



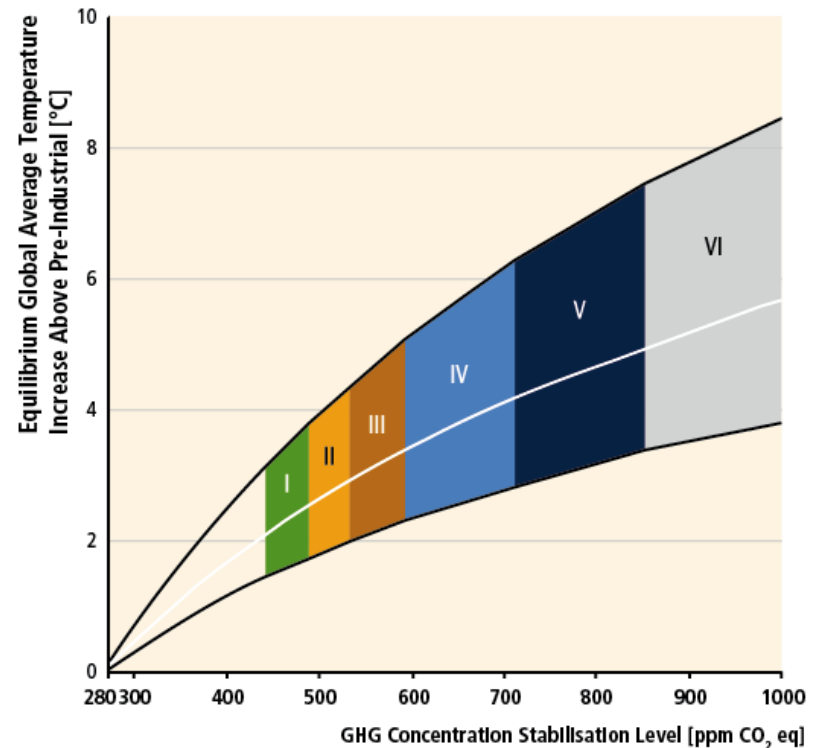
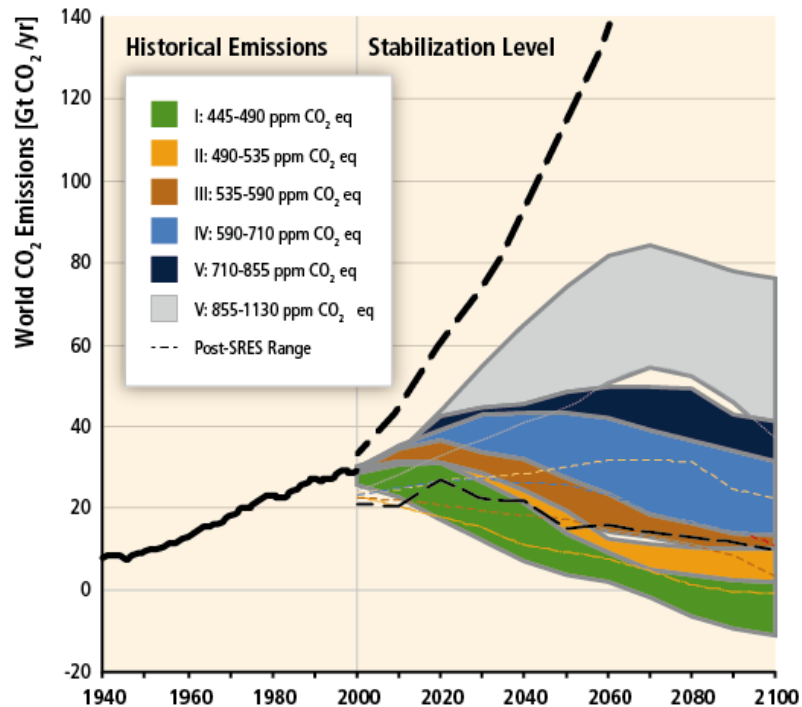
Renewable Energy as a pillar of energy security

Dr. Karsten Sach

German Federal Ministry for the Environment, Nature
Conservation and Nuclear Safety

Tokyo, 6 March 2012

Emission pathways



GHG emissions resulting from the provision of energy services contribute significantly to the increase in atmospheric GHG

