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ARTICLE

The 2014 German Renewable Energy Sources Act revision – from feed-in tariffs to direct marketing to competitive bidding

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German renewable energy developments are frequently quoted around the world. Often the same circumstances are used as either good or bad examples, depending on individual points of view. This article sheds some light on the latest 2014 revision of the German Renewable Energy Sources Act (EEG), commonly referred to as EEG 2014. The EEG 2014 represents a major shift from support that was mainly granted in the form of fixed-feed tariffs to mandatory direct marketing that is promoted by market premiums. Furthermore, the EEG 2014 lays down the foundation for the next step of promoting renewables, in which financial support will be established through competitive bidding.

Keywords: German Energy Renewable Source Act; EEG; EEG 2014; feed-in tariffs; direct marketing; competitive bidding; EEG surcharge; solar power; photovoltaics; wind power; onshore; offshore; biomass; geothermal energy; hydro power; renewables; legislation; Germany

Do not expect light reading. The precursor of the German Renewable Energy Sources Act (EEG) was the very lean 1991 Grid Feed-In Law (*Stromeinspeisungsgesetz* – StromEinspG).[1] It had only five sections and did not even cover two pages in the Federal Law Gazette. By 2000, the *Stromeinspeisungsgesetz* was replaced by the Renewable Energy Sources Act (EEG 2000),[2] then containing 12 sections on 3.5 pages in the Federal Law Gazette.

After several revisions in the meantime, the most recent substantial reform of the EEG is the EEG 2014 revision. It was also called 'EEG 2.0' during the legislative process[3] as it is a major update. As a result, we now have 104 sections and four annexes, covering 55 pages in the Federal Law Gazette. Its transitional provisions alone are longer than the original EEG (and of course the StromEinspG).[4] In terms of complexity and rate of

1 Federal Law Gazette (*Bundesgesetzblatt*) 1990, part I, 2366.
2 Gesetz für den Vorrang Erneuerbarer Energien, Federal Law Gazette 2000, part I, 305.
3 Cf. the Cabinet EEG reform working paper 'Eckpunkte für die Reform des EEG' (21 January 2014) for the Cabinet's Meeseburg retreat <https://www.clearingstelle-eeg.de/files/eeg-reform-eckpunkte.pdf> accessed 2 February 2015.
4 On the explosion of paragraphs in German energy law, see also Peter Becker, 'Die Paragrafenexplosion im Energierecht: Überlegungen zur Reduzierung der Komplexität' [2014] ZNER 517.

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revision, the EEG 2014 is starting to look like tax law. Therefore, if some of the provisions outlined below appear complicated – that is because they are.[5]

In any event, just looking at the increase in renewable generation, the EEG is a success story. Since the entry into force in 2000, the share of renewable energy in the gross electricity consumption has risen from 6.2 per cent to 25.3 per cent in 2013.[6] According to preliminary figures from the Federal Association of the Energy and Water Industry (BDEW) the share of renewables increased further in 2014 to 25.8 per cent.[7]

As this growth[8] also led to a substantial increase in the volume of support, to more than €22bn in 2013,[9] the currently ruling so-called grand coalition formed by Conservatives (Christlich Demokratische Union Deutschlands (CDU)/Christlich-Soziale Union (CSU)) and Sozialdemokratische Partei Deutschlands (SPD) that came into power in December 2013 pushed for an overhaul of the EEG. Various previous amendments of the EEG had failed to rein in costs.[10] The revision was also influenced by the opening of an in-depth inquiry by the European Commission in December 2013 investigating compliance with EU state aid rules of the reductions granted under the EEG 2012[11] to energy-intensive companies on the surcharge promoting renewable energy sources in Germany ('EEG-surcharge'[12]) and to suppliers that sourced 50 per cent of

5 For initial comments in German legal journals on the EEG 2014, see Guido Wustlich, 'Das Erneuerbare-Energien-Gesetz 2014 – Grundlegend neu – aber auch grundlegend anders?' [2014] NVwZ 1113; Henning Thomas, 'Das EEG 2014 – eine Darstellung nach Anspruchsgrundlagen' [2014] NVwZ 1139; Christian Kahle, 'Die beihilfenrechtliche Genehmigung des EEG 2014 durch die Europäische Kommission' [2014] NVwZ 1563; Walter Frenz, 'Paradigmenwechsel im EEG 2014: von der "Stasts-" zur Marktwirtschaft' [2014] RdE 465.

6 See information by the Federal Ministry for Economic Affairs and Energy, 'Erneuerbare Energien in Zahlen. Nationale und internationale Entwicklung im Jahr 2013' 10 <http://www.erneuerbare-energien.de/EE/Redaktion/DE/Downloads/erneuerbare-energien-in-zahlen.pdf> accessed 2 February 2015.

7 See Matthias Lang and Annette Lang, 'BDEW 2014 German Electricity Mix: Renewables Highest at 25.8%, Followed by Lignite (25.6%), Hard Coal (18%), Nuclear (15.9%) and Gas (9.6%)' (German Energy Blog, 2015) <http://www.germanenergyblog.de/?p=17640> accessed 2 February 2015.

8 Regarding record growth in particular in the solar sector in the years 2010 to 2012 please see M Lang, '7,604 MWp: Another Solar Record in 2012 Triggers 2.2% Feed-in Tariff Reduction from February' (German Energy Blog, 2013) <http://www.germanenergyblog.de/?p=12092> accessed 2 February 2015.

