Fact Book
Renewable Energy

June 2008

RWE

The energy to lead

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RWE Innogy



Focus on wind, hydro and biomass while also supporting new technologies

RWE Innogy

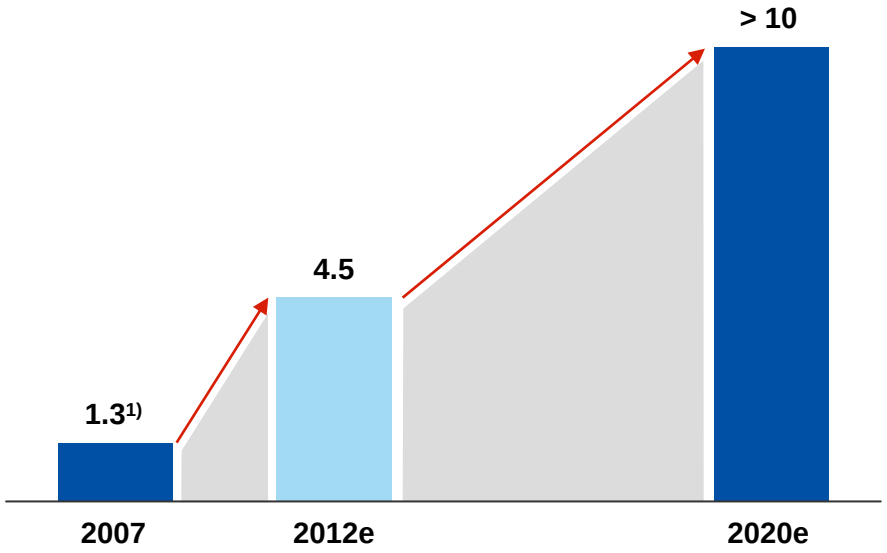
Overview

> Established in February 2008
> Bundling renewables activities and competencies across RWE Group
  – Focus on capacity growth in commercially mature renewable technologies, i.e. wind, biomass and hydro
  – Research & Development and ventures to drive the development of emerging technologies, e.g. solar, geothermal, marine
> EU focus, international activities opportunistically
> Asset portfolio of 1.2 GW capacity in operation and 0.3 GW under construction mainly located in United Kingdom, Germany, Spain and France (as of June 2008)
> Project pipeline of 9.0 GW capacity strongly geared towards onshore (44%) and offshore wind (44%)

Business Area	Wind onshore	Wind offshore	Hydro	Biomass	New technologies
					
Focus and Strategy	Key technology for capacity growth Focus on organic growth Focus markets include UK, Spain, Germany, France, Italy, Central-Eastern Europe	Key technology for capacity growth Organic growth strategy leveraging strong position in UK Focus markets include UK, Spain, Germany, France	Run-of-river projects Development of hydro power projects Focus areas are Central- and South-Eastern Europe	Development of biomass plants (> 5 MW) Regional focus on RWE core markets and South-Eastern Europe	Ventures and R&D Emerging technologies Carbon neutral generation Efficient energy storage

We plan to more than triple the installed generation capacity by 2012

Capacity growth targets (in GW, pro rata)



Value oriented growth strategy

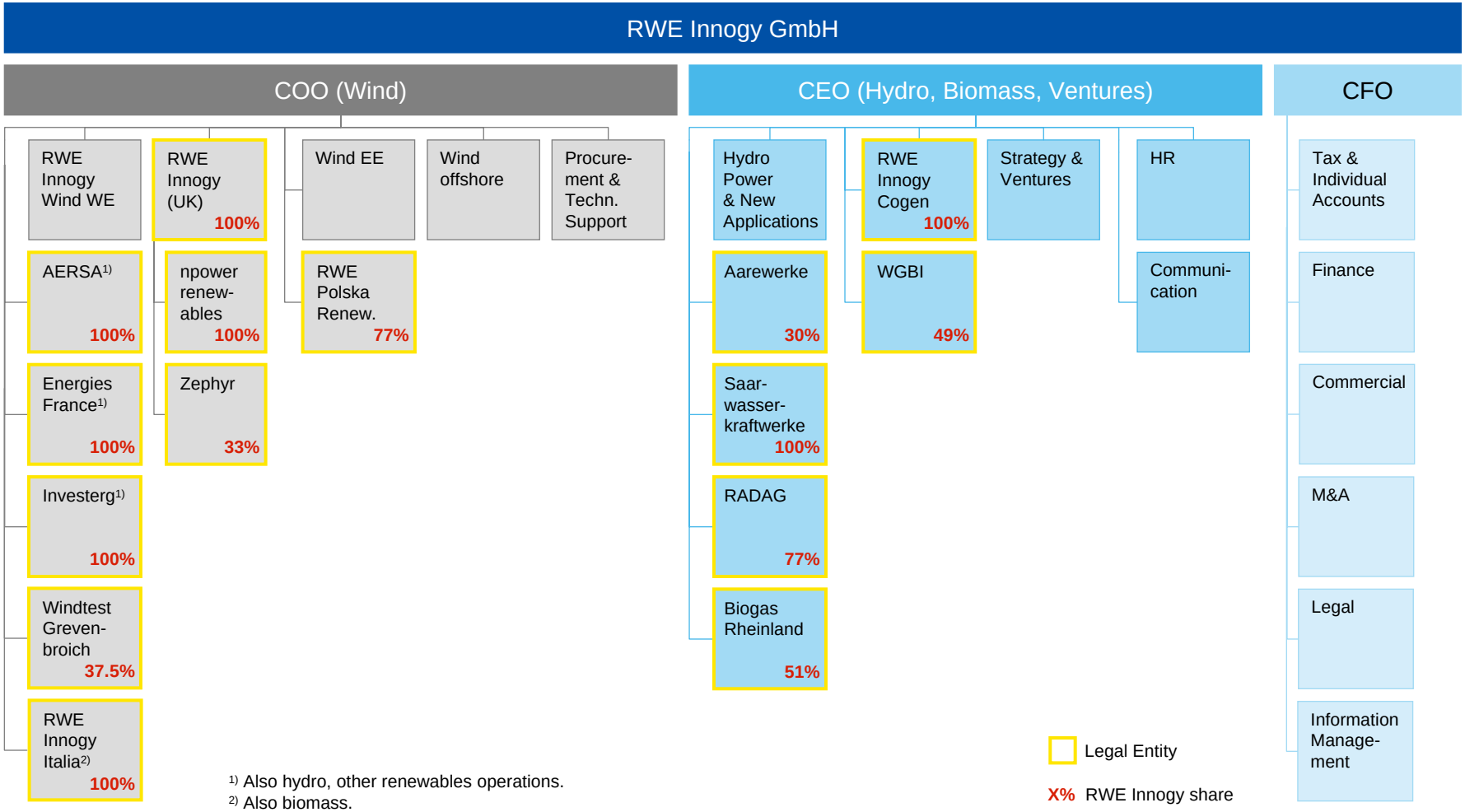
- RWE Innogy starting with strong diversified position in renewable energies as well as a significant realizable project pipeline
- Objective is profitable growth of renewables business
- We want to more than triple our installed capacity by 2012 and exceed 10 GW by 2020
  - Strong organic growth (incl. development of acquired pipeline) and strategic acquisitions
  - Average investments of at least € 1 bn p.a. from 2008 onwards
  - Value creation in line with RWE's strict investment criteria
- We will be operating in markets we know – our focus is on Europe
- Driving innovation in future renewable technologies
  - Investing in emerging and innovative companies
  - Development of pilot plants and demonstration projects

[1)] RWE Innogy capacity by year-end 2007, composed of 1,100 MW capacity in operation and 211 MW under construction (pro rata).

RWE Innogy management team: experienced – well connected – international

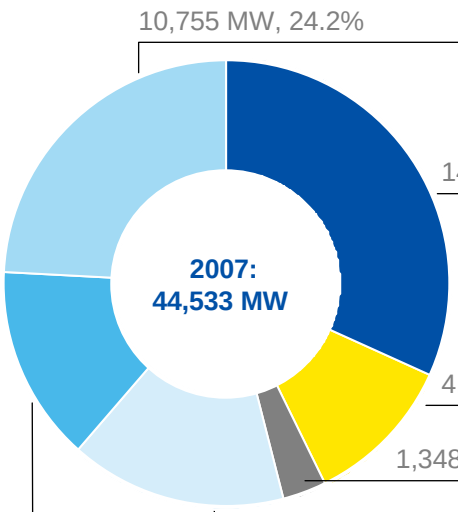
	Prof. Dr. Fritz Vahrenholt **CEO**	Dr. Hans Bünting **CFO**	Kevin McCullough **COO**
	> Hydro > Biomass > Ventures > HR > Communication	> Finance > Legal > Tax > M&A > IT	> Wind onshore > Wind offshore > Technology & procurement
Education	> Degree in chemistry > Doctorate in chemistry (both University of Münster)	> Degree in business administration > Doctorate in business administration (both University of Bochum)	> Degree in mechanical and electrical engineering
Career Milestones	> **2001 – 08** CEO REpower Systems AG, Hamburg > **1998 – 01** Member of the Board of Directors of Deutsche Shell AG > **1991 – 97** Senator and Principal of the City of Hamburg Environmental Ministry > **1984 – 90** Deputy Minister City of Hamburg Environmental Ministry > **1981 – 84** Head of Department of Environmental Policy, Waste Management and Air Pollution Control at the Hessian Ministry of Regional Development, Environment, Agriculture and Forestry	> **2004 – 08** Head of risk management RWE AG > **2000 – 04** RWE Trading GmbH, various management positions in finance and risk controlling > **1995 – 00** RWE Energie AG, various positions in finance and risk controlling > **1990 – 95** Ruhr-University Bochum, research associate	> **2004 – 08** Managing Director of npower renewables Ltd, RWE npower > **2001 – 04** RWE npower (Retail) Head of Business Transformation > **1998 – 01** National Power and Innogy plc, USA, various executive management positions > **1984 – 98** National Power, UK, various power plant management & operations positions

Organisation structure RWE Innogy



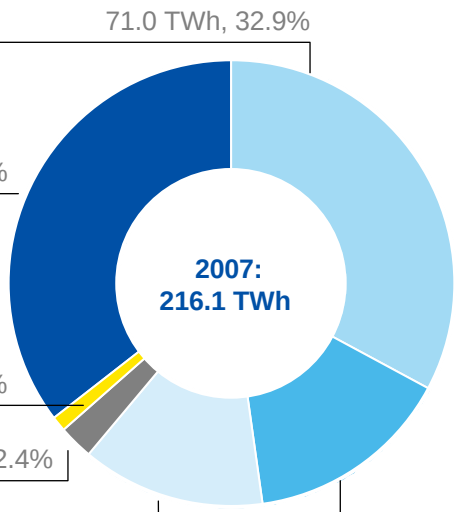
Renewables within RWE‘s capacity and generation mix

Power plant capacity by primary energy source (as of 12/2007, under IFRS)



10,755 MW, 24.2%	**Hard Coal**
14,064 MW, 31.6%	**Lignite**
4,973 MW, 11.2%	**Pumped storage, oil, other**
1,348 MW, 3.0%[1)]	**Renewable energies**
7,098 MW, 15.9%	**Gas**
6,295 MW, 14.1%	**Nuclear**

Electricity production by primary energy source (2007, under IFRS)



71.0 TWh, 32.9%	**Hard Coal**
76.1 TWh, 35.2%	**Lignite**
2.4 TWh, 1.1%	**Pumped storage, oil, other**
5.2 TWh, 2.4%	**Renewable energies**
29.3 TWh, 13.6%	**Gas**
32.1 TWh, 14.9%	**Nuclear**

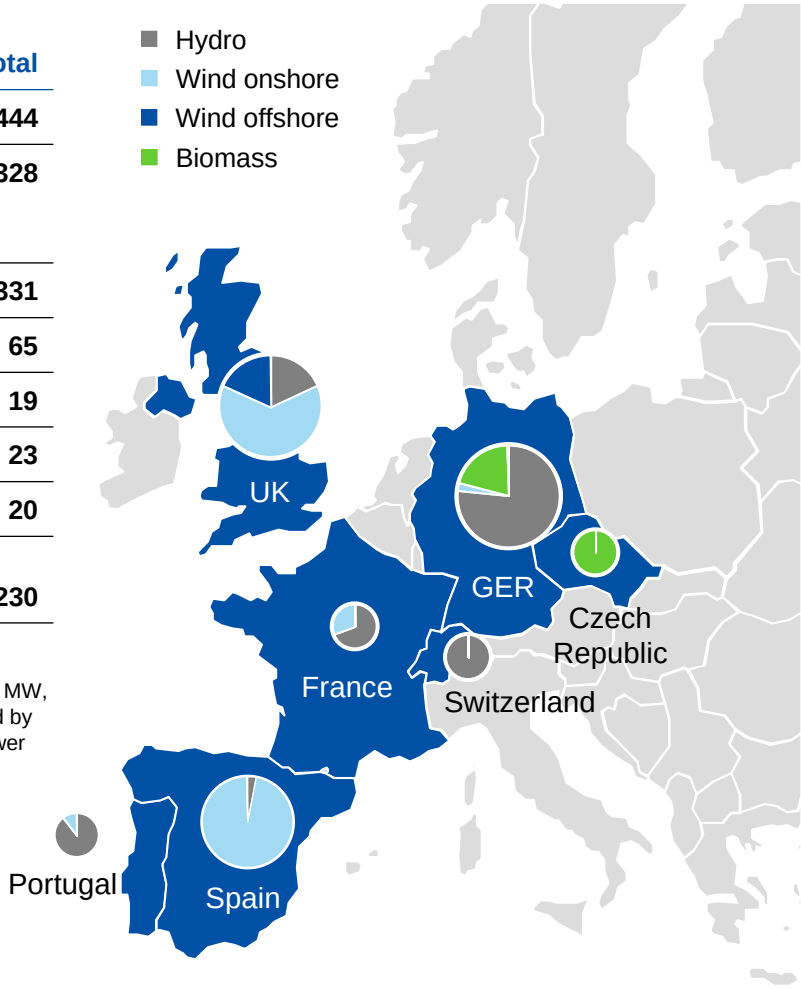
Note: Generation capacities in MW_{el} and electricity production by primary energy source as consolidated under IFRS.

[1)] Including wind power plants with a total installed capacity of 256 MW owned by a joint venture in which RWE npower holds a 33% stake. We have access to electricity generated by these plants on the basis of long-term power supply agreements.

Asset footprint by technology & region

(as of June 2008)

Capacity in MW_{el} (pro rata)	Hydro	Onshore wind	Offshore wind	Biomass	Solar PV & thermal	Total
Germany	339	11		92	1	**444**
UK	62	206[1)] [135[2)]]	60[1)]			**328**
Spain	10	320			< 1	**331**
France	45	20				**65**
Portugal	17	2				**19**
Switzerland	23					**23**
Czech Republic				20		**20**
Total RWE Innogy	**496**	**560**	**60**	**113[3)]**	**2**	**1,230**



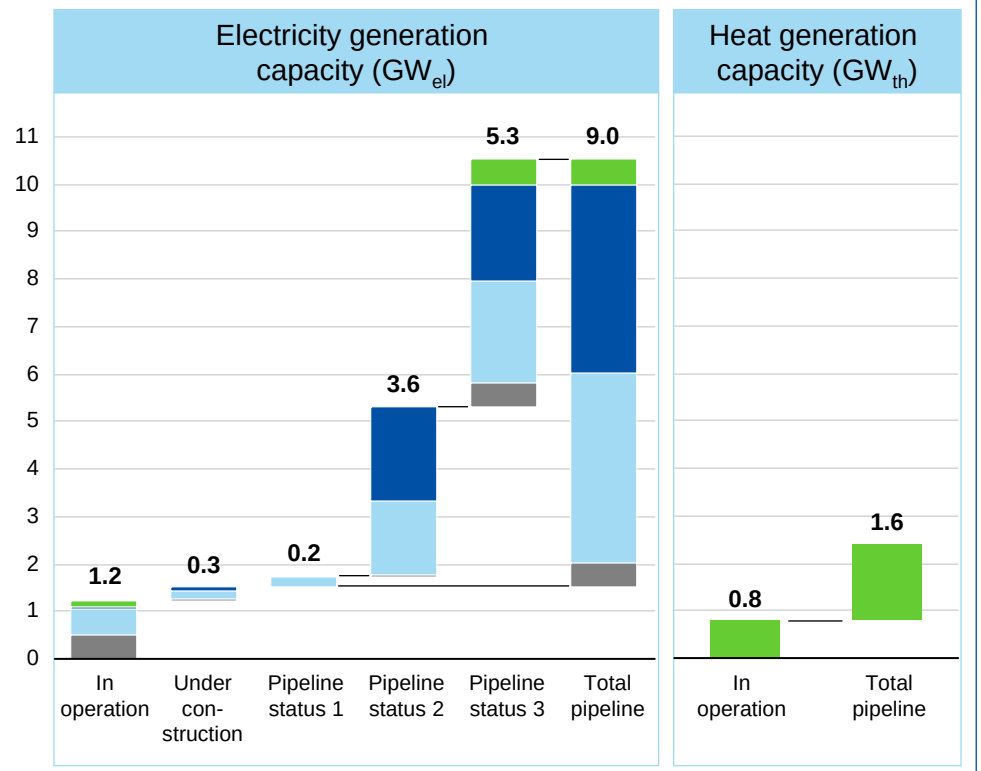
[1)] 206 MW = 10 MW Innogy wholly owned assets + 196 MW of Zephyr assets. RWE Innogy UK operated 401 MW, of this 391 MW (331 MW onshore/60 MW offshore) is owned by Zephyr Investments Ltd which is 1/3 owned by RWE Innogy UK. Of the 331 MW onshore, 196 MW is 100% contracted to RWE npower through PPAs (power purchase agreements). The remaining 10 MW is onshore and 100% owned by RWE Innogy UK and 100% contract to RWE npower through a PPA. The offshore capacity of 60 MW is 100% contracted to RWE npower through a PPA.

[2)] An additional capacity of 135 MW is contracted to the NFPA (Non-Fossil Fuel Purchasing Agency, est. 1989 to support renewables by offering long term PPAs and new projects were typically contracted in this way until the introduction of the Renewables Obligation in 2002).

[3)] Including 50 MW of biomass/fossil mix and 15 MW of fossil capacity; the thermal capacity of the plants in operation amounts to 517 MW_{th} in Germany and 292 MW_{th} in the Czech Republic.

9.0 GW pipeline strongly geared towards on- and offshore wind (pro rata, as of June 2008)

Projects by technology



- RWE Innogy with 1,230 MW_{el} assets in operation and 280 MW_{el} under construction – focus of portfolio on wind (58%) and hydro (34%) as well as biomass (8%)
- Total pipeline with projects until 2020 amounts to 9.0 GW_{el} – strongly geared towards onshore (44%) and offshore wind (44%)
- Biomass capacity of 113 MW_{el} in operation corresponds to a thermal capacity of 809 MW_{th} – pipeline of 0.6 GW_{el} (1.6 GW_{th})

Note:
Pipeline status 1 – Project consented, not yet under construction
Pipeline status 2 – Prospects (not consented) – land agreements in place, environmental impact studies commenced
Pipeline status 3 – Identified opportunities – sites identified, but no land agreements – initial discussion on agreements

Onshore wind power is the key element in RWE Innogy's growth strategy

Onshore wind capacity

■ RWE Innogy presence ■ Other RWE Innogy focus countries

Markets and operations

Technology & markets

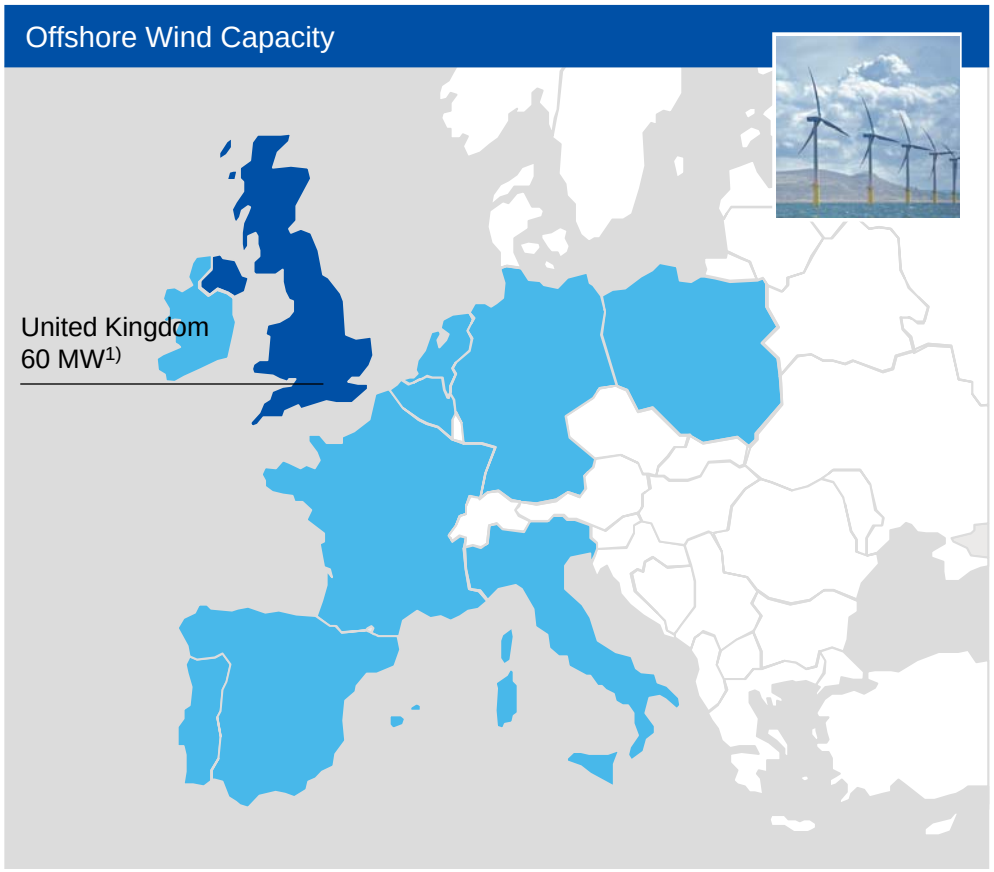
> Relatively mature markets especially in Germany and Spain
> 55.5 GW capacity installed in EU as of 2007,
  – High maturity of technology
  – Power generation costs competitive with conventional energy sources
> Still attractive growth rates & repowering potential in mature markets
> In the foreseeable future positive and stable financial support systems (e.g. fixed feed-in tariffs/obligations)
> Trend: Consolidation through M&A

RWE Innogy's assets & pipeline

> 560 MW onshore wind farms in operation (of which Zephyr UK 196 MW under economic control of RWE Innogy1) and 160 MW under construction
> Onshore wind pipeline of 4.0 GW

1) 206 MW = 10 MW RWE Innogy wholly owned assets + 196 MW of Zephyr assets. Please refer to footnote on page 9 for further explanation.

