

Foreseeable Developments in German Electricity Markets

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✉ Competition policy; Electricity industry; Germany; Renewable energy

1. Introduction

Electricity markets in Germany—more than most other markets—are in a constant state of change. After liberalising electricity and gas markets in the late 1990s Germany decided to phase out nuclear power starting in 2000. The plan was delayed in 2010. Following the nuclear catastrophe in Japan, at the beginning of 2011, the German Federal Government reconsidered the planned delay and decided to shut down eight nuclear power plants immediately. The rest of the nuclear power plants in Germany are to be shut down by 2022.

Parallel to these developments and from 2000 on, Germany decided to promote the generation of energy from renewable sources. The first edition of the German Renewable Energies Act (EEG)¹ was passed in 2000 and amended or revised several times since. The current version of the EEG is in force since January 1, 2012.² The purpose of this act is to facilitate a sustainable development of energy supply, particularly for the sake of protecting our climate and the environment, to reduce the costs of energy supply to the national economy, also by incorporating external long-term effects, to conserve fossil fuels and to promote the further development of technologies for the generation of electricity from renewable energy sources.³

So far, the efforts proved successful. Less electricity is being generated from conventional sources and more electricity is generated from renewable sources these days.⁴ These ends are desirable. From the point of view of German and European competition authorities the means, however, are not.

This article will outline the regulatory environment with emphasis on the provisions of the German Electricity and Supply Act (EnWG)⁵ and the EEG and summarise the market definitions as developed by German and European authorities. The article will then focus on the effects of the EEG, the foreseeable developments and their effects on market definition, market structure and on competition in the electricity markets.

2. Regulatory Environment

Before turning to the questions of market definition and market structure it is necessary to closely examine the regulatory environment the market players operate in. In the case of electricity markets, the legal framework is primarily determined by the EnWG and the regulations issued on its basis. The EEG, on the other hand, is the economically most significant statutory law in regard to renewable energy. These two different parts of legislation interact with one another, but focus on different objectives: While the EnWG aims to secure a cost-effective supply of power and an efficient and unrestricted market⁶ in the interest of the consumer, the EEG, as said, aims to facilitate a sustainable development of energy supply, reduce the costs of energy supply to the national economy and promote the further development of technologies for the generation of electricity from renewable energy sources.⁷

a) German Electricity and Supply Act (EnWG)

To achieve the objective of a secure, efficient and unrestricted market for grid-bound energy, the current version of the EnWG dated July 7, 2005 relies on unbundling and effective regulation of the power grids. Unbundling and regulation serve to break up the natural monopoly in grid operations and ensure an effective non-discriminatory access to the power grids.⁸

(i) Unbundling (§§ 6 — 10 EnWG)

According to § 6 EnWG vertically integrated energy suppliers are required to provide transparent and non-discriminatory access to the power grids. To achieve this goal, energy suppliers are required to separate the grid operation from other business segments (i.e. from the sales sector). This separation shall include the control of economically relevant information (§ 6a EnWG), the fulfilment of more stringent accounting requirements including separate accounting for power grid operations

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¹ Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare-Energien-Gesetz).

² A non-binding English version of the EEG 2012 can be downloaded at <http://www.bmu.de/en/service/publications/downloads/details/artikel/renewable-energy-sources-act-eeeg-2012/> [Accessed May 29, 2013].

³ § 1 para.1 EEG.

⁴ *Arbeitsgemeinschaft Energiebilanzen e.V.: Auswertungstabellen zur Energiebilanz für die Bundesrepublik Deutschland 1990 bis 2011*, Tabelle 2.

⁵ Gesetz über die Elektrizitäts- und Gasversorgung (Energiewirtschaftsgesetz).

⁶ § 1 EnWG.

⁷ Conflicts exist; for example: While § 13 EnWG gives the grid operator the right to shut down plants in the interest of a secure network, § 12 EEG obliges the grid operator to pay compensation to producers of energy from renewable sources in the interest of promoting renewable energy.

⁸ Explanatory Memorandum to the EnWG, BT-Drs. 15/3917, p.51.

