

*An Energetic Perspective and
the Role of Renewables in
Europe and the World*

Prague, 15 September 2011

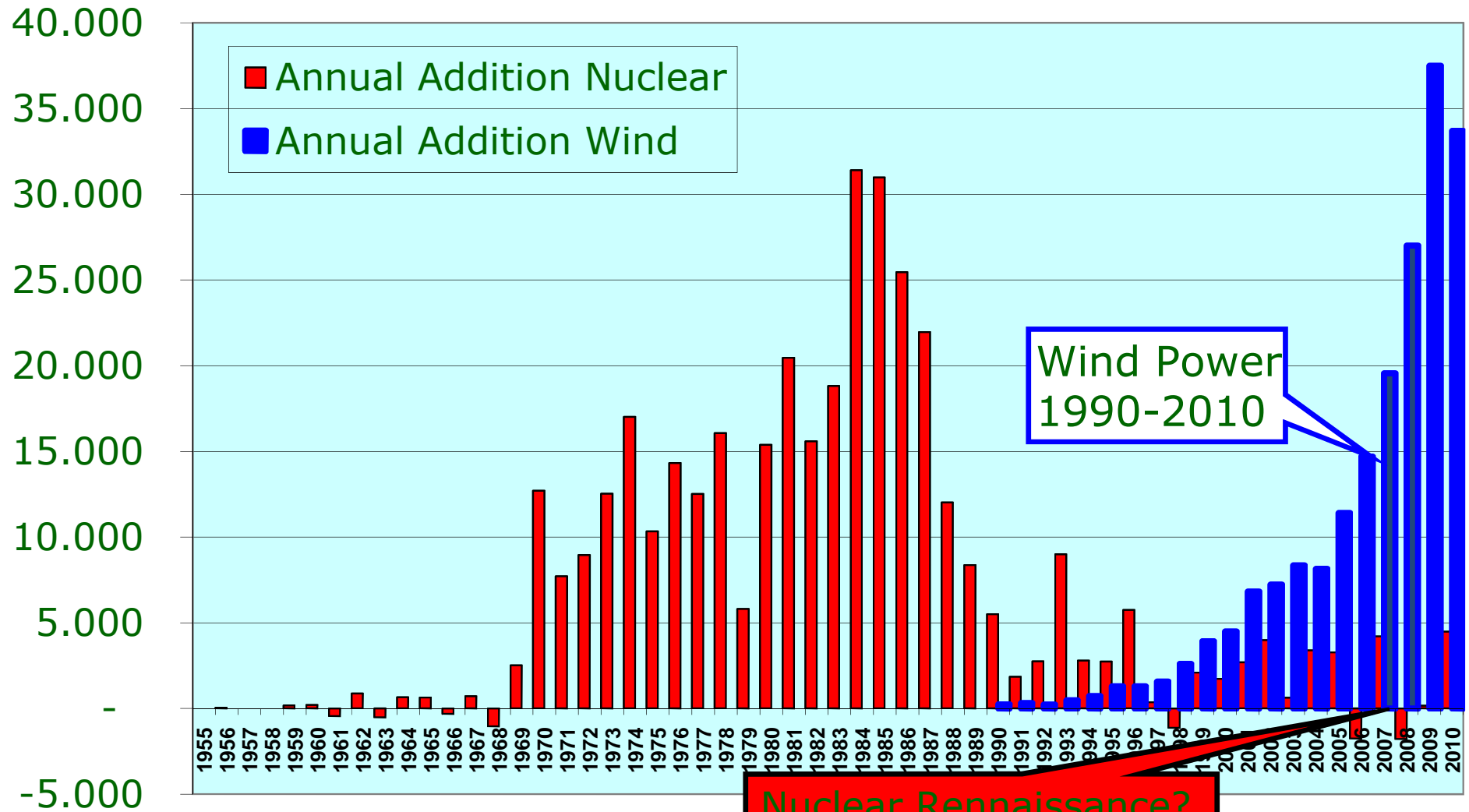
Hans-Josef Fell
Member of the German
Parliament

Pripjat Towncenter

April 2006: 20 years after Tchernobyl nuclear accident



Annual Additions of Nuclear and Wind Capacities in Megawatts



Source: Rechsteiner, IAEA

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Fukushima March 2011



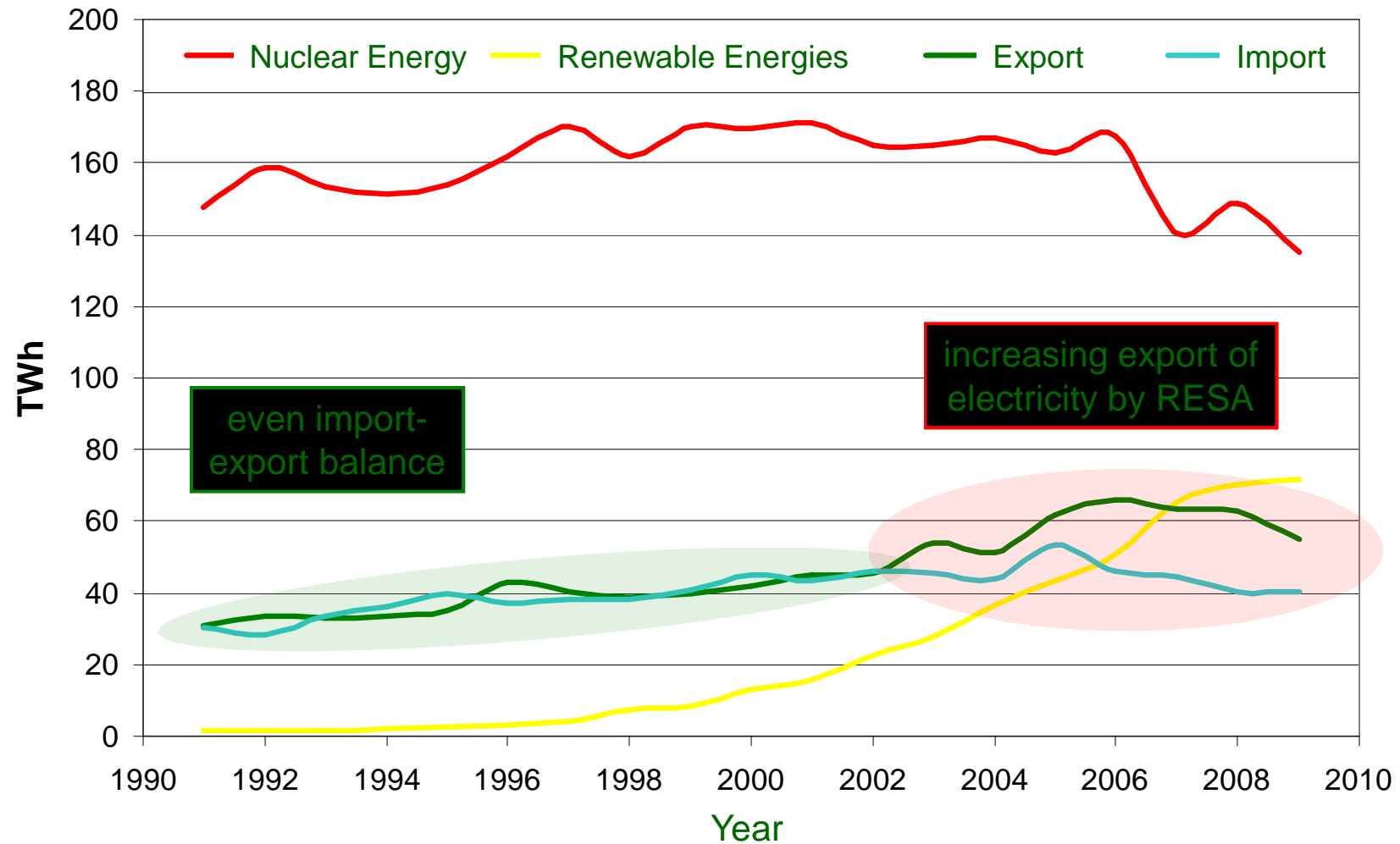
Source: Flickr/Oldmaison

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Moratorium or phase out decisions for nuclear

