



Setting the Course for a Sustainable Electricity System – Preview into the forthcoming SRU-Report

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Key questions of the report

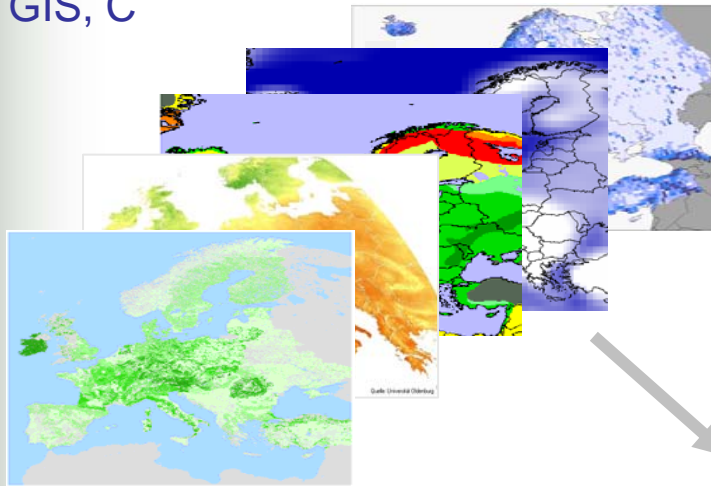
- Can the electricity demand in full be met with renewable energy?
- What are the costs of a 100% renewable electricity system?
- System choice needed
- Political road map for the transformation

Methodology

REMix-Europe
(Renewable Energy Mix for Sustainable Electricity Supply in Europe)