(§ 6b EnWG), the legal separation of the grid operation from other business sectors by outsourcing into an own legal entity (§ 7 EnWG)⁹ and operational unbundling in particular by personnel and organisational separation of the management (§ 7a EnWG).

Further, vertically integrated energy suppliers operating a transport network (high and extra high voltage grids) shall appoint an independent network owner as system operator and ensure his independence from any supply, production or sales interest (§ 8 EnWG).

(ii) Regulation (§§ 11 — 35 EnWG)

Operators of power grids are obliged to run, maintain and optimise a secure, reliable and efficient energy supply network on a non-discriminatory basis (§ 11 EnWG).

According to § 13 EnWG the operators of power grids are entitled to undertake measures to maintain the safety and reliability of the power grids including network-based measures (i.e. network switching) and market-based measures (i.e. use balancing energy and contracted interruptible load, congestion management and mobilisation of additional reserves).

Power grid operators are required to provide end customers, parallel and downstream networks, production and storage facilities with a connection to the transport network. The connection shall be granted under technical and economic conditions which are reasonable, non-discriminatory, fair, transparent and not unfavourable compared to the conditions required from operator's own companies or affiliated companies (§ 17 EnWG). The same applies to the access to the network (viz. use of the grid for feeding-in or withdrawing electricity). Furthermore, the charges for the access to the grid are subject to an incentive regulation according to §§ 21, 21a EnWG in conjunction with the Power Grid Incentive Regulation (ARegV)¹⁰ and the Electricity Network Fee Regulation (StromNEV).¹¹ The main factors of the incentive regulation are the actual costs of the grid operator as base level, revenue caps and individual efficiency targets set by the Federal Network Agency and the reallocation of certain non-controllable costs.¹²

The regulation of power grids is proving successful. As a matter of fact, the network charges to be borne by households and commercial customers have decreased by 20 per cent between 2007 and 2010 while the total energy price for households is constantly increasing since 2006.¹³

b) German Renewable Energies Act (EEG)

The EEG aims to promote the generation of electricity from renewable energy sources. To reach this aim, the legislator used three particular instruments: (i) establishment of statutory obligations between grid operator and producer; (ii) priority feed-in; and (iii) a minimum tariff for electricity from renewable energy feed-in to be paid by the grid operator.

(i) Non-Contractual Obligations

According to § 4 EEG, the grid operator is required to fulfil his obligations in accordance with the EEG. A contract between grid operator and producer is not required. Furthermore, a contractual agreement between grid operator and producer shall be invalid, if such agreement derogates from statutory provisions to the detriment of the producer. As a result, and regardless of any contractual agreement, the grid operator is obliged to provide grid access without delay (§ 5 EEG), purchase, transmit and distribute the electricity generated from renewable sources (§ 8 EEG) and pay the minimum tariff for such electricity (§ 16 EEG). In addition, the grid operator is obliged to immediately optimise, strengthen and expand the grid system in accordance with the best available technology in order to guarantee the purchase, transmission and distribution of the electricity generated from renewable sources (§ 9 para.1 EEG) and bear the costs (§ 14 EEG).

(ii) Priority Feed-In

In case of a conflict between electricity generated from conventional sources and such generated from renewable sources, the grid operator is obliged to feed in the electricity generated from renewable-sources with priority. This effectively means, inter alia, that the grid operator is not able to refuse the purchase or transmission of privileged energy with the argument that the grid is working to capacity with electricity generated from conventional sources.¹⁴

(iii) Minimum Tariff

§ 16 EEG offers producers of electricity generated from renewable sources fixed tariffs for the energy supplied. The tariffs depend on the nature of the energy source used for generation, output of the plant, special technologies used and other factors (i.e. place of installation e.g. on- or offshore wind energy¹⁵). The tariff is guaranteed for a period of 20 years in addition to the year the installation was first commissioned (§ 21 EEG).

⁹ Exemptions are made for integrated energy suppliers with less than 100,000 customers (§ 7 para.2 EnWG).

¹⁰ Verordnung über die Anreizregulierung der Energieversorgungsnetze (Anreizregulierungsverordnung).

