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European Renewable Energies Federation

Towards 100% Renewable Energy:

Perspectives for Germany and for Europe

Rainer Hinrichs-Rahlwes
- EREF President -

Prague – 31st of May, 2011

About EREF

- Federation of associations from EU Member States, working in the sector of energy produced from renewable sources
- Representing more than 50,000 MW of installed power capacity and a growing capacity in other sectors
- Voice of Independent Producers of Energy from Renewables
- Member of EREC (European Renewable Energy Council)

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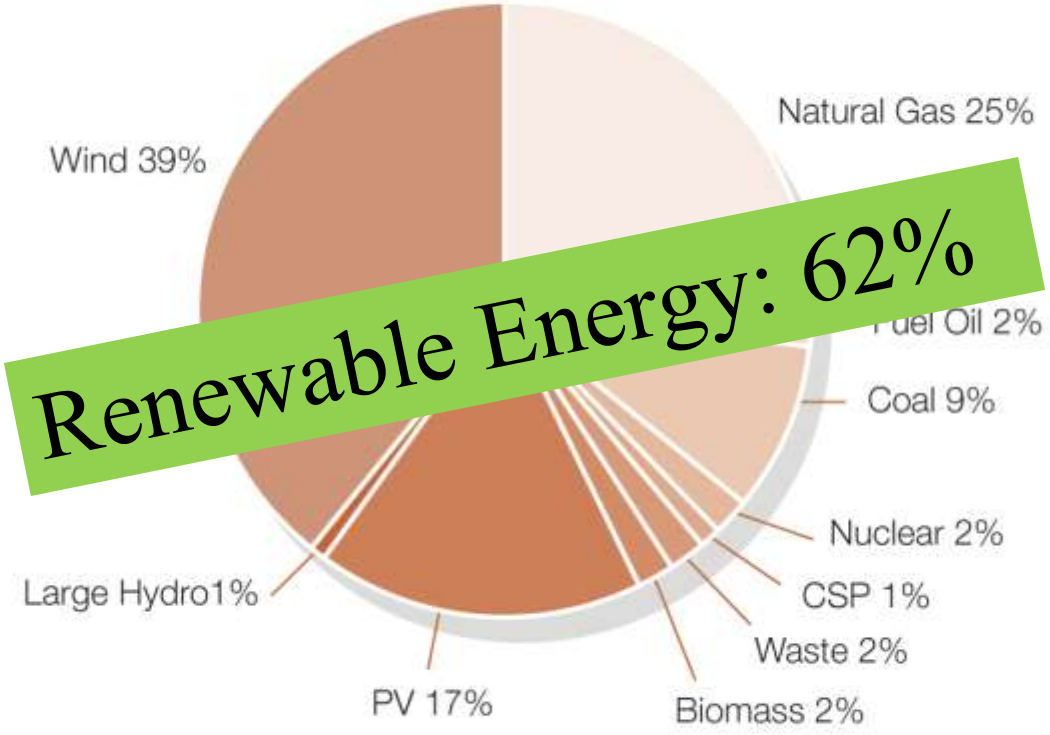
New power capacity installed, EU 2009



Source: EWEA, EPIA, ESTELA, EU-OEA and Platts Powervision

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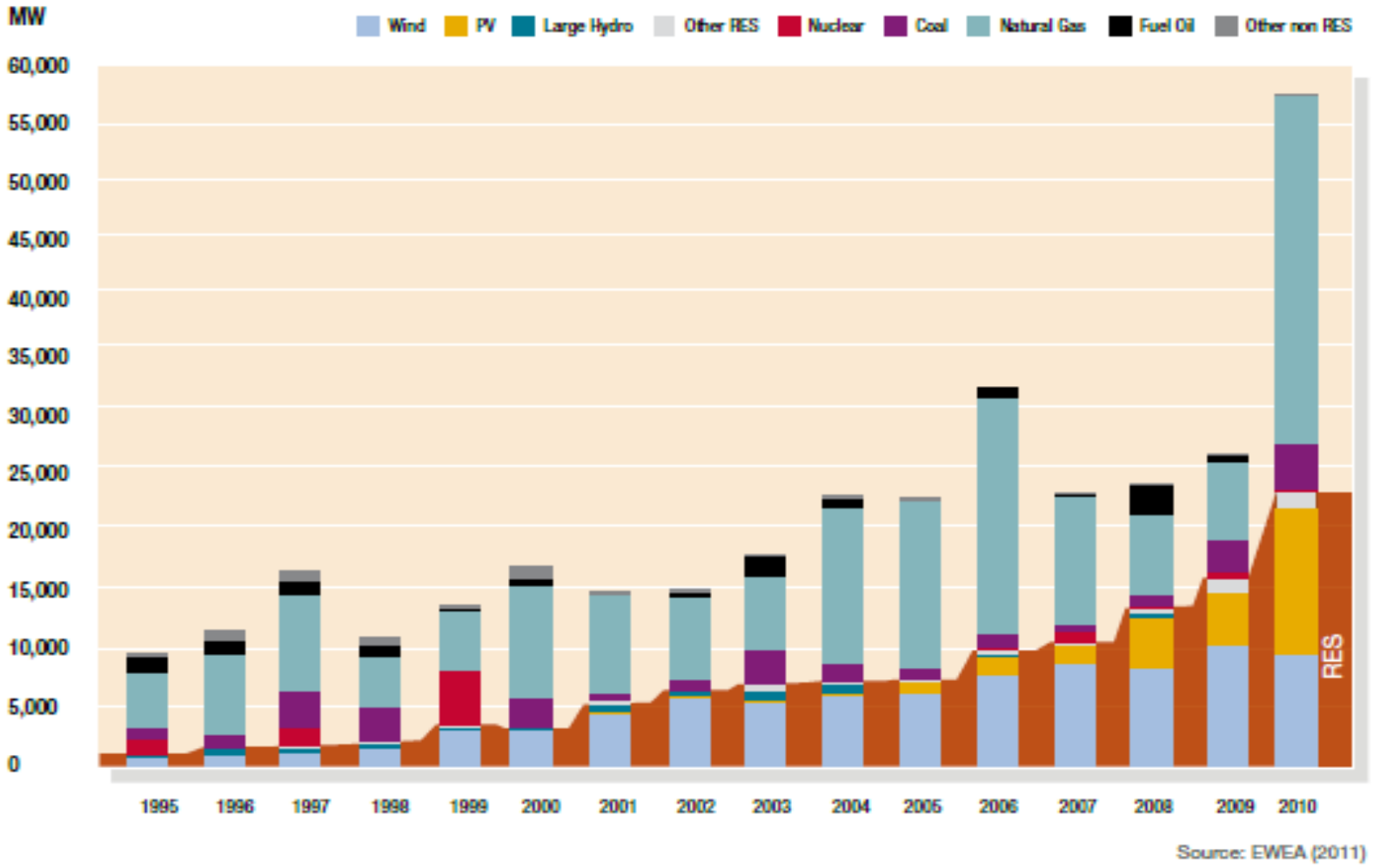
New installed power capacity per year (MW)



Renewable Energies can deliver

- **Guarantee Security of Energy Supply**
  - → **RES are proven and mature technology**
  - → **Mix of RE-technologies is always available**
- **Reduce Dependency on Energy Imports**
  - → **RES are domestic energy sources**
- **Curtail Risks of Price Volatility of Fossil Fuels**
  - → **RE-technologies have high cost decreases**
  - → **Wind, solar and geothermal energy are free**
- **Mitigate Climate Change**
  - → **RES are carbon free or neutral**

Still: Barriers must be removed

Market distortions, dominance of incumbent industry, **lack of internalising externalities** and **intransparent procedures** and **administrative barriers** are important reasons for relatively slow market penetration of renewable energy.