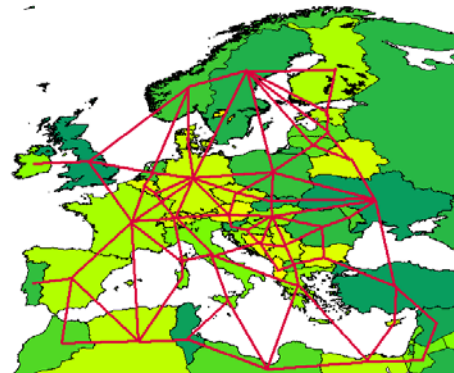
Inventory of Ressources

GIS, C



Power Needs and Load

GIS, C

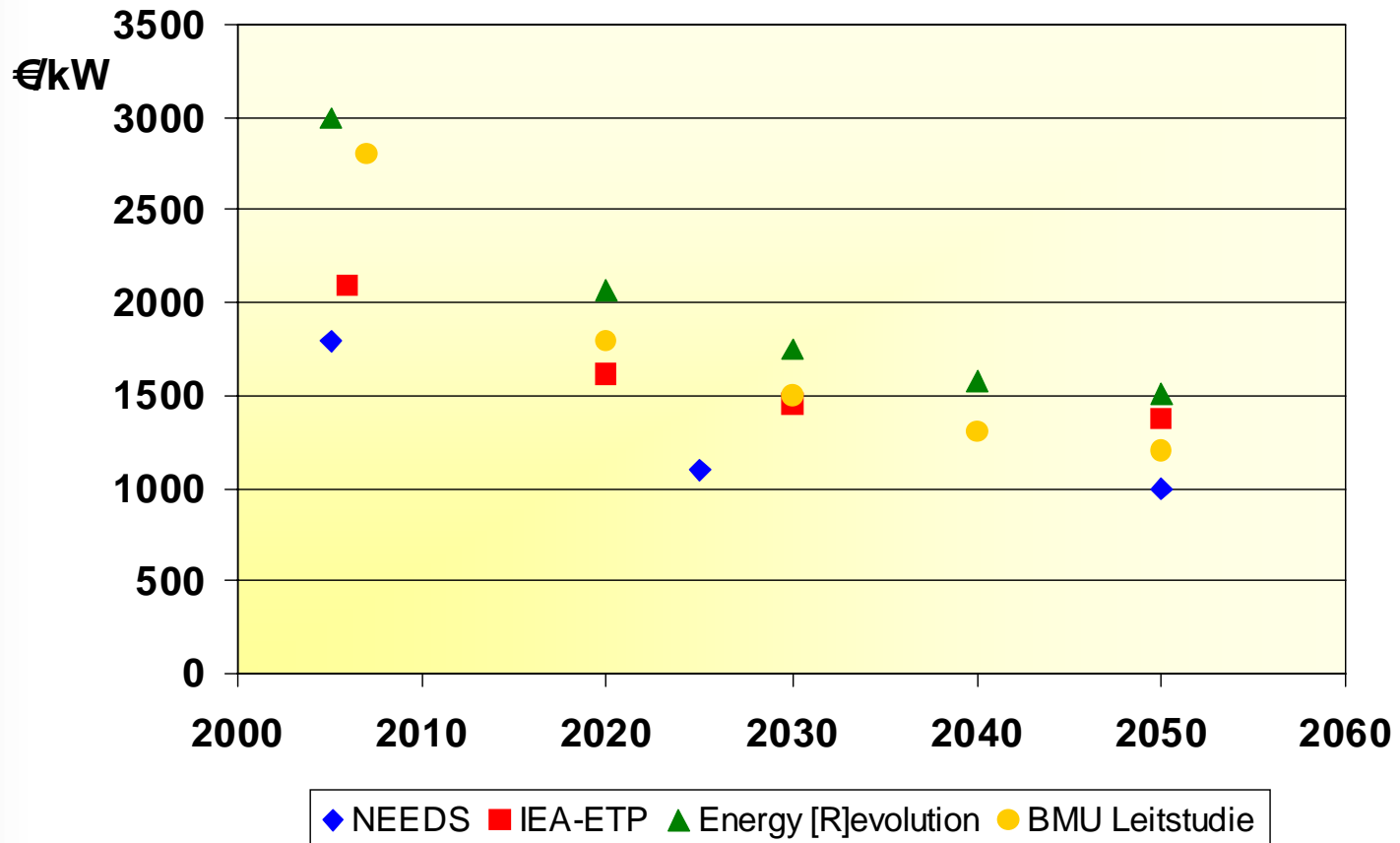


Linear Optimisation

GAMS (General Algebraic Modeling System)

Key Assumption: Learning Curve

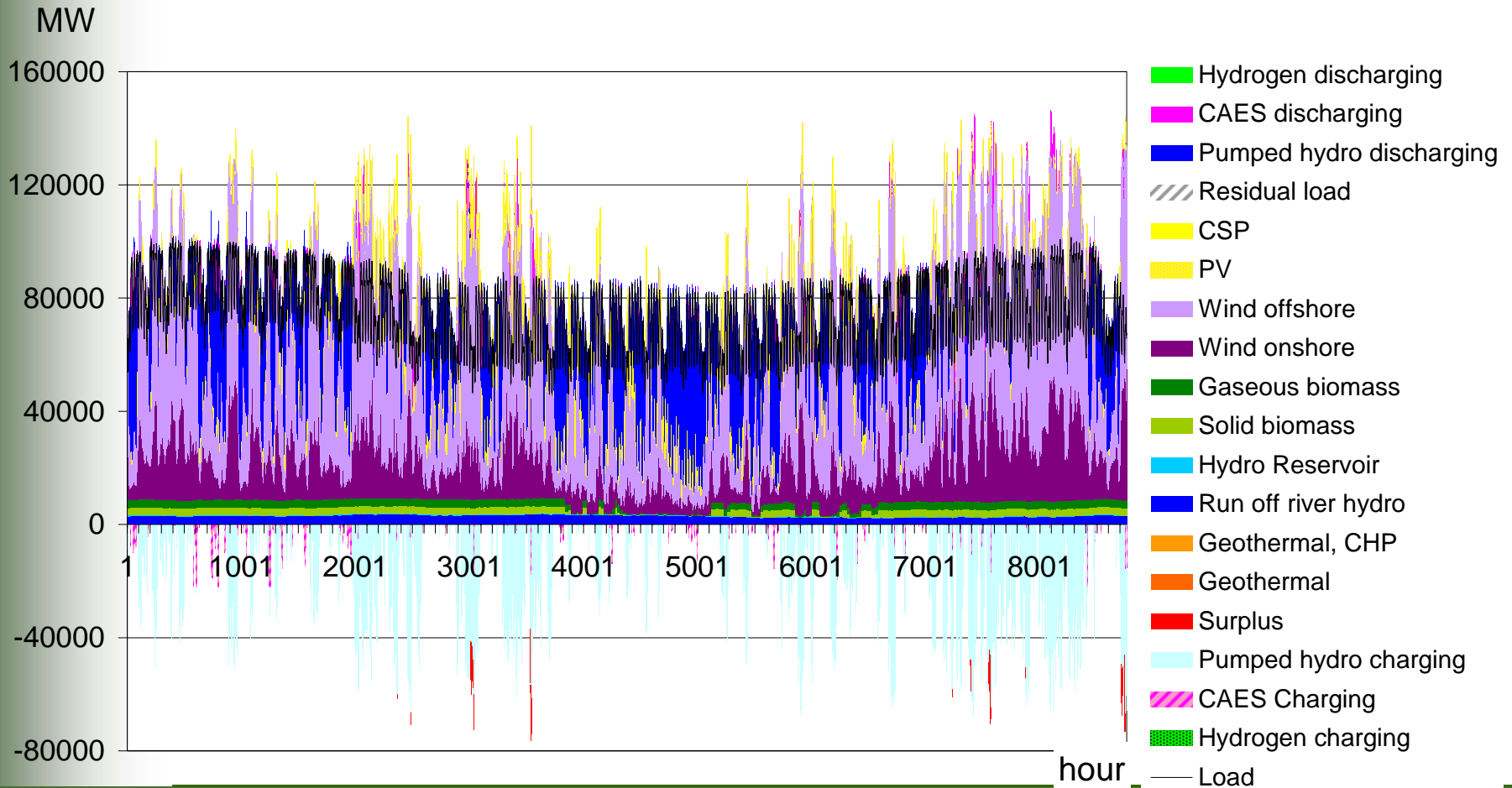
Vergleich Kostenprojektionen Wind Offshore (Kostendegression durch Lernkurve)