¹¹ Verordnung über die Entgelte für den Zugang zu Elektrizitätsversorgungsnetzen (Stromnetzentgeltverordnung).

¹² Hummel in Danner and Theobald, *Energierecht*, 75. Ergl. 2012, Einführung ARegV, Rdn. 11ff.

¹³ Bundesnetzagentur, *Energiekennzahlen 2010*, p.24 and p.37.

¹⁴ Wiemer in Gabler and Metzenthin, *EEG Praxiskommentar* (2011), § 8, Rdn. 11. However, grid operators are entitled to reduce or discontinue the feed-in if a grid bottleneck would otherwise arise in the respective grid system area (§ 11 para.1 no.1 EEG). In return the producer is entitled to claim lost revenues from the grid operator in such case (§ 12 EEG).

¹⁵ See §§ 29, 30 EEG.

The amounts paid by the grid operator to the producers of electricity generated from renewable sources are subject to a compensation mechanism according to the Regulation on a Nationwide Equalisation Scheme (AusglMechAV).¹⁶ The grid operator distributes the electricity generated from renewable sources and remunerated in accordance with the EEG to the upstream network operators (high and extra high voltage grid operators) and receives the feed-in tariff (§§ 34, 35 EEG). The network operators are obliged to sell the energy received by the downstream grid operators in the day-ahead or intraday-market at the European Energy Exchange (EEX). The transport network provider charges the costs—in particular the difference between revenues from the sale at the EEX and the feed-in remuneration—paid to the grid operator who charges these costs to his customers as EEG-Umlage (EEG reallocation charge).¹⁷

By adjusting the initial fixed tariffs, the legislator effectively controls the number and the type of plants producing energy from renewable sources. The legislator repeatedly made use of this instrument.

The reasons and effects of such adjustments can be shown by the example of solar photovoltaics: With the amendment of the EEG (2004), the legislator considerably increased the feed-in tariffs for solar photovoltaics.¹⁸ As a consequence, the installed capacity of solar photovoltaics significantly increased—from 435 MWel in 2003 to 6.120 MWel in 2008¹⁹—which led to high remuneration rates. The German public criticised that these remunerations led to high costs for the consumer. In addition, the solar photovoltaic technology was improving, leading to lower generation costs. Therefore, the legislator significantly reduced the feed-in tariff²⁰ and increased the annual reduction rates of the feed-in tariff from 5 per cent to 10 per cent with the EEG (2009).²¹ Nevertheless, the installed capacity was still increasing—to 25.039 MWel in 2011. The total share of solar photovoltaics remuneration in the overall remuneration for electricity generated from renewable sources was 46 per cent in 2011 while the share of solar photovoltaics in the overall energy generated from renewable sources in the same year was only 21 per cent.²² As consequence, the legislator considerably decreased the feed-in tariff again several times.²³ However, the effect

was slightly different than expected by the legislator. Increase in solar photovoltaic capacity is significantly lower these days, but still noticeable. Because of the reduced feed-in tariffs, the solar photovoltaic operators are reducing costs by importing solar panels from China with the result that several German solar panel manufacturers had to file for insolvency.²⁴

3. Market Definition(s)

The regulatory environment, as described, strongly affects the markets for electricity in Germany, the way the markets are defined and their structure.

a) Market Stages

Traditionally, the German Federal Cartel Office distinguishes generation, distribution and retail supply of electricity as market stages.²⁵ These stages are vertically interconnected.

The initial market stage is characterised by a large number of power plants operated by a variety of companies. The majority of production capacity belongs to four large energy companies. On the subsequent stages regional and local companies—particularly public utilities companies—and traders are active in the distribution and supply of electricity.²⁶ Effectively, the stages and the transactions within and between the different stages describe the way electricity follows from its production to final consumption.²⁷

b) Product Markets

Based on these market stages, the Federal Cartel Office and European Commission define a number of product markets. The Federal Cartel Office defines markets for the initial sale of electricity, for supplying electricity to customers with a metered consumption, for supplying electricity to customers with a standard load profile and for supplying heating current to customers with a standard load profile.²⁸ The European Commission, on the other hand, distinguishes four major markets. It defines markets for the generation and wholesale supply, for transmission, distribution and retail supply of electricity.²⁹ Some of these markets, so the European Commission, may be further subdivided.