→**These barriers have to be removed.**

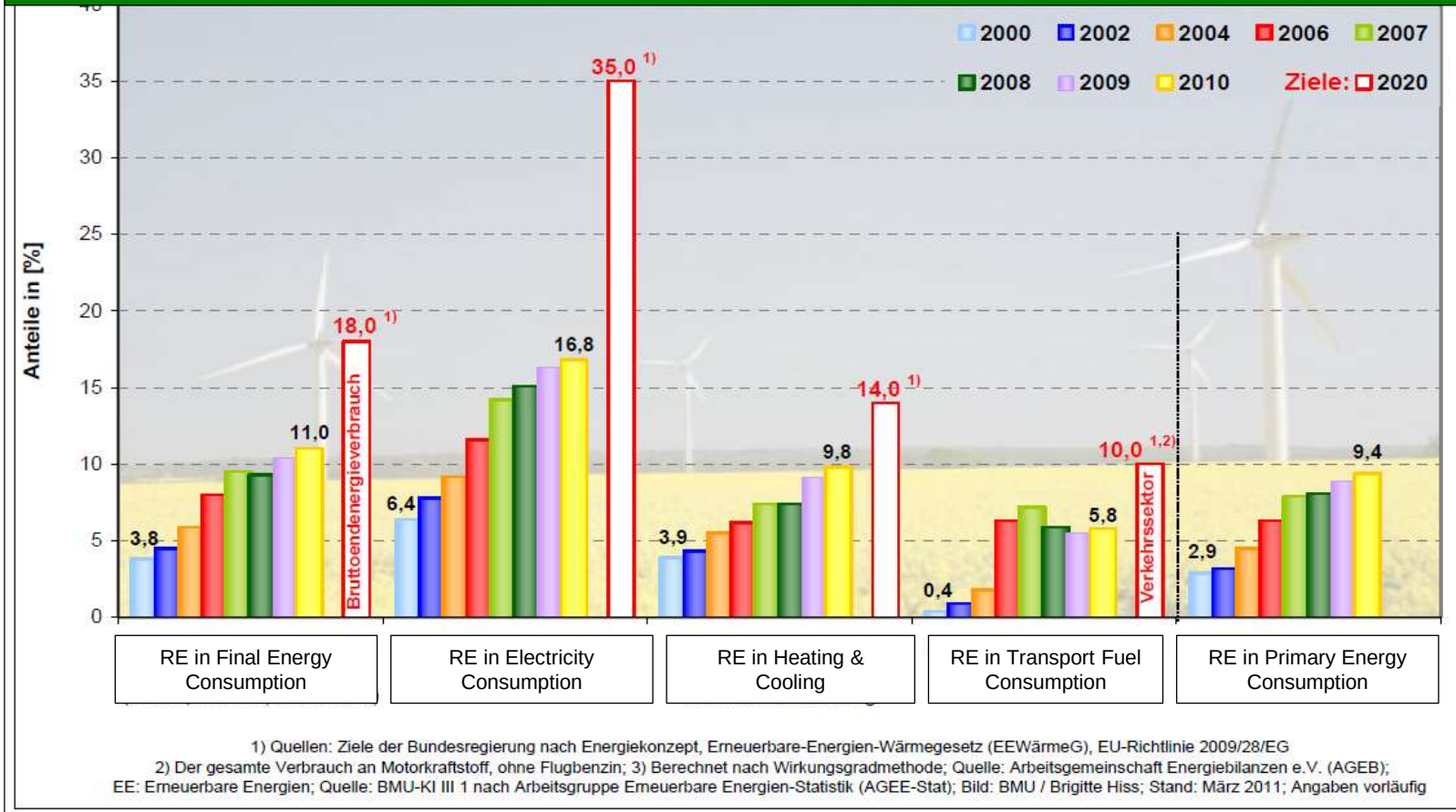
→**Strong political will** and effective and cost efficient **support mechanisms** are necessary.

Support Schemes should ...

- … pave the way for market introduction and market penetration of different forms of RES.
- … foster rapid increase of deployment of RES.
- … encourage and trigger cost reduction.

➢ Removal of administrative barriers and transparent and efficient support mechanisms are key elements for providing investment security for future oriented industry.

Example: Renewable Energies in Germany



1) Quellen: Ziele der Bundesregierung nach Energiekonzept, Erneuerbare-Energien-Wärmegesetz (EEWärmeG), EU-Richtlinie 2009/28/EG
2) Der gesamte Verbrauch an Motorkraftstoff, ohne Flugbenzin; 3) Berechnet nach Wirkungsgradmethode; Quelle: Arbeitsgemeinschaft Energiebilanzen e.V. (AGEB);
EE: Erneuerbare Energien; Quelle: BMU-KI III 1 nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat); Bild: BMU / Brigitte Hiss; Stand: März 2011; Angaben vorläufig

Share of Renewables in Germany's Energy Supply

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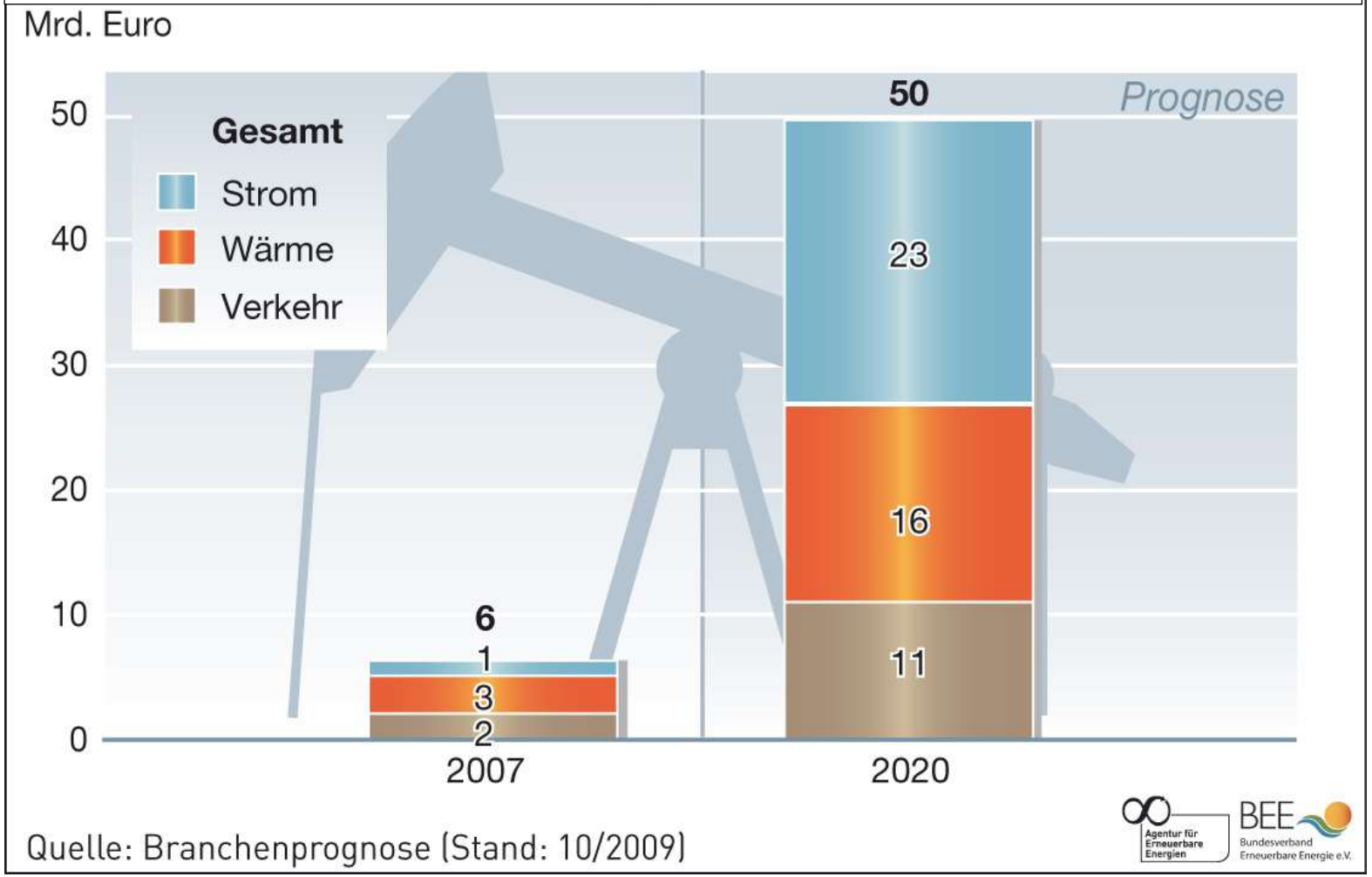
Avoided Costs for Fossil Fuel Imports due to the Use of Renewable Energy in Germany: 2007 / 2010



