Network Regulation in Germany

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Agenda

I. RWE's German electricity and gas grid

II. Current regulatory challenges

III. Responses
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### RWE Grid Assets in Germany

<table>
<thead>
<tr>
<th>Electricity</th>
<th>Lines</th>
<th>Transformer Stations</th>
<th>Connections</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHV and HV ≥ 110 kV</td>
<td>36,600 km</td>
<td>114,900</td>
<td>3,857,000</td>
<td>7,945,000</td>
</tr>
<tr>
<td>MV and LV &lt; 110 kV</td>
<td>306,500 km</td>
<td>32%</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>

| Share in German grid | 32% | 20% |

<table>
<thead>
<tr>
<th>Gas</th>
<th>TSO Gas</th>
<th>DSO Gas</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSO Gas</td>
<td>6,800 km</td>
<td>8,500</td>
<td>844,000</td>
</tr>
<tr>
<td>DSO Gas</td>
<td>34,000 km</td>
<td>644,000</td>
<td>844,000</td>
</tr>
</tbody>
</table>

| Share in German grid | 11% | 10% |

**Legends:**
- EHV = Extra high voltage
- HV = High voltage
- MV = Medium voltage
- LV = Low voltage
- TSO = Transmission System Operator
- DSO = Distribution System Operator
RWE grid revenues\(^1\) in Germany before regulation

1 Disclosed external revenue significantly higher due to transferred subsidies for renewables and CHP, concession fees and other services not exposed to regulation.

2 Exemption of TSO gas from regulation as effective competition between TSO exists.

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Unbundling of grids from generation, wholesale and retail

Regulation of grid access and grid fees*

* Exemption of TSO gas from regulation if effective competition between TSO exists.
Electricity: Two RWE grid fee approvals

- **TSO Electricity**
  - RWE Transportnetz Strom
    - Grid revenue € 1.0 bn/a
  - **-9%**

- **Region North**
  - RWE Westfalen-Weser-Ems
    - Grid revenue € 0.8 bn/a
  - **-10%**

- **Region Centre**
  - RWE Rhein-Ruhr
    - Grid revenue € 1.3 bn/a

- **Region Southwest**
  - Süwag Energie AG
    - Grid revenue € 0.4 bn/a

- **Region West**
  - energis
    - Grid revenue € 0.1 bn/a

- **Region East**
  - enviaM
    - Grid revenue € 0.6 bn/a

- **Region South**
  - Lechwerke
    - Grid revenue € 0.3 bn/a

Numbers before regulation

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Gas: One RWE grid fee approval

TSO Gas
- RWE Transportnetz Gas
  - grid revenue € 0.2 bn/a

Region North
- RWE Westfalen-Weser-Ems
  - grid revenue € 0.15 bn/a

Region Centre
- RWE Rhein-Ruhr
  - grid revenue € 0.1 bn/a

Region Southwest
- Süwag Energie AG
  - grid revenue € 0.05 bn/a

Region East
- Mitgas
  - grid revenue € 0.1 bn/a

All values before regulation
Contentious issues

- **Position paper** of the regulator:
  - **Trade tax**: imputed vs. actually paid
  - Return on equity: **double cap** on equity (40%)
  - § 32 (3): consideration of past **depreciation**

- **Particular risks** of certain grid operators:
  - **Indexation** to determine replacement values
  - Cost of procurement of **grid losses**
  - Limit on supplementary **personnel** costs

- **Retroactive** application

### Realisation of regulator's original position

- **Imputed**
- **Remains**
- **Probably remains**
- **Mostly remains**
- **Remains partially**
- **Remains as an indicator**
- **Prohibited by court ruling**

Dialogue-oriented approach minimises risks
Considerable average grid fee reductions

No consistent regulation: Considerable heterogeneity in criteria and results
Grid regulation – draft BNetzA: Regulator envisages elimination of inefficiencies by 2015

Active lobbying to influence the government decree
However: further changes to be expected from the required government decree

- 9 months advance for system implementation required
- Less complex **interim solution** seems a possibility
Access to gas grid effective Oct 1, 2006

- **Introduction of 19 market areas** with a virtual trading point (VTP) in each.
- **This enables unlimited access** within each market area.
- System implemented on October 1, 2006. The necessary **technical infrastructure** will become operational soon.
- **Cooperation agreement** signed by RWE to actively promote competition.

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**Diagram Description**

- **Source of gas/Point of import**
  - Market Sector
    - Entry contract
  - Long-distance grid operator
    - Interim exit contract
  - Regional gate
  - Regional grid operator
    - Interim entry/exit contract
  - City gate
  - Local grid operator
  - VTP
- **End consumer**
  - Exit contract
  - Entry contract

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Gas market areas operated by RWE

- Currently three (out of a total of 19) market areas operated by RWE TSO Gas.
- However: reduction of the number of areas in the medium term:
  - Possibly co-operation with other market area operators.
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RWE Energy’s strategy to reduce regulatory risk

Adaptive measures

- **Cost reductions**
  Additional project ‘GO’ to initiate continuous improvements.

- **Investment**
  Evaluation of all investment not legally required regarding cash-flow and return.
  Increasing efficiency further through application of new technology.

- **Flexible adjustments to the regulatory system**
  Development of models for management support.

- **Retail**
  Use of opportunities provided by lower grid fees.