Global Renewable Energy Investment Flows

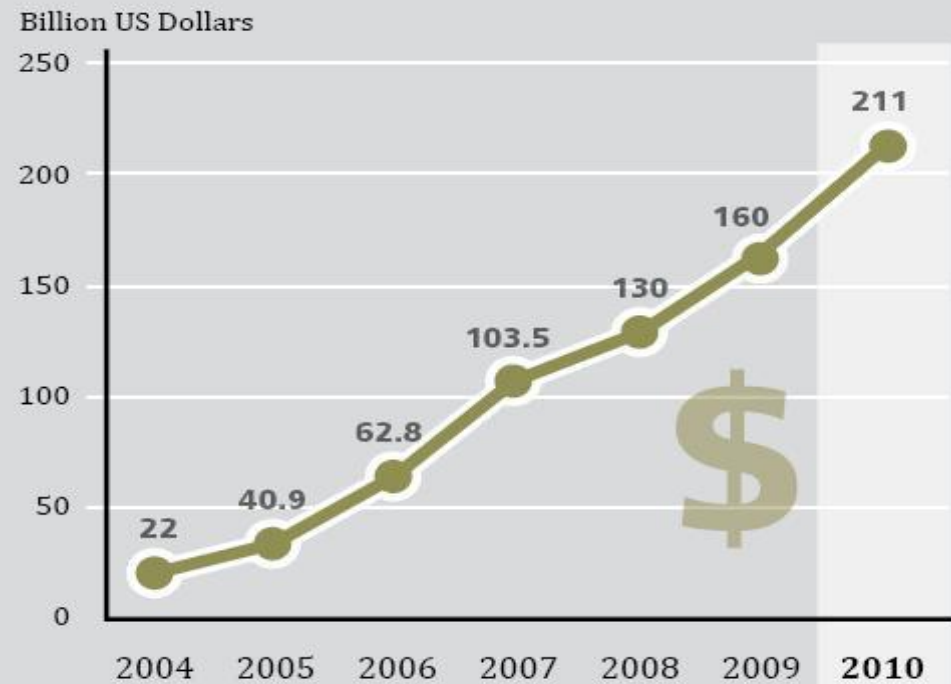


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Top 5 Countries for Renewable Energy Investment, 2010:

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

Figure 12. Global New Investment in Renewable Energy, 2004–2010



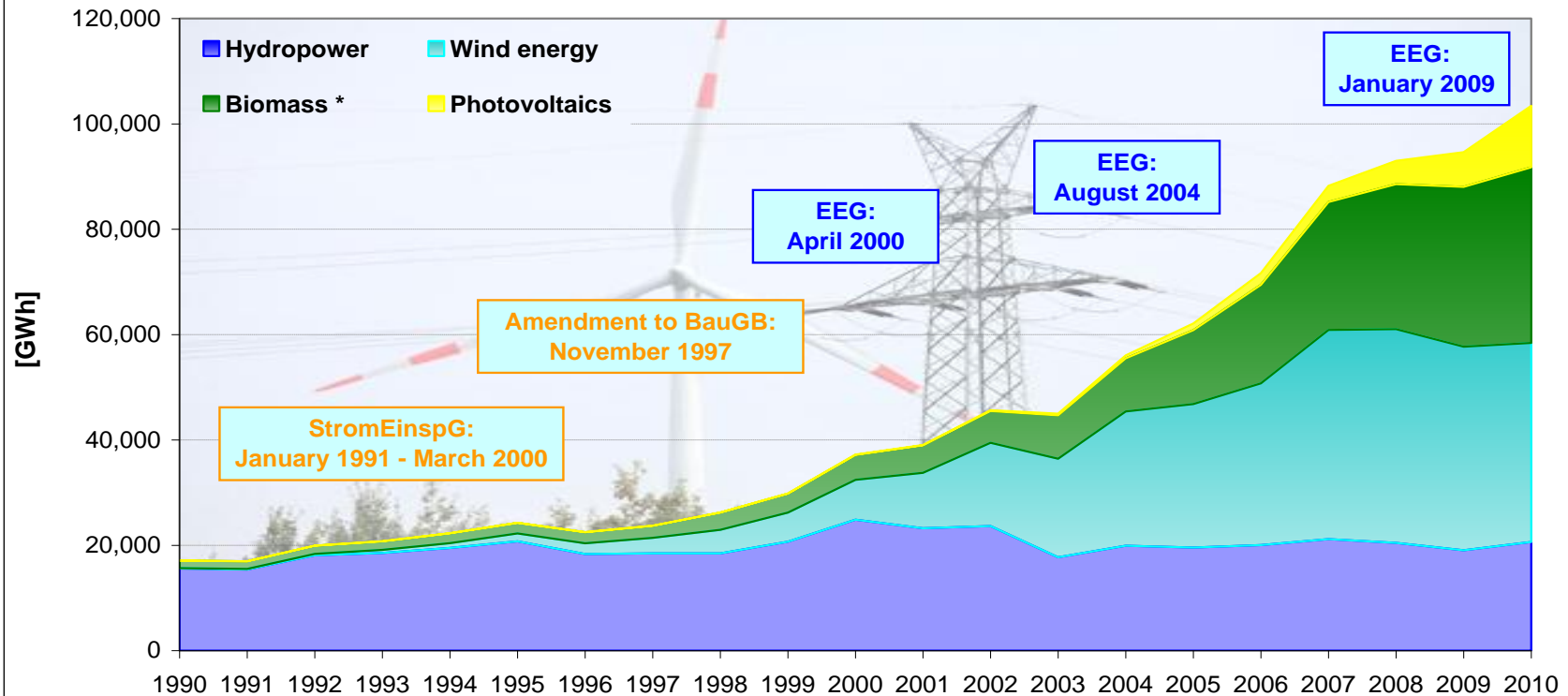
Source: REN21 (2011)