- Philippines, Thailand, Malaysia
- China
- Switzerland, Italy
- Germany
- Many Others

Gross Electricity Generation in Germany

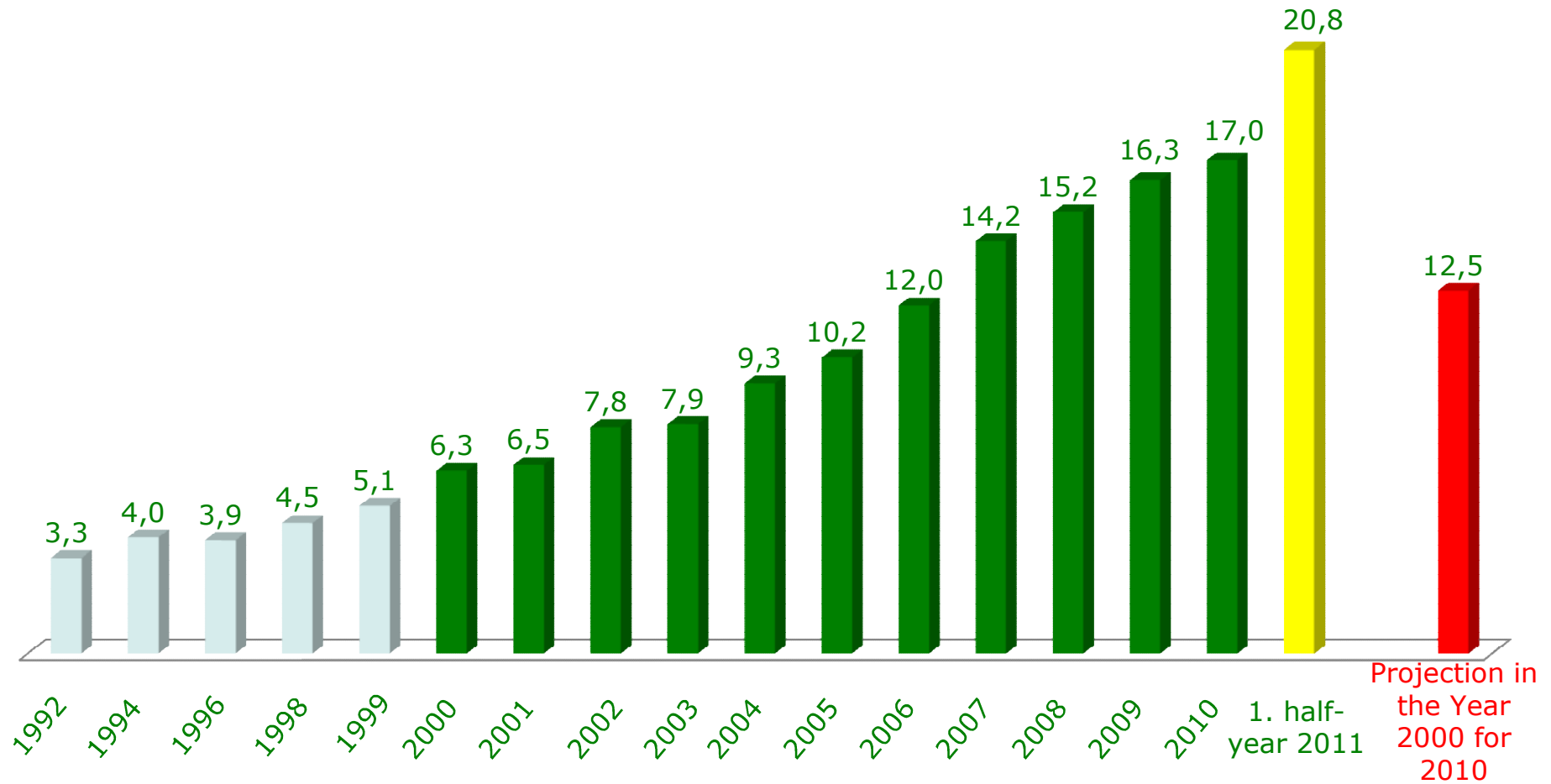


Source: Energiedaten, BMWi, Referat III C 3, Stand: 07.09.2010

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Share of the Renewables in the Gross Electricity Consumption in Germany

