



Federal Ministry
for Economic Affairs
and Energy



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GLOBAL
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The German Energy Solutions Initiative & the Energy Transition

German – Ghanaian Energy Symposium

Renewables in Industry

Christoph Wunsch

Renewables Academy (RENAC) AG

Consultant on behalf of the German Federal Ministry of Economic Affairs & Energy

July 3rd, 2019, Movenpick Ambassador Hotel, Accra



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Delegation der Deutschen Wirtschaft
in Ghana
Delegation of German Industry and
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Content

1. **The German Energy Solutions Initiative**
2. **The Energy Transition in Germany**



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Our Aims

Promotion of renewable energy and energy efficient technologies

Showcase sustainable energy solutions

Implementation of projects

Knowledge transfer

Contribution to international **climate protection**



Actors and Partners



How can you participate and meet German Enterprises?



✓ Foreign trade fairs



✓ Networking opportunities



✓ Knowledge transfer
✓ Information
✓ Capacity building



✓ Trade missions



✓ Fact finding missions



✓ Project development & flagship projects

Knowledge Transfer

Fact finding missions

- ✓ Missions to Germany for foreign companies & decision-makers
- ✓ Visit of best practices and applied solutions

Project development & flagship projects

- ✓ Facilitating business partnerships and knowledge transfer

Capacity building



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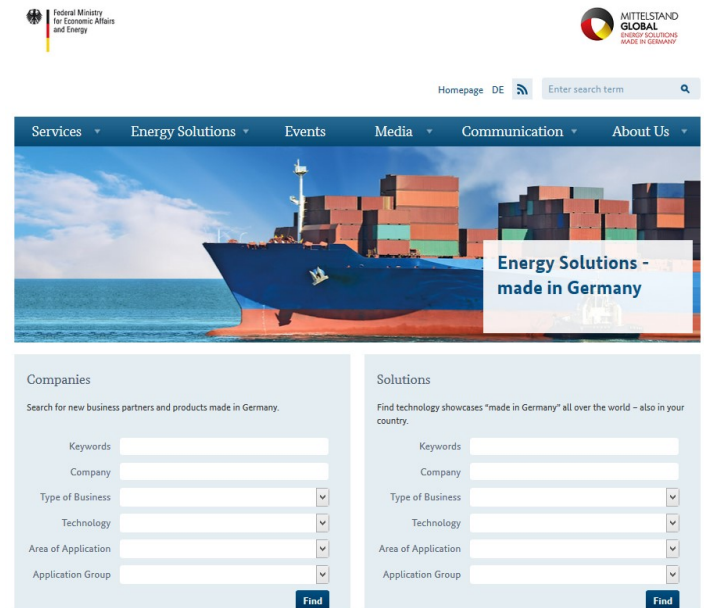


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Information about Events and German companies

On our website you can find:

- ✓ Information about technologies made in Germany on a Database
- ✓ Current news and upcoming events
- ✓ www.german-energy-solutions.de
- ✓ You may also always contact us!



German Delegation

Company	Name of Representative
Autarsys GmbH	Matthias Roß
Averdung Ingenieurgesellschaft mbH	Helmut Annan Adwiraah
ib vogt GmbH	Barton Shasha
Industrial Solar GmbH	Kwasi Deh
KACO new energy GmbH	Christoph Heinermann
VENSYS Energy AG	Jürgen Ringle & Philipp Wieltschnig
Viessmann Werke GmbH & Co. KG	Sonia Berkat

Upcoming Events for Ghana in 2019

- ✓ German Training Week as part of the GIZ Project Development Programme (PDP) – “Solar Energy in Ghana” // 06.11.-08.11.2019



