
Electricity Regulation in Germany

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I. Regulatory Authorities¹

A. Federal Network Agency²

The Federal Network Agency is an arm of the Federal Ministry of Economics. The FNA is tasked with providing, through liberalization and deregulation, for the further development of the electricity market, and implementing and enforcing regulatory policies applicable to the electricity sector. It is responsible for ensuring non-discriminatory network access and control of the network usage rates levied by power supply companies. Also, the FNA supervises anti-competitive practices and monitors the regulations concerning the unbundling of network areas and the system responsibility of the supply networks operators.

The FNA has rights of information and investigation, as well as the right to impose graded sanctions pursuant to the German Energy Industry Act.

B. Federal Cartel Office³

The Federal Cartel Office is an independent competition authority that enforces the applicable competition statutes. Specifically, the FCO is responsible for uncovering cartels, controlling abuses of dominance, and conducting merger reviews and controls.

C. German Energy Agency

The GEA is not strictly a regulatory authority, however its work is instrumental to policy making by the FNA. GEA is a for profit company funded by the German Ministry of Economics and Technology, with the mission to interface between politics and business. The GEA is the centre of expertise for energy efficiency, renewable energy sources and intelligent energy systems. Its mission is to generate economic growth and maintain prosperity with ever lower energy inputs.

D. Agency for the Cooperation of Energy Regulators

ACER is a newly established EU regulator that assists national regulatory authorities in exercising the regulatory tasks mandated by EC Directives. Where necessary, ACER coordinates actions between different national regulatory authorities in the EU.

¹ This research is generously funded by the Research Grants Council of Hong Kong under a Public Policy Research Grant numbered 7001-PPR-09.

² http://www.bundesnetzagentur.de/cln_1931/EN/Home/home_node.html

³ <http://www.bundeskartellamt.de/wEnglisch/index.php>

II. Regulatory Framework

A. EC Directives

As part of the EC, Germany is obliged to comply with EC Directives.

As a result of the EC liberalization packages, Germany has obliged market operators to comply with legal, functional and account unbundling requirements.

B. German federal statutes

1. German Energy Industry Act
2. Energy Line Expansion Act and Grid Expansion Acceleration Act
3. Renewable Energies Act
4. Combined Heat and Power Act
5. Nuclear Energy Act
6. Green House Gas Permission Trading Act
7. Emissions Trading Auctioning Ordinance
8. Act against Restraints of Competition

III. Market Structure

A. Generation

Most power plants in Germany are owned by **4 incumbent operators, namely RWE, E.On, EnBW and Vattenfall Europe.**

From 2001 to 2006, average yearly increase in wholesale electricity prices have increased dramatically, at approximately 13.4%. Doubts have been voiced as to whether such increases are due to rising costs or withholding of available power plant capacity to depress market supply⁴.

Independent generators and smaller renewable facilities are playing an increasing role.

B. Transmission and Distribution

Transmission networks in Germany are operated by 4 legally unbundled entities which were spun off from the 4 incumbent operators (above). The transmission operators are Amprion, TenneT, EnBW Transportnetze and 50Hertz Transmission. EnBW is the only incumbent operator which still owns its formerly integrated transmission grid as an independent operator, EnBW Transportnetze.

Regional or local distribution networks are operated by a number of vertically integrated utilities. The 4 incumbent operators hold shares in many of these utilities. Further acquisitions will likely be blocked by the Federal Cartel Office to prevent the strengthening of dominant market positions.

The third EC package for electricity and gas markets (pursuant to Directive 2007/0195) requires complete legal unbundling of transmission and distribution operators. It is thought that nothing short of complete legal separation, with no cross ownership, can remove the inherent risk of conflict of interest. This has not yet been implemented by Germany.

In an effort to promote higher-quality services and diversification of energy sources at more competitive prices, a trans-European network will be built⁵.

C. Retail

The retail market in Germany has been fully liberalized pursuant to the EC liberalization package. Industrial and household customers are currently free to purchase electricity from the provider of choice.