9 According to the transmission system operators, expenses for green power amounted to EUR 19.38 billion in 2013 plus EUR 2.69 billion that were carried over from 2012; see 'Aktuelle Angaben der Übertragungsnetzbetreiber zu den Einnahmen- und Ausgabenpositionen nach § 7 (1) Nr. 1 AusglMechV, Stand 31. Dezember 2013' <http://www.netztransparenz.de/de/file/2014-01-07_EEG-Konto_finanzieller-HoBA_2013_Dezember_gesamt.pdf> accessed 2 February 2015. According to the government, costs amounted to EUR 22.8 billion in 2013; see BT-Drucksache 18/1891, 171. In 2014 expenses for green power were EUR 21.5 billion plus a negative carry-over from 2013 of EUR 225 million; see 'Aktuelle Angaben der Übertragungsnetzbetreiber zu den Einnahmen- und Ausgabenpositionen nach § 7 (1) Nr. 1 AusglMechV, Stand 31. Dezember 2014' <http://www.netztransparenz.de/de/file/2015-01-07_EEG-Konto_Finanzieller-HoBA_2014_Dezember_Internet.pdf> accessed 2 February 2015.

10 An attempt by the former Conservative/Liberal coalition to reform the EEG again in 2013 (following a reform in 2012) had failed to get support by the 16 federal states; see M Lang, 'No Immediate EEG Revision – Agreement on Grid Expansion Acceleration' (German Energy Blog, 2013) <http://www.germanenergyblog.de/?p=12601> accessed 2 February 2015.

11 The last version of the EEG 2012 can be found at <https://www.clearingstelle-eeg.de/files/EEG-20121228_0.pdf> accessed 2 February 2015.

12 With the EEG surcharge, financial support to renewable power plant operators under the EEG is eventually passed on to consumers. In 2010 the surcharge still amounted to 2.047 ct/kWh. By 2014 it had risen to 6.24 ct/kWh; see 'EEG-Umlage 2014' <http://www.netztransparenz.de/de/1089.htm> accessed 2 February 2015.

their electricity portfolio from domestic renewable electricity ('green electricity privilege').[13]

Thanks to the large majority of the 2013 grand coalition in parliament, and the European law induced urgent need to find a solution for the EEG surcharge reductions for large energy users, the 'Act for a fundamental reform of the EEG and amending other energy law related legislation' passed parliament and the Federal Council[14] quickly.

On 23 July 2014 the European Commission also found the EEG 2014 to be in line with EU Guidelines on state aid for environmental protection and energy 2014–2020 (EEAG).[15,16] A day later, the EEG 2014 was published in the Federal Law Gazette[17] and the new EEG 2014 entered into force on 1 August 2014.

Main objectives of the EEG 2014

The main objectives of the EEG 2014 – besides reducing EEG-related costs – are laid down in Section 2 EEG 2014. They comprise:

- integration of renewable energy and mine gas into the electricity system. The improved market and grid integration shall further the transformation of the whole energy supply system (towards a mainly renewable energy supply);
- mandatory direct marketing of renewable energy and mine gas for the purpose of market integration;
- financial support shall focus to a greater extent on cost-effective technologies, taking into account medium and long-term costs;
- adequate distribution of costs based on their cause (*Verursacherprinzip*) and energy-related aspects;
- by 2017 at the latest the amount of financial support under the EEG shall be determined by auctions;
- auctions shall be open for bids of at least five per cent of newly installed capacity from European countries under certain conditions, e.g. the principle of reciprocity.

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13 OJ C 37, 7 February 2014.

14 Even though the federal states (*Länder*) criticised various aspects of the EEG revision they decided not to appeal the mediation committee (*Vermittlungsausschuss*); see Blasberg, 'EEG 2.0 Passes Bundesrat' (German Energy Blog 2014) <http://www.germanenergyblog.de/?p=16198> accessed 2 February 2015.

15 Guidelines on state aid for environmental protection and energy 2014–2020 (EEAG), OJ C 200, 28 June 2014, 1 to 55. For a state aid analysis of the EEG surcharge and the EEAG cf. Kahle (n 5 above); Marie-Christine Fuchs and Franziska Peters, 'Die Europäische Kommission und die Förderung erneuerbarer Energien in Deutschland – Eine Bewertung des EEG-Beihilfeverfahrens und der neuen Umwelt- und Energiebeihilfeleitlinien mit einem kritischen Blick auf die Leitlinienpolitik der Kommission' [2014] RdE 409; Christian Hampel and Katharina Groth, 'Der Abschluss des Beihilfeverfahrens gegen das EEG 2012 und seine Auswirkungen auf stromintensive Unternehmen' [2014] EnWZ 451. On the broadening of the European state aid law approach, see Martin Nettesheim, 'EU-Beihilferecht und nichtfiskalische Finanzierungsmechanismen' [2014] NJW 1847 and Martin Burgi and Daniel Wolff, 'Der Beihilfebegriff als fortbestehende Grenze einer EU-Energieumweltpolitik durch Exekutivhandeln' [2014] EuZW 647; cf. also Franz Säcker and Juliane Schmitz, 'Die Staatlichkeit der Mittel im Beihilfenrecht' [2014] NZKart 202, 206.

16 European Commission Decision on state aid SA.38632 (2014/N), C(2014) 5081 final. Approval was, however, partially limited in time, see M Lang and A Lang, 'EEG 2.0: Commission Approves EEG 2014 Paving Way for Entry into Force in August' (German Energy Blog, 2015) <http://www.germanenergyblog.de/?p=16273> accessed 2 February 2015.

