



Germany's Path to a Green Economy:

What Roles Do Manufacturers and Suppliers in the Onshore and Offshore Sector Play?

Focus on the federal state of North Rhine-Westphalia as one of the most important Energy and Industrial State's of Europe

Atlanta, June 5, 2012



North Rhine-Westphalia – The economic center of Germany



	Germany 2010	NRW 2010	Percentage of German total
Area	357 104 sq. km	34,092 sq. km	9.5 %
Population	81.8 mill.	17.8 mill.	21.8 %
Population density	229 inh./sq. km	523 inh./sq. Km	
GDP	2570.0 bn €	543.0 bn €	21.7 %
GDP per capita	31 418 €	30,421 €	
Gainfully employed	41.096 mill.	8.7 mill.	21.5 %
Private consumption	1474.4 bn €	321.6 bn €	23.0 %
Exports	1288,49 bn €	162.1 bn €	16.9 %
Imports	1155.01 bn €	178.2 bn €	22.0 %
Foreign direct investments **	34833 bn €	184.6 bn €	28.4 %

* 2009, ** of end of 2009; all other data as of 2010



Political courses for Green Economy

Objectives European Union

- Reduction of emission by 20 % compared to 1990
- Increase in renewable energy to 20 %
- Increase in energy efficiency

Objectives Federal Government Germany

- Increasing share of renewable energy in heat supply to 14 % by 2020 and to 10 % of total final energy consumption in the transport sector

Objectives State Government NRW

- Increase in wind power electricity production by 4% to 15% of the net energy consumption by 2020
- 2% of the state area will provided as priority area for wind farms
- Restrictive regulations concerning space and height will be relaxed
- More than 20 thousand jobs in wind industry

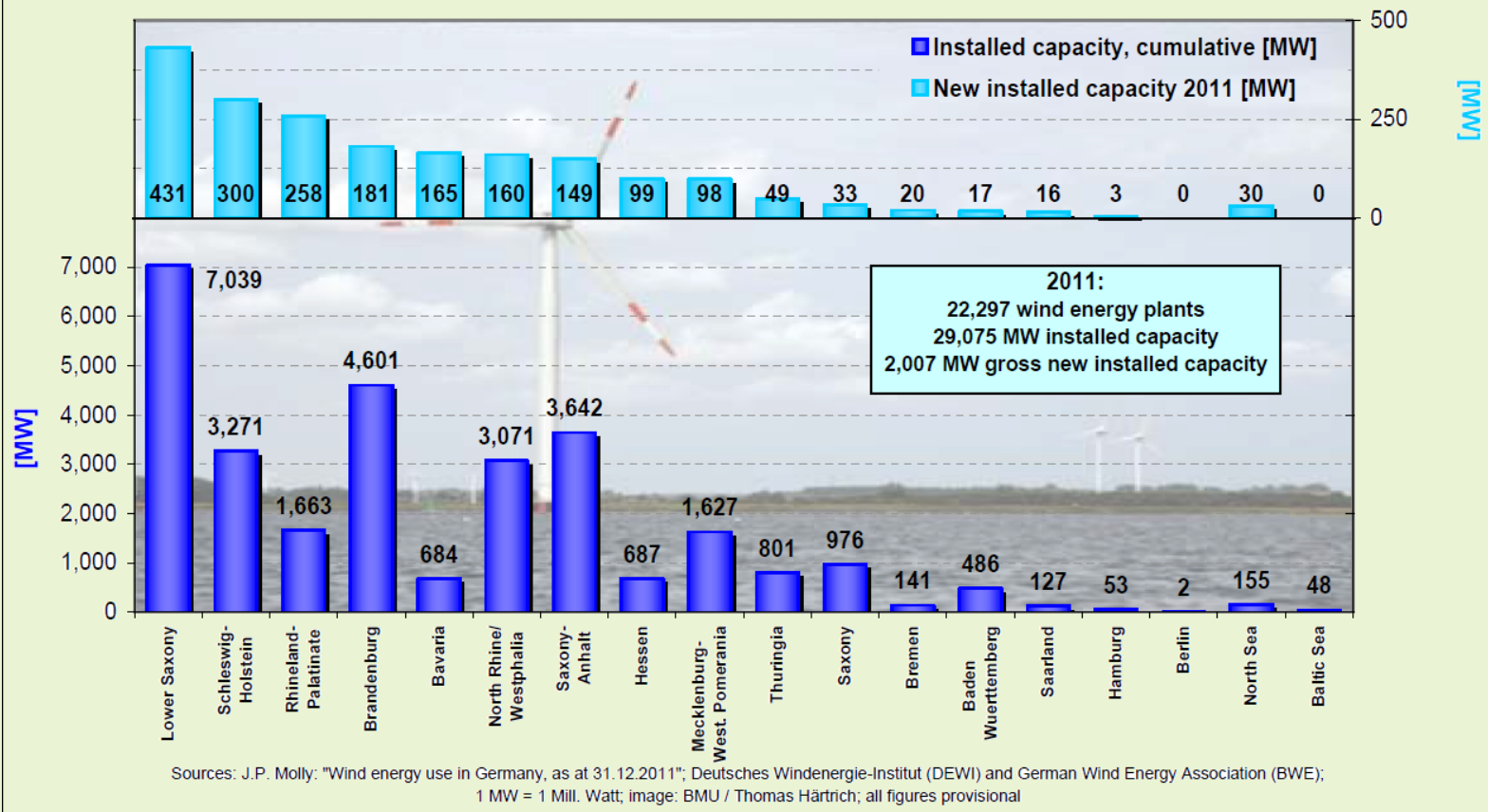
NRW accept the challenge with clear concepts and roadmaps

