E.ON’s European distribution business – Powering the energy system transformation

30 January 2014
Agenda

- E.ON’s European distribution business
  - Sweden
  - Germany
  - Back-up
Business overview

Map of E.ON’s distribution networks

<table>
<thead>
<tr>
<th>Regional Unit</th>
<th>Network length ('000 km)</th>
<th>Market share (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Power</td>
<td>Gas</td>
</tr>
<tr>
<td>Germany</td>
<td>352</td>
<td>59</td>
</tr>
<tr>
<td>Sweden</td>
<td>134</td>
<td>2</td>
</tr>
<tr>
<td>Hungary</td>
<td>84</td>
<td>18</td>
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<tr>
<td>Romania</td>
<td>79</td>
<td>20</td>
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<tr>
<td>Czech R.</td>
<td>65</td>
<td>4</td>
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<tr>
<td>Slovakia</td>
<td>37</td>
<td>-</td>
</tr>
<tr>
<td>Spain</td>
<td>32</td>
<td>-</td>
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</tbody>
</table>

Growth platform Turkey
- Enerjisa owns three distribution companies in Turkey (Ayedas, Baskent, Toroslar)
- Combined network length: ~200,000km
- ~9m customers

Well diversified portfolio of regulated network assets
Distribution in E.ON group context

Position within group context

Expected 2013 Group EBITDA €9.2 to 9.3bn

- European downstream business: ~72%
- Distributed energy & others: ~11%
- Sales: ~17%

Distribution businesses are one of the key pillars of E.ON’s group earnings

Expected 2013 Distribution EBITDA by region

- ~€3.2 to 3.4bn
- Southern Europe
- CEE
- Sweden
- Germany

- Germany and Sweden biggest contributors
- CEE countries taken together also with sizeable contribution

European regional units with several activities:
- Distribution: ~17m network customers
- Sales: ~24m customers
- Distributed energy, heat and innovative energy solutions
Business environment and strategic priorities

Business environment

- Improving regulatory environment in most countries, further enhancements necessary
- Growing public perception of networks as decisive enabler for energy system transformation
- Increasing investment needs
- Increasing deployment of smart technologies

Continuously deliver and improve top performance

- Deliver top performance as basis for good relations with customers and regulators
- Strive to be #1 in the constant competition with any DSO in our markets
- Maintain disciplined investment approach while keeping balance with long-term network needs
- Enhance our leading capabilities by deploying smart grid technologies

Contribute to fair regulatory frameworks

- Ensure sustainable conditions for new replacement, enhancement, expansion and smart technology investments
- Ensure appropriate returns for existing assets and operations

Distribution is as performance driven as any other business
Networks are enablers for new energy systems

E.ON’s expected total capex for renewables integration

<table>
<thead>
<tr>
<th>Year</th>
<th>Capex in € millions</th>
</tr>
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<tbody>
<tr>
<td>2012A</td>
<td>300</td>
</tr>
<tr>
<td>2013E</td>
<td>330</td>
</tr>
<tr>
<td>2014E</td>
<td>350</td>
</tr>
<tr>
<td>2015E</td>
<td>380</td>
</tr>
<tr>
<td>2016E</td>
<td>400</td>
</tr>
</tbody>
</table>

Cross-regional synergies: smart metering

<table>
<thead>
<tr>
<th>Regional unit</th>
<th>Number of smart meters (in millions)</th>
<th>Roll-out period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>1.0</td>
<td>2006-2009</td>
</tr>
<tr>
<td>Spain</td>
<td>0.7</td>
<td>2010-2014</td>
</tr>
<tr>
<td>UK</td>
<td>8.3</td>
<td>2012-2021</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>0.2</td>
<td>2014-2024</td>
</tr>
<tr>
<td>Romania</td>
<td>1.4</td>
<td>2014-2022</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.2</td>
<td>2015-2024</td>
</tr>
<tr>
<td>Germany</td>
<td>6.6</td>
<td>2016-2021</td>
</tr>
<tr>
<td>Poland</td>
<td>1.5</td>
<td>2023-2029</td>
</tr>
</tbody>
</table>

Today’s 30GW of connected renewables capacity in E.ON networks to double by 2025

Pay-off from knowledge exchange
**Distribution capex plan**

- **Expected distribution capex by category**
  - Total: €1.5bn
  - Integration of renewables
  - Customer connections
  - Smart meters
  - Other mandatory investments
  - Maintenance & replacement

- **Expected distribution capex vs. regulatory depreciation**
  - 2014E: Regulatory depreciation = 0.5bn, Capex = 1.0bn
  - 2015E: Regulatory depreciation = 0.6bn, Capex = 1.1bn
  - 2016E: Regulatory depreciation = 0.7bn, Capex = 1.2bn

- **Overview**
  - Roughly 50% of expected total distribution capex is allocated to grow the networks
  - Total capex needs are expected to rise further beyond 2016

- **Energy system transformation as organic growth opportunity**
  - Capex above regulatory depreciation for the coming years → growth of regulatory asset base
  - Significant and growing share of total E.ON group capex
Contribution to group portfolio

Pro forma distribution EBITDA*

E.ON’s mid-term portfolio target

- Key pillar of E.ON’s portfolio beyond financials

* ECR = E.ON Climate & Renewables; DE = Distributed energy; EGC = E.ON Global Commodities

** Bubble sizes represents EBITDA contribution

Significant part of total group EBITDA even after revenue cut and disposals in Germany

