

# Electricity market

## Summary

As in 2009, developments in the electricity generation field in 2010 were characterised by a significant increase in generation capacities from renewable sources. This expansion of generation based on volatile sources is primarily the result of solar power systems and, to a lesser extent, wind energy capacities.

Alongside the expansion of generation based on volatile sources, 2011 also witnessed a decline in generation from non-volatile sources resulting from the decommissioning of nuclear energy capacities in line with the amended Atomic Energy Act. Alongside this fall-off in nuclear energy, a further reduction in generation from non-volatile sources is planned through to the end of 2014. Despite this, it is expected that this entire reduction can be compensated for by the expansion of non-volatile power station capacity by 2014. However, the delays to a series of power station projects as already described in the 2010 Monitoring Report have, according to the monitoring data available for 2011, been further exacerbated. Furthermore, the total volume of non-volatile power station projects has fallen by nearly 18 percent within a year. To safeguard system security, it is necessary to ensure that the power stations that are already under construction are completed in line with their current scheduling. Of crucial importance in this context is the continued expansion of non-volatile generation capacity in southern Germany. The situation here will remain liable to risk even after the completion of the larger-scale power station projects that are currently under construction.

Both the integration of renewables and the decommissioning of non-volatile generation are placing particular demands on network operators. These challenges will continue to grow as a result of expansion plans for both onshore and offshore wind farms and photovoltaic systems. Consequently, the security of the electricity supply is currently a key issue that will persist over the coming years and one which the Bundesnetzagentur is already addressing in detail through its three reports on the implications of the decommissioning of nuclear capacities for the transmission systems and the security of supply<sup>1</sup>. Overall, these reports have shown that although the current situation facing the network is manageable, it requires network operators to intervene increasingly frequently in system operation. The network infrastructure in the electricity sector remains stable and secure, however.

In the event of any threat to or malfunction in the electricity supply network, transmission system operators (TSOs) are both authorised and obliged to remedy the associated problems through the adoption of network and market-related measures. Network-related measures, in particular with network switching, were implemented every single day of the year during 2010. Market-related measures, in particular those relating to congestion management, were taken on 129 days during the same year. In addition, the TSOs undertook commercial transactions on 157 days of the year in order to eliminate threats to or malfunctions in the network.

The continuing high level of security of the electricity supply can only be guaranteed in the future if massive investments are made at all levels of the network. The Power Grid Expansion Act (EnLAG) of 2009 is intended to greatly simplify the implementation of the necessary expansion measures. The Act identifies 24 projects for immediate priority implementation. So far, two of these projects have been completed. There are clear delays to the approval and implementation plans of twelve of the 24 EnLAG projects, with the result that the intended commissioning dates have been exceeded by several years in some cases.

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<sup>1</sup> <http://www.bundesnetzagentur.de> "Impact of the nuclear power moratorium on the transmission networks and security of supply"

The reports submitted by the TSOs to the Bundesnetzagentur regarding the state of implementation of their planned network expansions also document these delays. At the second quarter of 2011, a total of 149 expansion projects were planned through to 2014, including 19 measures relating to the connection of offshore wind farms. Of the total volume of expansion measures, 73 were behind schedule or had postponed completion dates at the end of the second quarter of 2011. Accordingly, the investment data reported within the framework of the 2011 monitoring activities provide further evidence of the fact that the new build and expansion projects planned for the transmission systems are significantly behind schedule.

The strong expansion of generation installations based on renewable energy sources, coupled with the legal obligation to connect and purchase regardless of network capacity, also represents a considerable challenge to distribution system operators (DSOs). Alongside traditional expansion measures, network operators are primarily responding to these challenges by increasingly restructuring their networks, putting in place smart technology, which allows them to adapt to changing requirements over time. Consequently, the number of DSOs conducting measures to optimize, reinforce and expand their networks grew once more during 2010. In addition, network operators have the option of restricting the output from installations operated under the Renewable Energy Sources Act (EEG) if they are unable to take up the energy generated from renewable sources because no conventional power station can be adjusted to compensate. So far, this type of adjustment of EEG installations has only been required to a small degree in the context of feed-in management in the northern network areas where there is a high level of installed wind power capacity. Nevertheless, the downward adjustment of energy from EEG installations in 2010 was 70 percent higher than in 2009. This illustrates the growing challenge that the rapid growth of renewables is already posing to networks and that will become increasingly intense over the coming years.