17 Federal Law Gazette 2014, part I, no 33 of 24 July 2014, 1066.

Key elements that remained unchanged

Before highlighting the main changes under the EEG 2014, it is worth noting that many key elements of the EEG remained largely unchanged or were modified only slightly:

- We still have differentiated, above-market remuneration (primarily market premiums paid in addition to revenue of self-marketed energy, fixed feed-in tariffs for smaller generators), depending on renewable source and capacity.
- Financial support continues to be granted for a period of 20 years plus the year of commissioning.[18]
- For new plants the remuneration depends on the date of installation and is regularly reduced (so-called degression), reflecting cost cuts due to technological innovation. The degression and the degression intervals vary for the different sources of renewable energies and are reviewed regularly.
- Grid operators have to pay EEG remuneration for power fed into their grids.[19]
- Priority feed-in[20] and obligation for grid operators to connect renewable power plants to grids.[21]
- Reallocation of EEG support costs incurred by the transmission system operators (TSOs) using a sophisticated EEG surcharge system that eventually passes costs on to electricity consumers.[22] It is supplemented by the so-called 'special equalisation scheme' (*Besondere Ausgleichsregelung*) for certain energy-intensive consumer groups and railroad operators allowing for reductions of the EEG surcharge.[23]

Important changes under the EEG 2014

Applicability of EEG 2014 and transitional rules for existing plants

Technically, the EEG 2014 applies to all renewable power plants and mine gas operated plants as of 1 August 2014.[24] However, numerous transitional provisions safeguard existing investments, effectively making key provisions of earlier EEG versions applicable to installations that started operations by 31 July 2014.

In particular, the new provisions for (reduced) remuneration[25] will not apply to existing plants. Instead, the respective rules of the EEG 2012 or earlier versions of the EEG will continue to apply if the power plant started operating before 1 August 2014.[26] Certain grandfathering provisions allow the application of previous EEG provisions also for certain installations that started to operate for a limited period after 1 August 2014.[27]

It would go beyond the scope of this article to go into further detail with regard to the extensive transitional provisions and grandfathering rules. Suffice it to say

18 See s 22 EEG 2014.
19 See s 19 EEG 2014.
20 See s 11 EEG 2014.
21 Regarding the obligation to connect renewable power plants to the grids see Section 8 EEG 2014; regarding the costs thereof see Section 16 EEG 2014.
22 See ss 56 to 62 EEG 2014.
23 See ss 63 to 69 EEG 2014.
24 The EEG 2012 was repealed.
25 See s 23 EEG 2014, which refers to various other provisions.
26 See in particular s 100 para 1 EEG 2014.
27 See s 100 paras 2 and 3 EEG 2014, s 61 para 3 no 2 EEG 2014.

that it is an extremely complex[28] and therefore potentially dispute-prone area of the EEG 2014.

Renewable targets, expansion 'corridors', 'breathing caps' and installation register

GROWTH TARGETS

To encourage renewable growth, the EEG 2014 sets three growth targets for the share of renewables in the gross electricity consumption (*Bruttostromverbrauch*):

- 40 to 45 per cent by 2025;
- 55 to 60 per cent by 2035; and
- 80 per cent by 2050.[29]

By 2020 the share in the total gross final energy consumption (*Bruttoendenergieverbrauch*) shall amount to 18 per cent.[30]

These targets shall ensure steady growth and provide security for investments already made, including conventional power plant operators and grid operators.[31]

EXPANSION 'CORRIDORS'

The new EEG 2014 introduces expansion 'corridors' (*Ausbaupfade*) for the support of renewable power plants under the EEG so as to achieve steady growth in line with the growth targets and avoid sharp cost increases.

The individual corridor targets are as follows:[32]

- onshore wind power: annual growth of up to 2500 MW (net amount[33]); capacity to be permanently decommissioned will be deducted from new capacity added;
- offshore wind power: reduction of the national targets for offshore wind power from 10 MW to 6.5 GW by 2020 and from 25 GW to 15 GW by 2030;
- solar power: annual growth of up to 2500 MW (gross amount); only new capacity counts, no deduction of capacity that has been decommissioned;
- biomass: annual growth of 100 MW (gross amount); only new capacity counts, no deduction for capacity that has been decommissioned.[34]

'BREATHING CAPS' FOR SOLAR POWER, ONSHORE WIND POWER AND BIOMASS

To ensure that actual growth will remain within or at least near these corridors, so-called 'breathing caps' were introduced for onshore wind power and biomass,

28 The transitional provisions are longer than the original EEG that entered into force in 2000 and certainly longer than its precursor the Grid Feed-In Law. An excellent example of the complexity is s 100 para 1 no 10 EEG 2014.

29 See s 1 para 2 EEG 2014.

30 Section 1 para 3 EEG 2014.

31 BT-Drucksache 18/1304, 109.

32 See s 3 EEG 2014.

33 See BT-Drucksache 18/1304 (n 31 above) 111, also regarding gross amount targets for solar power and biomass.

34 However, new capacity due to expansions of existing biomass power plants shall not count towards the annual growth target; see Wustlich (n 5 above).

modelled on the previously introduced 'breathing cap' for solar power. 'Cap' must not be misunderstood as meaning that support is really capped. Instead, 'breathing' means that financial support for onshore wind power and biomass under the new EEG 2014 is reduced quarterly (not annually) as of 2016 depending on newly commissioned capacity. This so-called degression can increase and for photovoltaics (PV) and onshore wind power decrease if growth exceeds or falls below the targets.[35]

The existing monthly breathing cap for solar power has been somewhat remodelled. While the initial degression rate has halved from one to 0.5 per cent per month, the increase triggered by excessive growth is slightly higher.

OFFSHORE WIND POWER

For offshore wind power there is no breathing cap, as growth will be managed through the statutory grid connection regime laid down in the German Energy Act (EnWG). Based on the annual Offshore Grid Development Plan (O-NEP),[36] the grid regulator, the Federal Network Agency (BNetzA) will allocate new grid connection capacity. For the period until 1 January 2018 BNetzA is entitled to allocate capacity not only in the amount of 6.5 GW, the national target for 2020, but 7.7 GW.[37] The transitional provision was included in the EnWG in view of the offshore projects planned in the past that have received unconditional grid connection commitments under the previous EnWG.[38] BNetzA has meanwhile issued a decision in the first allocation procedure for offshore grid connection capacity.[39]

Market integration of renewables: direct marketing and auctioning

To render support for renewables more market-oriented, the EEG 2014 is starting to move away from feed-in tariffs by strengthening direct marketing obligations and cautiously preparing renewable power plants for a future competitive bidding process to establish support levels.