Key objective: Ensuring security of renewable energy supply for all hours of the day at least cost

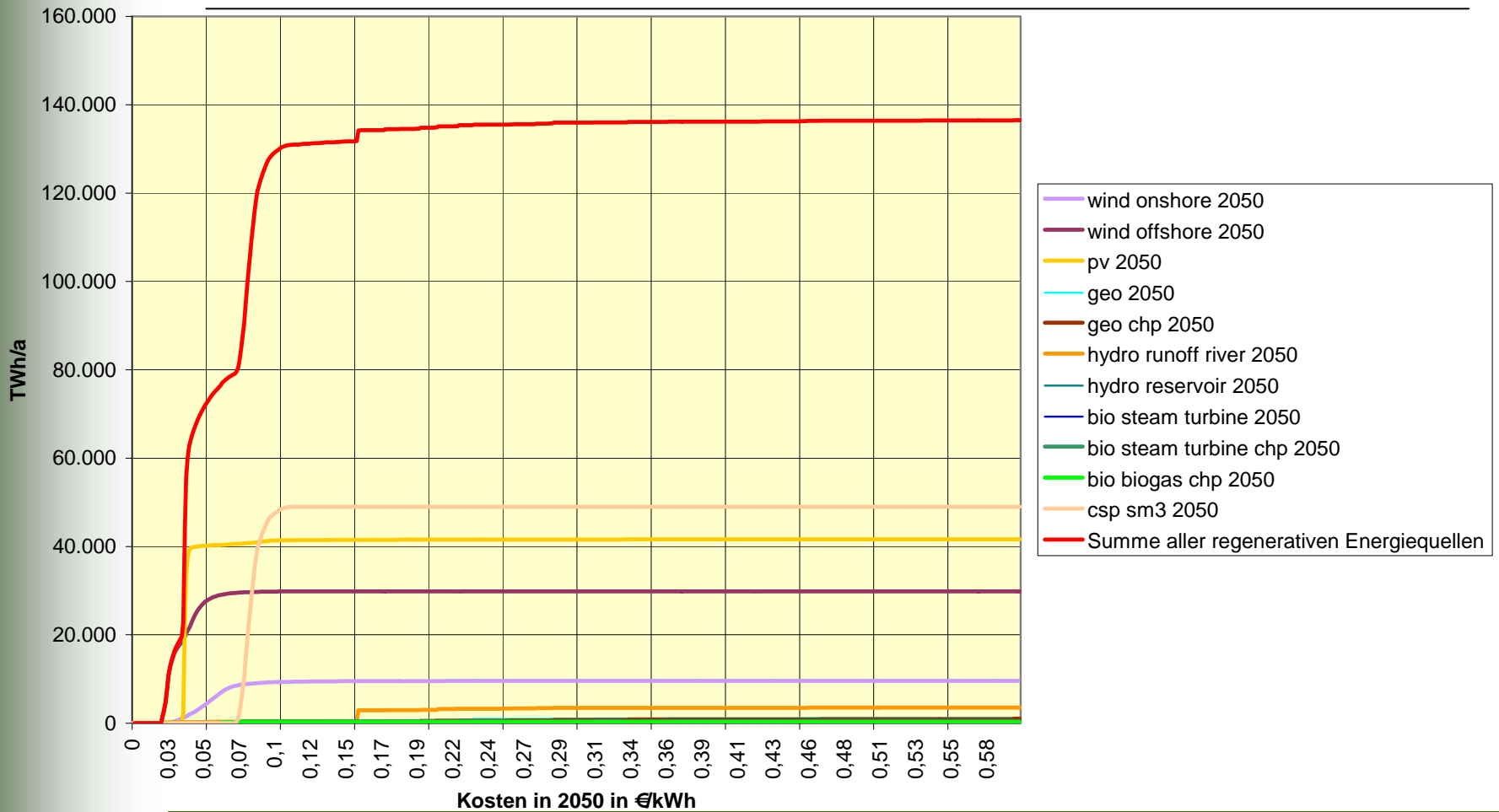
Szenario 2.1.a: DE-DK-NO 100% EE / 100% SV, max. 15% Austausch / 509 TWh





