



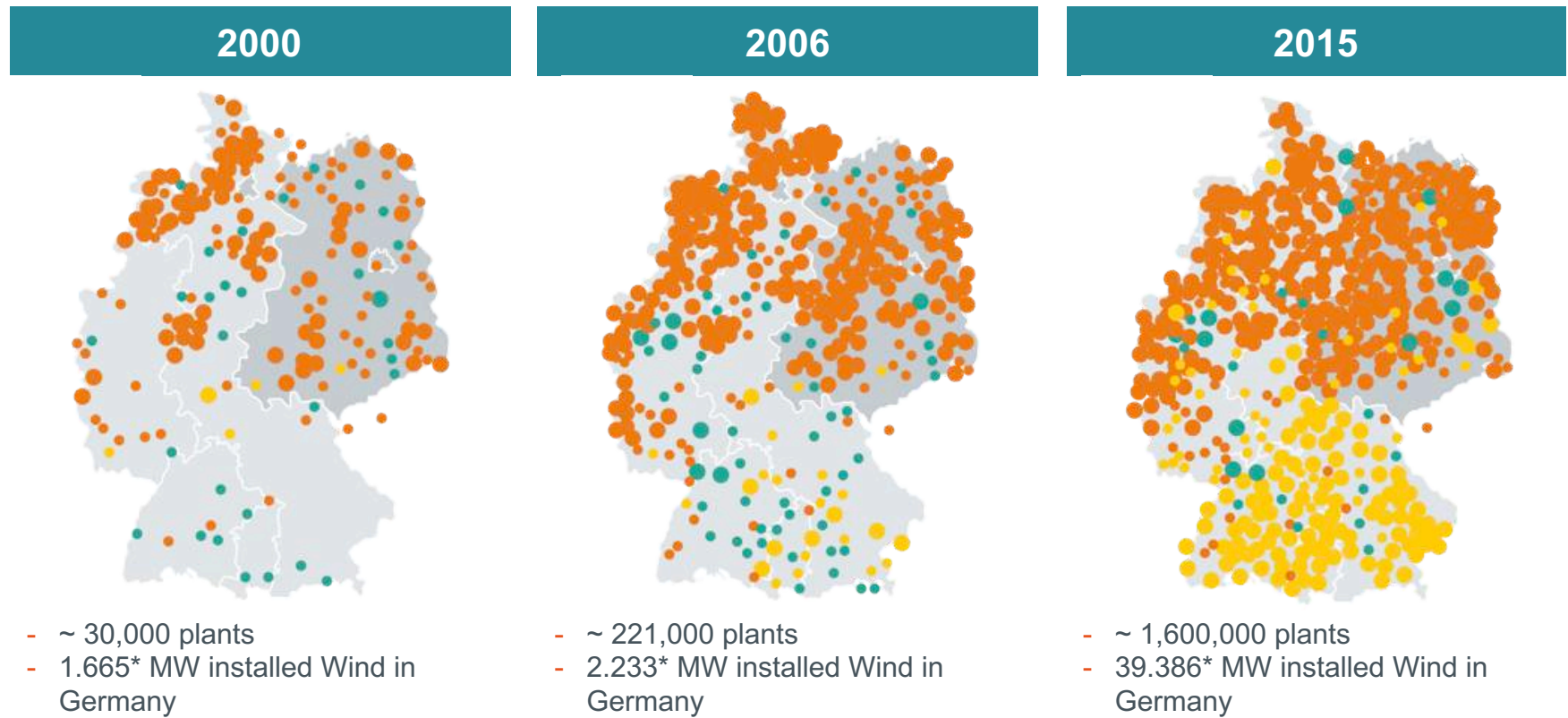
# 50Hertz' Approach to Sustainability and the Power Grid

6th European Grid Conference  
"Sustainability and the Power Grid"

