



Federal Ministry
for Economic Affairs
and Energy



Renewables Energies and Energy Efficiency in Germany at a Glance

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eclareon GmbH

on behalf of the Federal Ministry for
Economic Affairs and Energy

www.german-energy-solutions.de

Organiser:



Agenda

1. German Energy Solutions Initiative

2. Renewable Energies and Energy Efficiency in Germany

- Energiewende and background
- Building Sector
- Opportunities through the use of RES

3. The German Delegation



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German Energy Solutions Initiative

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German Energy Solutions Initiative – Goals

- ✓ demonstrate solutions in the field of energy efficiency and renewable energies
- ✓ help implement and expand energy efficiency as well as renewable energy measures as a way to boost competitiveness
- ✓ transfer know-how into the hands of political decision-makers, key opinion leaders and market participants
- ✓ make a tangible contribution to international climate protection

German Energy Solutions Initiative – Benefits



✓ foreign trade fairs



✓ information events



✓ know-how transfer
✓ qualification



✓ trade missions



✓ fact-finding missions to
Germany

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Renewables Energies and Energy efficiency in Germany

- Energiewende and background -

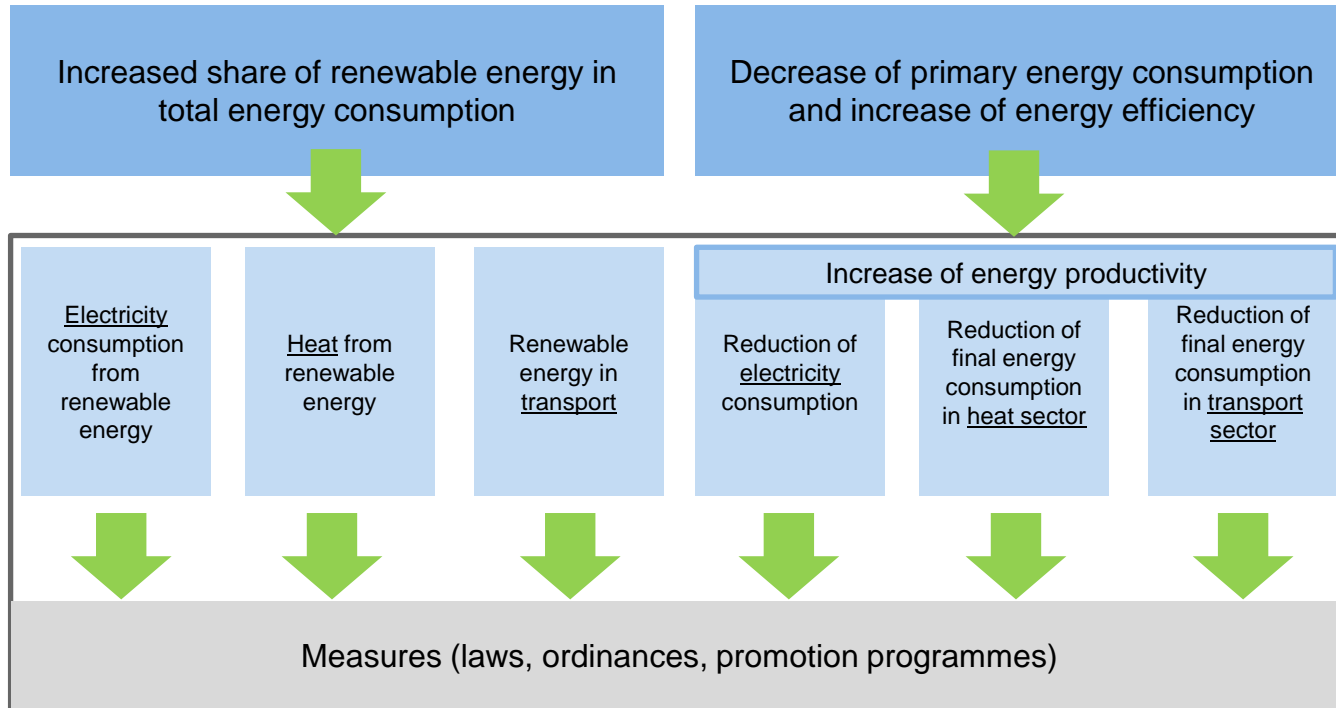
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The German Energiewende at a Glance

Climate Goals (reduction of GHG 40% until 2020), nuclear phase-out until 2022, competitiveness, security of energy supply