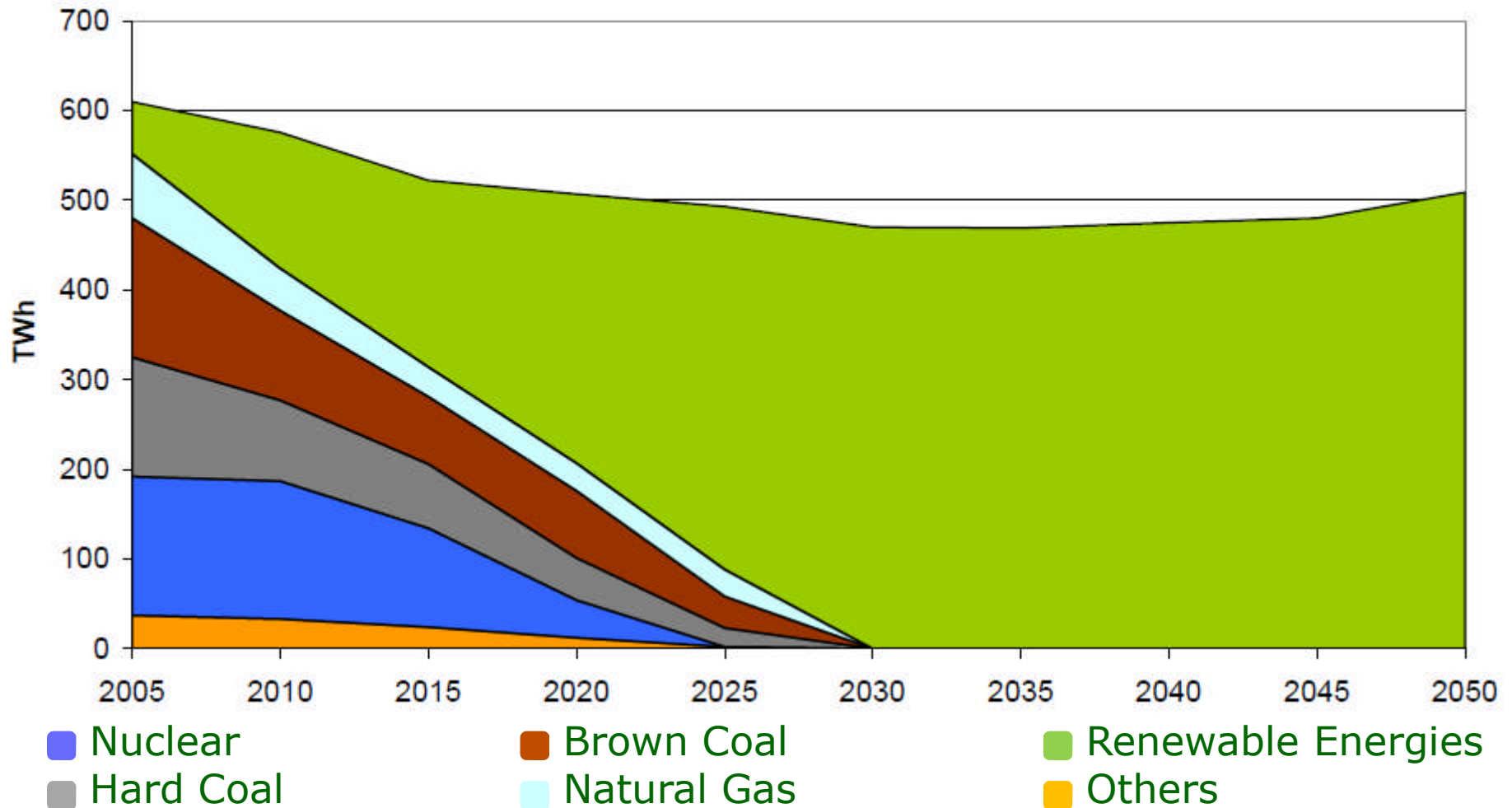
in %



Source: BMU, BEE, bdew

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100 % Electricity from Renewable Energies – Green Party Resolution

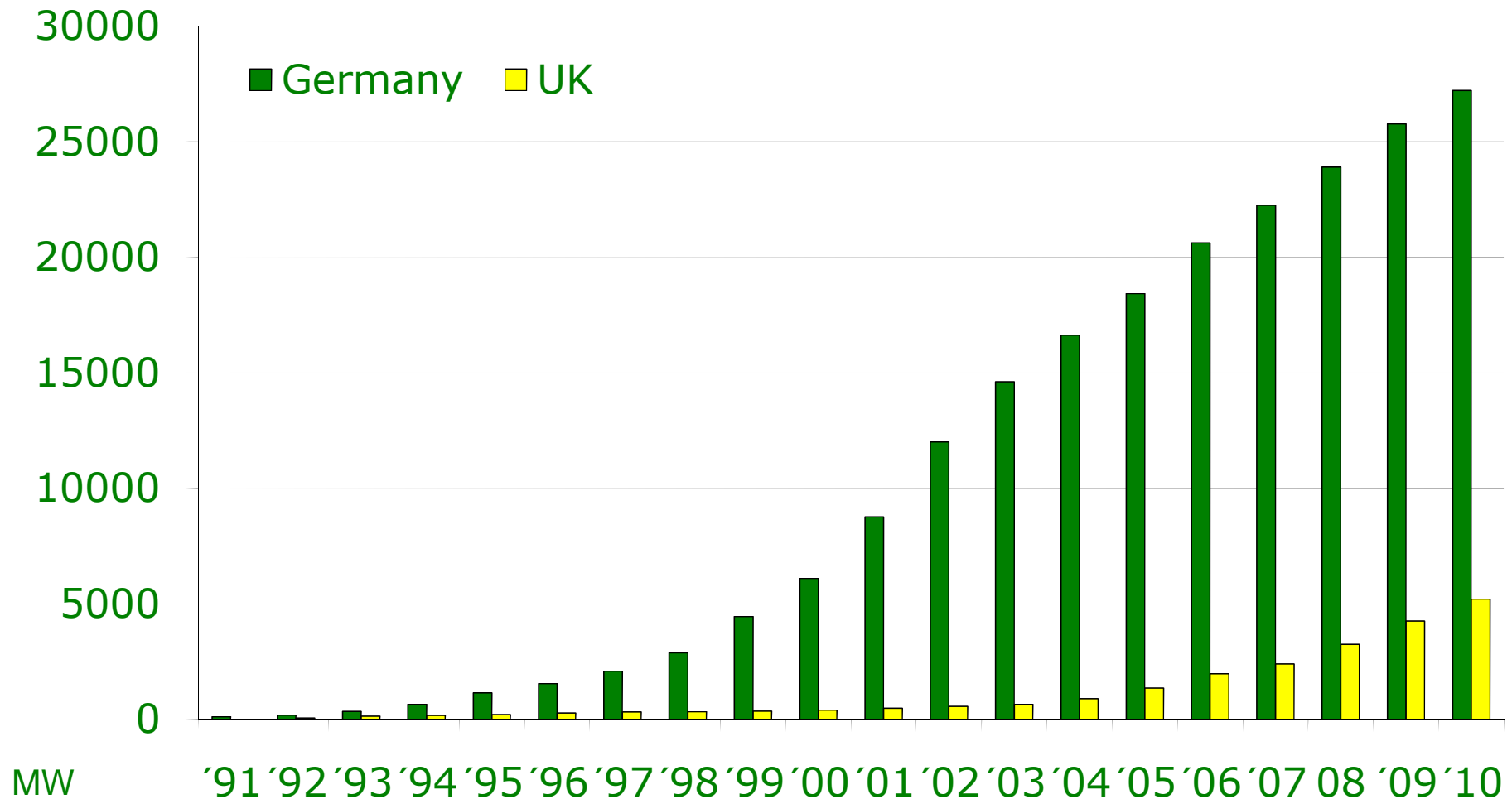


Source: Energy Concept of the Green Party 2010

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Windpower – Increase & Costs

Costs for wind energy:
~7 Cent/kWh in Germany
~13 Cent/kWh in UK



Key Points of an effective Renewable Energy Sources Act

- Privileged grid access
- Feed-in tariff have to be sufficient for an economic operation
- Funding of the feed-in tariff via electricity rate
- No cap for feed-in of Renewable Energies
- Garanteed peroid of remuneration

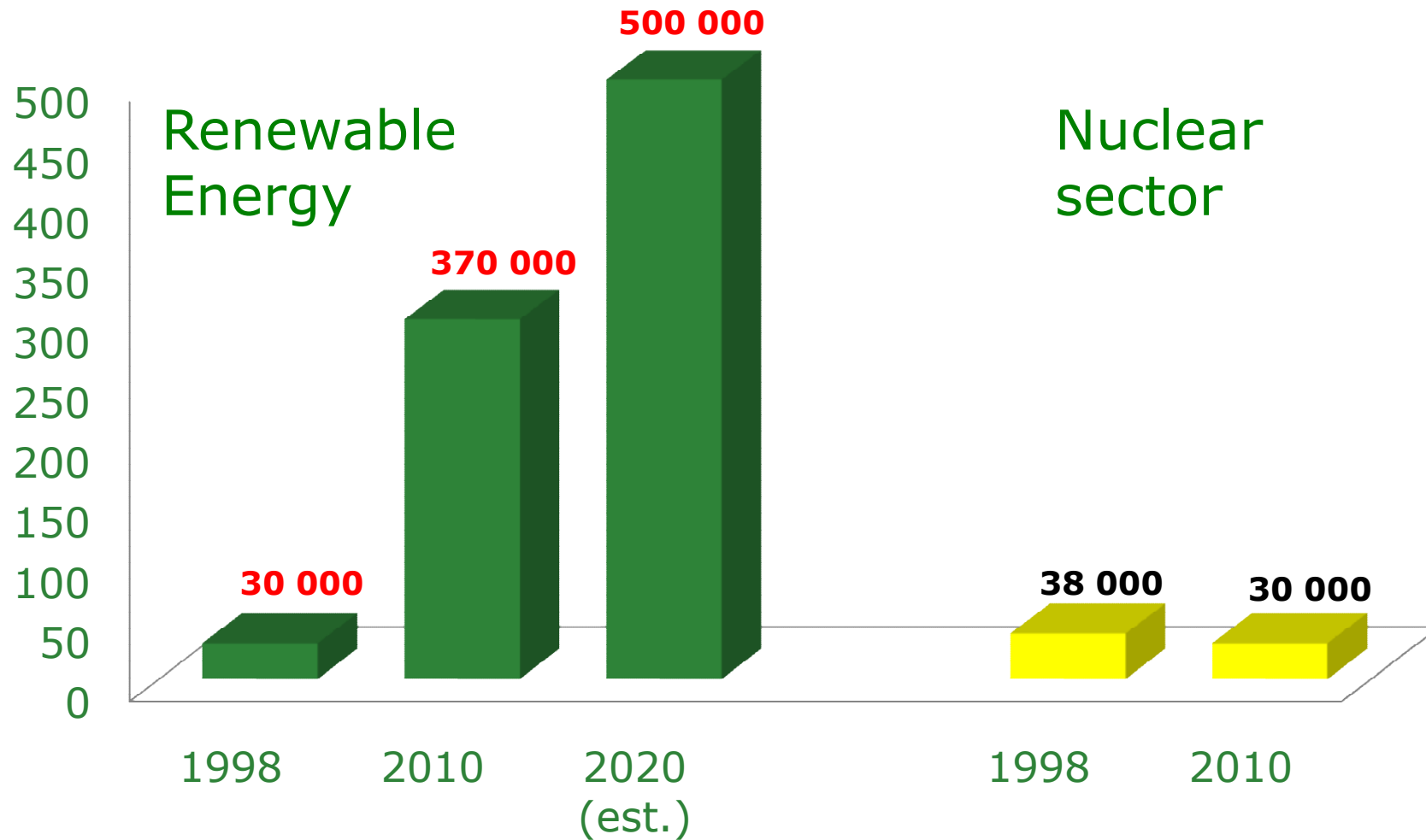
- Furthermore: no obstructions by a restrictive permission policy