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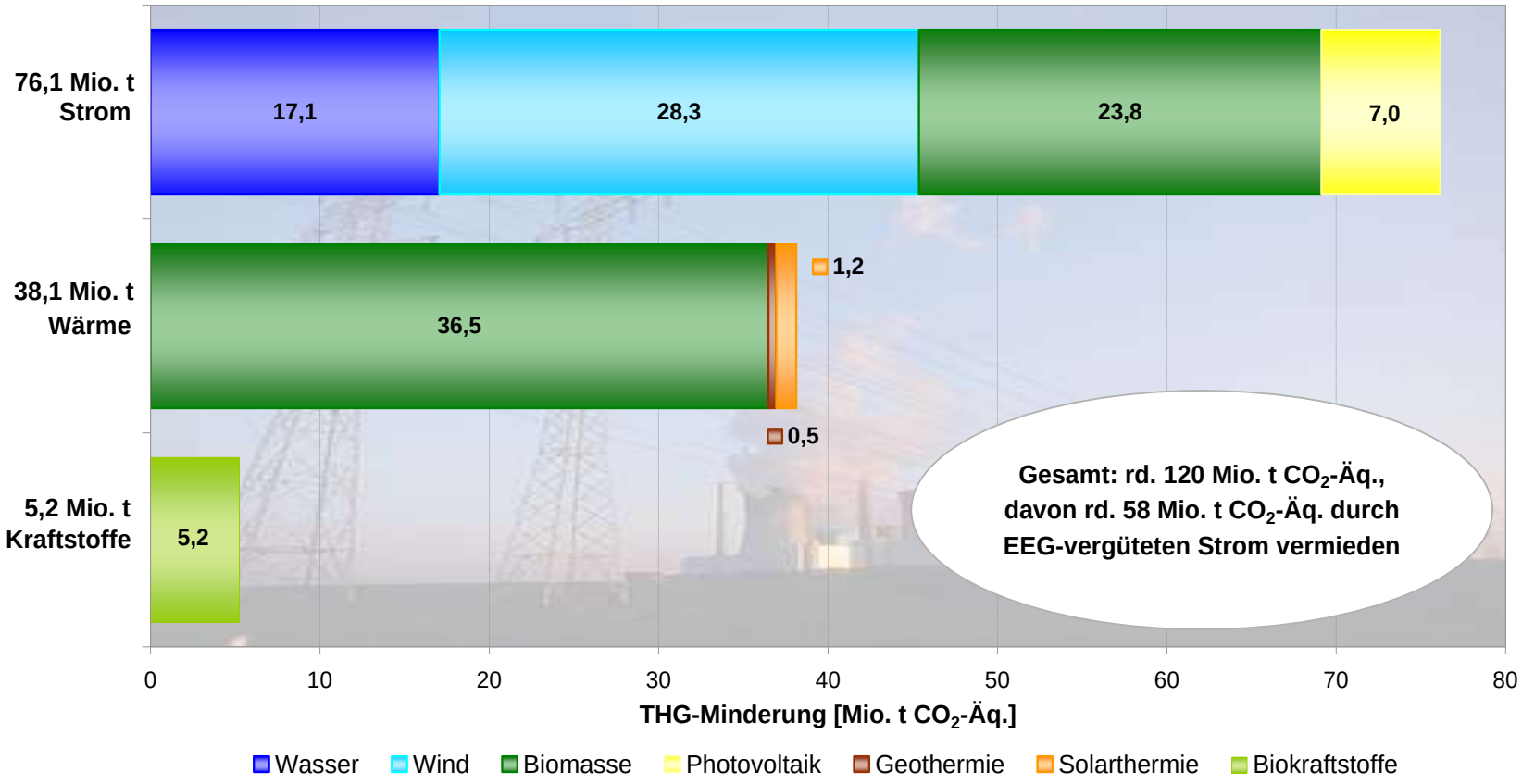
Industry forecast:
287 million tons CO_2eq in **2020**

Avoided Greenhouse Gas Emissions in Germany in 2010 by using of Renewable Energy



THG: Treibhausgas; Abweichungen in den Summen durch Rundungen; aufgrund geringer Strommengen ist die Tiefengeothermie nicht dargestellt;
Quelle: UBA nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat); Bild: H. G. Oed; Stand: März 2011; Angaben vorläufig

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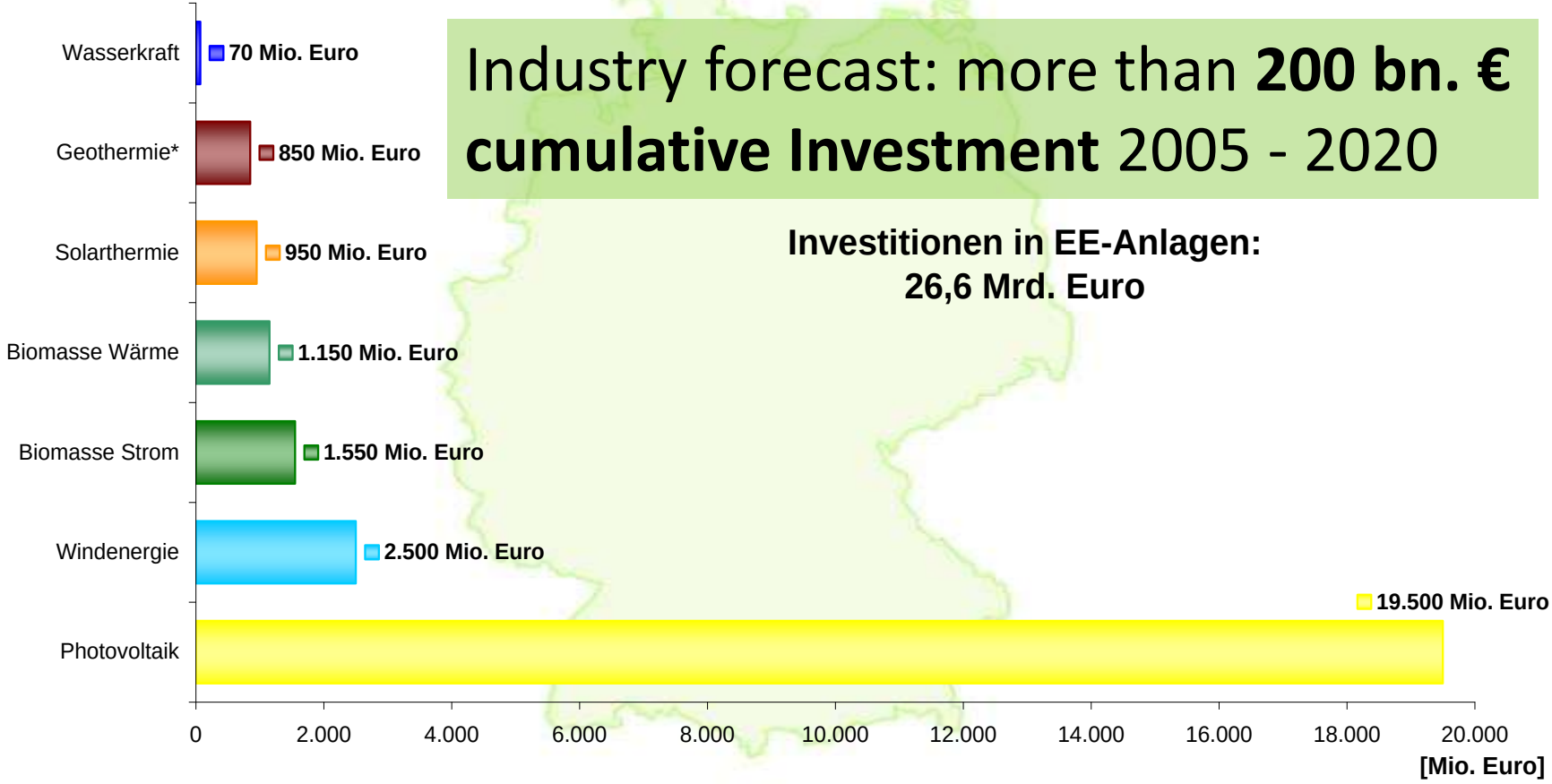
Investment in Renewable Energy Installations in Germany in 2010: 26.6 billion Euro



