



Hochschule für Technik
und Wirtschaft Berlin

University of Applied Sciences

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The Solar Revolution – New Ways for Climate Protection with Solar Electricity

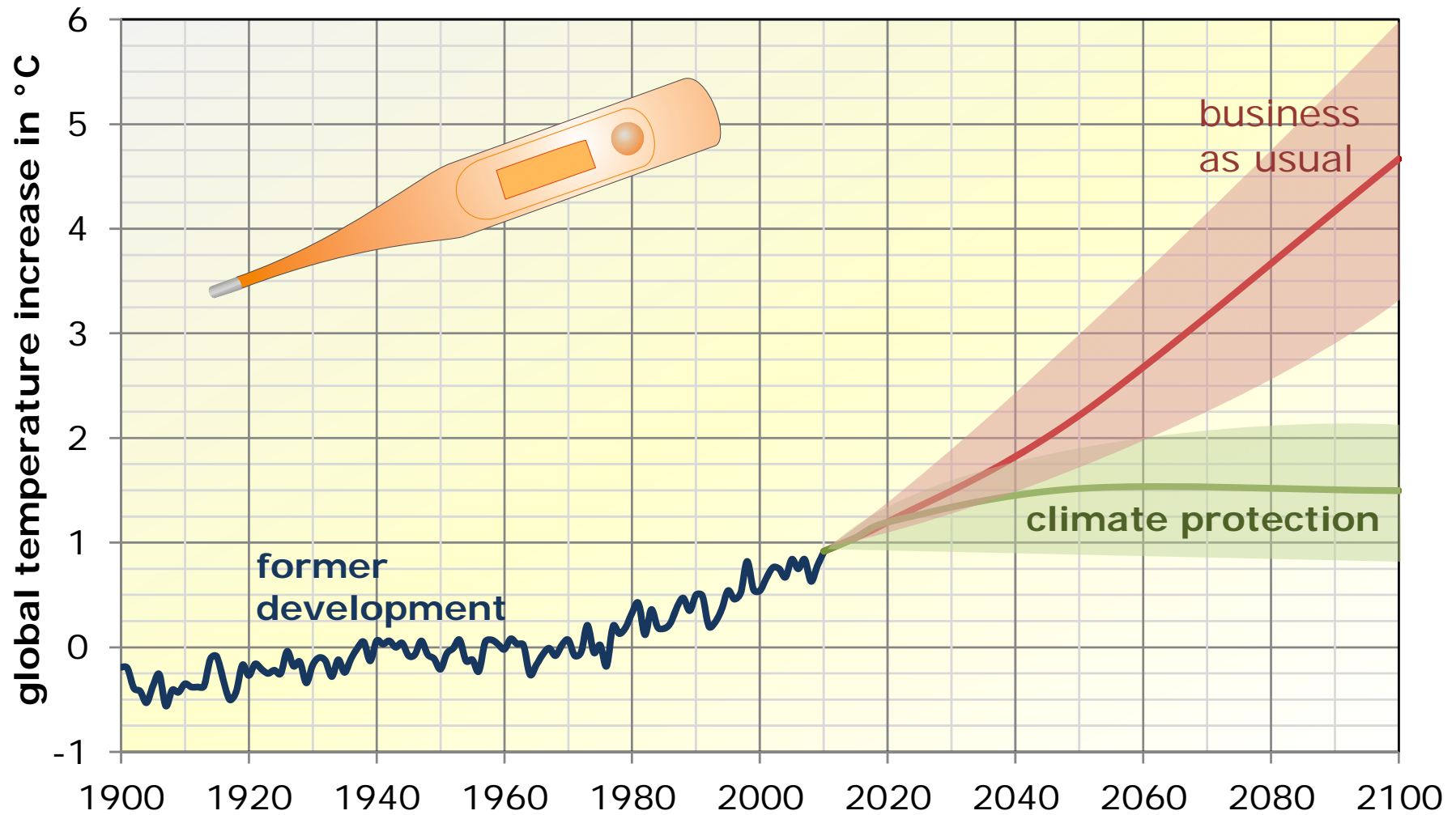
Prof. Dr. **Volker Quaschning**

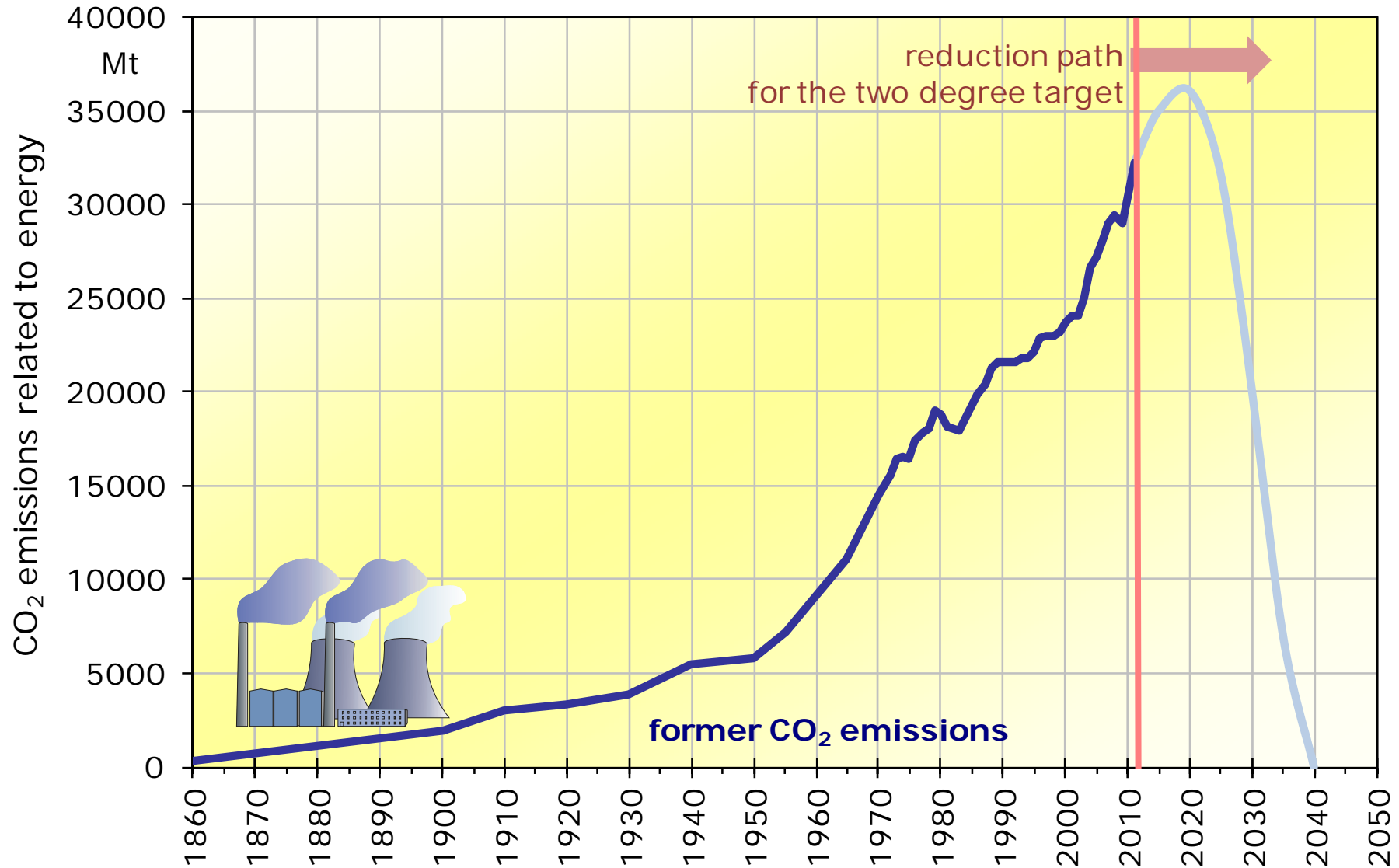
Hochschule für Technik und Wirtschaft HTW Berlin