Often mentioned wrong arguments against Renewables (REN)

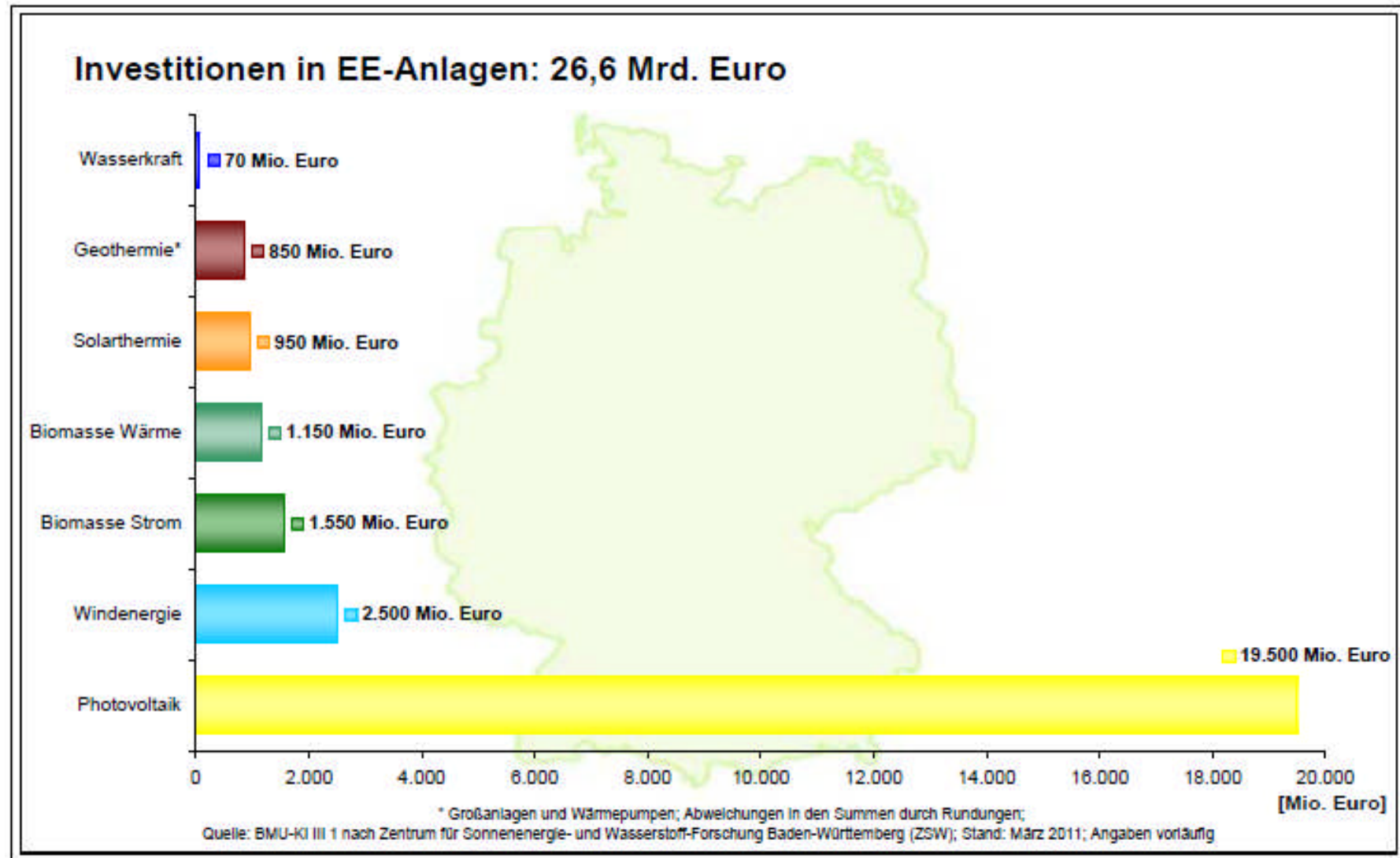
- REN would be too expensive
- REN would be a burden for electricity price
- REN would be a burden for economy
- REN could not grow fast enough to replace nuclear and coal
- REN would need base load compensation to equalise fluctuation of wind and sun