¹⁶ Verordnung zur Weiterentwicklung des bundesweiten Ausgleichsmechanismus (Ausgleichsmechanismusverordnung).

¹⁷ Neeser: *The German Electricity Market, Renewable EEG Energy*, AusglMechV, 2011, p.25.

¹⁸ i.e. for plant up to 30 kW from 0,457 EUR/kWh (§ 8 para. 1 EEG 2000) to 0,574 EUR/kWh (§ 11 para. 2 no. 1 EEG 2004).

¹⁹ Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, "Zeitreihen zur Entwicklung der erneuerbaren Energien in Deutschland", *Stand* December 2012, Tabelle 4.

²⁰ i.e. for plants up to 30 kW from 0,574 EUR/kWh (§ 11 para.2 no.1 EEG 2004) to 0,431 EUR/kWh (§ 33 para.1 no.1 EEG 2009).

²¹ Jordan-Korte: *Government Promotion of Renewable Technologies*, 2011, p.78.

²² *Jahresabrechnung der Übertragungsnetzbetreiber*, 2011 at http://www.eeg-kwk.net/de/file/EEG-Jahresabrechnung_2011.pdf [Accessed May 29, 2013].

²³ i.e. for plants up to 30 kW from 0,431 EUR/kWh (§ 33 para.1 no.1 EEG 2009) to 0,185 EUR/kWh (for plants up to 40kW) minus a monthly deduction (§§ 32 para.2 no.2, 20b EEG).

²⁴ *Handelsblatt: Solar-Pleitewelle vernichtet Milliarden*, July 11, 2012, at <http://www.handelsblatt.com/finanzen/aktien/aktien-im-fokus/die-naechste-insolvenz-solar-pleitewelle-vernichtet-milliarden/6865816.html> [Accessed May 29, 2013].

²⁵ A fourth market stage, the so-called grid-stage, is of secondary importance as there is no competition on this stage, BKartA, Decision dated Dezember 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna).

²⁶ BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

²⁷ Monopolkommission, "Energie 2011: Wettbewerbsentwicklung mit Licht und Schatten", *Sondergutachten* Nr. 59 pp.56–66 and BKartA, Decision dated December 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna).

²⁸ BKartA, Decision dated December 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna).

²⁹ Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426).

Comparing both approaches, the European Commission appears to consider subsequent trading as part of the electricity market on the initial market stage while the Federal Cartel Office does not.³⁰

The German Supreme Court had to deal with the question, confirmed the market definition as provided by the Federal Cartel Office and found the disparity to be a misconception.³¹

According to the German Supreme Court, the Federal Cartel Office correctly considered the electricity physically generated and not the capacities or the electricity that could theoretically be generated from these capacities. It further considered the net imports to be part of the market for the initial sale of electricity.³² The Federal Cartel Office did not consider the sale of balancing energy to be part of the market as supply and demand for balancing energy are governed by specific rules.³³ It further excluded subsequent trading from the market as not excluding subsequent sales would lead to quantities of electricity being considered multiple times.³⁴

In regard to the seeming disparity the German Supreme Court found that the European Commission only considered subsequent trading in one very specific instance.³⁵ Generally, the European Commission defined the market including only electricity generated within the relevant geographic market or imported. To this extent the Federal Cartel Office and European Commission define the product market similarly.

Both the European Commission and Federal Cartel Office are further agreed in excluding electricity generated in accordance with the EEG (EEG electricity) from the market for the initial sale of electricity. EEG electricity is generated, fed-in and marketed without regard to demand or price on the market for the initial sale of electricity and therefore part of a market of its own.³⁶

Operators of EEG installations are not subject to competition by other players generating electricity and enjoy priority connection to the grid systems for general electricity supply and all electricity generated may be fed into the grid without regard to current demand. The operators further enjoy priority purchase, transmission, distribution of and payment for such electricity by the grid system operators. Generally, operators do not sell EEG electricity on the wholesale market directly. The transmission grid operators purchase the electricity from the operators of EEG installations and are required to sell the electricity on the wholesale market.³⁷ The costs for

electricity generated from renewable sources are higher than the costs for electricity generated from conventional sources. EEG installation operators, however, receive a statutory rate of remuneration from transmission grid operators for their electricity. The remuneration covers their additional costs and is significantly higher than the market price. Accordingly, the production of EEG electricity is not influenced by the price indicators on the market.