ECO Summit ECO14

3. June 2014

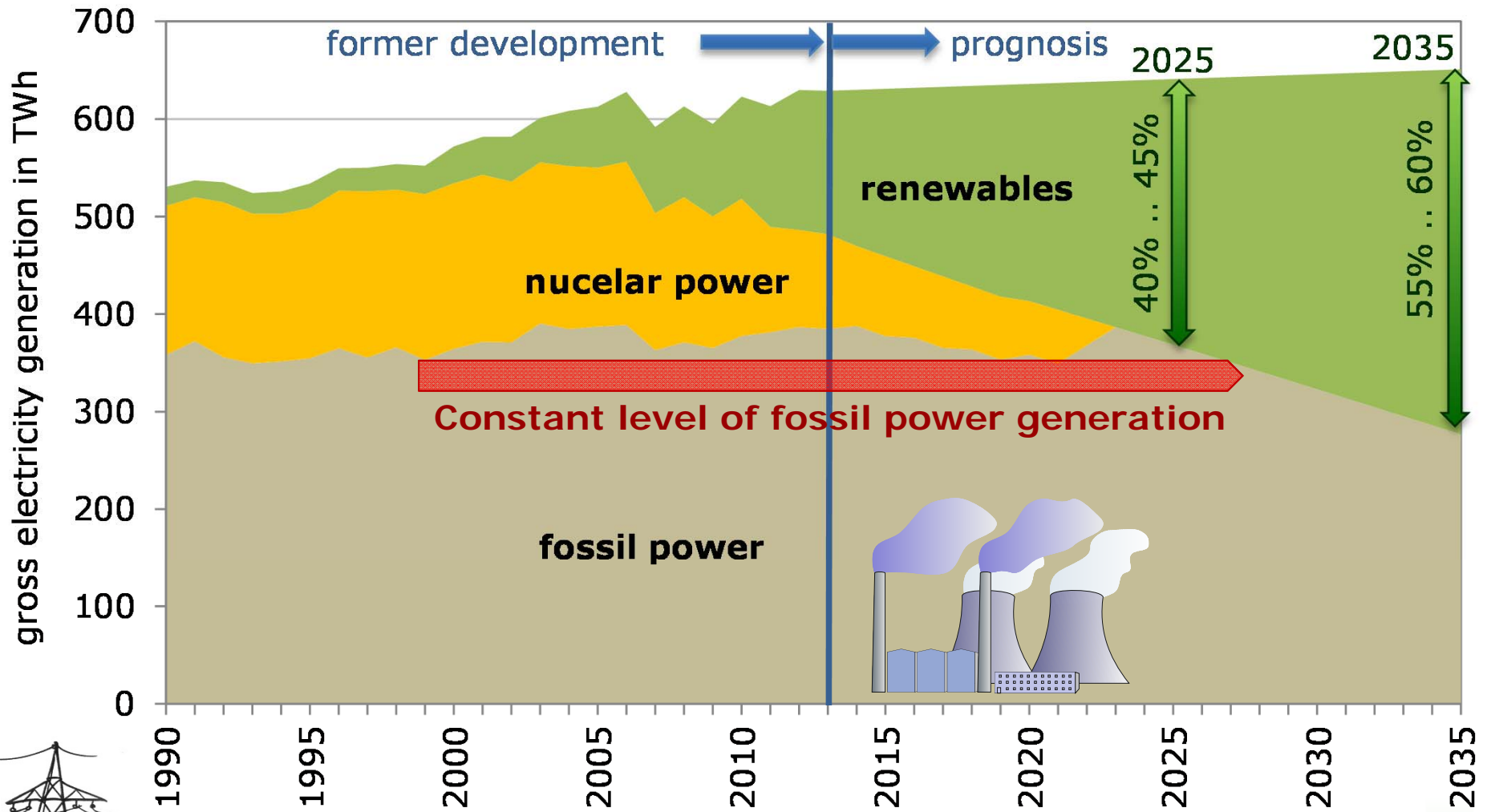
Berlin



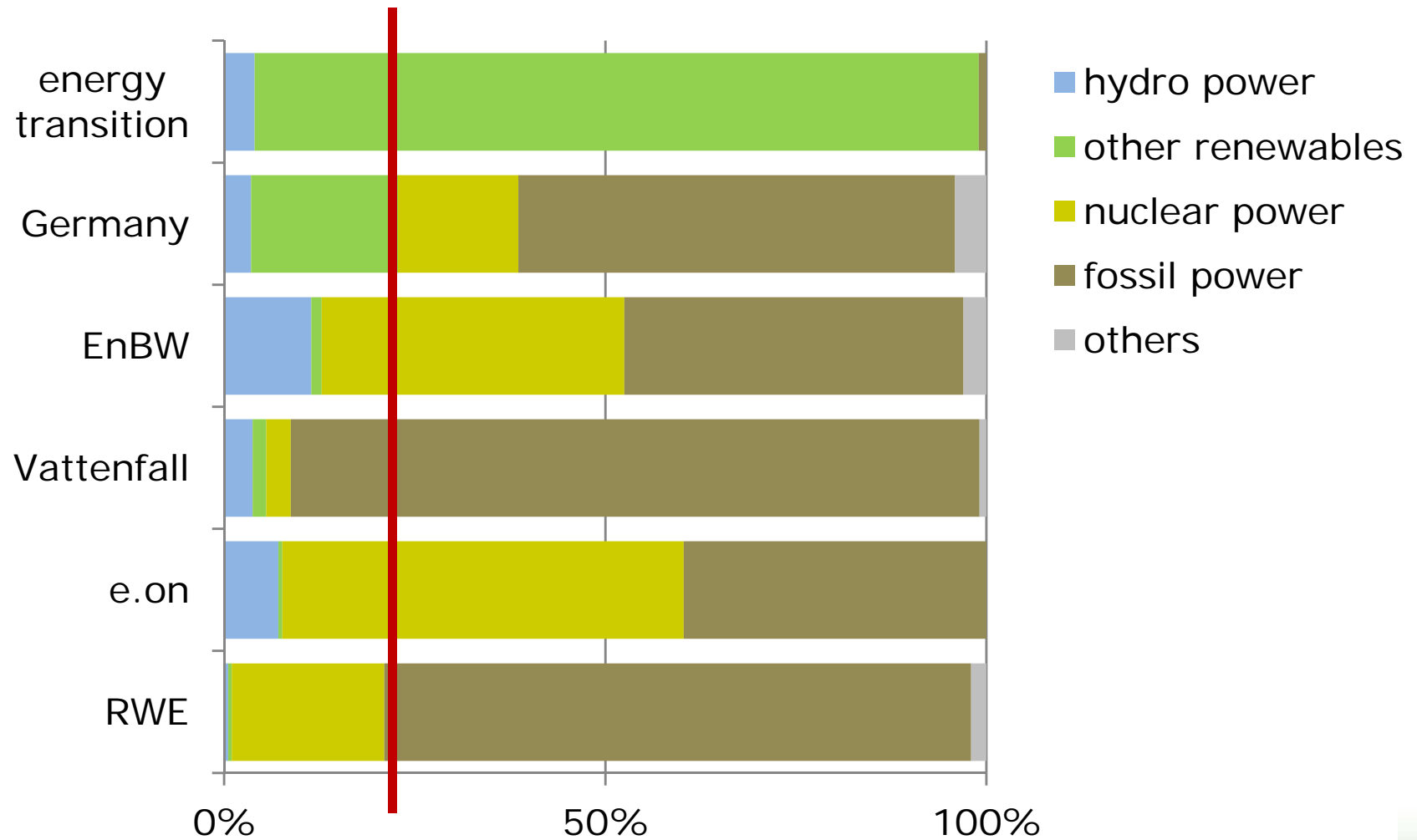


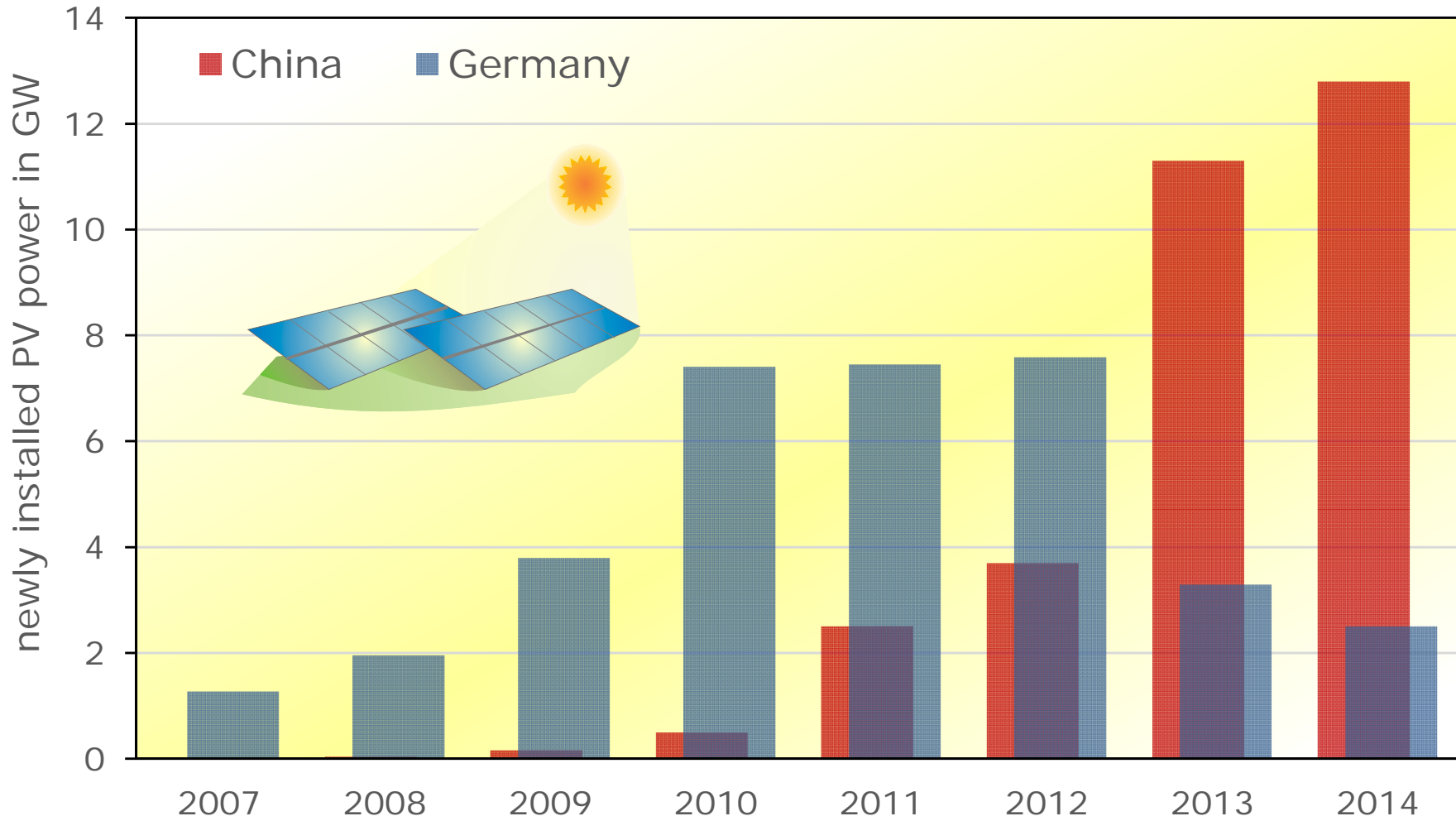
data: WRI, IEA, PIK-Potsdam

Prognosis based on the goals of the German government



Year 2012/13- own calculations on the base of available data from the big utilities

