Benefits and challenges for the renewable energy sector

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Secretary General
European Renewable Energy Council

INO_GATE Round table
Brussels, 26th June 2007
EREc – European Renewable Energy Council

Umbrella organisation representing all RES sectors:

- AEBIOM: European Biomass Association
- EGEC: European Geothermal Energy Council
- EPIA: European Photovoltaic Industry Association
- ESHA: European Small Hydropower Association
- ESTIF: European Solar Thermal Industry Federation
- EUBIA: European Biomass Industry Association
- EWEA: European Wind Energy Association
- EUREC Agency: European Renewable Energy Research Centres Agency

Associate members:

- EU-OEA: European Ocean Energy Association
- EBIO: European Bioethanol Industry Association
- EREF: European Renewable Energy Federation

Representation of European RES industry, trade & research
Global trends that are likely to have the most profound impact on the energy sector over the coming 5 years all encouraging the further use of renewable energy sources:

- the price and security of supply of oil and gas
- the increased awareness for climate change
- the need for new energy generating capacity
- the global trend towards liberalised markets
- public opinion
Renewable energy in Europe – a success story

Solar thermal

Wind

PV
EU Renewable Energy industry

- Europe is global leader in RES development
- 300,000 jobs in Europe already now
- Annual turnover of 25 billion € already now
- Innovative Business Sector with a large share of SMEs
- Economic growth and regional development
RES policy framework

RES White Paper (1997)
- To double the share of renewable energy from 6% to 12% of gross energy consumption in Europe (EU-15) by 2010

RES Electricity Directive (2001)
- To establish a framework to increase the share of renewables electricity from 14% to 22% of gross electricity consumption by 2010

- To achieve a share of 5.75% of biofuels for transport in the total amount of fuels in Europe by 2010

THE KEY DRIVERS
3x20% by 2020

20% by 2020
EFFICIENCY

By 2020 20% EU GHG

By 2020 20% RENEWABLES

BIO-FUELS
10 % 2020 binding

E-ELECTRICITY

HEATING & COOLING

NATIONAL TARGETS and ACTION PLANS
Coherent RES policy framework
New Renewable Energy Policy

• Increase share of renewables in EU energy mix to address the three pillars of energy policy
  • from 7% today to 20% by 2020;
• Binding overall renewables target for each Member State;
  • Member State National Action Plans, setting share of electricity, heating & cooling and biofuels and policy measures;
  • Minimum 10% biofuels in each Member State.
RES-electricity framework

- Well designed support scheme ensuring investor confidence
  - The price for renewable power must allow for risk return profiles that are competitive with other investment options.
  - The duration of a project must allow investors to recoup their investment.

- Streamlined and uniform planning procedures and permitting systems and integrated least cost network planning;

- Fair access to the grid at fair, transparent prices and removal of discriminatory access and transmission tariffs;

- Fair and transparent pricing for power throughout a network, with recognition and remuneration for the benefits of embedded generation;

- Unbundling of utilities into separate generation and distribution companies;

- The costs of grid infrastructure development and reinforcement must be carried by the grid management authority rather than individual renewable energy projects.
The heating sector – a neglected giant

Final energy consumption by sector

32 % Transport
20 % Electricity (incl. cooling)
48 % Heat

Source: Eurostat figures elaborated by EREC
RES-heating framework

- Renewable Heat obligation for new buildings
- Coherent stable support measures
- Removal of administrative barriers
- Reliable statistics for RES-heating
- Specific measures to promote RES cooling
Renewable Energy Technology Roadmap

20 % by 2020 incl. sectorial targets for electricity, heating/cooling & biofuels for transport
## Contribution of Renewables to Electricity Production

<table>
<thead>
<tr>
<th></th>
<th>2004 Eurostat TWh</th>
<th>2010 Projections TWh</th>
<th>2020 Projections TWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>58.5</td>
<td>194</td>
<td>530</td>
</tr>
<tr>
<td>PV</td>
<td>0.74</td>
<td>7.5</td>
<td>55</td>
</tr>
<tr>
<td>Biomass for electricity</td>
<td>67.9</td>
<td>138</td>
<td>300</td>
</tr>
<tr>
<td>Hydro</td>
<td>303.8</td>
<td>356</td>
<td>384</td>
</tr>
<tr>
<td>Geothermal</td>
<td>5.5</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Solar thermal elect.</td>
<td>-</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Ocean</td>
<td>-</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td><strong>TOTAL RES</strong></td>
<td><strong>435.9</strong></td>
<td><strong>707.5</strong></td>
<td><strong>1313</strong></td>
</tr>
<tr>
<td>Total Electricity Generation EU-25 (Trends to 2030-Baseline) (Combined RES and EE)</td>
<td>3178.6</td>
<td>3483</td>
<td>4006</td>
</tr>
<tr>
<td>Share of RES</td>
<td>13.7%</td>
<td>20.3-21.3%</td>
<td>32.6-40.2%</td>
</tr>
</tbody>
</table>

Source: EREC
## Contribution of Renewables to Transport Fuel Production

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Biofuels</td>
<td>Mtoe</td>
<td>Mtoe</td>
<td>Mtoe</td>
<td>Mtoe</td>
</tr>
<tr>
<td></td>
<td>0.63</td>
<td>2.1</td>
<td>18.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Gasoline and oil demand (Trends to 2030-Baseline) (Combined RES and EE)</td>
<td>277.3</td>
<td>290</td>
<td>313</td>
<td>332</td>
</tr>
<tr>
<td></td>
<td>311.5</td>
<td>312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biofuels’ Share %</td>
<td>0.2</td>
<td>0.72</td>
<td>5.75</td>
<td>12.0–12.8</td>
</tr>
</tbody>
</table>

Source: EREC
## Contribution of Renewables to Heat Production (1995-2020)

<table>
<thead>
<tr>
<th></th>
<th>2004 Eurostat Mtoe</th>
<th>2010 Projections Mtoe</th>
<th>2020 Projections Mtoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass</td>
<td>48.4</td>
<td>65</td>
<td>105</td>
</tr>
<tr>
<td>Solar thermal</td>
<td>0.68</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Geothermal</td>
<td>1.5</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>TOTAL RES HEAT</td>
<td>50.6</td>
<td>81</td>
<td>125</td>
</tr>
<tr>
<td><strong>Total Heat Generation (Trends to 2030)</strong></td>
<td>440</td>
<td>467</td>
<td>488</td>
</tr>
<tr>
<td><strong>Share of RES</strong></td>
<td>11.5%</td>
<td>17.3%</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

Source: EREC
Conclusions

• **Renewables** will be a **mainstream energy source** of the future contributing to
  - Security of supply
  - Climate change
  - Jobs and industrial growth

• Lots of **opportunities** in a portfolio of different renewable energy technologies providing
  - Electricity
  - heating & cooling
  - biofuels for transport

• Europe is at the forefront of renewable energy technology & industry development – let’s maintain & extend this leadership together!
Where to find us: Renewable Energy House

- Headquarters for the European renewable energy sector in Europe’s capital Brussels

- Renewable energy and energy efficiency showcase in a 120 year old monument protected building in the heart of Brussels

- 100 % heating & cooling supply from renewable energy sources

- 2,000 m² of modern office building hosting currently 60 staff from 20 countries

- More than 8,000 visitors in 1 year

Photo taken at inauguration on 22nd March 2006
Further information

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www.erec.org

Thank you very much for your attention!