All arguments do not really count

Renewable Energy as a Job Engine in Germany

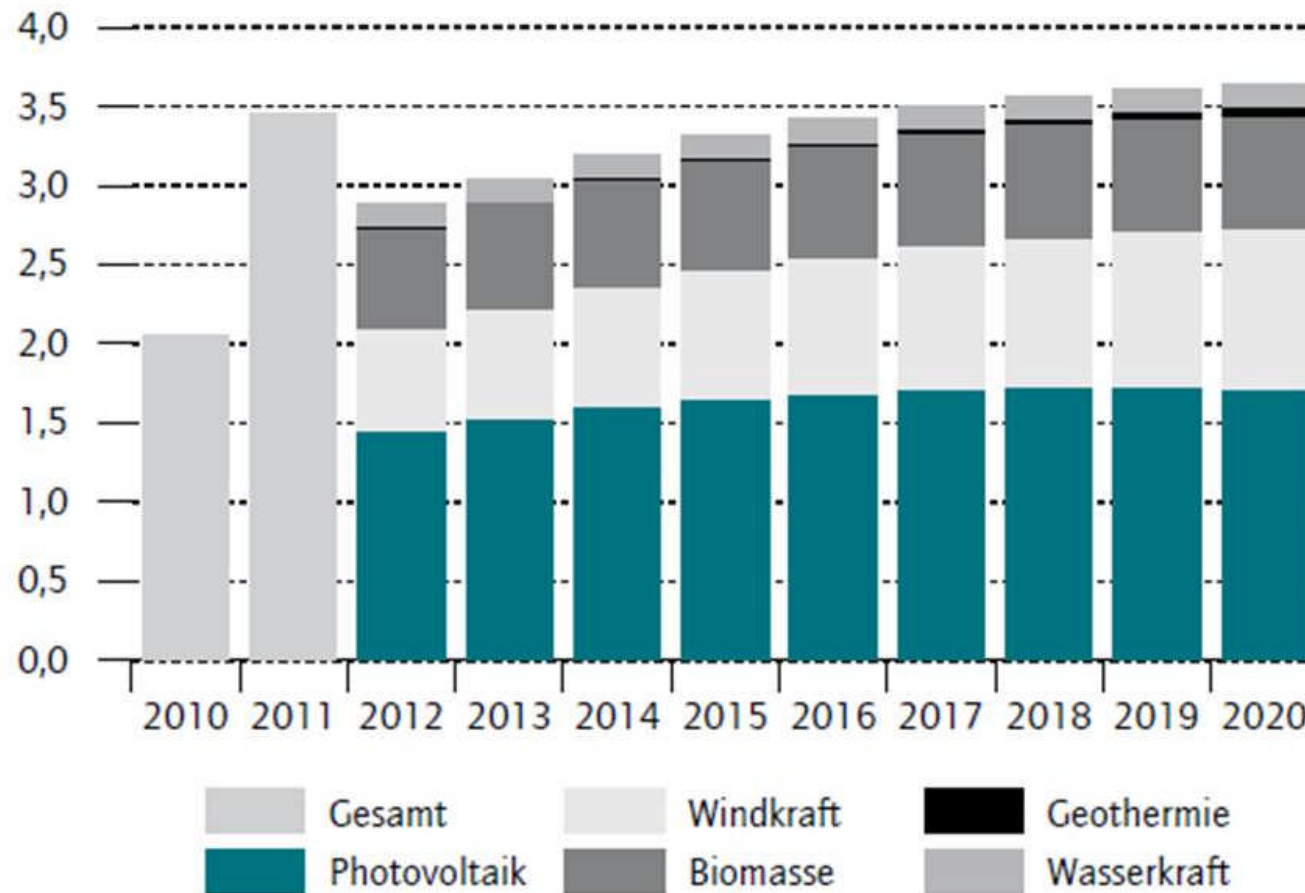


Investments in Renewables in Germany in 2010

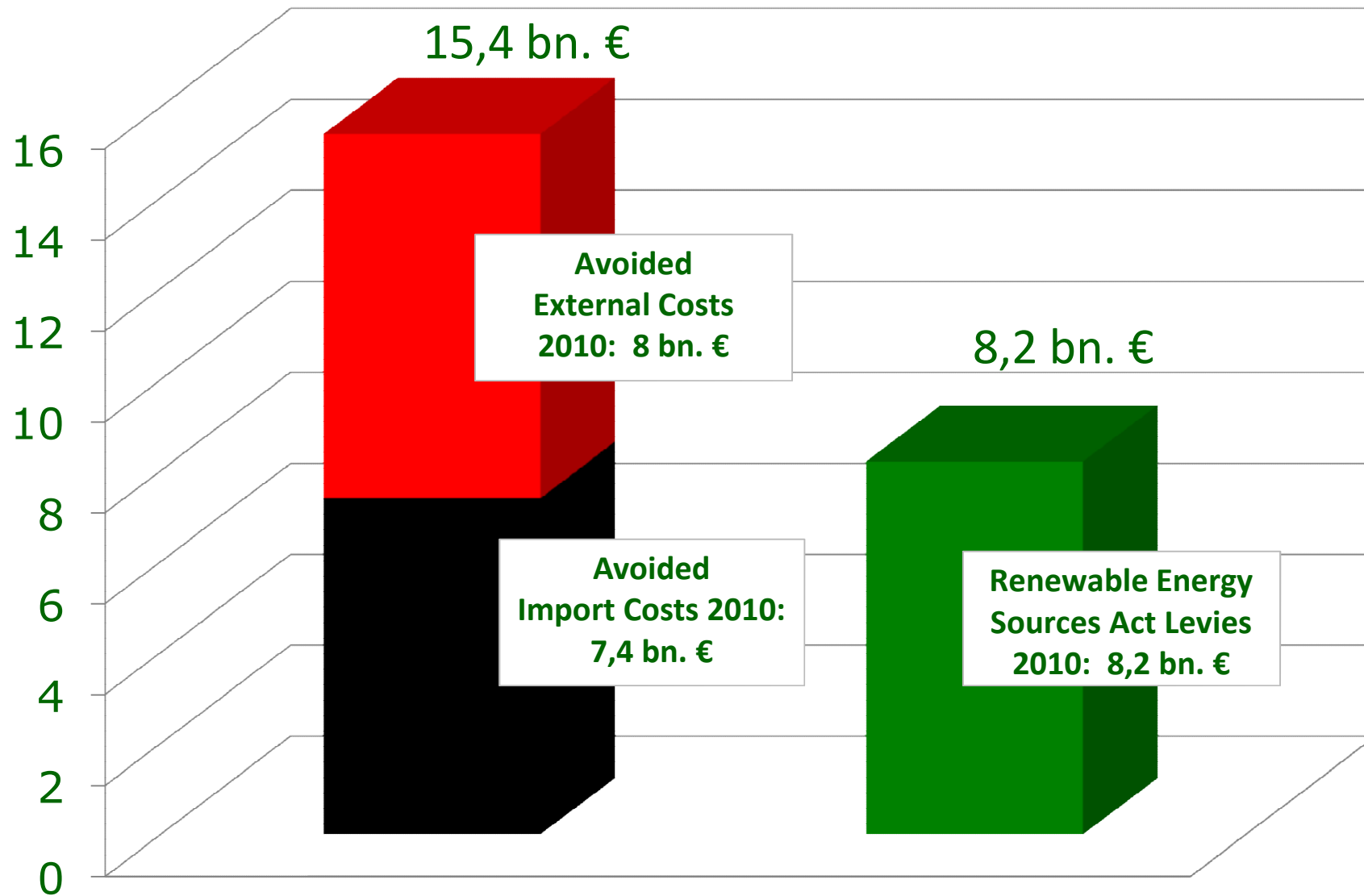


EEG-aditional costs 2010 and 2011 (Estimation 2012 until 2020)

In Cent pro kWh (inflationsbereinigt, Basis 2010)