Industry forecast: more than **200 bn. €** **cumulative Investment** 2005 - 2020

Investitionen in EE-Anlagen: 26,6 Mrd. Euro

* Großanlagen und Wärmepumpen; Abweichungen in den Summen durch Rundungen;

Quelle: BMU-KI III 1 nach Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW); Stand: März 2011; Angaben vorläufig

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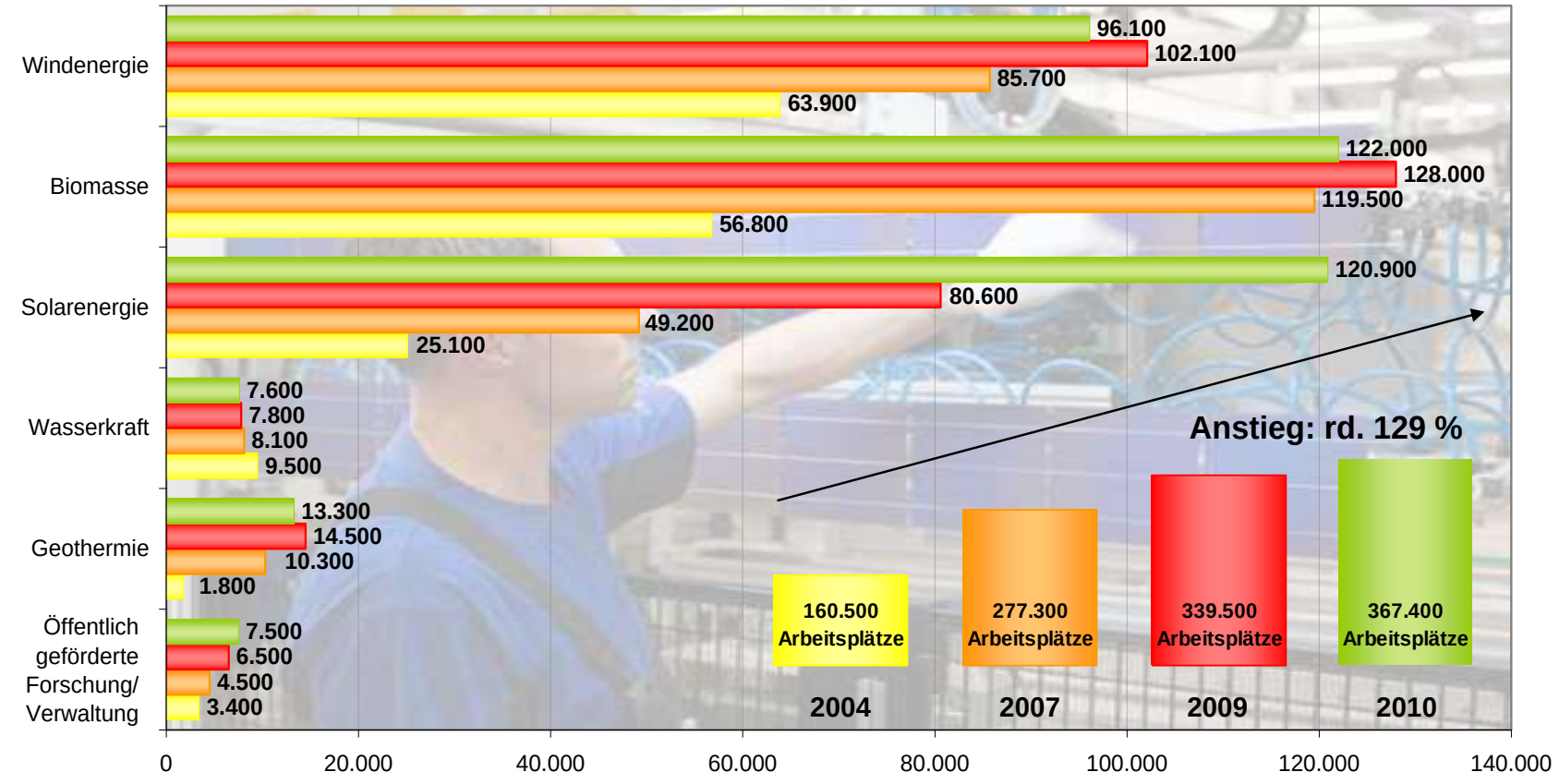
Industry forecast: more than **500,000 jobs** in **2020**

Development of Gross Employment in Renewable Energies in Germany (2004 – 2010)



Angaben für 2009 und 2010 Abschätzungen; Abweichungen in den Summen durch Rundungen;
Quelle: O'Sullivan/Edler/van Mark/Nieder/Lehr: "Bruttobeschäftigung durch erneuerbare Energien im Jahr 20010 – eine erste Abschätzung", Stand: März 2011; Zwischenbericht des Forschungsvorhabens „Kurz- und langfristige Auswirkungen des Ausbaus erneuerbarer Energien auf den deutschen Arbeitsmarkt"; Bild: BMU / Christoph Busse / transit

Strong Policies for Renewables

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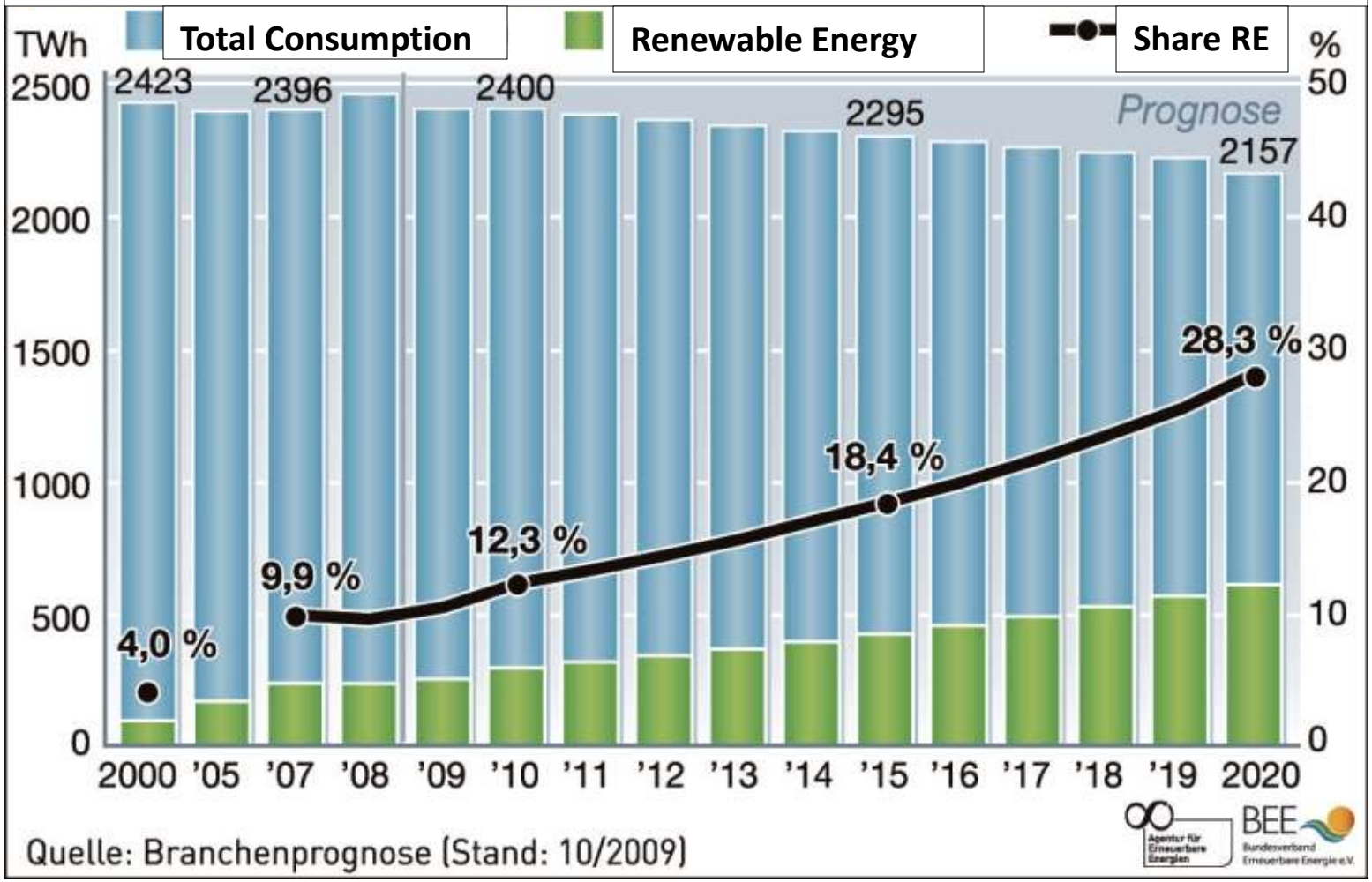
Erneuerbare Energie e.V.