Offshore wind power:
RWE Innogy has strong starting position in the UK



Markets and operations

Technology & markets

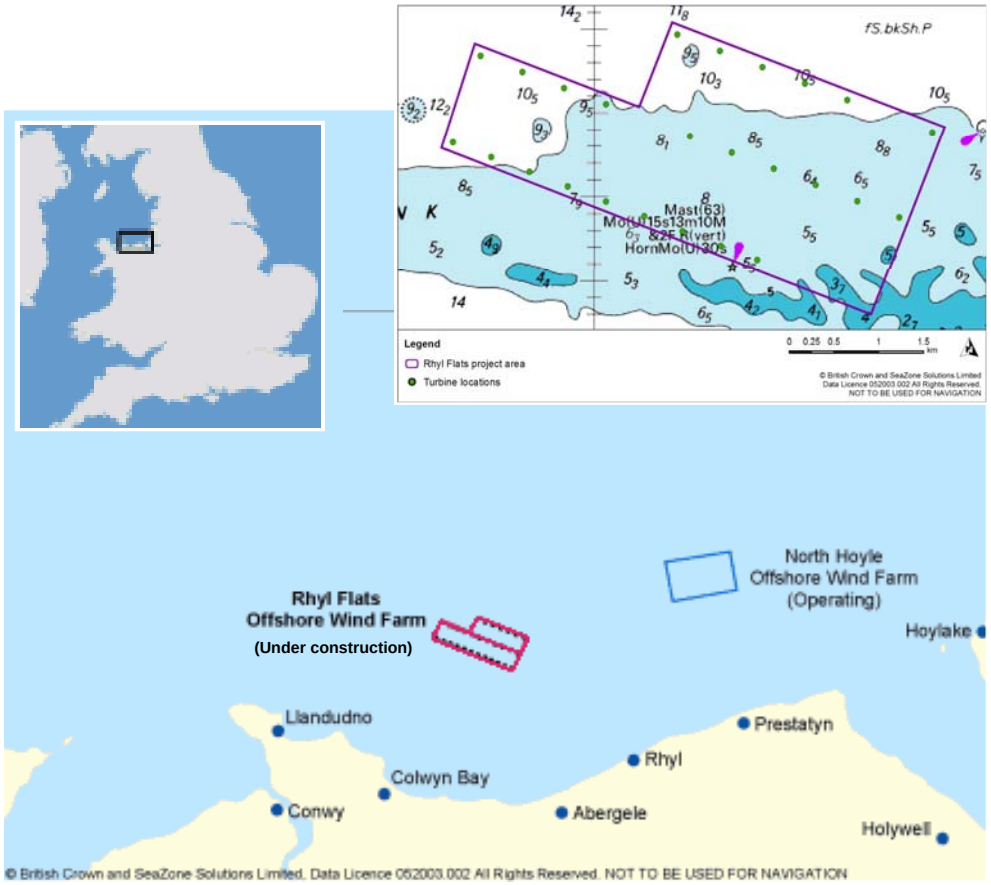
> Immature market: 1.1 GW installed offshore wind capacity in EU-27 in 2007,
  – Immature technology (in particular O&M, size of turbines)
> Strong market growth in medium to long term
  – Time horizon depends on technical progress and development of approval procedures
> Significant technological challenges remain especially in offshore foundations and structures
> Trends: Technical hurdles overcome, allocation of attractive sites, development of projects, M&A of projects

RWE Innogy‘s assets & pipeline

> 60 MW offshore wind farm (North Hoyle) in operation and 90 MW (Rhyl Flats) under construction
> Offshore wind pipeline of 3.9 GW (Gwynt y Môr 0.75 GW and Triton Knoll 1.2 GW in UK as well as 2.0 GW in Netherlands)

1) Owned by Zephyr Investments Ltd which is 1/3 owned by RWE Innogy UK. The 60 MW capacity is 100% contracted to RWE npower through PPAs (power purchase agreements).

Further offshore wind capacity is under construction and the scale is increasing



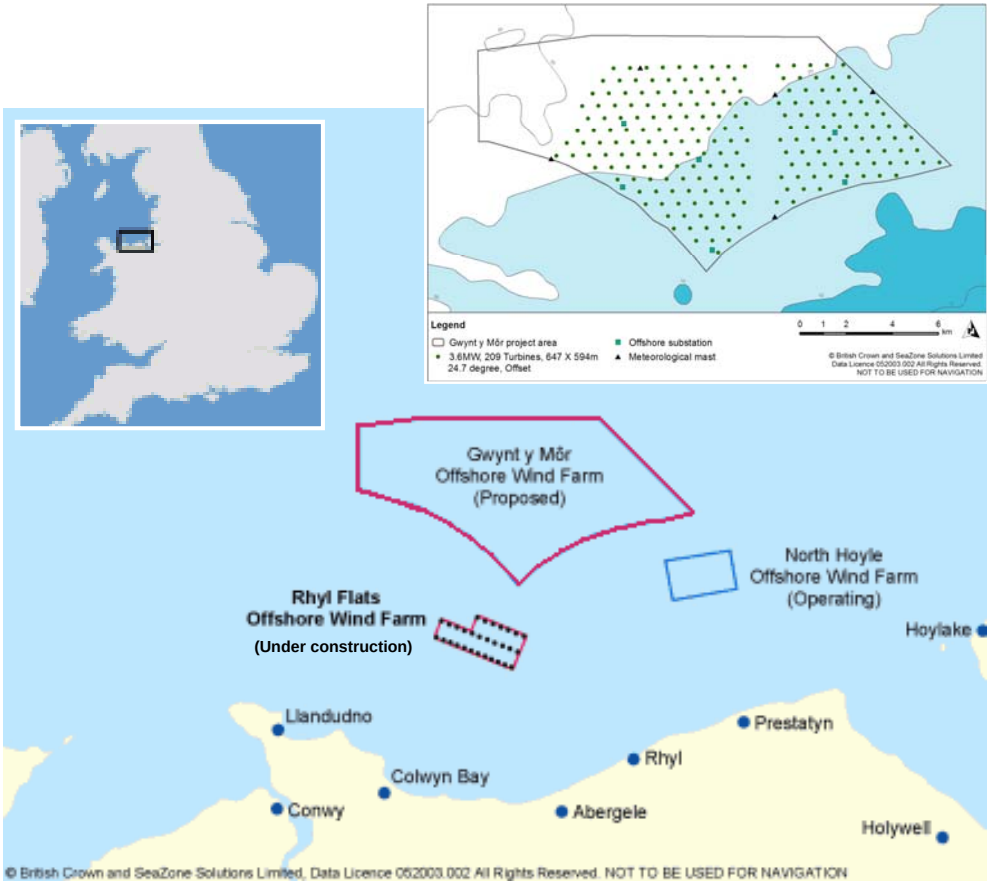
Rhyl Flats offshore wind farm

Once operational, the Rhyl Flats offshore wind farm will meet the average needs of approximately 61,000 homes and will prevent **the release of some 250,000 tonnes of CO_2.**[1)]

- Contract signed with Siemens power generation for supply and **installation of 25 turbines with 3.6 MW each (90 MW in total) in July 2007**
- Onshore construction work in progress
- Initial site preparation work offshore completed
- **Main offshore construction** (installing foundations, turbines and submarine cables) to start **1st April 2008**
- **Fully operational mid 2009**
- **Total investment 280 € m**

[1)] Prevention of 0.86 t CO_2/MWh, average electricity consumption by UK household of 4,700 kWh p.a.

Looking to the future – major projects are in development



Gwynt y Môr offshore wind farm

The wind farm has the potential to generate enough power every year to supply the average needs of 2% of UK households and will prevent the **annual release of around 2 million tonnes of carbon dioxide gas**[1)] – equivalent to taking approximately 590,000 cars off the road.

- > **750 MW**
- > Section 36 consent application submitted November 2005
- > Supplementary information submitted August 2007
- > **Consent expected this year**
- > **Installation in three stages in 2011 – 2013**

[1)] Prevention of 0.86 t CO_2/MWh.

Biomass CHP: focused on development of projects opportunities larger than 5 MW

Biomass capacity

■ RWE Innogy presence ■ Other RWE Innogy focus countries

Markets and operations

Technology & markets

> Biomass enjoys favourable regulatory support in most European countries
> Expected to contribute significantly to the EU renewables targets
> Solid biomass plant technology is mature and mainly used for distributed power generation
> Economic feasibility of projects strongly depends on access to feedstock which accounts for 25 – 40% of production costs
> Utilization of CHP (combined heat and power) generation elevates efficiency and profitability (critical in some markets)

RWE Innogy‘s assets & pipeline

> RWE Innogy Cogen bundling biomass competencies within RWE Group
> 113 MW_{el} (809 MW_{th}) biomass/CHP capacity in operation and 8 MW_{el} under construction
> Biomass pipeline of 579 MW_{el} (1,590 MW_{th})
> Joint venture "WBGI" with Austrian Kelag for developing biomass projects in South-Eastern Europe

1) Includes 47 MW_{el} dedicated biomass, 30 MW_{el} mixed fossil/biomass and 15 MW_{el} fossil capacity.
2) Includes 20 MW_{el} mixed fossil/biomass capacity (co-firing – combustion of biomass partly substituting fossil fuels).

Hydro power mature, but still offers an area of growth for RWE Innogy

Hydro capacity

RWE Innogy presence

Other RWE Innogy focus countries

Markets and operations

Technology & markets

> Overall mature market in Western Europe with low growth

> Small hydro plants (< 10 MW) expected to have significant share in future capacity growth

> Most significant growth potential in South-Eastern Europe, Turkey and Russia, but
  – Uncertain license approval processes
  – Grid accessibility for specific site locations not ensured

> Good relationship/strategic partnerships helpful

RWE Innogy‘s assets & pipeline

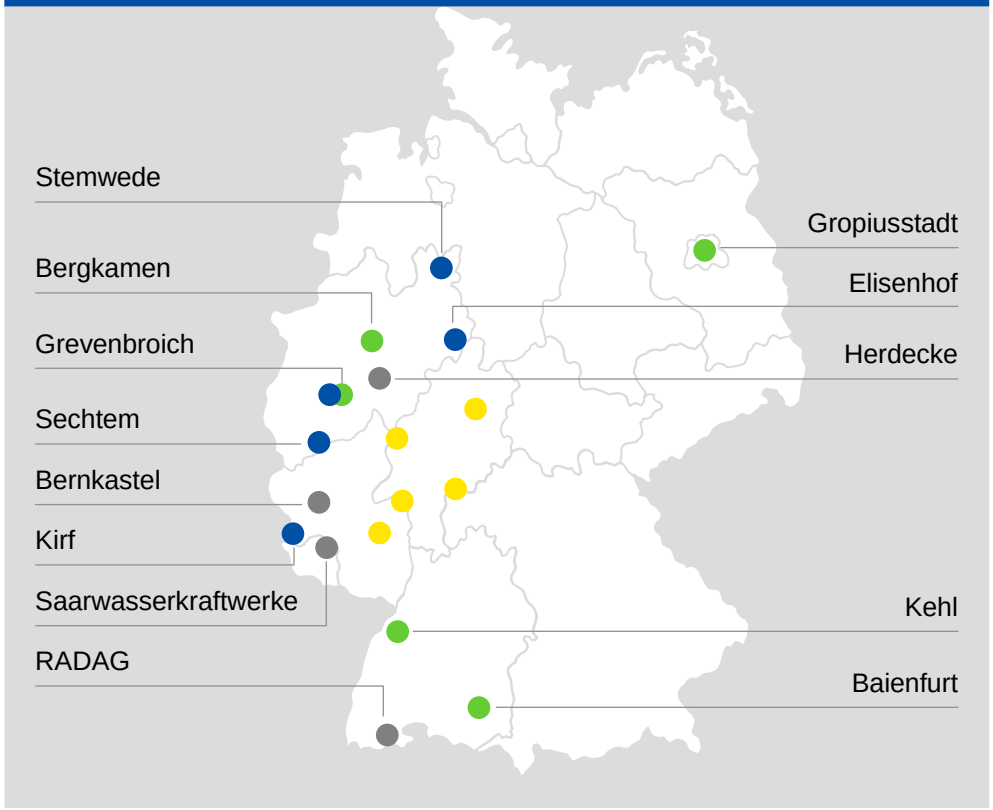
> Hydro power plants with 496 MW in operation

> 23 MW under construction

> Current hydro pipeline of about 500 MW

Germany plays an important role both in today's asset base and growth ambitions

RWE Innogy assets Germany



Hydro plants · Biomass plants · Wind sites · Solar sites

RWE Innogy activities Germany

> RWE Innogy's headquarters located in Essen; additional office in Hamburg

> Current run-of-river and storage plants along Mosel, Saar and Ruhr rivers

> Biomass and fossil CHP plants operated and developed by RWE Innogy Cogen

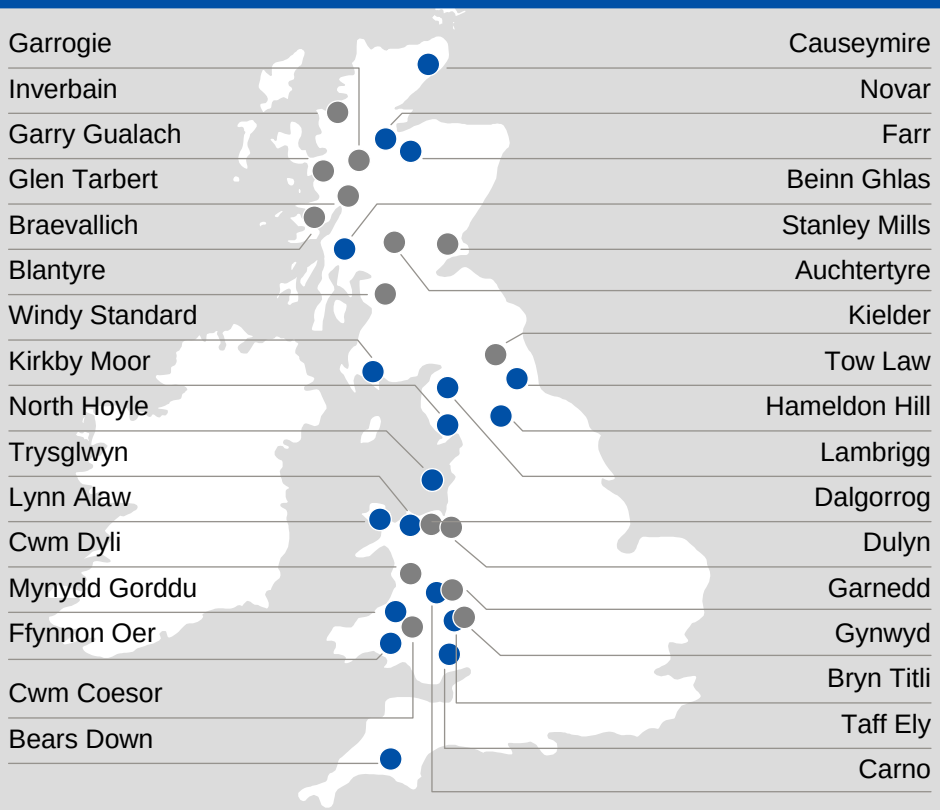
> First Biogas plant in Grevenbroich

Capacity (MW_{el})[1)]	In operation	Under construction
Wind onshore	11	
Wind offshore		
Biomass	92[3)]	8
Hydro	339	18
Other[2)]	1	

[1)] Table shows electrical capacity only (biomass assets in operation with 517 MW_{th} thermal capacity).
[2)] Solar PV capacity; [3)] Including 30 MW mixed fossil/biomass capacity and 15 MW fossil capacity.

RWE Innogy has a significant track record and strong position in the UK

RWE Innogy assets UK



● Hydro plants ● Wind sites

RWE Innogy activities UK

> RWE Innogy UK incorporates the wind and hydroelectric assets of npower renewables and npower's share in the Zephyr on- and offshore wind assets

> Significant pipeline of on- and offshore wind projects in various stages of the permitting process

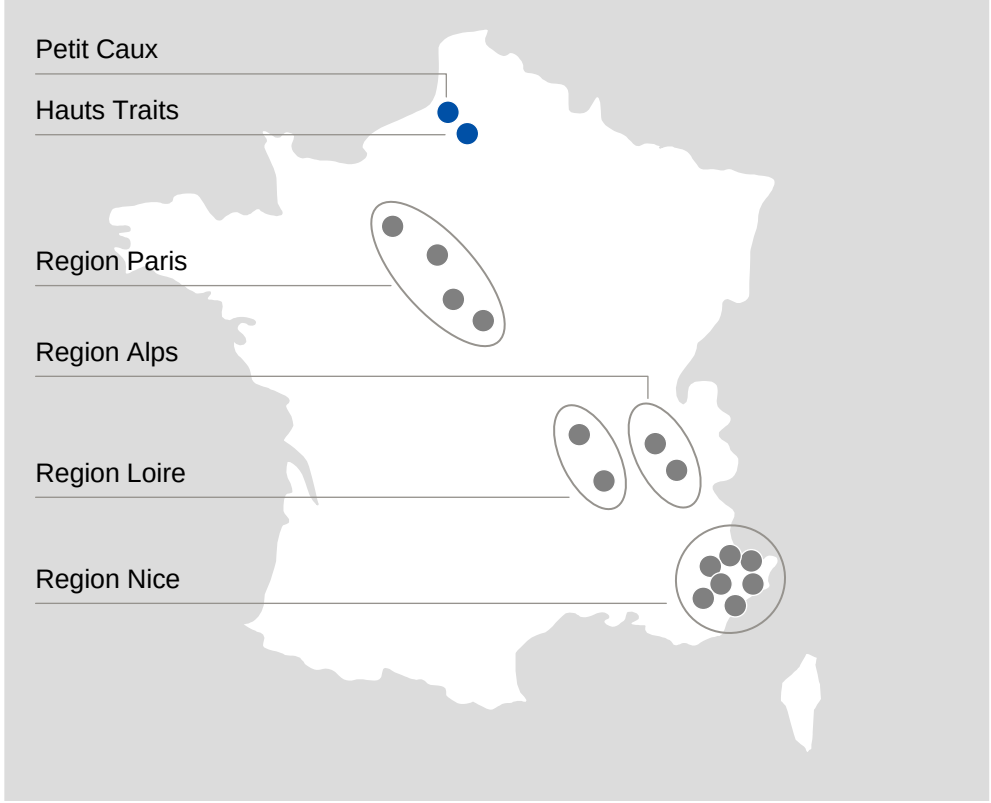
> RWE Innogy UK located in Swindon

Capacity (MW_{el})	In operation	Under construction
Wind onshore	206[1)]	82
Wind offshore	60[2)]	90
Biomass		
Hydro	62	3
Other		

[1)] 206 MW = 10 MW Innogy wholly owned assets + 196 MW of Zephyr assets. Please refer to footnote on page 9 for further explanation.
[2)] Owned by Zephyr Investments Ltd which is 1/3 owned by RWE Innogy UK. The 60 MW capacity is 100% contracted to RWE npower through PPAs (power purchase agreements).