Political Goals

Core Goals
„Strategic Level“

Control Goals
„Control Level“

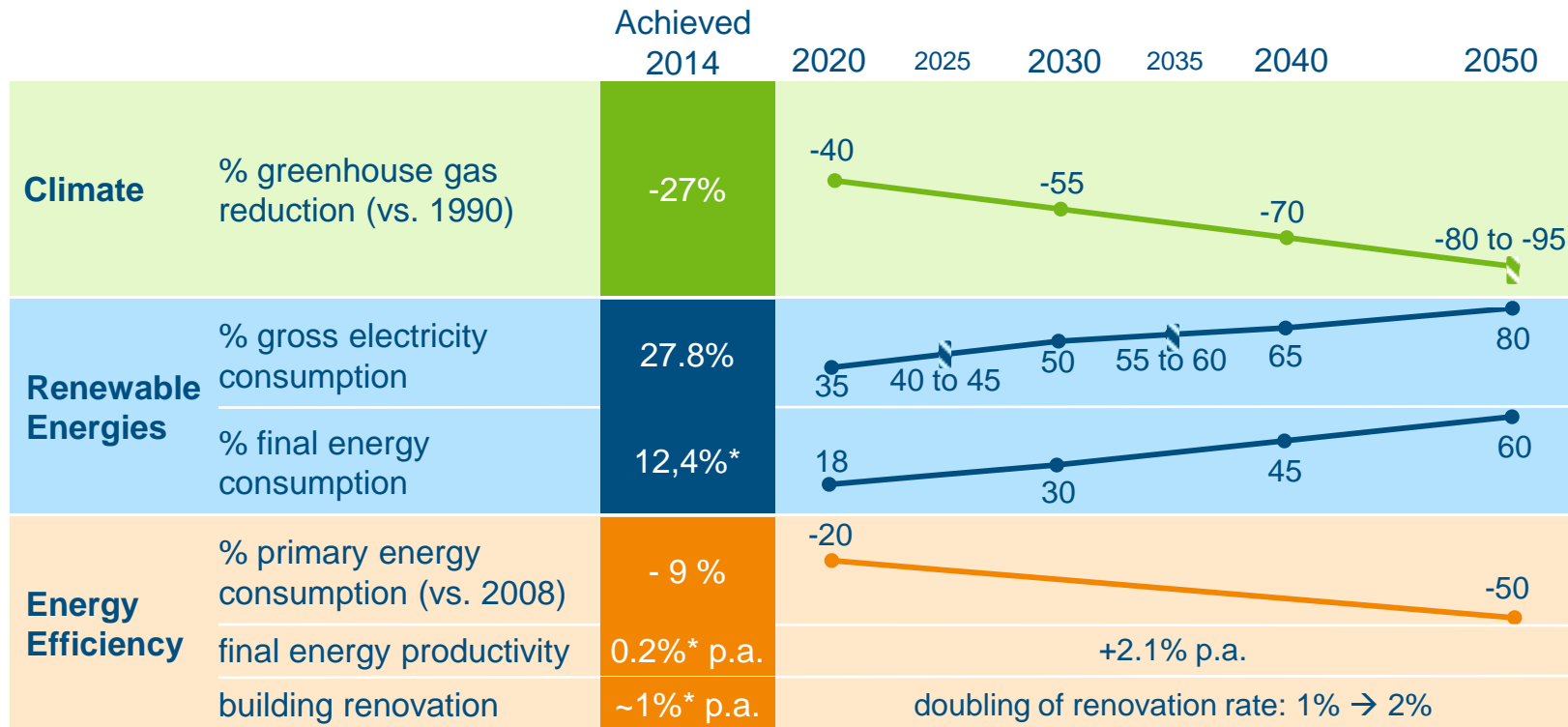


Optimisation

Guiding criteria:
- Cost efficiency
- System integration

„Measure Level“

2050 *Energiewende* targets



* 2013

Source: Federal Government 2010, BMU/BMWi 2014, AGEE-Stat 2014, AGEB 2015

The energy transition follows a transparent, long-term strategy with specific targets.



