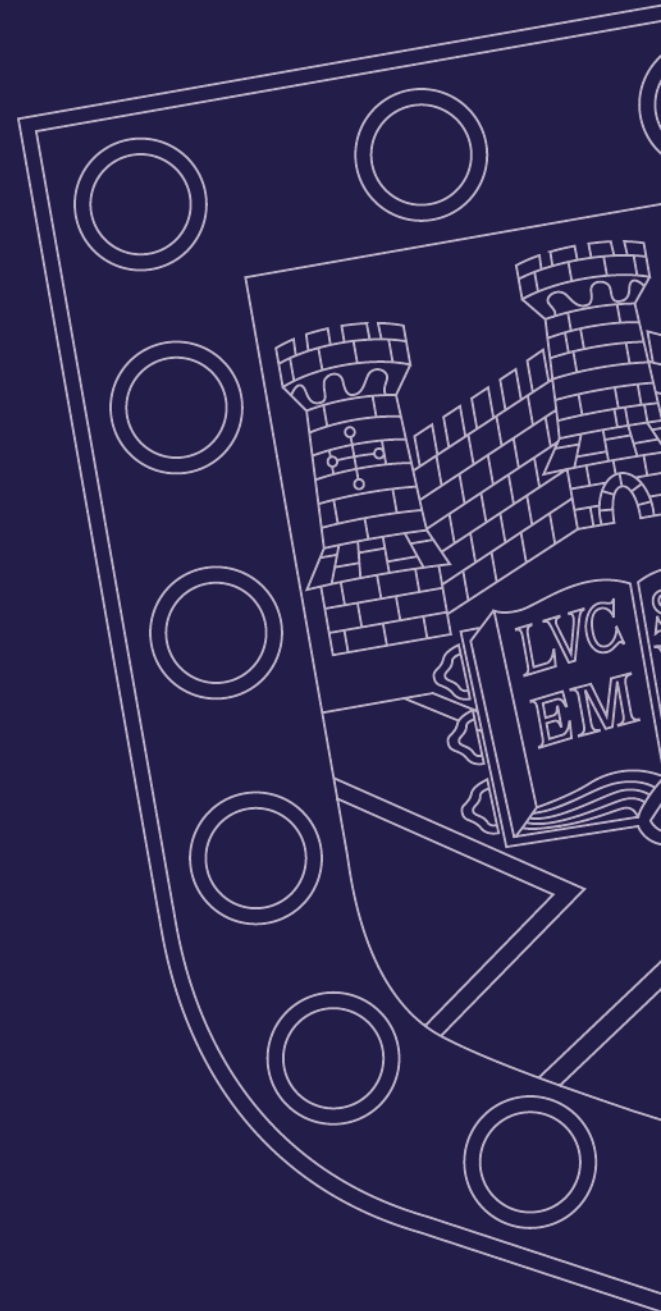
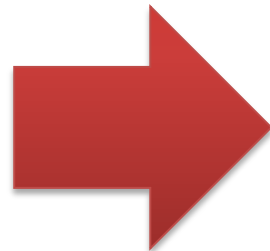
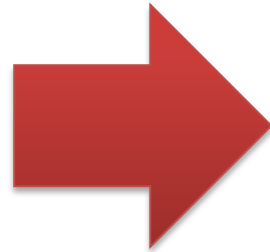
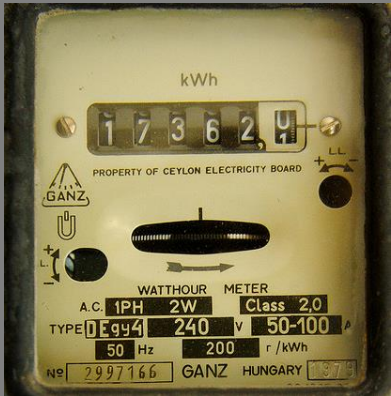


Renewables: how far can we go?