France is an attractive market for on- and offshore wind development

RWE Innogy assets France



Hydro plants Wind sites

RWE Innogy activities France

> Energies France is a 100% subsidiary of RWE Innogy with locations in Paris and Forbach (Département Moselle)

> Starting with hydro operations in 1980s, now focus is on development of wind power projects

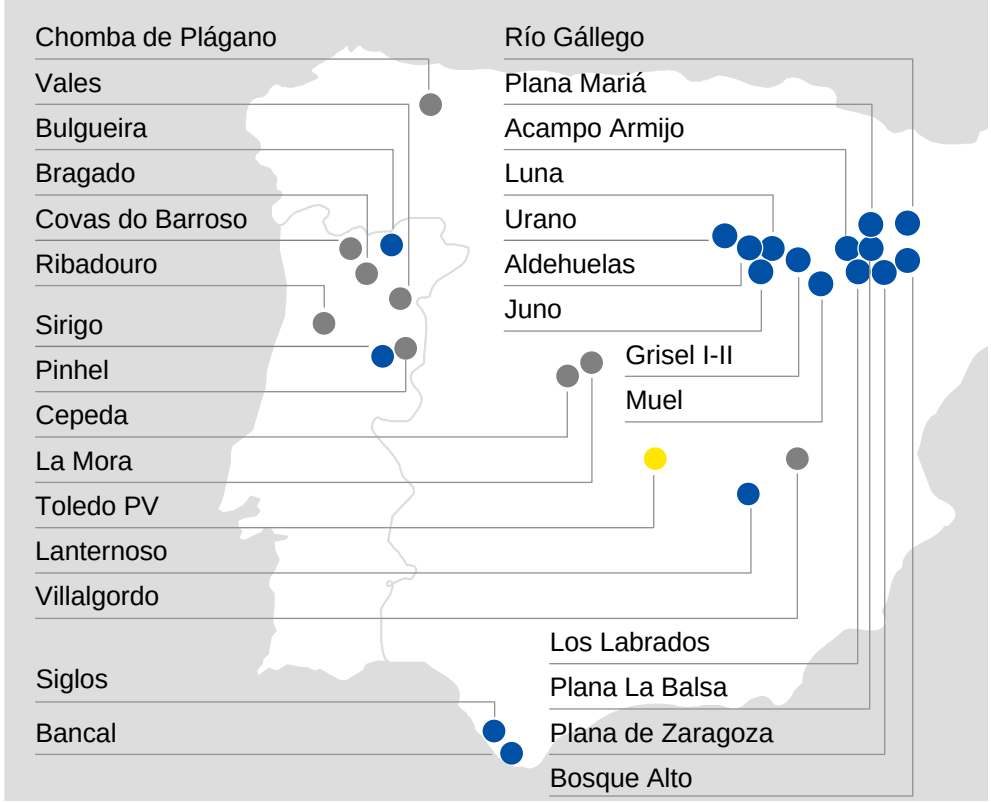
> Onshore wind pipeline with projects in Bretagne, Normandy and Languedoc Roussillon

> Plan to take advantage of attractive offshore regime

Capacity (MW_{el})	In operation	Under construction
Wind onshore	20	8
Wind offshore		
Biomass		
Hydro	45	
Other		

On the Iberian peninsula RWE Innogy is present via INVESTERG and AERSA

RWE Innogy assets Iberia



● Hydro plants ● Wind sites ● Solar sites

RWE Innogy activities Iberia

> RWE Innogy present in Portugal and Spain through its subsidiaries
  – INVESTERG (Portugal)
  – AERSA (Spain)

  both focusing on onshore wind and hydro

Capacity (MW_{el})	In operation	Under construction
Wind Onshore	323	
Wind Offshore		
Biomass		
Hydro	27	1
Other[1)]	0.3	

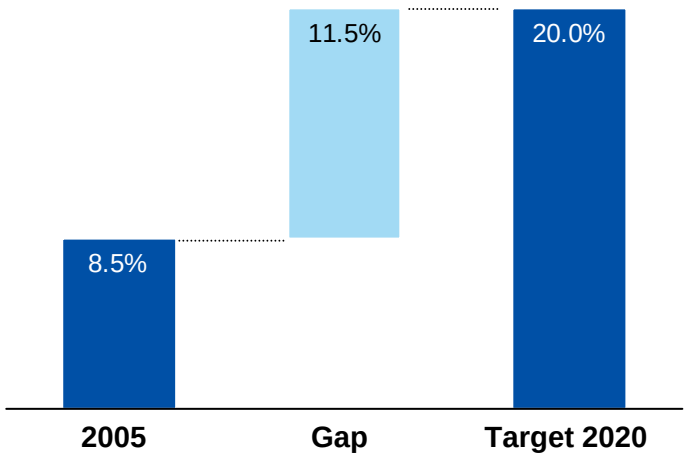
[1)] Solar thermal capacity.

Political Framework



EU targets a renewable energy share of 20% in primary energy consumption by 2020

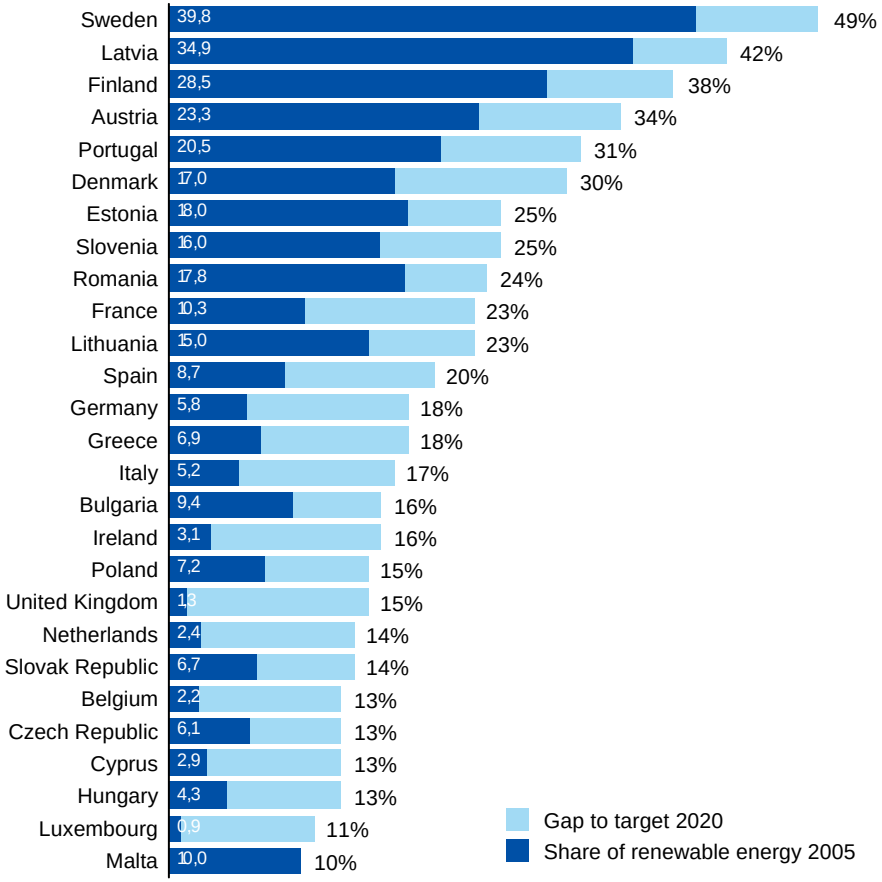
Overall share of renewable energy in EU



- Target of 20% share of renewables in overall EU energy consumption by 2020, i.e. covering
  - Power
  - Heating/cooling
  - Transport
- At least 10% of final consumption of energy in transport by biofuels in 2020 in each country

Source: EU Commission, 2008. Proposal for a directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources.

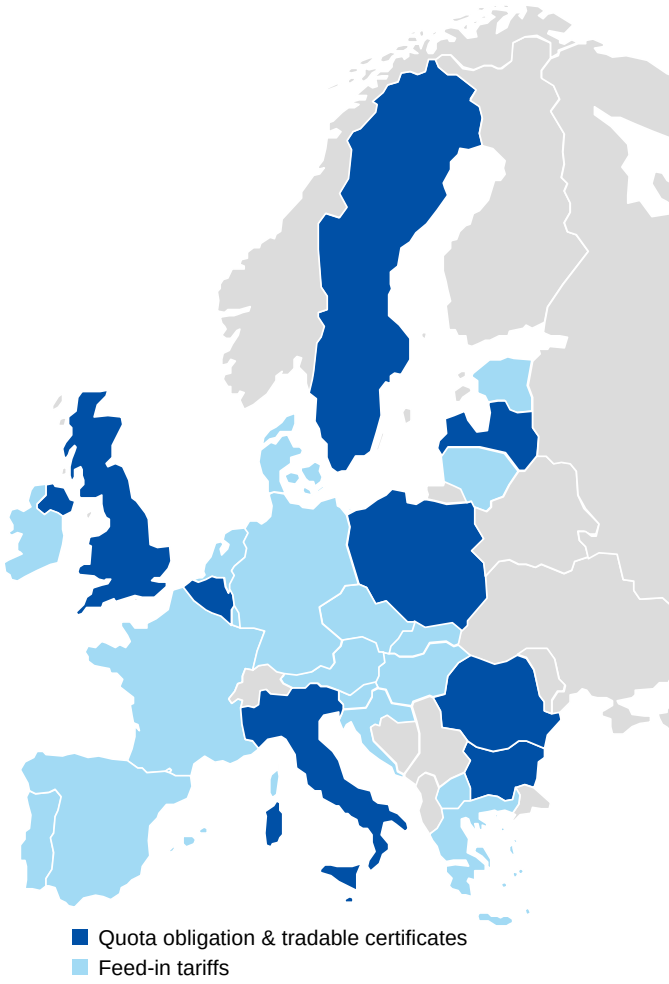
Individual country targets



Mechanisms to support renewable energy generation in Europe

Main types of support mechanism

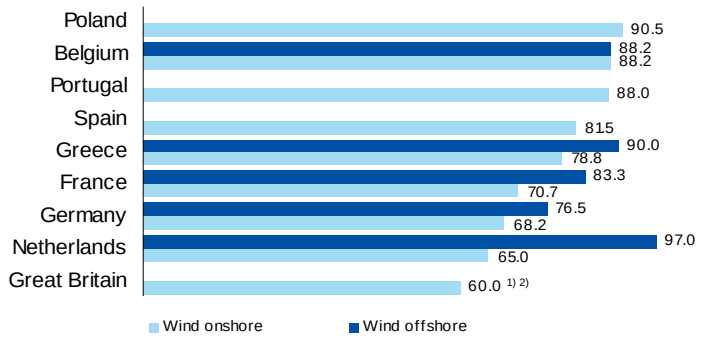
	Characteristics of mechanism:	Strength/Weakness:
Quota obligation & tradable certificates	> Electricity suppliers are obliged to have a certain proportion of their electricity from renewable sources > Renewable Energy Certificate is a tradable commodity proving that certain electricity is generated using renewable energy sources (per MWh) > Certificates are traded to fulfil renewable obligations > Renewable power generators receive wholesale market price for generated power plus the value of the certificate	> Forces suppliers to take action to meet their obligation, market based system should drive costs down > Lack of revenue certainty, cost of administration, failure to support immature technologies
Feed-in tariffs	> Renewable energy producers are paid a fixed tariff – Instead of pool price (Feed-in tariffs) – In addition to pool price (Price premium) > Tariffs usually vary depending on technology, capacity and age of power plant and are typically limited in time	> Price and investment certainty > Political risk, cost to consumers, generator does not receive CO_2 upside



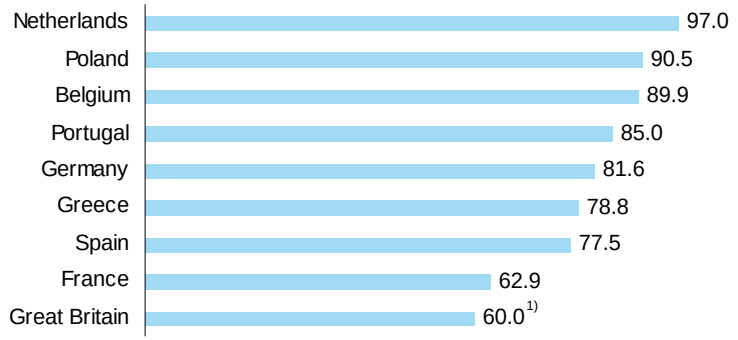
Sources: EREF – Prices for renewable energies in Europe: Feed-in tariffs versus quota systems – a comparison, 2006/2007; Datamonitor – Are national policies sufficient to drive renewable investment? – April 2007; EC [52]; BMU (January 2007); FORRES 2020 – Analysis of the renewable energy sources' evolution up to 2020 (Fraunhofer et al, April 2005).

Average prices for renewable energies in Europe

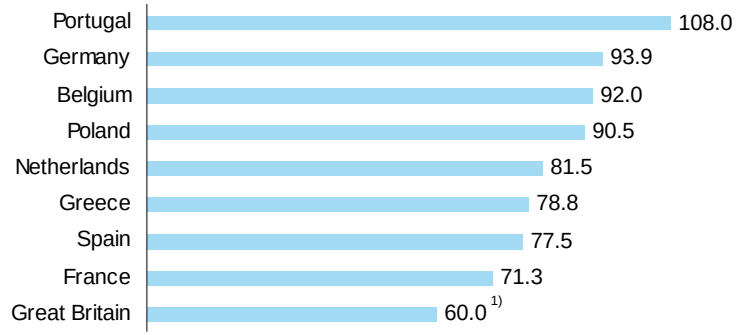
Average revenues for wind power 2006/07 (€/MWh)



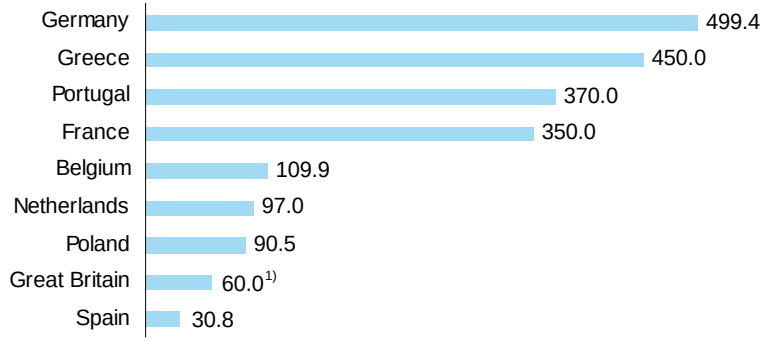
Average revenues for small hydro 2006/07 (€/MWh)



Average revenues for biomass 2006/07 (€/MWh)



Average revenues for solar PV 2006/07 (€/MWh)



Source: European renewable energies Federation EREF – Prices for renewable energies in Europe: Feed-in tariffs versus Quota Systems: a comparison – Report 2006/07.
1) Renewable Obligation Certificates only, wholesale price to be added.
2) 1 ROC/MWh for both on- and offshore wind.

UK: Renewables support framework based on renewable obligations and tradable certificates

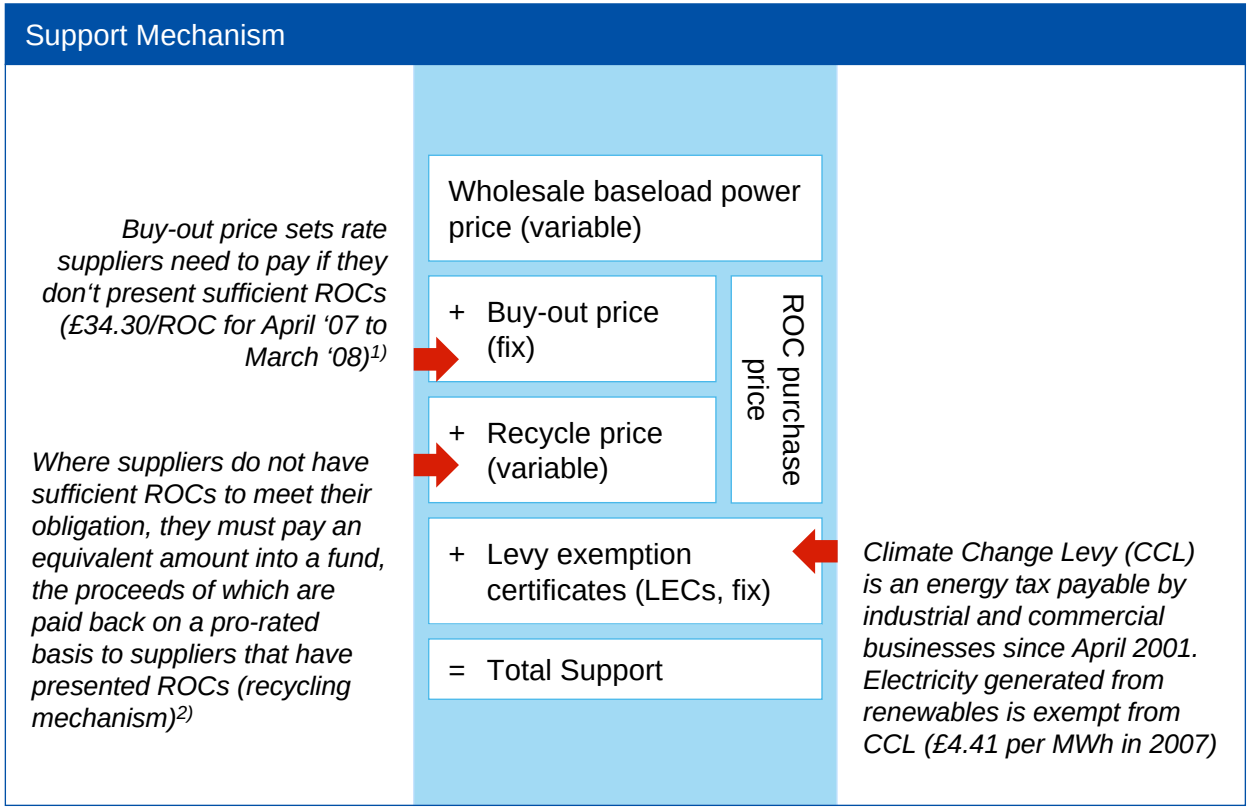
Renewables support in UK

Legal framework	> Renewables Obligation (RO)
Price mechanism	> Certificate-based, indirect variable subsidy
Length of mechanism	> Annual Compliance Periods (CPs), legislation from 2002 until 2026/27
Value of mechanism	> Renewables Obligation Certificate (ROC) value for 2006/7 (CP5) is 49.28 £/MWh
Other earnings captured	> Power price > Levy Exemption Certificates
CO_2 hedge effectiveness	> Yes – from power price earnings
Future legislation changes	> Energy White Paper (expected to be legislation in 2008) particularly re-affirms role of offshore and new technologies, e.g. by introducing ROC banding (for offshore wind 1.5 instead of 1.0 ROCs/MWh)

ROCs by technology (Energy White Paper)

Band	Support level (ROC/MWh)	Technologies
Established	0.5	Non-energy crop co-firing
Reference	1.0	Onshore wind, hydro, energy crop co-firing
Post-demon-stration	1.5	Offshore wind
Emerging technologies	2.0	Wave and tidal renewables, dedicated biomass with CHP, dedicated biomass using energy crops

UK: revenues from renewable energy combine market price, ROC purchase and tax incentives



Renewables obligation certificates

A ROC (Renewables Obligation Certificate) is the green certificate issued for electricity generated by an eligible renewable source within the UK.

Generators are issued ROCs (which they can then sell on) for each MWh of eligible electricity generated. Most suppliers purchase ROCs from their generation assets or enter into long-term purchase agreements with independent generators.

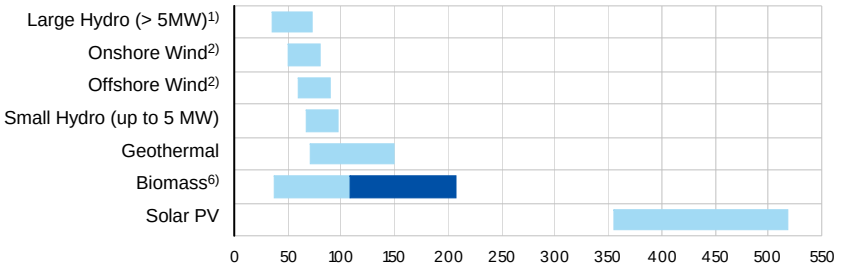
1) Buy-out price is updated each year by Ofgem to reflect changes in Retail Prices Index (RPI); for period April 1 2007 to March 31 2008 price was increased to £34.30 from £33.24 per ROC.

2) Since the share of the buy-out fund is dependent on the number of suppliers who fail to achieve the target, this value depends upon the obligation target being greater than the available renewables obligation certificates (in 2005/06 the compliance ratio amounted to 76% of the total obligation target).

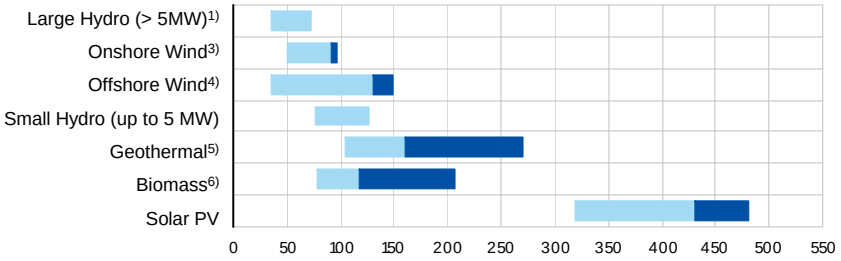
The renewables support framework in Germany is based on fixed feed-in tariffs

Feed-in tariff by selected technologies (in €/MWh)

Existing regime (EEG 2004)



New regime (amended EEG, effective January 2009)



Remuneration range for different types and sizes

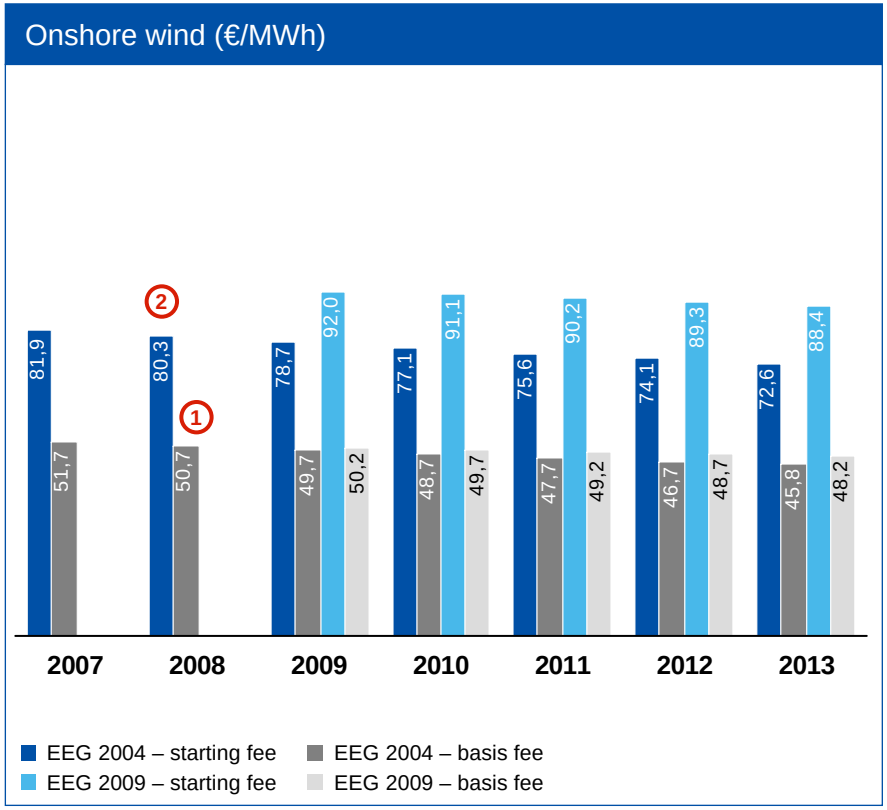
Bonus dependent on use of specific technologies/materials or date of installation

Renewables support in Germany

Legal framework	> Feed-in tariff system described in Renewable Energy Act (Erneuerbare Energien Gesetz EEG)
Price mechanism	> Regressive, guaranteed feed-in tariff (fixed once installation is commissioned)
Length of mechanism	> Tariffs guaranteed up to 20 years for wind
Value of mechanism	> Varying tariffs depending on technology, capacity and location > Up to 80.3 €/MWh for onshore and 89.2 €/MWh for offshore wind (installation in 2008)
Other earnings captured	> None
CO_2 hedge effectiveness	> No – tariff not linked to power price
Future legislation changes	> Amendment of EEG to become effective on 01/01/2009 (12/05/2007 adoption of cabinet draft, H1/2008 parliamentary procedure)

Source: RWE on the basis of EEG 2004 & 2009 – BMU; [1)] Only in case of modernisation and only payment for the capacity increase (from 2009: for a period of 15 years); [2)] High end of range starting fee for first 5 years (Offshore: for installation prior to 12/31/2010), low end for remaining years; [3)] 5 €/MWh bonus for installations prior to January 2014; [4)] starting fee of 130 €/MWh for first 12 years and 150 €/MWh for installations prior to 12/31/2015; [5)] up to 70 €/MWh bonus for combination with heat usage and use of petrothermal technology; additional 40 €/MWh for plants commissioned before December 31, 2015; [6)] Low end for waste wood, biomass: overall max. bonus of 100 €/MWh for use of regenerative raw material, CHP, innovative technologies (reduced to 90 €/MWh from 2009).