MANDATORY DIRECT MARKETING

Under the EEG 2012, renewable power plant operators were eligible for fixed feed-in tariffs. As an option, operators could voluntarily decide to sell the electricity themselves and claim a market premium in addition to the revenue obtained.[40]

Under the EEG 2014 direct marketing is the rule.[41] The sales revenue can still be topped up by claiming a market premium.[42]

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35 See ss 28, 29 and 31 EEG 2014.

36 See s 17b EnWG.

37 See s 118 para 14 EnWG.

38 See n 9 above, BT Drs 18/1891, 217.

39 See M Lang, 'BNetzA Issues Decision in First Allocation Procedure for Offshore Grid Connection Capacity (German Energy Blog, 2014 with link to the German press release) <http://www.germanenergyblog.de/?p=17174> accessed 2 February 2015.

40 See n 11 above, ss 33a to 33h EEG 2012.

41 See s 2 para 2 EEG 2014. On the revised direct marketing regime, see also Vollker Lüdemann and Christian Ortmann, 'Direktvermarktung im EEG – Das unvollendete Marktprämienmodell' [2014] EnWZ 387.

42 See s 34 EEG 2014.

Feed-in tariffs for new installations can only be claimed under the following conditions:

- For small renewable energy plants:[43]
  - plants commissioned before 1 January 2016 with an installed capacity of less than 500 kW;
  - plants commissioned after 31 December 2015 with an installed capacity of less than 100 kW;
  - the applicable tariffs for such small energy plants are reduced by 0.4 ct/kWh for wind (on- and offshore) and solar energy; for all other renewable energy sources a reduction of 0.2 ct/kWh applies.
- Another exception is the so-called fallback remuneration (*Ausfallvergütung*), which applies in particular if the direct marketing counterparty is not available (eg, because of insolvency). Fallback remuneration only covers 80 per cent of the otherwise applicable remuneration.[44]

Mandatory direct marketing has led to a new terminology for the basis on which financial support under the EEG 2014 is calculated. The new term is 'reference value' (*anzulegender Wert*).[45] As mentioned above the reference value is reduced for small power plants and in case of the fallback remuneration. The market premium for directly sold renewable energy is computed as reference value minus the monthly market value[46] for the respective source of renewable energy.[47] Hence the reference value must not be equated with the market premium, the feed-in tariffs or the fallback remuneration under the EEG 2014.

AUCTION SYSTEM TO DETERMINE FINANCIAL SUPPORT

The EEG 2014 goes beyond the shift to mandatory direct marketing. It mandates that financial support for renewable energy sources and mine gas and its specific amount shall be determined through auctions by 2017 at the latest.[48] This is to make financial support even more market-oriented and to meet the requirements of the EU Guidelines on state aid for environmental protection and energy 2014–2020 (EEAG), which shall ensure that meeting the EU's ambitious climate change and energy sustainability targets for 2020 and beyond will happen in a cost-effective way through market-based instruments. The EEAG explicitly mention auctioning procedures or competitive bidding processes, saying they 'should normally ensure that subsidies are reduced to a minimum in view of their complete phasing out'.[49] As of 2017 competitive bidding processes shall be the general rule under the EEAG.[50]

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43 See s 37 EEG 2014.

44 See s 38 para 2 EEG 2014.

45 Regarding the reference values for the various renewable energy sources and mine gas see Sections 40 to 51 EEG 2014.

46 For its definition see Section 5 no 25 EEG 2014.

47 Section 34 para 1 EEG 2014 in connection with Annex 1 no 1.

48 See s 2 para 5 EEG. For an initial assessment of the new competitive bidding regime see Christian Kahle, 'Ermittlung der Förderhöhe für PV-Freiflächenanlagen nach dem EEG 2014 – Ausschreibungsmodell' [2014] RdE 372 and Christian Kahle and Mascha Menny, Das Ausschreibungsmodell des EEG 2015, et 2014/12, 18.

49 See EEAG s 3.3.1. (109).

50 See EEAG s 3.3.1. (126).

Germany intends to gain experience with auctions using pilot projects with freestanding solar power plants.[51] To this end, the government in January 2015 adopted the Ordinance for Competitive Bidding for Financial Support of Freestanding Installations (FFAV).[52]

Key aspects of the ordinance are:

- Auctions are held by BNetzA on 1 April, 1 August and 1 December of each calendar year (in 2015 the first auction will be held on 15 April).
- The average auctioning volume in the years 2015 to 2017 is 400 MW with 500 MW being auctioned in 2015, 400 MW in 2016 and 300 MW in 2017. Capacity not used can be carried over to the next bid date.
- Natural persons, partnerships and legal persons alike shall be eligible to bid.
- Bids must amount to at least 100 kW and must not be higher than 10 MW.
- The land considered suitable for PV power plants seeking to participate in auctions is limited.[53] This is to avoid competition with farming.
- Bidders have to submit various documents including the decision to enact or alter a zoning plan that allows freestanding PV power plants. They also have to provide security.
- Details of the auctions have to be published by the BNetzA after the ninth and before the sixth week before the bid date on its internet site, giving information on the bid date, the auction volume, the maximum value, formal requirements and further determinations of BNetzA on submitting bids and the award procedure.[54]
- Each tender has to contain a maximum value that bids must not exceed, based on what is paid for PV power plants attached to buildings.
- Bids shall be awarded as pay-as-you-bid prices, except for the bid dates 15 August 2015 and 1 December 2015. In the latter auctions a uniform pricing method applies so that all bidders receive the same financial support that corresponds to the highest offer that was awarded the right to support. Using both methods shall help gain more experience.

With the first bid date, 15 April 2015, being so shortly after the publication of the final version of the ordinance, it will be interesting to learn more about the response.

As a novelty, Germany is considering whether to widen support for renewables also to bidders from other countries. The EEG 2014 contains a clause that would allow bids of at least five per cent of newly installed capacity from European countries under certain conditions, eg, the principle of reciprocity.[55] However, the FFAV ordinance does not yet contain proposals on the inclusion of bids from other European countries for the pilot projects.

