Bundesnetzagentur

Bundeskartellamt

Results of the investigation into price peaks in short-term electricity trading in November and December 2024

October 2025

On five days in November and December 2024, there were exceptionally high prices in short-term wholesale electricity trading. The Bundeskartellamt (BKartA) and the Bundesnetzagentur (BNetzA) conducted a detailed investigation into the causes of these unusual events to identify or rule out any evidence of abusive market practices and to assess the safeguarding of security of supply.

Short-term electricity wholesale prices are often subject to fluctuations, both throughout the day and during the year. The background is that the supply of electricity needs to match demand exactly at all times, and the two variables fluctuate independently of each other over time. The average price for day-ahead auctions in 2024 was about €79/MWh. During the supply period in November and December 2024 there was an unusually high number of expensive hours. Prices peaked at up to €936/MWh. In 35 of 1,464 delivery hours, or 2.4% of the time, prices in the day-ahead auction rose to over €300/MWh. Of the 35 hours with prices higher than €300/MWh, 34 occurred between 5 and 7 November 2024 and on 11 and 12 December 2024.

During these periods of extremely low wind and solar generation, also known as “dunkelflaute”[1] periods, high demand coincided at times with a low supply of renewable energies (RE). European market coupling ensured that significant amounts of electricity were imported from Germany’s neighbours, thus preventing even more extreme price peaks in Germany. The remaining electricity demand had to be covered primarily by controllable thermal power plants, which have higher generating costs than renewable energy installations. In such situations, price peaks can be an undistorted market outcome. Such high prices have historically been a rare occurrence, even during dunkelflaute periods. In some cases the observed prices significantly exceeded the generating costs of even very expensive power plants.

Against this background, the high electricity prices at the exchange were the focus of considerable media attention and discussion. Some asked whether significant generating capacities went unused, and whether they were instead withheld, possibly in order to drive up prices. This also led some to question whether security of supply was guaranteed.

[1] A “dunkelflaute” period refers to the persistent presence of a weather pattern in which low levels of sunlight coincide with minimal to no wind and consequently hardly any wind or solar PV generation. Based on historical generation time series, the Bundesnetzagentur defines dunkelflaute periods as situations in which the generating capacity of wind and PV installations is continuously less than 15% of their installed capacity over a period of at least 48 hours.

The Bundeskartellamt and the Bundesnetzagentur collected and evaluated large amounts of data from public and non-public sources relating to the underlying situation, the use and availability of power plant capacity and trading behaviour. The key findings for the five days in questions are as follows:

- The investigations carried out into power plant use and electricity supply revealed no evidence of a breach of antitrust law or of REMIT.
- Controllable power plant capacity was utilised to a significantly greater degree than was reported in the media in the immediate follow-up to the event.
- A secure electricity supply was guaranteed at all times.

The following sections present the results in detail.

1. Investigation into evidence of breach of antitrust law

The Bundeskartellamt is responsible for investigating possible breaches of antitrust law. The prohibition of anti-competitive abusive practices is intended, among other things, to prevent electricity producing companies with a dominant position in the market from driving up electricity generation prices in an abusive manner.

In its investigation of the market situations in question, the Bundeskartellamt took into account in particular the principles set out in the guidelines for the control of abusive market practices in antitrust and wholesale energy trading law in the area of electricity generation/electricity wholesale.[2] Price peaks in wholesale electricity trading are not per se sufficient evidence that prices on the primary electricity market have been driven up in an abusive manner; instead, they may be a normal and undistorted market result. On their own, they do not constitute proof of abusive behaviour by companies with a dominant position in the market.

One necessary criterion for showing an abusive withholding of capacity is the failure to use actually available electricity generation capacity, whose electricity could have been sold at a price above the respective short-term marginal costs. Withholding of capacity is also only considered to be a breach of the antitrust prohibition against market abuse if the criterion of market dominance is met.[3] Companies considered by the Bundeskartellamt to be possible candidates for a dominant position in the market are listed in the regularly published Market Power Reports. The focus of investigations was on the companies EnBW, LEAG, RWE, Uniper and Vattenfall, which those reports also examined closely due to their shares of electricity generation.

