



Going Renewable: Germany's Energy Future

Dr. Volker Oschmann

Australia



Germany

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FIFA World Cup

Australia

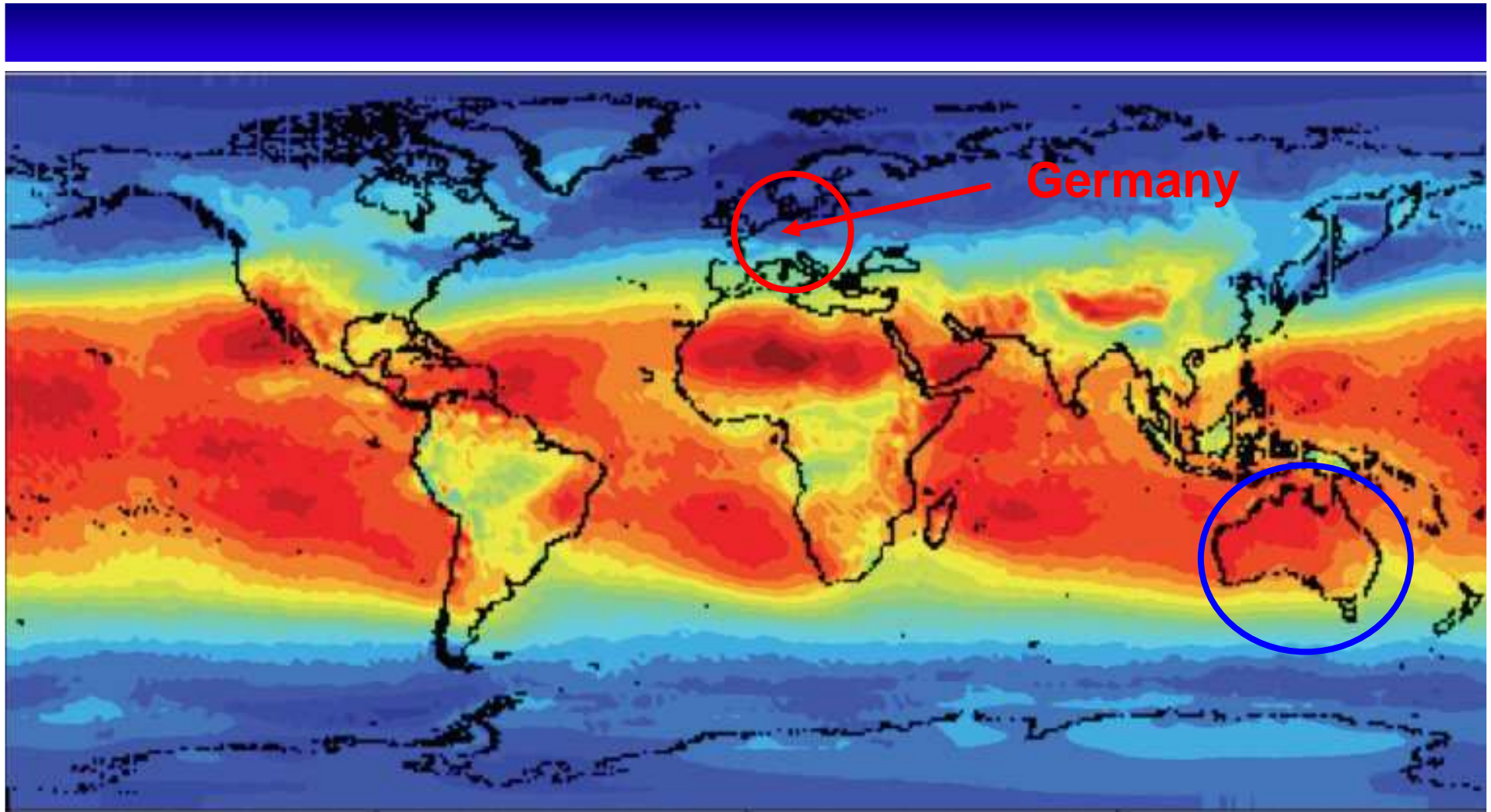


Germany

2 : 1

Solar Irradiance

World Solar Resources



Outline

- Targets, Status Quo, Scenarios & Instruments
- Environmental & Economic Effects
- Conclusions



Outline

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Australia

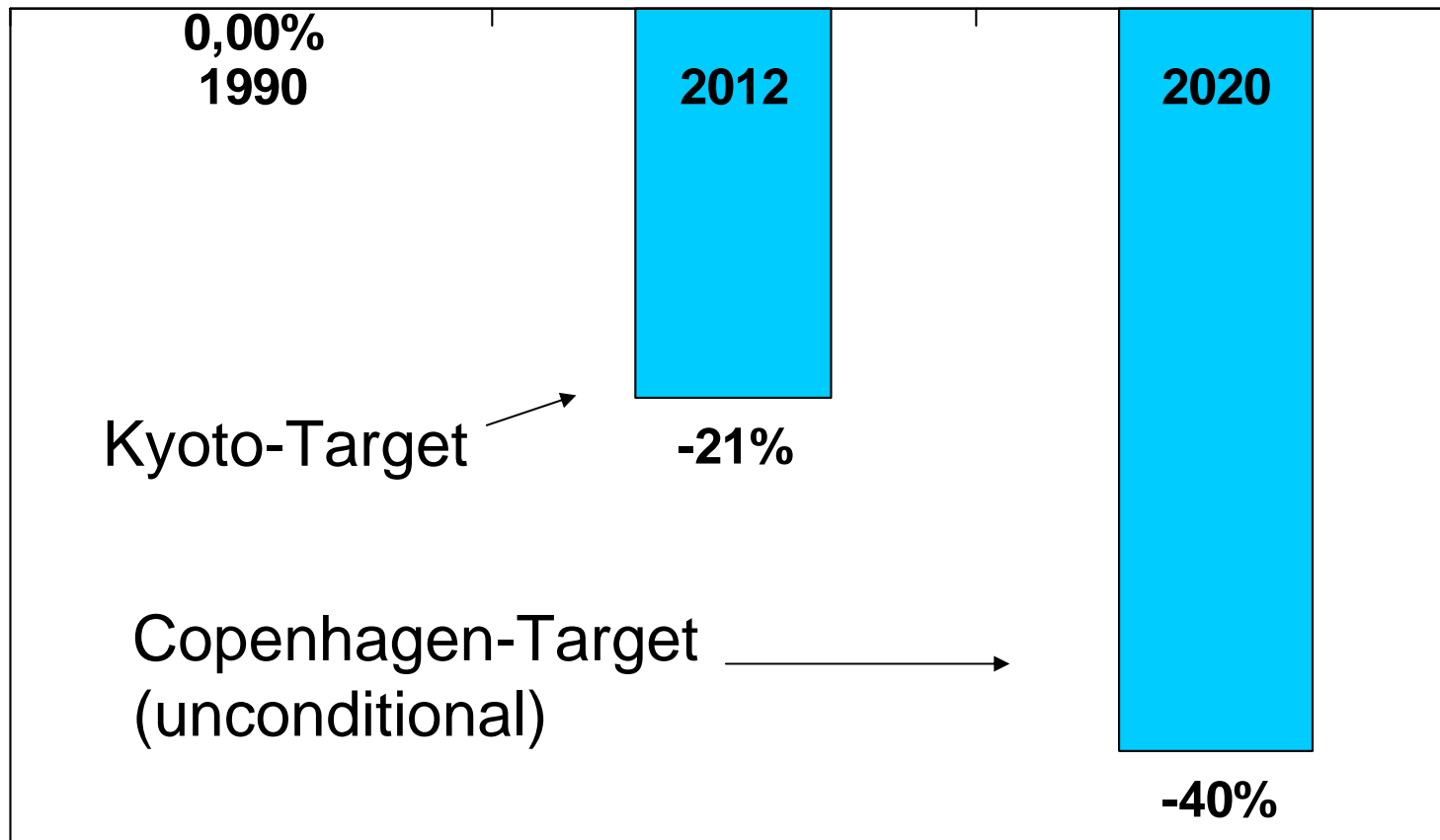


Germany

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GHG Reduction Targets (2020)