⁴ Dominik Most, Massimo Genoese, Market Power in the German wholesale electricity market 2(2) The Journal of Energy Markets (2009) 47 – 74 http://www.waterstechnology.com/data/jem/pdf/jem_v2n2a2.pdf

⁵ http://europa.eu/legislation_summaries/energy/internal_energy_market/127066_en.htm

The market for metering services has also been opened up. Customers may opt to receive metering services from the provider of choice.

IV. Regulation

A. Generation

Construction⁶ Construction of power generation facilities is generally subject to (1) Planning and Building Laws, and (2) environmental provisions such as the Federal Pollution Control Act.

New generators are required to obtain approval or licenses from a number of authorities. There is no one-stop licensing system for new generators.

Renewable Generation Generators which employ renewable technology enjoy the following benefits:

- Preferential access to power grids
- Mandatory purchase requirements on retail suppliers
- Fixed supra-competitive prices for sale

Nuclear Policy Nuclear power will not be part of the German policy for clean energy. Of the 17 nuclear plants in Germany, 8 have been shut down and the remaining will be decommissioned by 2022.

B. Climate Change

Renewable energy in Germany is mainly supported by the German Renewable Energy Sources Act⁷ (EEG, after the German name of the act). The German EEG has become a worldwide benchmark; 19 of 27 EU states chose the German EEG as a role model and adopted similar laws to initiate the development of renewable energy.

According to the Renewable Energies Act 2012, Germany has made the following commitments to increase the proportion of renewable energy generation to total power generation:

- 35% by 2020
- 50% by 2030
- 65% by 2040
- 80% by 2050

Germany has also made the following commitments to greenhouse gas reduction:

- 40% by 2020
- 55% by 2030
- 70% by 2040

⁶ http://www.unendlich-viel-energie.de/uploads/media/IndustryRoadmapDE_engl.pdf at p.16.

⁷ <http://www.unendlich-viel-energie.de/en/policy/the-renewable-sources-act.html>

- 80% by 2050

Germany is a world leader in renewable energy generation. She had exceeded her Kyoto target in 2007. In 2011, renewable energy production in Germany reached approximately 20%⁸.

1. Renewable Energy

Feed-in Tariffs

Feed-in tariffs and priority connection to the grid provide investment security in renewable generation.

Feed-in tariffs provide technology-specific guaranteed remuneration for produced electricity, for 20 years. Tariffs are regularly reduced to put cost pressure on manufactures to ensure that they remain efficient and affordable.

Feed-in tariffs are supported by an **EEG-allocation**, which is a fee every consumer in Germany has to pay to support renewable energies. The amount of EEG-allocation is equal to the difference between the tariff and average electricity prices. Currently, consumers are paying 3.5 Cent per kWh for renewable energy production. This is forecast to increase for a number of years until renewable energies become cheaper, whereupon it will decrease.

This has allowed new small- and medium-sized companies to gain new access to the electricity market.

Priority Grid Connection

Priority connection ensures that every kWh produced from renewable energy facilities must be purchased and transported in priority.

This prevents existing oligopolies from squeezing out renewable energy producers, especially in markets where networks and generation capacity are largely in the hands of similarly-sized companies.

2. Energy Efficiency

Tax Reductions

Tax reductions on the electricity and energy tax are granted only to companies that have introduced energy management systems.

Medium-sized companies have access to programs promoting energy efficiency, and will only enjoy tax reductions if they participate.

Efficiency Fund

€500 per year will be invested into an efficiency fund to promote energy efficiency activities for consumers, companies and municipality.

⁸ <http://www.consumerenergyreport.com/2011/09/08/germanys-renewable-energy-sources-rise-to-20-percent/>

3. Emissions Trading System

Germany is part of the EU ETS. The EUETS operates on a cap and trade principle. Each company within the ETS receives emission allowances which they can sell to or buy from one and other as needed. The total number of emission allowances is capped to ensure that they have a value, and the total volume or carbon emissions will not increase.

At the end of each year each company surrenders enough allowances to cover all of its emissions, otherwise heavy fines are imposed. Over time, the number of allowances is reduced so that total emissions fall.

