



# WindNODE – showcasing smart energy systems from northeastern Germany

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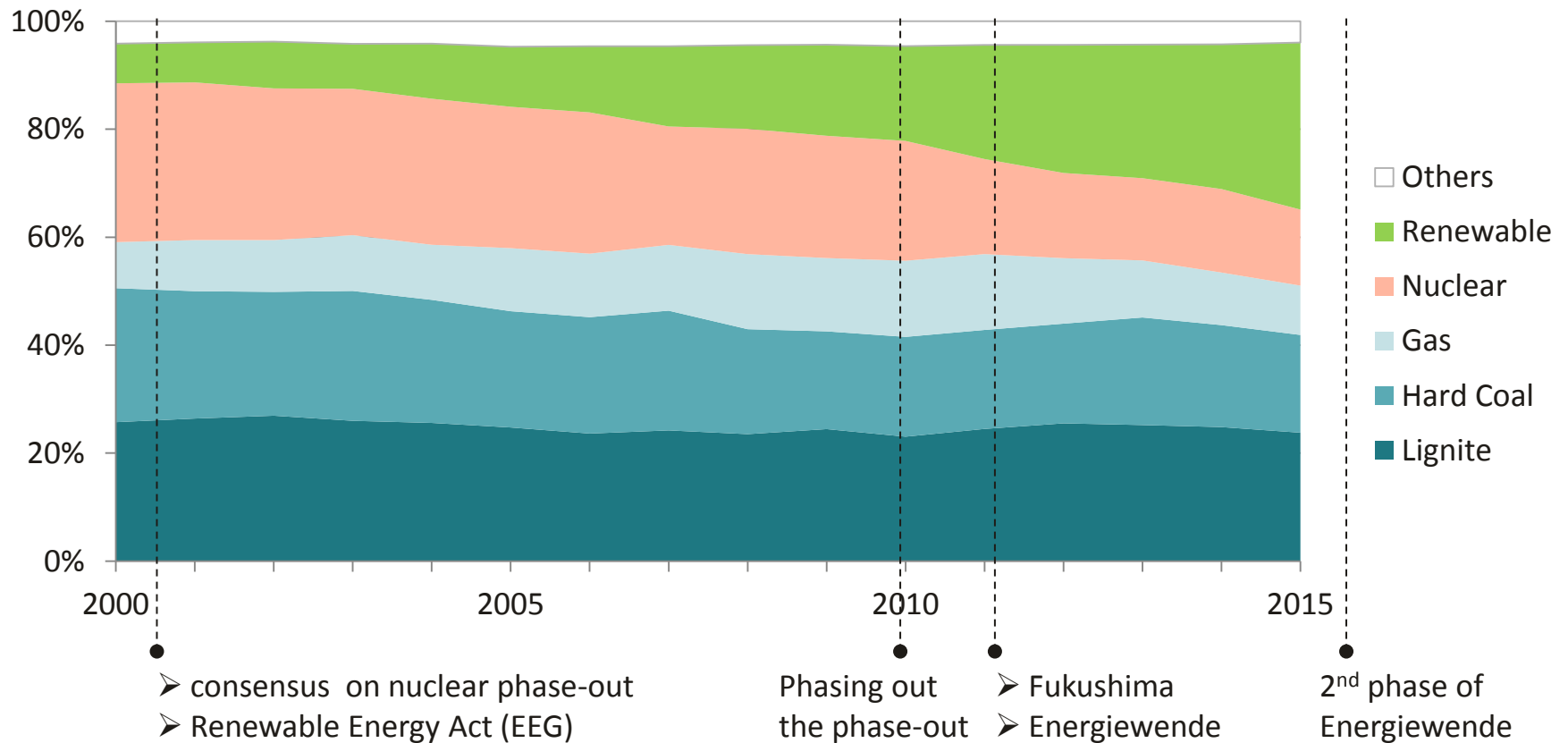


