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Vattenfall – company overview

• Founded 1909 in Sweden
• Europe’s 5th largest electricity generator;
  - total electricity production of 168 TWh
  - total installed capacity of > 35,000 Megawatts
• No. 1 in the Nordic market, with 20% market share in generation
• No. 3 in Germany, with 13% market share in generation
• No. 1 in Europe in district heating
• Well diversified generation mix; hydro, nuclear and fossil. Increasing wind power
• Core products are electricity and heat
• Vattenfall is 100% owned by the Kingdom of Sweden.
• Commitment to maintain credit rating in the single ”A” range

Our Vision: A Leading European Energy Company
Vattenfall’s geographical markets

Business Group Nordic
(Sweden, Denmark, Finland)
32% of Group revenues
54% of Group EBIT
55% of electr. generation

Business Group Central Europe
(Germany, Poland)
61% of Group revenues
51% of Group EBIT
45% of electr. generation

A third segment “Other operations” accounts for
7% of Group revenues and -5% of Group EBIT

Last 12 months (LTM) figures
### Vattenfall’s Development

#### 2000

- **EBIT**: 4.5 bn
- **TWh**: 83
- **Customers (thousands)**: 2.2 m
- **Employees (thousands)**: 13

#### 2007

- **EBIT**: 28.5 bn (+540%)
- **TWh**: 168 (+100%)
- **Customers (thousands)**: 4.7 m (+140%)
- **Employees (thousands)**: 32 (+150%)

**Large acquisitions**:
- HEW (Ger)
- Veag/Laubag (Ger)
- Bewag (Ger)
- EW (Pol)
- GZE (Pol)
- Elsam/E2 assets (Dk)

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**Vattenfall Capital Markets Day, 8 September 2008**
The strategic priorities have shifted over the last years

1999 - 2001

- Growth
  - German and Polish acquisitions
  - A integrated international company
  - Business and steering model for deregulated markets

2002 - 2005

- Consolidation (with price increases)
  - Implementation of several cost effectiveness and performance programs
  - Initial efforts to capture cross-border synergies
  - Modest growth through acquisition in Denmark

2006 -

- Growth and climate change
  - Continued focused efforts to grow through organic expansion and M&A
  - Establish a strong and global climate change position
  - Commitment to adapt the generation portfolio to new requirements
The financial development has been very attractive
Industry trends
Several major trends influencing the energy industry

- Liberalisation and industry consolidation
- Increased attention from the public and political arena
- Concerns for climate change
- Uncertainty around security of supply
- Impact of construction cycles
- The energy market
Market characteristics vary in different regions

Demand growth: Electricity demand 2002-2007
Capacity need: Need for new capacity until 2020 - compared to today (2005)
Security of supply concerns

Substantial parts of the old generation assets will be retired, which facilitates the move towards low CO$_2$.

Source: Eurelectric "The role of electricity", June 2007
Combating climate change is possible

Marginal cost of abatement - examples
€/t CO₂

- Fuel efficient vehicles
- Lighting systems
- Insulation improvements
- Fuel efficient commercial vehicles
- Capture & storage, coal retrofit
- Wind
- Solar
- Soil
- High cost power sector abatement
- Biodiesel
- Nuclear
- Water heating
- Cellulose ethanol

Abatement potential
Gt CO₂ / year in 2030

- Negative abatement marginal cost
- Abatement marginal cost below €40/t
- Abatement marginal cost above €40/t
The regulatory environment remains essential

Key success factors:
- Convincing fact-based argumentation on preferred regulation
- Effective and systematic stakeholder management
- Strong regulatory organisation
- Active listening mode in relation to external stakeholders
Strategic direction
The five strategic ambitions have matured

Key market developments last 10 years

- Liberalisation and market integration across Europe
- Industry consolidation
- Continuously enhanced competition between key players
- Increasing importance of environment, climate change and sustainability
- Growing competition for customers
- Strong public opinion/criticism related to price/performance and environment
- Changing demographics and expected upcoming gaps in key skills
Vattenfall should continue to use **M&A**, in particular to enter into new markets

- Degree of market liberalisation
- Proximity to core markets
- Need for new capacity
- Potential for clean capacity
- Cultural fit

Vattenfall shall increasingly pursue **organic growth** in both core and new target markets

- Enables possibility to “steer” the portfolio towards the prioritised generation mix
- Avoids price premiums
- Facilitates timing and control needs
Growth strategy - highlights

- Consolidation phase ended (Germany and Denmark).
- Substantially increased size targeted.
- Focus on electricity generation.
- Low-intensive CO$_2$ essential (nuclear, renewables, CCS).
- Organic and M&A.
- A third and possibly a fourth major geographical market targeted.
- United Kingdom and Benelux of very high interest.
- Possibly wider geographical scope.
- Growth in end-customers interesting (quality check, cost-to-serve).
Reduction CO₂ - extensive growth of renewables

Portfolio strategy - reshape the generation portfolio towards clean energy

Drivers:
- Emissions reduction
- Technological development/R&D
- Increasing financial attractiveness of renewables
- Preference for base load
- Public opinion

### 2008

<table>
<thead>
<tr>
<th>Source</th>
<th>Per cent</th>
<th>Total (TWh)</th>
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<tbody>
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<td>Renewables</td>
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<tr>
<td>Nuclear</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>44</td>
<td></td>
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<tr>
<td>Gas</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>170</strong></td>
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Low CO₂ emitting: 90 TWh