Ambitious Greenhouse Gas Targets



Australia



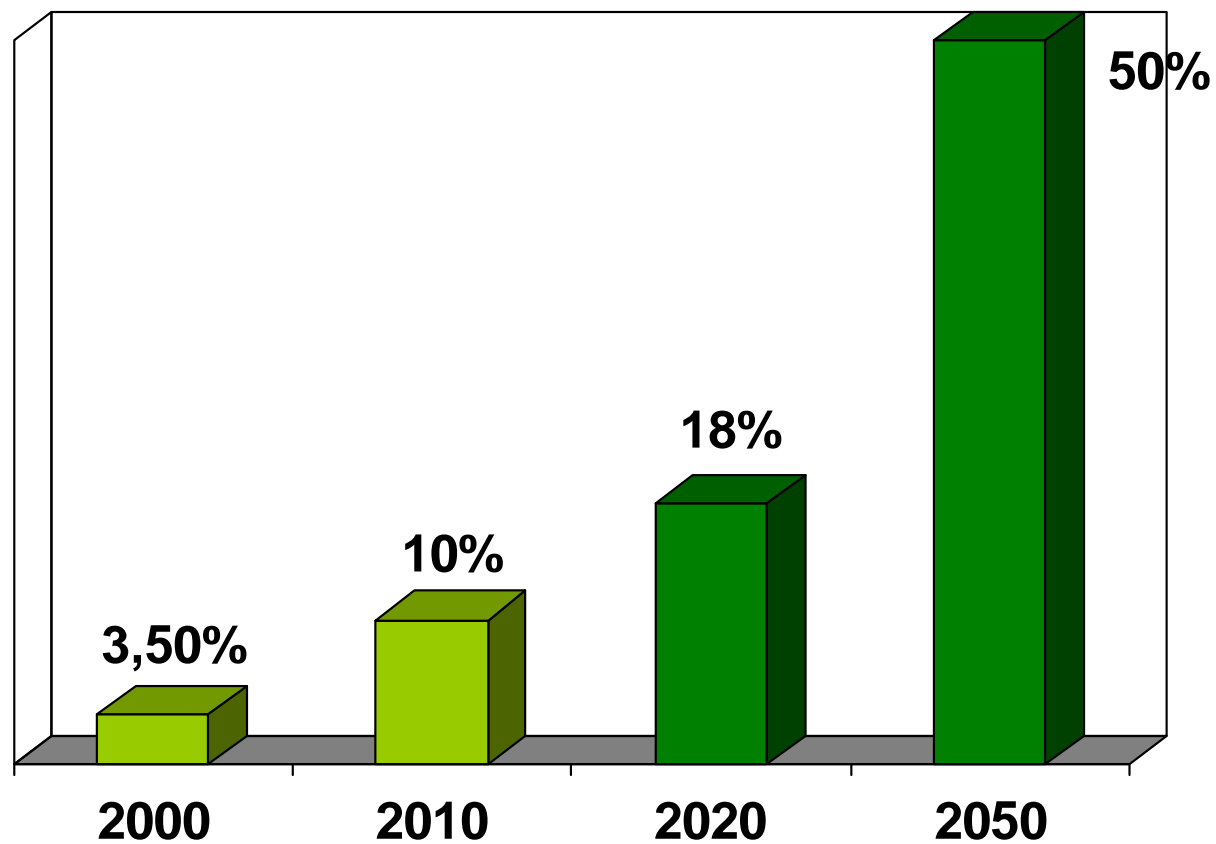
Germany

? : 50

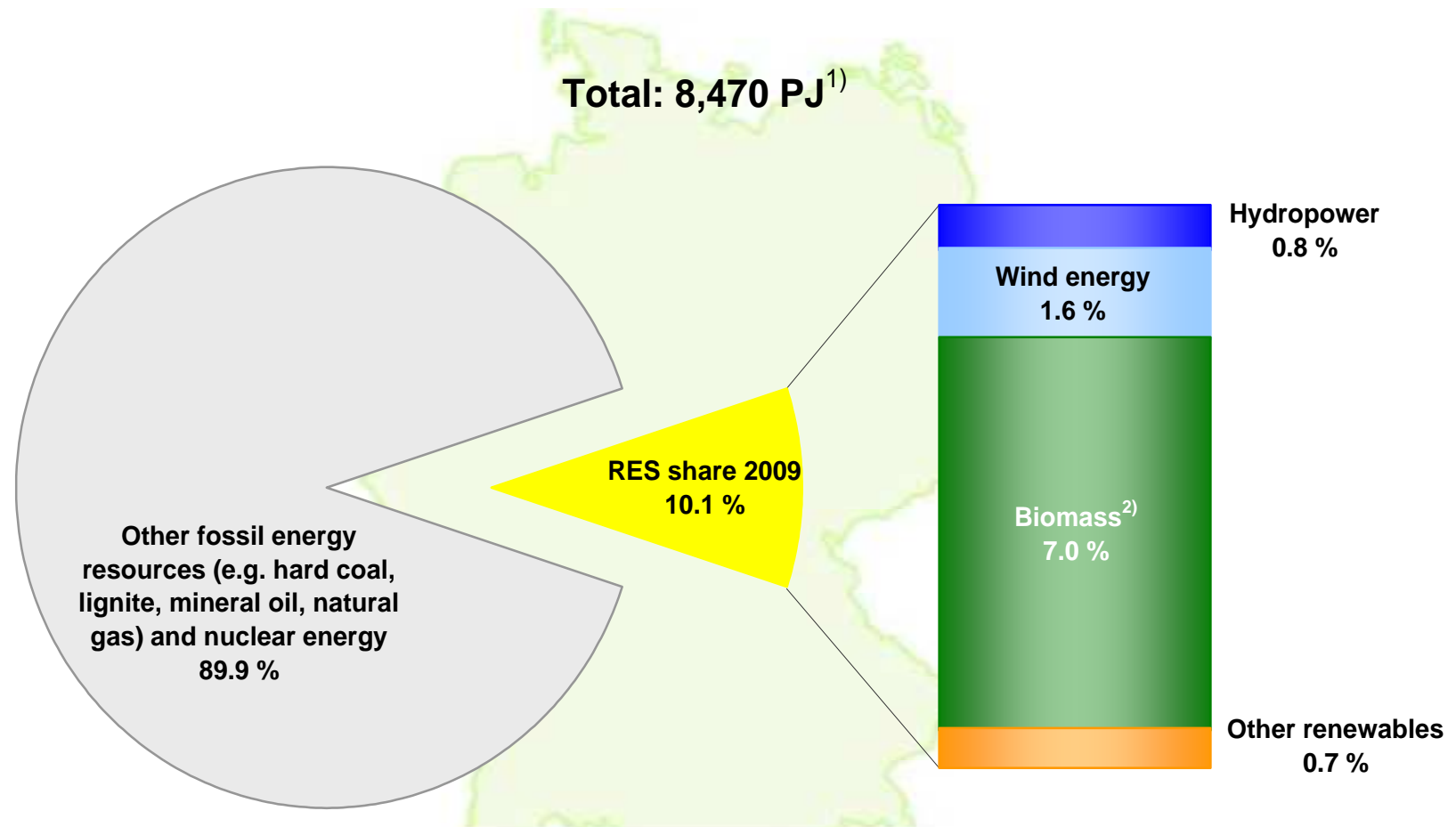
Renewable Energy Targets (2050)

Strong Renewable Energy Targets

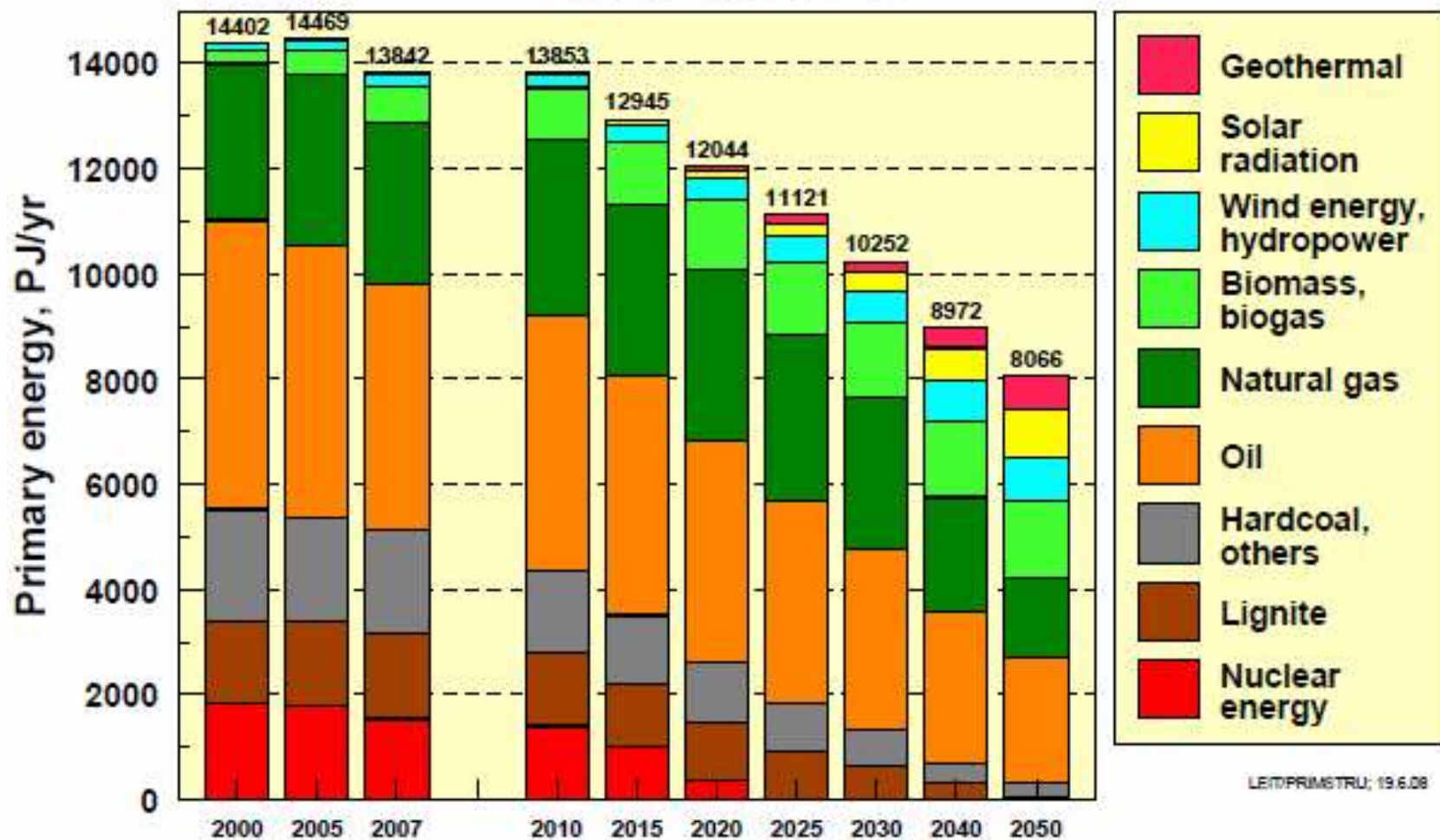
50% Renewable Energy in Final Consumption by 2050