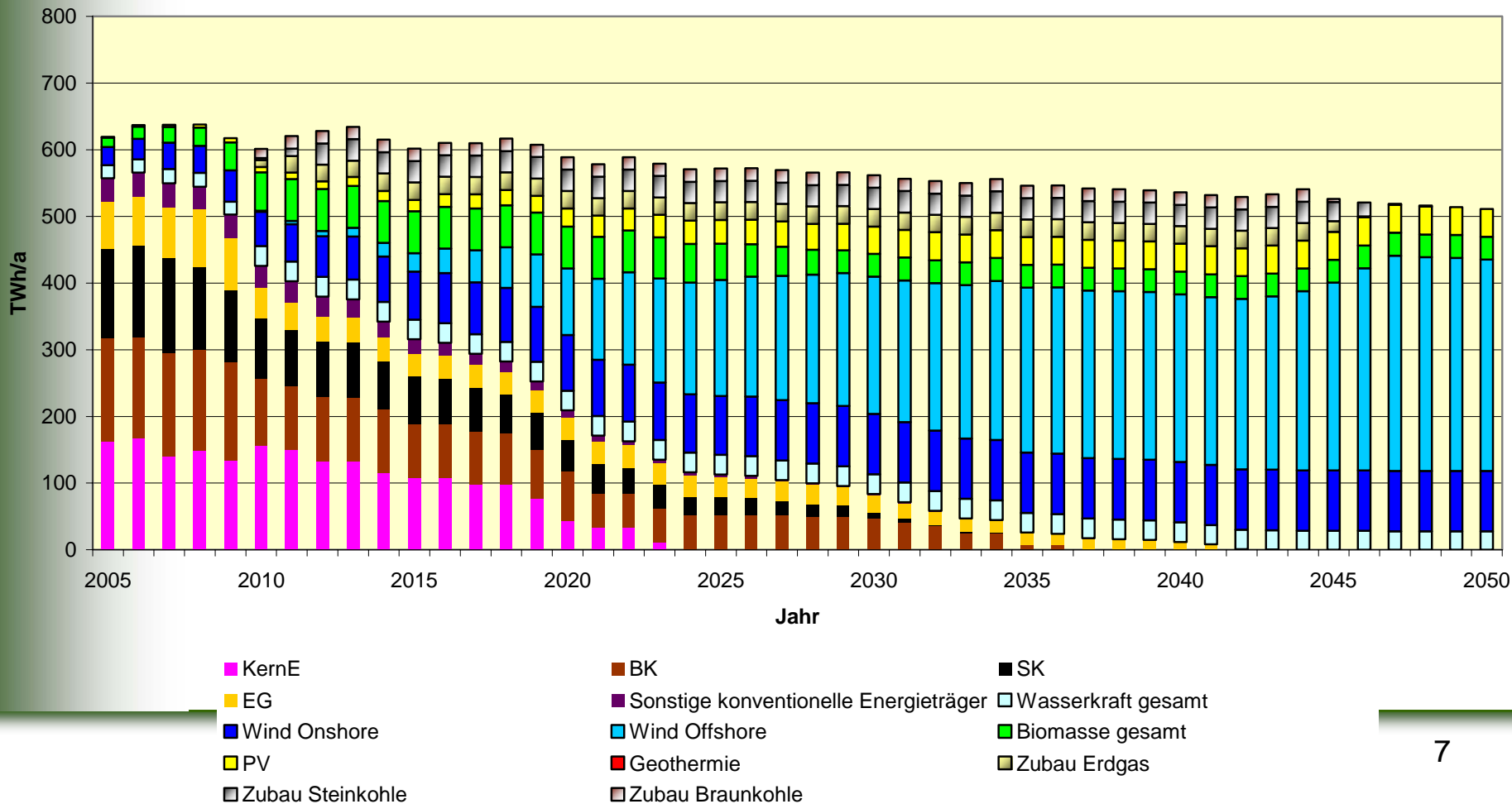
Cost and Potential: 70 000 TWh at a cost of below 5 ct/kwh in EUNA