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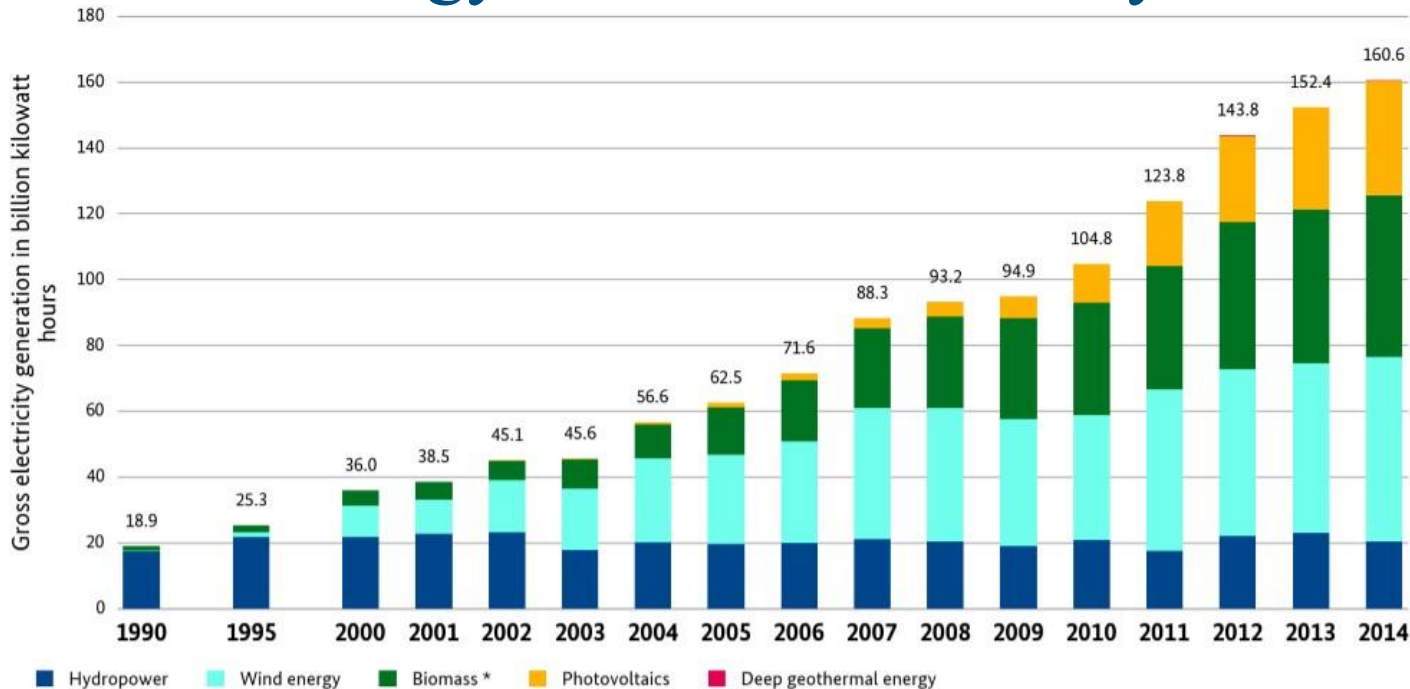
Renewables Energies and Energy efficiency in Germany - Building sector -

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Development of electricity generation from renewable energy sources in Germany

