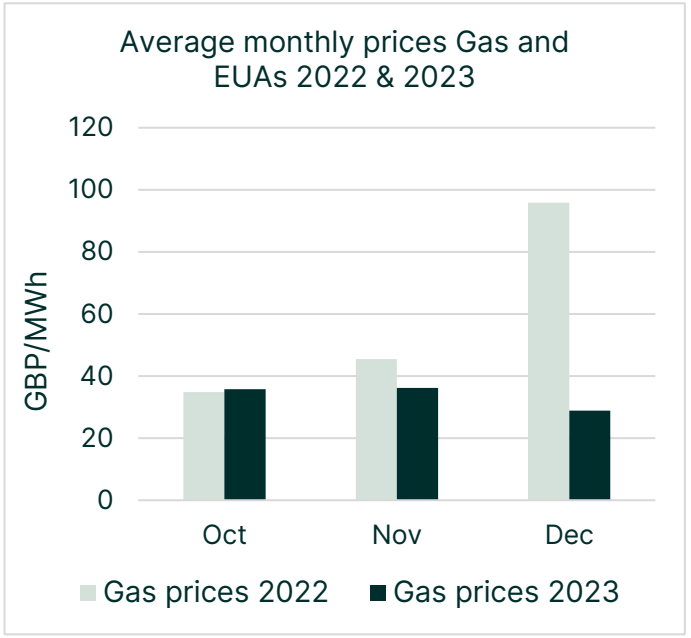
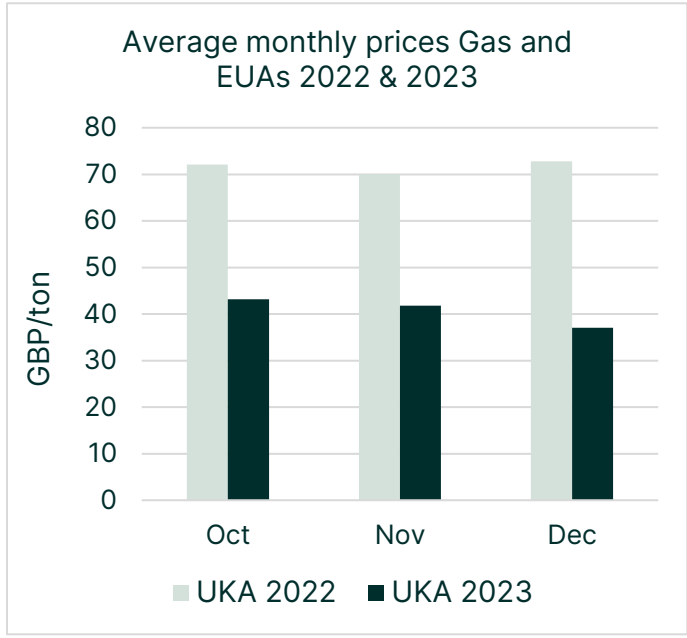
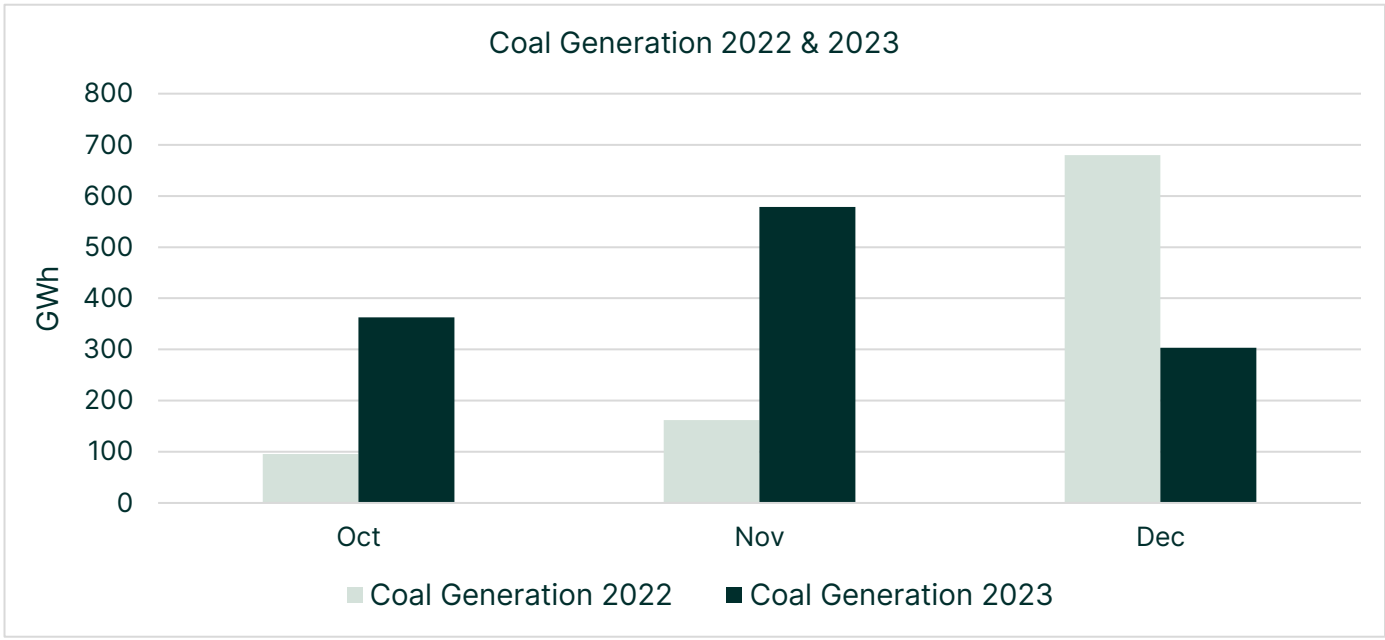
COAL-FIRED POWER GENERATION

- In Q4 2023 only one **coal unit** was still online: **Ratcliffe**. There is **2.5GW** coal-fired generation capacity less than the previous year.
- Surprisingly, in October and November 2023 the power generation using coal was over **3 times bigger than in 2022**.
- The downside of our current low demand/high renewables scenario is the **decrease in UKA prices**, which helped carbon-intensive sources like coal to be in the money to run during tight hours.
- Only in December the generation from coal was lower than the previous year. This is mainly due to the very high cost of gas registered in December 2022, which saw the marginal fuel switch from gas to coal.







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Conclusions

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- At the beginning of Q4, gas quotations spiked suddenly, due to the escalation of the Israeli–Palestinian conflict. The bearish pressure caused by high wind and temperatures and low gas demand prevailed, driving gas price down in late November and December.

- However, news from the Middle East are far from being reassuring. It is necessary to monitor the situation in the Red Sea area, since the involvement of LNG flows towards Europe could cause a rise in gas quotations.

- Close to the expiry of EUA 2023, operators closed part of their positions to switch them on the 2024 competence. This massive market movement guided the price up, close to the value of 80 €/Ton.

- If the Ratcliffe coal unit phases out in September 2024, this year will see the first winter without coal-fired generation in the electricity mix since the 19th century. We can count on Viking and the other interconnectors to contribute to balancing the intermittent renewables.

Thanks

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