Federal Ministry  
for Economic Affairs  
and Energy

on the basis of a decision  
by the German Bundestag

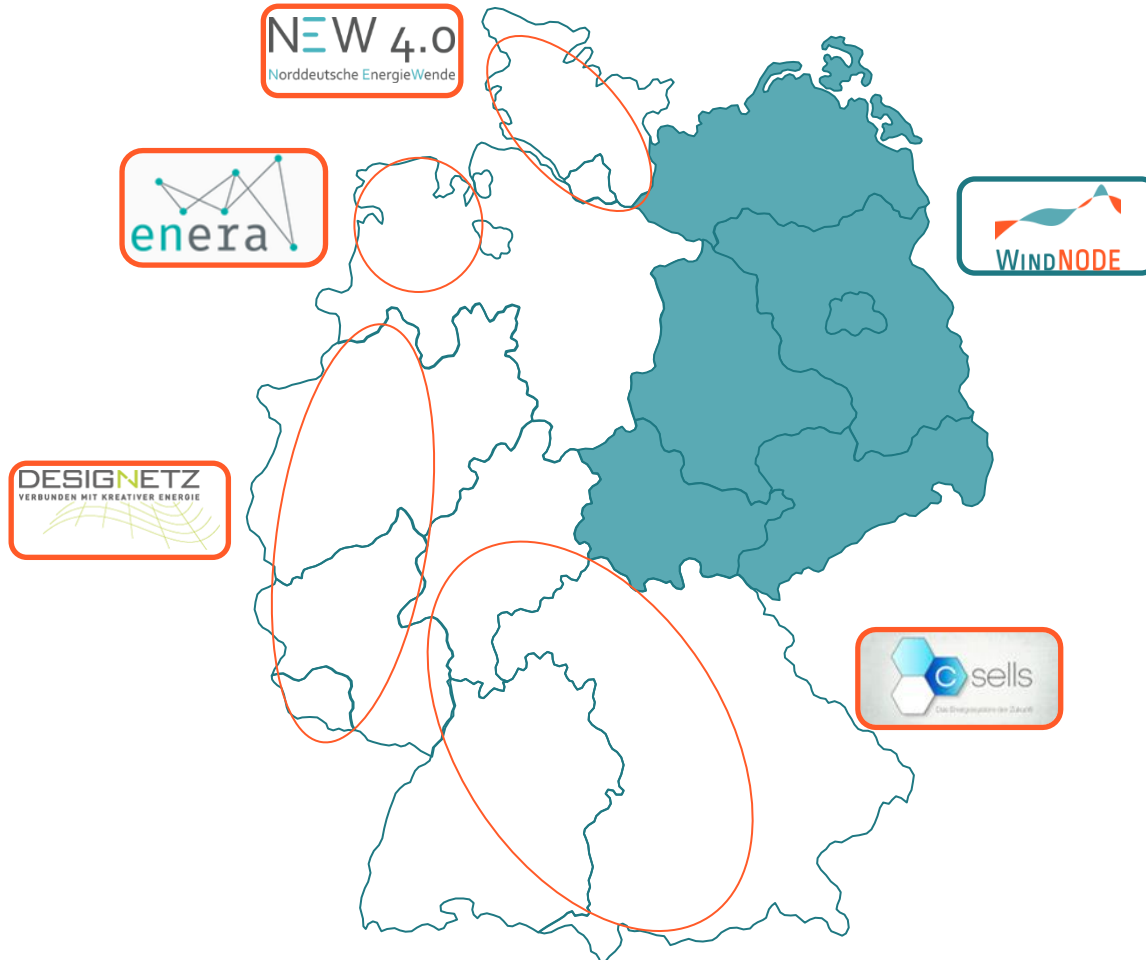
# Outlook on the 2<sup>nd</sup> phase of “Energiewende“ (Energy Transition)