Renewable Energies Hit 10% in 2009



Scenario 2050: 50% Renewable Energy





Transport Sector

Australia



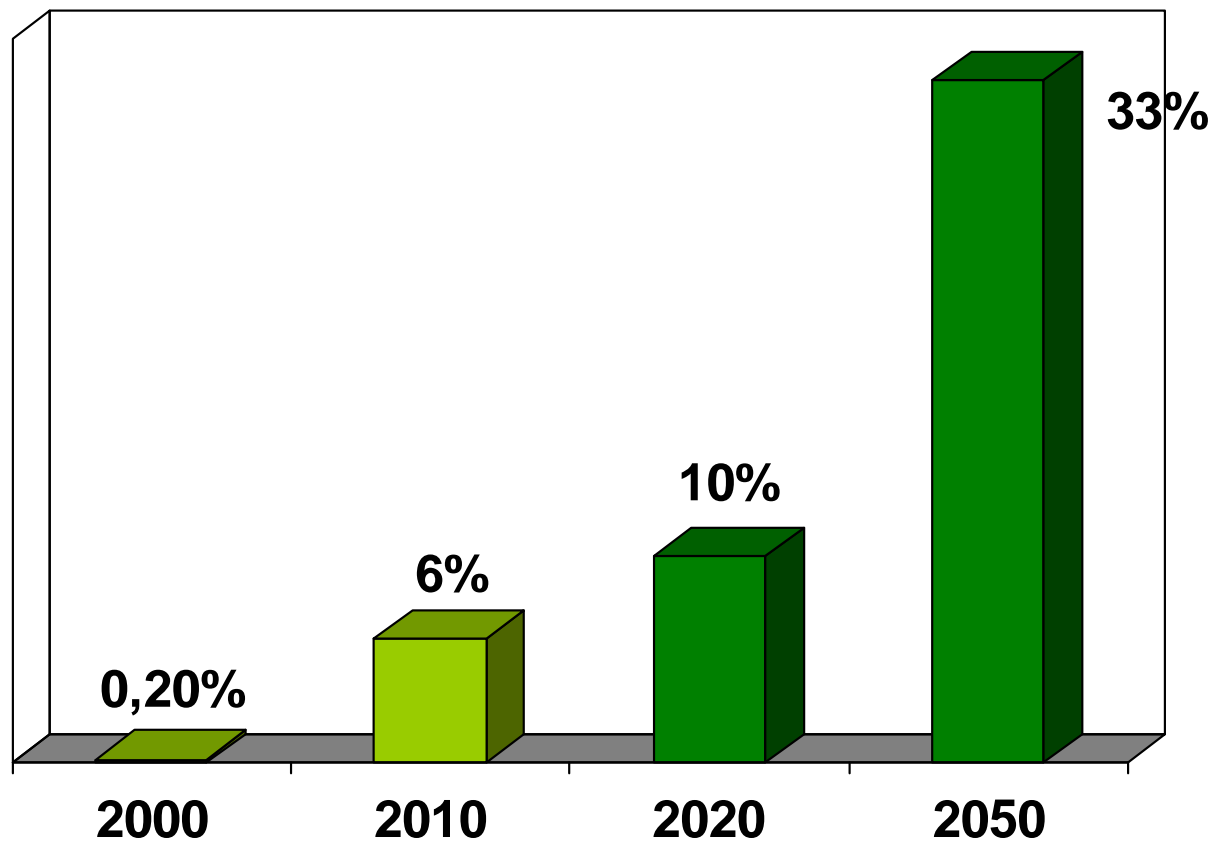
Germany

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Share of Biofuels in 2000

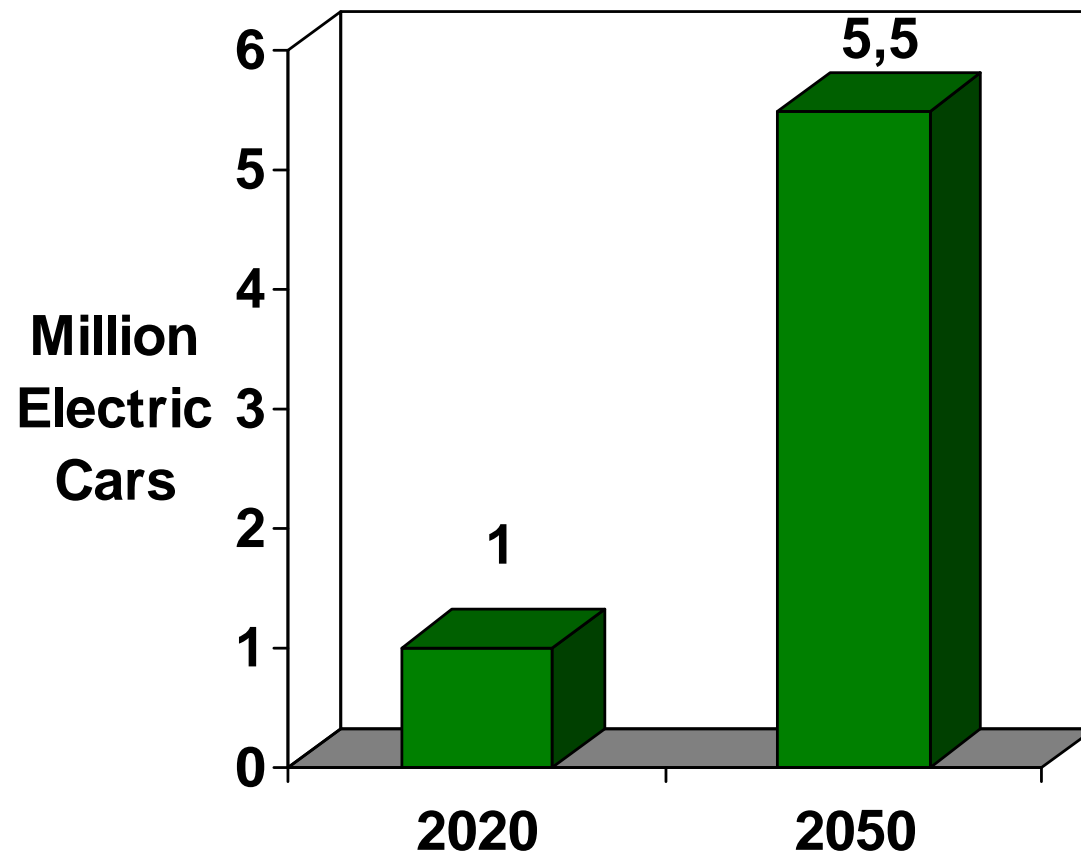
Targets for Renewable Transport

33% Renewable Energy by 2050

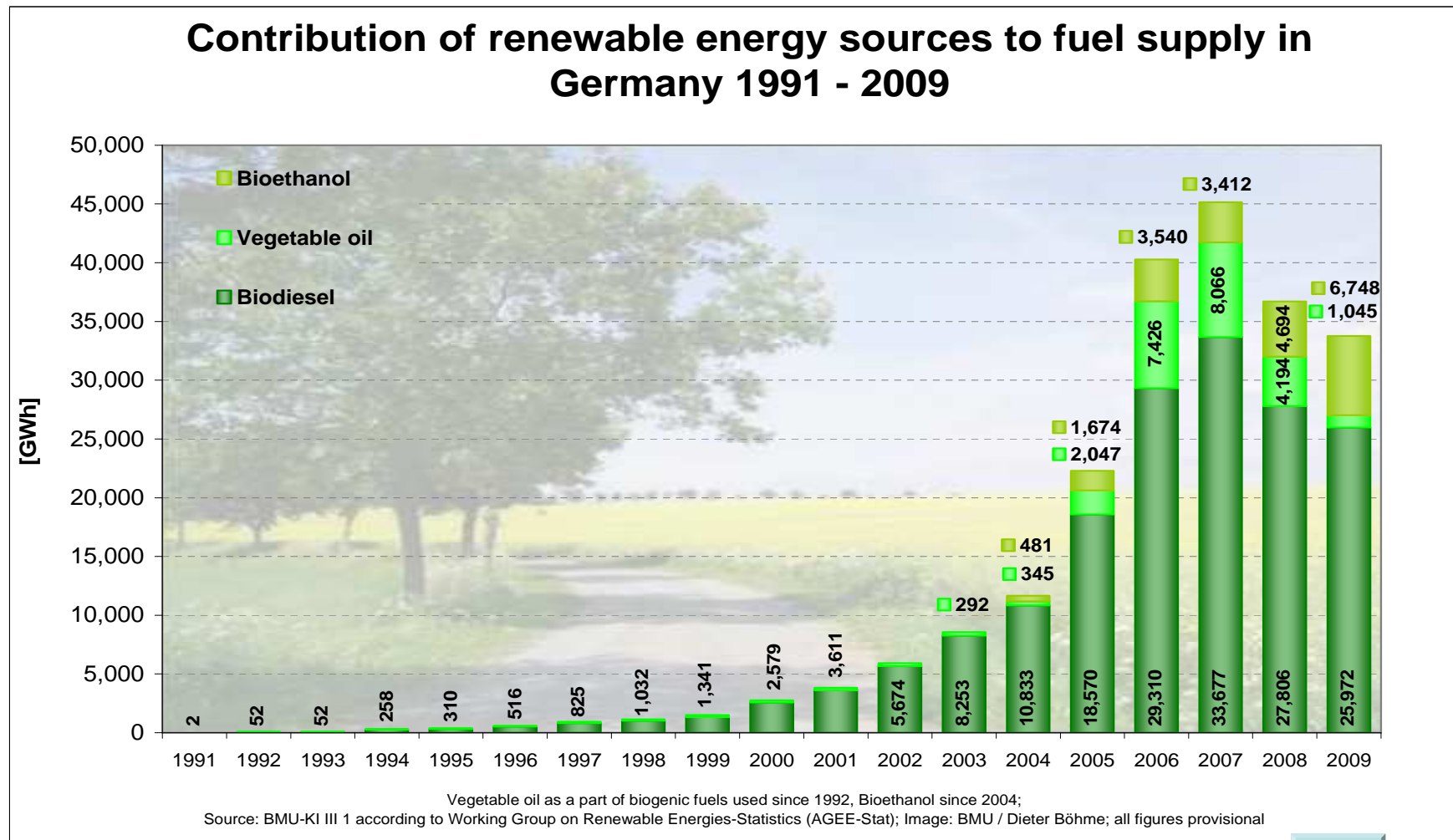


Targets for Electric Cars

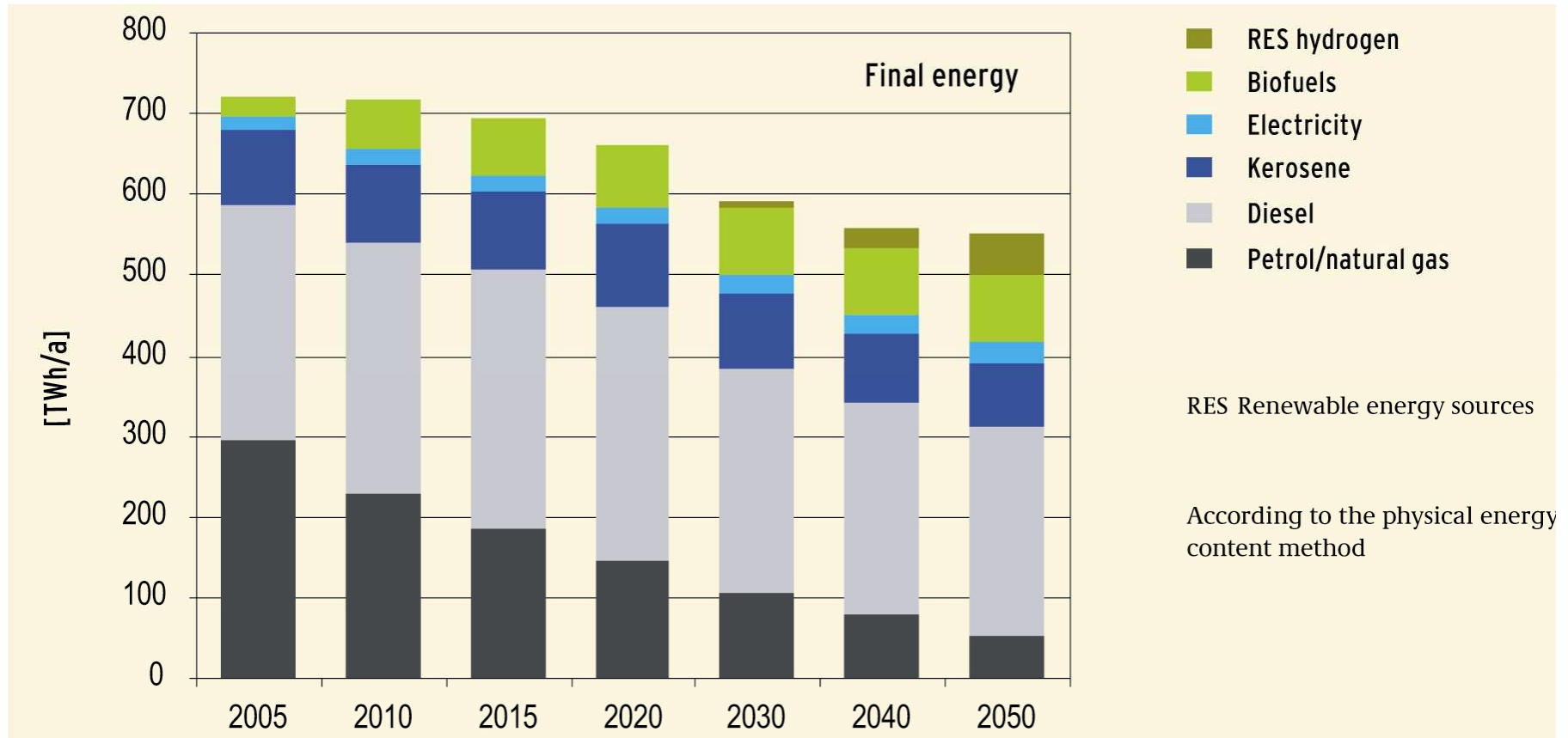
5.5 Mill. Electric Cars by 2050



Biofuels Up And A Little Down



Scenario 2050: 33% Renewable Transport



Legal Framework

Renewable Transport Framework

“Carrot”

R&D & subsidies for
electric cars

“Stick”