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The German “Energiewende“



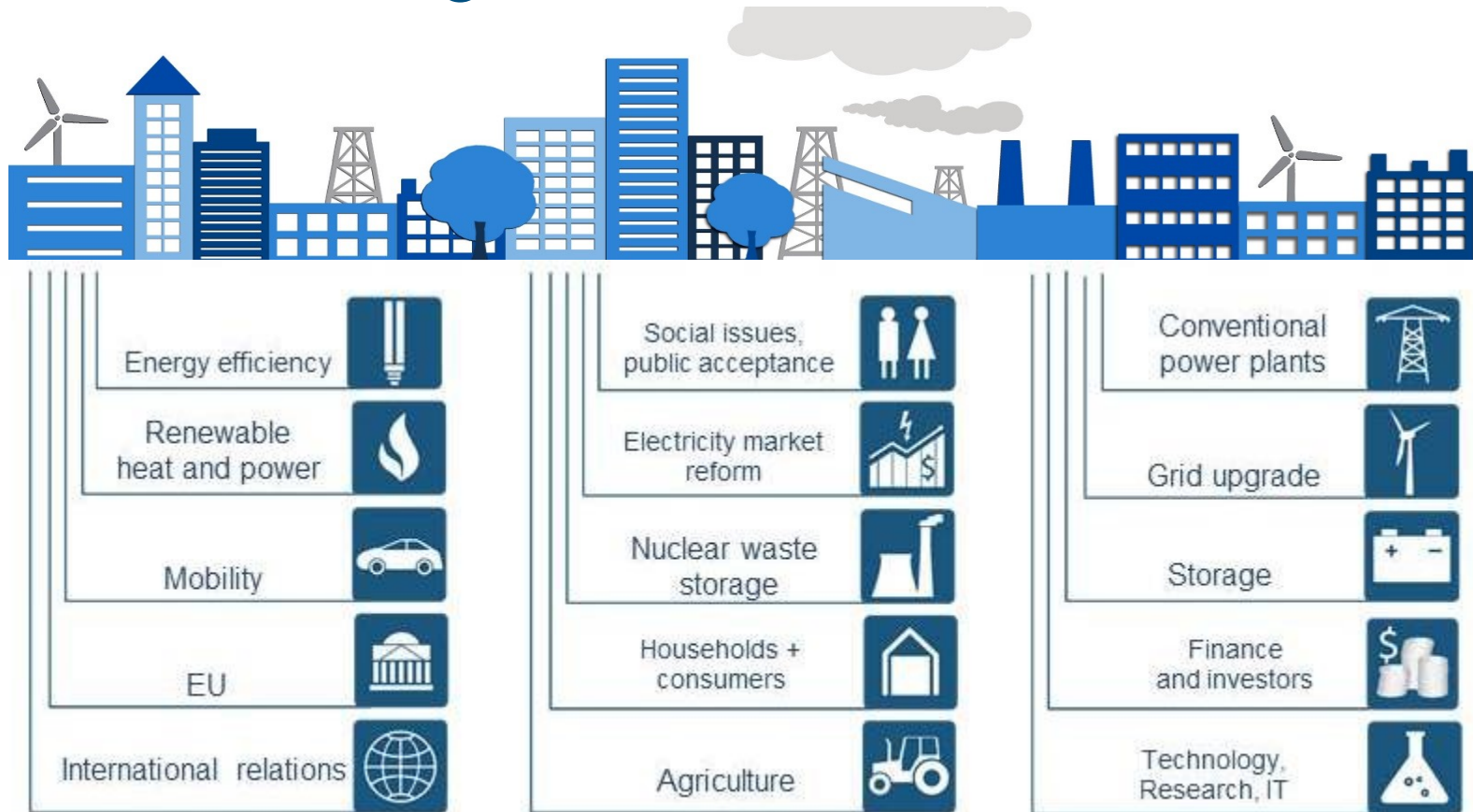
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