RGI Conference  
Brussels, 29 September 2016  
Marco Nix, CFO 50Hertz



# Renewables in Germany

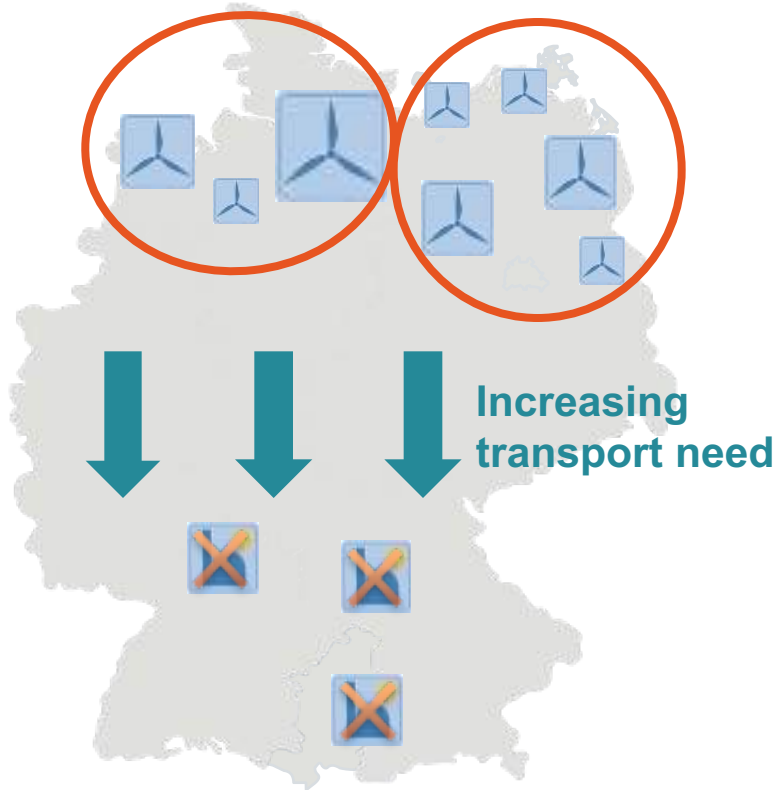


Wind and solar remain the main driver of renewable energy sources (RES) reaching a significant stake in electricity production.

\* BWE Figures

● Wind
 ● Solar PV
 ● Biomass

# Renewables growth requires an adaptation of the transmission grid infrastructure



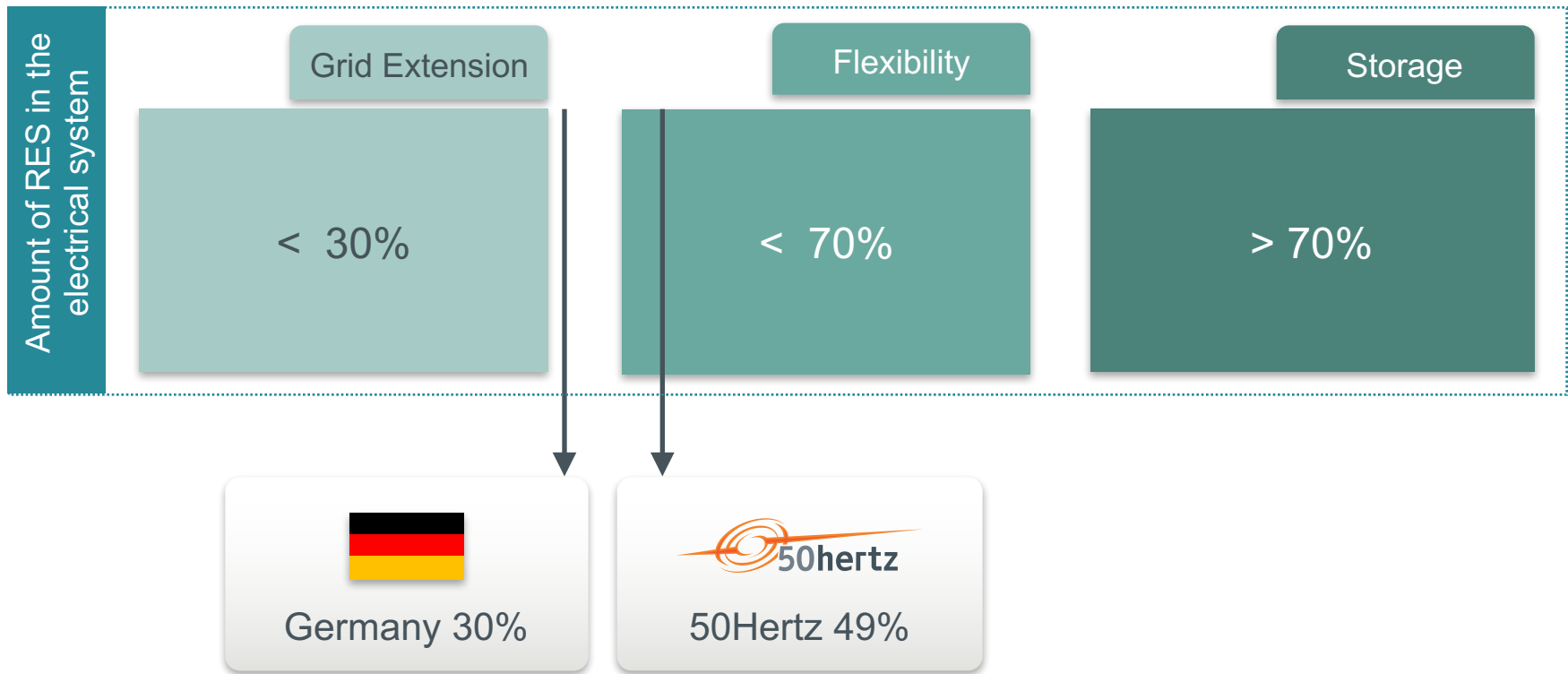
Existing extra-high voltage lines from North to South Germany are overloaded – this leads to high re-dispatch costs.