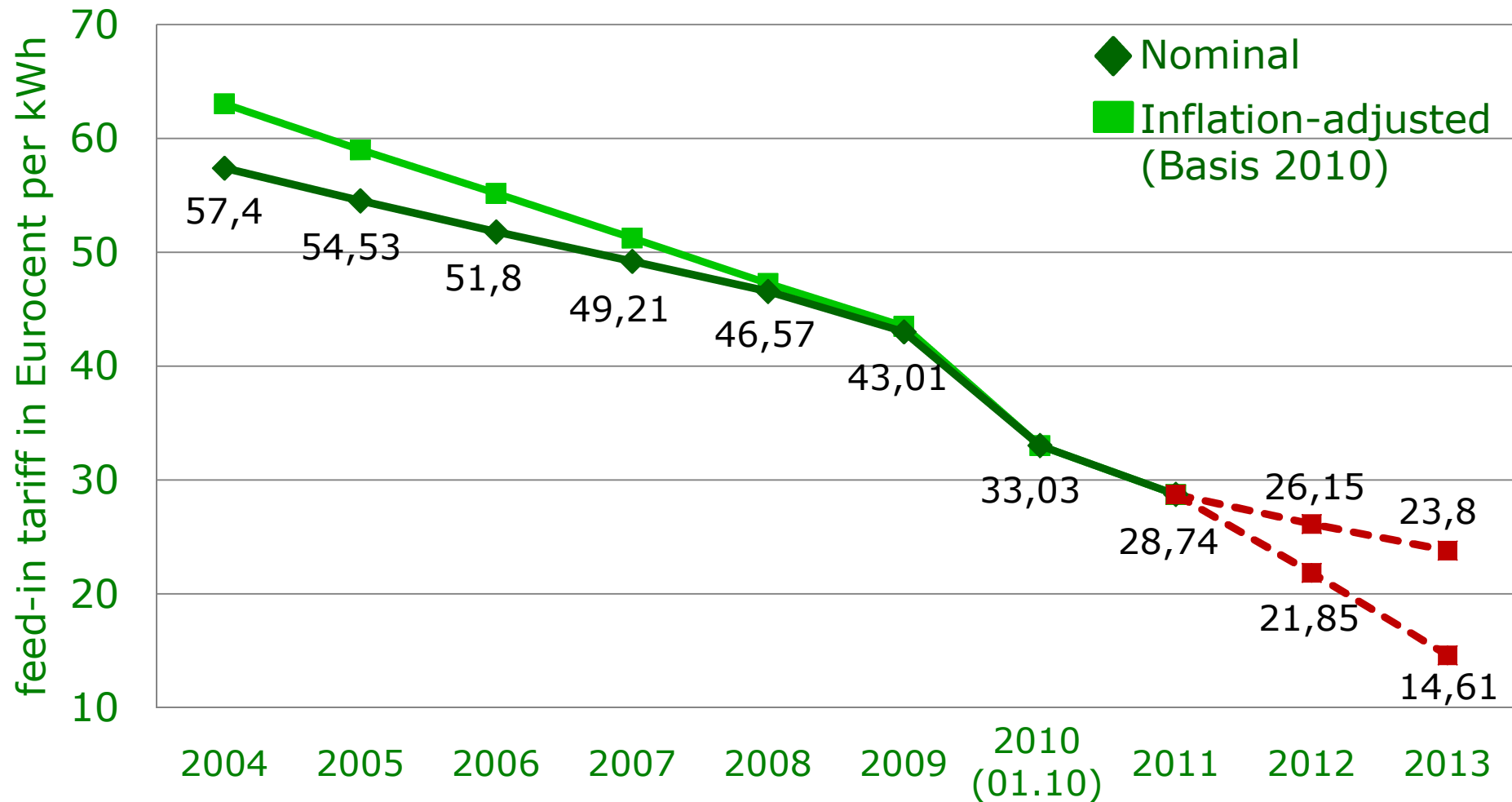
Avoided Costs by Renewable Energies



Source: BEE

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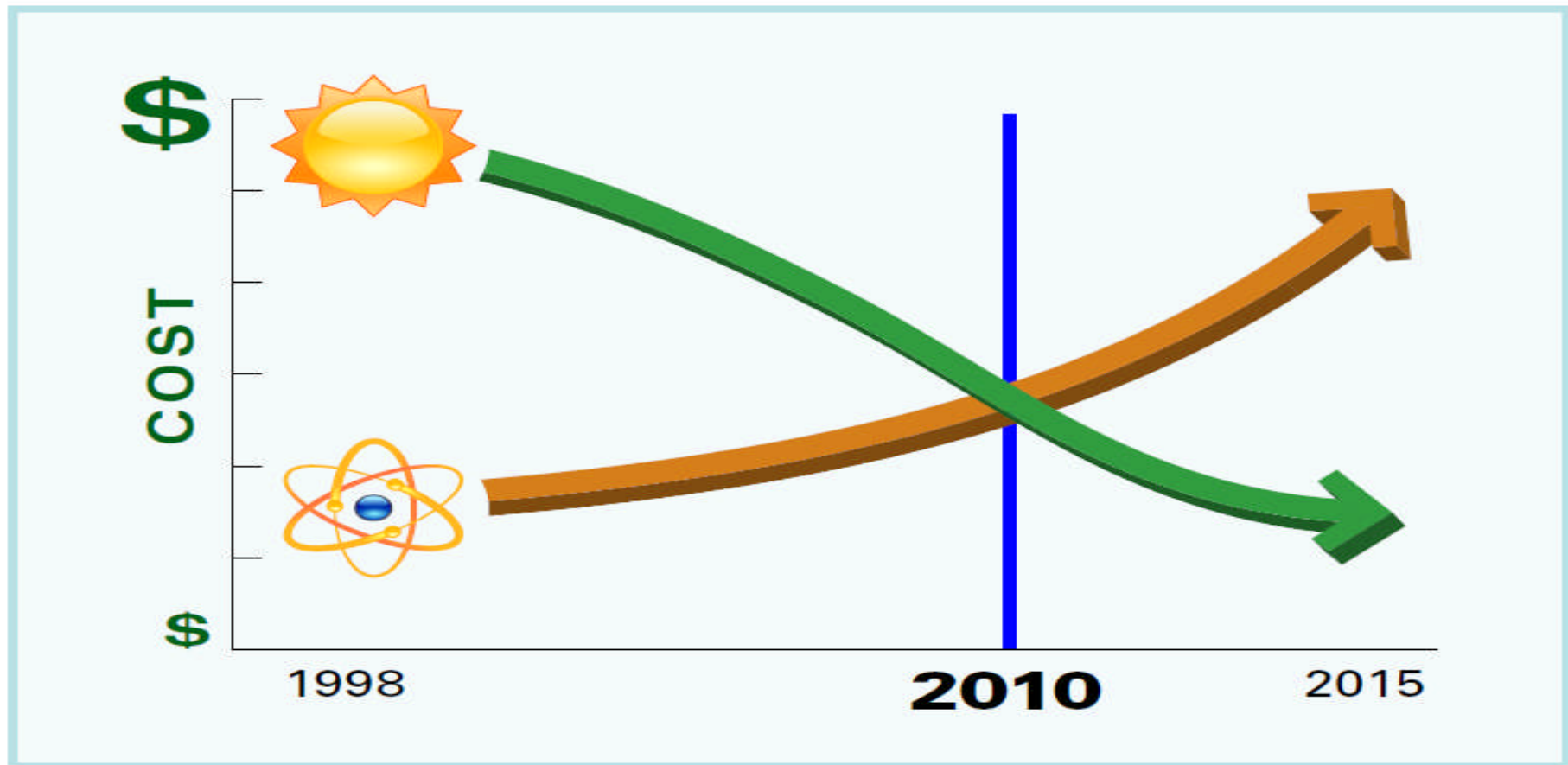
Development of feed-in tariff for photovoltaic systems (up to 30 kW)