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51 See s 2 para 5 sent 2 and s 55 EEG 2014.

52 Verordnung zur Einführung von Ausschreibungen der finanziellen Förderung für Freiflächenanlagen sowie zur Änderung weiterer Verordnungen zur Förderung der erneuerbaren Energien; Federal Law Gazette 2015, part I, 108.

53 See n 52, Art 1, part 2, s 6 para 3 no 6.

54 See n 52, Art 1, part 2, s 5.

55 See s 2 para 6 EEG 2014.

No financial support in times of negative prices

Another new provision was introduced to comply with the EEAG which mandate that operating aid granted to renewables is only in compliance if measures are put in place to ensure that generators have no incentive to generate electricity under negative prices.[56] According to section 24 EEG 2014, the reference value for financial support falls to zero if hourly contracts for the German/Austrian price zone at the spot market of EPEX Spot SE are negative for a period of at least six consecutive hours.[57]

Main changes regarding the individual sources of renewable energy

The EEG 2014 contains several changes pertaining only to specific renewable energy sources. Below, we will outline some of the more important modifications.

PV

Financial support for freestanding solar plants will be subject to auctions.[58] They are scheduled to start in 2015. The annual expansion corridor target is 2,500 MW gross. Under the breathing cap concept, increases/reductions in financial support become applicable when growth leaves the expansion corridor, either by falling below 2,400 MW or by going above 2,600 MW. Slight changes to the breathing cap for the reduction of the reference value (degression) have occurred.[59] In addition, the reference value for financial support has been slightly raised to compensate renewable power plant owners for the fact that electricity generated for self-consumption no longer enjoys the privilege of being fully exempted from the EEG surcharge with which consumers pay for the EEG support system.[60]

ONSHORE WIND POWER

For onshore wind power, the annual expansion corridor target is 2,500 MW net, with increases/reductions in financial support becoming applicable when growth leaves the expansion corridor, either by falling below 2,400 MW or by going above 2,600 MW (breathing cap concept).[61] While certain bonuses paid under the EEG 2012[62] were removed, the basic reference value (*Grundwert*) and the initial reference value (*Anfangswert*) that replaces the basic reference value (*Grundwert*) in the first five years following the commissioning of a plant were slightly raised[63] to include the management premium for direct marketing and reflect cost developments.[64] In addition, the reference yield model, which compensates plant operators at weaker wind locations, was modified to make it more cost-efficient and set more appropriate incentives.[65]

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56 EEAG s 3.3.1. (124) (c).
57 Certain exceptions apply, see s 24 para 3 EEG 2014.
58 See above 'Auction system to determine financial support'.
59 See above '"Breathing caps" for solar power, onshore wind power and biomass'.
60 See below 'Self-generated and self-consumed power (auto-generation)'.
61 See above '"Breathing caps" for solar power, onshore wind power and biomass'.
62 System services and repowering bonus, see n 11 above, ss 29 para 3 and 30 EEG 2012.
63 See s 49 paras 1 and 2 EEG 2014: basic applicable value 4.95 ct/kWh (previously 4.72 ct/kWh), initial applicable value 8.9 ct/kWh (previously 8.66 ct/kWh).
64 See BT-Drucksache 157/14, 215.
65 See n 64 above, 215. For an analysis of the onshore wind power related changes, see also André Lippert and Lars Kindler, 'Die Windenergie an Land in der Reform des EEG und des Planungsrechts' [2014] DVBl 1235.

Offshore wind power

The offshore wind power targets for 2020 and 2030 have been reduced to bring them in line with a technically more realistic expansion scenario.[66] In addition, the support regime was modified mainly to help delayed projects. The initially higher remuneration option for the first eight years from the date of commissioning of offshore wind generation (so-called *Stauchungsmodell*, acceleration model) previously set to expire at the end of 2017[67] was extended to the end of 2019.[68] Until the end of 2017 the reference value is 19.4 ct/kWh. It decreases to 18.4 ct/kWh as of 1 January 2018.[69] Instead of the eight-year acceleration remuneration model, operators can still choose an initial 12-year increased remuneration of currently 15.40 ct/kWh.[70] The basic remuneration that applies after the period in which the eight- or 12-year remuneration is paid is 3.9 ct/kWh.

Biomass

For biomass, a (small) expansion corridor target of 100 MW and a quarterly breathing cap for the degression of support were introduced.[71] In addition, bonuses for the use of certain raw materials[72] and gas processing[73] were removed. Henceforth support shall focus on cost-efficient raw materials, in particular waste and residue.[74]

Support for electricity from biogas generated in plants with a capacity of more than 100 kW is only granted for the share of electricity produced in a calendar year that equals 50 per cent of the installed capacity.[75] In return a flexibility bonus of EUR 40 per kW for providing flexible capacity can be claimed.[76] The higher flexibility bonus paid under the EEG 2012 continues to be paid for plants that started operations before 1 August 2014, but certain limitations apply.[77]

Hydro power

Plants that started operations before 1 January 2009 and increased capacity after 31 July 2014 are eligible for support under the EEG 2014 under certain conditions.[78] Degression of the reference value of 0.5 per cent starts in 2016.[79] Previously a one per cent degression as of 2013 applied.[80]

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66 See above 'Expansion "corridors"'.
67 See s 31 para 3 sent 1 EEG 2012 (n 11 above).
68 See s 50 para 3 sent 1 EEG 2014.
69 See s 30 para 1 no 2 EEG 2014.
70 See s 50 para 2 sent 1 EEG 2014; regarding the degression under this model see s 30 para 1 no 1 EEG 2014.
71 See above 'Expansion "corridors" and "Breathing caps" for solar power, onshore wind power and biomass'.
72 Section 27 para 2 EEG 2012 (n 11 above).
73 Section 27c para 3 EEG 2012 (n 11 above).
74 See n 64 above, 209.
75 See s 47 para 1 EEG 2014.
76 See s 53 EEG 2014; for plants eligible to feed-in tariffs pursuant to Sections 37 or 38 EEG 2014, support for the share exceeding 50 per cent is not reduced to zero, but to the monthly market value in the sense of s 5 no 25 EEG 2014.
77 See s 54 EEG 2014 in connection with Annex 3.
78 See s 40 para 2 EEG 2014.
79 See s 27 para 1 no 1 EEG 2014. The first draft still stipulated a one per cent degression as of 2016. According to BT-Drucksache 18/1891 (n 9 above) 194; this was changed to one per cent as hydro power has little cost reduction potential.
80 Section 20 para 2 no 1 EEG 2012.