## Further aggravation of the problem:

Wind power generation increases in the North. Due to the nuclear phase-out, output in the South will drop by about 8 GW.

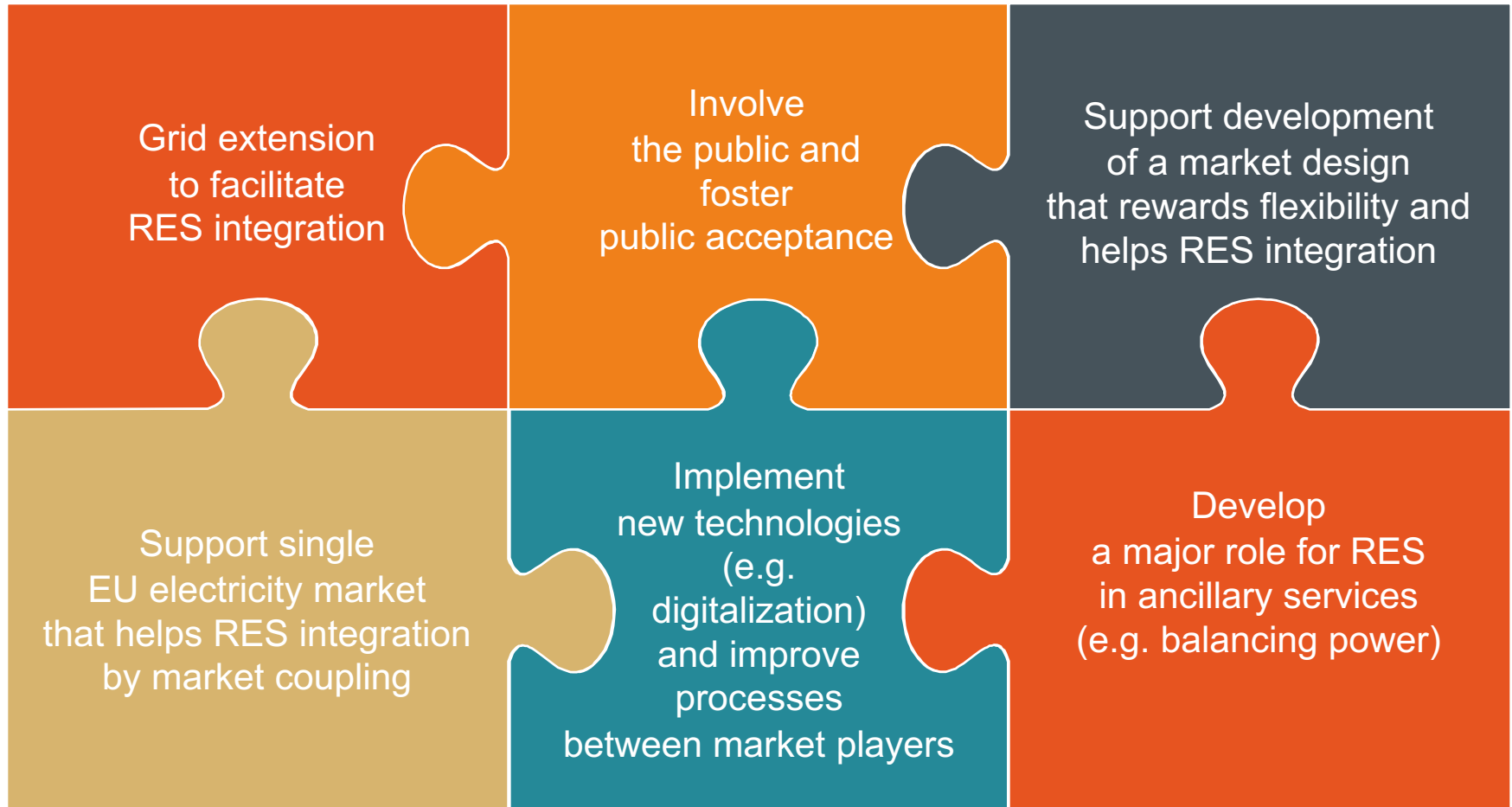
**Grid adaptation is key to successfully implement the energy transition ('Energiewende')**