- In Germany, there is an overwhelming **consensus** in favour of renewable energy
- Targets and policies for **all sectors**, Electricity, Heating, Transport
- For electricity from Renewable Energy: **Law granting priority to electricity from renewable energy** (EEG):
  - Ambitious targets for 2010 (12.5%) and 2020 (>35%)
  - Priority access to the power grid
  - guaranteed remuneration for 20 years (feed-in tariffs)
  - Differentiation of support level (technology, size, site)
  - Regular Degression + periodical review.

Share of Renewable Energies in Total Final Energy Consumption



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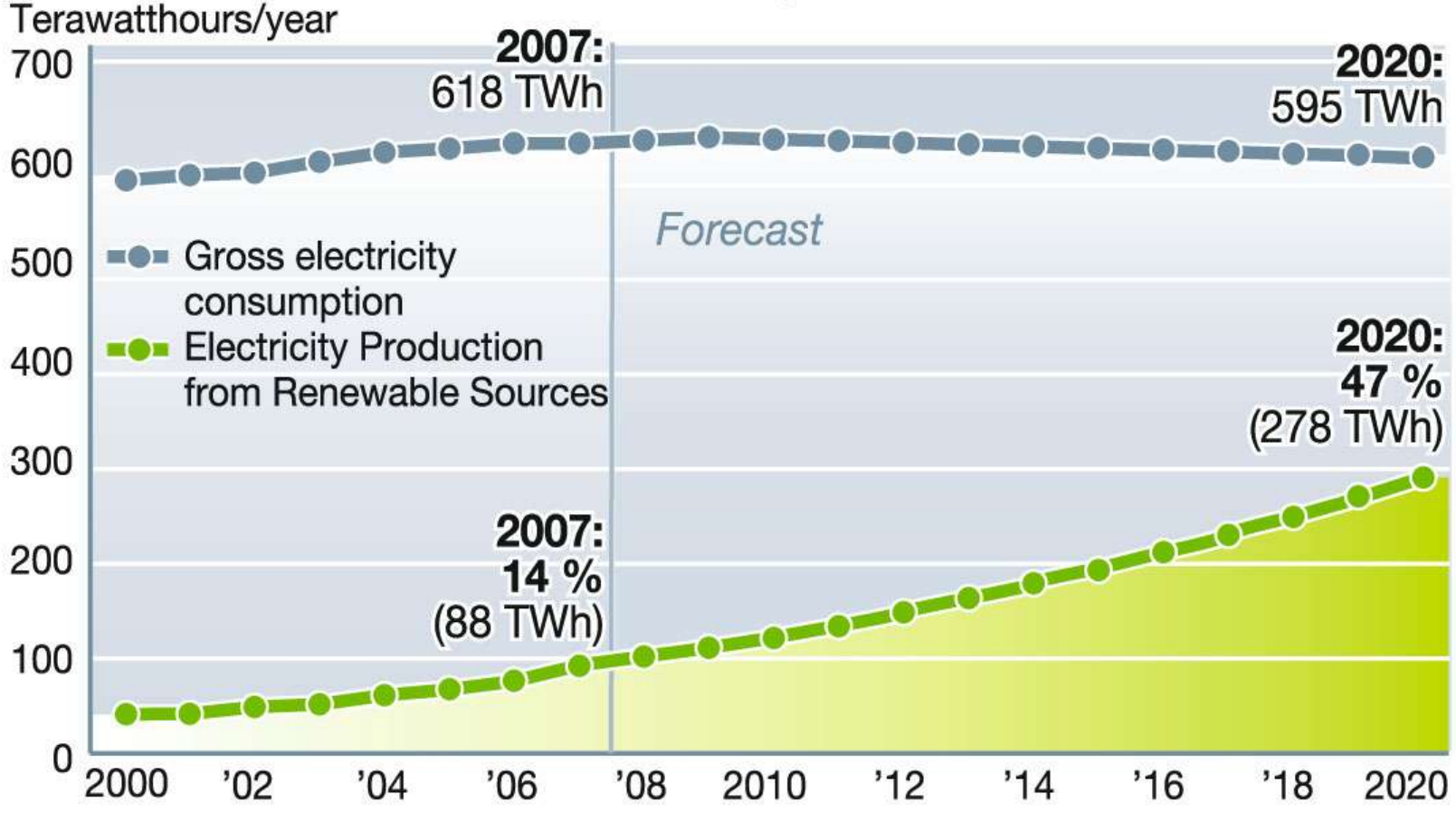
Share of Renewable Energies in Germany's Electricity Consumption until 2020

Until 2020, the share of Renewable Energies will reach 47 %.



www.unendlich-viel-energie.de

Source: Industry Forecast 2020; Status: 1/2009

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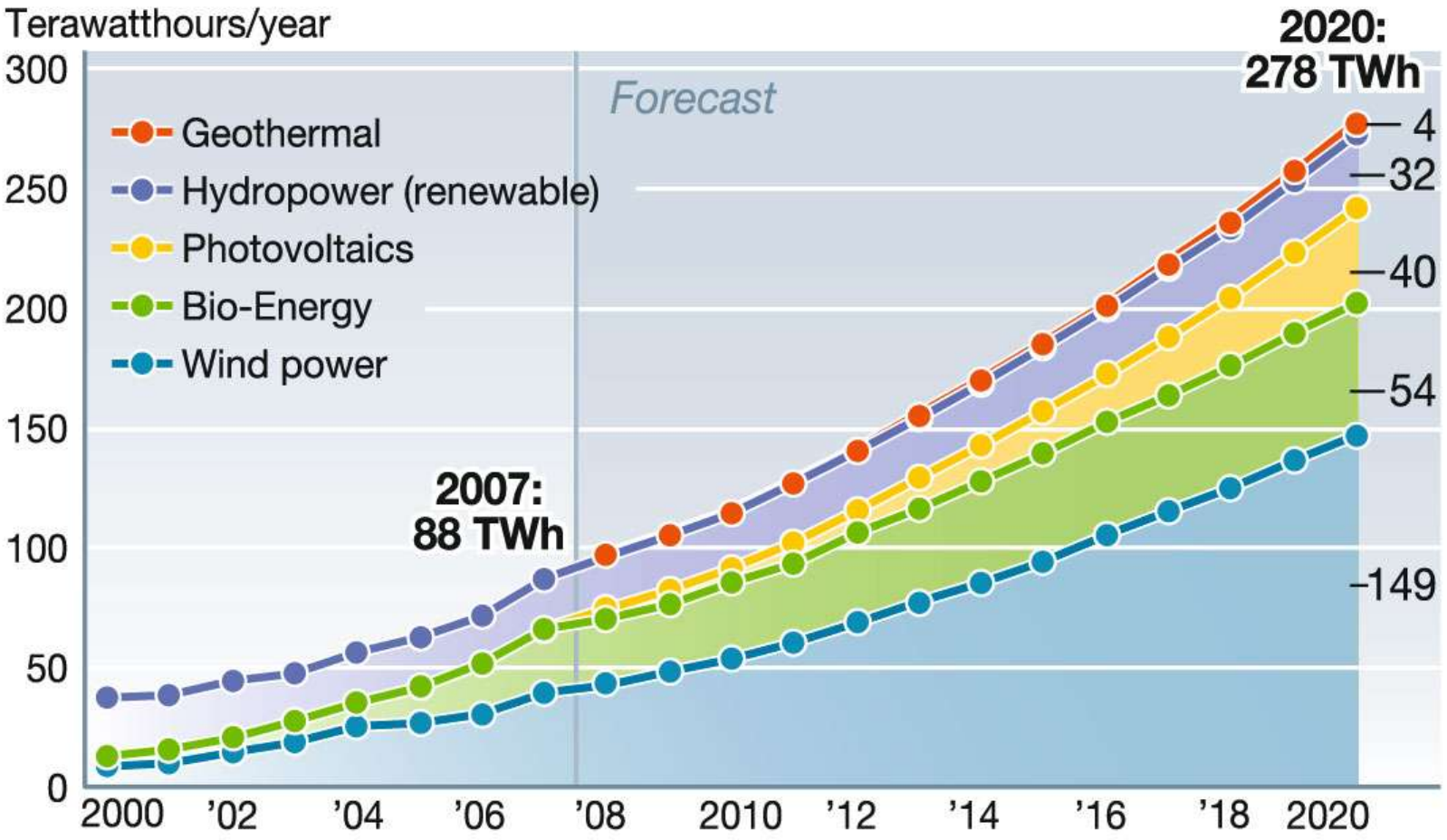
Electricity Production from Renewable Sources in Germany until 2020