Reduction of greenhouse gases in NRW until 2020 by 25% and until 2050 by 80 to 95% compared to 1990

**Measures in NRW foccusing on Wind and following the Climate Protection Action Program
as an element of the Climate Protection Law NRW (in preparation)**



Regional distribution of installed wind energy capacity in Germany 2011





NRW – The leading state of Suppliers

- 60 % of the German suppliers in wind power are based in NRW
- SMEs are the backbone of the economy
- There are 761 000 small and medium-sized companies in NRW
- 96% of engineering companies are SMEs
- they employ 190 000 people; 20% of the German total in this industry



Innovation

Creative Economics

High export share of the energy sector makes a huge contribution to climate protection

Worldwide leading in technology

10.000 green jobs in the wind energy in NRW

Many years of experience

Quality

Energy efficiency

70 % of locally produced machinery and equipment is exported

Above average sales and employment gains in supply industry



Onshore Industry in NRW

Onshore wind turbines in NRW

- More than 2.900 wind turbine generators with an output of 3.070 MW
- Germany: 21.164 wind turbine generators with an output of 25.777 MW
- Wind farm in Paderborn, NRW used to be the largest in Europe with 62 generators
- Governmental objective:
2% of the state area shall be used for
wind farms (4,5% geographically available)
Max. 20 GW installable Power / 20 TWh





Offshore Industry in NRW

Focus in NRW: Component Manufacturing

- Gearbox, bearings, converters and generators
- 17,1% of the German offshore plant and component manufactures are based in NRW
- 5 of the Worlds leading suppliers:
e.g. Bosch Rexroth, Renk, Winergy, Eickhoff, ZF
- > 1.2 Billion € Sales in 2010
- 2500 Employees
- 40 % of employees in the Offshore sector work in NRW, Baden-Württemberg and Bavaria

Value Added Chain

In addition to the component manufactures:

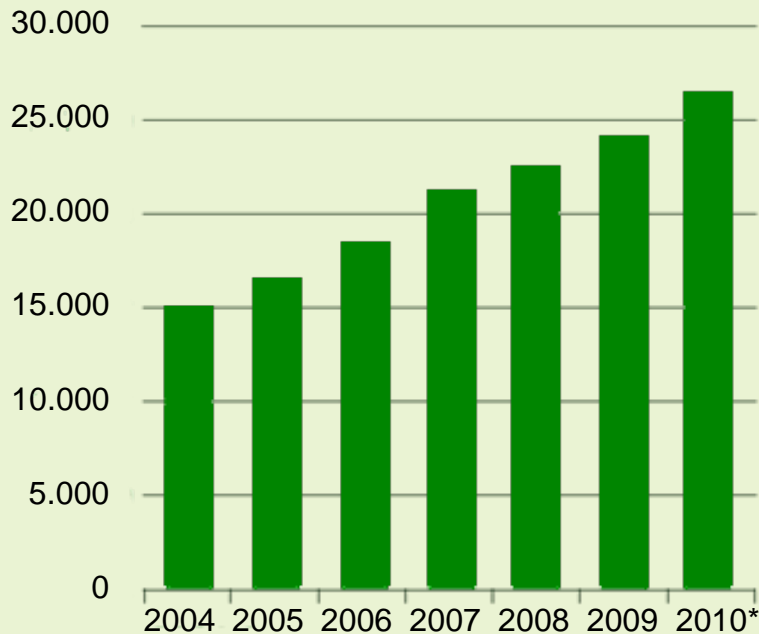
Numerous banks, energy providers, construction, service and maintenance companies

Highest share (23%) in the offshore value added chain of all federal states in Germany