# Adapting the electricity grid to RES growth rate

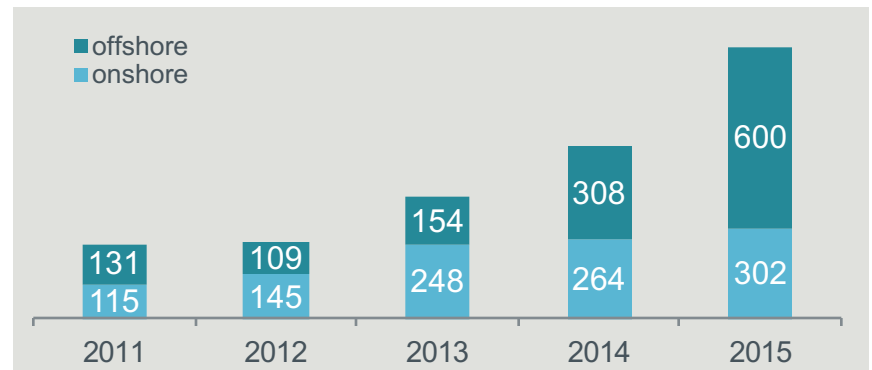
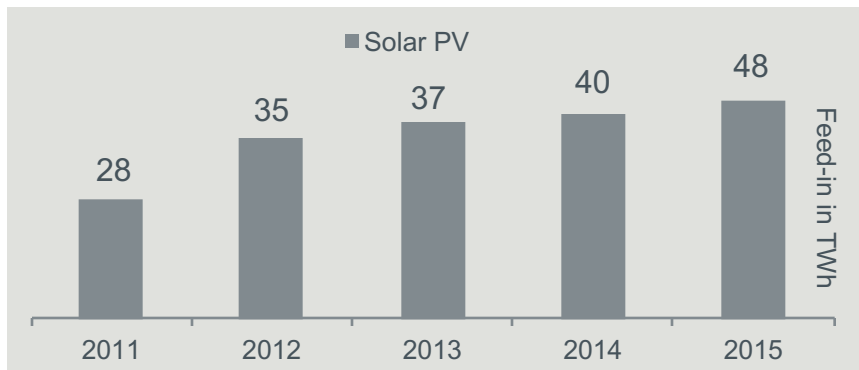
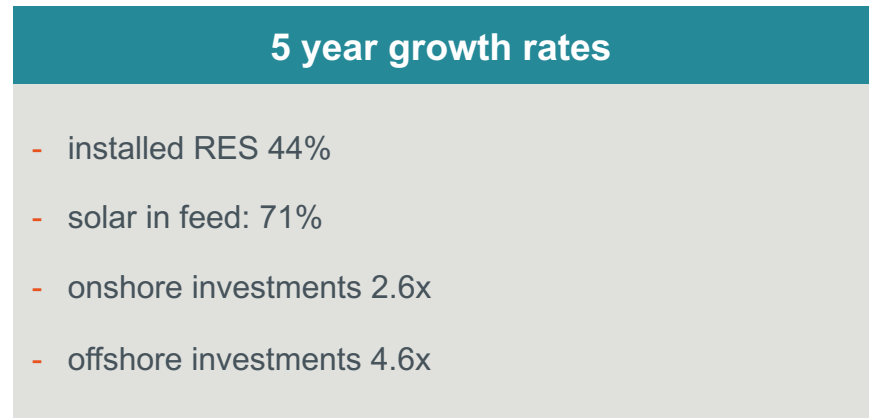
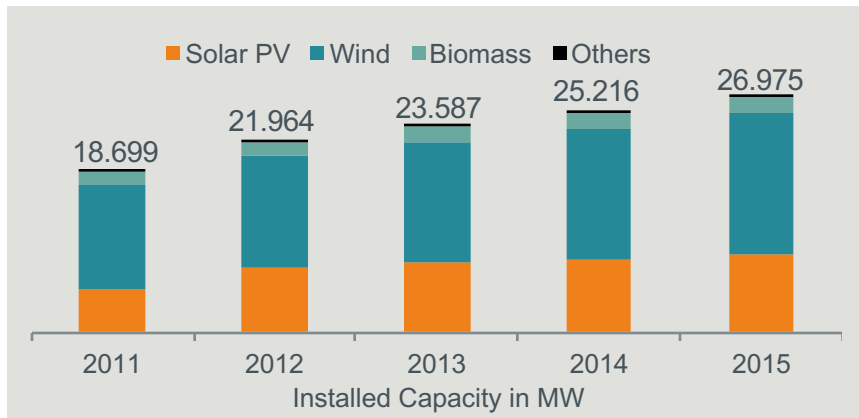