* Excluding the earnings contribution of disposed companies
Agenda

E.ON’s European distribution business

Sweden

Germany

Back-up
Energy market overview

**Market characteristics**

**Stable**
- Stable power demand ~150TWh
- Sound economic development: 1.2 % GDP growth in 2012
- High country rating
- Stable political climate: broad dialogue on energy policy

**Attractive**
- High political ambition level regarding green agenda and energy system transformation
- Active dialogue: broad stakeholder involvement
- Strong belief in power of markets and regulation of natural monopolies

**Market specifics**

- Power with central role in energy mix – also heating, e.g. heat pumps
- Integrated Nordic wholesale market
- Hydro and Nuclear based power production system – hydro as balancing power
- Market-based renewable certificates system together with Norway
- Strong belief in energy system transformation and smart grids
- Focus on energy efficiency and renewables expansion
- Strong interconnection to and with the continent

Stable and attractive power market with high green ambitions
Business overview

Network area – Power

Key data 2013
- Network length: 134,400 km
- Market share (based on network length): ~24%
- Electricity supplied: 43.7 TWh
- Customers: ~1,000,000
- FTE: ~570

Network area – Gas

Key data 2013
- Network length: 1,855 km
- Market share (based on network length): ~60%
- Electricity supplied: 7.3 TWh
- Customers: ~25,000
- FTE: ~100

Leading player in Swedish power and gas distribution
Business model distribution

Business model – Cornerstones

- Customer orientation
- Contracting/outsourcing
- Regulatory Approach

Business model – Guiding principles

- Distinct customer focus and efficiency as our core identity
- Lean process development and automation
- Live a performance culture, follow a business minded attitude
- Create market and competitive pressure on all operations driving both cost and quality improvement
- Utilize market competition in particular within technical services
- High level of outsourcing and contracting
- Continuous benchmarking

Strong focus on top efficiency and quality
Regulation – General basics

Principles of regulation model

- **Quality of supply**: requirements on the supply to fulfill good quality criteria (>11 outages per customer and year not accepted)
- **Outage fee**: major penalty scheme (customer compensation) for long outages (>12h)
- **Functional demands**: outage >24h not allowed according to Swedish law
- **Tariff**: level and overall development
- **Connection obligation**: “cost based principle”
- **Risk & Vulnerability**: balance based on society’s demands
- **Trust & Dialogue**:  
  - Return on sustainable level
  - "Delivery" of investment plan

Elements of regulation model

1st period regulation period 2012 - 2015
2nd period regulation period 2016 - 2019

More than just a calculation of allowed revenues
Regulation – Building blocks of allowed revenues

**RAB (Regulated asset base)**
- Based on replacement value (RV) of all physically existing assets irrespective of actual age of assets (→ RAB = 84% of RV)
- New investments are included in RAB latest six months after completion
- Yearly indexation of RAB by building cost index (av. 2007-2011= 3.6%)

**Capex allowance**
- Calculated as annuity based on RAB and regulatory WACC of 5.2% (pre-tax, real) for the period 2012-2015
- Depreciation period 40 years

**Opex allowance**
- Based on average of actual costs of the years 2006-2009
- Yearly adjustment by
  - Distribution specific cost inflation index (av. 2007-2011= 3.9%)
  - General efficiency factor of 1%

**Quality bonus/penalty**
- Up to +/-3% of yearly total costs (excluding pass-through items like transmission charges and network losses)
- Quality targets are based on actual quality performance of the years 2006-2009
- Penalties for outages >12h

Note: certain legal proceedings on the regulatory model not yet concluded
Regulation – Development of allowed revenues

Revenue cap for the period 2012-2015 (accumulated): **38.2bn SEK** (in 2010 money)*

translates into yearly revenue caps (in nominal terms)

Moderate growth of allowed revenues over the long-term

* Decided revenue cap by the regulator, October 2011, adjusted by the corrections in the model made by regulator, November 2012

Note: certain legal proceedings on the regulatory model not yet concluded
Performance – Quality

- Network quality
- Customers ('000) without power after hurricane/storms per day
- Overall SAIDI* development (in minutes)

- Significant quality improvements for our customers but still some way to go

- Specific Nordic challenges: strong storms/hurricanes and very widespread distribution networks
- Large & highly successful investment program “Krafttag” for “weather-securing” the networks
- Effective crisis management improving from storm to storm

* SAIDI = System Average Interruption Duration Index
Performance – Efficiency

Efficiency vs. peers

Regulatory benchmarking of local grids – Opex / CSV*

MSEK

2005 2006 2007 2008 2009 2010 2011 2012

Industry**

Fortum

Vattenfall

E.ON

• Effective contractor management

• Leverage technical services market via tender process for regional contracts every third year

• Strong cost and performance culture based on continuous benchmarking of quality and efficiency

• Effective, condition based maintenance strategy resulting in superior asset management

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* CSV = Composite Scale Variable = [network length (‘000km)] 0.5 x [customer number (m)] 0.25 x [electricity distributed (TWh)] 0.25
The CSV is an attempt to measure the network output or the supply task. Opex / CSV is opex in relation to a (comparable) network output or supply task

** "Industry"-figures are excluding Fortum, Vattenfall, and E.ON

Industry-leading efficiency performance
Enabler of energy system transformation I

Renewables network connections provide a business opportunity

- Continued growth of wind connections expected
- Some uncertainty for the time beyond 2015 due to new renewables certificate system