Germany:
Onshore wind power support mechanism



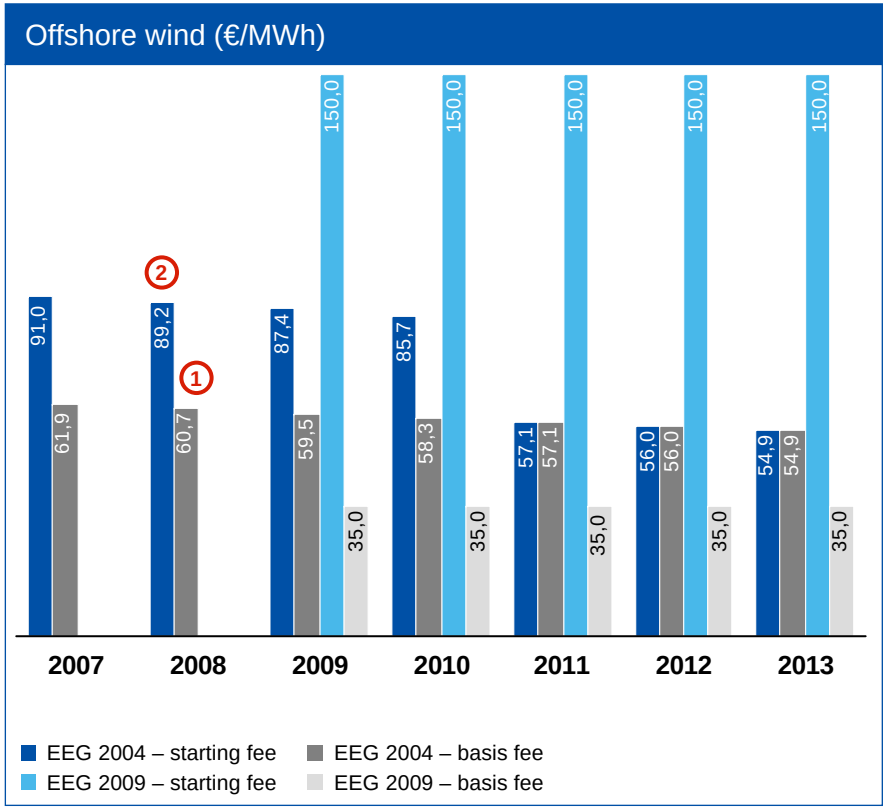
- Basis tariff of 50.7 €/MWh[1)] to be paid for electricity generated from onshore wind energy for a maximum period of 20 years. (1)
- Increased tariff of 80.3 €/MWh[1)] from commissioning for 5 years for assets achieving at least 150% of reference yield[2)]. (2)
- For installations not reaching the 150%, the period of 5 years mentioned above is prolonged by 2 months for every 0.75% which their yield stays below 150% of the reference yield.
- Individual installations receive a fixed tariff determined by the year of commissioning. Tariff levels reduce by 2% p.a.

Proposed changes from amendment of EEG, effective 2009:

- Basis tariff of 50.2 €/MWh[3)] for a maximum of 20 years plus year of commissioning
- Increased tariff of 92.0 €/MWh[3)] for first 5 years for assets achieving at least 150% of reference yield[2)], additional 5 €/MWh for assets commissioned before January 1, 2014
- Tariff levels reduce by 1% p.a.

[1)] For assets commissioned in 2008.
[2)] The reference yield is a yield generated by the reference installation. It is a wind energy converter of a specific type for which a yield at the target installation can be compared on the basis of a P-V curve (power-wind speed curve), measured by an authorized institution (Fördergesellschaft Windenergie e.V.).
[3)] For assets commissioned in 2009.

Germany:
Offshore wind power support mechanism



- Basis tariff of 60.7 €/MWh[1)] for electricity generated by installations which are located at least 3 nautical miles seawards from baseline for a maximum period of 20 years. (1)
- Increased tariff of 89.2€/MWh[1)] for installations commissioned by 31 Dec 2010 for 12 years. (2)
- This 12-year period is prolonged by 0.5 months for every nautical mile increase in range above 12 nautical miles and it is prolonged by 1.7 months for every metre in water depth in excess of 20 metres.
- Individual installations receive a fixed tariff determined by the year of commissioning. Tariff levels reduce by 2% p.a.

Proposed changes from amendment of EEG, effective 2009:

- Basis tariff of 35.0 €/ MWh[3)]
- Increased tariff of 150.0 €/MWh[3)] for 12 years (130.0 €/MWh for installations after December 31, 2015).
- This 12-year period is prolonged by 0.5 months for every nautical mile increase in range above 12 nautical miles and it is prolonged by 1.7 months for every metre in water depth in excess of 20 metres.
- Tariff levels reduce by 5% p.a. from 2015

[1)] For assets commissioned in 2008.
[2)] The reference yield is a yield generated by the reference installation. It is a wind energy converter of a specific type for which a yield at the target installation can be compared on the basis of a P-V curve (power-wind speed curve), measured by an authorized institution (Fördergesellschaft Windenergie e.V.).
[3)] For assets commissioned in 2009.

In mature markets such as Germany repowering will play a key role for growth

Increased energy yield

Increased turbine size and improved technology leading to

- Higher installed capacity on same area of land
- Improved load factors (higher utilisation and larger rotor diameter)
- Reduced operating costs
- Improved power grid integration since modern turbines have variable speeds and voltage control

Reduced environmental impact

- Reduced number of wind turbines leading to enhancement of natural landscape
- Reduced flicker effect as larger turbines rotate at much lower speed

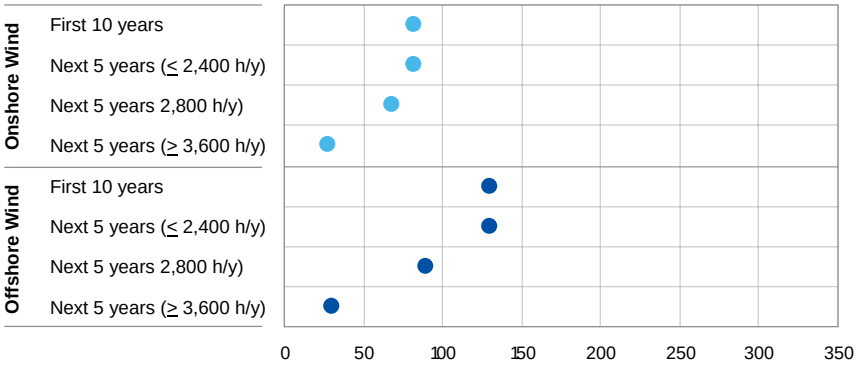
Support & Restrictions

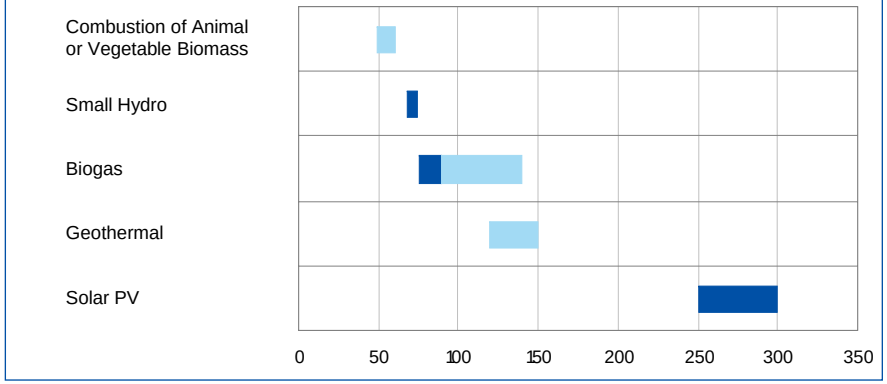
- Repowering bonus in current (2004) and amended (2009) EEG[1)] is attractive from an economic perspective, but ...
- ... height restrictions and spacing requirements do not allow harvest of the full potential in Germany

Note: Repowering of Simonsberg Wind Farm: number of turbines reduced from 11 to 3 – capacity increased from 5.5 MW to 15 MW – full load hours up from 2,545 h/a (29%) to 3.200 h/a (37%) – annual energy yield increased from 14 mn kWh to 48 mn kWh (Source: BWE), [1)] The German EEG encourages repowering by introducing the incentive of paying the increased initial tariff for a longer period. In comparison with traditional plants (see page 28) this period is extended by two months for each 0.6% by which the installation falls short of 150% of the reference output. Only installations which increase the existing capacity at least three-fold are sponsored. According to the first draft of the new EEG (effective 2009), incentives shall be increased by adding 5 €/MWh to the initial tariff and reducing the necessary increase of performance from triple to twice.

Renewables support frameworks in France

Feed-in tariff by selected technologies





Renewables support in France

Legal framework	> Order of 10/07/2006; (Order of 08/06/2001) – legislative framework constrains retailers to sign a purchase contract for electricity produced from renewable energies
Price mechanism	> Guaranteed feed-in tariffs for each renewable energy source
Length of mechanism	> Tariffs guaranteed up to 20 years for offshore wind and up to 15 years for onshore wind
Value of mechanism	> Tariffs fixed for first ten years then re-evaluation according to full power equivalent hours recorded during the first ten years of operation. > Currently up to 82 €/MWh for onshore and 130 €/MWh for offshore
Other earnings captured	> None
CO_2 hedge effectiveness	> No – tariff not linked to power price
Future legislation changes	> No changes visible so far

Source: RWE on the basis of European Renewable Energies Federation EREF – Prices for renewable energies in Europe: Feed-in tariffs versus quota systems: a comparison – Report 2006/07.

France: On- and offshore wind power support mechanism

Onshore wind (current situation)[1)]

- The power purchase contract for onshore wind is entered into for a period of 15 years from the beginning of commercial operation.
- The tariff for onshore facilities is 82 €/MWh for the first ten years.
- For the following five years the tariff is between 82 and 28 €/MWh in relation to the number of full power equivalent hours recorded during the first ten years of operation. The tariff is linearly interpolated between the base values:
  - 82 €/MWh for 2,400 hours or less,
  - 68 €/MWh for 2,800 hours and
  - 28 €/MWh for 3,600 hours or more.
- The base year for the fixed tariffs is 2006. A weighted average of several published indices is to cover inflation (K- and L-index).
- Costs of connection to the grid have to be paid by the wind power producer.
- No additional costs for balancing power for the wind power producer.
- Applications for wind farm building permits filed after July 13, 2007 have to be located in so called Wind Power Development Areas – these areas are defined taking into account
  - wind power potential of the area,
  - ease of connection to the grid,
  - landscape protection.

Offshore wind (current situation)[1)]

- The power purchase contract for offshore wind is entered into for a period of 20 years from the beginning of commercial operation.
- The tariff for offshore facilities is 130 €/MWh for the first ten years.
- For the following ten years the tariff is between 130 and 30 €/MWh depending on the number of full power equivalent hours recorded during the first ten years of operation. The tariff is linearly interpolated between the base values:
  - 130 €/MWh for 2,800 hours or less,
  - 90 €/MWh for 3,200 hours and
  - 30 €/MWh for 3,600 hours or more.
- The base year for the fixed tariffs is 2006. A weighted average of several published indices is to cover inflation (K- and L-index).

[1)] Order of July 10, 2006.

The renewables support framework in Spain offers two alternative schemes

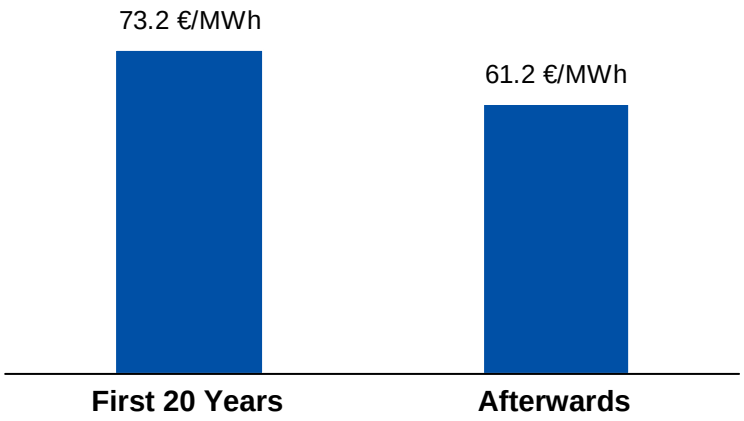
Renewables support in Spain

Legal framework	> Royal Decree 661/2007 of 25/05/2007; (Royal Decree 436/2004)
Price mechanism	> Choice between – Market price plus premium ("Variable tariff") – Feed-in-tariff ("Fixed tariff")
Length of mechanism	> Period of 15 – 25 years depending on technology > For certain technologies prices also regulated for years after initial period
Value of mechanism	> Variable tariff: Premium as well as upper and lower limits fixed for first period of 15 – 25 years > Fixed tariff: Tariffs fixed for first period and years thereafter > Regular revisions and updates of tariffs based on consumer price index
Other earnings captured	> Variable tariff: Power price > Additional compensation under both regimes such as an efficiency allowance and a reactive energy allowance for certain technologies
CO_2 hedge effectiveness	> Variable tariff: Yes – from power price earnings (within upper and lower limits) > Fixed tariff: No – tariff not linked to power price
Future legislation changes	> Regulations of the Royal Decree 661/2007 will be reviewed in 2010. Further reviews are scheduled for every four years thereafter > The reviews will not affect plants which are awarded the start-up certificate before January 1 of the second year after the year in which the review is carried out

Spain: Onshore wind power support mechanism

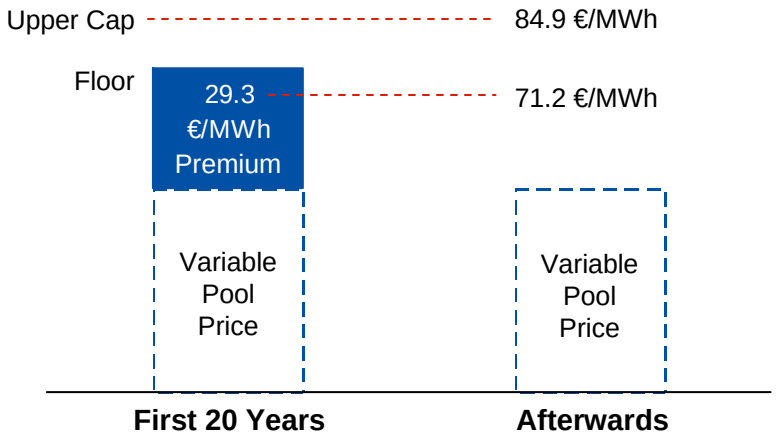
Example wind power[1)]

Fixed tariff



- The revenue per MWh is a fixed amount independent of the current pool price.
- The tariff is annually updated[1)] based on the consumer price index change.
- After initial period (length depending on technology) the reference price is lowered.

Variable tariff



- Within limits, the revenue is given by the sum of pool price and premium.
- The floor is the guaranteed minimum price.
- If market prices exceed upper cap, the price becomes equal to the market price but no additional premium.
- After initial period (length depending on technology) no premium is paid.

[1)] Tariffs as described in Royal Decree 661/2007.

The renewables support framework in Italy

Renewables support in Italy

Legal framework	> Green Certificates (GC)
Price mechanism	> Certificate-based, indirect variable subsidy
Length of mechanism	> 15 years
Value of mechanism	> Green Certificate (GC) value for 2008 is 112.88 €/MWh > Annual adjustment of certificate value
Other earnings captured	> Power price
CO_2 hedge effectiveness	> Yes – from power price earnings (but to limited extent as certificate value is updated and adjusted to the power price every year)
Future legislation changes	> Current legislation became effective in January 2008, future changes are not visible yet

GCs by technology (Legge Finanziaria no. 244, 2008)

Coefficient (GC/MWh)	Technologies
1.0	Onshore wind (plants of more than 200 kW)
1.1	Offshore wind
1.0	Hydro
0.9	Geothermal plants
1.8	Waves and sea
Conto Energia[1)]	Photovoltaic power
1.8	Biomasses and biogas produced by agriculture, breeding, forestry and small consortia
1.8	Biomasses and biogas from cogeneration plants with use of thermal power for agriculture

[1)] Remuneration for electricity generation from photovoltaic plants is regulated by art .7 del D.Lgs. 387/03 (the so-called “Conto Energia”). Depending on capacity and type of the individual plant tariffs vary from 360 to 490 €/MWh for 2008 and will be reduced by 2% for 2009 and 2010. Italy has implemented a cap for installed capacity of 1,200 MW.

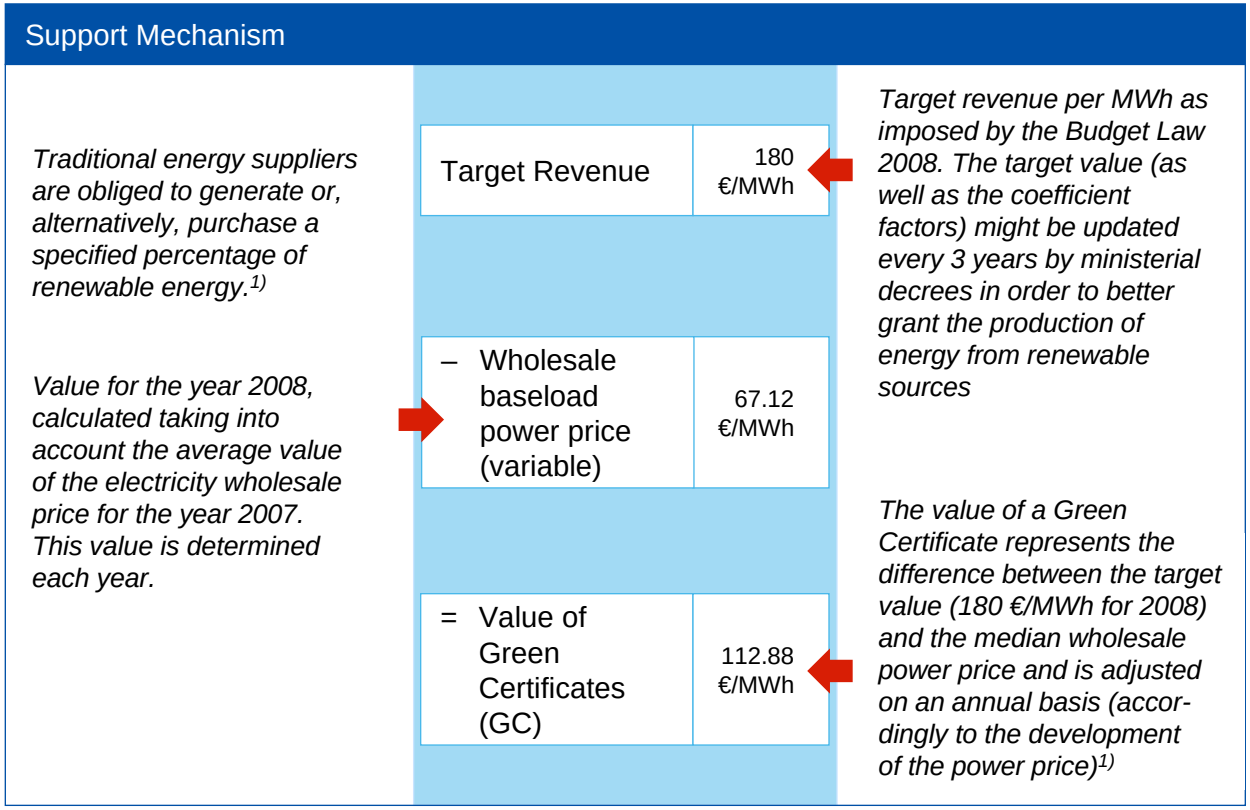
Italy: Revenues from renewable energy combine market price and green certificate value

Green Certificates

Generators are issued Green Certificates (GCs) by the Energy System Authority (Gestore del Sistema Elettrico or GSE) for each MWh of eligible electricity generated. The sale of the certificates can be performed either directly to another company (agreed price) or via the green certificates market place at the Italian energy exchange (price determined by supply and demand). The regulator is obliged to acquire GCs in excess on the market.

In addition, electricity produced from renewable sources can be sold to the wholesale market/retail clients or to the GSE.

Realised revenues from renewable energy can be higher or lower than 180 €/MWh.



1) The minimum quota of electricity produced by renewable sources must be increased by at least 0.75% p.a. during the period 2007-2012. As a consequence the percentage to be certified for the year 2008 is 3.8%. Operators may (a) directly generate electricity from renewable sources; (b) purchase an equivalent number of green certificates from the GSE; (c) purchase an equivalent number of green certificates from other producers through bilateral contracts or on the electricity market. Any operator which does not present the amount of green certificates required by the law shall be fined by the Gas and Energy National Authority.