There is an exemption to this rule. Operators can opt to sell their electricity directly. Due to the high generation costs of EEG electricity, direct marketing outside of the statutory conditions was not always a viable option. The new EEG which entered into force at the beginning of 2012 introduced the so-called market premium model. Installation operators that sell their electricity on the spot markets can realise the market price. In case the market price is below statutory remuneration, the installation operators receive the difference between market price and statutory remuneration. The market premium model appears to positively affect the amount of electricity marketed directly.³⁸ Yet, operators can opt to quit the marketing directly within a month's notice.

With this exemption to the rule and due to the statutory payment operators are lastly always entitled to, EEG electricity is generated regardless of electricity prices on the spot markets. Due to the fact that operators can feed all the EEG electricity generated into the grid, it is generated regardless of demand. EEG electricity exerts a competitive pressure on the electricity generated from conventional sources but the reverse is not true.³⁹ EEG electricity therefore cannot be included in the same market as conventional electricity as the market conditions which prevail for the first sale significantly differ between these two generation forms.⁴⁰

Accordingly, Federal Cartel Office and European Commission define the relevant product market as the market for the initial sale of electricity generated from conventional sources. The initial sale of EEG electricity is not part of this market. Effectively, there are separate markets for the initial sale of electricity generated from conventional sources and for the initial sale of electricity generated from renewable sources.

³⁰ Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426) and BGH, Decision dated November 11, 2008 - Beschluss vom 11. November 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

³¹ BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

³² BKartA, Decision dated December 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna).

³³ *Sector Inquiry into Electricity Generation and Wholesale Markets, Report in accordance with Section 32e (3) of the German Act against Restraints of Competition ARC (Gesetz gegen Wettbewerbsbeschränkungen - GWB)*, January 2011, p.72.

³⁴ BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

³⁵ BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

³⁶ *Sector Inquiry into Electricity Generation and Wholesale Markets, Report in accordance with Section 32e (3) of the German Act against Restraints of Competition ARC (Gesetz gegen Wettbewerbsbeschränkungen - GWB)*, January 2011, p.74.

³⁷ § 1 AusglMechAV.

³⁸ In 2011 11% of the electricity was marketed directly. However, only 0,003% of the electricity generated through solar photovoltaics was marketed directly, while 50% of the electricity generated through water was marketed directly. Compare *Jahresabrechnung der Übertragungsnetzbetreiber*, 2011, at http://www.eeg-kwk.net/de/file/EEG-Jahresabrechnung_2011.pdf [Accessed May 29, 2013].

³⁹ Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426).

⁴⁰ Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426).

c) Geographic Markets

In the past the Federal Cartel Office regularly considered the market for the initial sale of electricity from conventional sources to be limited to Germany.⁴¹ Meanwhile, the Federal Cartel Office assumes that there is a common primary market for electricity in Germany and Austria as there are no bottlenecks at cross-border interconnectors between Germany and Austria, and the two countries comprise a single market and price territory on the European Power Exchange as spot market for electricity in Europe.⁴² The European Commission left the question open whether to include Austria. Some authors convincingly argue a different and wider geographic market.⁴³ Considering the recent publications of Federal Cartel Office and European Commission it is, however, unlikely that a wider geographic market will be considered in the near future.