GEOTHERMAL

Support for geothermal power generation remained largely unchanged, mainly because it only plays a very minor role. However, the so-called petrothermal bonus paid under the EEG 2012 was removed.[81]

EEG surcharge and EEG surcharge reductions

The EEG-related costs for market premiums and feed-in tariffs are passed on to final consumers following a sophisticated cost reallocation system. In 2014, more than €21.5bn were reallocated through this system.[82]

The basic reallocation system remains unchanged under the EEG 2014. The grid operator to whose system the renewable power installation is connected has to pay the generator.[83] The connecting grid operator then passes on the electricity, respectively the right to label electricity as 'electricity from renewable sources', to the upstream transmission system operator (TSO),[84] who is obliged to compensate the downstream grid operator for his expenses made under the EEG.[85] TSOs compensate each other for costs incurred.[86] As far as the green electricity is not directly sold by the renewable power plant operators, the TSOs sell the electricity.[87] Prices at the electricity exchange are however lower than EEG payments.[88] To make up for (all) their costs TSOs may, after deducting the sales revenue, charge electricity suppliers delivering electricity to final consumers a share of the necessary expenditure proportionate to the respective quantity of electricity delivered by the electricity suppliers to their final consumers (so-called EEG surcharge).[89] By 2014 this surcharge had risen to 6.24 ct/kWh. In 2015 it fell slightly to 6.17 ct/kWh.[90]

SELF-GENERATED AND SELF-CONSUMED POWER (AUTO-GENERATION)

Under the EEG 2012, power generated and consumed by generators themselves was in principle not subject to the EEG surcharge. Repeated EEG surcharge increases made it commercially more and more attractive to consume self-generated power (also referred to as auto-generated power). This led to fewer consumers having to pay the EEG surcharge, further increasing the charge. Furthermore, auto-generation came under European state aid law compliance scrutiny under the EEAG.[91]

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81 Section 28 para 2 EEG 2012; petrothermal projects may receive research funding, BT-Drucksache 157/14 (n 64 above) 215.

82 See n 9 above.

83 See s 19 para 1 EEG 2014.

84 See s 56 EEG 2014.

85 See s 57 EEG 2014.

86 See s 58 EEG 2014.

87 See s 59 EEG 2014 in connection with the Equalisation Scheme Ordinance (AusglMechV).

88 Sales revenue ranged from 25.72 ct/kWh to 38.20 ct/kWh in 2014 according to the TSOs; see <http://www.netztransparenz.de/de/file/Vermarktungsmengen_Prg-7_Abs-1_Nr-2_Internet_Dez-2014.pdf> accessed 2 February 2015.

89 See s 60 para 1 sent 1 EEG 2014 in connection with the Equalisation Scheme Ordinance (AusglMechV).

90 See <http://www.netztransparenz.de/de/EEG-Umlage.htm> accessed 2 February 2015.

91 Cf. Kahle (n 5 above); Fuchs and Peters (n 15 above).

The EEG 2014 therefore modified the EEG surcharge exemption provisions for auto-generation in many respects.[92]

Under the EEG 2014, only the following power installations are fully exempt from the EEG surcharge.[93]

New installations

- If electricity is consumed in auxiliary facilities (*Neben- und Hilfsanlagen*) of a power plant in order to generate power, so-called own Consumption of power plants (Kraftwerkseigenverbrauch).
- Plants that are neither directly nor indirectly connected to a grid.
- Consumers that source their electricity 100 per cent from renewable sources and do not claim support pursuant to the EEG for electricity that they do not need themselves.
- Small plants with an installed capacity of up to ten kW. The EEG surcharge does not have to be paid for the first 10 MW of self-consumed power. The provision applies from the commissioning of the plants for a duration of 20 calendar years plus the year of commissioning.

Plants considered existing power plants. Plants considered as 'existing plants' (*Bestandsanlagen*) are also fully exempt from the EEG surcharge:

- if the final consumer generates his own power;
- to the extent he consumes it himself;
- if the electricity is not transmitted through a grid unless it is consumed in the vicinity of the installation.

They are considered 'existing plants' under the following conditions:

- plants the final consumer operated prior to 1 August 2014 under the above-mentioned conditions;
- plants licensed by 23 January 2014 pursuant to the relevant laws named in the EEG, which generate electricity for the first time after 1 August 2014 and are operated on the above-mentioned conditions prior to 1 January 2015;
- plants that replace, retrofit or extend one of the two aforementioned plants, unless the installed capacity increases by more than 30 per cent;
- existing plants that generate electricity for use by the operator that have been in operation since before 1 September 2011 (before the EEG 2012 entered into force); they enjoy more privileges than the plants operated prior to 1 August 2014 and the ones licensed by 23 January 2014.[94]

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92 For issues associated with the auto-generation changes, see also Marc Ruttloff, 'Eigenversorgung durch Bestandsanlagen unter dem EEG 2.0 – wie weit reicht der Bestandsschutz?' [2014] NVwZ 1128; Christian Moench and André Lippert, 'Eigenversorgung im EEG 2014 – Neue Hürden für die Privilegierung selbst erzeugten Stroms' [2014] EnWZ 392; Martin Geipel and Cornelia Kermel, 'Die Belastung von Eigenstrom mit der EEG-Umlage nach dem EEG 2014' [2014] RdE 416 and Nils Graßmann and Katharina Groth, 'Bestandsschutz für Eigenversorgungsmodelle nach dem EEG 2014' [2014] RdE 475.