Renewable Technologies



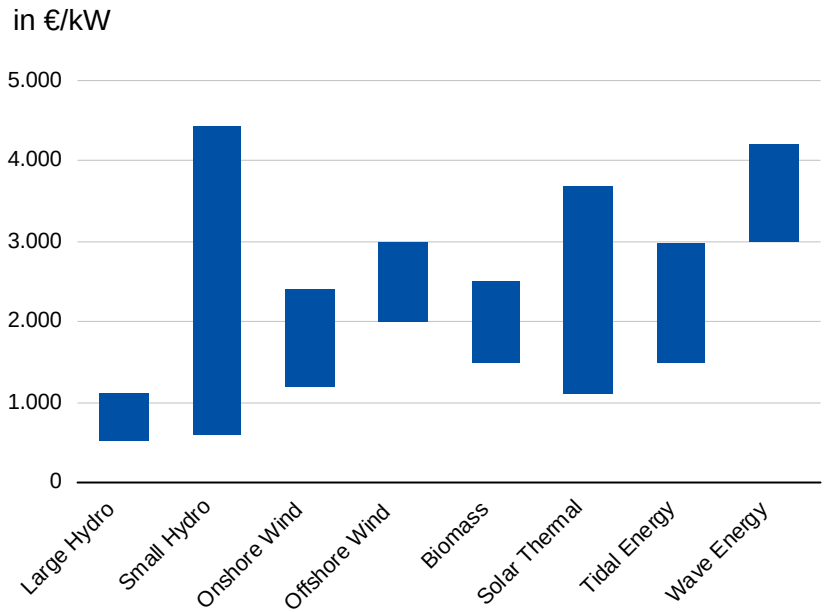
Today hydro is the only commercially mature technology – however wind at the threshold

Criteria	Hydro	Wind	Biomass	Solar	Wave & Tidal
Types	> Run-of-river > Large vs. small	> Onshore > Offshore	> Techn.: co-firing, grate/fluidized bed, gasification > Source: agricultural, forestry residues, live-stock waste	> Photovoltaic (PV) > Solar thermal (ST)	> Tidal barrage > Marine current > Wave energy
Maturity of technology	> Mature > Stand-alone economically profitable	> Onshore: stabilizing, re-powering ongoing > Offshore: some technical hurdles but expected to be mature in near future	> High development potential for increase of efficiency	> Low degree of maturity > Further development crucial for reaching commercial maturity	> Tidal: mature due to usage of mature hydropower technology > Other: still in pilot phase
Estimated timing of commercial maturity	> Already	> Onshore: Next 2 years > Offshore: Next 10 years	> Biogas: 10 – 15 years > Biomass: 15 – 25 years	> PV: unknown > ST: 15 – 20 years	> Tidal: unclear (cost reduction not in sight) > Other: 2010 – 2020

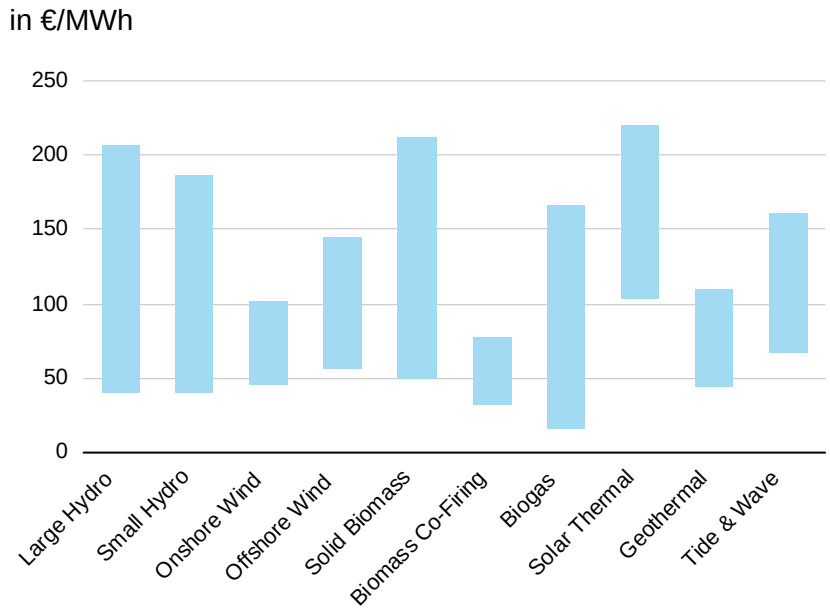
Market relevance today

Investment and generation cost by renewable technology

Cost per kW capacity (2007)



Long-term marginal electricity generation cost (in EU member states for the year 2005)



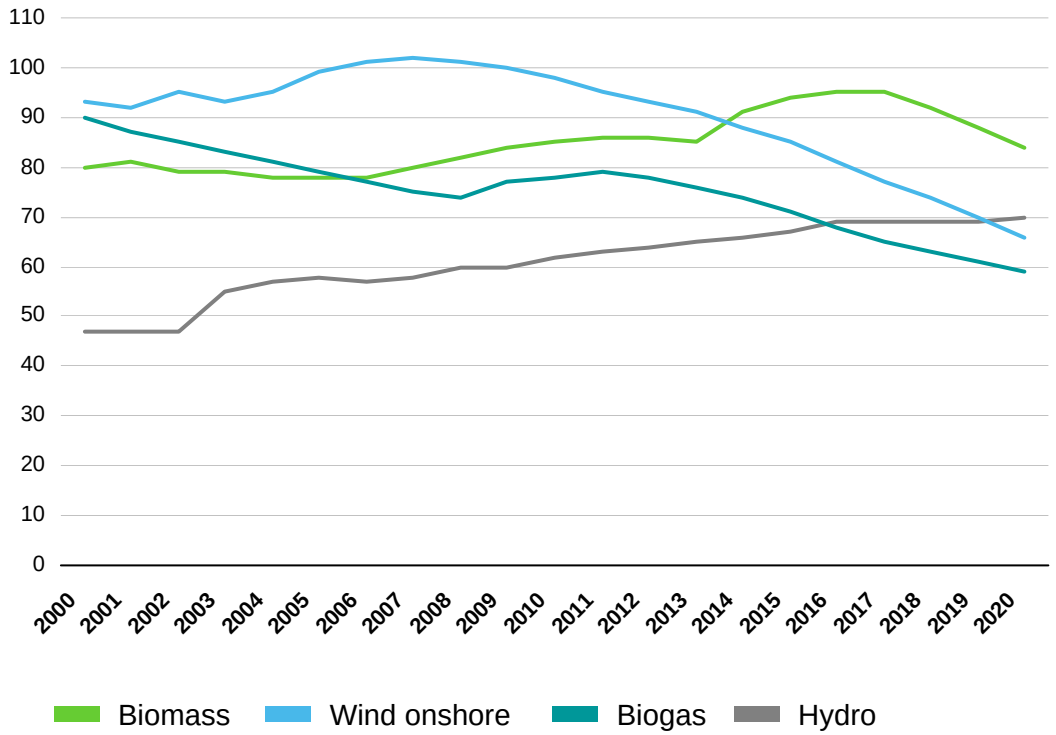
- With a relatively low share of operational & maintenance cost in full costs, capex and site conditions (e.g. avg. wind speed) are key drivers of long-term marginal electricity generation cost of renewable technologies.
- Only biomass technologies are to a significant extent (up to 40%) also dependent on raw material availability and prices.

Source: RWE Innogy estimates.

Source: Forres Report – Economic analysis of reaching a 20% share of renewable energy sources in 2020 (August 2006).

Declining cost and supportive regulations ensure attractive business conditions

Average Generation Cost by Technology (in €/MWh)

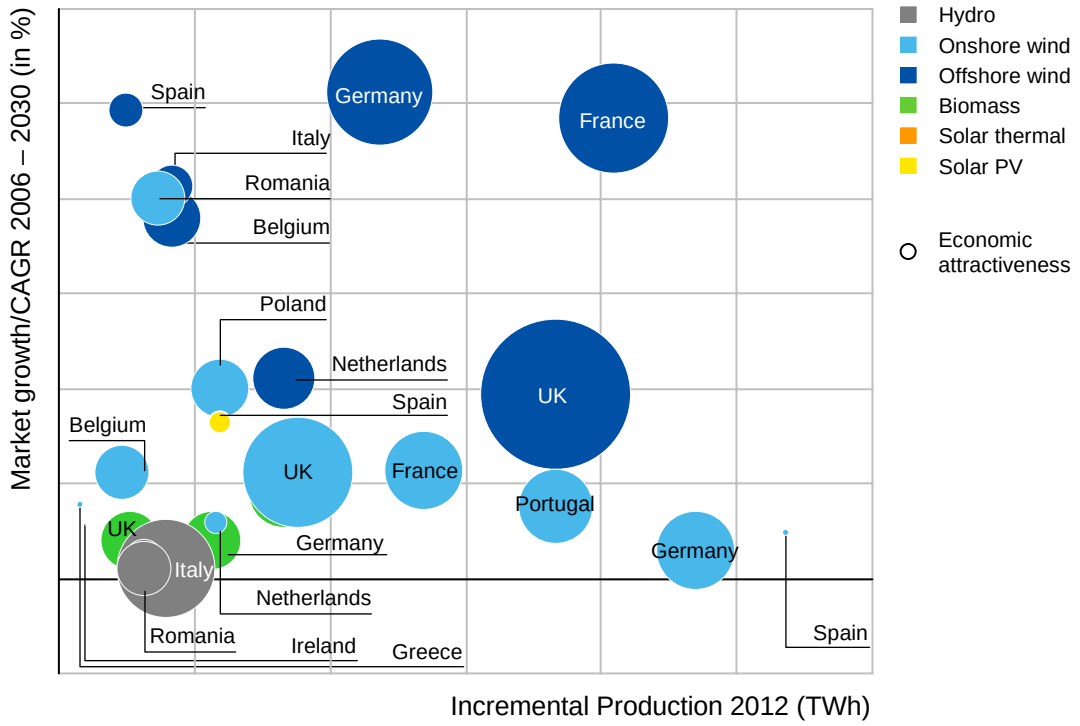


- Strong incentives for expansion into renewable technologies (high conventional energy prices; increasing emission costs; more favourable public perception and image)
- Supportive regulation for renewables implemented in several countries [supporting tariffs (feed-in, quota obligation) as well as investment subsidies, tax benefits]
- Future generation cost mainly dependent on technological development and necessary capital expenditure (except biomass, here raw materials have material impact on cost) – however generation costs of some technologies under specific conditions are already close to commercial (e.g. wind onshore, biomass or hydro at some sites)

Source: Federal Environmental Ministry (BMU) – Leitstudie 2007.

Renewables expected to experience strong growth rates, especially in on- and offshore wind

Analysis of long-term potential of various technologies in Europe

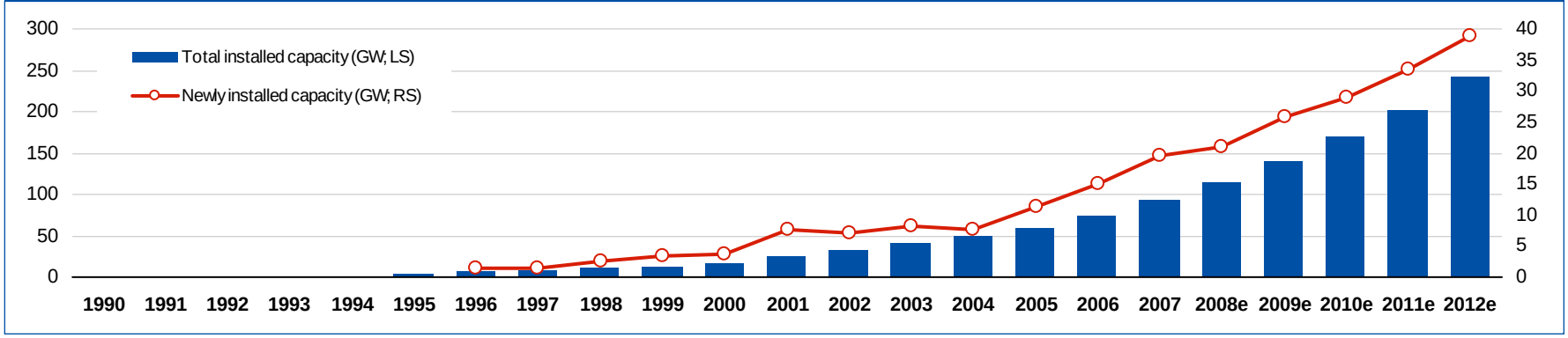


- Offshore wind in United Kingdom, Germany and France with attractive economics and organic growth potential – however understanding of/access to technology is key
- Onshore in Germany (including repowering), France and partially United Kingdom with potential, but lower overall economic attractiveness
- Interesting biomass markets include Germany, United Kingdom, but also Central & South-Eastern Europe (e.g. Poland, Romania)
  – locking-in of feedstock is crucial
- Opportunistic approach in hydro power, strong regional approach in solar thermal (Southern Europe)

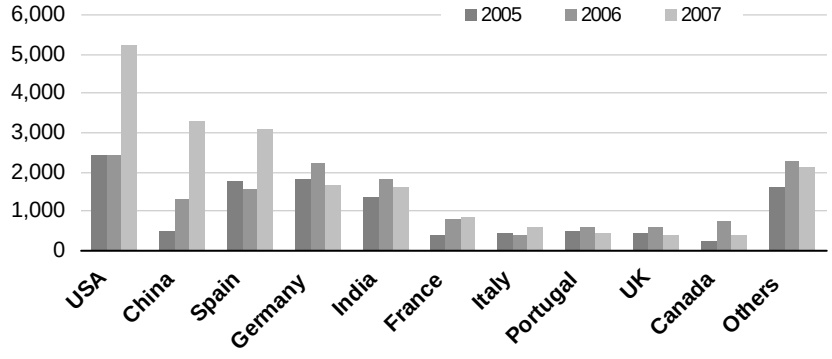
Source: Booz Allen Hamilton analysis (2007).

The world market for wind energy

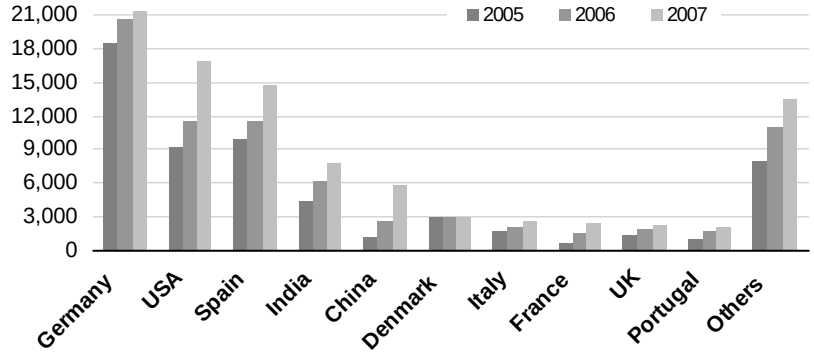
Installed wind power capacity (in GW)



Top10 with > 80% of newly installed capacity (in GW)



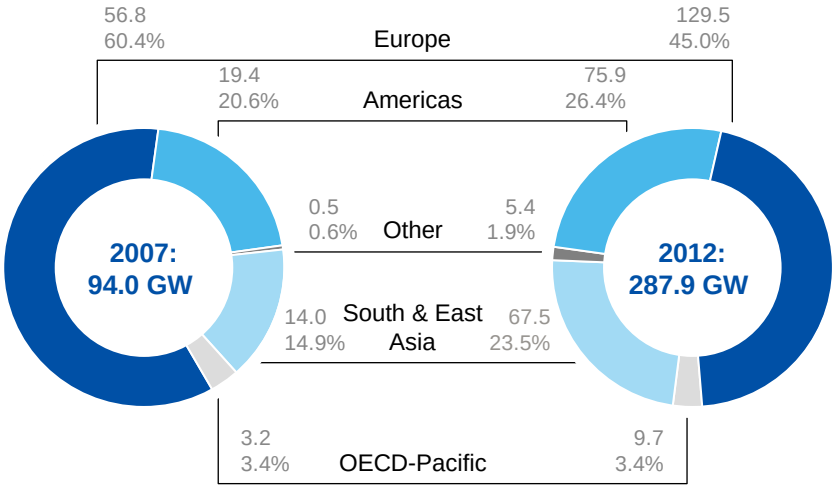
Top10 with > 85% of total installed capacity (in GW)



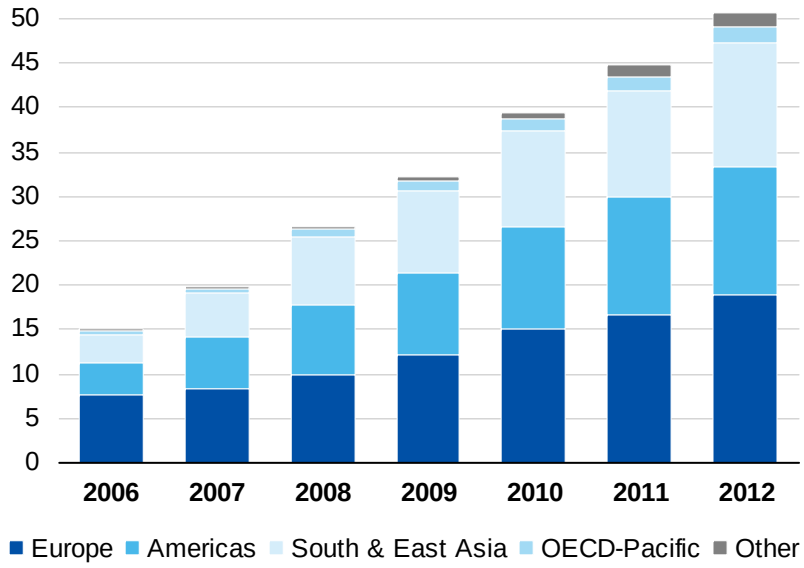
Source: BTM Consult – World Market Update 2007 (March 2008).

Europe leading the pack in wind energy

Total capacity year-end 2007 and 2012



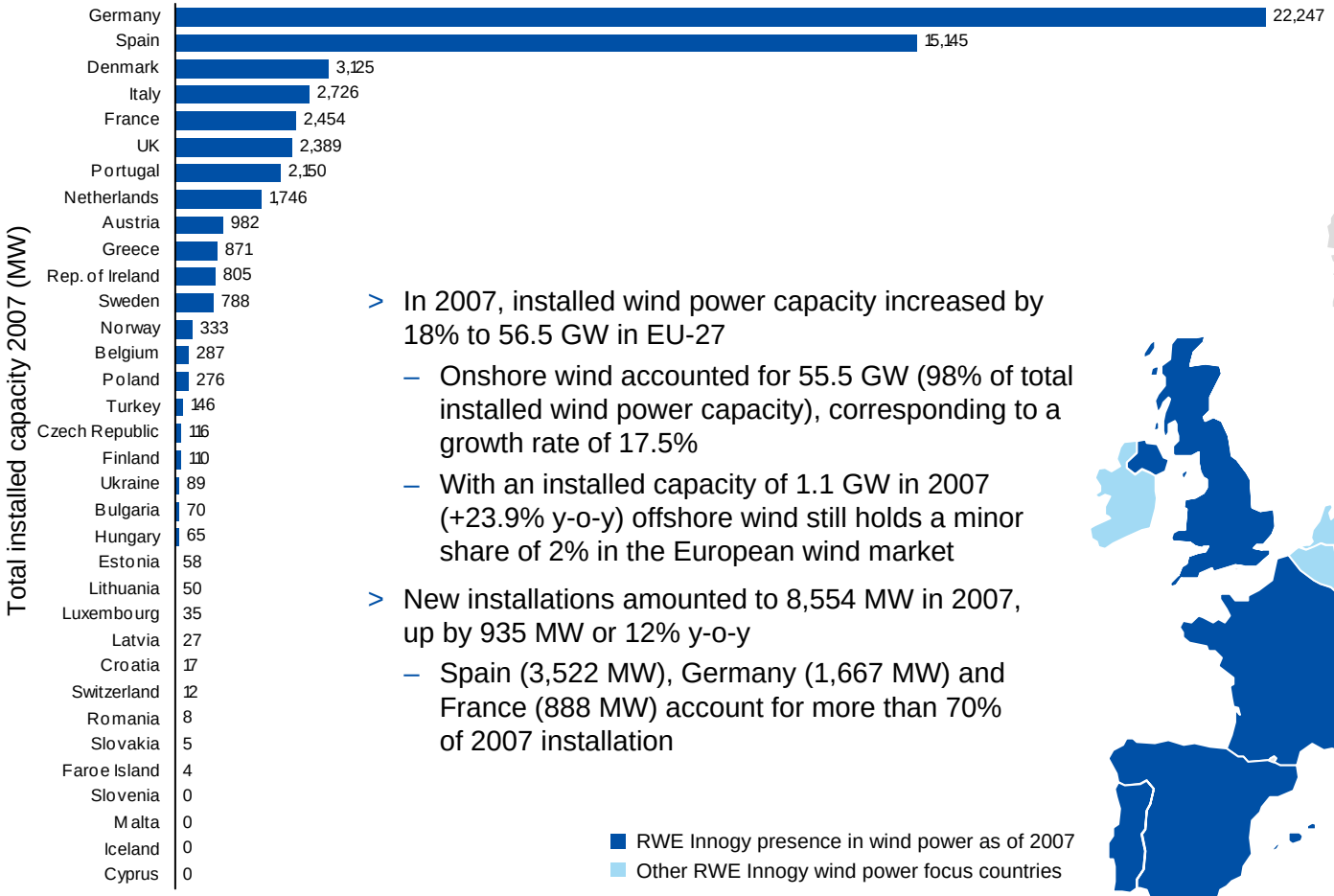
Projected installed capacity in 2006 – 12 (p.a., in GW)



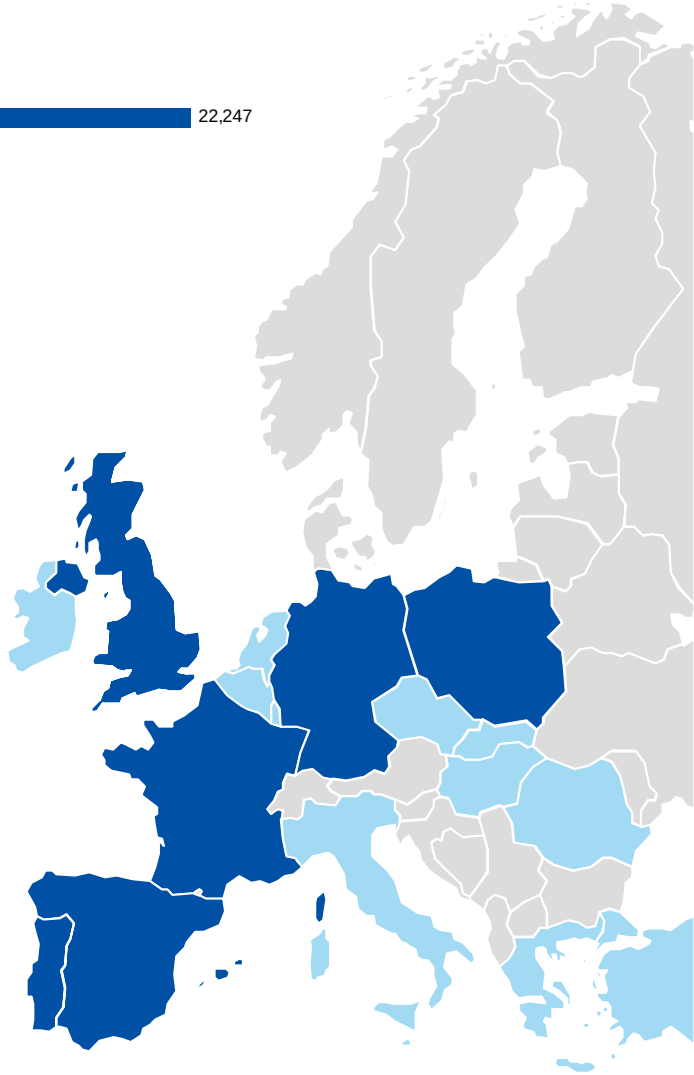
- Europe is leading in wind energy with an installed capacity of 57 GW in 2007, corresponding to 60% of the worldwide capacity
- Installed capacity in Europe is expected to grow by an average of 18% p.a. to 129 GW in 2012 – however, in terms of growth Europe will grow more slowly than the Americas (31% p.a.) or South East Asia (37% p.a.)
- Although other areas will grow quickly, Europe remains the dominant region for wind energy with 45% of the worldwide installed capacity in 2012

Source: BTM Consult – World Market Update 2007 (March 2008).