Catherine Mitchell

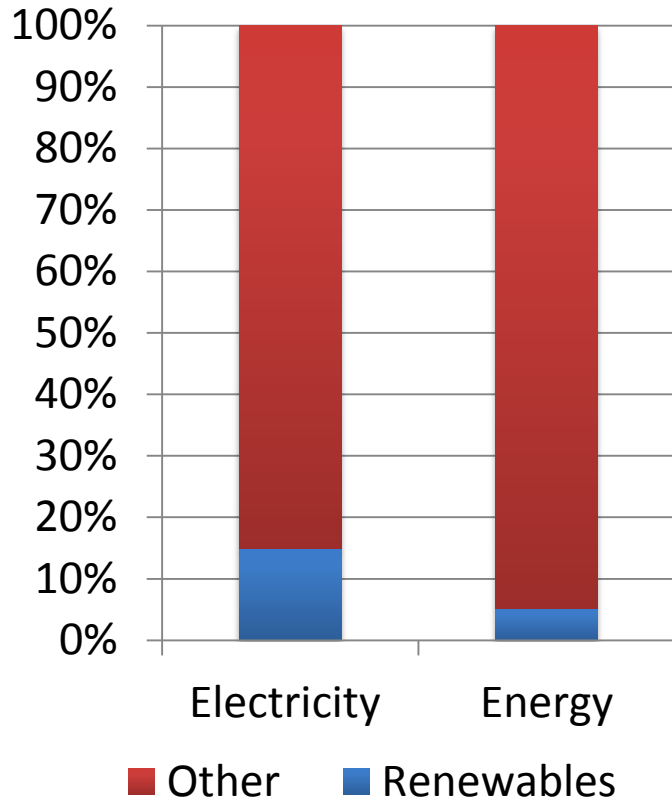


The future

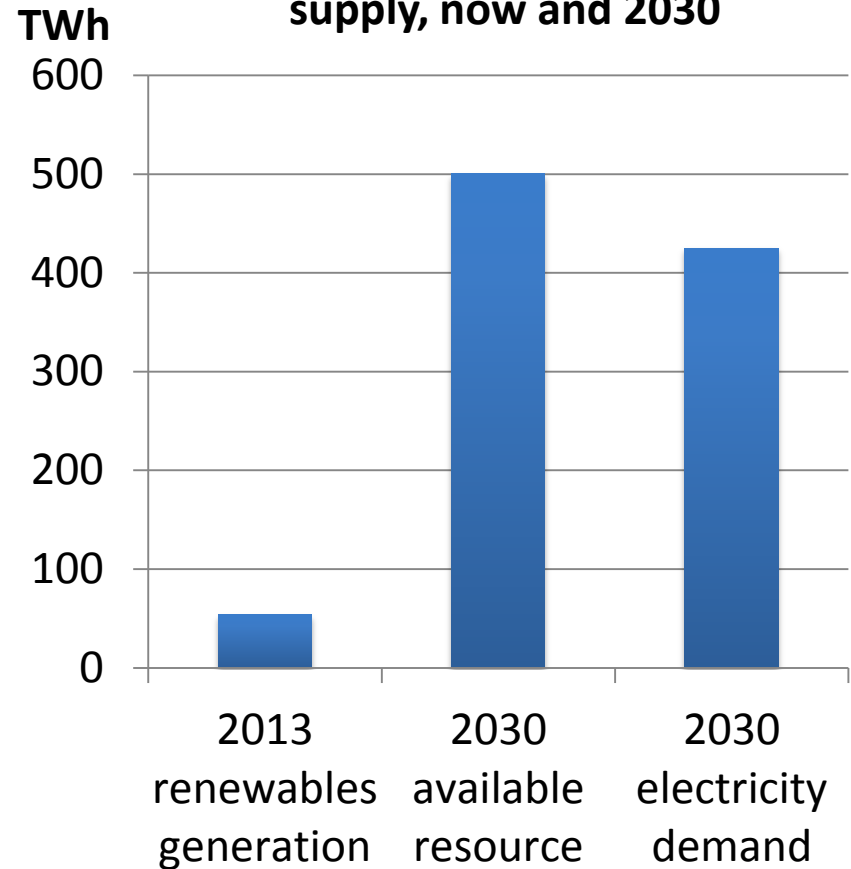


Current situation in GB

UK energy mix in 2013



Electricity demand, renewable supply, now and 2030



Energy system foundations

Secure

Low-carbon

Affordable

Better ways of operating

Demand side flexibility
(?18 GW)