Source: Industry Forecast 2020; Status: 1/2009

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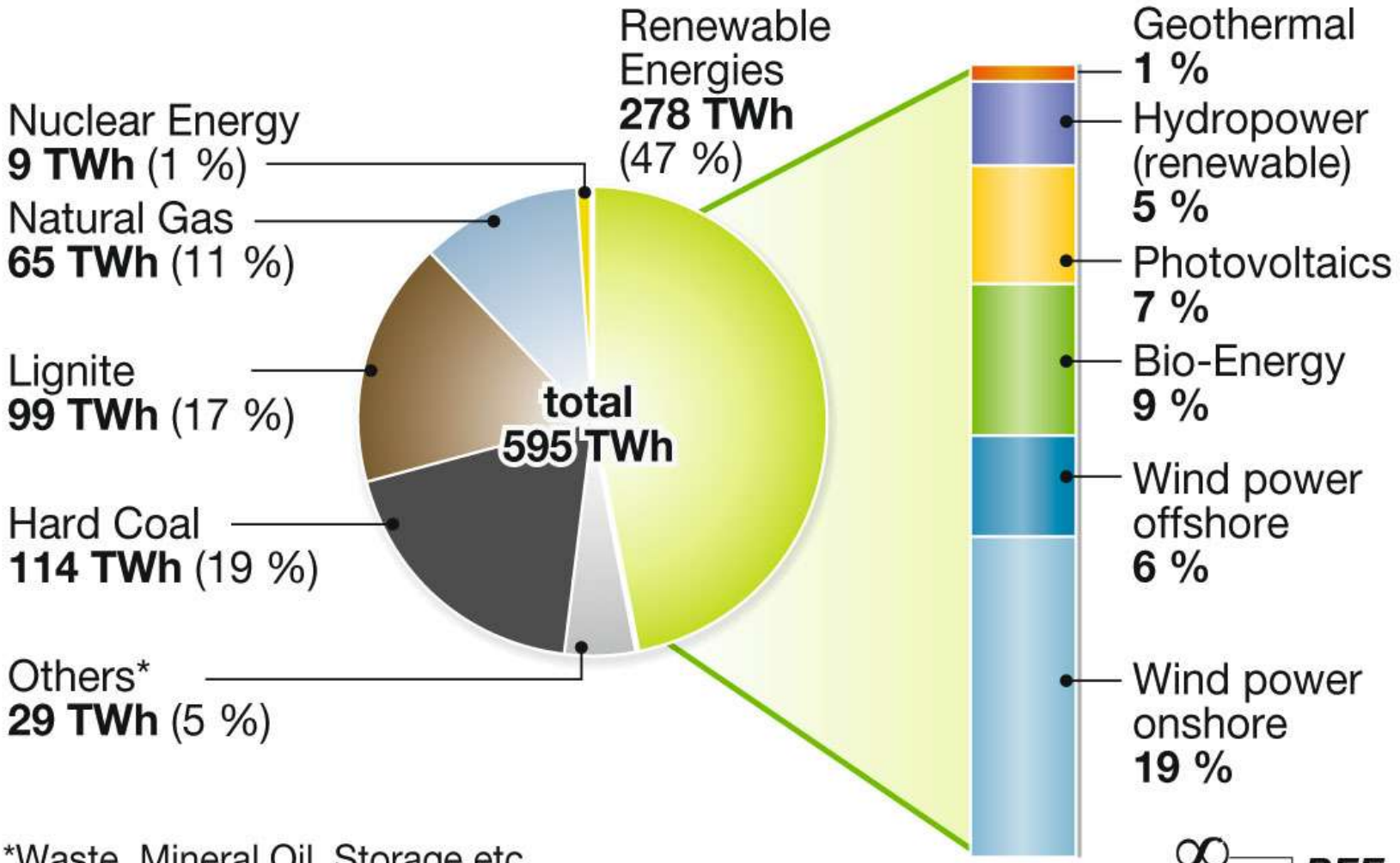
The Electricity Mix in 2020: Renewable Energies Ensuring 47 % of Supply



*Waste, Mineral Oil, Storage etc.
Source: Industry Forecast 2020; Status: 1/2009

www.unendlich-viel-energie.de

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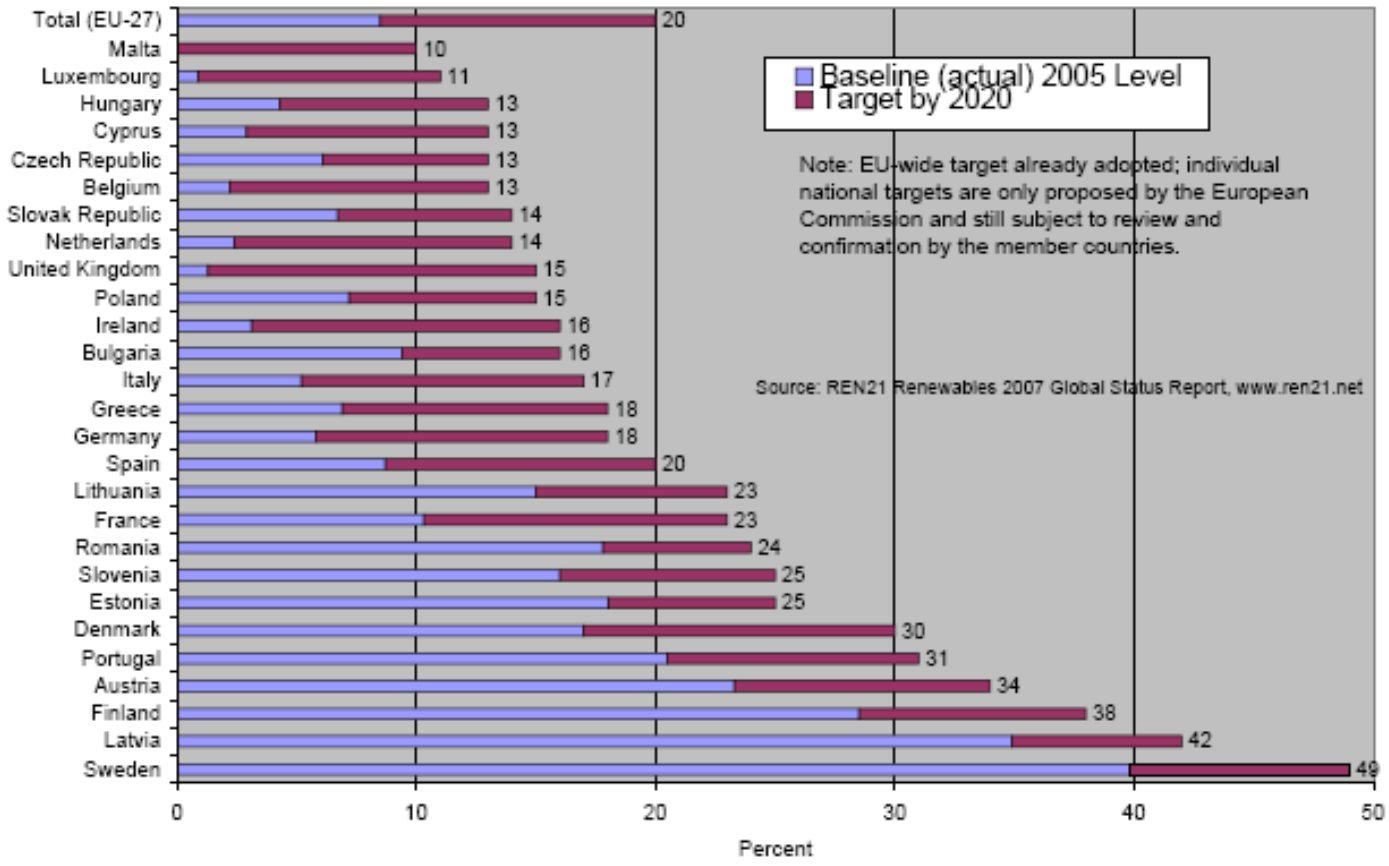
The Renewables Directive (2009/28/EC)