In 2010, the German wholesale market for electricity was extremely liquid. The wholesale volume in 2010 amounted to approximately seventeen times the actual electricity requirement in Germany. Without taking account of the transactions cleared on the exchange, the over-the-counter (OTC) trade volume in 2010 was more than fourteen times greater than the volume traded on the markets (EEX and EPEX Spot). More than half of the wholesale volume was traded over broker platforms and more than a third of the trade volume was accounted for by bilateral transactions between parties. However, the volumes traded on the markets rose greatly compared to 2009. In 2010, the electricity trade volume on the EEX and EPEX Spot was a good 70 percent higher than the corresponding figure for 2009. The volumes traded on the day-ahead and intraday markets rose by more than 50 percent. However, the increase in the intraday trade volume is primarily due to the sale of electricity under the EEG by the TSOs on the EPEX Spot market. The sale of EEG electricity volumes also had a dampening effect on day-ahead prices during 2010, with the result that prices rose only slightly in this sector. On the futures market, price levels in 2009 and 2010 remained practically constant at base load while falling by seven percent at peak load.

One trend observed in both the futures and spot markets is the considerable reduction in price volatility compared to previous years. This reduced level of price fluctuation is due, at least in part, to the EEG electricity volumes that have been marketed on EPEX Spot since January 2010 and the coupling of the German and Nordic markets as of the end of 2009. Following the successful launch of the German/Nordic market coupling in November 2009, the focus in 2010 shifted to the introduction of market coupling in the central-western European region. The coupling of the electricity markets in north-western Europe (Germany, France, Benelux and Scandinavia) at the end of 2010 represented the accomplishment of a milestone towards the integration of electricity markets within the European Union. Following this, the national electricity spot markets of nine countries have been interconnected at wholesale level. The expected positive effects on market results have been achieved. In particular, it has been possible to align prices between the individual countries.

The German electricity retail sector in 2010 was characterized by a marked increase in volumes supplied to industrial customers as well as by increases in the prices paid by industrial, business and household customers. After the clear fall in sales of electricity to industrial customers in 2009, an increase of over 14 percent was observed in 2010. Electricity sales to business and household customers remained comparatively stable. Overall, electricity sales grew by approximately seven percent in 2010 to regain their level of 2008.

After a continuous succession of increases in the prices paid by household customers in recent years, the year 2011 has seen the greatest rise in electricity prices since regulation was introduced. The causes for this lie primarily in the increase in the surcharge payable under the EEG and the growing importance of the "energy procurement and supply" price component. Although several factors are responsible for the sharp increase in the EEG surcharge which is used to promote renewable sources, the largest of these is the increase in overall feed-in tariff payments to installation operators. The increase in the "energy procurement and supply" price component is due in part to the rise in the undertakings' supply revenues as well as to the fact that in 2011, wholesale prices, which have fallen markedly as of the second half of 2008, failed to have the expected positive effect on electricity prices to household customers due to changes in the undertakings' procurement strategies.

Household customers who are not satisfied with their electricity suppliers' price practices are able to change supplier. Thanks to the continuing improvement in market conditions, household customers in 2011 are able to choose between an average of 147 suppliers in each network area. In 2011, some consumers are still able to achieve significant savings by switching supply contract or supplier. On average, basic supply according to § 36 EnWG continues to be the most expensive form of electricity supply; it is more price-effective for household customers to make use of their possibility to change and select another tariff from their default supplier or a tariff from another electricity supplier. However, nearly 44 percent of all household customers have not yet taken advantage of this option. 41 percent of all household customers are covered by a special contract with their default supplier and only 15 percent by a special contract concluded with a competitor.

To summarise, alongside the positive observation that growing numbers of consumers are changing their electricity supplier, it is nevertheless still unfortunately the case that the majority of consumers fail to move from their habitual supplier to a competitor despite the potential reduction in prices such a change can bring about. It is therefore increasingly difficult for competitors to gain customers who are not already considered to be in the consumer segment that is open to changing. Even though more consumers changed supplier in 2010 than they did in 2009, only approximately 25 percent of these changes helped overcome the domination of the former regional monopoly areas. If household customers do decide to switch supplier, only a small number of companies are generally in a position to profit from this. Approximately 45 percent of all household customers who switch are acquired by one of Germany's four largest suppliers either directly or via other marketing channels. Since these undertakings have had to confront a significant loss of customers in the network areas in which they provide default supply, the market share held by the four largest electricity suppliers has fallen when viewed at the national level. At the regional level, however, these local default suppliers continue to dominate despite the increasing numbers of consumers who are changing operator or supplier.

Against this background, the Bundesnetzagentur – along with the Bundeskartellamt (Federal Cartel Office) – would once again encourage all household consumers to find out about switching contract or supplier so as to benefit from the opportunities competition brings.