State Aid Germany

Support for renewable electricity and reduced EEG-surcharge for energy-intensive users

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The **German Renewable Energy Act** (Erneuerbare-Energien-Gesetz, EEG) provided for support to *electricity production from renewable energy sources and mining gas.*

- Financed by *a surcharge* (*EEG-surcharge*) paid by electricity suppliers and passed on to end consumers through their electricity bill.
- Energy-intensive industries (EIU) were *granted reductions* on the EEG-surcharge.
Renewable Energy Act

- The German Renewable Energy Act (Erneuerbare-Energien-Gesetz, EEG) was designed to encourage cost reductions based on improved energy efficiency from economies of scale over time.

- Main principals:
  - Investment protection through guaranteed feed-in tariffs and connection requirement
  - No charge to Germany’s public purse
  - Innovation by decreasing feed-in-tariffs

Amended Renewable Energy Act entering into force on 1 January 2012 (‘EEG-Act 2012’)
Case

- Complaint filed by: the German Association of Energy Consumers (Bund der Energieverbraucher)

- Content of complaint: argued that the amended Renewable Energy Act (EEG-Act 2012) in particular the cap on the EEG-surcharge in favor of energy-intensive users (EIU) constitutes unlawful and incompatible State aid.
Electricity Market Supply Chain

- RES/Mining gas
- DSOs
  - F-I-T Or Market Premium (DM)
- TSOs
  - Compensate for F-I-T and Market Premium (DM)
- Suppliers
  - EEG-Surcharge
- Consumers

Direct Marketing (DM)
EEG-Surcharge Calculation

- TSOs jointly determine each year the EEG-surcharge for year X+1
- Each electricity supplier bears the same costs for each kwh of electricity delivered by it to a final consumer (*flat fee*).

<table>
<thead>
<tr>
<th>Forecasted Revenues</th>
<th>Forecasted Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income from day-ahead and intraday market</td>
<td>Feed-in Tariffs and compensation payments</td>
</tr>
<tr>
<td>Income from EEG-Surcharge</td>
<td>Payment of premiums</td>
</tr>
<tr>
<td>Interest payment</td>
<td>Payment of interest</td>
</tr>
<tr>
<td>Income from settlement of balancing energy</td>
<td>Cost for the settlements of day-ahead market and balancing energy</td>
</tr>
</tbody>
</table>

- 2012: 3.592 ct/kWh; 2013: 5.277ct/kWh
EEG-Surcharge Reduction

- The EEG-Act 2012 (§39) foresees that the EEG-surcharge is decreased for electricity supplier by 2 ct/kWh if the following conditions are met:
  - RES electricity bought under direct marketing
  - >50% of the electricity delivered to final consumers is from RES or mining gas
  - >20% if wind or solar electricity

- 100% conventional sources: \(43\text{€/MWh} + 53\text{€/MWh} = 96\text{€/MWh}\)

- 50% conventional source: \((43\text{€/MWh} + 33\text{€/MWh}) \times 50\% + (\text{RES price} + 33\text{€/MWh}) \times 50\% = 96\text{€/MWh}\) Max offer for RES 83€/MWh (40€/MWh as a premium)
Energy Intensive Users

- §41 of the EEG-Act 2012 limits the EEG-surcharge for EIU (blocked pricing).

<table>
<thead>
<tr>
<th></th>
<th>&lt;1 GWh</th>
<th>1 GWh~10 GWh</th>
<th>10 GWh~100 GWh</th>
<th>&gt;100 GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>10%</td>
<td>1%</td>
<td>0.05 ct/kWh</td>
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</tbody>
</table>

- If EIU has consumption >100GWh and the cost > 20% gross added value, then EEG surcharge will be 0.05 ct/kWh for the whole electricity consumption.

- As a result of the cap, the EIU’s electricity supplier’s obligation to pay the EEG-surcharge to the TSO is reduced accordingly.

- This results in a higher EEG-surcharge for other consumers (TSOs take into account reduced prices when establishing EEG-surcharge).
• 22 May 2002, the Commission adopted a decision on the "Gesetz über den Vorrang erneuerbarer Energien (Erneuerbare- Energien-Gesetz)" (an earlier version of the EEG-Act which came into force on 1 April 2000) in which it considered that the German renewable support system did not involve State aid.