European wind power experienced strong growth in 2007



- In 2007, installed wind power capacity increased by 18% to 56.5 GW in EU-27
  - Onshore wind accounted for 55.5 GW (98% of total installed wind power capacity), corresponding to a growth rate of 17.5%
  - With an installed capacity of 1.1 GW in 2007 (+23.9% y-o-y) offshore wind still holds a minor share of 2% in the European wind market
- New installations amounted to 8,554 MW in 2007, up by 935 MW or 12% y-o-y
  - Spain (3,522 MW), Germany (1,667 MW) and France (888 MW) account for more than 70% of 2007 installation



Source: European Wind Energy Association (February 2008).

Attractive growth markets

Onshore wind

- Relatively **mature market** (especially in Germany and Spain): 55.5 GW capacity installed in EU-27 by year-end 2007, high maturity of technology, stable cost structures
- Still **attractive growth rates of Ø 11% p.a**. until 2015 in EU-27 (capacity build up 65 GW) – increasing demand from utilities and IPPs, but bottlenecks in supply chain for components
- In mature markets with a large amount of relatively old existing capacity, **repowering** is a key option to generate further growth
- In the foreseeable future **positive** and stable financial **support systems**

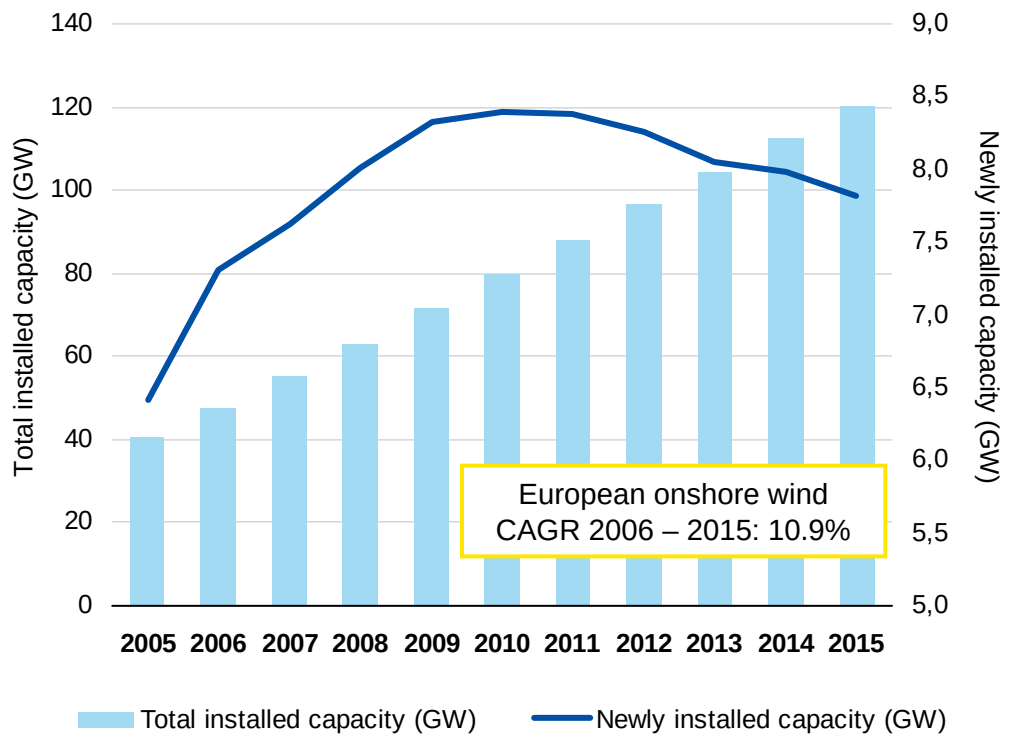
Offshore wind

- **Immature market:** Capacity installed in EU-27 of 1.1 GW (thereof 70% in UK and Denmark)
- **Immature technology** (in particular O&M, size of turbines) as well as **small number of turbine suppliers** with significant offshore experience
- **Strong market growth of Ø 31% p.a.** until 2015 (capacity build up > 9 GW) – time horizon depends on technical progress and development of approval procedures
- Mostly **attractive support systems**, especially in core offshore wind markets UK and Germany legislation is set to further improve economic conditions

Source: RWE Innogy, European Wind Energy Association, Emerging Energy Research – Wind Power Development Strategies in Europe, 2007 – 15 (base case scenario).

Onshore wind: Steady path for solid growth

Onshore wind installed capacity development in Europe, 2005 – 2015

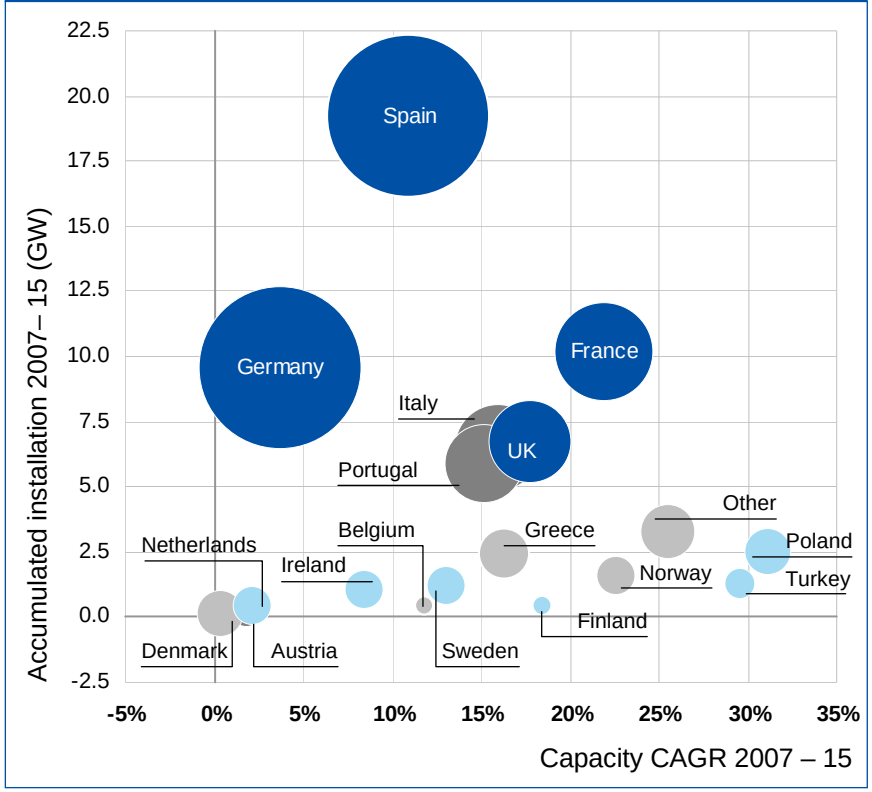


- Installed capacity in Europe has grown 18% p.a. since 2004, corresponding to an average of 7.1 GW p.a. incremental capacity
- In certain areas, electricity production from wind energy has grown to a significant level (e.g. 20% in Denmark, > 7% in Germany, in some German federal states exceeding 30%, > 8% in Spain as of 2006)
- Steady path for solid growth
  - European onshore wind expected to increase installed capacity by 11% p.a. (8.1 GW annual incremental capacity)
  - Spain, France, Germany, UK, Italy and Portugal with 80% of net additions in installed capacity by 2015
  - Focus moving to medium sized markets which will grow faster
  - Medium to long-term growth is expected to slow down due to increased saturation of large markets and shift towards offshore

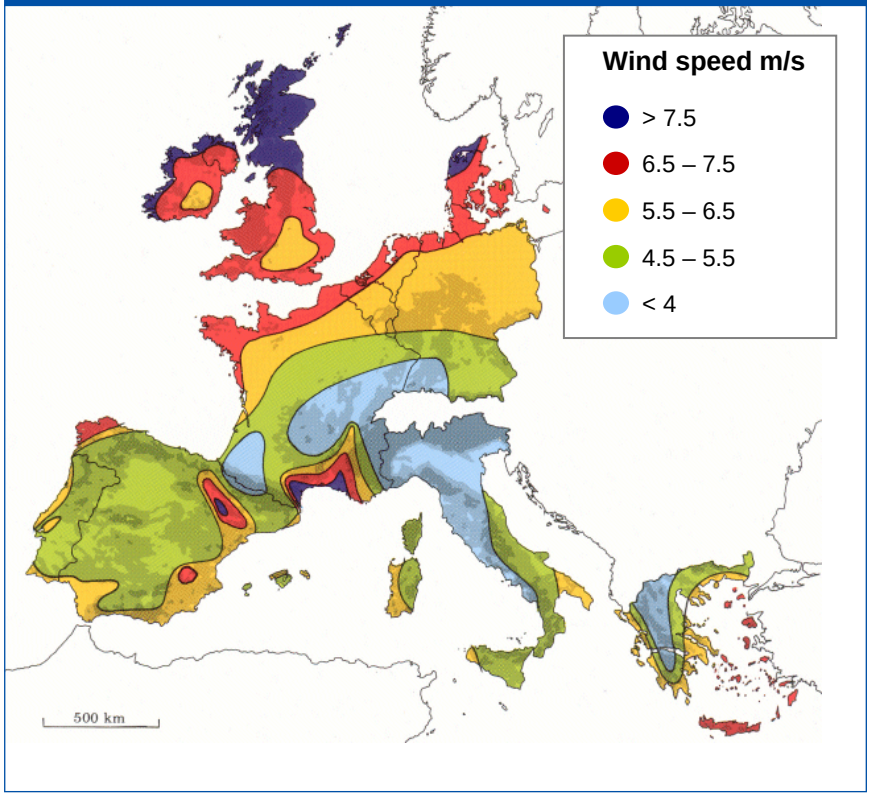
Source: Emerging Energy Research – Wind Power Development Strategies in Europe, 2007 – 15 (base case scenario).

Major markets in EU based on size and wind resources

Onshore wind markets in Europe



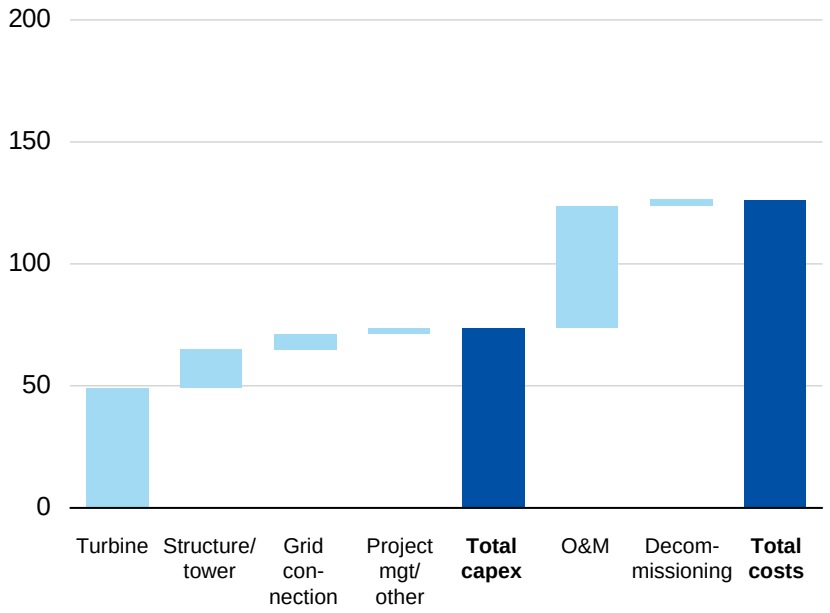
Natural onshore wind conditions (at 50 m height)



Sources: RWE analysis on basis of Emerging Energy Research – Wind Power Development Strategies in Europe, 2007 – 15 (base case scenario); European Wind Atlas, copyright by Risø National Laboratory.

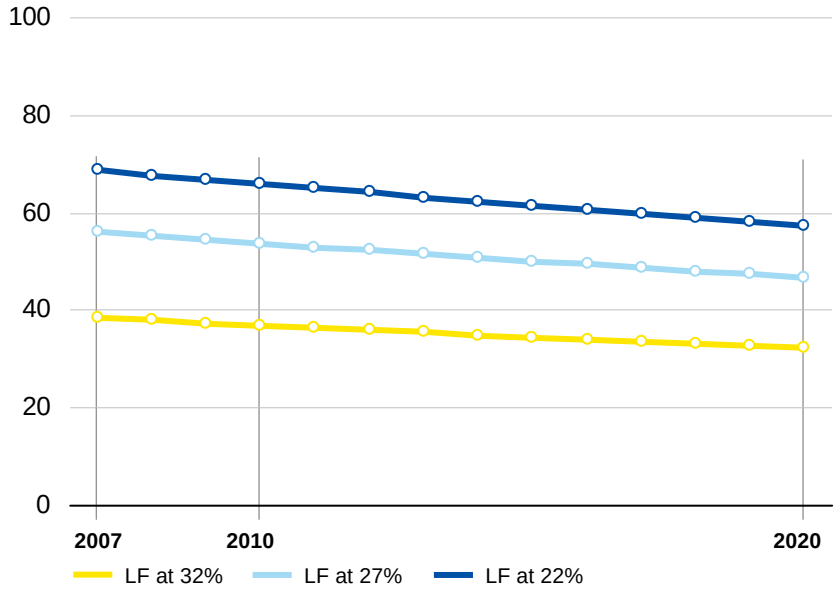
Onshore wind is already close to commercial at load factors above 30%

Onshore wind[1)] (Annual levelised costs € '000/MW)



- Capital expenditure is 60% of levelised costs
- Turbine represents 40% of total levelised costs

Development total power generation costs (€/MWh)

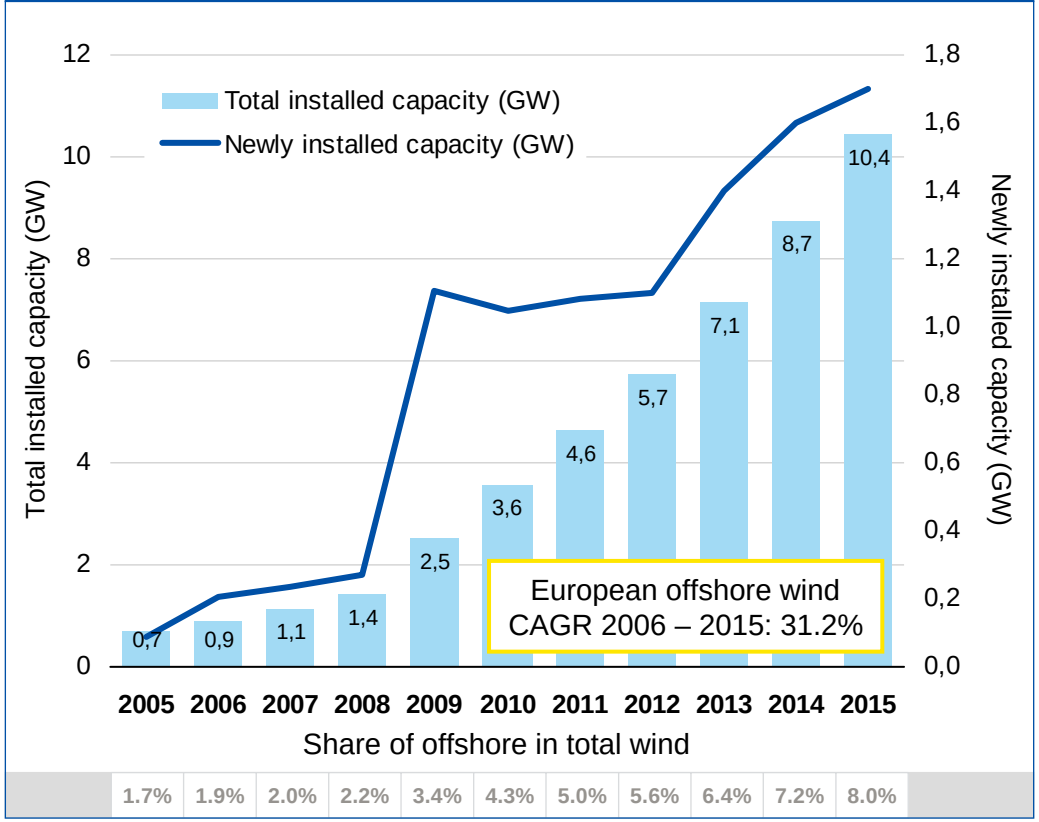


- Wind farm profitability strongly depends on load factor (LF) of specific site.
- At load factors above 30% onshore wind is already close to commercial.

Sources: DLR reports 2006, EWEA Renewable Market Report 2005, Booz Allen Analysis.
Note [1)] Country specific case based on 100 MW wind farm – capex and operating expenditure can vary between projects in different countries.

Offshore wind market to grow by 31% p.a. until 2015, representing 8% of the wind market

Offshore wind installed capacity development in Europe, 2005 – 2015

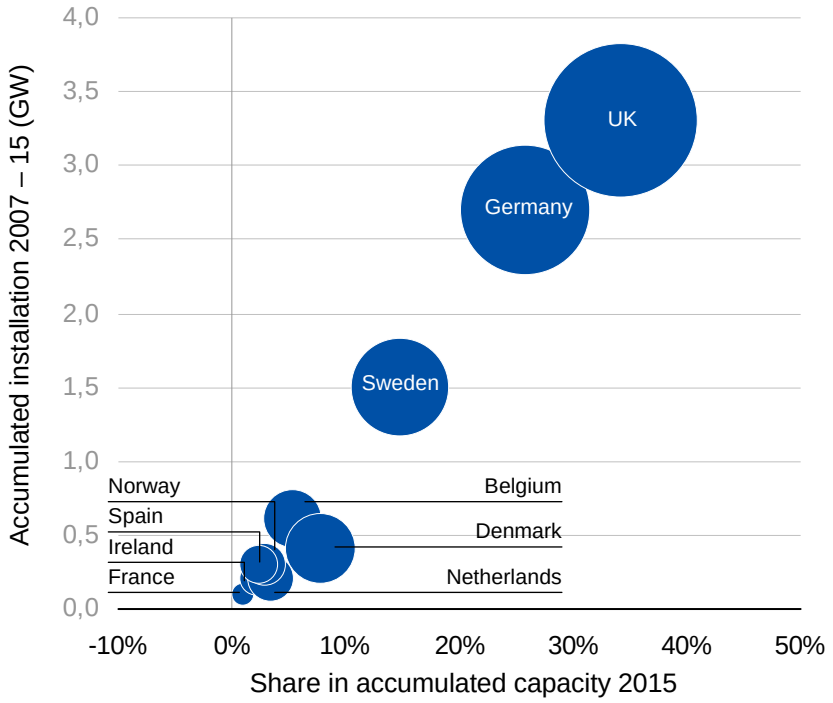


- Offshore technology still immature and current progress slow – accounts for only 2% of total accumulated and 3% of newly installed capacity as of 2007
- Currently, stronger short-term growth is prevented by:
  - Increased prices for wind turbines and long delivery times
  - Technical problems with some of the first large offshore wind farms
  - Only limited number of companies with practical offshore experience (Vestas, Siemens)
- However, significant offshore capacity already in planning stage
- The share of offshore is expected to reach 8% in 2015 as onshore growth slows down in Europe
- Growth in offshore is mainly driven by:
  - Strong pipeline of projects
  - Technological developments (several challenges still exist)
  - Strong regulatory support (high political targets & attractive remuneration schemes)

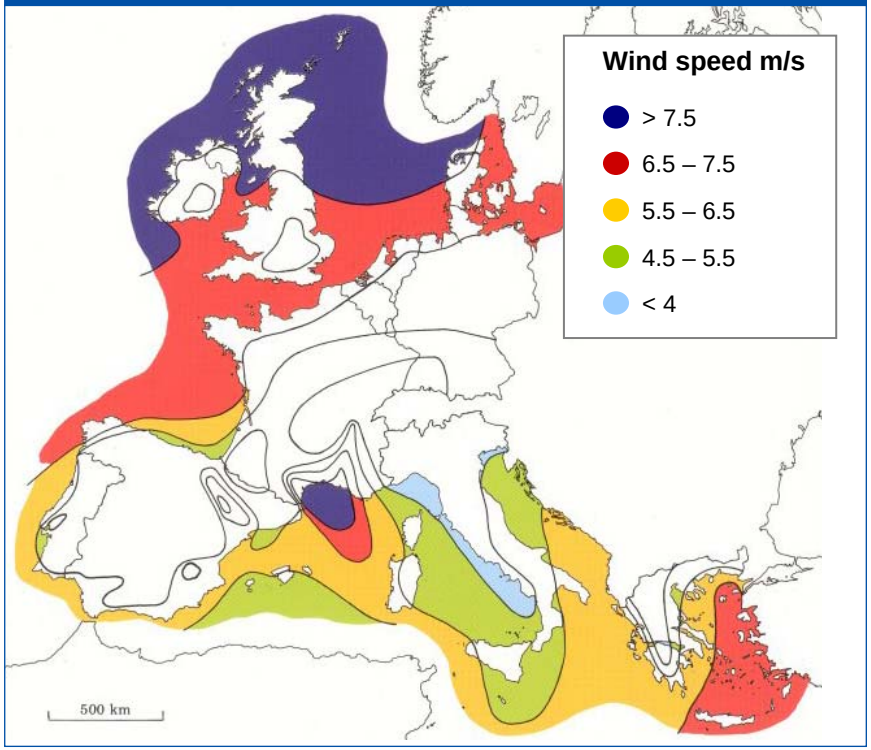
Source: Emerging Energy Research – Wind Power Development Strategies in Europe, 2007 – 15 (base case scenario).