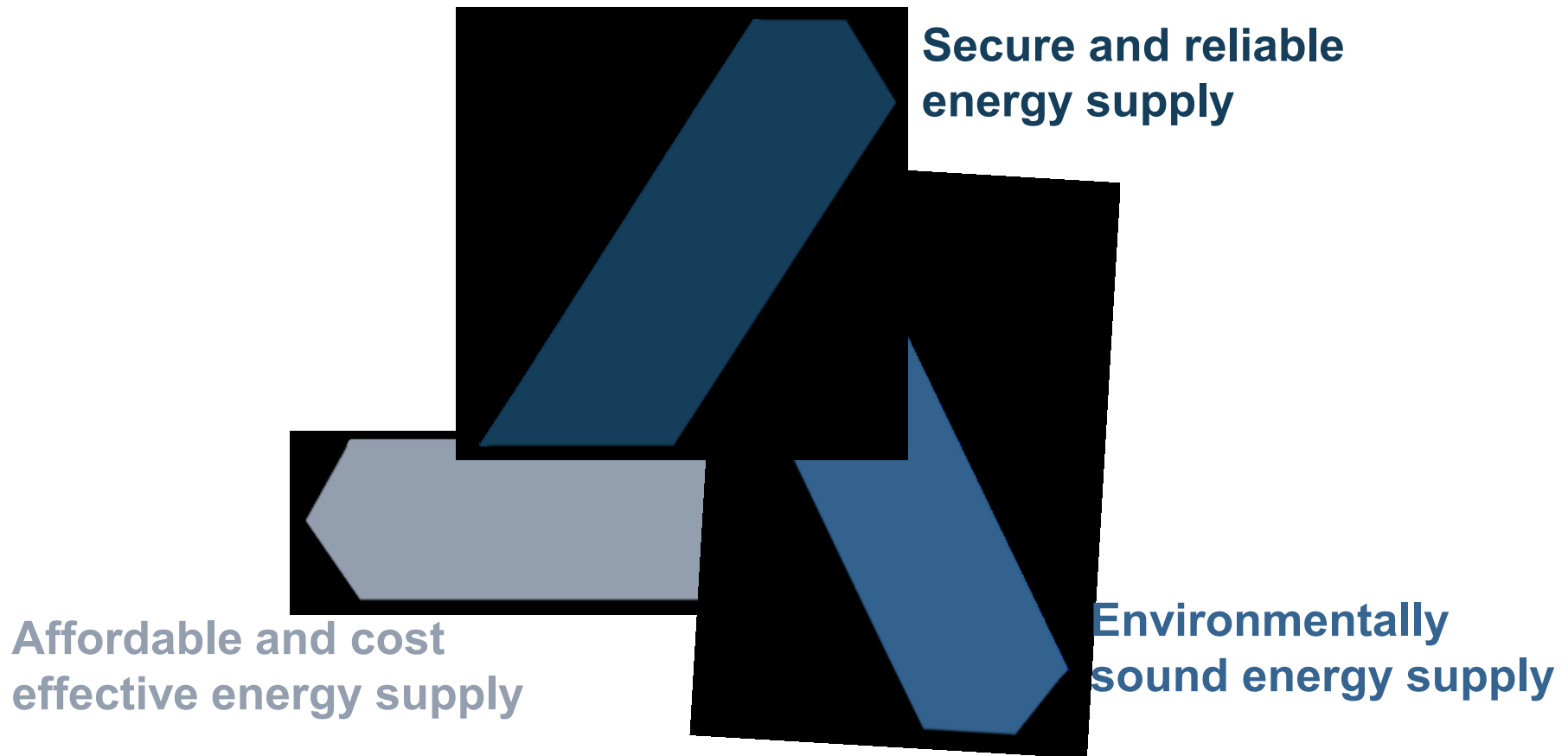
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What is the Energiewende?