• However, since the initial decision, the EEG-Act has been amended substantially. Given that the amendments introduced by the EEG-Act 2012 were not notified to the Commission, the aid has to be considered as unlawful new aid.
<table>
<thead>
<tr>
<th>Feature</th>
<th>EEG-Act 2000</th>
<th>EEG-Act 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passing on of the surcharge</td>
<td>Successive obligations of the operators to purchase the EEG electricity</td>
<td>The passing on of costs is decoupled from the transfer of the EEG electricity.</td>
</tr>
<tr>
<td>Equalisation mechanism on the third level</td>
<td>Cost equalisation is coupled with the purchase of EEG electricity.</td>
<td>Equalisation of the costs resulting from the spot market sales of the EEG electricity.</td>
</tr>
<tr>
<td>Final consumers have to bear the costs, but some benefit from a cap.</td>
<td>Not provided for.</td>
<td>BesAR: EIUs can ask for reductions in their surcharge.</td>
</tr>
<tr>
<td>Role of the BNetzA</td>
<td>No role.</td>
<td>Supervision and enforcement of the determination of the surcharge.</td>
</tr>
<tr>
<td>Role of the BAFA</td>
<td>No role.</td>
<td>Authorises the reduction of the surcharge.</td>
</tr>
<tr>
<td>Level of the surcharge</td>
<td>0.2 ct/kWh (2000)</td>
<td>6.24 ct/kWh (2014)</td>
</tr>
</tbody>
</table>
The EEG-surcharge administered by TSO constitutes a State resource

• First, the State has appointed undertakings (TSOs) to administer a surcharge established by the State.

• Second, the State has established rules governing the use and destination of the surcharge. (In particular if the TSOs collect more surcharge than needed. They are thus not free to set and use the EEG-surcharge as they wish.

• Finally, the Commission notes that there are quite detailed control mechanisms in place that allow the State to monitor the financial flows linked to the EEG.
What is State Aid

- Under Article 107(1) TFEU, any aid granted by
  1. a Member State or through State resources
  2. in any form whatsoever which distorts or threatens to distort competition
  3. by favouring certain undertakings or the production of certain goods
  4. in so far as it affects trade between Member States
  is incompatible with the internal market.
Assessment of the Measure by European Commission

- Existence of a selective advantage and impact on competition and trade
- Existence of State resources
Existence of a selective advantage and impact on competition and trade

- Advantage for the producers of RES electricity and electricity from mining gas:

- Through the feed-in tariffs and premiums, they obtain more than what they would obtain on the market.

- In 2012, around EUR 19.5 billion were paid out in terms of feed-in tariffs and premiums while TSOs could sell the purchased renewable energy on the wholesale market only for around EUR 3 billion. The top up compared to market prices thus amounted to EUR 16.5 billion.

- The measure is selective because it favours only producers of RES electricity and electricity from mining gas.

- The electricity market has been liberalized and electricity producers are engaged in trade between Member States takes place.
Existence of a selective advantage and impact on competition and trade

- Advantage to EIU in the manufacturing sector:

- EIUs in the manufacturing sector are advantaged because the EEG-surcharge that can be required from them is capped.

- According to estimates made by the BNetzA for the year 2011, as a result of the cap, the EIUs concerned only pay 0.3% of the EEG-surcharge while they account for 18% of energy transmitted through the grid.

- The measure is selective because only energy-intensive undertakings can benefit from it. In addition only undertakings from the manufacturing sector qualify for it.

- The potential beneficiaries are producers of energy-intensive goods and are active in sectors in which trade between Member States takes place.
Existence of State resources for EEG-surcharge

- The State has appointed undertakings (TSOs) to administer a surcharge established by the State.

- The State has established rules governing the use and destination of the surcharge. (In particular if the TSOs collect more surcharge than needed. They are thus not free to set and use the EEG-surcharge as they wish.

- The Commission notes that there are quite detailed control mechanisms in place that allow the State to monitor the financial flows linked to the EEG.
Existence of State resources
Reduced EEG-surcharge for EIU

• The Commission comes to the preliminary conclusion that the EEG-surcharge constitutes a State resource. The reduced EEG-surcharge or capped surcharged implies a renouncement to State resources.

• The cap and the corresponding decrease in EEG resources for the TSOs is set off at a later stage by a mechanism that compensates the foregone revenues by increasing the amounts raised by the EEG-surcharge from the remaining (non-capped) consumers. The loss of revenues induced by the cap is thus ultimately financed from the EEG-surcharge, which - as established above - has at this stage to be considered as a State resource.
Existence of State resources
Reduced EEG-surcharge for suppliers having bought min 50% of renewable electricity

- The Commission comes to the preliminary conclusion that the EEG-surcharge constitutes a State resource. The reduced EEG-surcharge implies a renouncement to State resources.

- The EEG-surcharge reduction and the corresponding decrease in EEG resources for the TSOs is set off at a later stage by a mechanism that compensates the foregone revenues by increasing the amounts raised by the EEG-surcharge for the remaining (non-capped) consumption. The loss of revenues induced by the reduction is thus ultimately financed from the EEG-surcharge, which - as established above - has at this stage to be considered as a State resource.
The Commission concludes that the EEG-Act 2012 entails State aid in favour of producers of RES electricity and electricity from mining gas and that the reduced EEG-surcharge entails aid for EIU.
Regarding the support to RES electricity, the Commission concludes that the conditions established under the Environmental Aid Guidelines are fulfilled.