93 See s 61 paras 2 and 3 EEG 2014.

94 See s 61 para 4 EEG 2014.

The European Commission accepted the above exemptions as being in line with the EEAG only for a transitional period. The government therefore has to review the provisions on existing plants by 2017, and shall present a proposal for revision in due time beforehand.[95] The explanatory memorandum for the EEG 2014 bill expressly states that a revision will have to be in compliance with EU state aid law.[96]

EEG surcharge reductions for new auto-generation plants. For all other new plants intended to provide power for self-consumption, the full EEG surcharge applies unless they are renewable power plants or highly efficient combined heat and power plants as defined in the law, in which case a uniform surcharge applies that is introduced in a staggered manner. In 2015 the surcharge amounts to 30 per cent and in 2016 to 35 per cent. As of 1 January 2017 it will be 40 per cent of the otherwise applicable surcharge.[97]

EEG SURCHARGE REDUCTION FOR ENERGY-INTENSIVE COMPANIES

EEG surcharge reductions for energy-intensive companies were a hotly debated subject under the EEG 2012.[98] To mitigate competitive disadvantages for energy-intensive industries caused by a high EEG surcharge, the EEG 2014 continues to provide for certain reductions under the so-called special equalisation scheme (*Besondere Ausgleichsregelung*).

To benefit from the reductions of the EEG surcharge, energy-intensive companies and railroad operators have to file an application with the relevant authority, the Federal Office of Economics and Export Control (BAFA).[99]

The revised special equalisation scheme (including its transitional and hardship provisions) is the result of intensive talks between the German government and the European Commission in a commercially most relevant area, and therefore quite sophisticated. To qualify for a reduction, several requirements have to be met:[100]

- In the last calendar year the amount of electricity consumed at a delivery point by a company listed in Annex 4 on which the EEG surcharge has to be paid pursuant to section 60 para 1 or 61 EEG 2014[101] has to exceed 1 GWh.
- In line with the EEAG,[102] eligible undertakings are those exposed to a risk to their competitive position due to the costs resulting from the EEG in support of renewable energy. They are listed in Annex 4 of the EEG 2014 as so-called list 1 and list 2 companies.
- Undertakings can apply for an EEG surcharge reduction if the ratio of electricity costs to gross value added at factor costs amounts to:
  - 16 per cent for list 1 undertakings (as of 2016: 17 per cent);

95 See European Commission, IP/14/867, 23 July 2014 and s 98 para 3 EEG 2014.
96 See BT-Drucksache 18/1891 (n 9 above) 5.
97 See s 61 para 1 EEG 2014.
98 Cf. Maximiliane Uibeleisen and Martin Geipel, 'Praxisrelevante Neuerungen der Besonderen Ausgleichsregelung nach dem EEG 2014 für stromkosten- und handelsintensive Unternehmen' [2014] NJOZ 1641.
99 See s 63 EEG 2014.
100 See s 64 EEG 2014.
101 Electricity exempted from the EEG surcharge under the provisions for auto-generation cannot be exempted again under the rules for energy-intensive companies.
102 See EEAG s 3.7.2. (185).

  - 20 per cent for list 2 undertakings.
- EEG surcharge costs are reduced as follows:
  - A deductible applies. The EEG surcharge has to be paid in full for the first 1 GWh.
  - For consumption exceeding 1 GWh, the EEG surcharge amounts to 15 per cent, but:
    - a cap at four per cent of gross value added (GVA) applies if the electro-intensity (electricity costs divided by undertaking's GVA) of an undertaking amounts to less than 20 per cent;
    - a cap at 0.5 per cent of GVA applies if the respective electro-intensity is higher than 20 per cent;
    - these reductions for consumption exceeding 1 GWh only apply to the extent that the individual EEG surcharge payable is no less than 0.1 ct/kWh respectively 0.05 ct/kWh for companies from the non-ferrous sector.[103] This shall ensure a minimum contribution to the EEG surcharges by privileged undertakings.
- The new system generally applies as of 2014 for applications for EEG surcharge reductions in 2015 and later years. However, the new scheme is being introduced gradually. For undertakings currently benefiting from the reductions under the EEG 2012, the EEG surcharge may not increase to more than twice as much as the surcharge in the previous year in the period from 2015 to 2018.[104] This also applies to undertakings that do not fulfil the requirements pursuant to section 64 EEG 2014, because they are Annex 4 list 1 companies whose electro-intensity amounts to less than 16 per cent in 2015 and 17 per cent in 2016.
- To facilitate the system change, transitional provisions apply, one of which was a prolonged application period until 30 September 2014 for 2015.[105]
- A hardship clause applies to undertakings that were granted EEG surcharge reductions under the EEG 2012, but which are no longer eligible for an EEG reduction under the EEG 2014. They have to pay the EEG surcharge in full for the first 1 GWh. Beyond 1 GWh they have to pay 20 per cent of the EEG surcharge with no further reduction. The clause applies in the following two cases:
  - undertakings not listed in Annex 4 of the EEG 2014;
  - undertakings covered by Annex 4 of the EEG, list 2, whose electro-intensity does not amount to 20 per cent of GVA.[106]

EEG SURCHARGE REDUCTION FOR RAIL OPERATORS

Under the revised EEG 2014 rail operators also fall under the special equalisation scheme and can apply for an EEG surcharge reduction with BAFA if they can demonstrate that the electricity consumed for railway operations at a delivery point (excluding recycled energy) amounted to at least 2 GWh in the previous fiscal year. The EEG surcharge will then be reduced to 20 per cent.[107]

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103 See s 64 para 2 no EEG 2014 in connection with Annex 4.
104 See s 103 para 3 EEG 2014.
105 See s 103 para 1 no 5 EEG 2014.
106 See s 103 para 4 EEG 2014.
107 See s 65 EEG.