The Energiewende is a fundamental transformation of the energy system and re-alignment of energy policy. It is multidimensional and affects many areas.

Policy and Guiding Principles of the Energiewende



Affordability, reliability and environmental protection are interlinked and the ultimate objectives of the Energiewende and German energy policy.

Cornerstones of the Energiewende

Efficiency first



Direct use of renewables



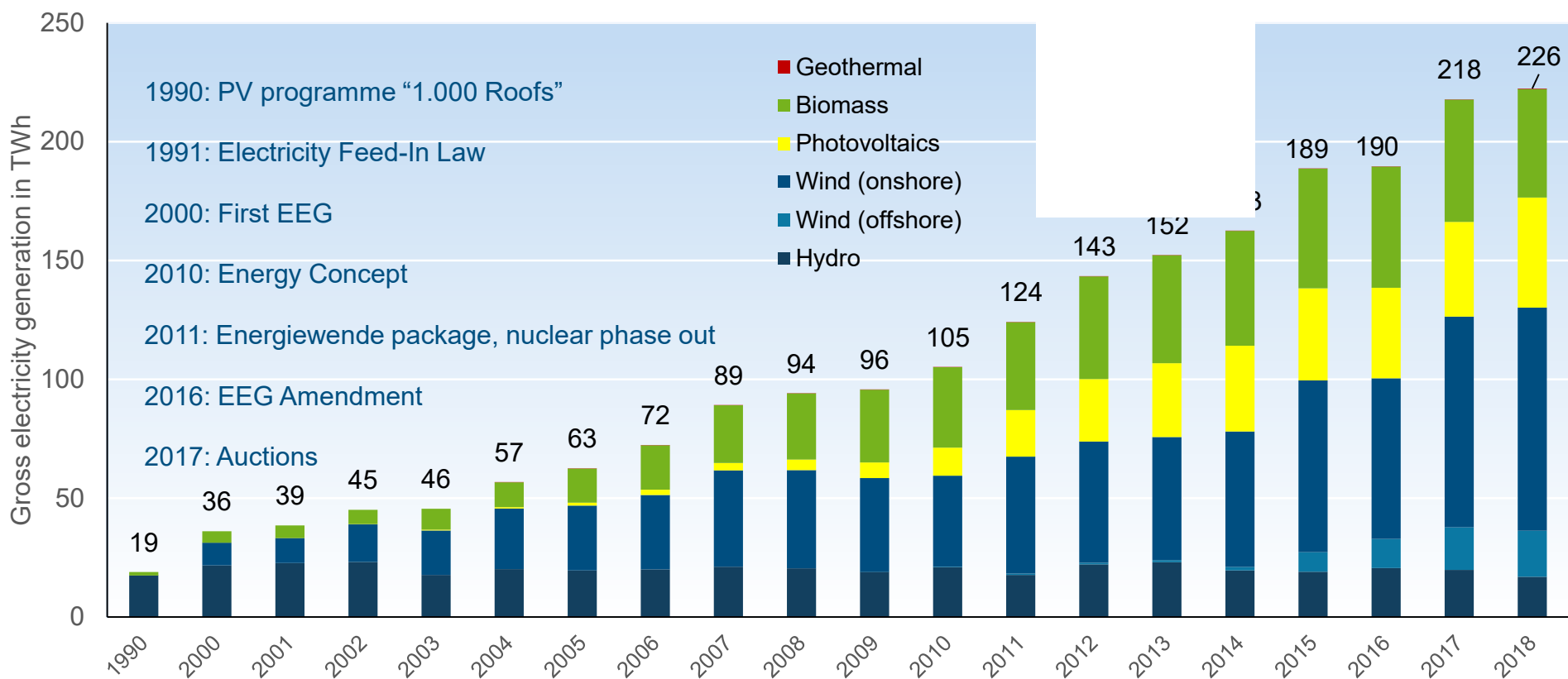
Sector coupling



The energy transition triad combines efficiency, direct use of renewables and sector coupling

Source: BMWi 2017

The Energiewende started Decades ago: Milestones



Continuously developed policy support has fostered steady growth of renewables in Germany.