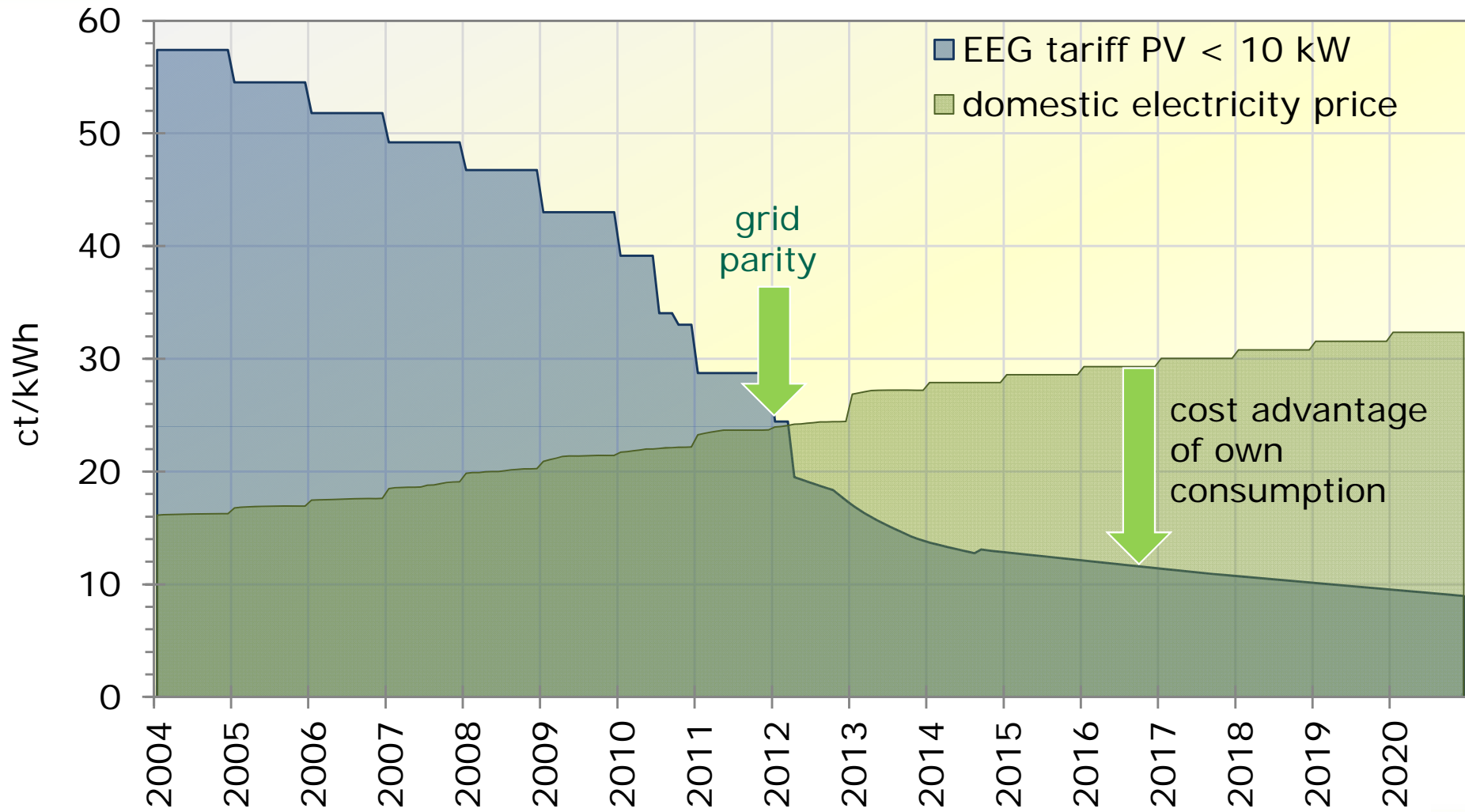


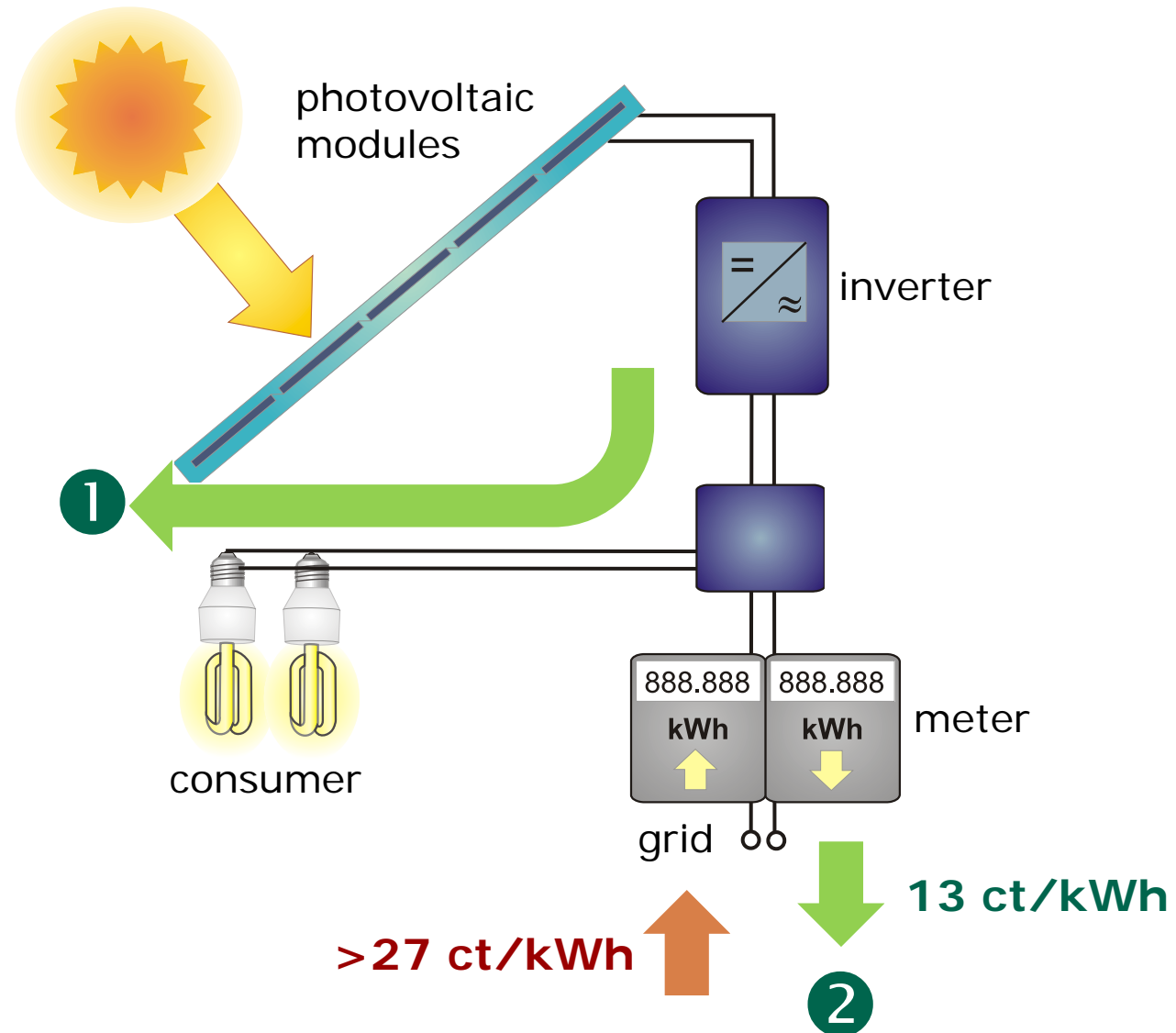


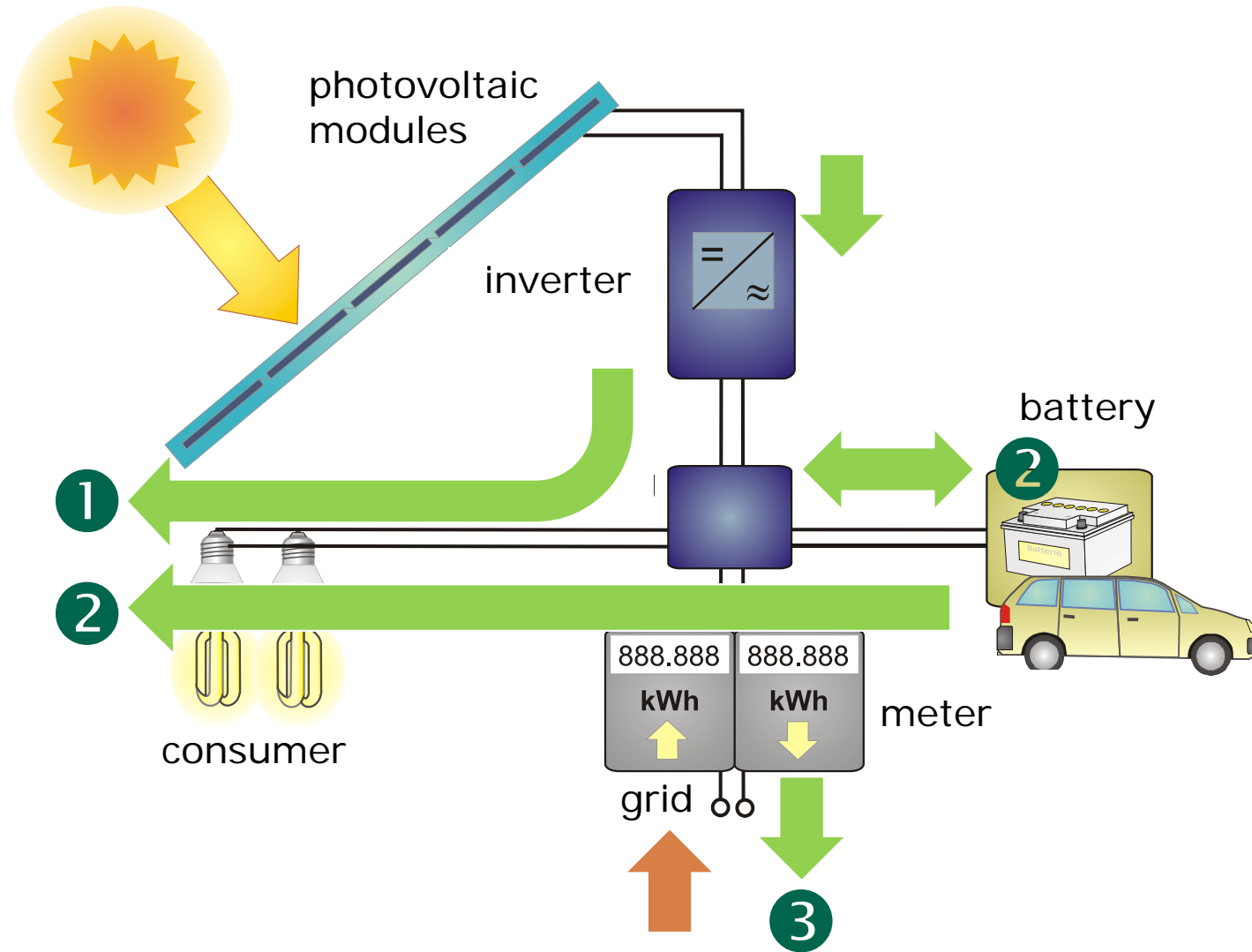
The big **utilities have the wrong power stations** for the energy transition and must slow down the development to save their profits.