The major growth markets for offshore wind are the UK and Germany

Offshore wind markets in Europe



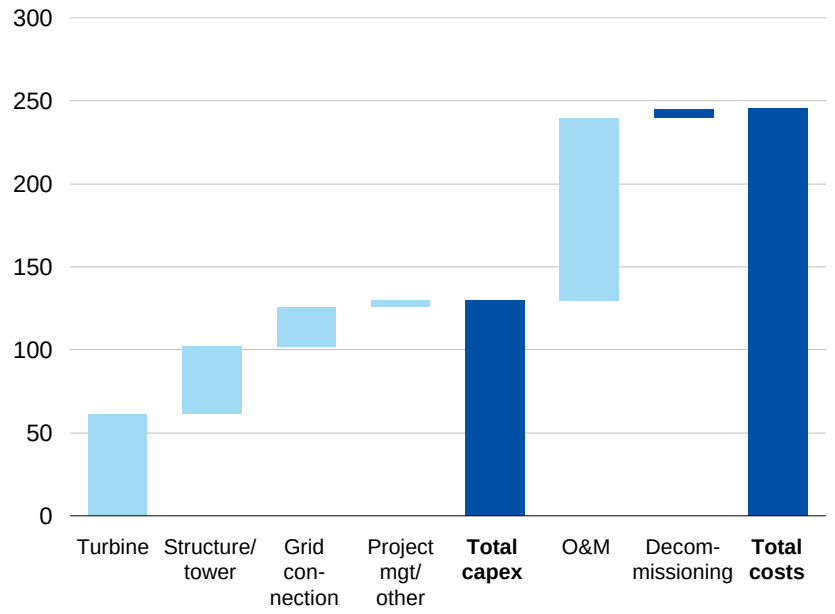
Natural offshore wind conditions (at 50 m height)



Sources: RWE analysis on basis of Emerging Energy Research – Wind Power Development Strategies in Europe, 2007 – 15 (base case scenario); European Wind Atlas, copyright by Risø National Laboratory.

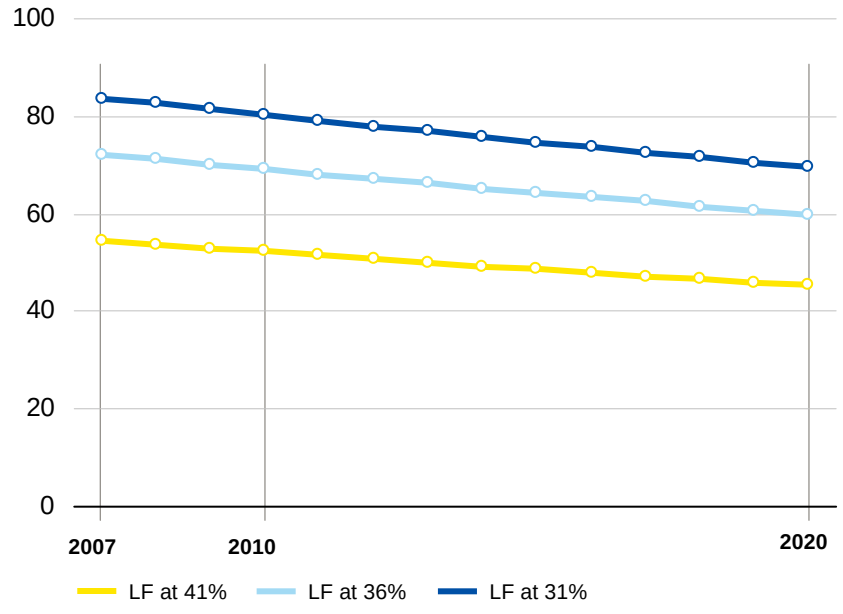
Offshore wind can be cost competitive at load factors above 40%

Offshore wind[1)] (Annual levelised costs € '000/MW)



> Costs strongly depend on water depth and distance to coast.
> Hence, economies of scale exist for offshore wind farms.

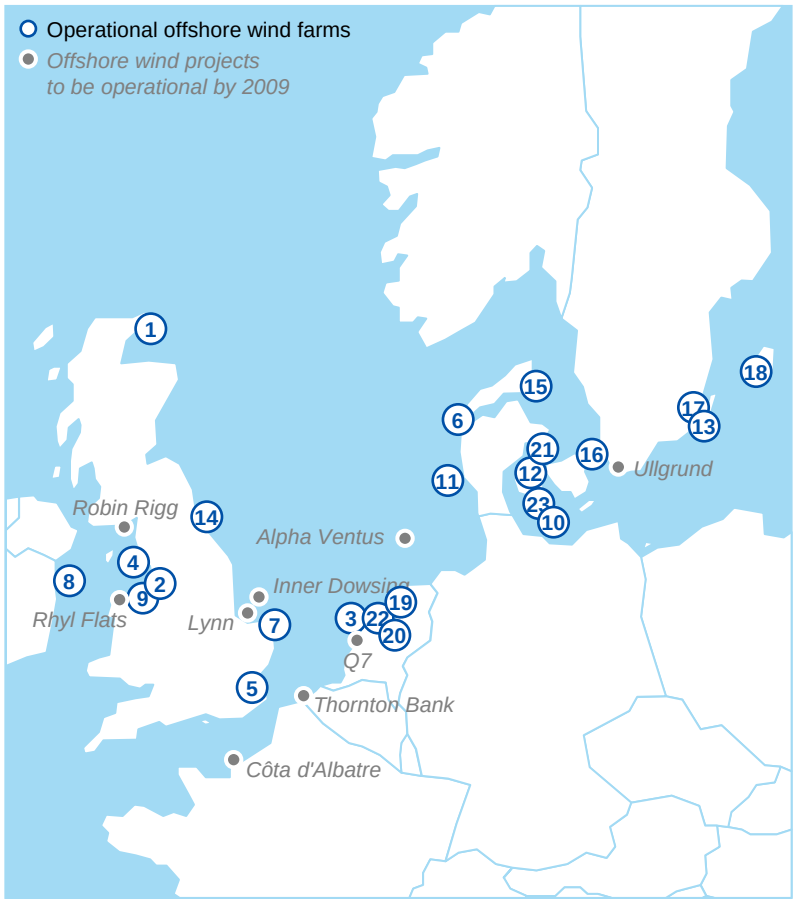
Development total power generation costs (€/MWh)



> Due to significantly higher capex and O&M offshore wind requires high support levels even at load factors above 30%.
> Generation cost reduction for offshore installations expected to be substantial due to strong learning curve potential.

Sources: DLR reports 2006, EWEA Renewable Market Report 2005, Booz Allen Analysis.
[1)] Country specific case based on 100 MW wind farm – naturally, capex and operating expenditure can vary between projects in different countries.

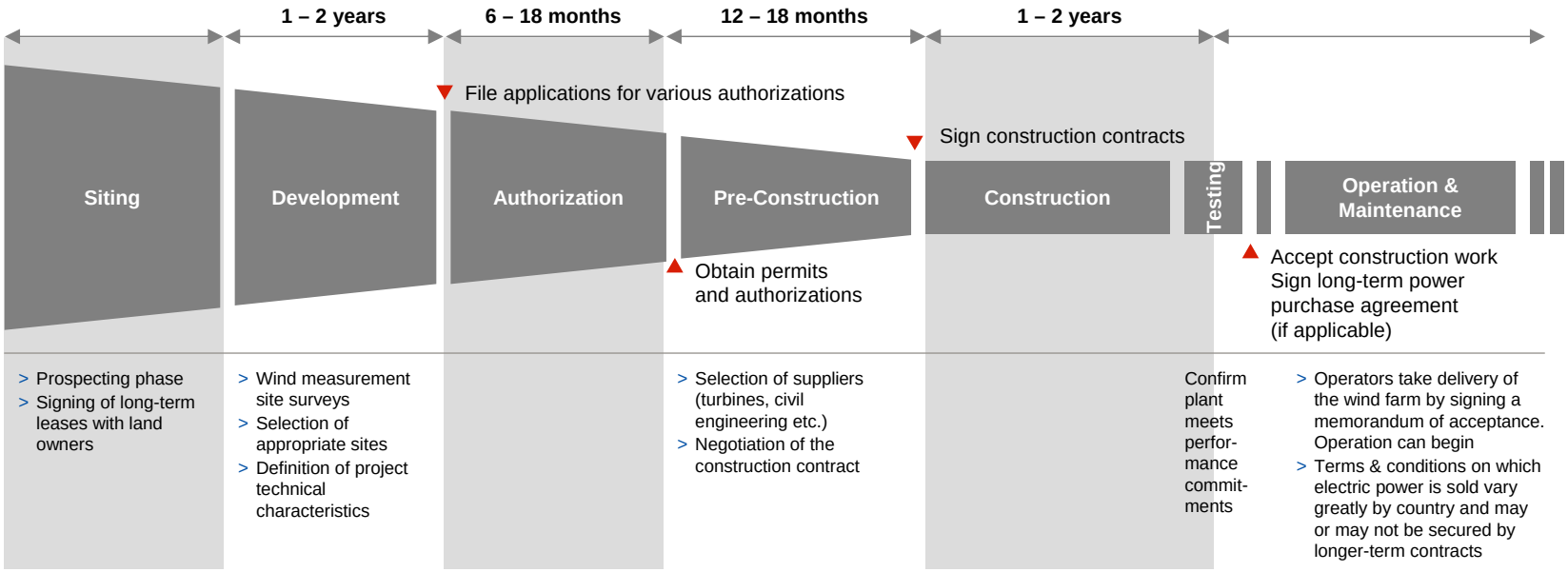
Europe‘s offshore wind farms: Current status



	Name	Utility	Date Com-missioning	Total Capacity (Turbines)
1	**Beatrice**	SSE, Talisman	2007	10 MW (2 x REpower 5.0 MW)
2	**Burbo Bank**	Dong	2007	90 MW (25 x Siemens 3.6 MW)
3	**Egmond aan Zee**	Nuon, Shell	2007	108 MW (36 x Vestas 3.0 MW)
4	**Barrow**	Centrica, Dong	2006	90 MW (30 x Vestas 3.0 MW)
5	**Kentish Flats**	Vattenfall	2005	90 MW (30 x Vestas 3.0 MW)
6	**Ronland**	n/a	2004	17.2 MW (4 x Vestas 2.0 MW, 4 x Bonus[1)] 2.3 MW)
7	**Scroby Sands**	E.ON	2004	60 MW (30 x Vestas 2.0 MW)
8	**Arklow Bank**	GE	2003	25 MW (7 x GE 3.6 MW)
9	**North Hoyle**	RWE Innogy	2003	60 MW (30 x Vestas 2.0 MW)
10	**Nysted**	Dong	2003	165.6 MW (72 x Bonus[1)] 2.3 MW)
11	**Horns Rev**	Dong, Vattenfall	2002	160 MW (80 x Vestas 2.0 MW)
12	**Samsø (Palludan Flak)**	Dredging Intl, ABB, Hydro Soil Services	2002	23 MW (10 x Bonus[1)] 2.3 MW)
13	**Yttre Stengrund**	Vattenfall	2001	10 MW (5 x NEG[2)] 2.0 MW)
14	**Blyth**	E.ON	2000	4 MW (2 x Vestas 2.0 MW)
15	**Frederikshavn**	Dong	2000	11 MW (2 x Vestas 3.0 MW, 1 x NEG[2)] 2.75 MW, 1 x Nordex 2.0 MW)
16	**Middlegrunden**	Dong	2000	40 MW (20 x Bonus[1)] 2.0 MW)
17	**Utgrunden**	Vattenfall	2000	10.5 MW (7 x GE 1.5 MW)
18	**Bockstigen-Valor**	n/a	1997	2.75 MW (5 x NEG[2)] 0.55 MW)
19	**Dronten**	n/a	1996	16.8 MW (28 x NordTank[2)] 0.6 MW)
20	**Irene Vorrink**	n/a	1996	16.8 MW (28 x NordTank[2)] 0.6 MW)
21	**Tunø Knob**	Dong	1995	5 MW (10 x Vestas 0.5 MW)
22	**Lely**	n/a	1994	2 MW (4 x Ned Wind[2)] 0.5 MW)
23	**Vindeby**	Elkraft	1991	5 MW (11 x Bonus[1)] 0.45 MW)

Sources: BTM Consult, EWEA – Wind Directions (November/December 2007), www.offshore-wind.de, Emerging Energy Research.
[1)]Acquired by Siemens in 2004. [2)]Vestas since 2004.

RWE Innogy: Proficient in coping with all critical success factors in project development

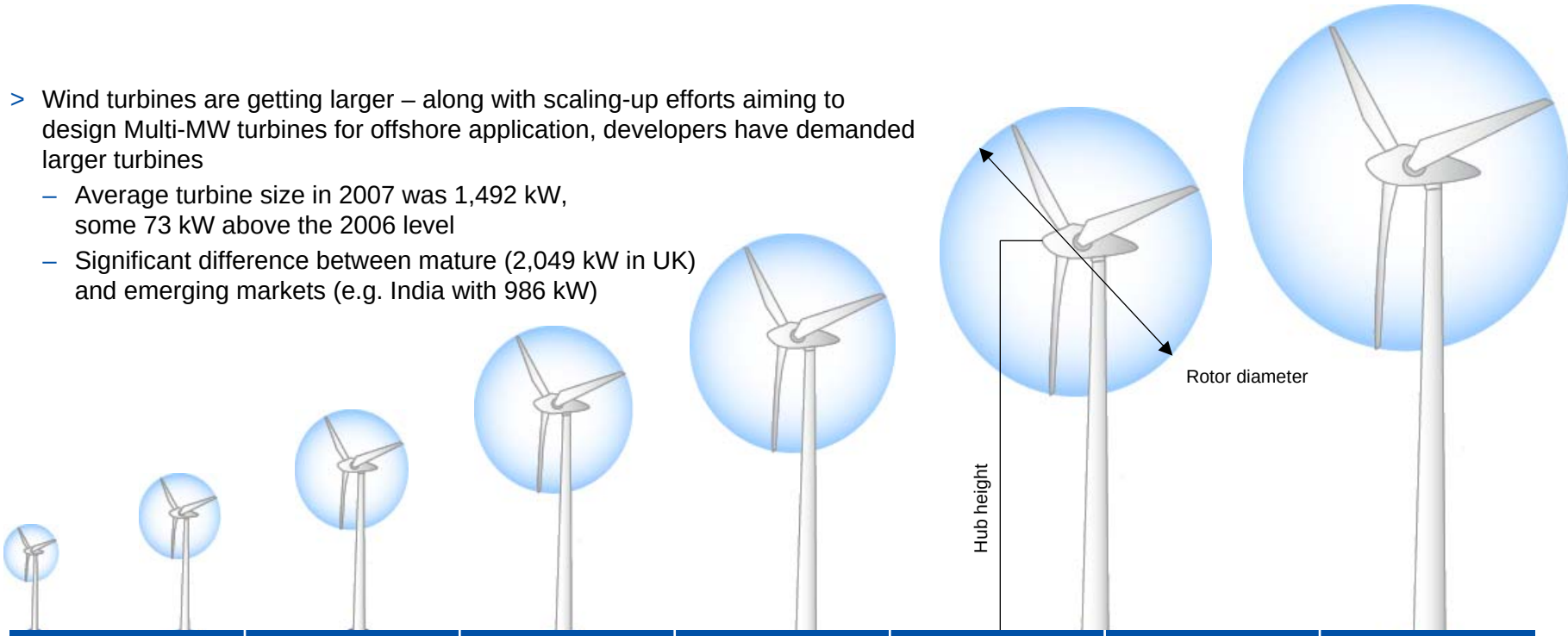


Critical success factor	Relationship with land owners	Evaluation of wind speed data	Timely response and high consenting success rate	Access to turbines at right price	Build to time and budget	Early identifi-cation of perfor-mance issues	High plant availability
RWE Innogy	Local offices or development partners in all key regions	Strong team of in house specialists	Mix of project management and environmental science capability	Plant procure-ment specialists and strong links with suppliers	Specialist in house project management capability	In house testing capability	Twelve years experience of operating wind farms

Source: Goldman Sachs Report (Sept. 2007), updated and edited by RWE Innogy.

Evolution of turbine technologies

> Wind turbines are getting larger – along with scaling-up efforts aiming to design Multi-MW turbines for offshore application, developers have demanded larger turbines
  - Average turbine size in 2007 was 1,492 kW, some 73 kW above the 2006 level
  - Significant difference between mature (2,049 kW in UK) and emerging markets (e.g. India with 986 kW)



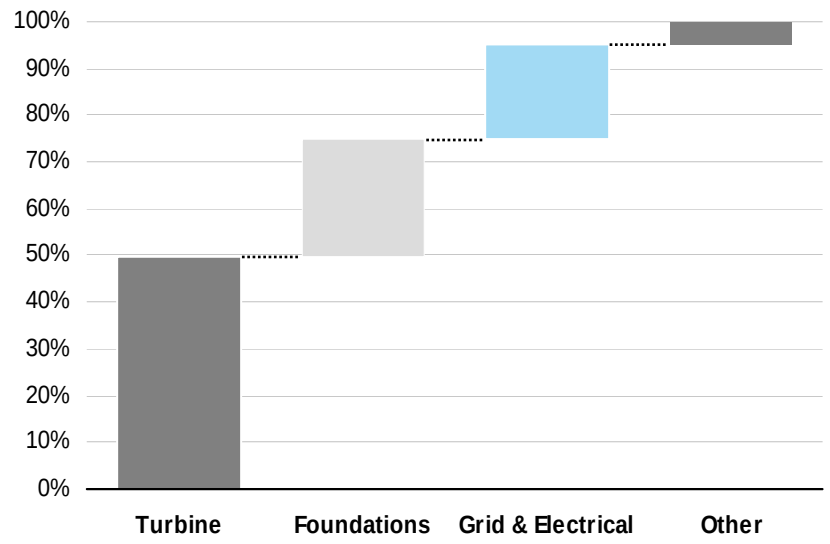
	1980	1985	1990	1995	2000	2005
Nominal capacity	30 kW	80 kW	250 kW	600 kW	1,500 kW	5,000 kW
Rotor diameter	15 m	20 m	30 m	46 m	70 m	115 m
Hub height	30 m	40 m	50 m	78 m	100 m	120 m
Electricity output p.a.	35,000 kWh	95,000 kWh	400,000 kWh	1,250,000 kWh	3,500,000 kWh	ca.17,000,000 kWh

Sources: Bundesverband Windenergie, BTM Consult – World Market Update 2007 (March 2008).