Quota Obligation:
Fuels must contain
renewable energies

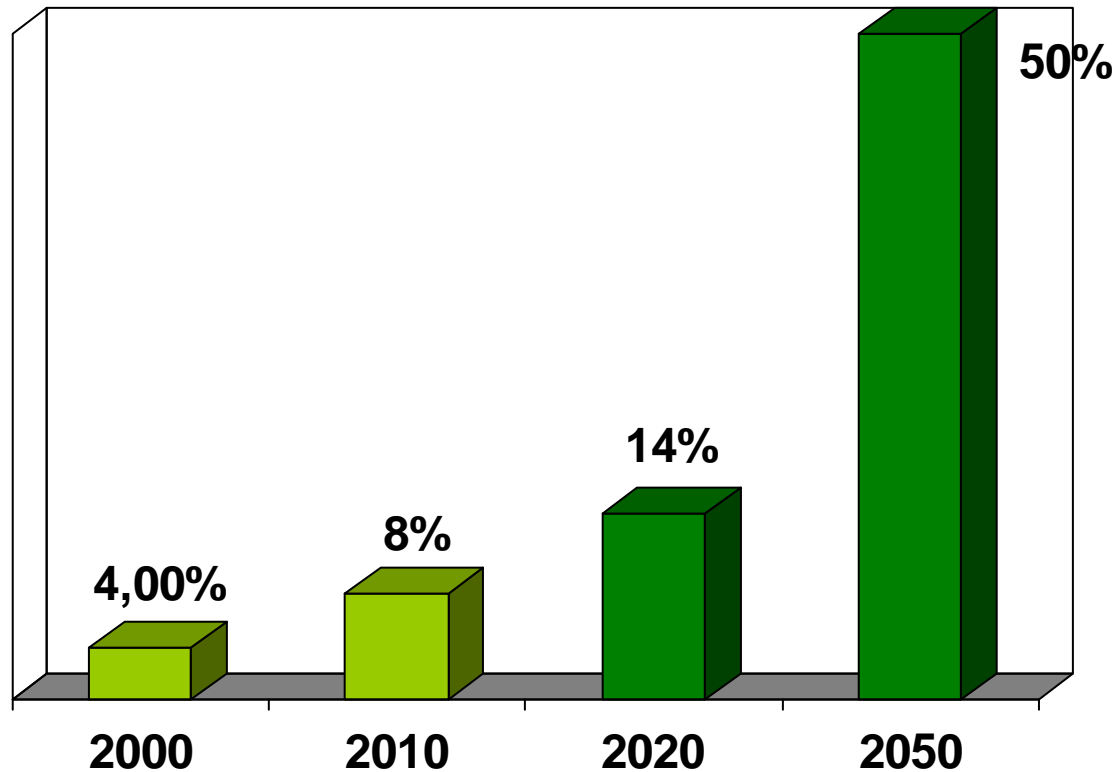




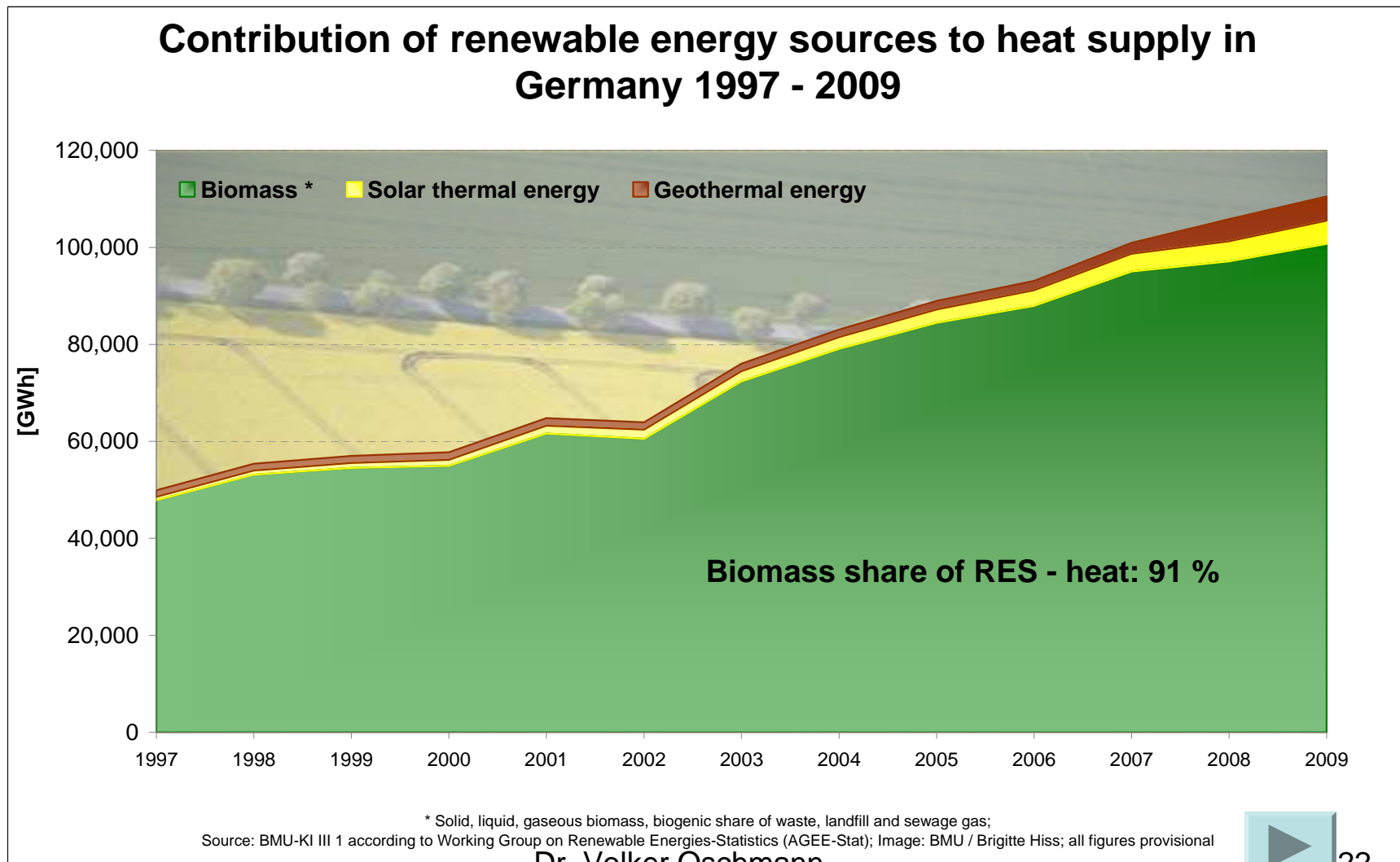
Heating & Cooling Sector

Targets for Renewable Heating & Cooling

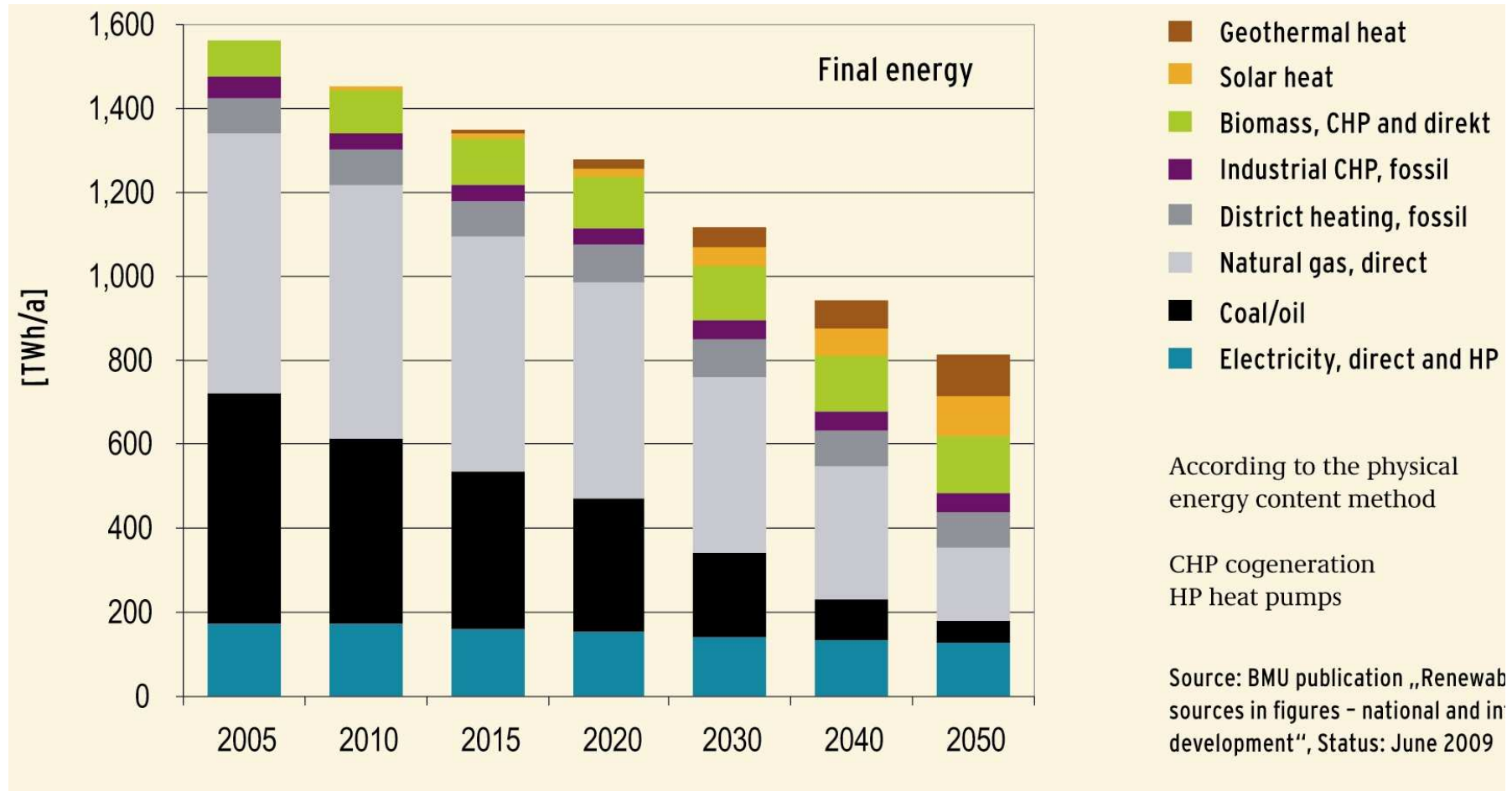
50% Renewable Energy by 2050



Renewable Heat On The Rise



Scenario 2050: 50% Renewable Heat



Legal Framework

Renewable Heat Act

“Carrot”

Subsidies for:

- Existing buildings
- Innovative technology

“Stick”

Obligation:

New buildings must use renewable energies





Electricity Sector

Australia



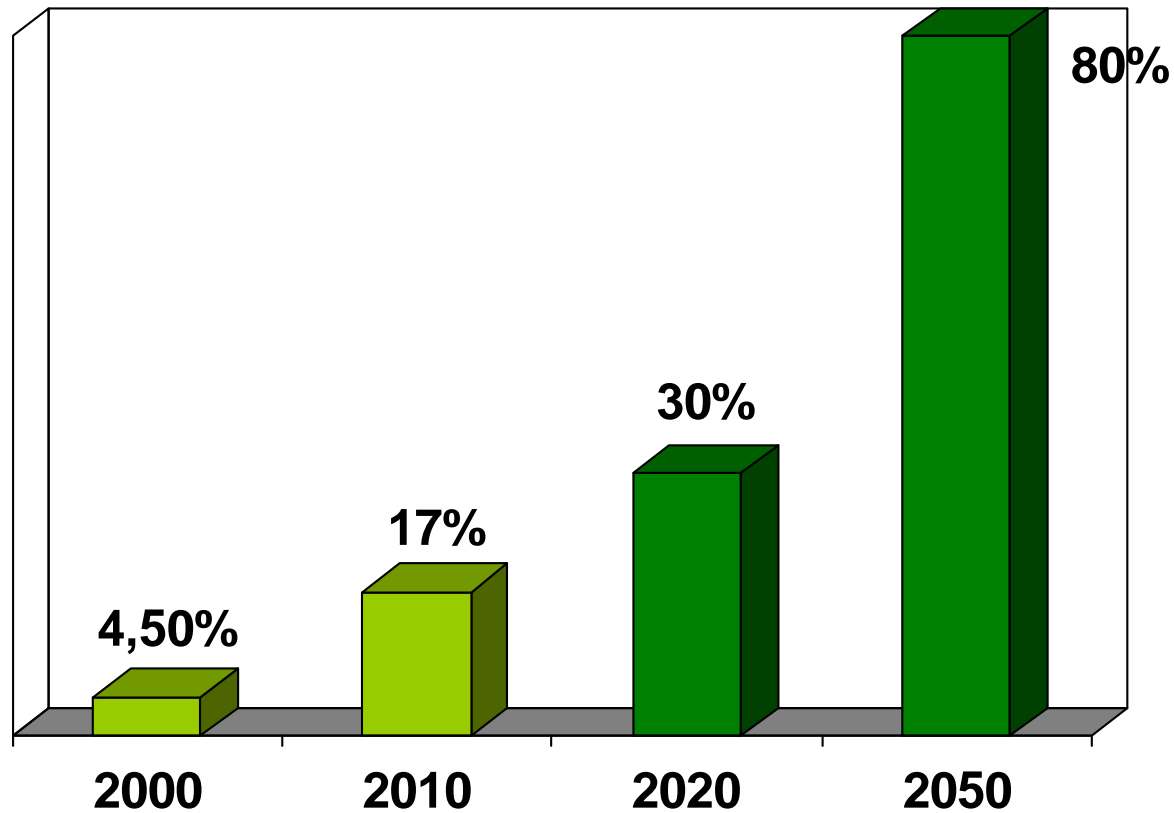
Germany

7 : 16

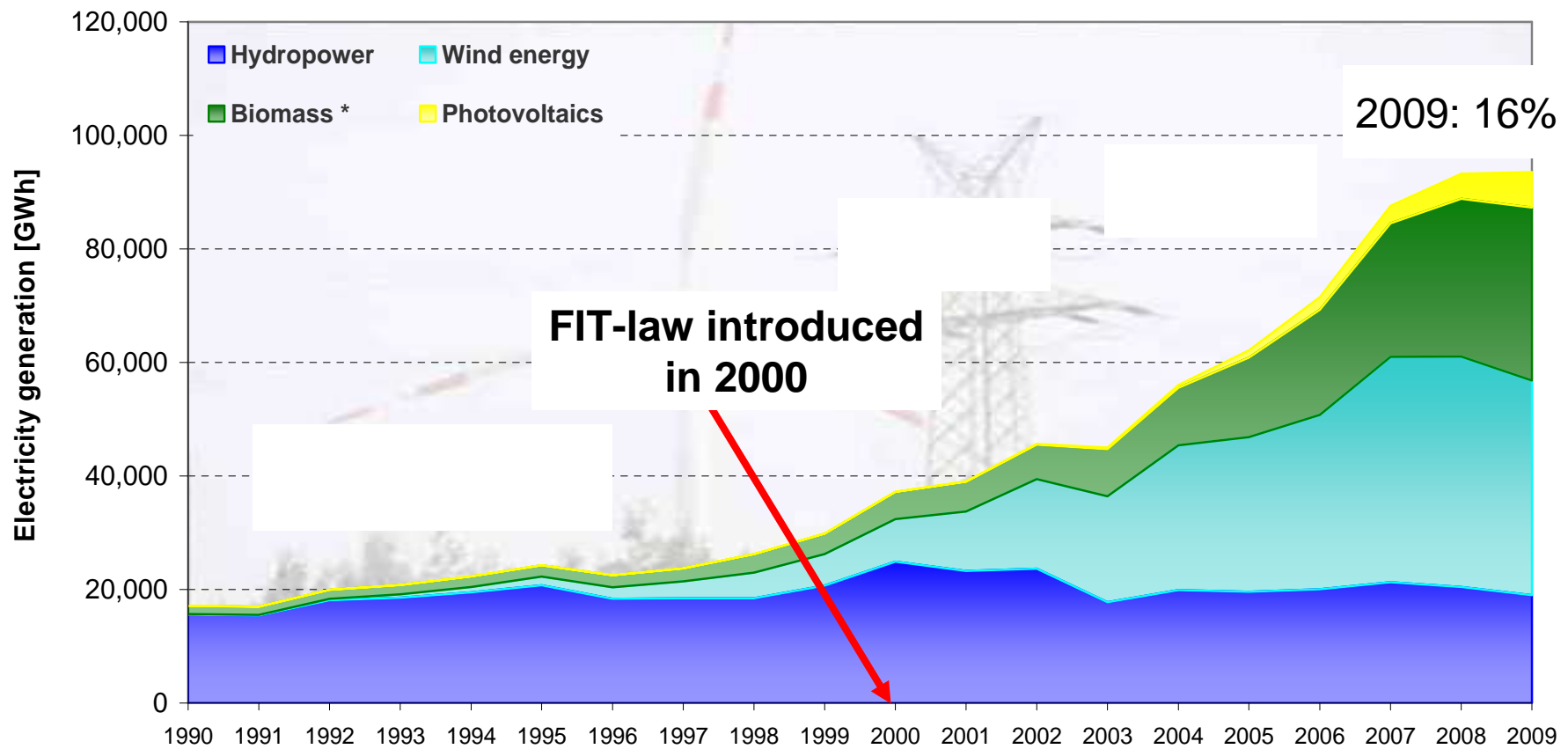
Share of Renewable Electricity (2009)