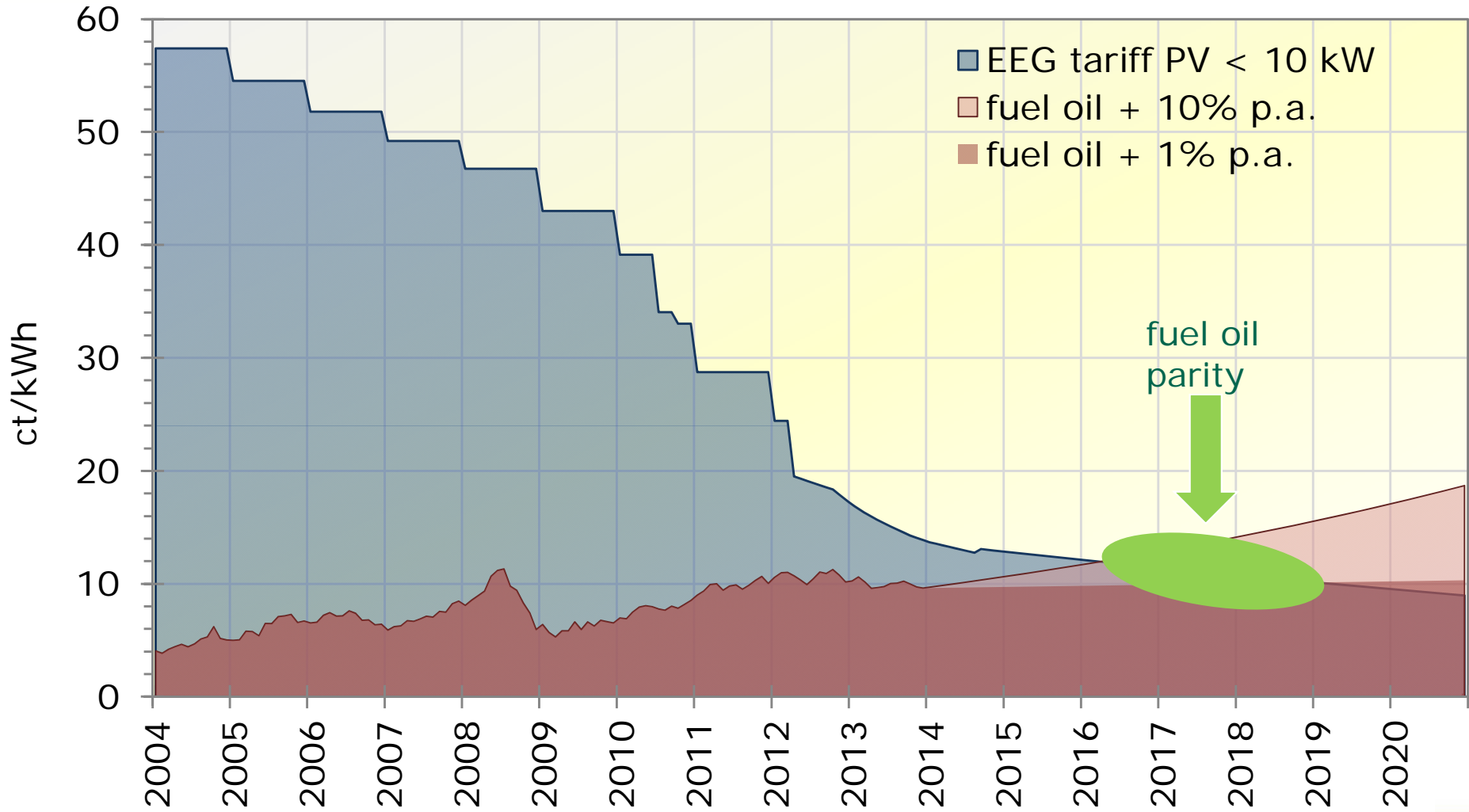
A **reliable electricity supply with 100% renewable** energy is **possible**. The cost argument is only used to slow down the speed of the Germany energy transition.