Turbines dominate cost of wind projects

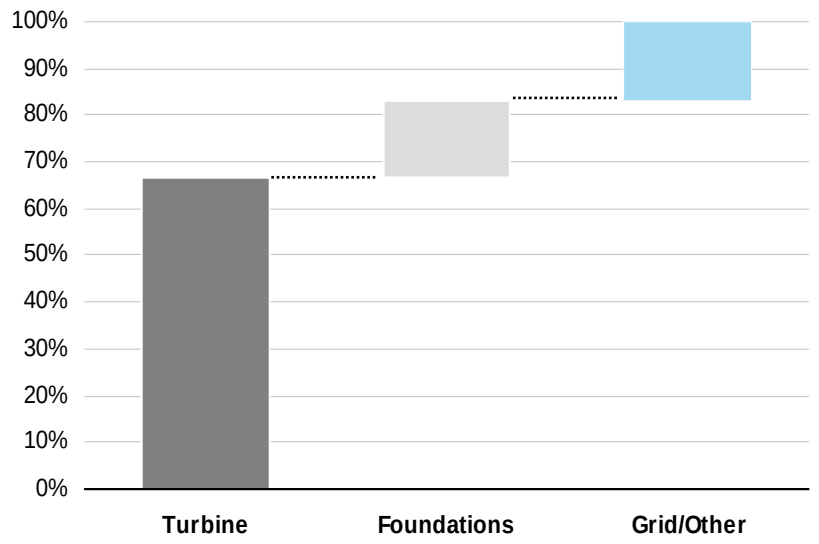
Capex split offshore wind farm (UK example)

(in % of total capex)



Capex split onshore wind farm (UK example)

(in % of total capex)

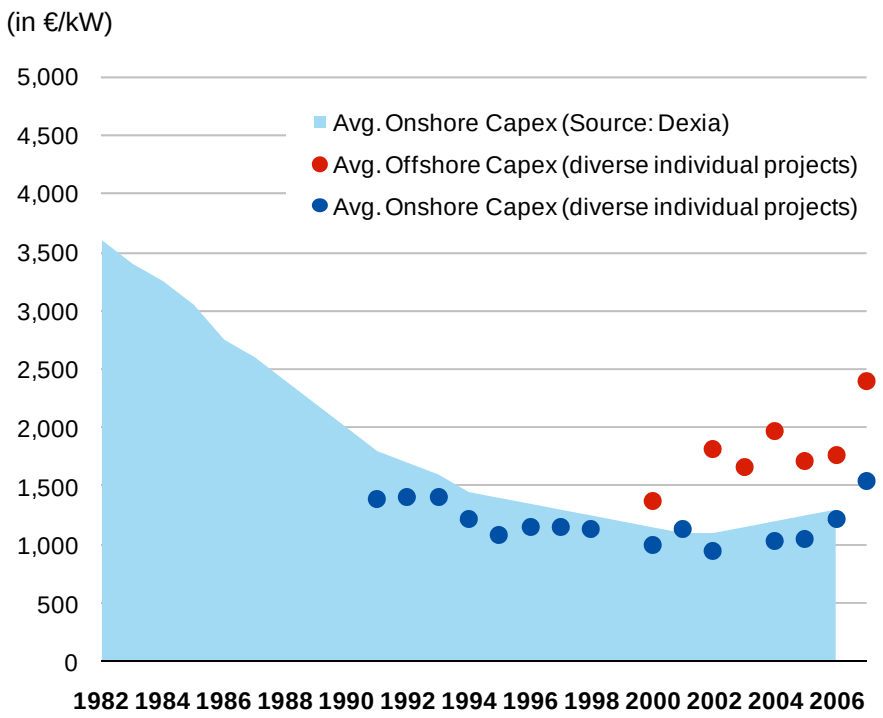


- For both on- and offshore projects, wind turbines dominate the capex split – appropriate turbine prices are thus crucial for an attractive return on investment
- Offshore investment split varies according to project details, e.g. water depth, distance to shore, grid connection works etc.
- Cost of grid connection depends on distance to coast, foundation also depends on depth of water – in contrast to the UK market, the grid operator in Germany is obliged to connect the projects to the electricity grid and to bear capital and finance cost

Source: RWE Innogy.

Wind project costs have increased significantly

Analysis of capex for european on- and offshore wind projects

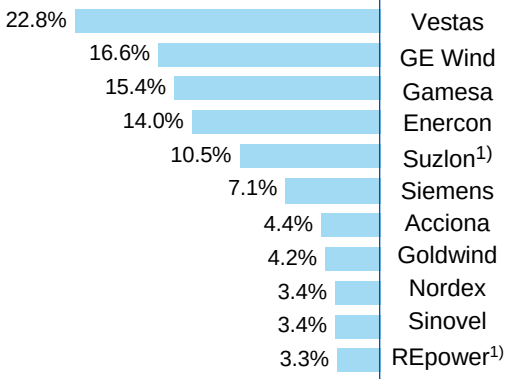


- After significant price decreases along the learning curve, prices for wind projects have experienced a strong upward pressure. Main reasons are
  - strong demand as utilities and IPPs continuously gain market share – increasing demand from Asia
  - markets for key components are tight and restricted by suppliers' capacities (constraint in manufacturing capacity of gearbox components and blade/rotor components, but also availability of logistic/construction equipment and capacity for underwater cable installation)
  - material cost & commodity price increases (e.g. steel, copper)
  - improved margin levels of turbine and component manufacturing industry
- Over medium- to long-term horizon wind power capex will steadily decline due to technical progress – main component suppliers will gear up capacity & output
- Cost reduction for offshore installations expected to be the most substantial due to strong learning curve potential

Sources: DEXIA, RWE Innogy, diverse internet sources – the chart shows the average cost per kW capacity, the deviation from project to project is significant, also due to other project and location specific factors such as underlying wind regime, construction costs in difficult areas as well as regulatory issues.

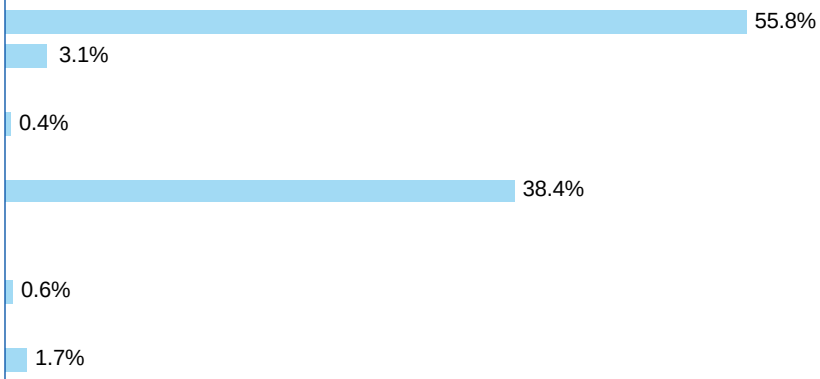
Few large players share the market for on- and offshore wind turbines

Global market shares (newly installed capacity in 2007)



- Increase in demand by utility companies leads to favourable order books for turbine manufacturers
  - Current bottleneck (order backlog of 24 months) for turbines and key components expected to prevail until 2010
- Turbine suppliers are establishing long-term commitments, strategic partnerships or even backward integration with component suppliers
- Component suppliers are increasing manufacturing capacity due to long-term-planning horizon
- Onshore: New capacity will come from capacity build up and emergence of new players, e.g. from China and India

Global offshore market shares (of total 1.1 GW installed capacity, 12/2007)



- Vestas (incl. NEG) and Siemens Wind (incl. Bonus) are currently the only companies with long-term experience in offshore turbines
- Both manufacturers with a combined share of 94% dominate the global offshore wind turbine market
- However, especially in the field of Multi MW turbines a number of new competitors are aggressively entering the market
  - REpower (5 MW turbine, two test fields with a total of 20 MW in UK and Germany; 6 MW turbine under development)
  - Enercon (4.5 MW turbine & 6 MW turbine – small test fields in Germany)
  - Multibrid (6 MW turbine)

Sources: BTM Consult – World Market Update 2007 (March 2008), company data, RWE Innogy.
1)Suzlon holds a stake of 86.5% in REpower Systems AG.

Security of turbine supply through framework contracts with major suppliers

Current environment

- Strong demand and capacity constraints at turbine and component manufacturers leading to
  - Higher prices and
  - Waiting list of up to 2 years

Our view

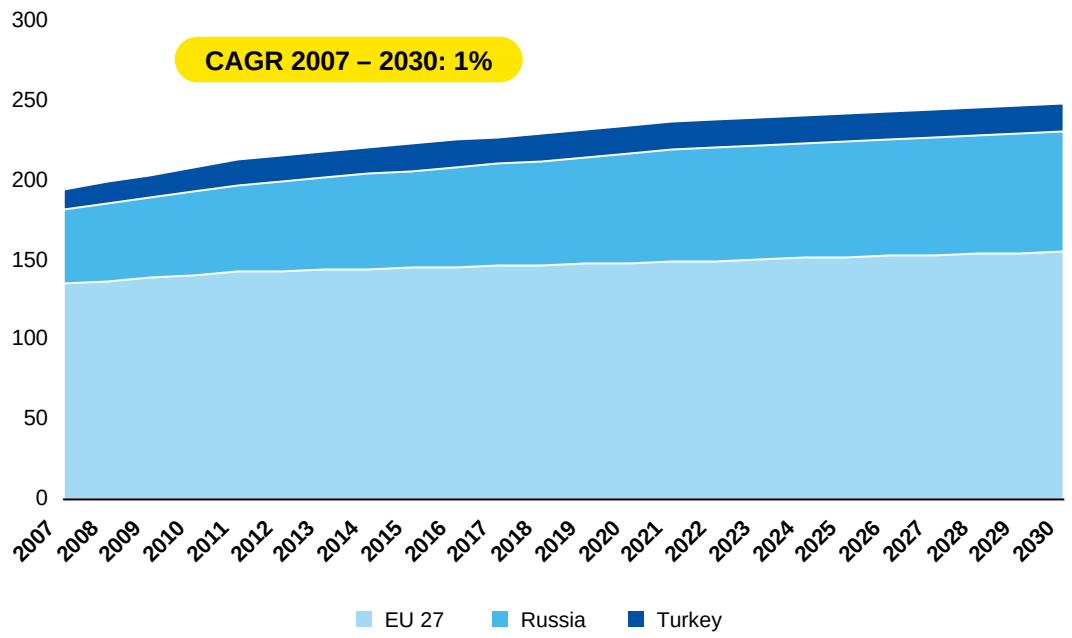
- Beyond 2010 supply should not be an issue
- Wind turbine prices are expected to increase until 2010 and then benefit from economies of scale

Our strategy

- To overcome bottlenecks, closing of long-term supply contracts with 2 – 3 years duration including flexibility to shift between different plant types, countries and years is crucial
- RWE Innogy secures on- and offshore turbines with multiple parties through medium to long-term framework contracts:
  - REpower Memorandum of Understanding (supply, delivery and commissioning of wind turbines with a volume of up to 1.9 GW, including approximately 250 REpower 5M/6M offshore turbines for offshore wind farms and approximately 200 REpower 2M onshore turbines for onshore windfarms over a period of 4 – 6 years from January 2010)
  - Negotiations with other suppliers (e.g. Siemens Wind), a total of four framework agreements intended with major suppliers

Overall hydro market is saturated

Installed hydro capacity EU-15 (in GW)



- > Favourable natural conditions across Europe
- > Capex highly dependent on conditions
- > EU15: high margins, but low organic growth potential

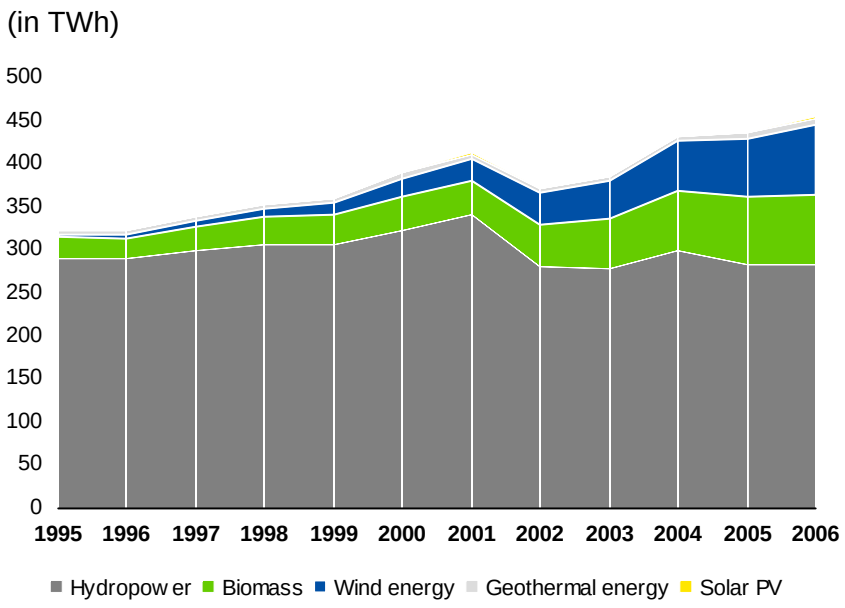
Key issues

- > Overall mature and low growth market
- > Limited accessibility as hydro assets are not for sale
- > Costs are strongly site dependent
- > Most significant growth potential in South-Eastern Europe and Russia, but
  - – Uncertain licence approval processes
  - – Grid accessibility for specific site locations not ensured
  - – Good relationship and strategic partnerships shall be established by RWE Innogy in time

Sources: Eurelectric, IEA, Fichtner.

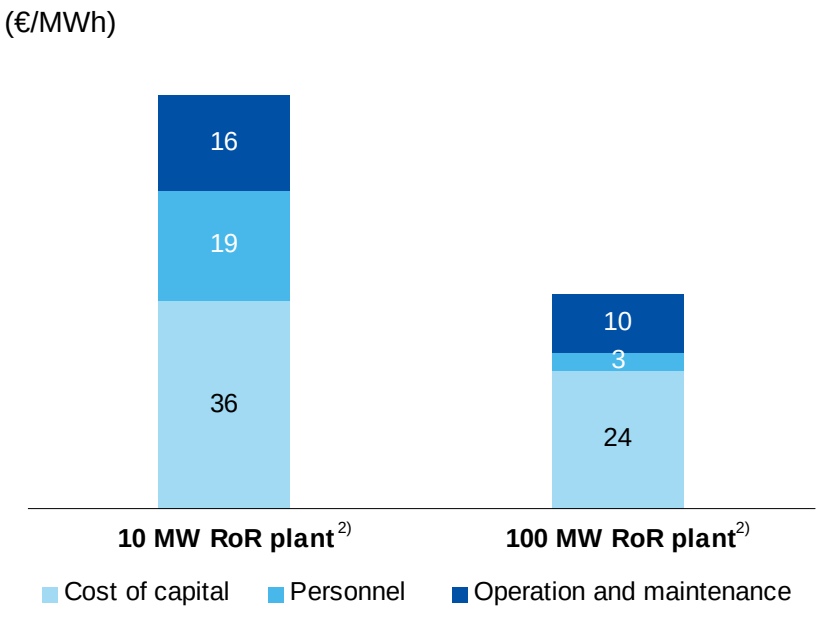
Hydro power is a mature technology

Renewable Power Generation in Europe[1)]



Source: BMU – Renewable energy sources in figures – national and international development (December 2007) – from 2004 EU-25

Electricity production costs of a new hydro power plant



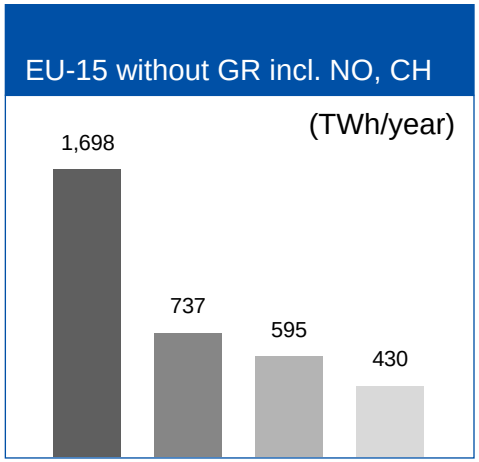
Source: Fichtner GmbH & Co. KG

> > 60% of the European renewable power generation is based on hydro power.
> Total electricity production costs can compete with fossil fuel power plants.

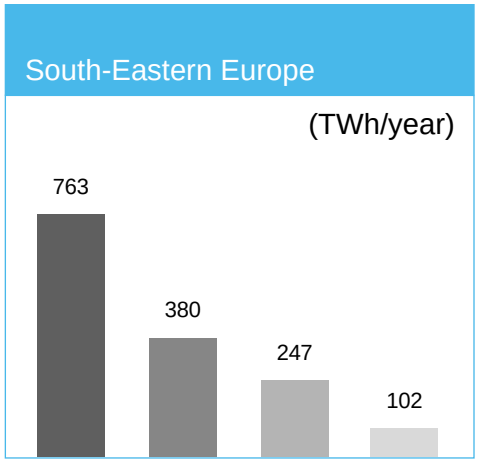
1) Including municipal waste and biogas.
2) Run-of-river plant.

Europe: Mature technology with some growth potential in Western and South-Eastern Europe

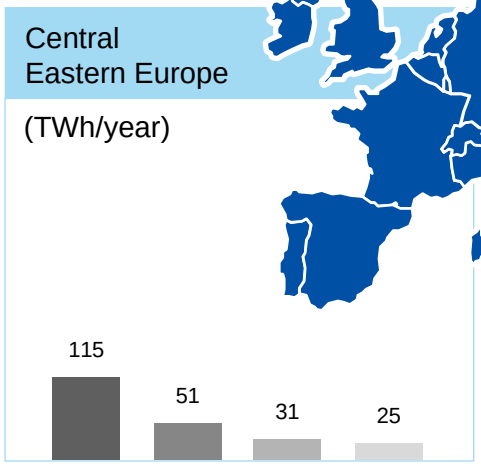
> More than 300 TWh/year of unused economical hydro power potential in Europe
> Almost two-thirds of the economical potential in South-Eastern Europe is not developed



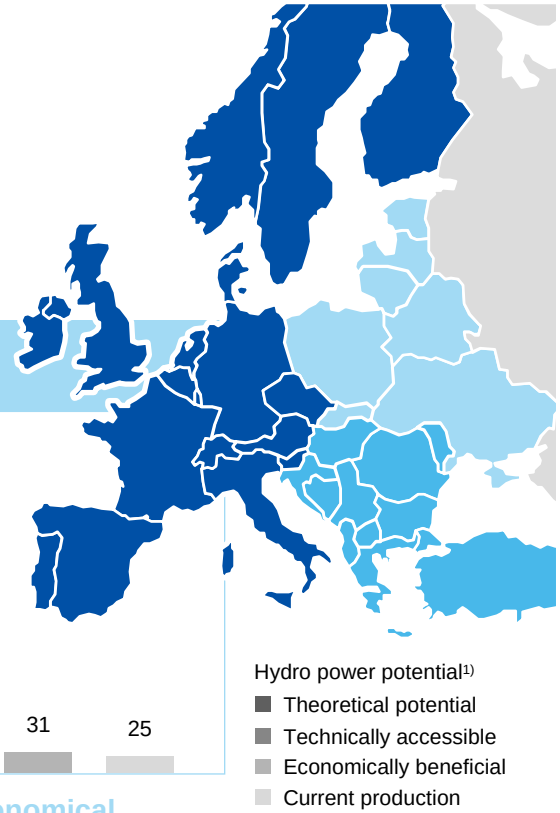
28% unused economical potential



59% unused economical potential



19% unused economical potential



1) Average values of the following sources: WEC, 2007 Survey of Energy Resources; EUROSTAT; UCTE; Europe's hydropower potential today and in the future, CESR, University of Kassel; Hydropower & Dams World Atlas, 2007.

Biomass is a viable option for "green" capacity build-up – however feedstock needs to be secured

Key characteristics

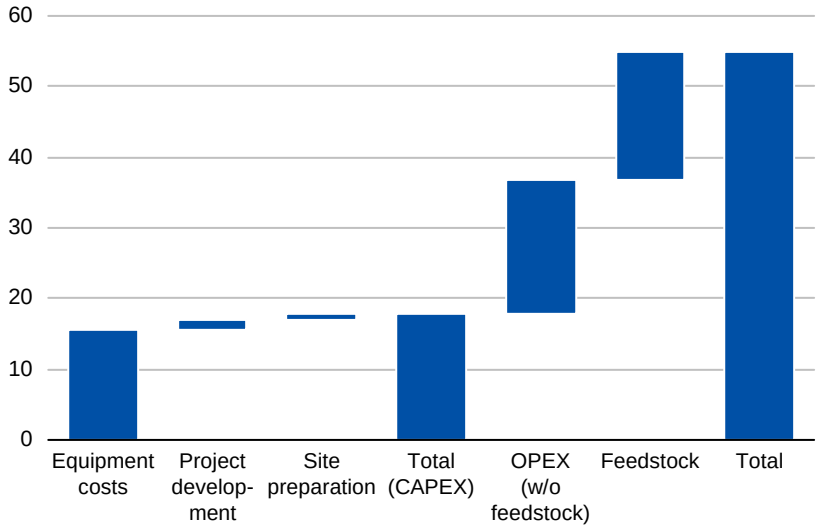
- Biomass enjoys favourable regulatory support in most European countries
- After wind it is expected to be one of the largest contributors to the EU renewables targets
- Solid biomass plant technology is mature and can support independent generators
- Feedstock represents 25 – 40% share of full costs, but cannot be effectively hedged
- Utilization of CHP generation is essential for efficiency and profitability

Conclusions

- Feedstock availability, competition with higher value added uses and logistics cost will limit growth potential
- Strong position in feedstock supply is crucial
- Ideal plant size is ~ 20 MW to cover feedstock optimal radius (< 50km) and number of delivery vehicles (< 50 per day)
- CHP success factor is the access to partners such as municipalities and industry

Operational costs and profitability are highly dependant on feedstock price and availability

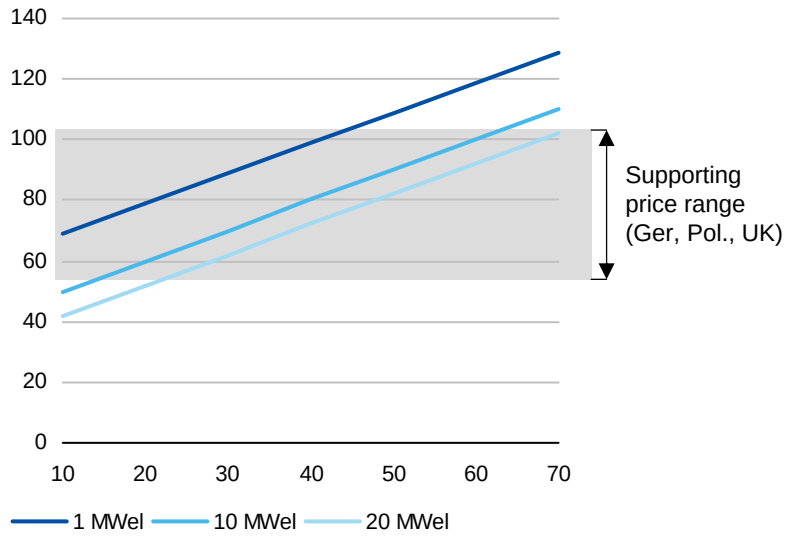
Levelised cost structure for biomass (in €/MWh)



Opex is very dependent on feedstock costs – no possibility of hedging/long-term supply contracts

- > Feedstock share on overall costs: 25 – 40%
- > Feedstock costs differ depending on feedstock type and transportation

Levelised cost structure for biomass depending on feedstock price and plant size (in €/MWh)



Overview of feedstock costs[1)] (transportation to plant included):

- > Residues (wood): 5 – 30 €/ton (average: 12.5 €/ton)
- > Residues (crops): 5 – 40 €/ton
- > Energy crops: 20 – 60 €/ton (up to 100 €/ton)

Source: DLR, IE Leipzig.