In regard to production and first sale of EEG electricity, its geographic scope is limited to the territory of Germany since it is based on the specific legal conditions laid down in the EEG.⁴⁴ The geographic scope of other product markets on subsequent market stages is regional and in some instances even smaller.⁴⁵

4. Market Structure

The regulatory environment influences the way markets develop and are consequently defined. It also has effects on the structure of these markets and according developments.

a) Past and current Developments

As described above, the majority of electricity production capacity belongs to four large energy companies. Two of these players form a dominant duopoly.⁴⁶ The four large players operated the nuclear power plants in Germany. The decision to phase out nuclear energy, shut down the production capacities and promote the generation of energy from renewable sources meant a positive stimulus for competition in the electricity markets.⁴⁷ Smaller players are able to enter the market and fill the voids. Taking all electricity generated in or imported to Germany into consideration, the market share of the dominant players is in decline. Taking into account only electricity generated from conventional sources, however, the market shares of the dominant players are rising in absolute

terms.⁴⁸ Effectively, this leaves the market for the generation of electricity from conventional sources more concentrated than before.

The market for the generation of electricity from renewable sources, on the other hand, is fragmented. It is, however, not organised on a competitive basis and EEG electricity is generated regardless of demand and price indicators on the basis of special statutory provisions. The activity of producers of EEG electricity is not exposed to competition. Exempting EEG electricity from competition was meant to help improve the share of EEG electricity. Doubtless, this aim is being reached. The negative effect on electricity prices as result of eliminating competition was accepted as necessary.

This negative effect is further amplified by a—rarely considered—side effect of the EEG. The total energy costs to be paid by most consumers are rising in case of low or even negative market prices for electricity at the EEX. This may seem contradictory but can be explained by the mechanism of the feed-in tariff and the way it is refinanced. The producer of renewable energy is compensated in accordance with the applicable feed-in tariff which is independent of the market price. The difference between the statutory compensation and the market price is compensated via the EEG reallocation charges. Accordingly, low or negative market prices result in higher EEG reallocation charges.⁴⁹ The effect should be neutral with respect to the consumer price assuming that the consumer price consists of market price plus EEG reallocation charges.⁵⁰ According to §§ 40 et. seq. EEG certain industries (electricity-intensive enterprises and rail operators) can, however, take advantage of a limitation of the EEG reallocation charges. As a result, the EEG reallocation charges are not evenly distributed amongst all consumers of electricity. While electricity-intensive enterprises benefit from low or even negative market prices, the majority of the consumers face even higher overall energy costs.

Summing this up and considering the initial market stage and both markets on this stage, there is an absolute rise of market shares of the dominant players in one market and a planned economy in the other market. While each by itself is undesirable, the combination severely affects the complete market stage and the prices passed on to the retail customers. This effect is worsened by particular provisions of the EEG.

⁴¹ BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

⁴² Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426) and *Sector Inquiry into Electricity Generation and Wholesale Markets, Report in accordance with Section 32e (3) of the German Act against Restraints of Competition ARC (Gesetz gegen Wettbewerbsbeschränkungen)*, January 2011, p.6.

⁴³ Schiffer, "Wettbewerb und Preise auf dem Strommarkt" (2011) 4 *Wirtschaftsdienst* 285.

⁴⁴ Commission Implementing Decision of April 24, 2012 (notified under document C(2012) 2426).

⁴⁵ BKartA, Decision dated December 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna).

⁴⁶ BKartA, Decision dated December 8, 2011 — B8-94/11 (RWE/Stadtwerke Unna) und BGH, Decision dated November 11, 2008 - KVR 60/07 (E.ON/Stadtwerke Eschwege).

⁴⁷ Mundt, "Kartellrechtspraxis in Zeiten der Energiewende", speech held November 3, 2011 in Cologne.

⁴⁸ Schiffer, "Wettbewerb und Preise auf dem Strommarkt" (2011) 4 *Wirtschaftsdienst* 285.

⁴⁹ Bundesnetzagentur: *Hintergrundinformationen zur Ausgleichsmechanismus-Ausführungsverordnung (AusglMechAV)*, at <http://www.bundesnetzagentur.de/cae/servlet/contentblob/149950/publicationFile/3937/Hi> [Accessed May 29, 2013].

⁵⁰ Lower market price and higher EEG reallocation charges should correspond to higher market price and lower EEG reallocation charges.