Targets for Renewable Electricity

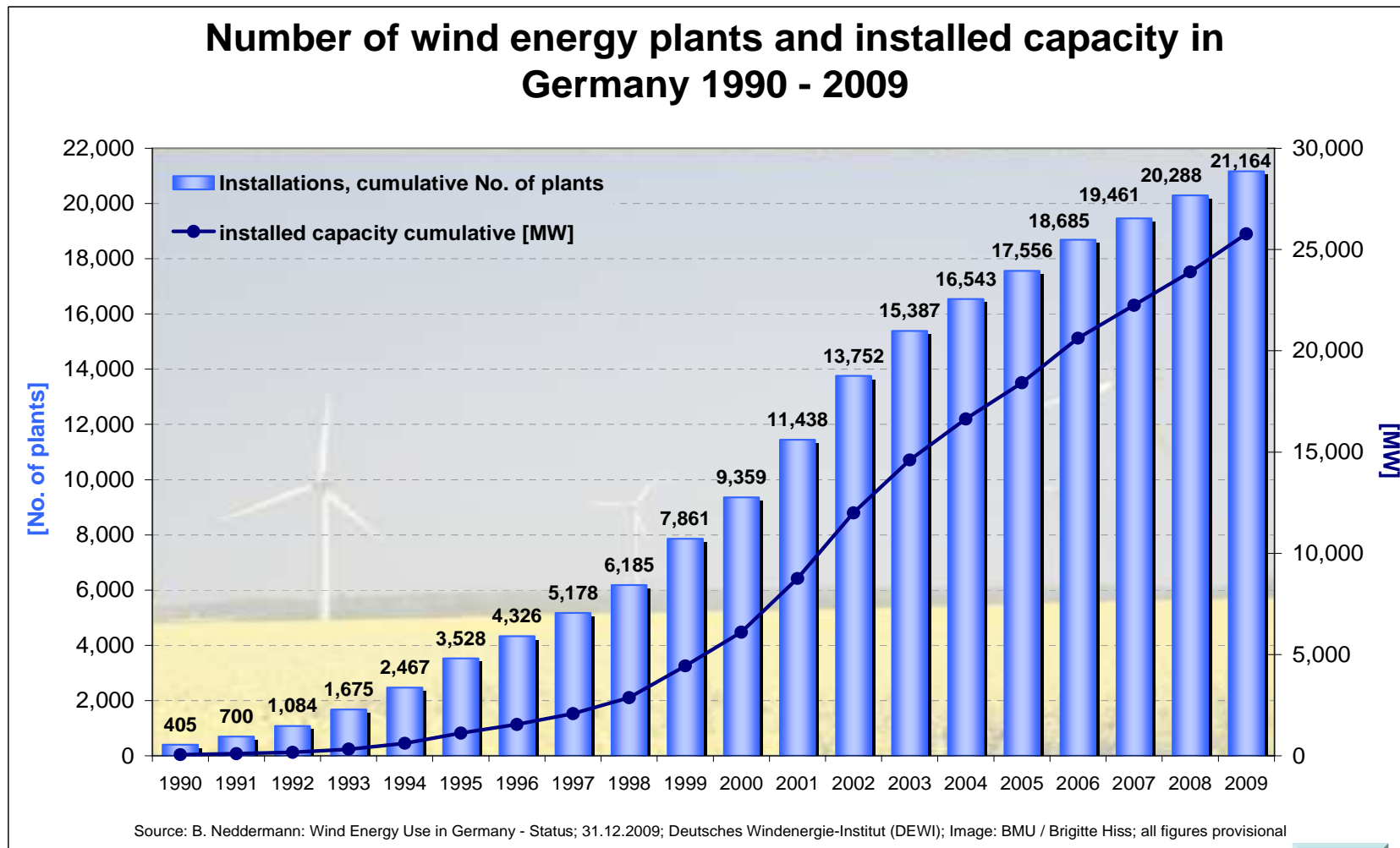
80% Renewable Electricity by 2050



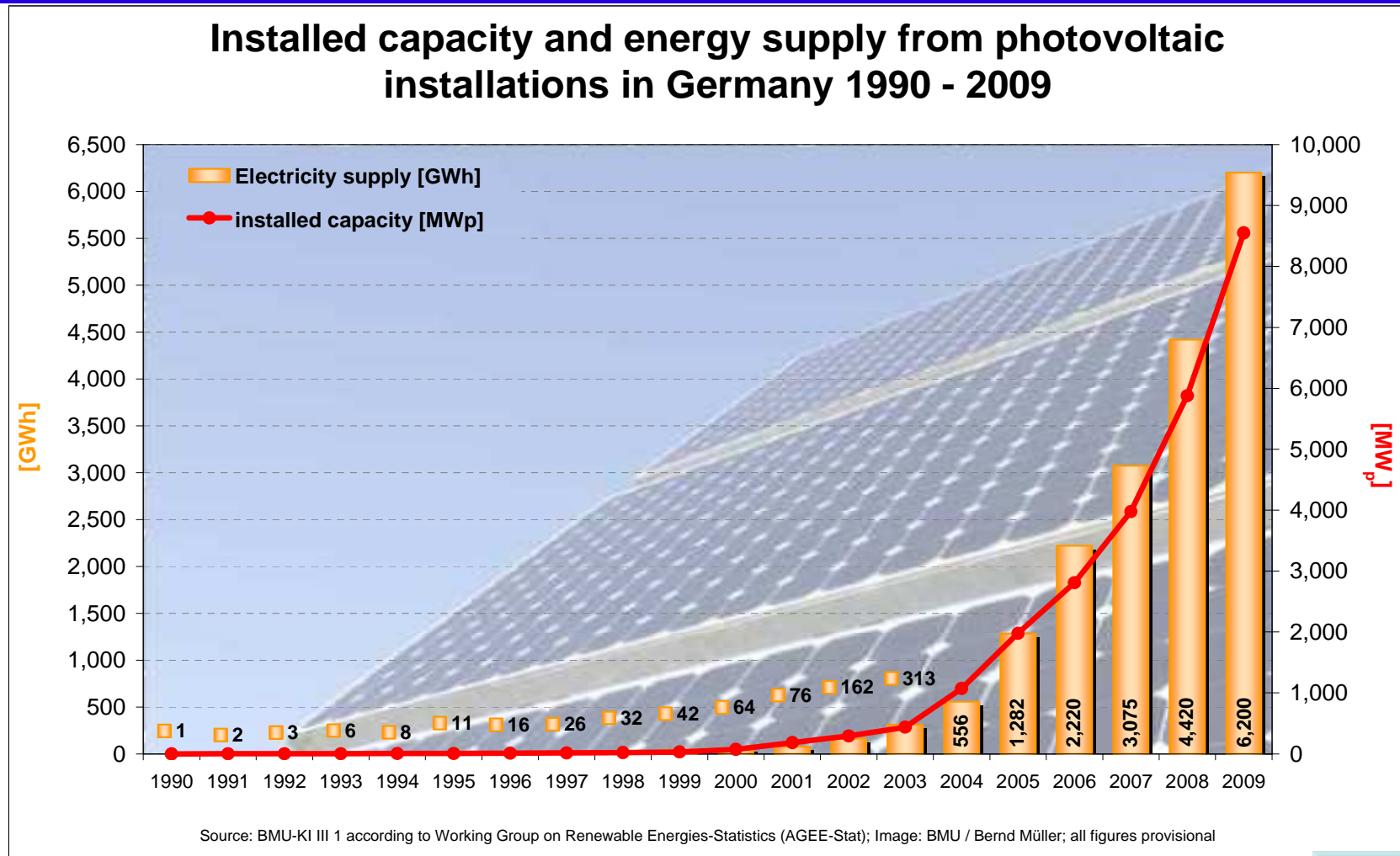
Renewable Electricity Quadruples



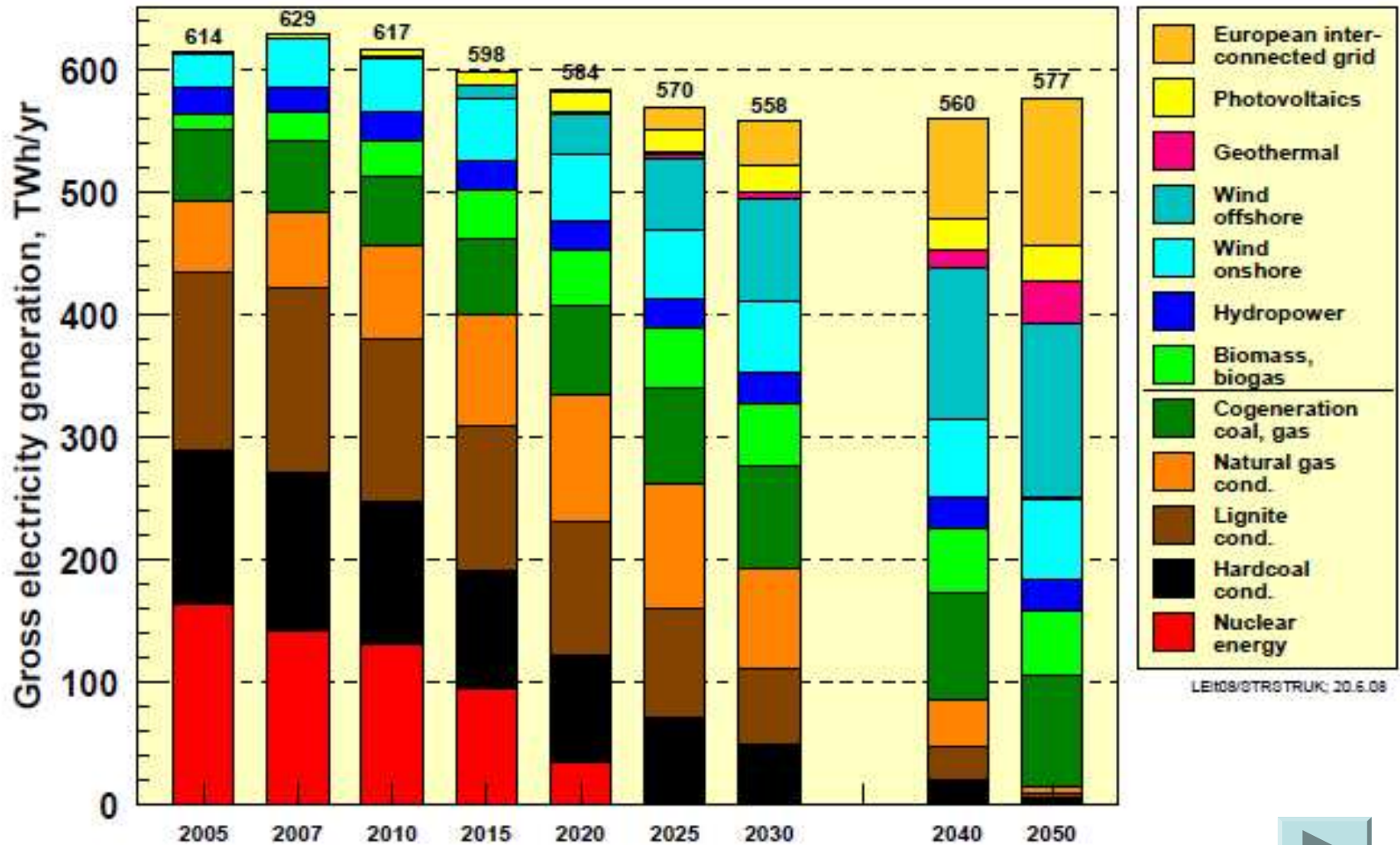
Wind Energy: Massive Growth



Photovoltaic Skyrockets



Scenario 2050: 80% Renewable Electricity



Legal Framework

Renewable Electricity Law