Stromerzeugungspotential regenerativer Energiequellen in Europa und Nordafrika 2050



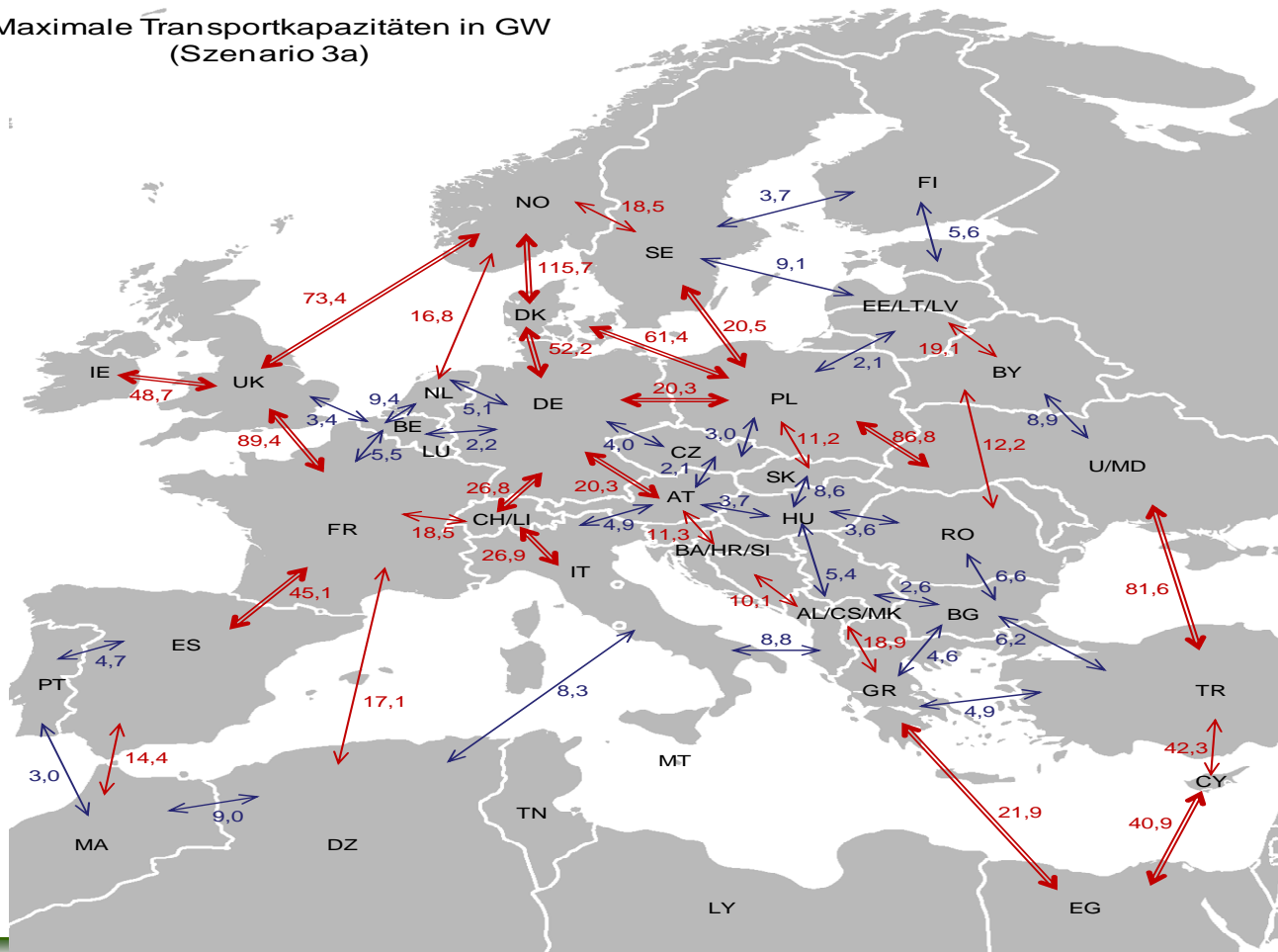
Development of renewable energy mix in Germany until 2050