The Bundeskartellamt's investigations dealt primarily with two questions: (i) were all of the power stations that were reported to be available by these companies actually used, and (ii) were power stations where the capacities were reported as not available, or partly not available, indeed unavailable? The investigation did not focus on reviewing the reported marginal costs of power stations, as the price peaks on the exchange were so high that they clearly exceeded the marginal

[2] See also BKartA/BNetzA (2019): Leitfaden für die kartellrechtliche und energiegroßhandelsrechtliche Missbrauchsaufsicht im Bereich Stromerzeugung/-großhandel, accessible at: https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Leitfaden/Leitfaden_Preisspitzen.pdf?__blob=publicationFile&v=4.

[3] On the other hand, the prohibition of cartels within the meaning of Article 101 AEUV and Sections 1 and 2 GWB also applies to companies without a dominant market position. See also margin no 24 of the guideline.

costs of the vast majority of power stations. Also taken into account was the fact that the price in intraday trading on the afternoon of 12 December 2024 was significantly lower than that of the day-ahead auction. More flexible power stations can, in the event that lower intraday prices occur later, quickly adjust their power plant deployment, which appears profitable based on day-ahead prices, to intraday prices, which are in this case lower.

The analysis of the capacity available to the electricity wholesale market based on the power plant deployment planning data collected by the Bundeskartellamt for power plants with a capacity of over 10 MW showed that nearly all the market capacity registered as available did indeed generate electricity during the relevant periods. The free capacity of the generation capacity registered as available and not used by the five abovementioned companies amounted to an average of about 170 MW between 5pm and 7pm on 6 November 2024 and about 410 MW between 4pm and 6pm on 12 December 2024. This remaining capacity is mostly highly flexible storage facilities or more flexible power stations with particularly high marginal costs, whose marketing is less based on day-ahead prices and more one intraday prices. Additionally, one company retroactively clarified reporting errors that had incorrectly indicated availability that did not actually exist.

The Bundeskartellamt also examined the reasons for non-availability during price peaks among the above-mentioned power station operators, verified the plausibility of the specific reasons given for each power station and, where possible, also checked them against other data sources. For example, the results of balancing capacity auctions were compared with the amount of balancing reserves that companies reported as the reason for non-availability. To verify the availability of heat-driven power stations,[4] several smaller market participants were asked about the possible use of such co-generation power stations, and the findings were used to verify the plausibility of the reported availability of similar power stations operated by larger power station operators. In addition, information on technically available capacity was checked for plausibility by identifying power station parameters such as start-up times, minimum operational life, etc.

Non-availability is generally the result of a complex interplay of technical and economic factors. Equally complex is therefore the task of verifying the plausibility of the reasons provided for non-availability. In particular, there must be a case-by-case assessment of the circumstances specific to each power station. From the standpoint of an investigating authority, it is therefore impossible to conclude with absolute certainty for each individual reported case of non-availability that the power station in question was correctly reported as not available. In any case, the investigations did not find any evidence of false non-availability.

Overall, the data surveys and verifications described above did not reveal any evidence of abusive withholding of capacity on the five days in question.

2. Assessment of security of supply and investigation of evidence of breach of antitrust law under REMIT

The Bundesnetzagentur carried out analyses to assess the security of supply and with a view to identifying possible breaches of the prohibitions against market abuse in REMIT (EU) No 1227/2011).

[4] This refers to power stations that orient their electricity generation to the necessary or marketable heat production.