**Priority
Planning
Permit**

**Priority
Access To
The grid**

**Feed-In
Tariff**





New Energy Strategy

Strategy 2010: Towards 100% RE?

- New Energy Strategy expected for 2010
- New long-term target: 100% Renewable Energy?

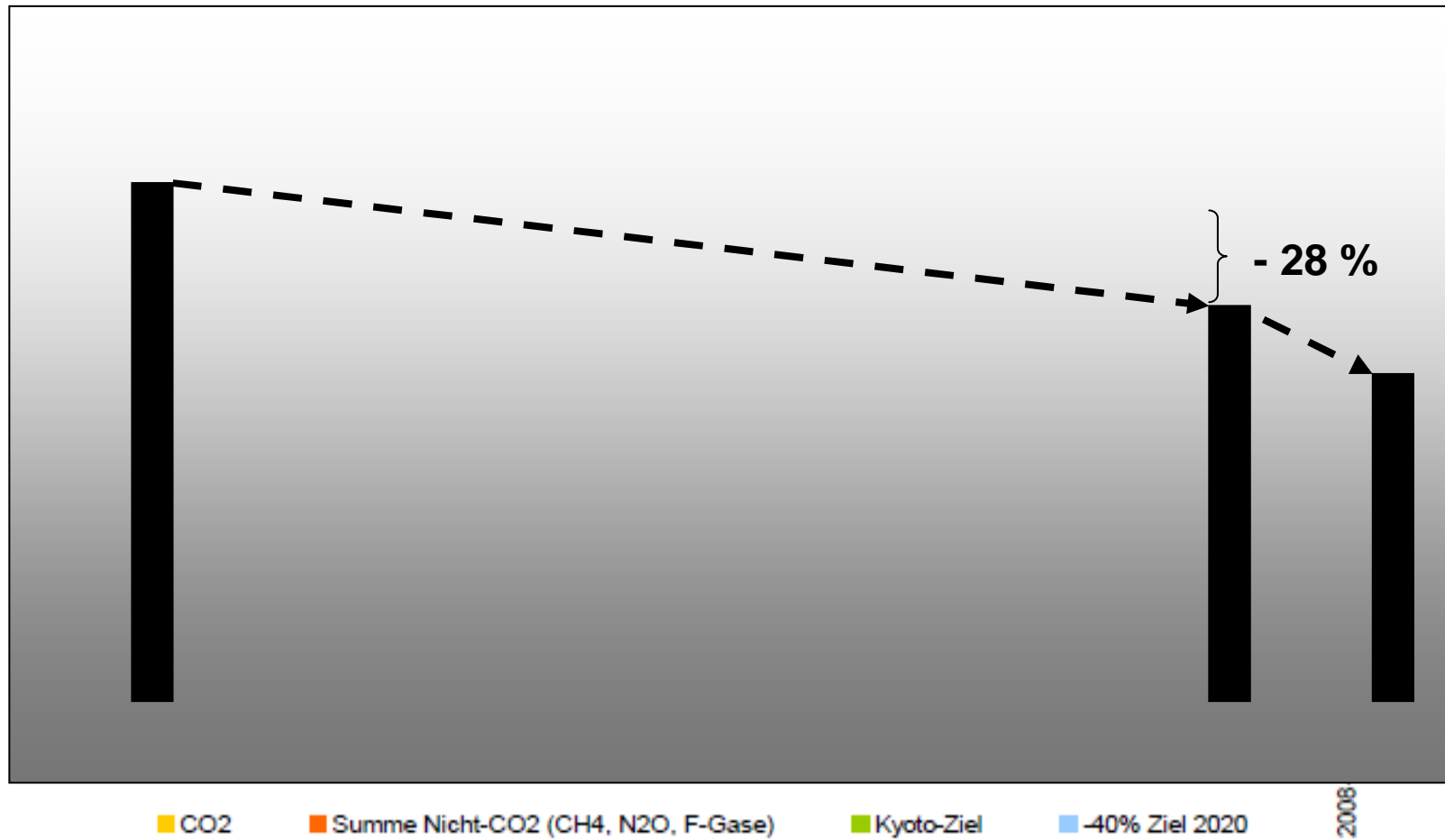


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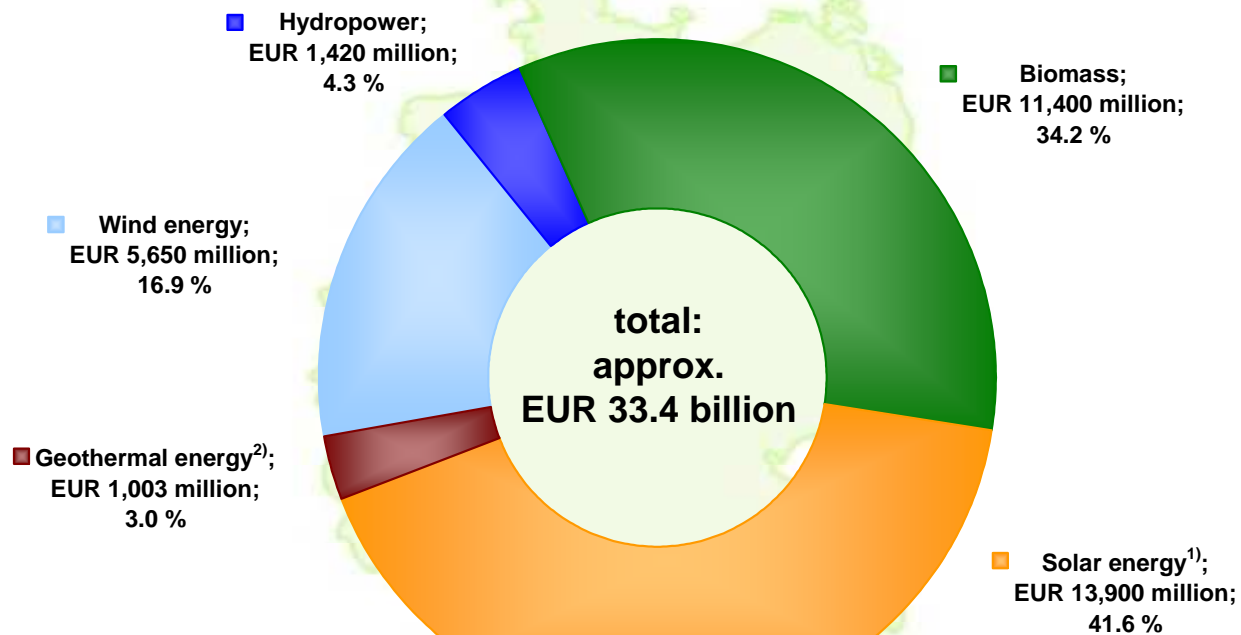