Due to the fact that the share of EEG electricity is on the rise, the aforementioned effect will gradually intensify. Currently EEG electricity makes up for about 20 per cent of the electricity generated and sold in Germany.⁵¹ In 2020 EEG electricity will make up for 35 per cent, in 2030 for 50 per cent and in 2050 it will make up for 80 per cent.⁵² Effectively, the uninterrupted development would lead to a complete elimination of competition and to a comprehensively planned economy in the market for the initial sale of electricity in Germany lastly resulting in electricity prices being determined by legal provisions instead of competition.

b) Criticism and Suggestions

Criticism of the current developments is widespread. It is clear that consumers are skeptical of rising electricity prices.

The current developments, however, also threaten to thwart the plans of the European Commission to establish an internal energy market. In November 2012 the European Commission found Member States not to be on track to meet the clear deadline of 2014 for completion of the internal energy market.⁵³ Member States, so the European Commission, are slow in adjusting their national legislation and creating fully competitive markets.⁵⁴ The European Commission also fears that Member States follow nationally inspired policies preventing the internal market from working effectively. The European Commission is in the process of reviewing the guidelines on state aid for environmental protection to reflect changes in the technological landscape and EU policy objectives in the energy sector, while minimising competition distortions in the internal market.⁵⁵ The German approach clearly distorts competition, leads to a fragmented market and is a significant hurdle on the way to an integrated European energy market.

While the European Commission appears cautious in criticising Germany, the Federal Cartel Office, as national competition authority, is explicitly sceptical of the current developments.⁵⁶ In a speech held in 2011 the president of the Federal Cartel Office stated that it is absolutely necessary to reorganise the market for the initial sale of electricity generated from renewable sources and ensure competition within the market.⁵⁷ He promoted a complete and rapid integration of the markets for the initial sale of

electricity generated from conventional and from renewable sources and demanded changes to the way EEG electricity is produced and marketed. The German Government, per Andreas Mundt, decided in favour of market and system integration. He found that marketing EEG electricity via the market premium model is a first target-oriented approach. Currently only approximately 11 per cent⁵⁸ of the EEG electricity is sold via the market premium model. The legislator would need to find ways to increase the percentage significantly.

Further he proposed to question the need for operators of EEG installations to enjoy priority in feeding their energy into the power grids.⁵⁹ Possibly, compelling every company generating and marketing electricity to include a fixed quota of electricity generated from renewable sources could be a practicable solution to balance the different interests involved.

This so-called quota model is followed by a number of states.⁶⁰ Investment grants and tax incentives are other options. Most European Member States combine two or more of the aforementioned instruments. Current research, however, seems to suggest that fixed tariffs, as provided for by the EEG, appear to be the most effective way to promote the generation of electricity from renewable sources.⁶¹ It is being discussed whether other models or instruments are capable of ensuring the market and system integration more effectively.⁶²

c) Likely Scenarios

The Federal Cartel Office has made clear that it is in favour of changing the way EEG electricity is generated and marketed and the German public is weary of rising electricity prices. It is clear that EEG electricity will need to be competitively organised and the Federal German Government is bound to take action soon. Changes to market definition and market structure will necessarily result from any action taken.

Quite likely, the Federal German Government will promote the market premium model more strongly than in the past and provide further incentives to increase the amount of electricity sold via the market premium model.⁶³ On the other hand, it is unlikely that Germany will abandon fixed tariffs and introduce a quota model. The tariff model has proven effective. The Federal German Government could, however, consider

⁵¹ The feed-in from renewables represents approximately 18% of the total feed-in volume.

⁵² § 1 para.2 EEG.

⁵³ *European Commission: Making the internal energy market work*, COM(2012) 663 final, p.2.

⁵⁴ *European Commission: Making the internal energy market work*, COM(2012) 663 final, p.2.

⁵⁵ *European Commission: Making the internal energy market work*, COM(2012) 663 final, p.2.

⁵⁶ *Sector Inquiry into Electricity Generation and Wholesale Markets, Report in accordance with Section 32e (3) of the German Act against Restraints of Competition ARC (Gesetz gegen Wettbewerbsbeschränkungen)*, January 2011, p.21.