Share of RES in German electricity supply



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Contribution of renewable energy sources to electricity supply in Germany



* 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;

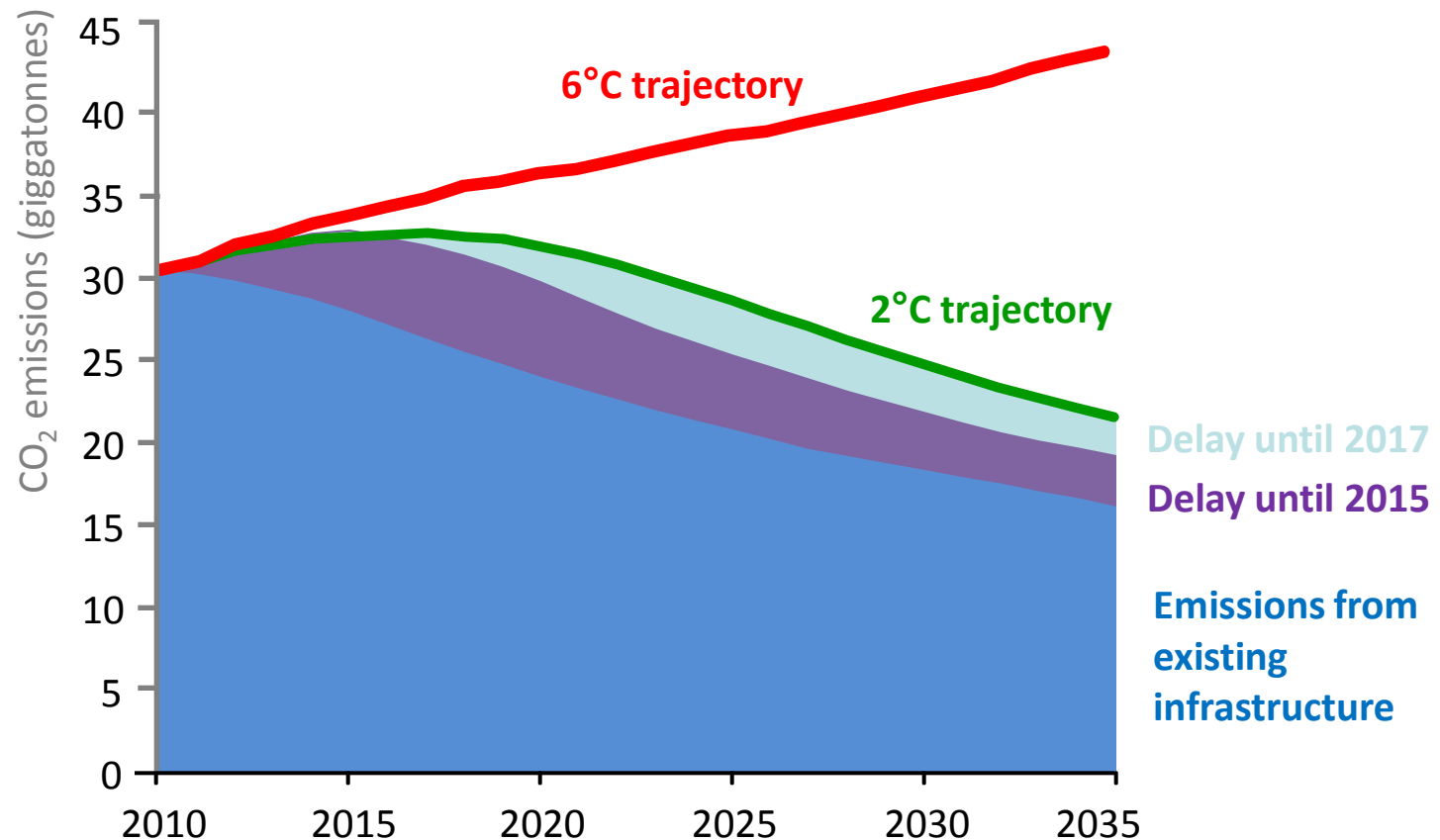
StromEinspG: Act on the Sale of Electricity to the Grid; BauGB: Construction Code; EEG: Renewable Energy Sources Act;

