

World Wind Energy Report 2009





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**9TH WORLD WIND ENERGY
CONFERENCE & EXHIBITION
LARGE-SCALE INTEGRATION
OF WIND POWER**

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Wind farm at Çanakkale/Intepe, Turkey

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The World Wind Energy Association WWEA Uniting the World of Wind Energy

The World Wind Energy Association (WWEA) is a non-profit organisation which works for a world energy system fully based on the various renewable energy technologies, with wind energy as one cornerstone. WWEA acts as a communication platform for all wind energy actors worldwide, WWEA advises national governments and international organisations on favourable policies for wind energy implementation and WWEA enhances international technology transfer, a key in the accelerated dissemination of this clean technology.

Actually, WWEA has almost 500 members and represents the wind sector from 95 countries on all continents. Amongst the WWEA members, there are the national wind energy associations of the major wind countries – which themselves represent more than 50'000 members – as well as companies, scientific institutions and public bodies.

In 2007, WWEA was granted Special Consultative Status at the United Nations. WWEA has observer status e.g. at the UNFCCC Climate Conferences and cooperates with further international organisations. WWEA is represented at the International Steering Committee of REN21 and is one of the first and major proponents of the creation of the International Renewable Energy Agency IRENA.

WWEA is governed by a Board which comprises WWEA President Dr Anil Kane (India), the Senior Vice President Hon. Peter Rae AO (Australia), ten Vice Presidents from the five continents and the Treasurer. The Secretary General Stefan Gsänger manages the daily administration of the association at the WWEA Head Office in Bonn/Germany.

The WWEA members have formed various working groups like on education, CDM, small scaled and hybrid systems, sustainability guidelines and community power.

WWEA organises on an annual basis World Wind Energy Conferences like the WWEC2010 Large Integration of Wind Energy in Istanbul/Turkey in June 2010 and in the previous years in:

- Jeju/South Korea (2009),
- Kingston/Canada (2008),
- Mar del Plata/Argentina (2007),
- New Delhi/India (2006),
- Melbourne/Australia (2005),
- Beijing/China (2004),
- Cape Town/South Africa (2003),
- Berlin/Germany (2002).

In cooperation with Husum fair, WWEA has invited for the World Summit for Small Wind Turbines, taking place in Husum/Germany in April.

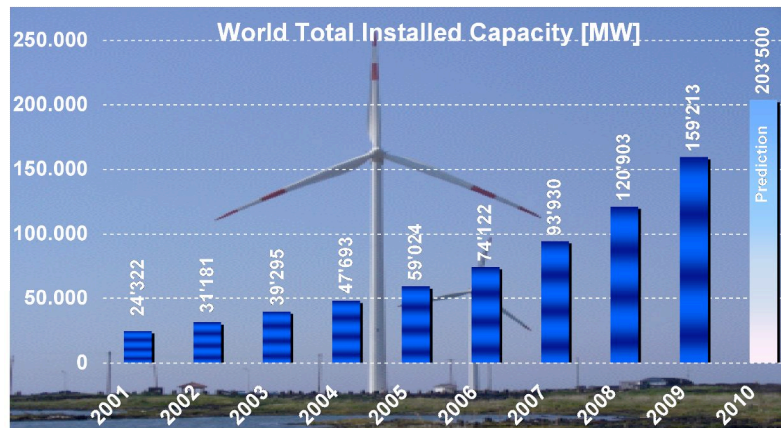
WWEA cooperates with and supports numerous wind and renewable energy events all over the world.

WWEA publishes on a regular basis information about wind energy and provides up-to-date information about wind energy technology, like

- *the annual World Wind Energy Report,*
- *the technology website www.world-wind-energy.info*
- *the biannual yearbook Wind Energy International which comprises updated country reports about 100 countries and numerous special reports.*

WWEA also cooperates with the magazine Windtech International.

