Legal framework on repowering and further operation of wind turbines

For a successful implementation of the energy transition in Germany

13 September 2017
IKEM – the institute

- The Institute for Climate Protection, Energy and Mobility e.V. (IKEM) is a public charity and institute associated to the University of Greifswald

- On an international level, IKEM supports the United Nations as a recognised NGO

- As an interdisciplinary research institute, IKEM provides counseling to federal and regional ministeries
Background: Current conditions

EEG funding is limited to 20 years

- At the end of 2020, wind turbines with total generating capacities of approx. 4.5 MW will cease to receive funding
- Between 2021 and 2026 further 2.5 MW a year will lose EEG funding
- The affected wind energy plants will be switched off if a further operation is not profitable
- This could affect the chances of reaching the goals set for the energy transition

Conditions for profitability

- In the base case, a revenue between 3.57 and 4.07 ct/kWh is necessary for a profitable further operation. This includes:
  - investments for further operation
  - running costs
  - economic incentives for operators
- The average price at the day-ahead market amounted in 2016 to only 2.82 ct/kWh

Sources: Deutsche WindGuard, Weiterbetrieb von Windenergieanlagen nach 2020, 2016; Fraunhofer ISE, energy charts
Decisive issues

Which EEG privileges are maintained?

How is the electricity market developing?
## Privileges of the EEG 2017

<table>
<thead>
<tr>
<th>Privileges</th>
<th>Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Connection to the grid, § 8 EEG</strong></td>
<td>- <strong>Entitlement to payment, § 19 EEG</strong></td>
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<tr>
<td>As a principle, renewable energy plants are</td>
<td>Market premium for directly sold renewable</td>
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<tr>
<td>prior and promptly connected</td>
<td>electricity</td>
</tr>
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<td>Irrespective of requirements for optimisation,</td>
<td>Basis for calculation</td>
</tr>
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<td>strengthening or grid expansion, § 12 EEG</td>
<td>- Basically: legally set applicable value</td>
</tr>
<tr>
<td>- <strong>Feed-in, § 11 EEG</strong></td>
<td>- Basically: applicable value determined</td>
</tr>
<tr>
<td>Renewable electricity, whether sold with or</td>
<td>competitively for plants launched from 01.01.2017</td>
</tr>
<tr>
<td>without support or with a compensation fee,</td>
<td>(feed-in remuneration for plants up to 100 kW)</td>
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<td>must be prior and promptly integrated</td>
<td></td>
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<tr>
<td>- <strong>Claim for compensation, § 15 EEG</strong></td>
<td></td>
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<tr>
<td>The operator of a renewable energy plant</td>
<td></td>
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<td>gets compensated for involuntary losses</td>
<td></td>
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<tr>
<td>through feed-in management</td>
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Perpetuation of EEG privileges

Option A: Repowering (new construction)

Option B: Further operation after the end of the support
Repowering

Main idea and status quo

- Complete replacement of older wind turbines with more modern and more efficient plants
- In 2016, 15% of the new constructions were “repowered” plants (AnlReg 04/17)
- § 30 EEG (old version) was abolished, so there are no more special provisions for repowering
- Support claims are no longer enforceable, even if the 20 year period is not yet over
- Handling as if the plant is first launched, § 3 Nr. 30 EEG

Scope of the EEG

- Scope of application: “electricity from renewable energies (or from mine damp)”
- Funding on the grounds of the EEG is not a condition for the applicability of the EEG

Privileges of the EEG

- No support for renewables, §§ 19 ff. EEG
- Connection to the grid/adjustment, §§ 8, 12 EEG
- Entitlement to prior feed-in, § 11 EEG
- Claim for compensation, § 15 EEG

Participation in tender calls
Construction independently from tender calls

- Expansion phase, § 4 EEG, serves the “quantity control” of the constructions for purposes of synchronization with the grid development
- “Nearly binding rule”: discrepancy only on special circumstances
- Expansion phase coincides quantitatively with the volumes of tender calls, § 28 Abs. 1 EEG
- Significant infringement of constitutional rights, Art. 12 I, 14 GG
- Apart from grid expansion areas, tender calls are not geographically coordinated = construction of wind plants not predictable for the grid expansion
- No explicit prohibition of construction
- Plants up to 750 kW also increase theoretically the total volume over that of the expansion phase

Significant legal uncertainty
Further operation after 20 years

**Privileges of the EEG**

- No claim to EEG funding, §§ 19 ff. EEG
- Connection to the grid/adjustment, §§ 8, 12 EEG
- Entitlement to prior feed-in, § 11 EEG
- Claim for compensation, § 15 EEG

**Market price for electricity**

- Most forecasts expect a price increase in the long term
- A forecast is difficult because of numerous uncertain influence factors
- In the past, a reliable forecast was not possible
Solution: Higher prices

**EPEX-Spot price development**

- Higher general demand for electricity (e.g. because of a rise in electromobility)
- End of nuclear power generation in Germany could decrease the electricity offer and cause higher prices (balancing effects of the common energy exchange)
- Political market interventions (e.g. carbon taxation)

**Marketing model “green wind electricity”**

- It is possible to promote the electricity generated without EEG funding as “electricity from renewable energies”
- Guarantees of origin, § 79 EEG (provided there was no support pursuant to § 19 EEG)
- Regional guarantee, § 79a EEG (electricity for which a market premium was paid)
- Green balancing group

**Long term, based on volatile political and economic conditions**

**Changes in regulation needed in order to enable regional direct marketing of green electricity**