Wind Energy as job generator in NRW

Workplaces



Source: IWR, data: IWR, preliminary = *

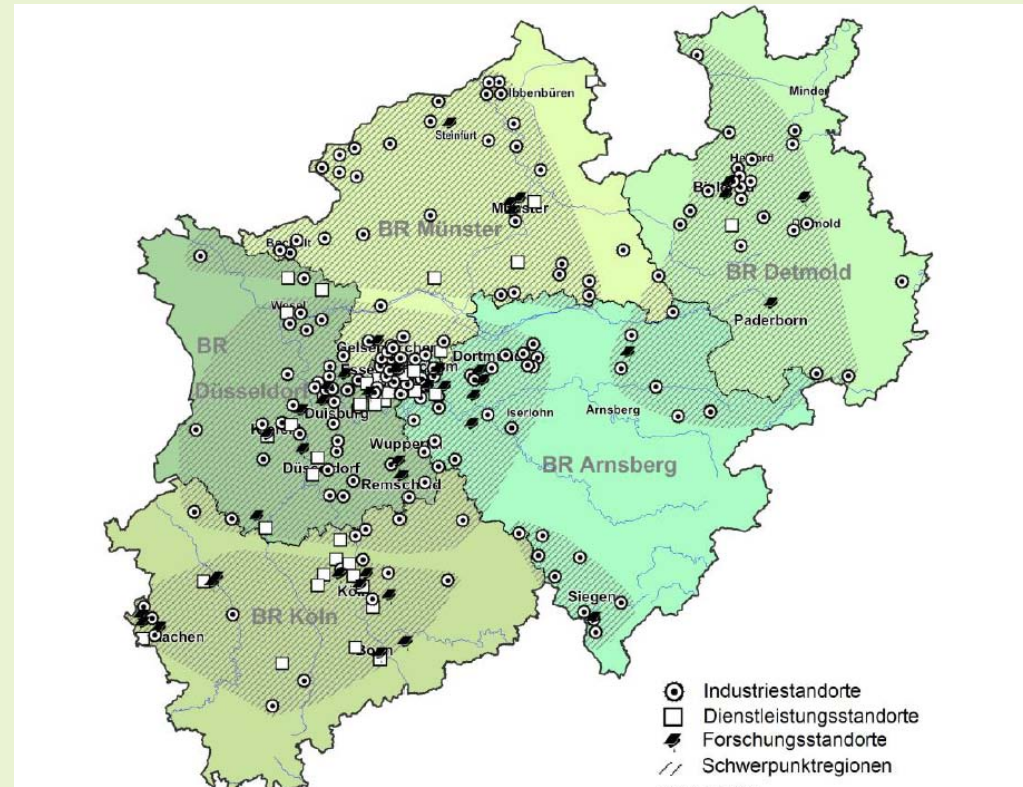
Employees in renewable plant and system engineering in NRW (without operation)

	2010	2009
Solar energy	7.626	6.667
Wind energy	7.229	6.559
Bio energy	3.575	3.418
Service	2.351	2.267
Other installation companies	2.391	2.014
Geothermal Energy	1.544	1.362
Fuel cell	875	943
Cogeneration	709	693
Hydro Energy	168	161
Total	26.468	24.094



Wind Energy Research in NRW

- One of the densest research networks in Europe
- More than 30 active facilities at around 15 universities
- Central elements along the value creation chain are covered
- Research categories:
 - 35% academic research
 - 35% industrial research
 - 30% non- university research
- Genuine location advantage for industry





The Network Wind Energy within the EnergyAgency.NRW



forms the strategic and competent platform in the energy domain



Network Wind Energy NRW

- Technology development (Industry, R&D)
- Project management (Politics)
- Currently 600 Members
- Incorporates all important technological and industrial sectors



EnergyResearch.NRW cluster

is pushing forward with coordinated collaboration between research and scientific facilities and the business community



Training and qualification for green jobs in NRW

EnergieAgentur.NRW

- range of 50 **continuous training seminars**, which can be used by continuous training institutions, energy supply utilities, corporate associations and federations, institutes of higher education, local authorities and companies in NRW
- **Energy Knowledge Portal**: on-line platform on the Internet for vocational initial and continuous training
- **State-wide campaigns and joint actions** (e.g. "NRW Saves Energy"): information on environmentally friendly and innovative heating technologies, tips on energy conservation



Offers of cooperation

Network Building

Industry Partner
Education Partner
Research Partner



Politics

Experience Exchange – Energy Transition

Instruments

- Economic Ministry
- Climate Protection Ministry
- Research Ministry

Public Relation

Events, Road Shows, Meetings



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**Visit us at booth 6633-F Hall-B
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Thank you for your attention!

