Renewable Energy as a pillar of energy security

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Emission pathways

GHG emissions resulting from the provision of energy services contribute significantly to the increase in atmospheric GHG
Global Renewable Energy Investment Flows

Top 5 Countries for Renewable Energy Investment, 2010:

1. China ($50 billion)
2. Germany ($41 billion)
3. USA ($30 billion)
4. Italy ($14 billion)
5. Brazil ($7 billion)

Source: REN21 (2011)
Contribution of renewable energy sources to electricity supply in Germany

- **Hydropower**
- **Wind energy**
- **Biomass** *
- **Photovoltaics**

* Solid and liquid biomass, biogas, sewage and landfill gas, biogenic share of waste; electricity from geothermal energy not presented due to negligible quantities produced; 1 GWh = 1 Mill. kWh;

**StromEinspG:** Act on the Sale of Electricity to the Grid; **BauGB:** Construction Code; **EEG:** Renewable Energy Sources Act;

*Source: BMU-KI III 1 according to Working Group on Renewable Energy-Statistics (AGEE-Stat); image: BMU / Christoph Edelhoff; as at: July 2011; all figures provisional*
The window of opportunity for RE investment

“Without further action, by 2017 all CO₂ emissions permitted in the 450 Scenario will be “locked-in” by existing power plants, factories, buildings, etc”

Source: WEO 2011
# The German Energy Concept - Goals

<table>
<thead>
<tr>
<th>Climate</th>
<th>Renewable energies</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse gases (vs. 1990)</td>
<td>Share of elec.</td>
<td>Overall share (Gross final energy cons.)</td>
</tr>
<tr>
<td>2020</td>
<td>35%</td>
<td>18%</td>
</tr>
<tr>
<td>2030</td>
<td>50%</td>
<td>30%</td>
</tr>
<tr>
<td>2040</td>
<td>65%</td>
<td>45%</td>
</tr>
<tr>
<td>2050</td>
<td>80%</td>
<td>60%</td>
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</tbody>
</table>
Electricity imports/exports of Germany

Net export: ~4.3 TWh
Thank you for your attention

More Information:

http://www.bmu.de/english
www.erneuerbare-energien.de/english