At present, the ETS covers mainly power plants, heavy industries, factories, and airlines. It is estimated to continue to embrace more industries in the coming years.

The EUETS is implemented by the **German Emissions Trading Authority (GETA)**⁹, as the competent national authority. National legislation comprises mainly the National Allocation Plan regarding the allocation rules and amounts of allowances to be allocated to participating companies in Germany, and the Greenhouse Gas Emissions Trading Act.

Allocation and Auctioning of emission allowances¹⁰

From 2013 onwards the system for allocating emission allowances will be fully harmonized within the EU, applying the same rules across all EU Member States.

Whereas allowances used to be allocated for free (and more were typically allocated to high emitting companies), **free allocation will be phased out and auctioning will now be applied instead to the power sector**, meaning that companies will have to pay to obtain emission allowances. Auctions are held at the European Energy Exchange (EEX) weekly.

The GETA is empowered by the **Emissions Trading Auctioning Ordinance 2012**¹¹ to impose countermeasures against manipulative bidder behavior aiming at a distortion of the auction clearing price. GETA also issues periodical reports on the auctioning of emission allowances in Germany.

As for industry sectors, allowance will still be allocated for free, based on ambitious benchmarks. A benchmark will act as a threshold for the level of free allocation, to be developed per product. Generally, a benchmark will be based on a value reflecting the average greenhouse gas performance of the 10% best performing installations in the EU producing that product.

⁹ http://www.dehst.de/EN/Home/home_node.html

¹⁰ http://ec.europa.eu/clima/policies/ets/benchmarking/index_en.htm

¹¹ http://www.bmu.de/files/english/pdf/application/pdf/ets_auctioning_ordinace_bf.pdf (unofficial translation)

Free allowances for industries are required for EU industries to remain competitive in relation to competitors outside of the EU who are not similarly regulated. A higher share of allowances will be allocated to industries which face international competition from industries outside the EU which are not subject to comparable climate change legislation.

Market Rules

In 20 October 2011, the European Commission adopted a proposal for the review of the financial market rules, with a view to applying the following changes to prevent market manipulation¹²:

- High integrity standards on all market participants who are prohibited from engaging in manipulation through practices such as spreading false information or rumours
- Companies with large installations regulated by the EUETS cannot profit from inside information at the detriment of other market participants
- Better transparency and access to information available to all market participants

C. Transmission and Distribution

Construction and Operation

State level approval is required for the operation of a transmission network.

Following state level approval, regional authority must issue the relevant license if the applicant is reliable, sufficiently staffed and has capacity to operate the network.

Distribution Access

Distribution operators are required to grant non-discriminatory third-party access. Also, distributors are required to publish capacity information so that market participants can see if capacity is available.

In particular, pursuant to the Federal Decree on the Connection to Low-Voltage Grids, a local distribution operator is required to connect any property within the area to the local grid. The customer requesting connection may be obliged to pay for some of the related costs.

Transmission Access

Connection of power plants to the transmission grid is regulated by the Generation Interconnection Regulations (2007), under which network operators are required to connect, and grant non-discriminatory third party access to their infrastructure. Also, transmission providers are obliged to publish capacity information so that market participants can see if capacity is available.

¹²

Mandatory access is qualified by technical impossibility or economic unreasonableness (in operational, capacity, technical or commercial terms). For example, a low voltage request to a regional distribution grid may not be economically feasible to the network provider.

Cost sharing agreements may be negotiated between the generator and transmission operator.

Expansion

Due to the rapid expansion of onshore and offshore renewables, and liberalization of the EU cross-border electricity market, the transmission grid is near capacity.

The government has announced plans to significantly improve the grid by 2050. These plans include:

- Integrating the German and European grid
- Connections for offshore wind parks
- Expansion of the existing grid
- Coordination among the four grid operators in the expansion and operation of the grid.
- Cooperation among transmission system operators within the EU, to facilitate market integration under the EC Third Package for Electricity and Gas Markets.

In late 2009 the government had begun aggressively expanding high voltage overhead and underground lines, as well as storage facilities. In 2012, a new quality element rewards the reliability or performance of network by adding a quality component that will increase or reduce the revenue cap (below) of the operator.