DSO compensation for network connections

- Provide customers with attractive offers to build the assets leveraging E.ON's strong expertise and purchasing power
- Costs for internal grid and connection to be borne by customer – no “socialization” via network tariffs
- Value can be created by superior project delivery (time and budget)
- Distribution investment to be completely included in RAB

Renewables network connections provide a business opportunity
Enabler of energy system transformation II

Overview: use of smart technologies

Active management of capacities
- Maximize capacity utilization of existing assets
- Demand side management tools and processes
- Outage and interruption management, e.g. smart meter confirmed outages

Increasing automation and monitoring
- Condition based/pro-active maintenance concepts
- Increasing automated metering points throughout the grid even on low voltage level
- IT and data management of increasing importance and with essential role in further improving effectiveness
- Additional services, e.g. control center services to wind park operators

Case study: dynamic line rating
- Starting point: stressed power grid on Öland, network congestions 1-3% of time
- New 48MW offshore wind farm in Kårehamn to stress the situation even further
- Traditional approach: "invest in copper"
- Smart solution: dynamic line rating allowing better utilization of existing capacities
- Investments of 2 MSEK in system & tools vs. 300 MSEK in a new line

Location overview
- "Donut" metering device
- Weather stations

Increasing automation and optimization of existing systems
Business outlook

Opportunities in market consolidation

- Highly fragmented distribution market with ~165 distribution companies with strongly differing potential to handle current and future challenges
- Necessary consolidation offers E.ON opportunities for further synergetic acquisitions (small- to mid-scale)
- Efficiency gains resulting from consolidation are a targeted result of the regulation model

Swedish distribution companies by size (in replacement value in MSEK)

Case study: Kramfors

- Excellent geographical fit: an "island" within E.ON’s distribution network (5000 customers, 90 GWh)
- Key value driver: decrease operational cost through synergies with existing business - no additional staff needed
- Synergies almost as high as previous EBITDA of Kramfors Energiverk AB
- Investment ~110 MSEK, IRR ~14%

* E.ON has 4 regulatory network areas

Kramfors network area

Market consolidation offers development opportunities
Financial outlook

- Figures from 2007 to 2009 reflect investment program Kraftag
- Broadly stable capex level for 2014; post 2016 generally increasing capex level expected
- Investments targeted to optimize network quality

Remarkably robust results over the years driven by superior performance, efficiency gains, and quality levels

Broadly stable EBITDA for 2014 expected

Stable earnings outlook and well targeted investments
Key takeaways

• Sweden delivers **robust earnings** resulting from outstanding performance

• **Top performance** is the key driver to balance out all stakeholder interests

• The energy transition is challenging but presents a **growth opportunity**

• **Further growth potential** through efficiency driven market consolidation
Agenda

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- Sweden
- Germany
- Back-up
Germany – Business overview

Network overview

Key figures

<table>
<thead>
<tr>
<th></th>
<th>E.ON grids</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid customers</td>
<td>6.9m</td>
<td>~16%</td>
</tr>
<tr>
<td></td>
<td>0.8m</td>
<td>~5%</td>
</tr>
<tr>
<td>Grid length</td>
<td>352,000km</td>
<td>~19%</td>
</tr>
<tr>
<td></td>
<td>59,000km</td>
<td>~14%</td>
</tr>
<tr>
<td>Installed RES</td>
<td>26GW</td>
<td>~37%</td>
</tr>
<tr>
<td>Concessions</td>
<td>3,800</td>
<td>~28%</td>
</tr>
<tr>
<td></td>
<td>1,900</td>
<td>~32%</td>
</tr>
</tbody>
</table>

Shareholder structure

<table>
<thead>
<tr>
<th>Company</th>
<th>E.ON</th>
<th>Municipalities</th>
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<tbody>
<tr>
<td>bayernwerk</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>avacon</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td>e.on Hanse</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td>e.dis</td>
<td>33%</td>
<td>67%</td>
</tr>
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</table>
**Distribution in Regional Unit Germany context**

<table>
<thead>
<tr>
<th></th>
<th>E.ON Germany</th>
<th>thereof Distribution</th>
<th>thereof <strong>going concern</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>~€40.3 billion</td>
<td>~€12.7 billion</td>
<td>~€10.5 billion</td>
</tr>
<tr>
<td><strong>EBITDA</strong></td>
<td>~€2.8 billion</td>
<td>~€1.8 billion</td>
<td>~€1.4 billion</td>
</tr>
<tr>
<td><strong>CAPEX</strong></td>
<td>~€1.1 billion</td>
<td>~€0.9 billion</td>
<td>~€0.7 billion</td>
</tr>
<tr>
<td><strong>Operating Cash Flow</strong></td>
<td>~€2.9 billion</td>
<td>~€1.8 billion</td>
<td>~€1.5 billion</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td>~20,850</td>
<td>~13,218</td>
<td>~9,380**</td>
</tr>
</tbody>
</table>

* Unaudited values
** Target staffing 2015 incl. network and customer service

Distribution is the main earnings contributor
Concessions – E.ON as partner of municipalities

Concessions – Our business backbone

- Renewal of concessions at least every 20 years
- Many areas have become highly competitive
- Of all currently expiring concessions more than 90% renewed
- Positioning ourselves as preferred regional partner via superior customer service and operational excellence

→ Loosing an expiring concession triggers a forced disposal of assets

Concession business is small scale – high effort but risk diversification
Regulation – General basics

Current regulatory system provides a stable and reliable status

Process steps of regulatory system

- **Cost Audit + Benchmarking**
  - *every 5 years*
  - Revenue cap incentive regulation
  - Total costs of historic base year basis for benchmarking & revenue cap
  - Efficiency level determines revenue path of regulatory period