Source: AGEb 2018, AGEE-Stat 2019

Targets of the Energiewende until 2050

		2017	2020	2030	2040	2050
Climate	% greenhouse gas reduction (vs. 1990)	-30.8 %**	-40 %	-55%	-70%	-80-95%
Renewable energy	% gross final energy consumption	16.9 %**	18%	30%	45%	60%
	% gross electricity consumption	37.8 %**	Min 35%	Min 50%	Min. 65%	Min 80%
	Share in heat consumption	13.9 %**	14%			
	Share in Transport sector	5.6 %	10% (EU)			
Energy efficiency	% primary energy consumption (vs. 2008)	-5.8 %	-20%			-50%
	Final energy productivity (2008-2015)	1.1% p.a.*	2,1% per year (2008-2050)			
	Gross electricity consumption (vs. 2008)	-2.3 %*	-10%			-25%
	Primary energy demand (buildings) (2008)	-18.3 %*				- 80 %
	Heat demand (buildings) (vs. 2008)	-6.3%*	-20%			
Transport	Final energy consumption in transport (vs. 2008)	+4.2%*	-10%			-40%
	Number of Electric vehicles (incl. hybrids)	83.175 (341.411)	(1 million)	(6 million)		

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



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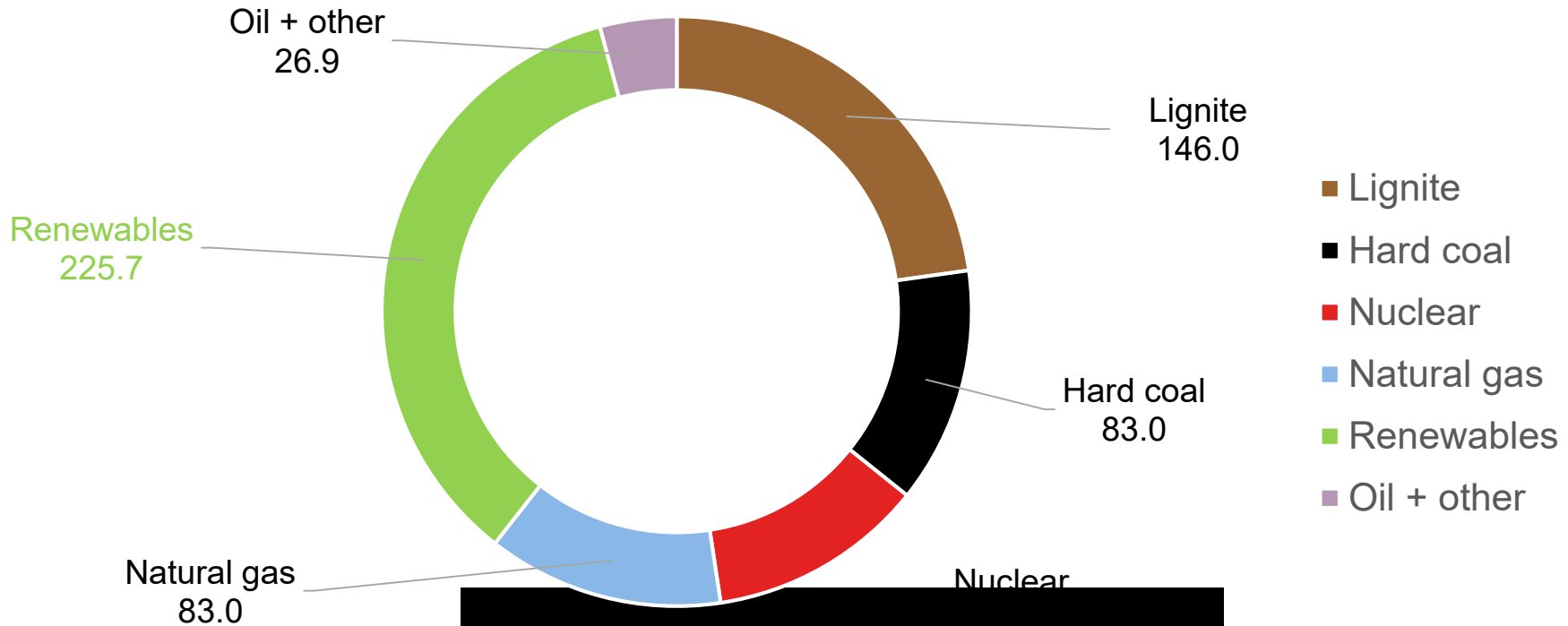
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* 2017
**2018