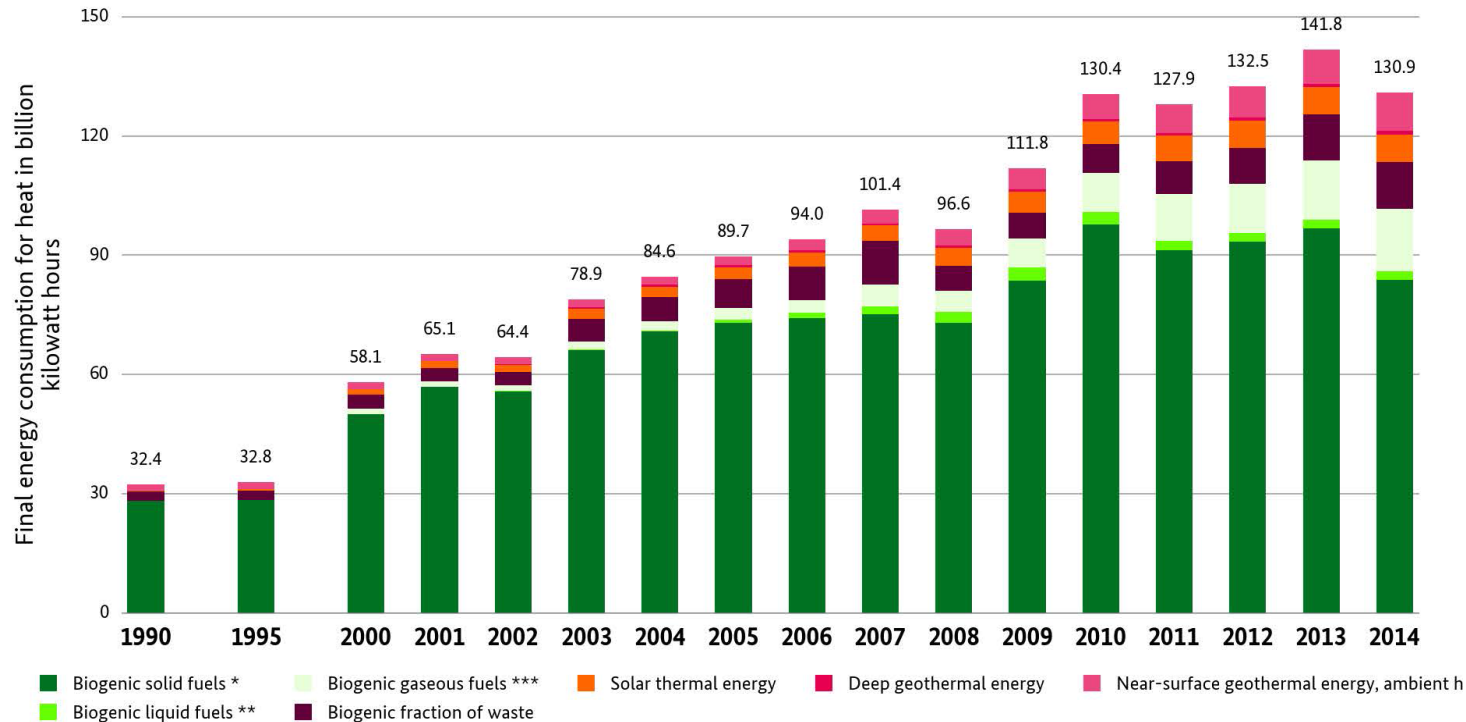


* incl. solid and liquid biomass, biogas, biomethane, sewage gas and landfill gas as well as the biogenic fraction of waste, from 2013 incl. sewage sludge; BMWi based on Working Group on Renewable Energy-Statistics (AGEE-Stat); as at February 2015; all figures provisional

Source: AGEE-Stat. 2015

While in the 1990s hydro was the only renewable energy source, wind onshore, biomass and solar now contribute all to the generation of electricity.

Development of renewables-based heat consumption in Germany

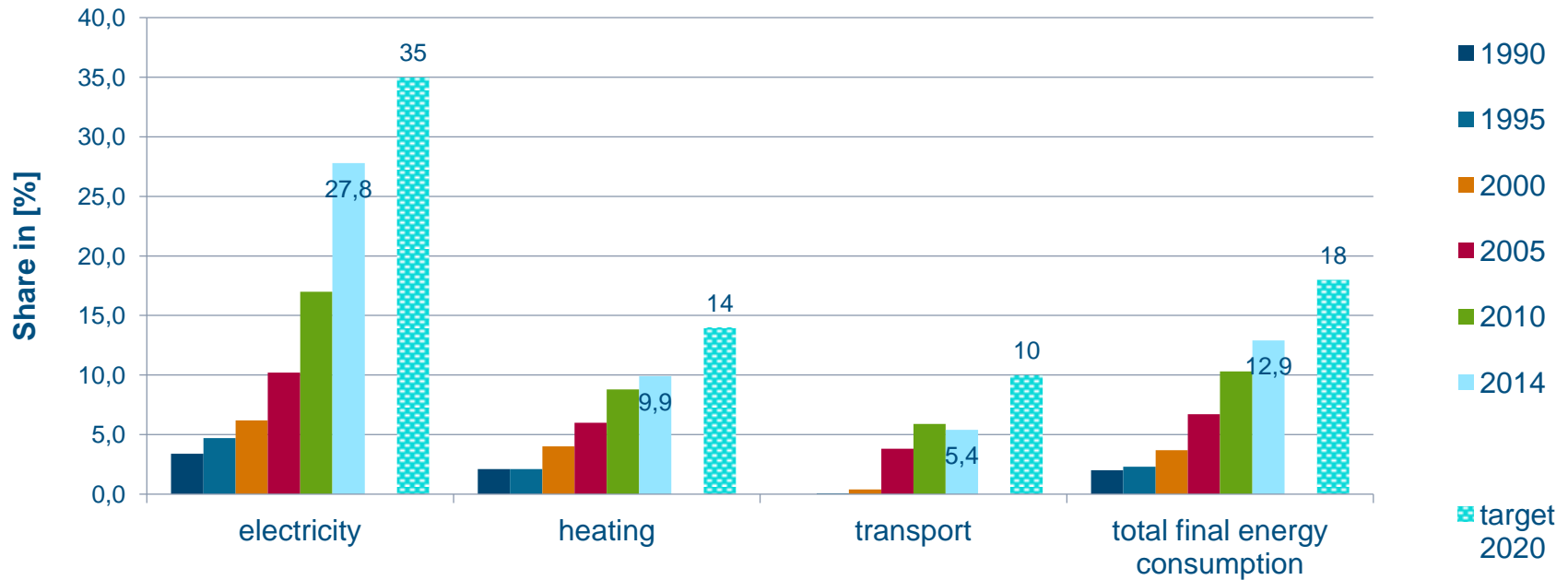


Source: AGEE-Stat. 2015

* incl. biogenic share of waste, ** incl. biodiesel used in farming, *** Biogas, biomethane, sewage gas and landfill gas; BMWi based on Working Group on Renewable Energy-Statistics (AGEE-Stat); as at February 2015; all figures provisional

Biomass plays the leading role in Germany's heat consumption from renewables.