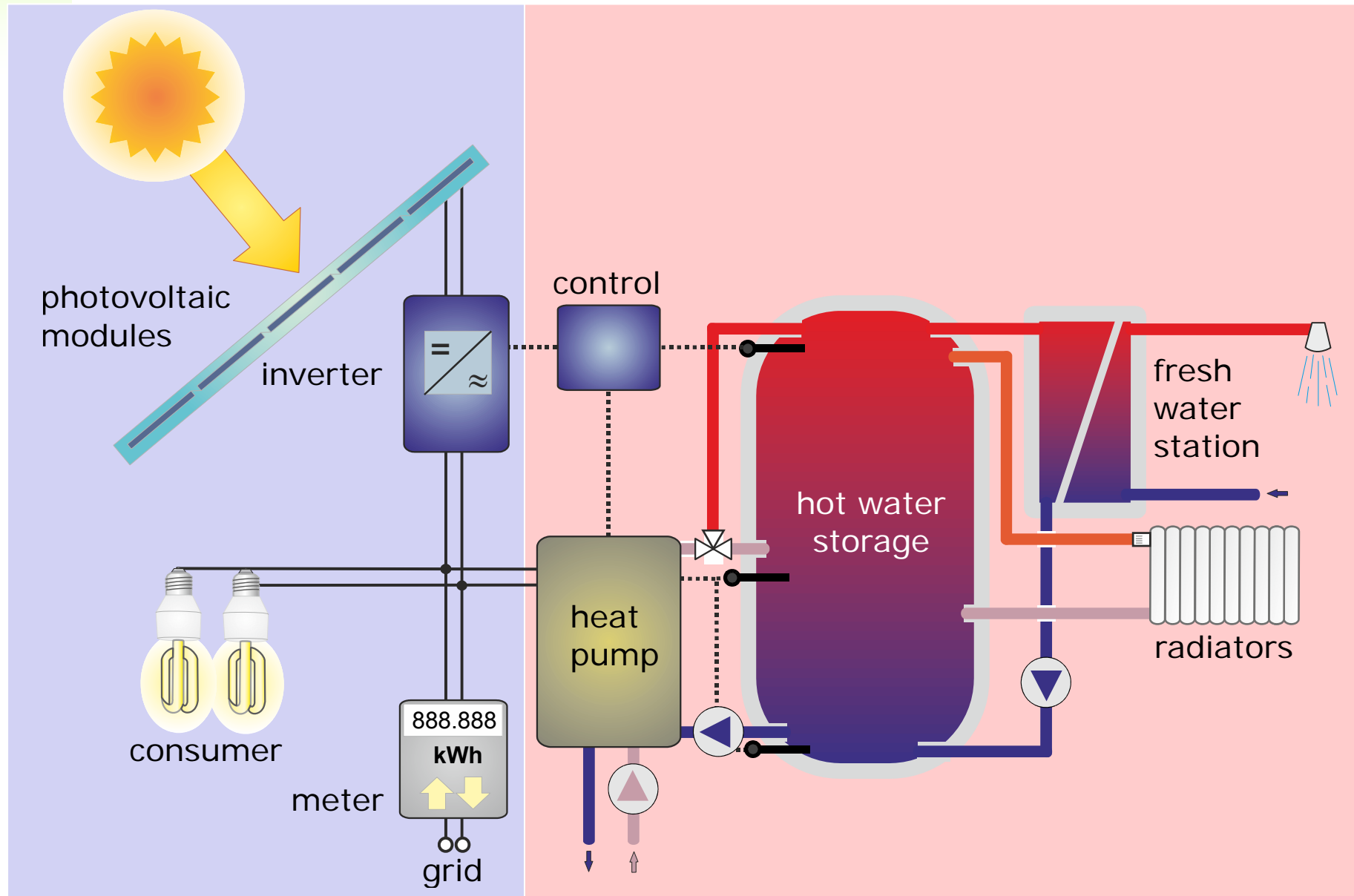






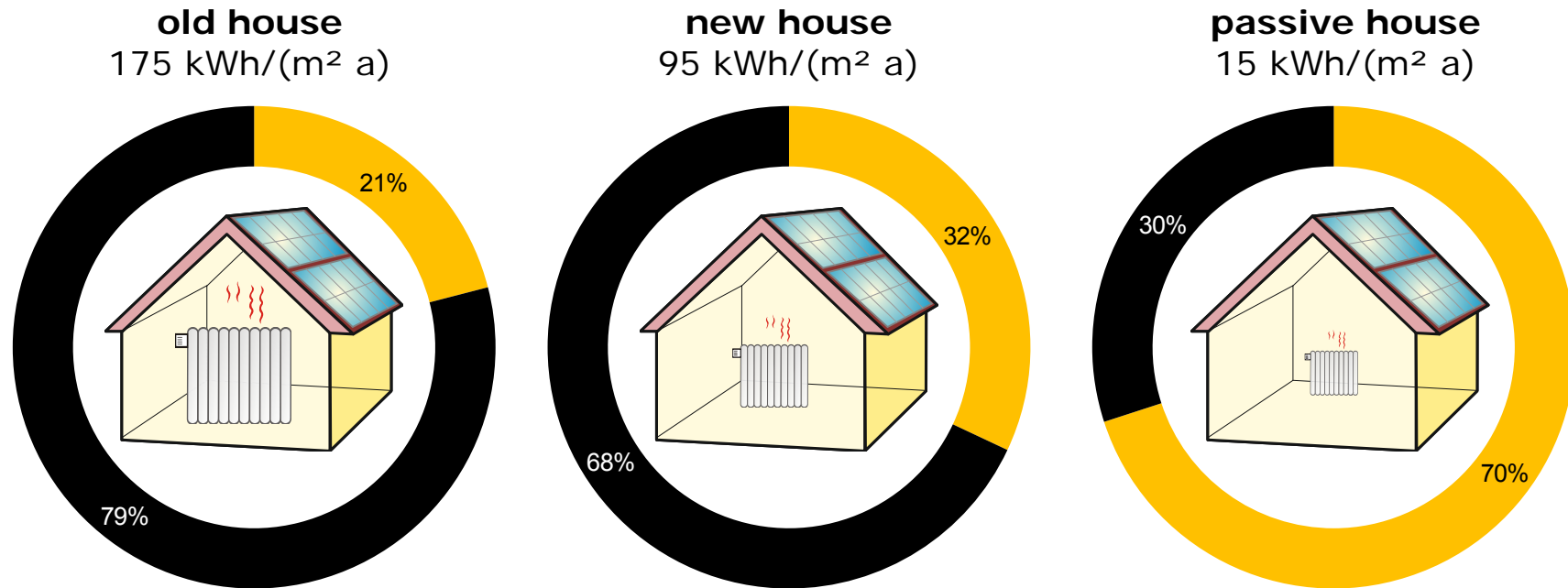
Assumptions: burner efficiency 80%, calorific value of fuel oil 10.5 kWh/l



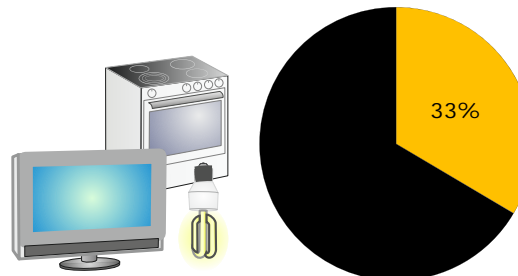


Installed photovoltaic power 7 kW (approx. 50 m²) without battery

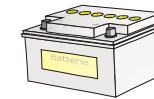
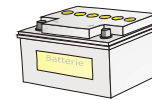
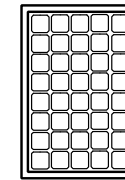
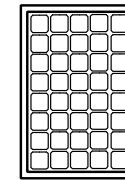
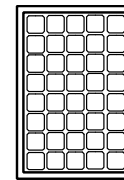
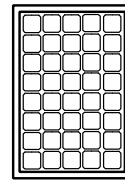
Heat pump electricity



photovoltaics
 mains supply



One family house: usable floor area 127 m², location Berlin, air-water heat pump, PV system 7.2 kWp, hot water tank 500 l
Household electricity demand 3940 kWh/a, drinking water demand 15.5 kWh/(m² a)