- Milestone for mainstreaming renewable energy
- All sectors: electricity, heating & cooling, transport
- 2020: 20% Renewables in EU's final energy
- Binding national targets
- Key role of national support systems
- Cooperation Mechanisms
- National Renewable Energy Action Plans (NREAPs)
- Regular reports (MS and EC)
- Full and ambitious implementation is crucial

RES-targets for 2020

Figure 12. EU Renewable Energy Targets—Share of Final Energy by 2020



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20% by 2020 – Europe can do more!

- EU-27: Surplus of about 1% above the 2020 target
- 25 MS forecast to achieve or exceed their binding 2020 targets within national borders
- Only Italy and Luxembourg plan to use CoopMex to meet binding 2020 targets
- According to the RES industry projections, the EU-27 could reach 24.4%

Source: EREC_EU Roadmap

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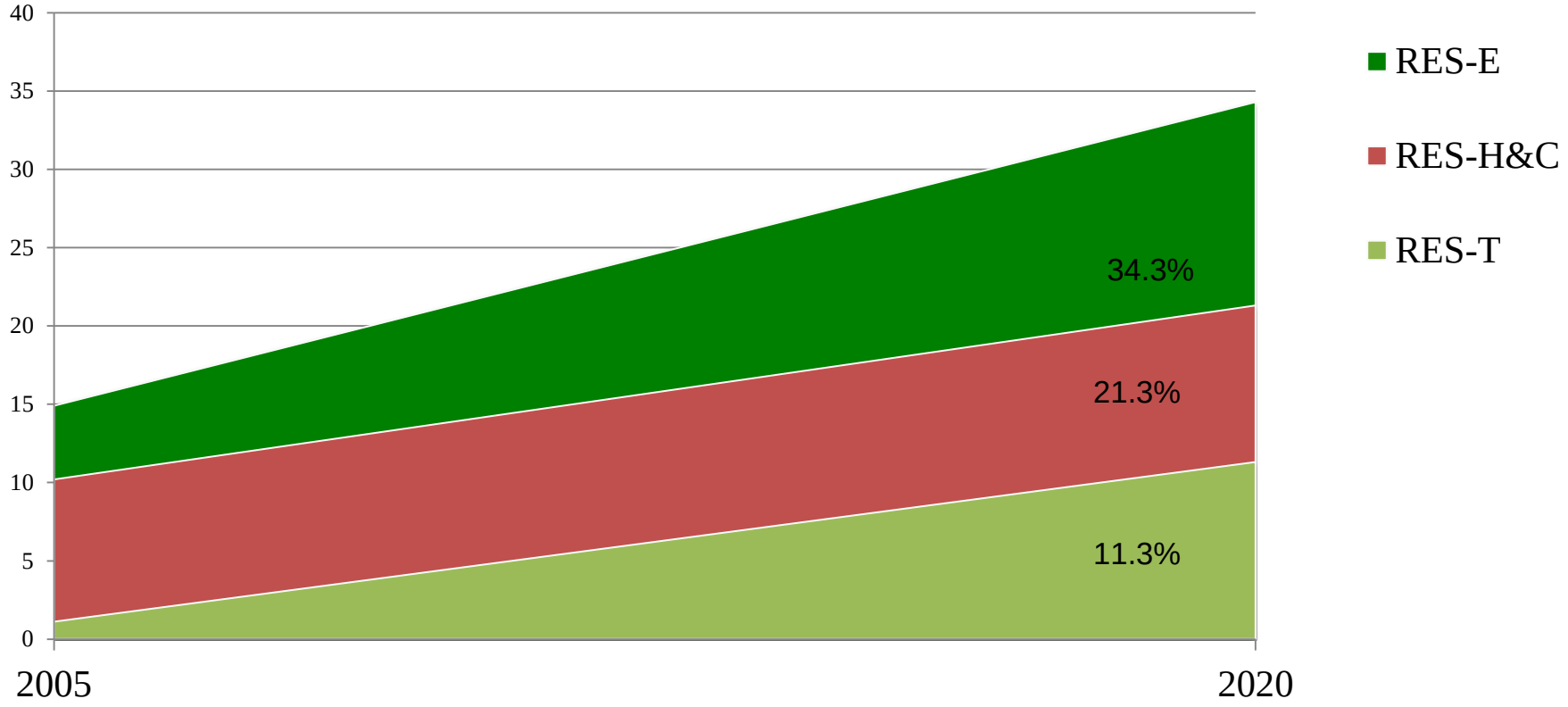
RES increase by sector (%)

NREAPs projections



Source: EREC based on the NREAPs

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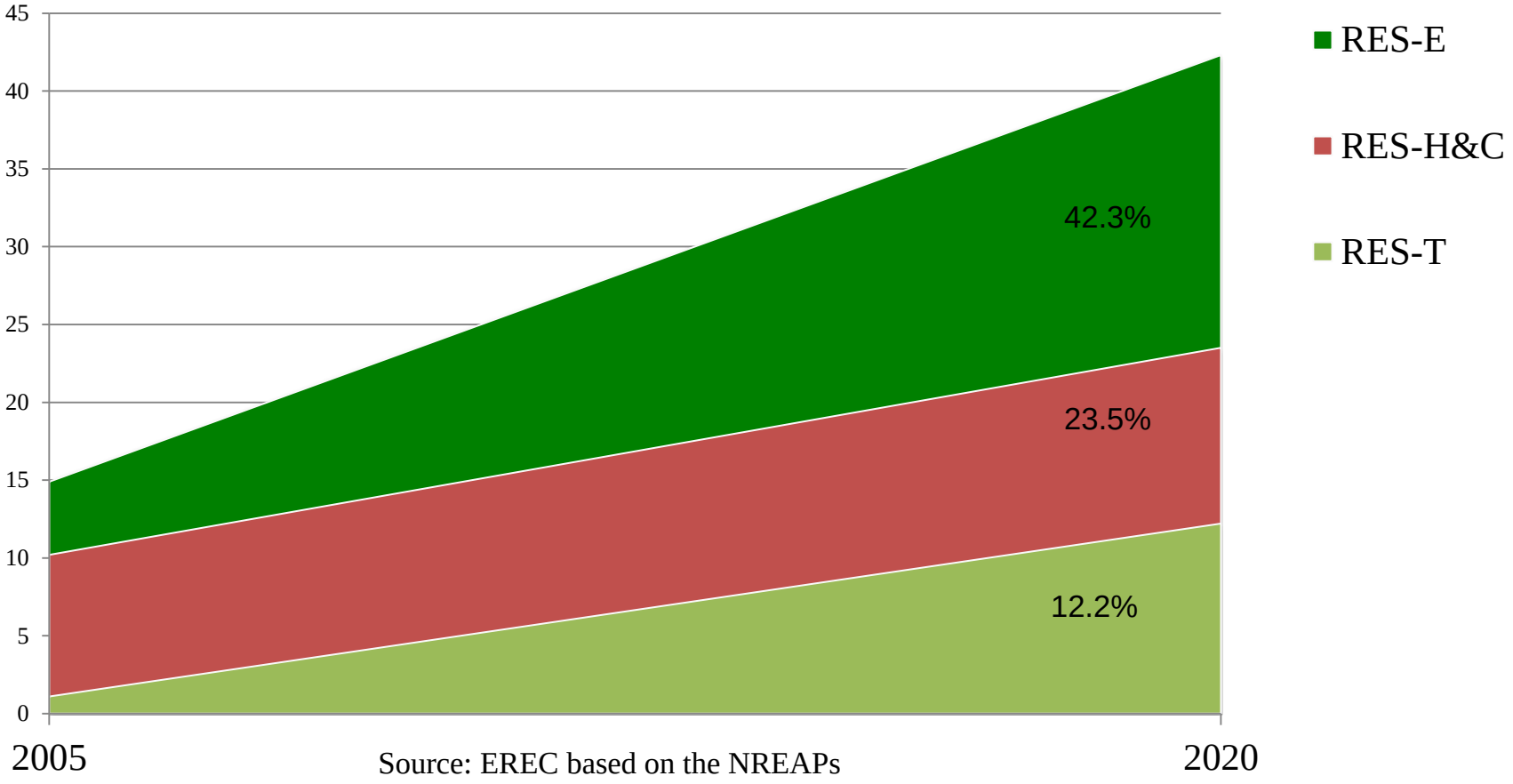
RES increase by sector (%)