Sources: BSW, DESTATIS

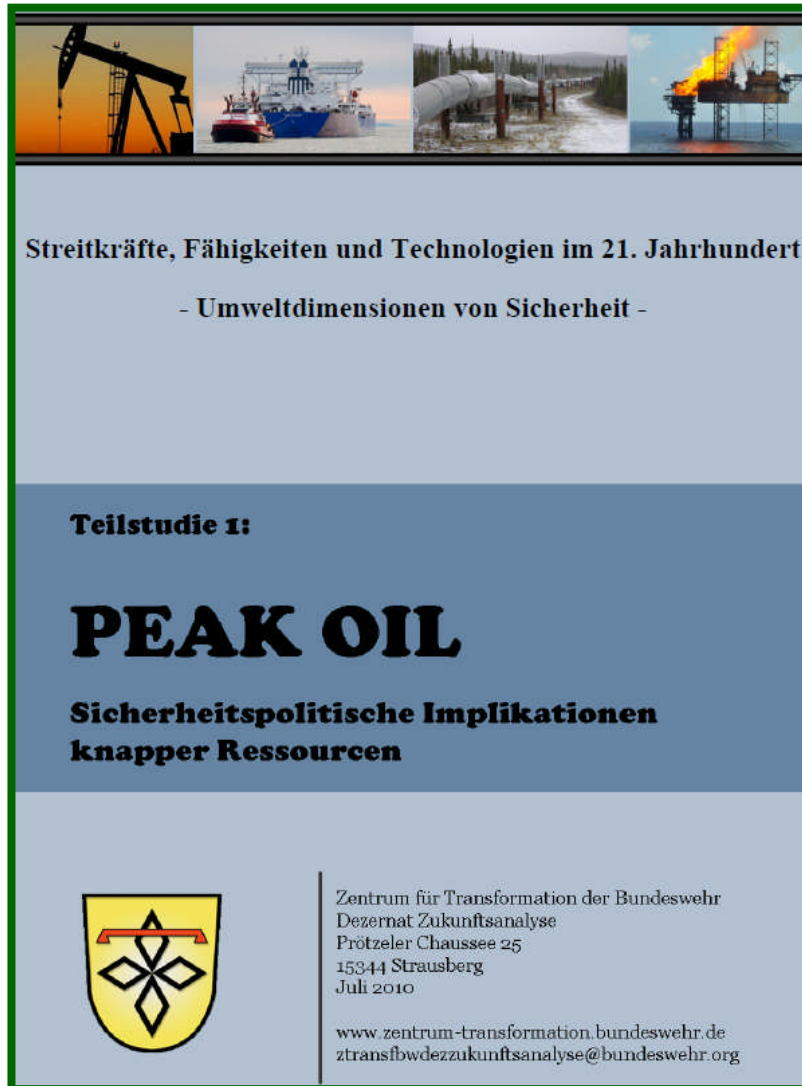
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Solar and Nuclear Costs - The Historic Crossover



Solar Energy is Now the Better Buy

Study on Peak Oil by the German Military



“The occurrence of Peak Oil is (...) inevitable.”

“This sub study illustrates the serious risk that a global phase of transformation, caused by a persistent scarcity of resources, will not be resolved without tensions in security policy.”

A Path to Sustainable Energy by 2030



'Wind, water and solar technologies can provide 100 percent of the world's energy, eliminating all fossil fuels.'

(Mark Z. Jacobson & Mark A. Delucchi)

Costs of Renewable Energy vs. Cost of Continued Use of Fossil Fuels

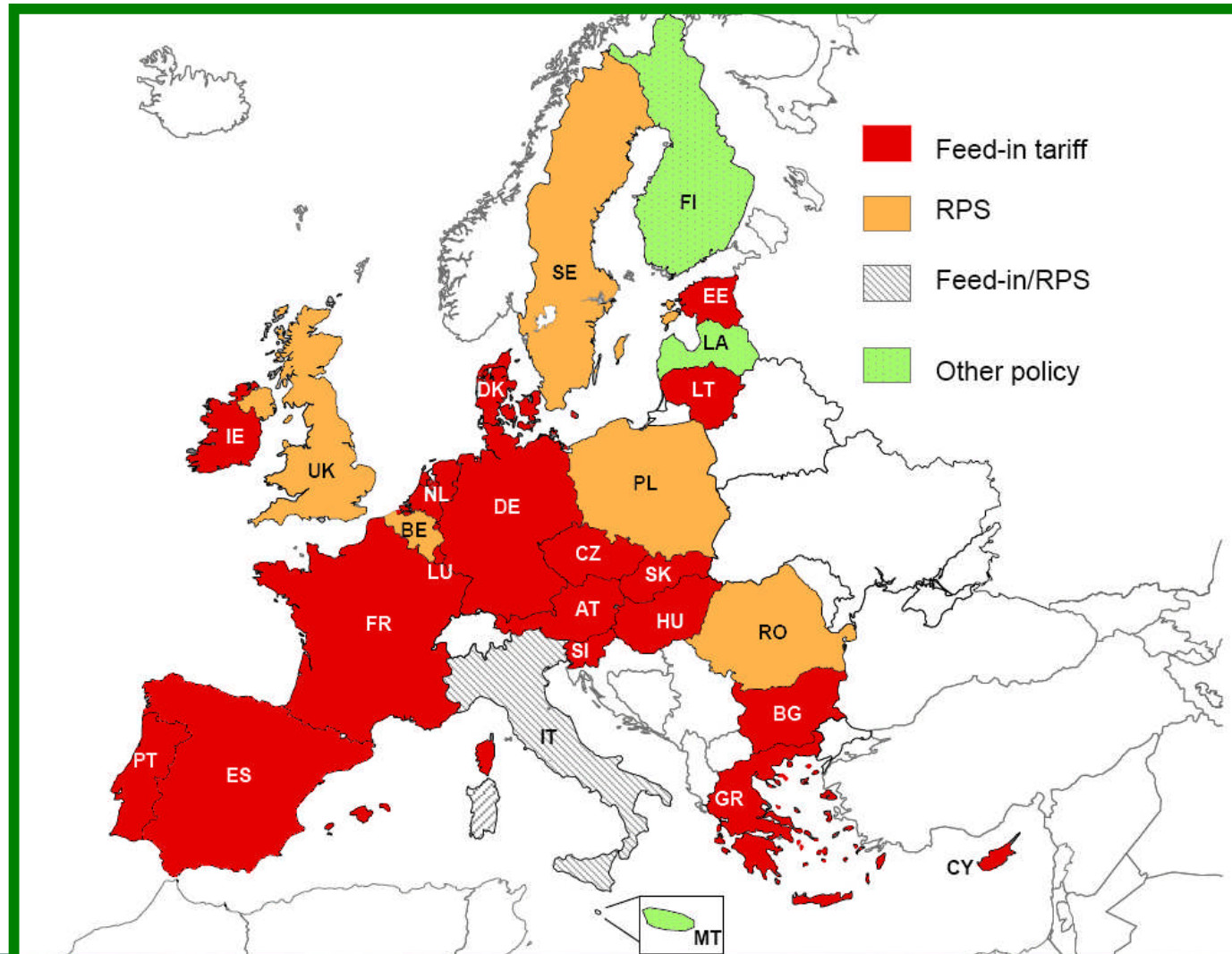
Estimated costs fossil, nuclear energies (US \$)	
Petroleum	3350-4475 Bil.
Natural Gas	550-830 Bil.
Coal	150-300 Bil.
Electricity	1490-2150 Bil.
Sum per year (without external costs!)	5000-7750 Bil.
Sum 2010-2030 (+ 20% rise)	200 000 Bil.
Sum to replace world's energy with 100 % renewable energies by 2030	100 000 Bil.