The FNA monitors the reliability of the transmission grids. Transmission operators are required to operate, maintain and expand the network in line with demand and to cooperate with other operators to warrant the safety and reliability of the transmission system. Failure to comply with these responsibilities can result in a loss of license or a revenue cap reduction (below).

In 2012, the government launched its first Grid Development Plan, which requires grid operators to submit development recommendations in the coming ten years¹³.

Cross-border Transmission

Pursuant to EC Regulation No. 714/2009, cross-border supply of electricity and network access in the EU internal market will be enhanced.

The European Network of Transmission System Operators (ENTSO) will coordinate among transmission operators in member states and draw up a non-binding 10-year work development plan towards a single European

¹³ <http://www.dena.de/en/projects/energy-systems/grid-development-plan-working-group.html>

power grid.

Apart from grid expansion, interconnection capabilities will be significantly enhanced to achieve market coupling and spur cross-border trade.

Rates

Germany adopts the revenue-cap regulatory model. The FNA sets a revenue cap for a transmission or distribution operator's total allowed revenues.

The operator may decide the tariffs (subject to them being non-discriminatory), and as long as the total revenue is within the cap, this model incentivizes the operator to increase efficiency and lower costs in order to increase profits.

In addition to the inherent flexibility of the revenue cap model, it is also applied in a flexible way pursuant to the Federal Decree on Incentive Regulation to encourage even greater efficiency.

The revenue cap is adjusted to take into account the quality and efficiency of transmission services. To this end, each operator needs to provide the FNA with information about its cost base, which allows the FNA to calculate the efficiency and relative efficiency of each operator. Using such data, the FNA will adjust the revenue cap to determine the overall level of tariffs which the operator will be allowed to charge, and will reward more efficient operators.

Public Service Obligations

Local grid operators are obliged to connect any property within its area to the local grid according to the Federal Decree on the Connection to Low-Voltage Grids (2006).

D. Storage

Storage facilities are increasingly regarded an essential facility which reduces market imbalance and facilitates supply to customers.

Like transmission and distribution service providers, storage facilities are obliged to offer access to customers.

E. Wholesale

The spot market is operated by EPEX SPOT SE¹⁴, a power exchange coupled with the French, Austrian and Swiss markets. EPEX SPOT is a major driving force for the full integration of the European power market. All trades concluded on EPEX SPOT are cleared through the clearing house European Commodity Clearing.

Exchange Rules

Trading on EPEX SPOT is governed by a Trading Agreement comprising the Market Rules, Code of Conduct and Operational Rules, which members must sign before they are granted membership to the Exchange¹⁵.

The Operational Rules govern matters such as price limits and order quantity, whereas the Code of Conduct contains behavior rules to be followed by Exchange members which pertain to fair competition.

Market surveillance for breach of conduct rules is conducted by the Market Surveillance Office¹⁶, an independent exchange body that directly reports to EPEX SPOT SE. If a breach is proven by the Market Surveillance Office, EPEX SPOT SE can sanction the offending company, for example with a membership suspension.

The European Energy Exchange (EEX)¹⁷ operates market platforms for trading energy derivatives. The EEX stimulates competition in wholesale markets in Germany and Austria, and cooperates with the French and Dutch energy exchanges. The indices used in the EEX provide important indicative values for electricity trading.

Transparency

The EPEX SPOT publishes all prices resulting from bilateral trades on the EEX Transparency Platform¹⁸, which implements both statutory publication requirements and voluntary commitments by the industry.

The published prices act as a reliable indicator for short-term electricity trading, and serves as a benchmark for transactions on the wholesale market.

Pricing Regulation

Pricing of electricity in the wholesale market by generators is subject to the Act Against Restraints of Competition, which prohibit pricing that exceeds costs or comparable market prices to an unreasonable extent (see further below).