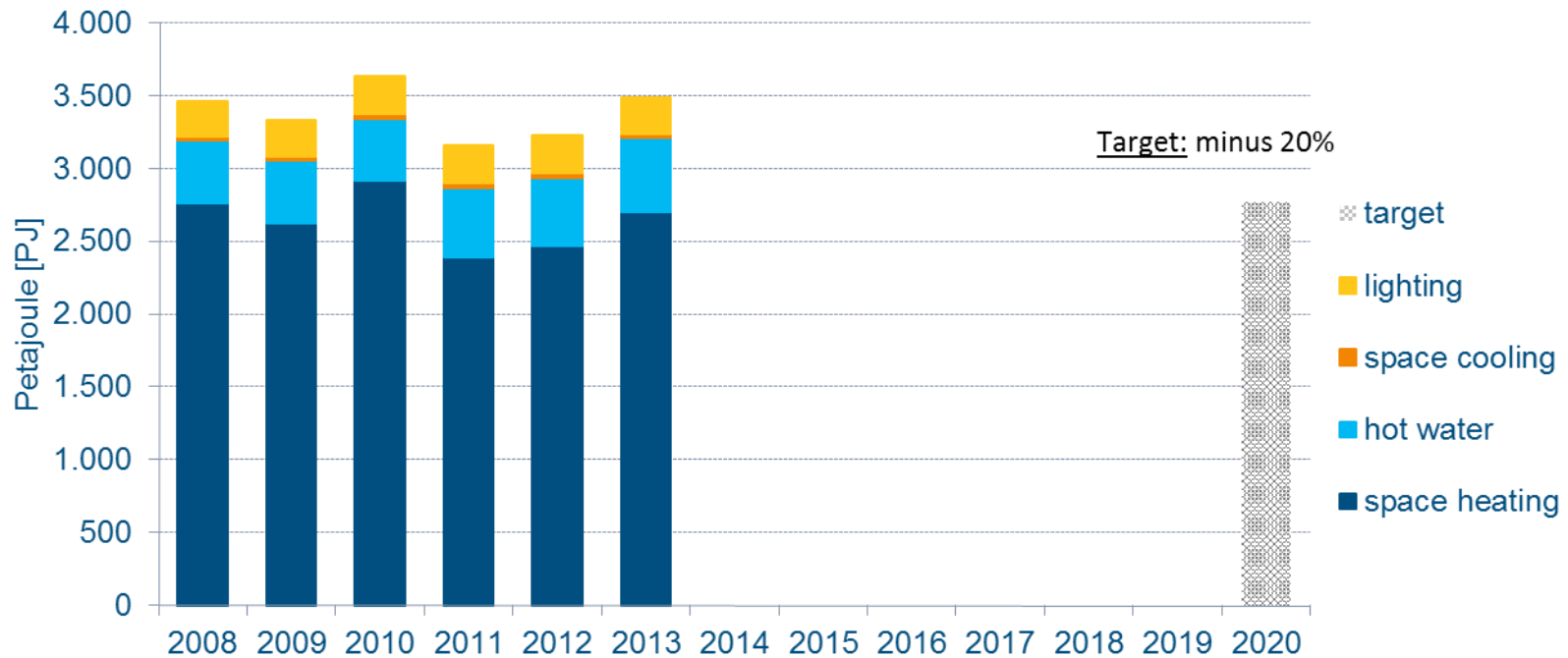
Renewable energy development in Germany



Source: Ecofys 2015 based on AGEE-Stat 2015

Share of renewables is growing in all sectors, but fastest in electricity

Final energy use in German buildings



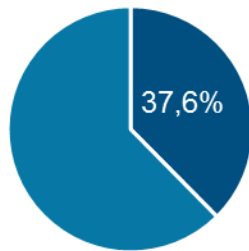
Source: AGE B 2013

Space heating accounts for the highest share of energy consumption in building.

Energy efficiency in German buildings

Sector relevance

Final energy consumption
(2013): 3,484 PJ



Bottom-up energy savings
NEEAP (2008-2013)

171.6 PJ/a
(power coefficient 2.5)



Sector measures

- Information campaign
- Energy consulting
- KfW programmes for energy-efficient construction and renovation
- Heating check and labeling
- Energy saving legislation (EnEV)
- Energy performance certificates
- Key points of the energy efficiency strategy for buildings

NAPE immediate measures

- Incentive programme for energy efficient renovation
- Enhancement of the KfW programmes for energy-efficient construction and renovation

Saving potential
NAPE: 32-76.5 PJ

Source: Ecofys 2015 based on AGEb, 2014, BMWi 2014

The current rate of energy-efficient renovation (0.9% per year) needs to be doubled in order to achieve a climate-neutral building sector by 2050.