GREEN POWER PRIVILEGE

The green power privilege previously contained in the EEG 2012[108] (to which the European Commission had objected) was removed, so that electricity suppliers can no longer claim an EEG surcharge reduction of 2 ct/kWh if they source 50 per cent of their electricity portfolio from domestic renewable electricity. The EEG 2014 gives the government the power to create a new regime regulating the sale of green electricity by ordinance. The provision authorising the ordinance stipulates that such system may include electricity from other European countries.[109]

Cost cuts and effects of EEG 2014

By amending the EEG, the government initially wanted to reduce costs from an average financial support across all technologies of 17 ct/kWh under the EEG 2012 to 12 ct/kWh for new installations by 2015.[110] In talks with the federal states in April 2014 the government made concessions, which according to Economics Minister Sigmar Gabriel amounted to 0.2 ct/kWh by 2020.[111]

Whether the new expansion corridors, the breathing caps for the degression of financial support and the cost cuts made for example by removing bonuses for biomass, onshore wind power and geothermal energy will be enough to stabilise the EEG surcharge on the 2014 level of 6.24 ct/kWh remains to be seen. With the reform, the EEG surcharge could at least remain stable until 2017, various media sources quoted the economics minister as saying in April 2014.[112] In October the TSOs announced a 6.17 ct/kWh EEG surcharge for 2015.[113] Shortly thereafter they provided a range of 5.66 ct/kWh to 7.27 ct/kWh in their forecast for 2016.[114]

Outlook

Even though the EEG 2014 only entered into force on 1 August 2014, further steps are already planned to amend the EEG 2014 and the surrounding legal framework again.

Auctioning financial support – EEG 3.0

The next milestone will definitely be the switch from mandatory direct marketing that is topped up with market premiums (and feed-in tariffs mainly for small renewable power plants) to auctioning financial support.

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108 Section 39 EEG 2012.

109 See s 95 no 6 EEG 2014 (n 11 above).

110 See key point paper for the reform published by the Ministry of Economic Affairs and Technology on 21 January 2014, at 3, 4 <http://www.bmwi.de/BMWi/Redaktion/PDF/E/eeg-reform-eckpunkte, property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf> accessed 2 February 2015.

111 See M Lang, 'EEG 2.0: Federal Government and Federal States Reach Agreement on Important Issues of EEG Reform' (German Energy Blog, 2014) <http://www.germanenergyblog.de/?p=15603> accessed 2 February 2015.

112 <http://www.sueddeutsche.de/news/wirtschaft/energie-gabriel-strompreis-bleibt-bis-2017-stabil-dpa.urn-newsml-dpa-com-20090101-140407-99-04428> accessed 2 February 2015.

113 See <http://www.netztransparenz.de/de/EEG-Umlage.htm> accessed 2 February 2015.

114 See M Lang and A Lang, 'TSOs 2016 EEG Surcharge Forecast: Trend 6.5 ct/kWh, Range 5.66 to 7.27 ct/kWh' (German Energy Blog, 2014) <http://www.germanenergyblog.de/?p=17341> accessed 2 February 2015.

As we pointed out above, pilot projects with freestanding PV power plants shall help gain experience with auctioning as of 2015.[115] Towards November 2015 a report based on the experience with the pilot tenders shall be published.

In 2016 the EEG shall be amended and become the EEG 3.0 as of 2017 in which tenders determining financial support under the EEG shall be the general rule for all renewables.

10-Point-Energy-Agenda

As a number of important issues for the proper functioning of the German and ultimately the European energy market have not been tackled in the EEG reform package, BMWi has presented a '10-Point-Energy-Agenda'[116] comprising further main legislative projects of the government for the ongoing 18th legislative session, including a market design that makes it possible to integrate the growing input of renewable energy while ensuring the security of supply by non-volatile power plants. Regarding the new electricity market design BMWi has recently published a Green Paper called 'An Energy Market for the Energy Transition' that shall serve as a starting point for the discussion.[117] Comments were due by 1 March 2015. After assessment of the comments the ministry will present a White Paper with specific proposals at the end of May 2015. The White Paper will also be subject to public consultation until September 2015. Then the legal framework identified as necessary will be drafted.

Conclusion

The German EEG has been as inspiration for many feed-in tariff systems around the world, and has contributed to the growth of renewables in many countries. It had a markedly disruptive effect on German energy generation. Its effectiveness in supporting renewables also meant constant revision. Over time, it was modified to introduce more market mechanisms, mainly using a special premium system to support direct marketing of renewables.

The latest reform is very much influenced by how the European Commission sees European state aid law requirements. Assuming that the European Commission's view on how renewables shall be supported continues to prevail, German renewables support will move towards competitive bidding and auctions to determine support levels. Going forward, European law developments are likely to play an ever increasing role in shaping the future of the EEG. We suspect that the next EEG will not be simpler than the 2014 version.

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115 See above 'Auction system to determine financial support'.

116 See Ministry for Economic Affairs and Energy, 'Die "10-Punkte-Energie-Agenda" des BMWi' <http://www.bmwi.de/DE/Themen/energie,did=644350.html> accessed 2 February 2015; and M Lang, '10-Point Energy Agenda by Energy Ministry Following Renewables Reform' (German Energy Blog, 2014) <http://www.germanenergyblog.de/?p=16151> accessed 2 February 2015.

117 For an English language summary, see M Lang, 'Green Paper: An Electricity Market for the Energiewende – Capacity Market Discussion Paper by German Energy Ministry' (German Energy Blog, 2014) <http://www.germanenergyblog.de/?p=17223> accessed 2 February 2015.