¹⁴ <http://www.epexspot.com/en/>

¹⁵ <http://www.epexspot.com/en/product-info>

¹⁶ http://www.epexspot.com/en/market_surveillance/creating_trust_in_the_market

¹⁷ <http://www.eex.com/en/>

¹⁸ <http://www.transparency.eex.com/en/>

F. Retail

1. Authority to sell power

A retail supplier is required to submit a notification to the FNA for approval to supply private households with electricity.

The retailer must demonstrate that it has the technical and commercial capacity to provide reliable services and to comply with minimum standards required by the FNA.

2. Rates

Publication of Information Retail suppliers are obliged to publish their general terms and conditions and standard prices on the Internet.

Public service obligations The local incumbent supplier must supply private households in the relevant supply area, at standard terms, conditions and prices. This obligation is subject to situations where it would be economically unacceptable for the supplier.

Energy Efficiency Campaign The German Energy Agency launched an Efficient Energy Systems project, which established multiple working groups with a view to promoting efficiency. The following are examples of GEA initiatives, which largely conform to EC policy suggestions¹⁹:

1. **Improving consumer access to information:** The EEC operates a website at www.stromeffizienz.de, which contains information leaflets, information on energy-saving appliances, and an online calculator for energy savings.
2. **Demand side management**²⁰ to better coordinate between production and consumption of power.
3. **Efficient homes** project to increase savings for homes through energy-efficient refurbishment and installation.
4. **Smart meters** to enable two-way communication between supplier and consumer, and intelligent metering. This is also part of the EC Electricity Directive 2009/72/EC²¹. Smart meters allow consumers to better manage their energy usage and reduce their carbon.
5. **Efficient house**²² quality mark to certify buildings or apartments with low energy requirements.

EC Directive 2009/72/EC

According to the EC Directive of 13 July 2009 concerning common rules for the internal market in electricity, member states must ensure that all customers have the right to choose their electricity supplier and to change supplier easily, with the operator's assistance, within 3

¹⁹ http://ec.europa.eu/energy/gas_electricity/consumer/consumer_en.htm

²⁰ <http://www.dena.de/en/press-releases/pressemitteilungen/spotlight-on-demand-side-management.html>

²¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0202:EN:HTML:NOT>

²² <http://www.dena.de/en/projects/building/dena-efficient-house-quality-mark.html>

weeks.

Electricity suppliers must inform the customer of the following consumption data:

- The contribution of each energy source
- The environmental impact cause
- Their rights in the event of a dispute.

Electricity bills must be transparent and contain sufficient information to guide consumer choice, and they must be sent to customers frequently.

V. Competition

Article 101 TFEU The general provisions of competition law are applied to the energy sector, subject to the sector-specific rules.

Act against Restraints of Competition²³ The AARC contains a sector-specific provision on the energy sector, which provides that A **dominant supplier of electricity may not:**

1. **Charge prices that exceed its cost base in an unreasonable manner,**
2. **Charge prices that exceed the price level in similar markets, unless the supplier provides evidence that such deviation is objectively justifiable²⁴.**

Anti-competitive practices relating to **grid connection and network access** are within the competence of the FNA and respective state-level authorities.

Retail supply and other practices are regulated and prosecuted by the Federal Cartel Offices (FCO).

The relevant authorities have the power to order the discontinuation of the unlawful conduct and impose significant fines. Overcharges may be refunded to customers. Further, the government is considering the introduction of detailed provisions on structural remedies.

Mergers and Acquisitions

A special chambers within the FCO deals with transactions related to the energy sector.

The FCO determines whether a transaction would result in the creation or strengthening of a dominant market position. Decisions of the FCO may be appealed to the Federal Ministry of Economics or judicially reviewed by the courts.

A transaction must be notified to the FCO where, in the most recently completed financial year, the parties' revenues exceeded:

- €500 million in combined worldwide revenues of the target, purchaser and purchaser's affiliated undertakings
- €25 million in German revenues of either the target or the purchaser and its affiliated undertaking
- €5 million in German revenues of another party to the transaction

A transaction may also be subject to filing requirements under the EC

²³ http://www.gesetze-im-internet.de/englisch_gwb/index.html

²⁴ AARC §29

Merger Regulation (Council Regulation No. 139/2004) on the control of concentrations between undertakings.