- **Yearly revenue cap**
  - *yearly adjustment*
  - Yearly adjustment of revenue cap by
    - Consumer Price Index (CPI)
    - General efficiency factor of 1.5%
    - Individual efficiency factor from benchmarking

- **Grid expansion**
  - *yearly application & adjustment*
  - DSO applies yearly for grid expansion
  - Increases revenue cap within a regulatory period

- **Network tariff**
  - *yearly adjustment*
  - Based on energy consumption
  - Differ for different network areas within Germany
Regulation – Regulatory schedule

**Power distribution**

- **1st regulatory period**
  - Base year
  - Cost Audit + Benchmark

- **2nd regulatory period**
  - Base year
  - Cost Audit + Benchmark

- **3rd regulatory period**

**Comments**

- Cost of base year 2011 are basis for allowed revenues from 2014 onwards
- Regulatory cost audit and benchmarking took place from mid 2012 to end 2013
- Replacement investments in the years 2012 to 2016 are reflected in allowed revenues partly from 2019 onwards
- Benefits from performance measures effective in the years 2012 to 2018 can be kept until 2019

* For gas distribution: first regulatory period ended 2012. Therefore the base year for the second period was 2010. The second period for gas lasts from beginning of 2013 to the end of 2017

**Strong incentives for performance**
Regulation – Cost base

Composition of cost base

\[
\text{Cost base} = \text{Allowed OPEX} + \text{Allowed Return on equity} + \text{Allowed Depreciation}
\]

- Cost structure of efficient system operator
- Including actual cost of debt
- Equity financed part of the Regulated Asset Base up to a maximum equity level of 40% multiplied with 9.05% (nominal)
- Based on Regulated Asset Base with regulatory asset lifetimes of 30 to 45 years

Calculation of cost base follows an equity-based approach
E.ON’s excellent capabilities are the basis for our license to operate

Cost efficiency power & gas

→ „Best in Class“ in cost efficiency benchmarking

Quality regulation

→ Better quality than required by regulator

Power, 2nd regulatory period

<table>
<thead>
<tr>
<th>Load density kW/km²</th>
<th>Non-availability per year as a function of load density</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>100 min/a</td>
</tr>
<tr>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>200</td>
<td>60</td>
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<tr>
<td>300</td>
<td>40</td>
</tr>
<tr>
<td>400</td>
<td>20</td>
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</table>

Gas, 2nd regulatory period

<table>
<thead>
<tr>
<th>Load density kW/km²</th>
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<tr>
<td>0</td>
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<td>300</td>
<td>40</td>
</tr>
<tr>
<td>400</td>
<td>20</td>
</tr>
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</table>

→ SAIDI unplanned: 20 min/a

*planned & unplanned interruptions

E.ON*
Performance – Earnings drivers

Building blocks of EBITDA

- Other earnings (e.g. third party business, participations, aperiodic effects)
  - Allowed profit according to cost audit: ~59%
  - Additional remuneration for grid expansion: ~17%
  - Higher efficiency than required from benchmarking: ~12%

Stable CAPEX returns and opportunity for extra margin from outperformance
Energiewende* – E.ON networks as “enabler”

Example E.DIS: RES installed capacity

- Distribution grid originally designed to distribute power up to maximum load
- RES installed capacity exceeds maximum load in a region nearly factor 3
- Now, expansion of the distribution grid required as well as increased deployment of smart technologies

> Today’s RES capacity is three times the amount of peak load

Situation for E.ON DSOs quite unique in Germany

* German energy system transformation
Energiewende – E.ON as innovation pioneer

Examples of application of smart technologies

- **Controllable mid-voltage/low-voltage-secondary sub-station**
  Enables an increased in-feed of renewables in low voltage networks by dynamic voltage regulation

- **Dynamic line rating (high-voltage)**
  Increase of line capacities by taking account of varying weather conditions

- **High temperature lines**
  Increased capacity of conductors by using temperature-resistant materials

- **Intelligent in-feed management (EisMan)**
  Intelligent curtailment of renewable generation in case of grid congestion allows integration of all RES requesting connection to the grid

Innovative technologies significantly reduce additional investment needs
Political perception of DSO role in Energiewende

Rising awareness for situation of DSOs

Government’s coalition agreement from December 2013

- “DSOs are the backbone of the, Energiewende‘ on the ground because the roll-out of renewables results in an increasing decentralization of the energy system.”

Motion for a resolution’ of the Upper House of the German parliament in July 2013

- “[…] that current instruments of the incentive regulation […] will not meet the future demands of the accelerated, Energiewende‘.”

- “Against this background the Upper House asks the government to implement a new mechanism within current regulations with regard to the consideration of investment cost as soon as possible.”