Interconnection
(?16 GW)

Storage

Cut peak demand

Link heat transport and electricity

Energy efficiency

- Cut total energy demand
- Buildings
- Industry and SMEs
- Appliances / Equipment

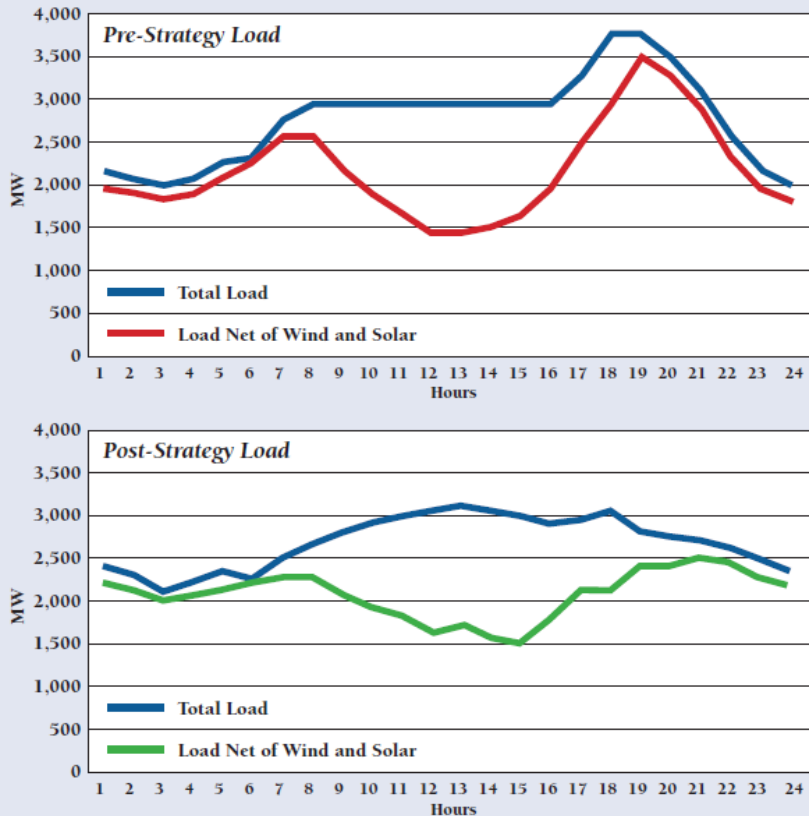
Possible larger capacity due to:

- Electric vehicles
- Top-up water heating



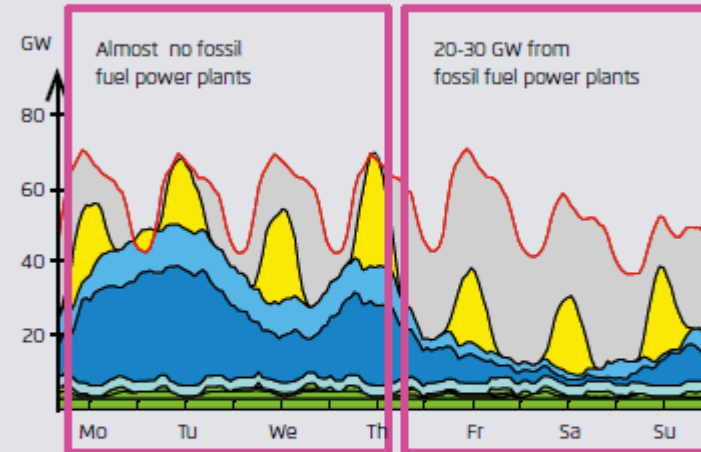
Reduce, flatten and flex

Comparison of Pre-Strategies and Post-Strategies Load Profiles



Demand for Fossil Fuel Power Plants in 2022:
Example of a Week in August

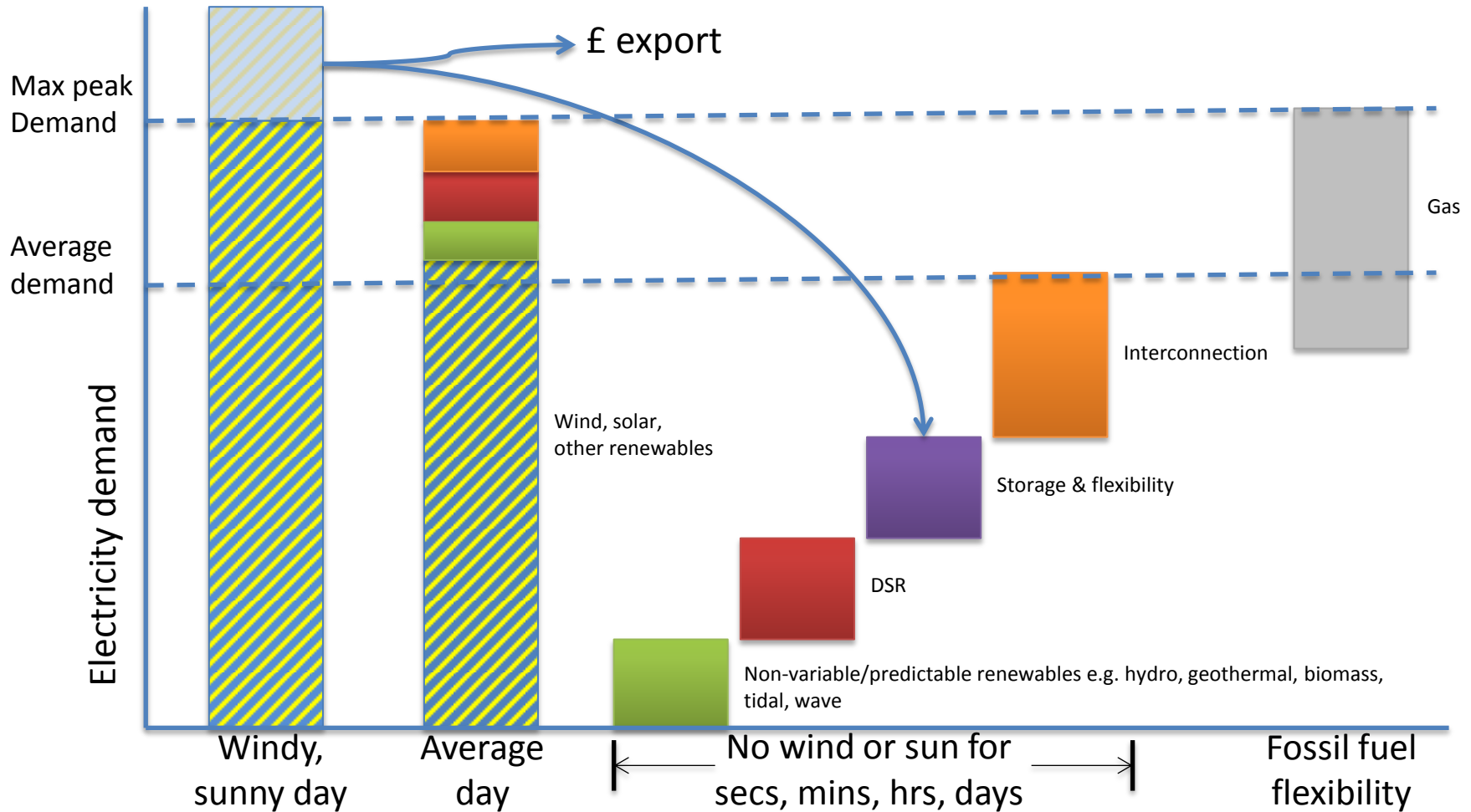
2



- From Monday to Thursday, wind and solar power cover most of the demand for electricity, fossil fuel power plants are scarcely needed
- Between Thursday afternoon and Sunday morning, 20-30 GW of additional power plant capacity are continuously required



No wind, no sun scenario



How do we make it happen?

1. **Strategy** – where is it?
2. New '**British Energy Agency**' - transparent and open decision-making, involving civil society