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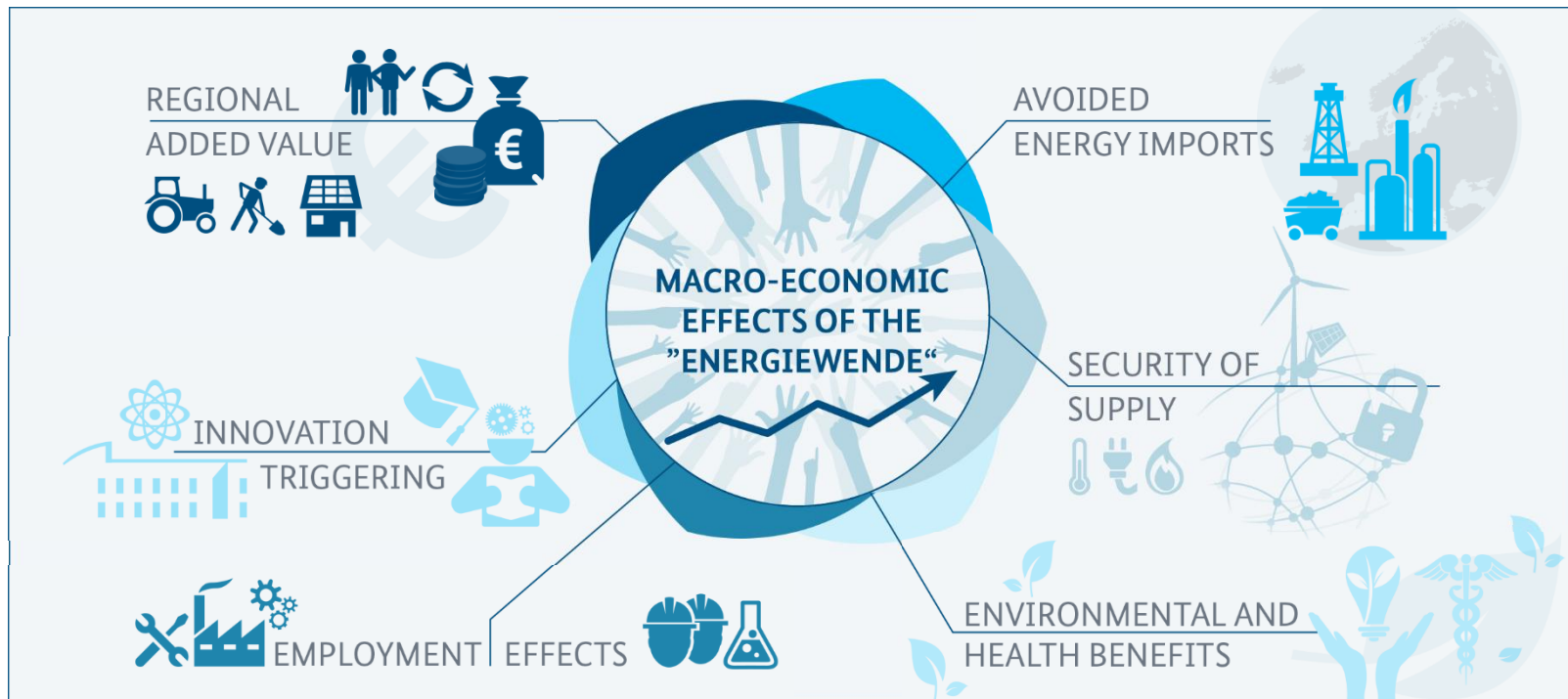
- Opportunities through the use of RES -