Renewable Energy Save CO₂



Renewable Energy Is Big Business

Total turnover from renewable energy sources in Germany 2009 (investments and operation)



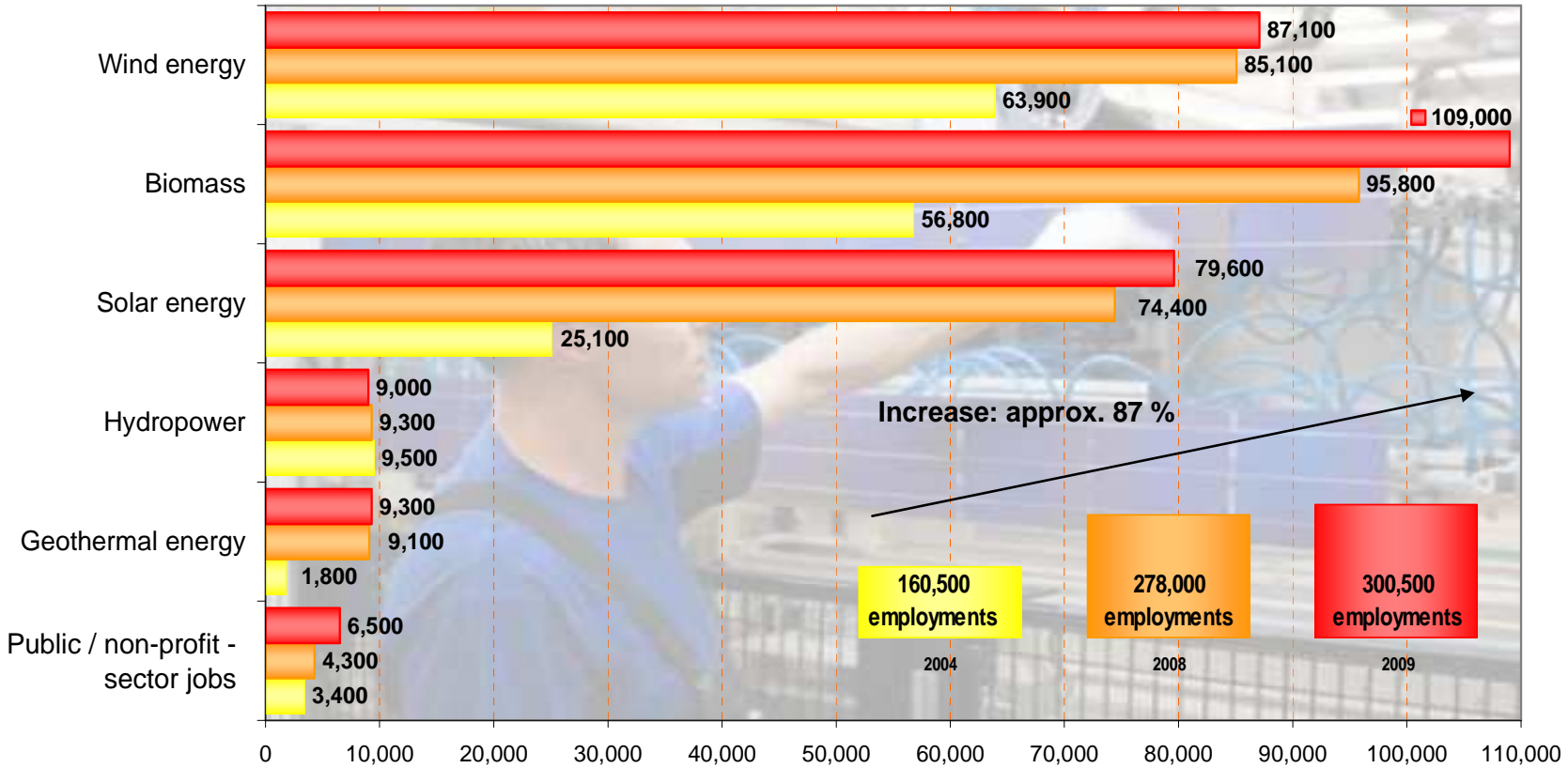
Turnovers:

- Investments: approx. EUR 17.7 billion
- Operation: approx. EUR 15.7 billion

¹⁾ Photovoltaics and solar thermal energy; ²⁾ Large plants and heat pumps; Deviations in the totals are due to rounding;
Source: BMU-KI III 1 according to the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW); all figures provisional

Renewable Energy Creates Jobs

Jobs in the renewable energy sector in Germany 2004, 2008 und 2009



14/6/2010

Dr. Volker Oschmann

Source: BMU-KI III Projekt "Gross employment from renewable energy in Germany in the year 2009, a first estimate"; Image: BMU / Christoph Busse / transit



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Conclusions

Germany:

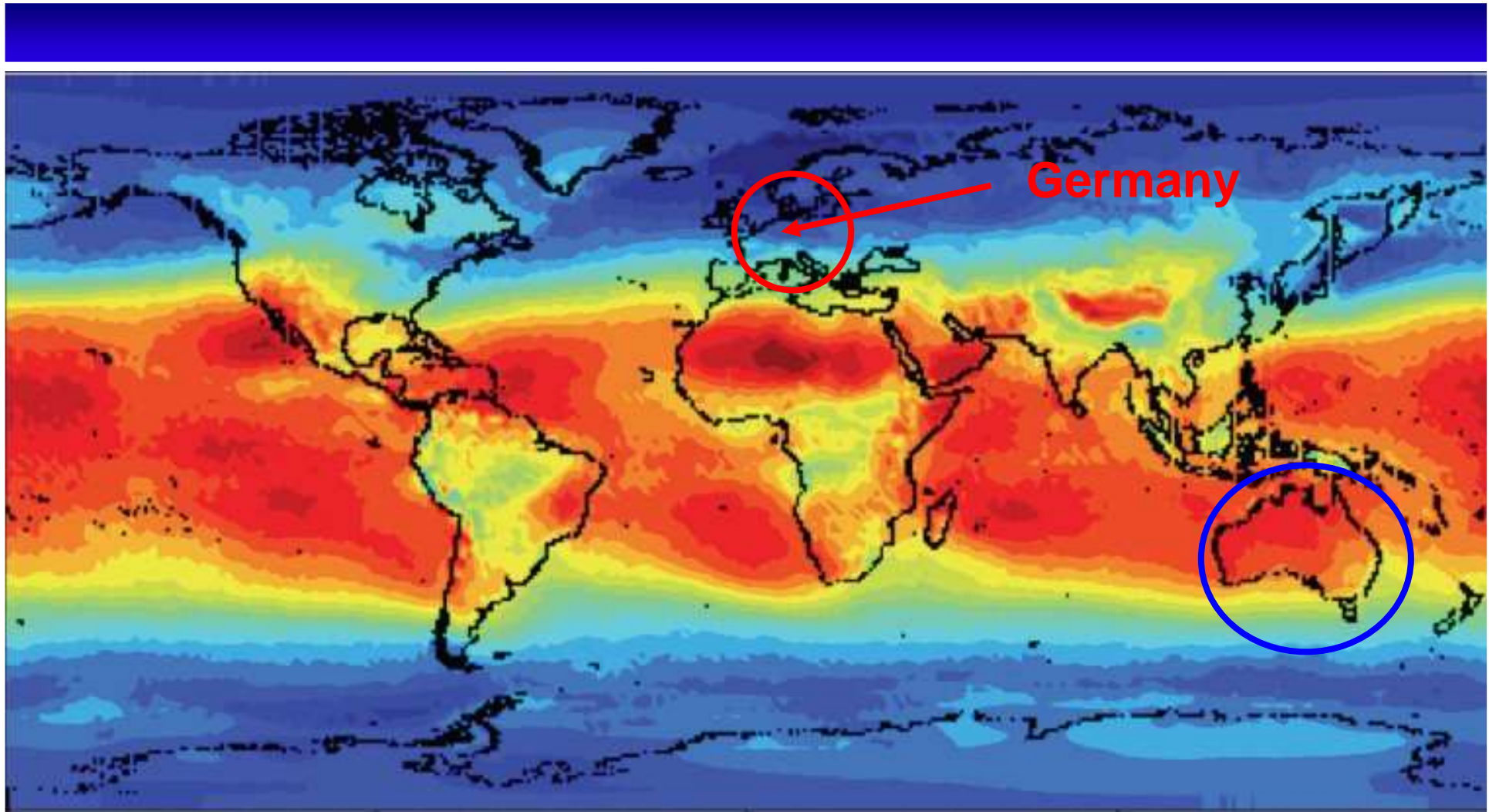
- Has limited RE potentials
- Pursues an ambitious RE target: 50% (100%?) by 2050
- Is on track to reach the target

Australia:

- If Germany can do it, Australia can do it!



World Solar Resources



Australia



Germany

2000 : 1000

Share of Renewable Energy in 2050?

Thank you very much for your attention!



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