July 3rd 2019, Accra

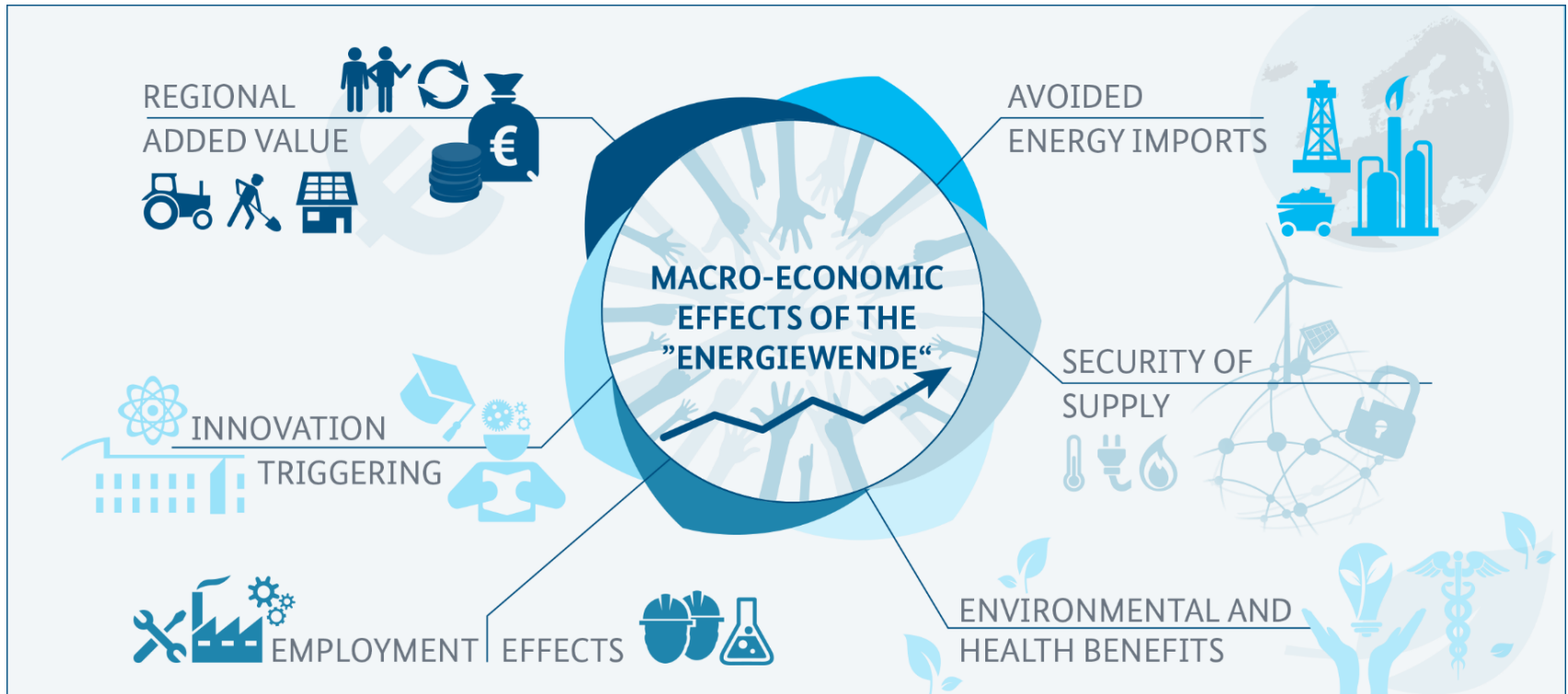
Gross Electricity Production in Germany 2018

Gross electricity production in 2018 (Total: 640,7 TWh)