3. New **independent system operator** - strategic body to deliver the change
4. New **policies and incentives**

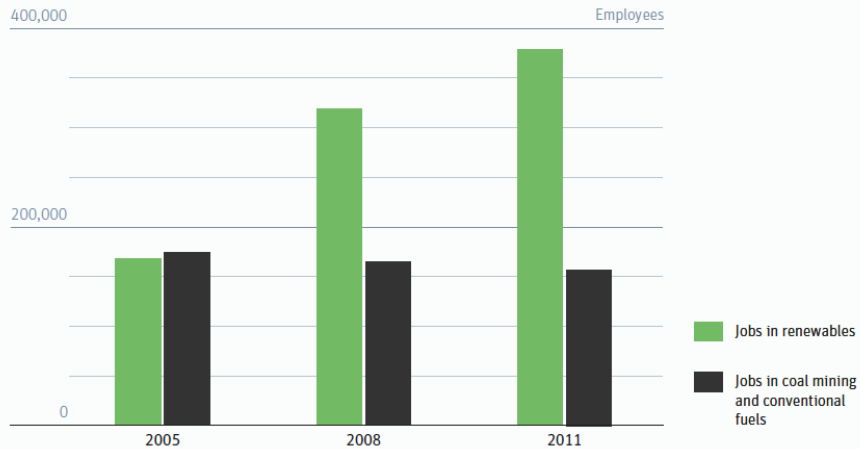


Can we afford it?

Renewables create more jobs than conventional energy does

Employment in Germany in renewable and conventional energy sectors, 2005-2011

Source: BMU, BMWI



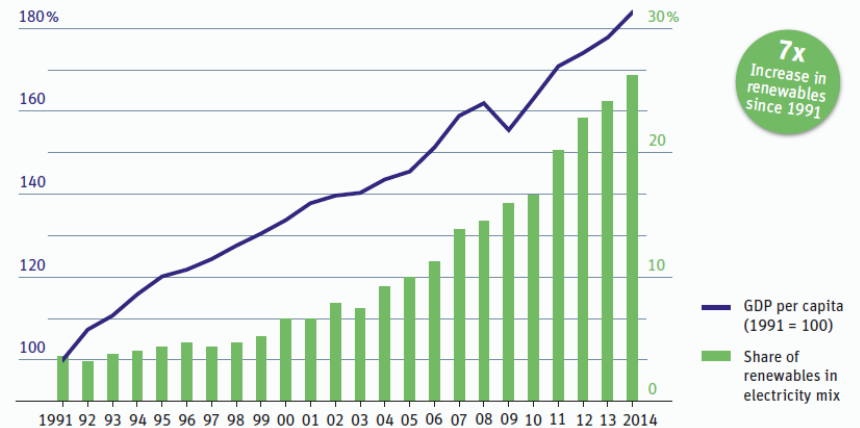
German Energy Transition

energytransition.de

Renewables do not hurt Germany's economy

Gross Domestic Product and share of renewables in power generation from 1991-2014, Germany

Source: BMWI, AG Energiebilanzen, Destatis



7x
Increase in
renewables
since 1991

German Energy Transition

energytransition.de