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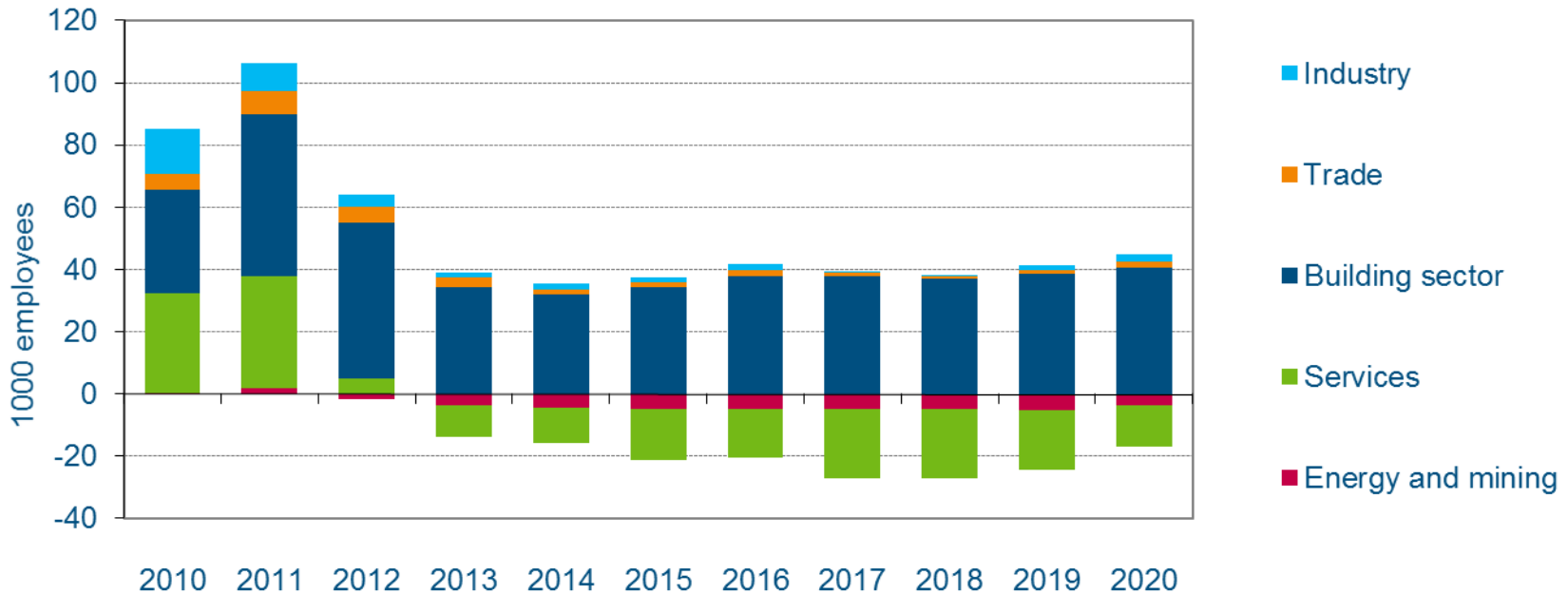
Macro-economic benefits



Source: BMWi 2014

The energy transition has positive effects on various levels of the economy.

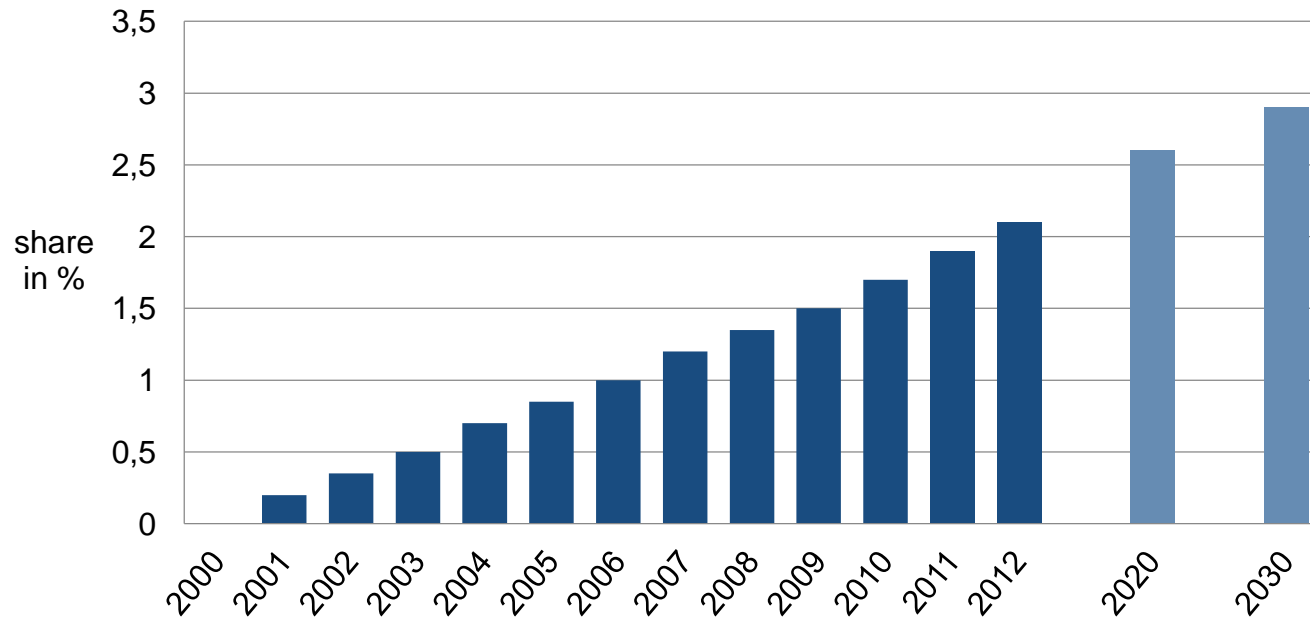
Net job creation due to energy transition



Source: GWS, EWI, Prognos 2014

Of all sectors, employment in the building sector benefits most from the energy transition.