Grid extension is the most effective and efficient way to integrate a growing amount of renewables

## 50Hertz' contributions to a successful energy transition

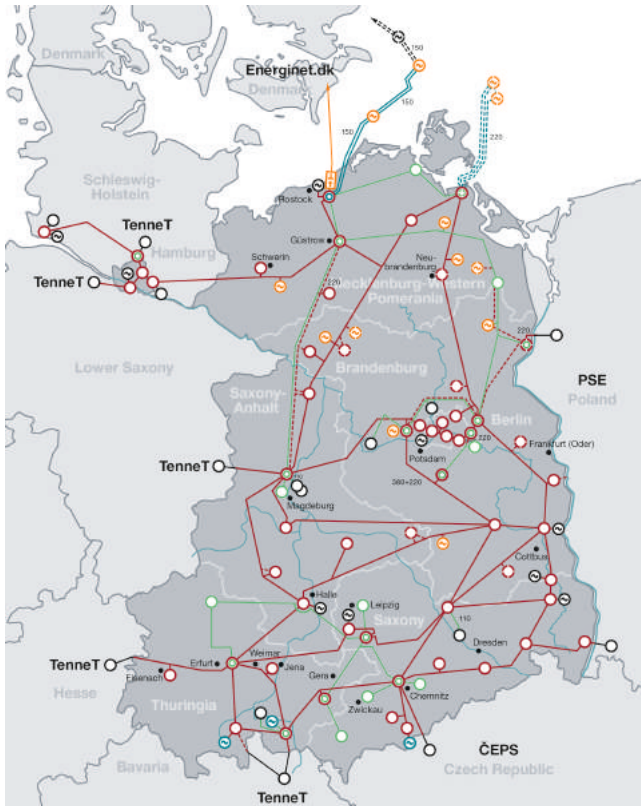


# Growing investment volumes reflect need of transmission grid extension...



...and there is still some work to be done.