Gross electricity generation in Germany, percentage of total generation



# Federal Government support 5 model regions for “smart energy”

## Overview of the SINTEG program

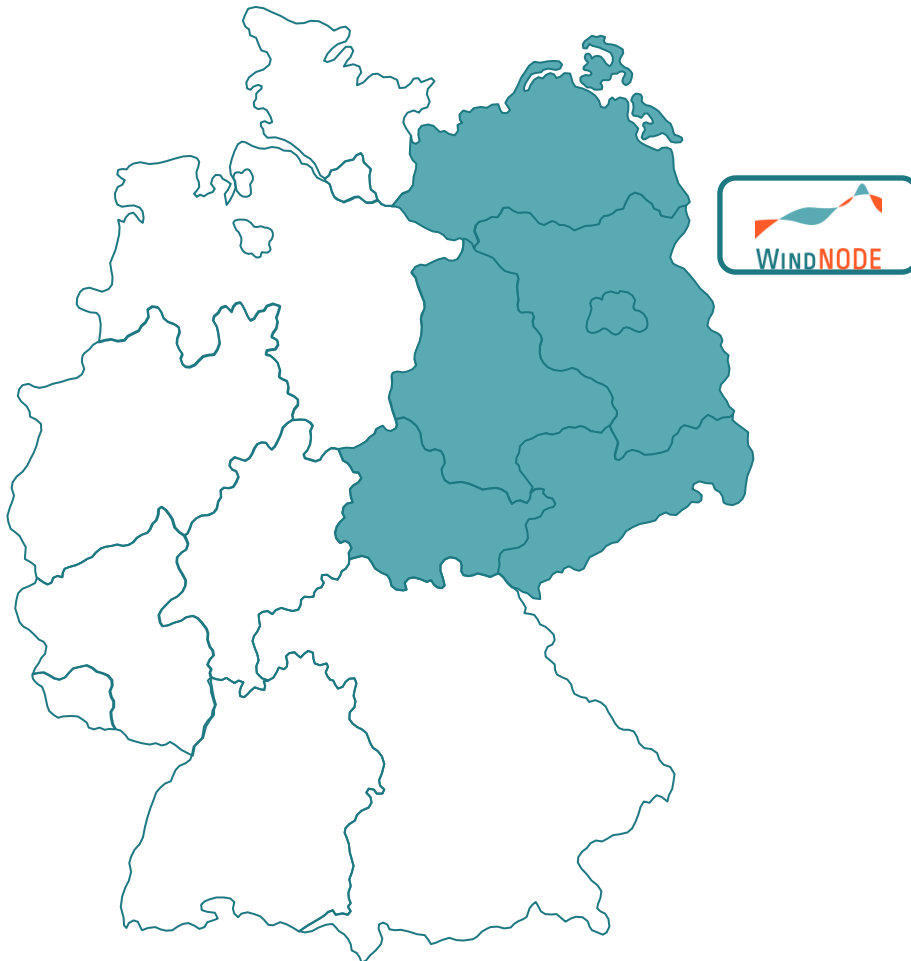


- ✓ **Challenge:**  
Coping with intermittence and integrating large shares of renewables into the energy system
- ✓ **Government funding\*:**  
230 mio. € for 5 consortia
- ✓ **Project duration:**  
4 years, starting in December 2016

\* BMWi – Federal Ministry for Economic Affairs and Energy  
Source: BMWi, WINDNODE, websites of other consortia

# WindNODE region pioneers the integration of intermittent RES\*

## WindNODE region at a glance








- **Modelling a complete energy system**  
1 TSO (50Hertz Transmission),  
6 federal states, 16 mio. people
- **Frontrunner for green electricity**  
> 48% (2016) renewables in the  
electricity mix
- **Increasing grid congestion**  
Redispatch almost every day
- **Cost burden**  
Highest grid fees in Germany  
(approx. 10 Ct/kWh)

\* Renewable Energy Sources

Source: WindNODE, 50Hertz

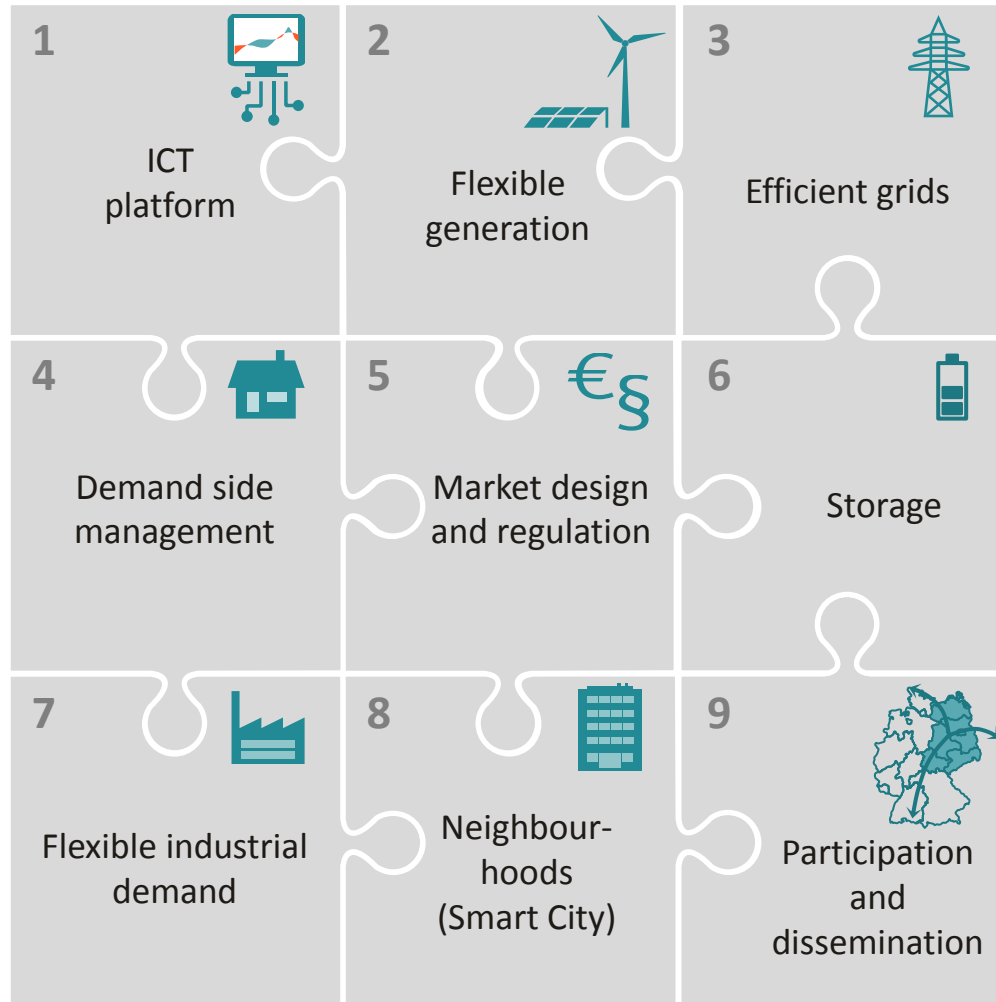
# A joint effort of more than 70 distinguished partners