⁵⁷ Mundt, "Kartellrechtspraxis in Zeiten der Energiewende", speech held November 3, 2011 in Cologne.

⁵⁸ *Jahresabrechnung der Übertragungsnetzbetreiber*, 2011, at http://www.eeg-kwk.net/de/file/EEG-Jahresabrechnung_2011.pdf [Accessed May 29, 2013].

⁵⁹ Mundt, "Wettbewerb im Strommarkt oder Planwirtschaft erneuerbarer Energien", speech held March 22, 2012 in Berlin.

⁶⁰ Diekmann, Kempf, Neuhoff, Schill and Traber, "Erneuerbare Energien: Quotenmodell keine Alternative zum EEG" (2012) 45 *DIW Wochenbericht* 16.

⁶¹ Diekmann et al: *Erneuerbare Energien: Quotenmodell keine Alternative zum EEG*, DIW Wochenbericht Nr. 45/2012, p.16.

⁶² *RWI: Marktwirtschaftliche Energiewende: Ein Wettbewerbsrahmen für die Stromversorgung mit alternativen Energien. Ein Projekt im Auftrag der Initiative Neue Soziale Marktwirtschaft*, August 2012 and *Monopolkommission: Energie 2011: Wettbewerbsentwicklung mit Licht und Schatten, Sondergutachten Nr. 59*, p.23.

⁶³ It is being discussed whether to direct marketing via the market premium model should be made mandatory from August 1, 2013 on, Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit/Bundesministerium für Wirtschaft und Technologie, *Gemeinsamer Vorschlag zur Dämpfung der Kosten des Ausbaus der Erneuerbaren Energien*, at http://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Erneuerbare_Energien/20130213_Eckpunktepapier_Strompreissicherung_bf.pdf [Accessed May 29, 2013].

introducing a quota model in addition to fixed tariffs. This could be supported by creating incentives for captive use of electricity generated from renewable sources. Such energy would not be marketed and would therefore not be subject of statutory compensation and the related negative effects. Preconditional for a broadly captive use of renewable energy, however, is the possibility of storing renewable energy outside the grid and directly at source. The Federal German Government recognised this and, starting May 2013, the *Kreditanstalt für Wiederaufbau*⁶⁴ is beginning to promote the installation of solar energy storage units.⁶⁵

Regardless of whether a quota model is introduced in addition to fixed tariffs or the Federal German Government settles for promoting the market premium model, market integration is inevitable. Integrating markets for the initial sale of electricity generated from conventional and from renewable sources would, however, have rapid and radical effects on both market definition and market structure. These effects, again, would most certainly lead to a consolidation on the market for the generation of electricity as well as to intensified competition—at least for a limited period of time.

5. Summary

Overall costs for electricity in Germany are rising. This is mainly due to the specifics of electricity markets in Germany and the lack of competition in these markets.

It appears that German and European authorities are convinced that changes within the regulatory environment—effectively responsible for the lack of competition—are inevitable. Changes to the EEG, as the central piece of legislation within the national support scheme for energy generated from renewable sources, are likely in the near future.

The Federal German Government can be expected to consider further reducing the feed-in tariffs and promoting captive use of electricity from renewable sources. It is unlikely that the Federal German Government will chose to switch to a quota model. It is, however, quite likely that the market premium model will become mandatory. Drastic changes are unlikely. Yet, any changes made will—more or less gradually—result in changes to the way German and European authorities will define the relevant product markets.

The integration of EEG electricity, the consequent redefinition of product markets and expected changes to the way competition authorities will define the relevant geographic markets will lead to an increase in competition in the electricity markets in Germany. Foreign providers—in particular providers from neighbouring European countries—will play an increasingly important role. The four large energy companies in Germany will be facing new challenges.

⁶⁴ The Kreditanstalt für Wiederaufbau (KfW) is a promotional bank and its capital is held by the Federal German Republic and the German States.

⁶⁵ KfW press release dated April 18, 2013 at https://www.kfw.de/KfW-Group/Newsroom/Aktuelles/Pressemitteilungen/Pressemitteilungen-Details_107136.html [Accessed May 29, 2013].