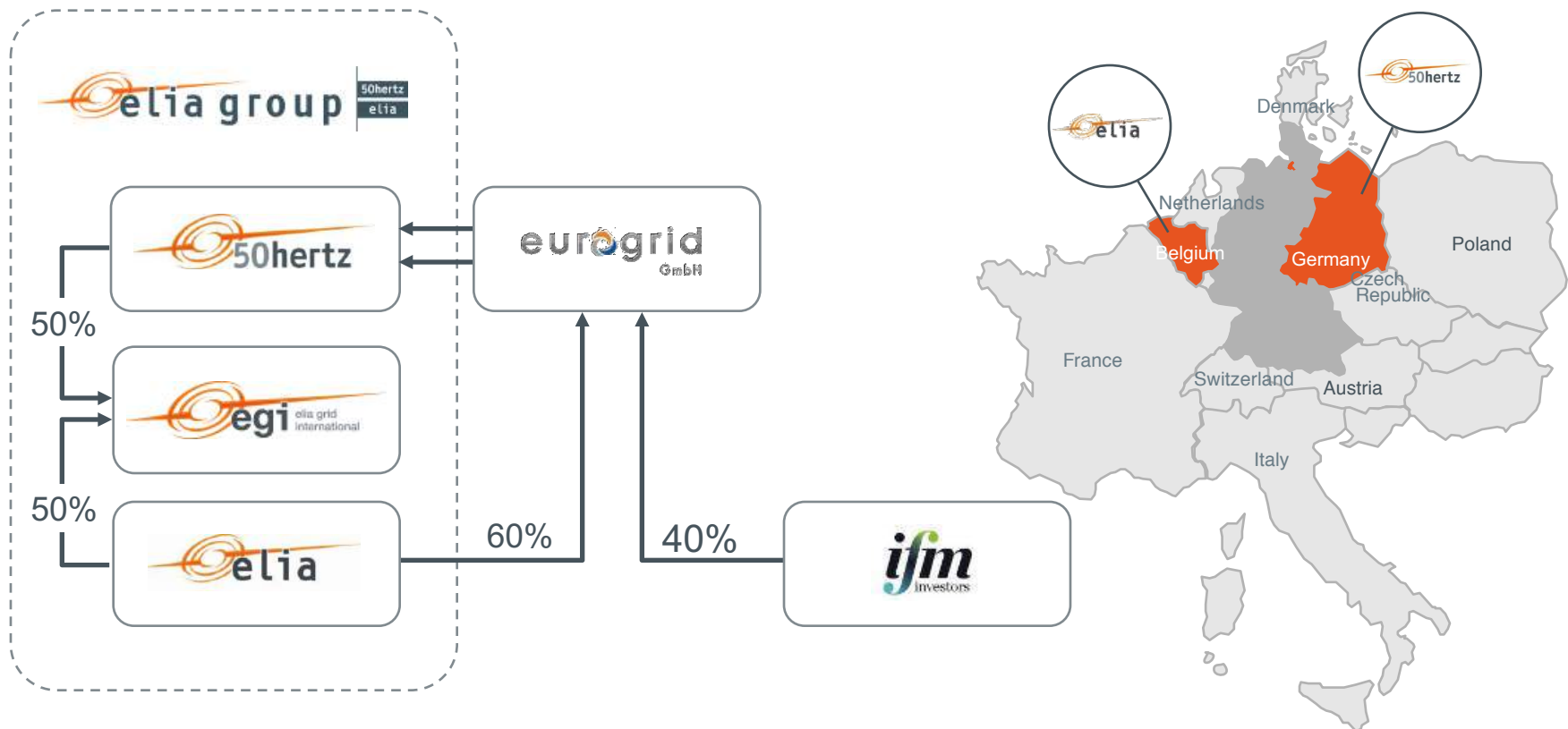
# 50Hertz at a glance



	Figures (% with respect to D) as at 2015/12/31
Area	109.589 km <sup>2</sup> (~31%)
Total length of lines	10.150 km (~30%)
Maximum load	~ 16 GW (~20%)
Energy consumption (based on electricity supplied to end-consumers in acc. with the EEG)	~ 96 TWh (~20%)
Installed capacity: - of which Renewables - of which Wind	50.528 MW (~27%) 26.975 MW (~30%) 16.107 MW (~39%)
Workforce	955
Turnover - of which grid	9,799 bn. € 1,446 bn. €

50Hertz has a leading role in integrating volatile renewables


## Stable shareholdership



Long-term oriented equity investors supporting the energy transition



# ESG rating performed with clear target to achieve high score in peer group

ESG-framework:	Environmental	Social	Governance
	Grid Extension	Public acceptance dialogue with relevant stakeholders	IT Security
	Environmental Compensation	Compensation Payments to municipalities	EU Tender Procedure
	Energy (savings) Audit	Netzquartier	Balanced steering model
	UXO Clearing at Baltic Sea	Health and Safety Certification	Risk Management – ISO31000
	Bird protection (overhead lines)	Quorum Supervisory Board	Green funding options
	Ecological aisle management	Regular and sustainable sponsorings cooperations	Credit rating at investment grade
	...	...	...