## WindNODE partners

<b>Board</b>																																			
<b>Industry</b>																																			
<b>Academy</b>																																			
<b>Associated</b>	<p>~ 30 associated partners</p>																																		

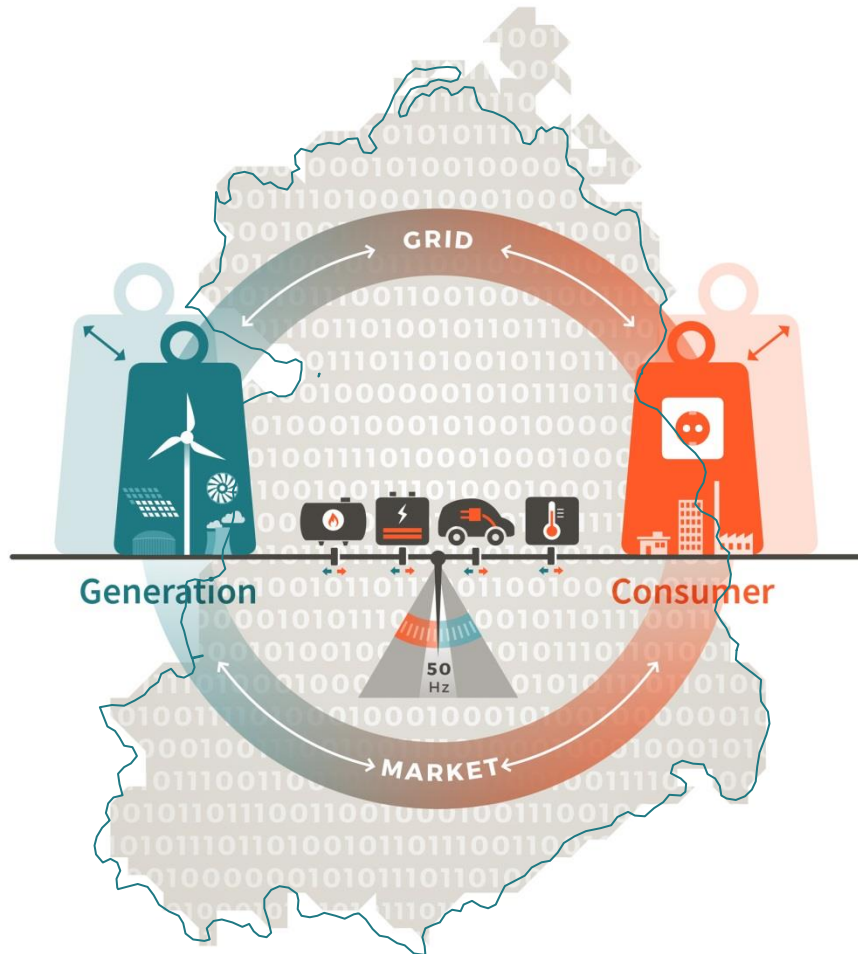
# 360° view on smart energy systems

WindNODE work packages



# Model solutions for the “energy market 2.0”

WindNODE targets



## Flexibility

- (1) Identifying potential for flexibility
- (2) Activating flexibility
- (3) Sector coupling
- (4) Regionalisation vs. transmission



## Integration into the “energy market 2.0”

- (5) Market roles and business models
- (6) Intelligent, efficient grid infrastructure
- (7) Making use of new data



## Participation & Dissemination

- (8) Developing standards for an intelligent energy system *made in Germany*
- (9) Regional development and export
- (10) Involving visitors and the public