The investigations into the supply situation focused on the utilisation of the controllable power plant capacity for the German market area that existed in November and December 2024. The power plant capacities were determined on the basis of the installed net nominal capacity specified in the core energy market data register (Marktstammdatenregister) and in the Bundesnetzagentur's list of power plants. In November and December 2024, the controllable power plant capacity amounted to approximately 105.5 GW. This included power plants operating on lignite and hard coal, natural gas and pumped storage, as well as power plants utilising biomass or (run-of-river) hydropower. This list is supplemented by the category “other conventional power plants”, which includes power plants running on mineral oil, sewage sludge or waste, as well as battery storage facilities. These installed power plant capacities were compared with the electricity feed-in to the general supply grids, as well as an estimated feed-in to other grids. Capacities were investigated that have only a rail power grid connection, or are grid-related operating resources, or were reported as unavailable, or were held in reserve as security reserves. In addition, estimates were made of capacity for biomass, hydropower and other conventional power plants that hitherto have been unused on the market. These values were deducted from the installed capacities and an available market capacity was calculated.

The capacities classified as available on the market are estimates based on available data. The electricity feed-in to grids other than the general supply grid and the capacities of biomass, hydropower and other conventional power plants historically not used on the market are estimated conservatively due to a lack of quarter-hourly data. The actual values could be lower, which would increase the additional capacity available on the market. On the other hand, it is possible that some of the capacities were tied up for commercial collateralisation purposes, or were not available due to other technical restrictions. For example, the usable capacities of heat-fired power plants may have been lower as these plants cannot reach their net nominal capacity without full heat dissipation, and temperatures in November 2024 were at times in the double digits. Power plant deployment planning data indicates that this was the case, although it was not possible at the time to show this quantitatively in the evaluations conducted.

The analyses reveal that the controllable power plant capacity was used on a much greater scale than the media reports following the event initially suggested. In the most expensive hours on 6 November and 12 December 2024 - in both cases, from 5pm to 6pm - there were still about 4.5 GW and 3.4 GW respectively of remaining market capacity available, according to estimates by the Bundesnetzagentur (see illustration “Utilisation of the controllable power plant fleet during the evaluation period”). The lignite and coal-fired power plants that could be used for general electricity generation and were registered as available were fully used in the expensive hours on 6 November and 12 December 2024. There was still remaining capacity available in natural gas and pumped storage power stations, according to the REMIT reporting obligations. This capacity, however, was much lower than what was suggested in reports.

Despite this, a secure electricity supply was guaranteed at all times as Germany has sufficient generating capacities available. In addition to the market capacity, there were also about 12 to 13 GW of reserves and balancing energy available.