Transparency and consolidation of activities increased under ESG framework

# 50Hertz approach to environmental compensation

## Portfolio of Ecological Compensation Measures

### Individual measures

**Implementation of individual environmental projects (fauna, flora, ...)**

- Visible
- Lokal
- Sustainable

### Eco Pools

**Support of regional environmental projects implemented (fauna, flora, ...)**

- Visible
- Regional
- Sustainable
- Effective

### Compensation payments

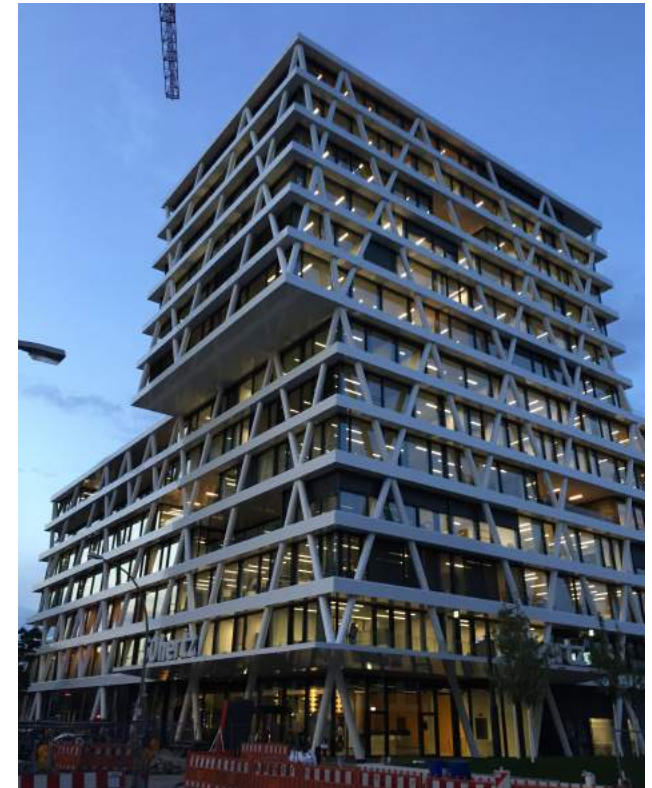
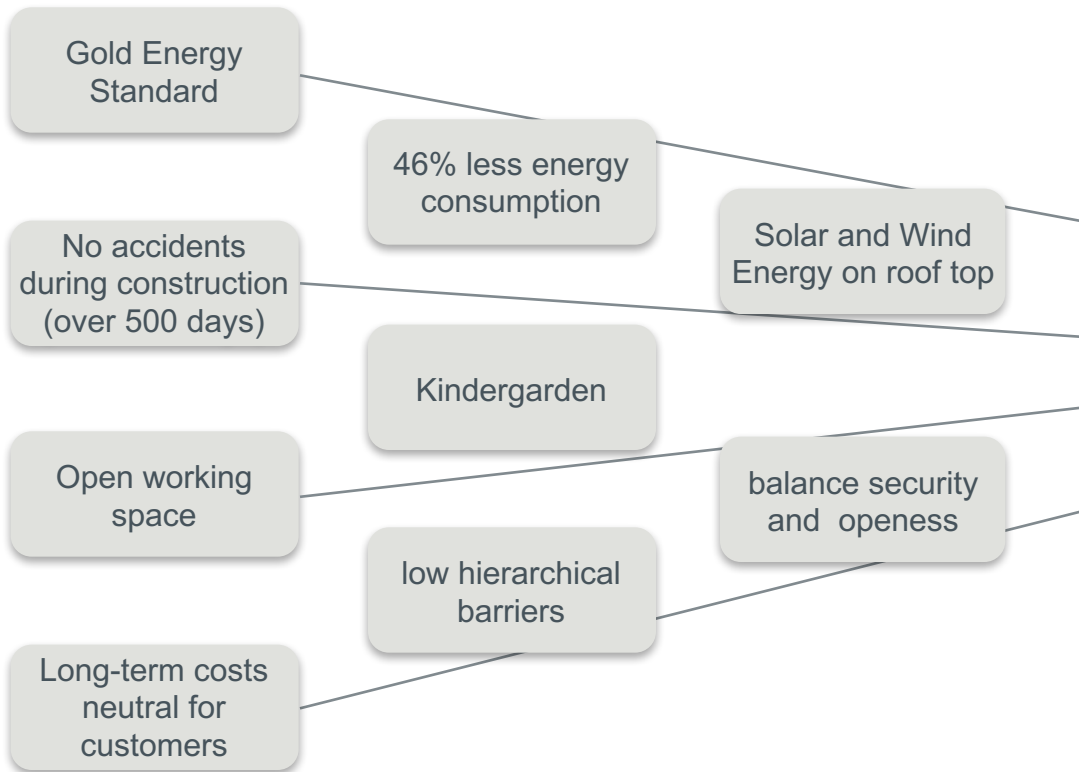
**Further allocated by communities and regions**