### Resulting development given growth target 2030

<table>
<thead>
<tr>
<th>Source</th>
<th>Per cent</th>
<th>Total (TWh)</th>
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</thead>
<tbody>
<tr>
<td>Renewables</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>22</td>
<td></td>
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<tr>
<td>Coal CCS</td>
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<tr>
<td>Gas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>390</strong></td>
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</table>

Low CO₂ emitting: 290 TWh

200 TWh increase in low emitting
• Apply learning from external work to improve Vattenfall’s internal strategic overview

• Measures assessed by Business Groups, with methodology and project support from central expertise

• Analysis identifies potential and *incremental* costs for Vattenfall to reduce emissions:
  – Compared to a situation where carbon was not constrained
  – Including both existing and expanded production (current markets only)
  – Throughout Vattenfall’s value chain

• Analysis is NOT an evaluation of various investment options from a corporate perspective or a substitute for other related processes (capacity management, business planning)
Development of CCS and R&D continued key priority

- **European Test Center Mongstad**
  - Research new techn. 'chilled ammonia'

- **Demo Plant Nordjyllandvaerket (~300 MW<sub>th</sub>)**
  - Post combustion

- **Pilot Plant Schwarze Pumpe (~30 MW<sub>th</sub>)**
  - Oxyfuel

- **Demo Plant Jänschwalde (~300 MW<sub>th</sub>)**
  - Oxyfuel & Post combustion

- **Demo Plant Siekierki (~150 MW<sub>th</sub>)**
  - Post combustion
Operational excellence strategy – next steps

Ongoing OPEX program

• 11% productivity increase, equaling SEK 5 bn cost reduction
• Implementation and delivery ongoing

Next steps – Continue to enhance operational excellence through continued increases in:

• Productivity
  – Use benchmarking to clarify company position
  – Set new improvement targets according to benchmark results
  – Increase efficiency of SSCs

• Cross-border synergies
  – Identify key processes
  – Increase cooperation and learning within Group
  – Develop structured bench learning processes
Future of networks

**Situation today**

- Major investments necessary
  - development of offshore wind power,
  - replacement of old equipment
  - measures to increase the grid quality
- Essential unbundling requirements reduces strategic advantages of grids
- Regulation pressure on big ‘utilities’ reduces attractiveness

**Consequences**

- Transmission: integrated grids are offered for sale
- Distribution: evaluation of the future role of the grids
Customer strategy – increase market shares

Grow the customer base and increase market shares:

- Strengthen the relationship with the consumer base
- Allows Vattenfall to better capitalise on fixed costs in sales and services
- Contributes to overall growth

Increase customer orientation:

- Strong linkage between customer satisfaction and shareholder value
- Basis for promoting a more commercial mindset
- Necessary in order to gain license to operate our current/future assets

**Electricity sales customers 2007 (million)**

<table>
<thead>
<tr>
<th>Company</th>
<th>Customers 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENEL</td>
<td>49</td>
</tr>
<tr>
<td>EDF</td>
<td>38</td>
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<tr>
<td>E.ON</td>
<td>27</td>
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<tr>
<td>Iberdrola</td>
<td>23</td>
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<tr>
<td>RWE</td>
<td>20</td>
</tr>
<tr>
<td>Vattenfall</td>
<td>5</td>
</tr>
</tbody>
</table>

Top 5 in Europe

Note: EDF 2006, Vattenfall April 2008
Customer strategy – reduce cost to serve

Reduce cost to serve:

- Necessary to create an economically sound basis
- Facilitates possibilities to grow customer base through competitive prices
- Contributes to creation of efficient processes
- Can be contributed to by increasing market share
- Differentiate between different segments
Our five strategic ambitions and key strategies

**Number One for the Customer**
Increase customer orientation and *market shares* as well as *reduce cost to serve*

**Benchmark of the Industry**
Improve operational excellence through *increased productivity* and *cross-border synergies*

**Continued Profitable Growth**
Drive growth through *organic expansion* and *business development* in combination with *acquisitions* in new markets

**Number One for the Environment**
Reshape the generation portfolio towards *clean energy* (renewables, clean coal and nuclear)

**Employer of Choice**
Attract, retain and *develop people and competencies* for the future
Back up
**Preliminary conclusions: Group level abatement**

**Abatement potential**
- Significant potential identified to 2030
- Few alternatives identified, especially for existing production
- Focus of measure identification is CCS

**Abatement cost**
- Cost curve relatively 'flat': no tipping points identified
- Abatement by expansion is economically favourable

**Roadmap 2030: Major abatement levers**

1990-present
- Replacement and upgrading of inefficient production

2008-2020
- Organic growth in wind
- *M&A in renewables, nuclear*
- Co-firing of biomass
- CCS Demonstrations

2020-2030
- Commercial CCS
- Organic growth and M&A in renewables, nuclear
Major upgrading attractiveness of renewables

Drivers for higher attractiveness

• Learning curve leading to lower costs for renewables
• Continuous development of new and better renewables
• Fuel prices up leading to higher costs for traditional capacities
• ETS starting to generate high costs
• Expansion of renewables contributes to industrial growth in home markets
• Large competitors moving now

Renewables forecasts revised up

Overall share of renewables (excl large scale hydro) in EU 27

Source: IEA World Energy Outlook
Growth strategy – business development

Organic growth and M&A should be complemented with business development efforts

- Provide additional growth
- Promote electricity demand
- Increase perceived value of electricity
- Capitalise on R&D and innovation skills and stimulate entrepreneurship

Heat Pumps

XX = potential in core markets by 2030

Plug-in Electric Hybrid Vehicles

60–85 TWh el.

District Cooling Systems

40–50 TWh cool.