In particular, the feed-in tariffs and premiums are designed to promote the development of electricity produced from renewable energy sources and compensate for the difference between the production costs of RES electricity and the market price of electricity in accordance with point 109 of the Environmental Aid Guidelines.
Compatibility

Feed-in tariffs for producers of Mining Gas

- The Commission finds that the support to the production of electricity from mining gas can be allowed under Article 107(3)(c) TFEU as it helps achieving an objective of common interest (environmental protection) and is necessary and proportionate to that objective and does not distort competition in a way that is incompatible with the common interest.
Compatibility
Reduced EEG surcharge and “green electricity privilege”

• The Commission has doubts as to whether its financing mechanism is compatible with Articles 30 and 110 TFEU.

• 1. § 39 EEG-Act 2012 provides for a reduced rate of the EEG surcharge in case of direct marketing that seems to be available only when the supplier has purchased 50% of his electricity portfolio from national RES electricity producers and seems therefore to constitute a discriminatory charge within the meaning of Article 110 TFEU.

• 2. As for reduced EEG-surcharge, Germany has however not sufficiently demonstrated that relocation risk to third countries for the different sectors and undertakings concerned and has not demonstrated that the aid would be limited to what is necessary to prevent such relocations.
Preliminary Conclusion

- The Commission has at this stage doubts as to the compatibility of the support mechanism for RES electricity and electricity from mining gas insofar as the financing mechanism concerns

- (i) imports that could have been eligible for EEG support if produced in Germany, and

- (ii) of the reduced EEG-surcharge for energy-intensive users with the internal market.
Debates about the Existence of State Aid

Germany claims that there is no economic advantage either at the level of RES electricity producers, or at the level of EIUs:

- For RES electricity producers, feed-in tariffs at which they are remunerated are independent from the EEG-surcharge.

- Concerning EIUs, Germany argues that the reduced EEG-surcharge does not grant an economic advantage, but rather compensates for a competitive disadvantage suffered by those undertakings in comparison with their competitors in other Member States (which have lower RES financing costs) and third countries (which mostly face no comparable burdens).
Debates about the Existence of State Aid

• The commission thinks that the arguments submitted by Germany are unconvincing. For advantage:

• 1. The notion of advantage is based on an analysis of the financial situation of an undertaking in its own legal and factual context with and without the particular measure.

• 2. Germany has stressed the necessity of the reductions in order to sustain the beneficiaries’ competitiveness in comparison with EIUs in other Member States and third countries. In doing so, Germany implicitly acknowledges that the beneficiaries receive an economically advantageous treatment.

• The fact that the feed-in tariffs may or may not be influenced by the level of the EEG-surcharge is irrelevant for determining whether these tariffs constitute an economic advantage.
Debates about the Existence of State Aid

Germany has also challenged the finding that the economic advantages are selective and liable to affect competition and trade:

- Reduced EEG-surcharge is said to apply to all undertakings in the manufacturing industry and to undertakings of all sizes.

- Without the reductions, EEG electricity support could not be financed as EIU would relocate outside Germany.
Debates about the Existence of State Aid

- It must be recalled that “neither the large number of eligible undertakings nor the diversity and size of the sectors to which those undertakings belong provide any grounds for concluding that a State initiative constitutes a general measure of economic policy”, as long as other sectors, such as for instance services, are excluded from the scope of beneficiaries.

- However, neither environmental protection, nor the preservation of the industry’s competitiveness qualify as basic or guiding principles inherent to the system of the surcharge. To the contrary, they are external objectives attributed to that system. (§ 1 and § 40 in EEG-Act 2012)
Debates about the Existence of State Aid

Germany disputes the involvement of State resources:

• It states that the EEG support mechanism only involves private undertakings.

• Germany stresses that the level of the EEG-surcharge is not determined by the EEG-Act 2012, nor by a public body. The level of the EEG-surcharge is determined by the operation of the market.
Debates about the Existence of State Aid

These arguments cannot alter the preliminary conclusion reached in the Opening Decision:

- State has designated or established a body to administer the funds. So the mere fact that the advantage is not financed directly from the State budget is not sufficient to exclude that State resources are involved.

- The TSOs are therefore bound by law to recover the EEG-surcharge from the electricity suppliers.