- Flexible
- Efficient



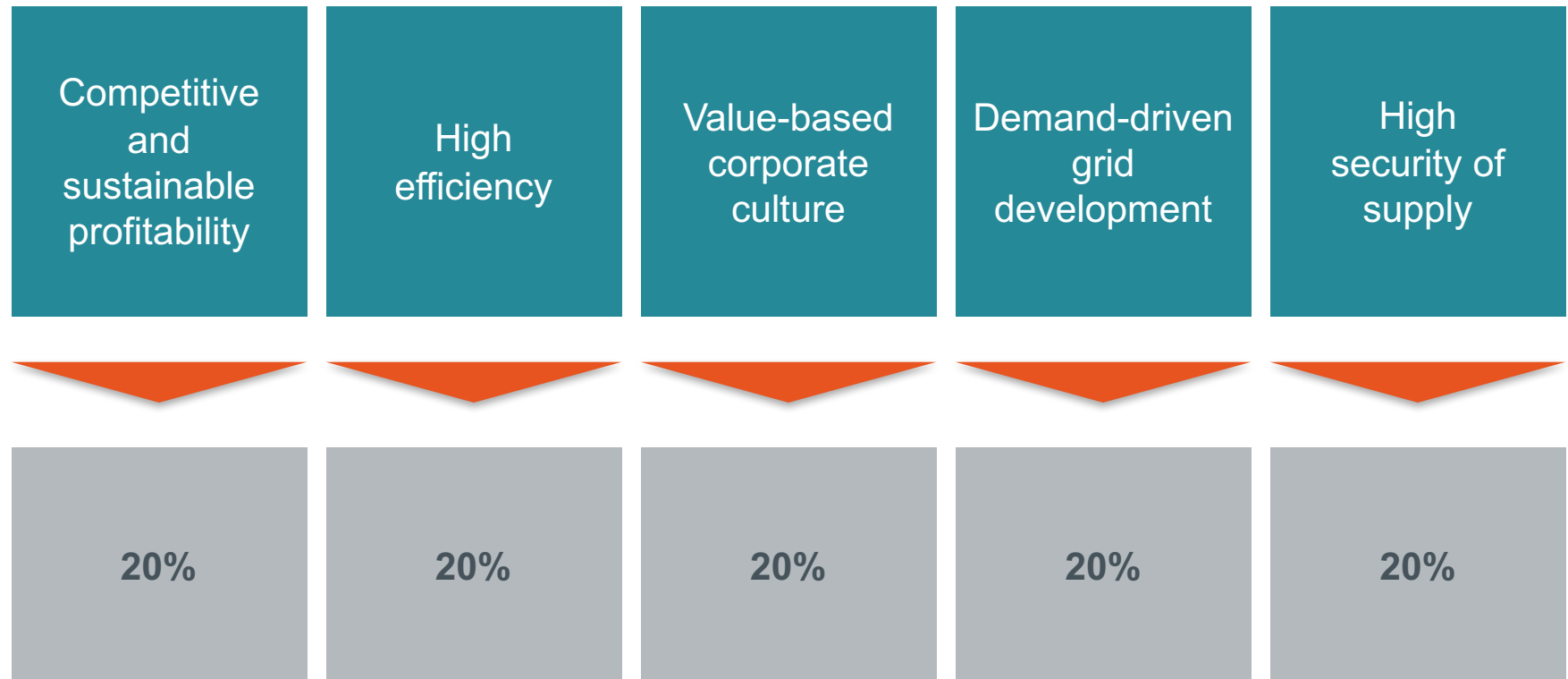
**Five to ten percent of overhead grid project costs dedicated to environmental compensation**

# Netzquartier – the new 50Hertz headquarters



Netzquartier enhances communication and collaboration to increase effectiveness and efficiency

# Steering of the company



Targets are derived from strategy and well balanced

## 50Hertz' Mission: We make the energy transition happen...



... for a sustainable world!

# Many thanks for your attention!

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