Sources:

Mark Z. Jacobson/ Mark DeLucchi 2009, A plan for a sustainable future, in: Scientific American Nov. 2009
 Dr. Werner Zittel 2010, Worldwide Estimated Yearly Energy Costs (EWG 2010)

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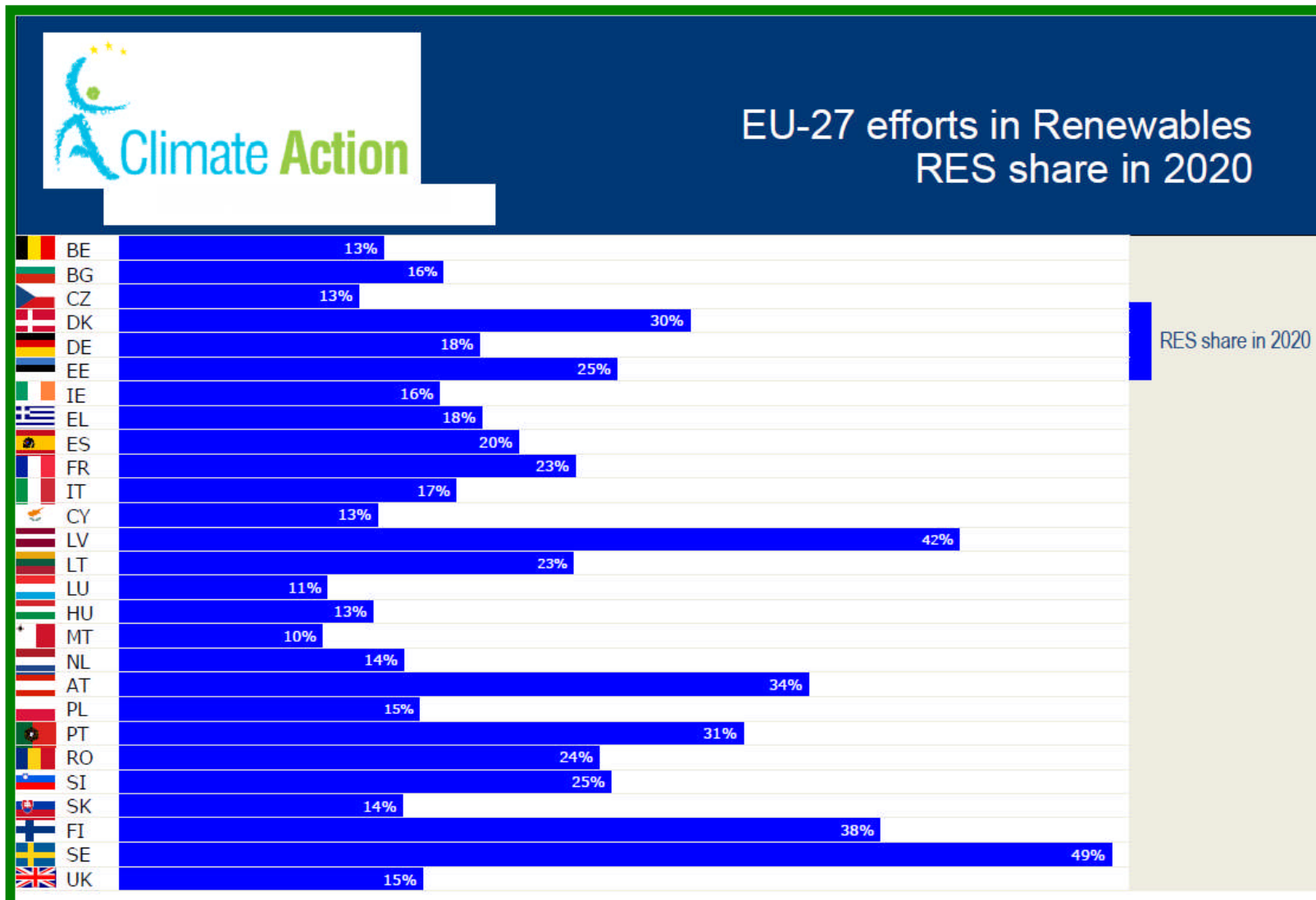
Renewable energy policies in the EU-25



Source: Heinrich Böll Foundation, A White Paper

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EU-27 efforts in Renewables

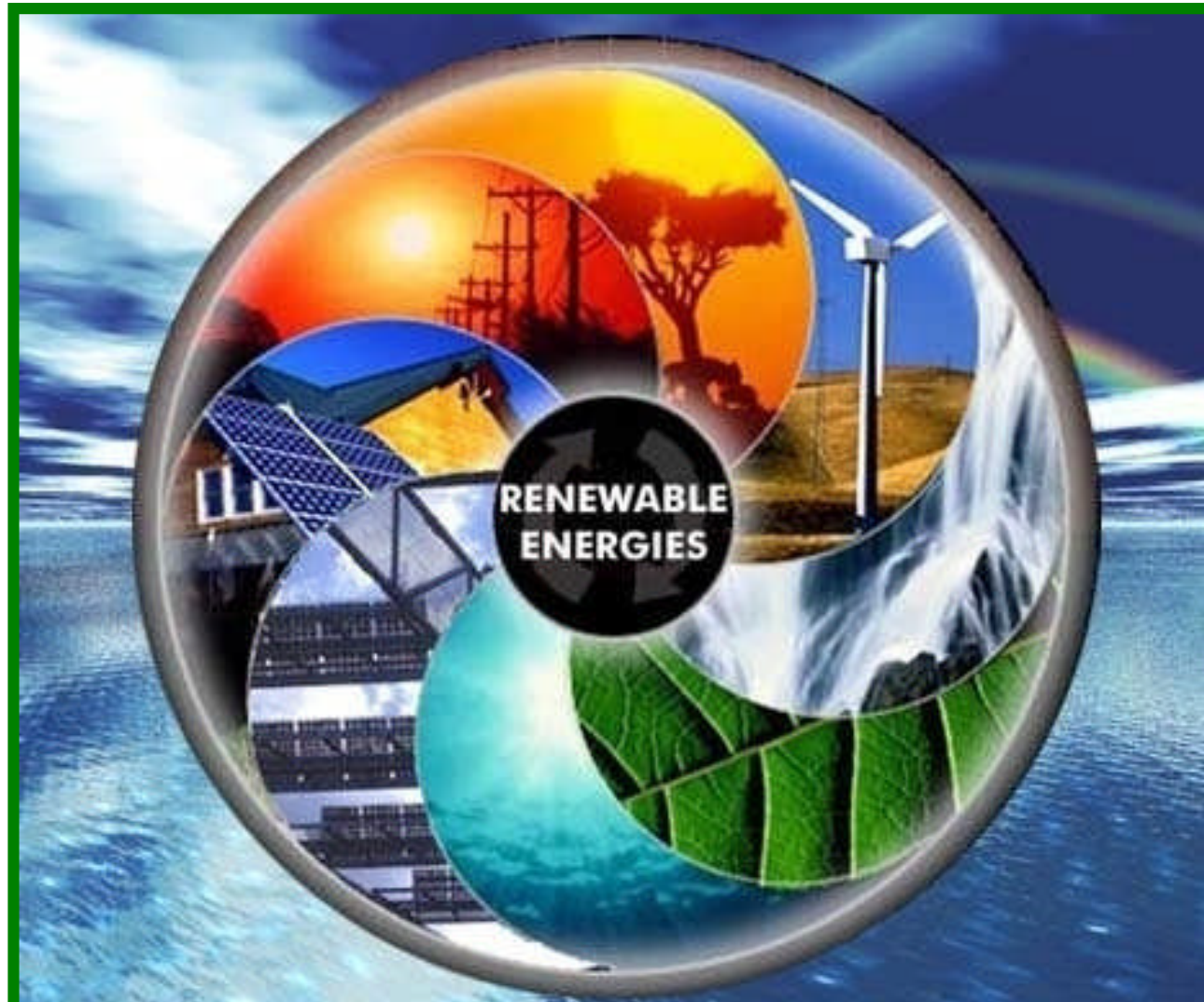


Energy Efficiency pays off!

With the use of efficiency measures till 2020 in Germany:

- Creation of 260.000 new jobs,
- avoidance of 77 Mio. tons carbon dioxide emissions and
- avoided costs for fossil fuels of about 19 bn. €.

Tomorrow's Energy Production



*Thank you very much
for your Attention!*

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