DSO importance for Energiewende understood

Significant progress towards a fair regulatory regime
Financial outlook

**CAPEX**

Expected cash-effective investments (€bn)

- **RES integration**
- **Replacement / Others**
- **Customer connections**

- Increasing network investments for RES integration due to “Energiewende”
- Smart meter roll-out starting in 2016

* Expected pro-forma cash-effective investments excluding the investments of the disposed companies

**Earnings Outlook**

Expected EBITDA (€bn)

- Temporary decrease in earnings starting with the 2nd regulation period power in 2014
- Moderate and stable EBITDA increase from 2014

* Expected pro-forma EBITDA excluding the contributions from the disposed companies

Moderate increase after regulatory reset
Key takeaways

• **Distribution**: high-performing business with attractive earnings and moderate risks

• E.ON networks in Germany are “best-in-class”

• The Energiewende is a **growth opportunity** for us
Backup

- Overview
- Sweden
- Germany
- Other EU Countries
  - Czech Republic
  - Hungary
  - Slovakia
  - Romania
  - Spain
- IR team and calendar
Overview RAB and regulatory periods

Regulated asset base 2013/2014 (€bn)¹

<table>
<thead>
<tr>
<th>Country</th>
<th>RAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>~10</td>
</tr>
<tr>
<td>Sweden</td>
<td>~9.1</td>
</tr>
<tr>
<td>Spain</td>
<td>~0.8²</td>
</tr>
<tr>
<td>Hungary</td>
<td>~1.5</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>~1.2</td>
</tr>
<tr>
<td>Romania</td>
<td>~0.7</td>
</tr>
<tr>
<td>Slovakia</td>
<td>~0.6³</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Regulatory periods</th>
<th>Power</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>2013-2016</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Hungary</td>
<td>2013-2016</td>
<td>2010-2016 ⁴</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2010-2014</td>
<td>2010-2014</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2012-2016</td>
<td>Not relevant</td>
</tr>
</tbody>
</table>

- In general, RABs between different regulatory regimes are not directly comparable due to significant methodical differences.
- In Sweden for example, RAB is based on replacement value of all physically existing assets irrespective of the actual age of the assets.

¹ For Germany RAB is for 2014. Exchange rates as of 27 Jan 2014
² Implicit pro forma RAB retroactively determined. Actual system is based on indexed regulatory revenue allowance
³ RAB for 100% of ZSE (E.ON-share 49%)
⁴ Period was extended until 2016 or until further regulatory change

Most important countries Germany and Sweden with overlapping regulatory periods in power.
Regulation – Building blocks of allowed revenues

Schematic illustration (power)

- **RAB** based on replacement value (RV) of all physically existing assets irrespective of actual age of assets. New investments are included in RAB, latest six months after site taken in operation. Yearly indexation of asset base by building cost index (av. 2007-2011, 3.6%)

- **Allowed Capex** calculated as annuity based on regulatory WACC of 5.2% (pre-tax, real) for the period 2012-2015 and depreciation periods of 40 years respective 10 years.

- **Opex allowance** based on actual costs 2006-09: year by year adjusted by cost index factor and general efficiency factor of 1% (Historical cost index factor average 2007-2011, 3.9%)

- **Pass-through of non-controllable costs** like transmission tariffs and network losses

- **Quality bonus/penalty** derived from targets based on actual performance 2006-09 of up to +/-3% of total cost excluding pass-through items

- **Revenue cap 38 234 MSEK** in cost level 2010 based on official decision letter of regulator for the period 2012-2015

- **Under-/over-recovery of allowed revenues** to be adjusted in following regulatory period Max +/- 5%

Allowed revenues are an important but only one element within regulatory model

* Decided cap by the regulator, October 2011, adjusted by the corrections in the model made by regulator, November 2012

Note: certain legal proceedings on the regulatory model not yet concluded
Regulation – Building blocks of allowed revenues

Schematic illustration for 2014 (power & gas)

Allowed revenues consist of quite a high number of elements

* Old assets are those capitalized before 01/01/2006. New assets are those capitalized after 01/01/2006. Old assets are indexed up to 40% with asset-specific indices to determine the current costs

** Return on Equity is post-trade tax and pre-corporation tax
Regulation – How it works in detail

German regulation formula

\[ EO_t = K_{Adnb,t} + (K_{Avnb,0} + (1 - V_t) \cdot K_{Ab,0}) \cdot \left( \frac{VPI_t}{VPI_0} - PF_t \right) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t \]

- **EO\(_t\)**: Revenue Cap for the year \(t\)
- **K\(_{Adnb,t}\)**: Permanently non-controllable costs for the year \(t\)
- **K\(_{Avnb,0}\)**: Currently non-controllable costs from cost audit & benchmarking
- **K\(_{Ab,0}\)**: Controllable costs from cost audit & benchmarking
- **V\(_t\)**: Allocation factor for the year \(t\)
- **VPI\(_t\)**: Consumer inflation index for the year \(t\)
- **VPI\(_0\)**: Consumer inflation index for the base year
- **PF\(_t\)**: Productivity factor for the year \(t\)
- **EF\(_t\)**: RES growth factor for the year \(t\)
- **Q\(_t\)**: Quality element for the year \(t\)
- **VK\(_t\)**: Volatile costs for the year \(t\)
- **VK\(_0\)**: Volatile costs from cost audit & benchmarking
- **S\(_t\)**: Regulatory account settlement for the year \(t\)

Duration of regulatory period 5 years \(\rightarrow t\) ranges from 1 to 5

Formula enshrined in law

Germany
Regulation – Formula

German regulation formula decomposed

\[ EO_t = KA_{dnb,t} + (KA_{vnbb,0} + (1 - V_t) \cdot KA_{b,0}) \cdot \left(\frac{VPI_t}{VPI_0} - PF_t\right) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t \]

1. Cost base
2. CPI and general efficiency adjustment
3. Expansion factor
4. Quality bonus/penalty
5. Volatile costs (mainly network losses)
6. Settlement of regulatory account

* ARegV (Anreizregulierungsverordnung) = Ordinance for incentive regulation

Multiple levers to be managed
Regulation – Breakdown of TOTEX

German regulation formula decomposed

\[ EO_t = K_{A_{dnb,t}} + (K_{A_{vnb,0}} + (1 - V_t) \cdot K_{A_{b,0}}) \cdot \left( \frac{V_{PI_t}}{V_{PI_0}} - P_{F_t} \right) \cdot E_{F_t} + Q_t + (V_{K_t} - V_{K_0}) + S_t \]

- Permanently non controllable cost (§11 II ARegV)*
  - Yearly adjustment based on actuals/planned values
  - Example: expenses for upstream systems etc.