RES Industry projections



Source: EREC based on the NREAPs

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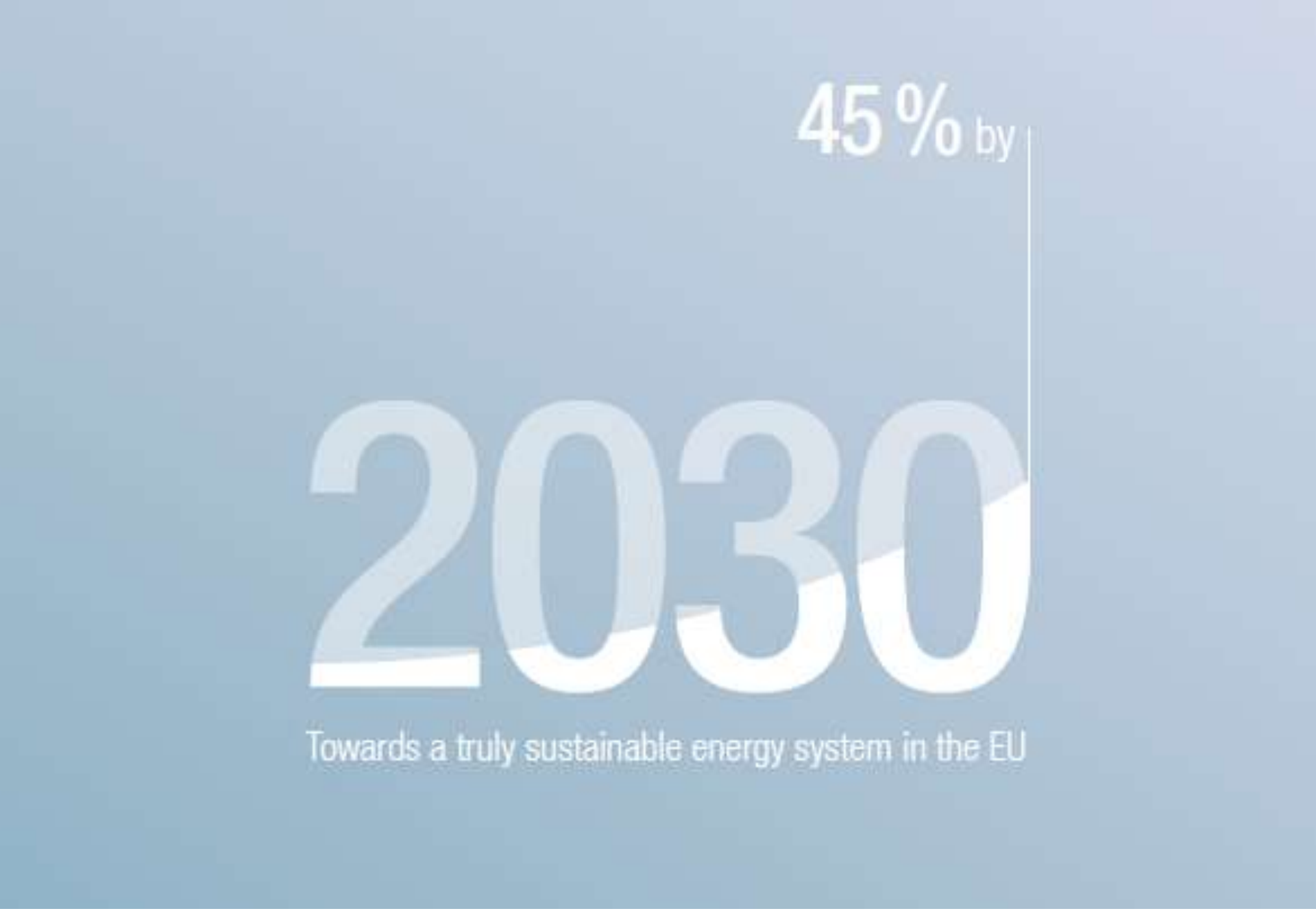
What's next – EU-level

- Effective and ambitious **implementation of the RES Directive**
- **Stable and reliable** national support schemes
- Ambitious framework to **reduce Europe's energy demand**
- **Level playing field** in the energy market, new market design
- Important role of **decentralised** and **distributed** generation**, smart infrastructure** development
- **Coherent strategy** for an energy **system fully based on renewables (Energy Roadmap 2050)**
- **Phasing out all subsidies for fossil and nuclear energy**
- **NEXT STEP:** Binding **renewable** energy **target for 2030**


45 % by
2030
Towards a truly sustainable energy system in the EU

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Policy Recommendations (1/2):

- **Ambitious implementation of the RED and strong policies for renewables is key for future oriented growth.**
  The targets (e.g. 13% for CZ and 18% for DE) should be seen as an absolute minimum to be clearly exceeded!
- **National policies have to be thoroughly checked** for compliance with the RED – in in particular whether or not they are providing the necessary reliability for smooth growth of Renewables.
- **The next steps have to be prepared to create and maintain a stable framework for renewable energy through ambitious – overall and sectoral – targets and reliable policies:**
  * Develop ambitious targets for 2030 and a vision for 2050!
  * Design policies for a fully renewables based energy supply!

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Policy Recommendations (2/2)

- **Create real markets for energy and facilitate a level playing field for renewable energy – centralized and decentralized:**
  * Remove administrative barriers and discriminating costs!
  * Introduce a stable legal framework for renewable energy!
  * Allow for real competition based on real costs!

- **Remove subsidies for unsustainable energy sources:**
  * Accept the polluter-pays-principle!
  * Remove competitive advantages of fossil and nuclear fuels!
  * Accept that coal and nuclear are not competitive in markets!

- Be aware: On a real cost basis, based on life-cycle assessment and including externalities, most **renewable energies** are already today or will soon become **cost competitive**!

The Way Forward …

- **By 2050 global emissions must have been reduced by >50%.**
  → Emissions in industrialised countries to be reduced by 80 – 95%.
  → Energy sector to be completely decarbonised.

- **Global Emissions must peak in 10 – 15 years.**
  → EU-targets (20-20-20/30 in 2020) [and other] are not sufficient.
  → Renewable Energy can contribute much more:
  → **IPCC**: 80% in 2050, **EREC/Greenpeace**: ~100% in 2050

- **Renewable Energies are available and they are sustainable**.
  → Deployment has to be accelerated, barriers must be removed.
  → Clear priorities and policies are needed for renewable energy:
  Traditional base load electricity (coal and nuclear) does not fit in.

- **Prepare for Post-2020: Striving for 100% Renewable Energy!**

Thank you for listening!

Why should the Czech Republic not enter competition for the most successful deployment of renewable energy?

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