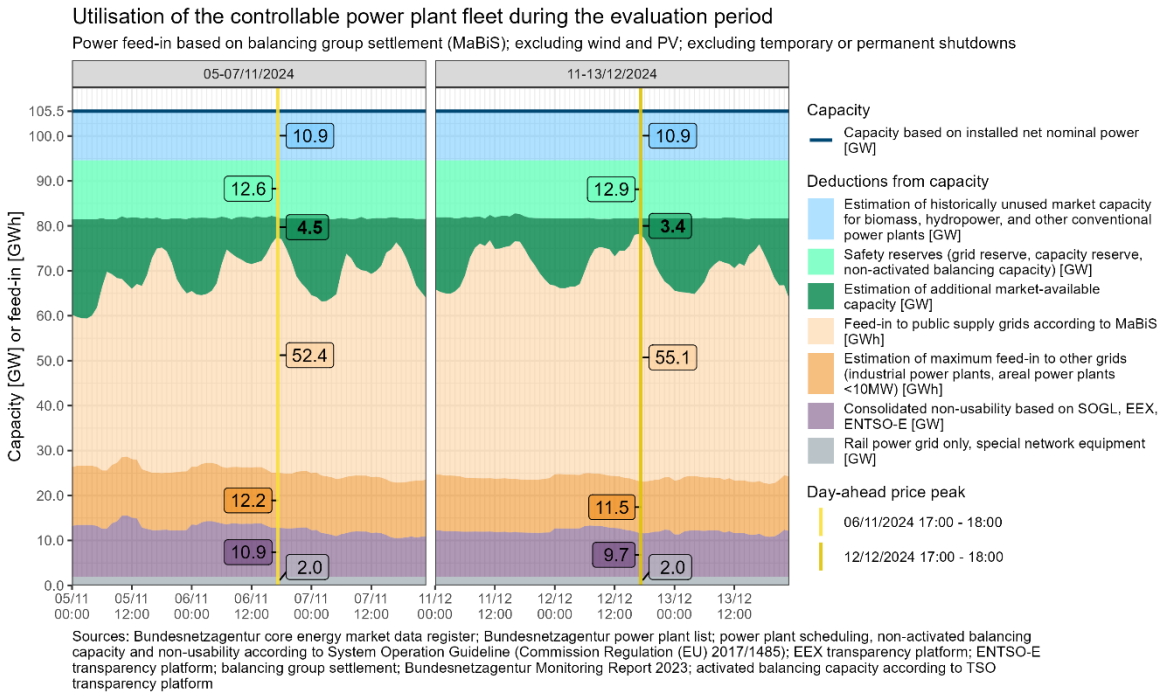

Illustration 1: Utilisation of controllable power plant fleet during the evaluation period

The differing public assessment immediately following the event is attributable to several factors. For one, electricity feed-in to industry, rail and local grids was not taken into account. According to Bundesnetzagentur estimates, this feed-in ranged between 11 and 12 GW. Secondly, according to the balancing group settlement data (MaBiS), domestic feed-in to the general supply grids was significantly higher than what was originally reported on the transparency platform of the European transmission system operators ENTSO-E. The generation data published there tended to underestimate the actual grid feed-in und thus overestimated the unused capacity. For biomass, hydropower and other conventional power plants, the historically utilised capacity on the market is significantly less than their installed net nominal capacity of around 29 GW. Taking into account the maximum feed-in to the general electricity supply grids and factors such as non-availability, feed-in to other grids and self-consumption, the historically utilised capacity on the market amounts to around 18 GW. The difference of around 11 GW that has so far not been used on the market is attributable to energy source-specific restrictions, among other factors.

European market coupling in pre-day and intraday trading worked well. Because Germany was the country with the highest prices during many of the relevant hours, it imported electricity from neighbouring countries within the scope of available capacities.

On the trading side, the Bundesnetzagentur also examined the market participants' bidding behaviour with a view to identifying possible prohibition of market manipulation under REMIT. Investigations focused on who benefited to a particular degree, directly or indirectly, from the high prices, and whether there were any noticeable anomalies in bidding behaviour. The comparison with fundamental forecasts suggest that in the shortage situation, individual bidders did not bid purely according to marginal costs. However, a bid above marginal costs alone does not constitute a breach of REMIT. The Energy Only Market is designed in such a way that companies can generate contribution margins during periods of electricity shortages. These contributions serve the refinancing of investment costs and create incentives to invest in peak load power plant capacities as well as flexibility options. A breach of REMIT would only be assumed if the circumstances of the individual case indicate that market participants have taken specific measures to achieve a price level that does not result from the market forces of an

uninfluenced wholesale energy market. Such an artificial price level would only exist if it were not the result of the free interplay of supply and demand, without external interventions or information asymmetries. So far, no evidence of a breach has been found. There are some questions that the Bundesnetzagentur is still looking into in more detail.

Dunkelflaute periods, such as those that occurred in November and December 2024, will occur again in the future. The Bundesnetzagentur continues to believe that legislative measures to add controllable capacity are urgently needed to keep sufficient generating capacity available in the long run. There is also a general need to increase flexibility, both in demand and generation, for example by more flexible operations to leverage biomass capacity hitherto unused on the market. The Bundesnetzagentur will continue to analyse unusual market situations within the framework of its statutory mandate. In order to be able to assess such situations more quickly and effectively in the future, there is also a need for an improved data basis. This applies in particular to values for feed-in to grids other than general supply grids, as well as more precise information on actual available generating capacities and its non-availability.