- Currently non controllable costs (§11 III ARegV)
  - “efficient costs”
  - Yearly adjustment only for inflation and general efficiency

- Controllable costs (§11 IV ARegV)
  - “inefficient costs”
  - Revenue cap is reduced during regulatory period step by step according to allocation factor

- Allocation factor (§16 I ARegV)
  - Determines the reduction of the revenue cap
  - First year \( V_1 = 0.2 \), increases by 0.2 each year
  - Last year \( V_5 = 1 \), means controllable costs = 0

* ARegV: Anreizregulierungsverordnung = ordinance for incentive regulation

Cost reductions by DSO higher than required from benchmarking results in additional margin until start of new regulatory period
Regulation – Breakdown of TOTEX

German regulation formula decomposed

\[ EO_t = KA_{dnb,t} + (KA_{vnb,0} + (1- V_t) \cdot KA_{b,0}) \cdot \left( \frac{VPI_t}{VPI_0} - PF_t \right) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t \]

- **Permanently non-controllable cost**
  - Example: 20.- EUR (due to definition)
- **Currently non-controllable costs**
  - Example: 90% * 100.- EUR = 90.- EUR
- **Controllable costs**
  - Example: 10% * 100.- EUR = 10.- EUR
  - Year 1: (1-0.2) * 10.- = 8.- EUR
  - Year 2: (1-0.4) * 10.- = 6.- EUR
  - etc.
  - Year 5: (1-1) * 10.- = 0.- EUR

**Example:**

**TOTEX 120.- EUR**

Efficiency level 90%

Regulatory timeline of 5 years to eliminate “inefficient costs”
Regulation – Inflation and general efficiency

German regulation formula decomposed

\[ E_{Ot} = KA_{dnb,t} + (KA_{vnb,0} + (1 - V_t) \cdot KA_{b,0}) \cdot \left( \frac{VPI_t}{VPI_0} - PF_t \right) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t \]

- **VPI\textsubscript{t} / VPI\textsubscript{0}**: Adjustment for inflation (§8 ARegV)*
  - Customer Inflation Index (CPI) used as published by the Federal Statistical Office in Germany
  - The term reflects the relation of the CPI of the next to last year before the year of the relevant revenue cap and the CPI of the base year
  - Example: Power. For the first year of the regulatory period (2014) the CPI of 2012 is set into relation to the CPI of 2011 (base year)

- **PF\textsubscript{t}**: Productivity factor (§9 ARegV)
  - The general sectoral productivity factor reflects efficiency improvements of the grid business in general
  - Explicitly defined for the first (1.25% per year) and second (1.5% per year) regulatory period of the incentive regulation
  - For further regulatory periods will determine the factor according to scientific methods
  - Example: PF\textsubscript{1}=1.5%, PF\textsubscript{2}=3.02%, PF\textsubscript{3}=4.57% etc.

* ARegV: Anreizregulierungsverordnung = ordinance for incentive regulation

Allowed revenues are protected against general inflation
Regulation – Network expansion

German regulation formula decomposed

\[ EO_t = KA_{\text{dnb},t} + (KA_{vnb,0} + (1 - V_t) \cdot KA_{b,0}) \cdot \left(\frac{VPI_t}{VPI_0} - PF_t\right) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t \]

*EF* \(_t\)  
RES growth factor (§10 ARegV)*
- Regulatory instrument for remuneration of investments due to changes of the supply tasks during the regulatory period
- Once a year DSO can apply for RES growth factor if structural parameters have changed in the past (time lag between 0.5 and 1.5 years)
- Structural parameters:
  - Supplied network area
  - Number of connection points
  - Peak load
- Revenue cap increases as a lump sum based on structural parameters; no link to investment volume

* ARegV: Anreizregulierungsverordnung = ordinance for incentive regulation

Important element to support renewables-related network growth
**Regulation – Quality and regulatory account**

**German regulation formula decomposed**

\[
EO_t = KA_{dnb,t} + (KA_{vnb,0} + (1 - V_t) \cdot KA_{b,0}) \cdot (\frac{VPI_t}{VPI_0} - PF_t) \cdot EF_t + Q_t + (VK_t - VK_0) + S_t
\]

- **\(Q_t\)**: Quality element (§19 ARegV)*
  - Introduction in 2012 aiming at the retention of optimal quality of supply in Germany
  - Quality regulation applies for medium and low voltage
  - Bonus/Malus-System
  - System average interruption duration index (SAIDI) as the only parameter for the reference curve, depending on the load density
  - Effect of deviation from reference curve: 0,18 € / Customer / min / year
  - Upper & lower limit for revenue cap adjustments: -2 to +4% of controllable costs

- **\(VK_t - VK_0\)**: Volatile costs (§11 V ARegV)
  - Primarily costs due to grid losses

- **\(S_t\)**: Regulatory account (§5 ARegV)
  - Differences between allowed revenues and actual revenues (positive or negative) are “booked” to the regulatory account
  - In the last year of the regulatory period the balance of the regulatory account is determined and then settled over the next regulatory period