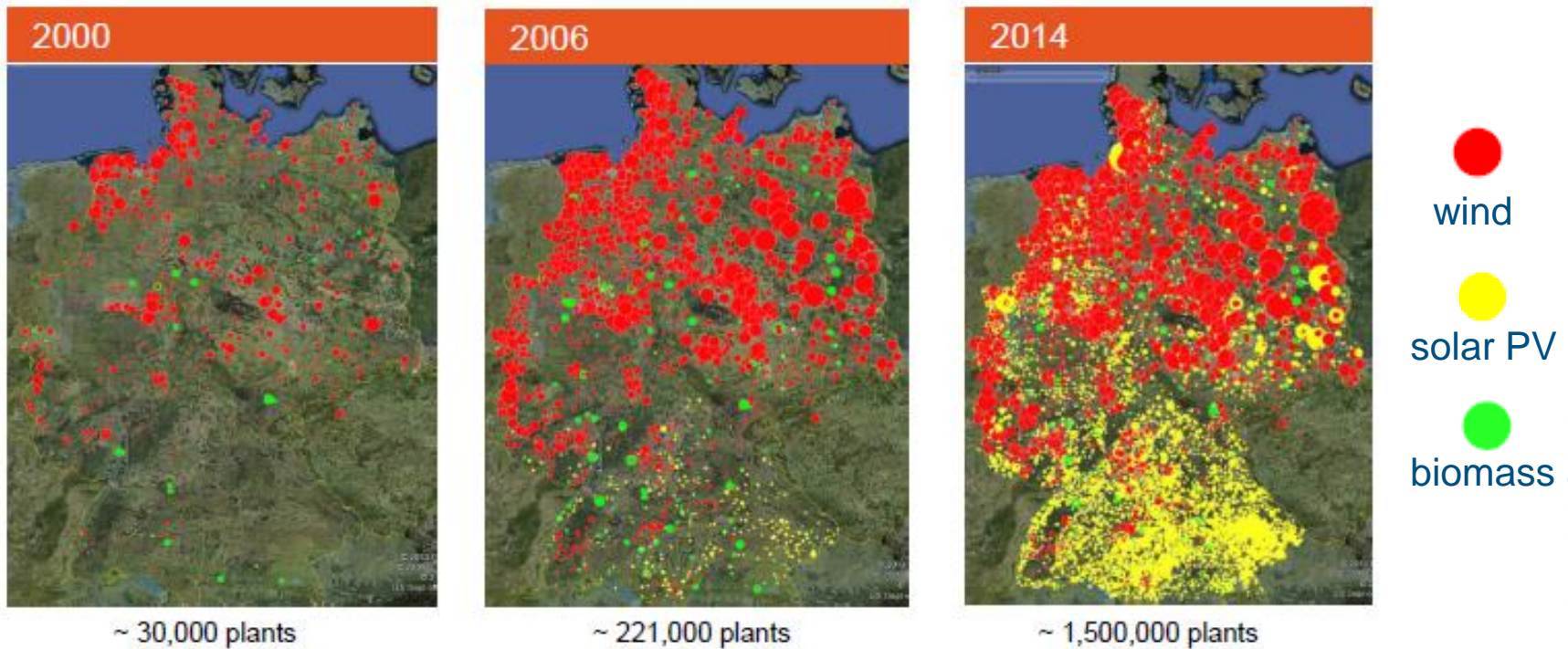
Contribution of renewables to German GDP



Source: DIW 2010, AEE 2014

The German economy is increasingly benefiting from both domestic and international renewables investments.

Expansion of renewable energy sources in Germany



Source: 50hertz, Boris Schucht 2015

Business opportunities: the number of renewable power plants has grown exponentially over the past 14 years.



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The German Companies

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Organiser:



Participating German Companies

Spenso Sports & new Energy Solutions

PBW-Planungsbüro Wahlbuhl

STEINEL Vertrieb GmbH

GeoClimaDesign AG

Ship & Industrie Service UG

Terra Tec-Geoenergy UG

Thank you for your attention!

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