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



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

The German Energy Concept - Goals



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and Nuclear Safety

	Climate	Renewable energies		Efficiency		
	Greenhouse gases (vs. 1990)	Share of elec.	Overall share (Gross final energy cons.)	Primary energy cons.	Energy productivity	Building modernisation
2020	- 40%	35%	18%	- 20%	Increase to 2.1%/a	Double the rate 1% -> 2%
2030	- 55%	50%	30%			
2040	- 70%	65%	45%			
2050	- 80-95%	80%	60%	- 50%		

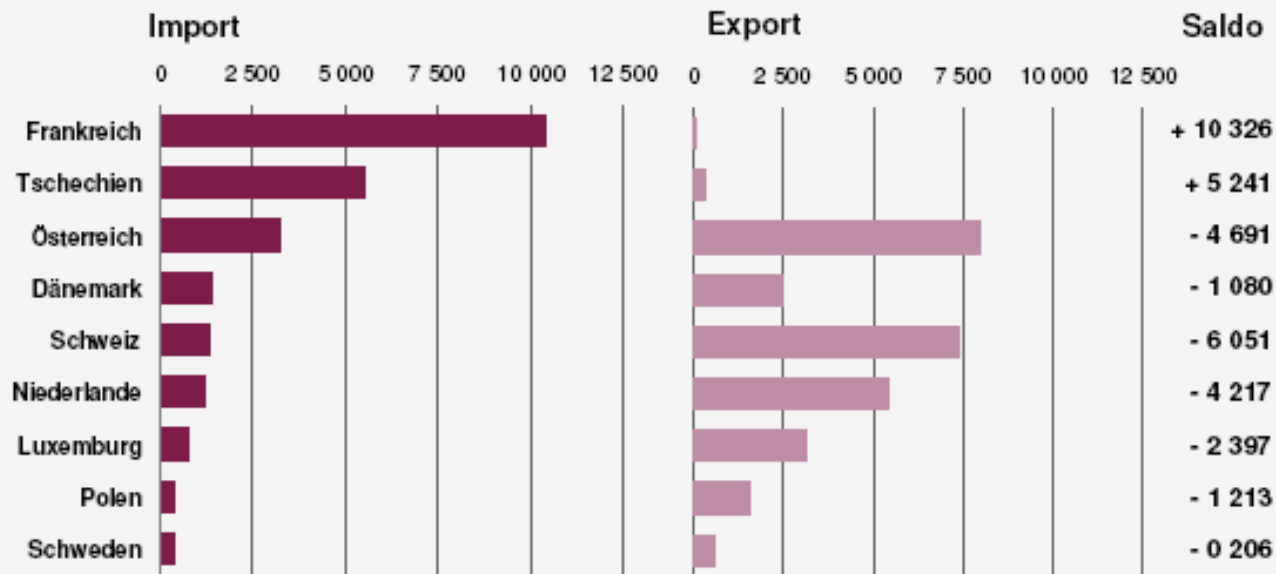
Electricity imports/exports of Germany



Stromtausch mit den Nachbarstaaten



1. Halbjahr 2011* (Strommengen in GWh)



Quelle: BDEW

* vorläufig

**Net export:
~4,3 TWh**



Thank you for your attention



More Information:

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