* ARegV: Anreizregulierungsverordnung = ordinance for incentive regulation

**Limited experience with quality regulation so far**
From sales to allowed revenues

German distribution – Composition of sales* (€bn)

- Sales: ~11.9
- RES surcharge: ~6.5
- Allowed revenues: ~4.8
- Other: ~0.6

- DSOs are legally obliged to purchase all power produced by the renewables generators connected to their network
- More than 50% of sales results from the TSO’s full compensation for the power from renewables generators

* Pro forma sales 2013 = Expected sales excluding the contributions from the disposed companies (3 regional utility companies)
# Overview CZ power – Price regulation of distribution

## Price regulation power - Overview

### Basics
- **Method:** revenue cap
- **Regulation period:** 2010-2014 (3rd)
- **Next regulation period:** 2015-2019 (4th)
- **Next photo year:** 2012/13 (note that this based on past photo years, the laws do not provide an explicit photo year)

### Cap formula
- **Regulatory formula for initial year:**
  \[ R_{\text{base}} = \text{OPEX} + D + (\text{RAB} \times RR) \]
- **Regulatory formula for adjustment:**
  \[ R_t = \text{OPEX} \times (1 + PI - X)^t + D + (\text{RAB} \times RR) \]
  \[ R_{\text{adjusted}} = R_t \times k + R_{t-1} \times (1 - k) + Z + KF + Q \]

## Price regulation power – Key cost factors

- **Regulated return on RAB (pre-tax):** 6.7%
- **Revaluation for old assets at 3% (starting 2015) until revaluated CZ GAAP values met (not yet confirmed for new regulatory period) – currently at risk**
- **Depreciation period for lines is 40 years**

## Price regulation power – Other important factors

- **Quality factor applied since 2013**
- **Customer contributions (BKZ) add to the RAB, 80% of the BKZ release is deducted from network fees**
# Overview CZ gas – Price regulation of distribution

## Price regulation gas - Overview

**Basics**
- Method: revenue cap
- Regulation period: 2010-2014 (3rd)
- Next regulation period: 2015-2019 (4th)
- Next photo year: 2012/13 (note that this based on past photo years, the laws do not provide an explicit photo year)

**Cap formula**
- Regulatory formula for initial year: \( R_{\text{base}} = \text{OPEX} + D + (RAB \times RR) \)
- Regulatory formula for adjustment: \( R_t = \text{OPEX} \times (1 + PI - X)^t + D + (RAB \times RR) \)

## Price regulation gas – Key cost factors

**Regulated return on RAB (pre-tax): 7.1%**
- Revaluation for old assets at 3% (starting 2015) until revaluated CZ GAAP values met (not yet confirmed for new regulatory period) – currently at risk
- Depreciation period for lines is 40 years

**CAPEX**
- General efficiency factor: 2.0 %
- Individual efficiency factor: 0 for 3rd regulation period

**OPEX**
- Inflation factor for OPEX is 70% business service price index + 30% (CPI+1%)

## Price regulation gas – Other important factors
- Quality factor currently not applied
Overview HU power – Price regulation of distribution

Price regulation power - Overview

- Method: modified price cap with real quantity acceptance with year-2 Q
- Regulation period: 2013-2016
- Next regulation period: 2017-2020
- Photo year: 2011

Price regulation power - Key cost factors

- Regulated return on RAB (pre-tax): 6.23%
- Regulatory asset value determined at unit prices multiplied with quantities and weighted by HU GAAP net to gross book value
- Depreciation period for lines is 37 years, but depreciation below 0 is possible
- General efficiency factor: No indexation in 2013-2016 period

Price regulation power – Other important factors

- Unplanned SAIDI, SAIFI and an outage rate min. level defined. 3-fold sanctions possible if non compliant in 3-years average.
Overview HU gas – Price regulation of distribution

Price regulation gas - Overview

- Method: price cap
- Regulation period: 2010-2013 period is extended till 2016 or until further regulatory change
- Next regulation period: unknown

Price regulation gas – Key cost factors

- Regulated return on RAB (pre-tax): different for USP and competitive market. WACC USP: 0%; competitive: 8.29%
- Revaluation for all assets at currently 5.5% based on construction indexes
- Depreciation period for lines is 40 years

Price regulation gas – Other important factors

- Quality regulation on outages: complex index (of consumers affected and length of outage), index on outage length, and index on the number of outages.

Basics
- Regulatory formula for initial year: \( R_{\text{base}} = \text{OPEX} + D + (\text{RAB} \times RR) \)
- Network Loss is no more an eligible cost for gas DSOs
- Regulatory formula for adjustment: \( R_t = R_{\text{base}} \times (1 + \text{CPI} \times H - 5\%, \text{if} \, \text{CPI} \times H > 5\%) \)
- \( H \): correction factor for estimating fault
- \( \text{Note: R is divided by volume as price is set} \)

Cap formula

OPEX
- No efficiency factor
- Indexation if acknowledged inflation exceeds 5% (+0,25% in 12/13 gas year)

CAPEX
- Revaluation for all assets at currently 5.5% based on construction indexes
- Depreciation period for lines is 40 years

Price regulation gas – Overview
Overview SK power – Price regulation of distribution

Price regulation power - Overview

- Method: price cap
- Regulation period: 2012-2016
- Next regulation period: 2017+
- Next photo year: 2015