Source: BMWi 2018 –

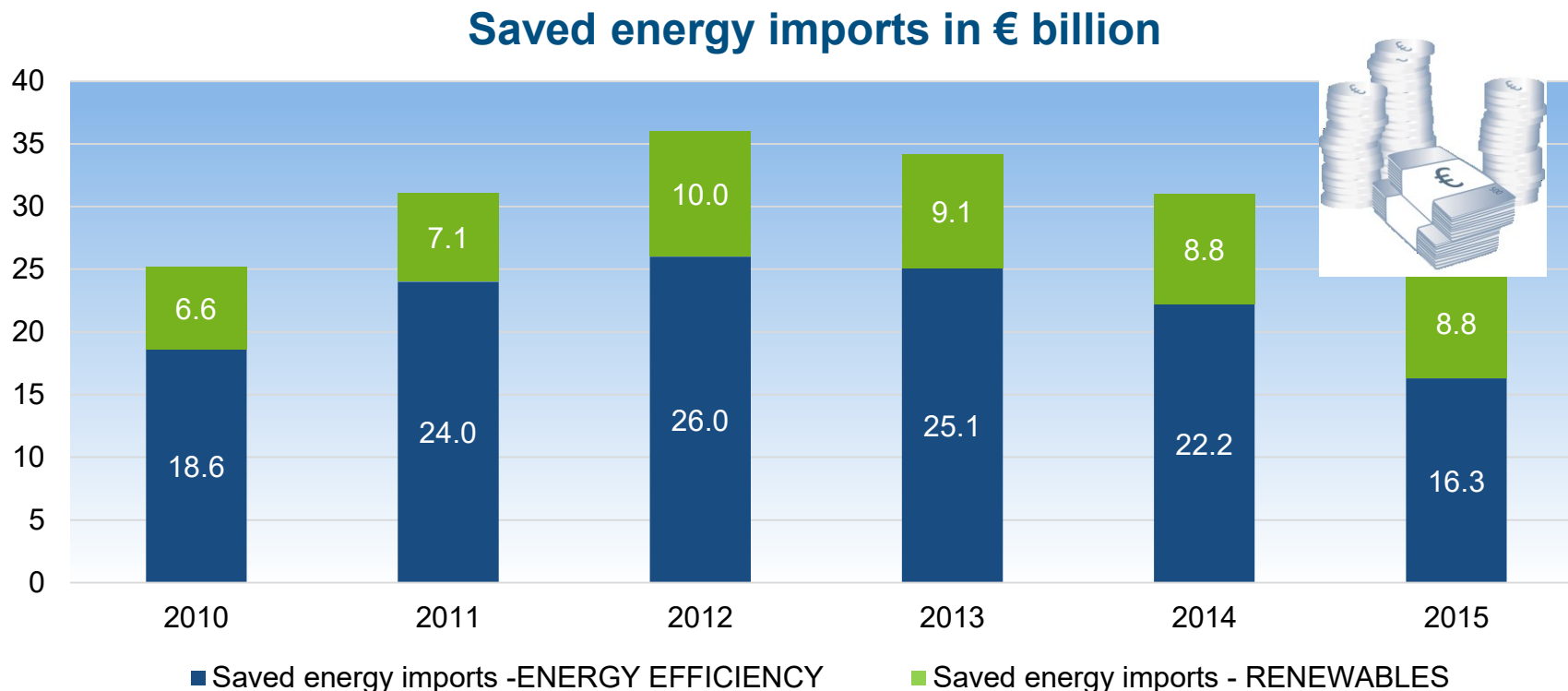
Benefits of the Energiewende



Source: BMWi 2014, ERGO Kommunikation

The energy transition has numerous positive effects on various levels.