- The concept of the State naturally also encompasses the legislator.
Compatibility with the internal market

- State aid for the producers of EEG electricity could be declared compatible with the internal market
- The EEG-surcharge violates Article 30 or Article 110 of the Treaty
- The Commission also raised doubts as to whether the reduced EEG-surcharge could be declared compatible with the internal market on the basis of Article 107(3) of the Treaty.
Compatibility Assessment of the Reduced EEG-Surcharge

- The Commission is required to assess the reduced EEG-surcharge on the basis of the 2014 Guidelines.
Compatibility Assessment of the Reduced EEG-Surcharge

The reduced EEG-surcharges for energy-intensive undertakings in 2013 and 2014 are compatible with the internal market only insofar as the following conditions are fulfilled:

- the reduction in the surcharge is granted only in respect of costs resulting from support for energy from renewable sources;
- the beneficiaries meet the eligibility criteria laid down in points 185, 186 and 187 of the 2014 Guidelines;
- the reduction in the EEG-surcharge is proportionate according to the criteria set out in points 188, 189 of the 2014 Guidelines.
Conclusion

- the European Commission has concluded that aid granted for the production of energy from renewable energy sources under the German Renewable Energy Act of 2012 (Erneuerbare-Energien-Gesetz – "EEG") was in line with EU state aid rules.

- The Commission has also approved the majority of reductions granted to energy-intensive companies on a surcharge to finance the support for renewables.

- However, a limited portion of the reductions exceeded what is permitted under EU state aid rules.
Mining Gas

Today, most large underground hard coal mines potentially contain coal mine methane, and abandoned mine methane and can be effectively used for power and heat generation with gas engines. Sudden changes in the composition of CMG put greater demands on the engine, however. GE offers a special gas mixing and engine control system that enables efficient use of this gas to a minimum CH$_4$-concentration of only 25%. Additionally, GE’s Jenbacher gas engines and aeroderivative gas turbines are designed to operate on full load, despite low gas pressure, high humidity, dust load, and altitude. The generated energy can be used in the coal mine to meet electricity requirements or fed into the public power grid. Thermal energy can be used for onsite heating or fed into a district heating system.
Mining Gas

Features & Benefits

- Increased worker safety due to installation or refurnishing of gas suction system
- Mitigation of greenhouse gas (methane) and possible carbon monetization
- Revenues for power and heat production, when fed into the public grid
- Smooth operation despite fluctuations in gas pressure and methane content
- Overall efficiency of up to 90%, in combined heat and power, and up to 43.5% in power generation alone
- Zero to 100 percent load in 10 minutes
- Compact, modular units with low footprint requirement and dynamic weight
- Basic design and support for gas conditioning if required
- Low NOx yield from Dry Low Emissions (DLE) combustors
Renewable energy in Germany

- 30% electricity generated from renewable energy in 2014
Why state aid should be prohibited?

- The deadweight cost of taxation and the opportunity cost of public funds

- Brander and Spencer (1985) show that with state aid, countries may compete with each other in a negative-sum game under individual rationality, but end up with collectively wasting subsidies to industry. All countries are better off if they can forgo such subsidies.

- Collie (2000) demonstrates that, when products are sufficiently close substitutes in an integrated market which is Cournot or Bertrand oligopoly, a ban on state aid may increase welfare. We may get reverse result if with sufficient differentiated products.

- Mollgaard (2005) shows that state aid in an oligopoly with differentiated goods may make the recipient to be dominant by non-price effects. Such aid could be predatory if given in large amount.
Why state aid should be prohibited?

- Tax competition to attract firms to one jurisdiction may cause unemployment and slowdown of business development in other jurisdictions.

- Non-subsidized enterprises may lose competitive edge, which may further hamper the competitiveness of European economy. (Nicolaides, Kekelekis, Buyskes 2005)

- The state aid may interfere with market signal, leading to allocative inefficiencies and technical inefficiencies.

- Keep inefficient rivals in the market.
May be compatible with common markets

(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment and of the regions referred to in Article 349, in view of their structural, economic and social situation;

(b) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;

(c) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

(d) aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Union to an extent that is contrary to the common interest;

X (e) such other categories of aid as may be specified by decision of the Council on a proposal from the Commission.

- aid for areas in special situations
- promotion of projects of common European interest
- certain economic activities and areas, without affecting trading conditions
- culture and heritage, without affecting trading conditions
- other exceptions, decided by Council by qualified majority
welfare or corrects externalities?

Public economics:

- Efficiency: Market failure (externalities, public goods, Information asymmetries, coordination problems, market power)
- Equity
- Besley and Seabright (1999) shows that in the case of geographical externalities (e.g. factor and product market linkages), state aid can correct such externalities under imperfect competition. But the efficiency of regional investment subsidies only holds when not resource constrained.
Problems:

- Measurability
- Aid is costly: Intended benefit may not surpass the costs
- Undesirable side effects, e.g. international spillover
- Government failures, e.g. conflicts between social welfare and regulators’ private goals