Basics

- Regulatory formula for initial year:
  \[ R_{\text{base}} = \text{OPEX} + D + (\text{RAB} \times \text{RR}) \]
- Regulatory formula for adjustment:
  \[ R_t = R_{\text{OPEX base}} \times (1 + \text{PI-X})^t + D_{\text{base}} + \Delta D + R_{\text{RAB base}} \times \text{RR} \times Q - F^* \]
- Note: R is divided by volume as price is set

Cap formula

Price regulation power – Key cost factors

- Regulated return on RAB (pre-tax): revaluated annually (6.04% for 2012 and 2013, 6.03% for 2014)
- RAB: depreciated asset base based on external value appraisal of 2005 YE assets and investments & depreciation since 2006 at the start of the regulatory period (time lag)
- Depreciation period for lines is 30 (LV) - 35 years (MV, HV)

CAPEX

OPEX

- General efficiency factor: 3.5%
- Inflation factor for OPEX is core inflation, however escalation index \((1 + \text{core inflation} - X)\) can not be below 1.0

Price regulation power – Other important factors

- Automatic compensations for violated quality standards towards customers applied from 1 January 2014 (i.e. customers are compensated automatically by DSOs / Suppliers without any request for the compensations)

F – revenues from connection, illegal consumption, exceeding the reserved capacity; to be applied from 2014 (based on 2012 actual revenues)
Overview RO power – Price regulation of distribution

Price regulation power - Overview

- Method: price cap
- Regulation period: 2008-2012 (2nd)
- Photo year: 2011/2012

Price regulation power - Key cost factors

- Regulated return on RAB (pre-tax): 8.5%
- RAB: depreciated asset base based revaluated with inflation until reaching 95% of revaluated local GAAP
- Depreciation period for lines is 12 years for cables and 32 years for overhead lines

Price regulation power - Other important factors

- Quality factor not active up to now

Basics

Cap formula

- Regulatory formula for initial year:
  \[ R_{\text{base}} = \text{OPEX} + D + (\text{RAB} \times \text{RR}) \]
- Regulatory formula for adjustment:
  \[ R_t = R_{\text{base}} \times (1 + \text{PI} - \text{X} + \text{Q})^t \]
  Note: R is divided by volume as price is set

CAPEX

- General efficiency factor: 1.5%
- Inflation factor is CPI
- 9.5% grid losses recognized in 2012 & 13

OPEX

- Quality factor not active up to now
Overview RO gas – Price regulation of distribution

Price regulation gas - Overview

• Method: price cap
• Regulation period: 2008-2012 (2nd)
• Next regulation period: 2013-2017 (3rd)
• Photo year: 2011/2012

Price regulation gas – Key cost factors

• Regulated return on RAB (pre-tax): 8.6%
• RAB: depreciated asset base based revaluated with inflation
• Depreciation period for pipes is 30 (steel)-40 years (PE)

Basics

• Regulatory formula for initial year:
  \[ R_{\text{base}} = \text{OPEX} + D + (\text{RAB} \times \text{RR}) + \text{DV} \]
• Regulatory formula for adjustment:
  \[ R_t = R_{t-1} \times (1+\text{PI-X}) \times \text{GF}+\text{Q}+(V_t-V_0)+\Delta\text{INV} \]
  Note: R is divided by volume as price is set, Adjustment formula obsolete

Price regulation gas – Other important factors

• Quality factor not active up to now
Overview ES – Price regulation of power distribution

- **Energy Reform** launched in July’13 in order to tackle the tariff deficit issue in Spain and review system regulated costs.
- **2013 & 2014 transition regulatory scenario** approved. New Regulatory scenario expected to be approved in Jan-Feb’14

Regulation power - Overview

- **Method:** revenue cap
- **Transition framework:** 2013 & 2014 based on historical remuneration
  - 2013 Remuneration specific calculation:
    - Until 07/2013: 2012 remuneration + investment recognition (year n-2)
    - From 07/2013: Adjustment with new financial rate.
  - 2014: 2012 Investments recognition
  - No asset based-RAB defined.
- **Next regulatory framework (not approved - under consultation process):** 2015-2019
  - Asset based RAB to be defined for each DSO.
  - Photo year: 2013

Regulation power – Key cost factors

- **2013 & 2014 Transition period**
  - Financial remuneration rate ‘13
    - Until 07/13: 7.98%
    - From 07/13: 5.5%
  - Financial remuneration rate’14: 6.5%
  - Depreciation: 40 years for grid assets.
  - Annual investments (year n-2) recognition process.
    - Specific investments get 100% remuneration.
    - Customer payments % adjust receivable capex.

Next regulatory framework CAPEX factors to be defined

- **2013 & 2014 Transition period**
  - Transitory period OPEX calculated as percentage of real O&M vs. total remuneration.
  - 2013 OPEX for new investments: 6.5 %
  - 2014 OPEX for new investments not published.

Next regulatory framework OPEX factors to be defined

Regulation Power – Other important factors

- **Q: Grid losses and Quality Bonus** previous system (under review):
  - Grid losses vs. individual losses target at a loss-energy price and added to remuneration. ±2% remuneration cap
  - Quality target set and used as reference. Incentive may turn in a bonus or penalty up to ±3% of global income.
- **RES Investments:** DSO is obliged to attend RES investments requests, however RES investments are paid to the DSO by RES producers. Percentage of network financed by RES producers is to be included to define a gross RAB and a net RAB.
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# E.ON IR - Reporting calendar & important links

## Reporting calendar

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## Important links

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