Benefits - Reduced Costs of Energy Imports

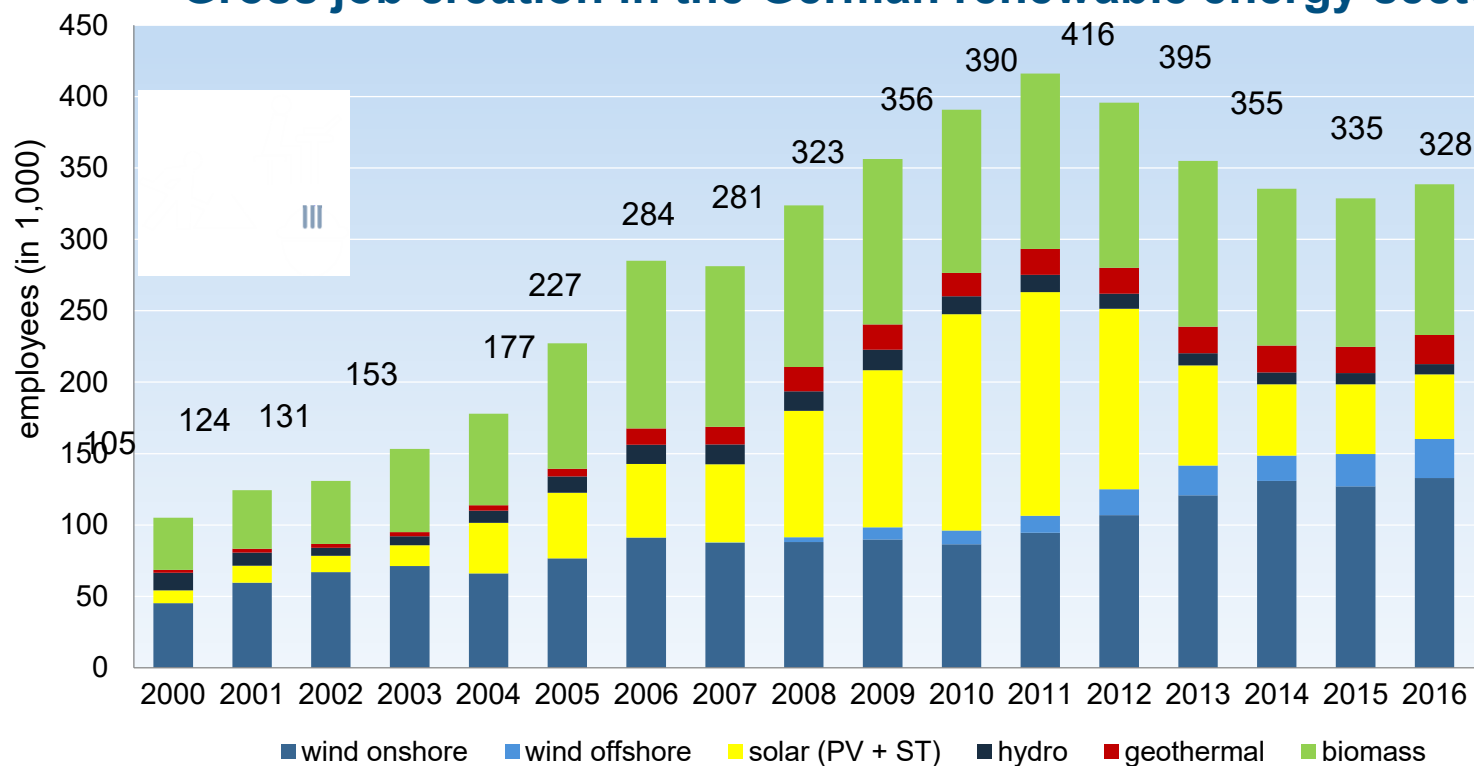


Renewable sources of energy saved € 8,8 billion in 2015.

Data source: DLR/DIW/GWS 2016

Benefits – Job Creation

Gross job creation in the German renewable energy sector



The renewables sector has positive employment effects in Germany

Source: DLR/DIW/GWS 2018

Next Steps of the Energiewende

- Energiewende in the heat sector
- Energiewende in the transport sector
- Energiewende in the agricultural sector
- Sector coupling
- Grid integration of growing share of renewables
- Grid expansion
- Cross-border interconnections
- Electric mobility and infrastructure

Thank you for your Attention!

Coordination Office:

German Energy Solutions Initiative

+49 (0)30 18 615- 6401/7386

office@german-energy-solutions.de

www.german-energy-solutions.de

Follow us: @export_EE

Facilitator:

Renewables Academy AG

Christoph Wunsch

+49 (0)30 5 870 870 17

wunsch@renac.de

www.renac.de