PV power per one family house	kWp	2	4	4	7
Battery capacity	kWh	-	4	-	5
Heat storage	l	-	-	800	800
Own consumption	%	50	70	85	83
PV potential in Germany	GWp	26	52	52	90

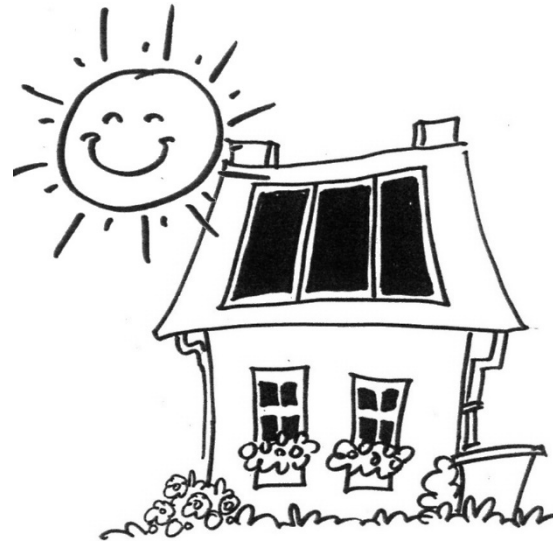
For protecting the livelihood of future generations we need a real **energy revolution with 100% renewables until 2040.**

Policy and big business are not able to protect our natural resources.

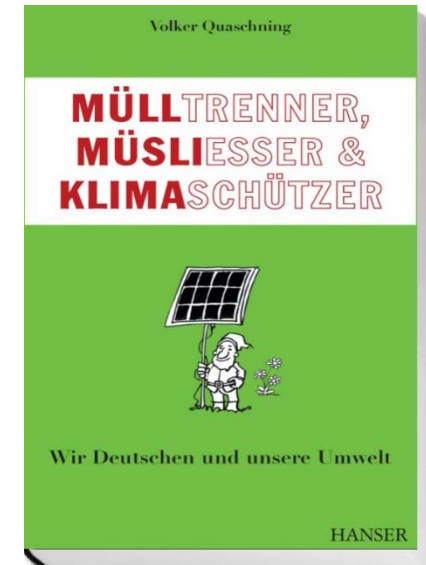
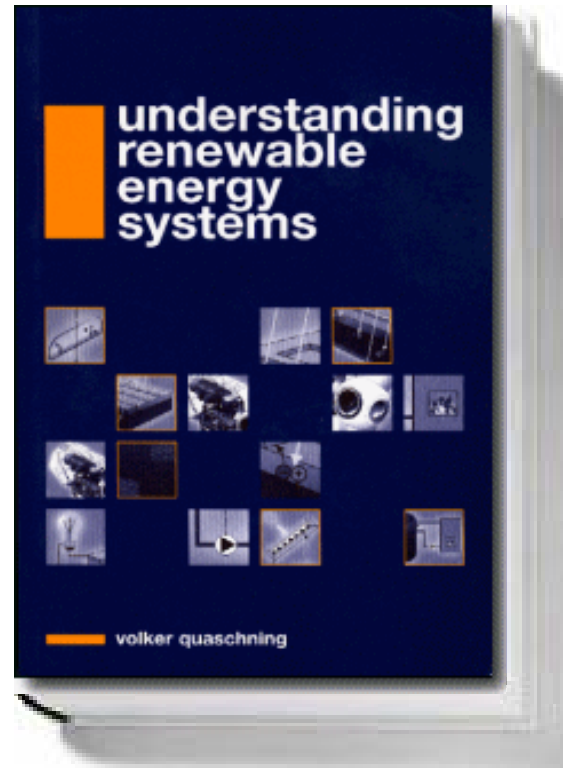
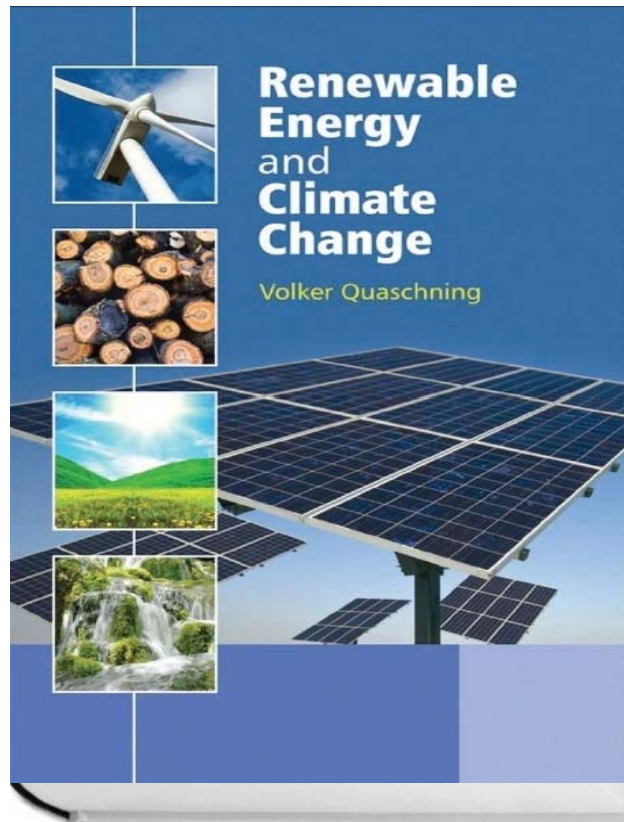
Wen can take the **energy revolution in our own hands. Own consumption systems** give us **the key.**

...the energy revolution.

Policy and big industry have failed.



Our children will thank us for it.



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