Entwicklung der Bruttostromerzeugung 2005 bis 2050
konventionelle Erzeugung und regenerative Energiequellen (für 509 TWh/a in 2050)

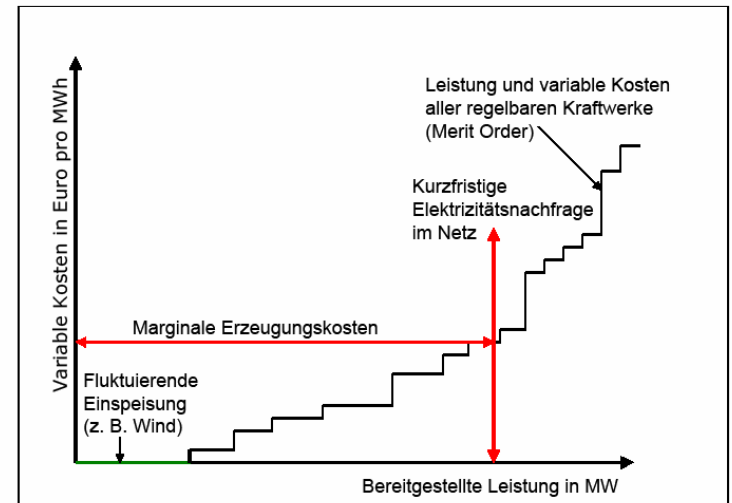
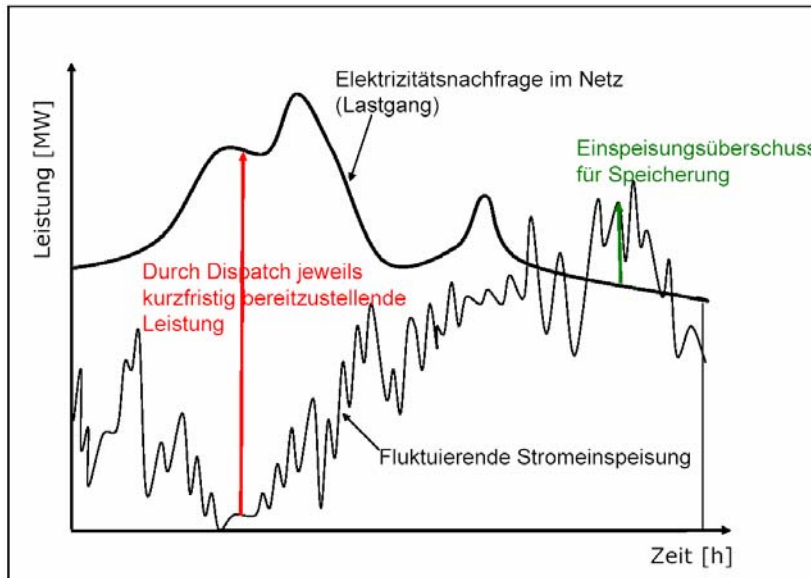


TEN-E Needs by 2050

Maximale Transportkapazitäten in GW
(Szenario 3a)



Fluctuating supply: implications for power plant needs in the future



Development of average specific electricity production costs