Executive Summary



- Worldwide capacity reached 159'213 MW, out of which 38'312 MW were added.
- Wind power showed a growth rate of 31,7 %, the highest rate since 2001.
- The trend continued that wind capacity doubles every three years.
- All wind turbines installed by the end of 2009 worldwide are generating 340 TWh per annum, equivalent to the total electricity demand of Italy, the seventh largest economy of the world, and equalling 2 % of global electricity consumption.
- The wind sector in 2009 had a turnover of 50 billion €.
- The wind sector employed 550'000 persons worldwide. In the year 2012, the wind industry is expected for the first time to offer 1 million jobs.
- China continued its role as the locomotive of the international wind industry and added 13'800 MW within one year – as the biggest market for new turbines –, more than doubling the installations for the fourth year in a row.
- The USA maintained its number one position in terms of total installed capacity and China became number two in total capacity, only slightly ahead of Germany, both of them with around 26'000 Megawatt of wind capacity installed.
- Asia accounted for the largest share of new installations (40,4 %), followed by North America (28,4 %) and Europe fell back to the third place (27,3 %).
- Latin America showed encouraging growth and more than doubled its installations, mainly due to Brazil and Mexico.
- A total wind capacity of 200'000 Megawatt will be exceeded within the year 2010.
- Based on accelerated development and further improved policies, WWEA increases its predictions and sees a global capacity of 1'900'000 Megawatt as possible by the year 2020.

General situation:

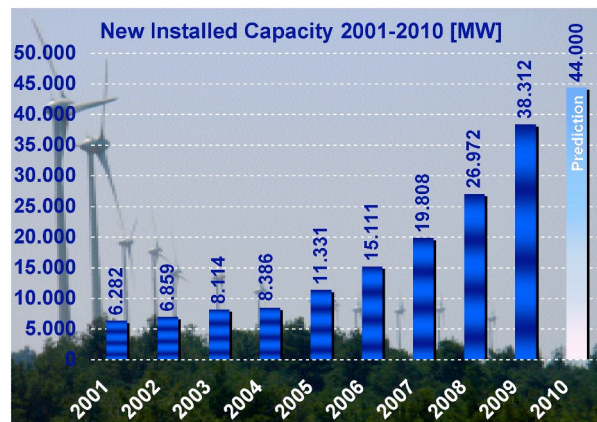
Global Wind Capacity continues to double every third year

Again the year 2009 brought new records for wind energy utilisation around the world: In spite of the global economic crisis, investment in new wind turbines exceeded by far all previous years.

The wind capacity worldwide reached 159'213 Megawatt, after 120'903 MW in 2008, 93'930 MW in 2007, 74'123 MW in 2006, and 59'012 MW in 2005.

Again it can be seen that the installed wind capacity is more than doubling every third year.

The market for new wind turbines showed a 42,1 % increase and reached an overall size of 38'312 MW, after 26'969 MW in 2008, 19'808 MW in 2007 and 15'111 MW in the year 2006. Ten years ago, the market for new wind turbines had only a size of 4 Gigawatt, only one tenth of the size of 2009.



In comparison, according to the International Atomic Energy Agency the share of nuclear power in the global energy supply went again down in the year 2009 and the number of nuclear power stations worldwide decreased by one.

The turnover of the wind sector worldwide reached 50 billion € / 70 billion US\$ in the year 2009, compared with 40 billion € in the previous year.

Wind energy and the global financial crisis: Better policies

The global financial and economic crisis, all in all, had no negative impact on the general development of the wind sector worldwide. Many governments sent clear signals that they want to accelerate wind deployment in their countries and indicated that investment in wind and other renewable technologies is seen as the answer to the financial as well as to the still ongoing energy crisis.

Hence, politically stable and in many cases improved frameworks lead to more investment in wind utilisation around the globe.

Two milestones in this context were the first feed-in law in North America,

adopted in Ontario, in the aftermath of the WWEC2008, and the introduction of the first feed-in tariff in Africa by the National Energy Regulator of South Africa.

Within this political environment and as predicted in the World Wind Energy Report 2008, the finance sector has started to understand that wind technology is in principle a low-risk investment not only for the investors themselves, given the right policies are in place.

In addition to such direct microeconomic benefits for wind investors, wind turbines stabilise the overall energy prices and

hence reduce general economic risks in a country, while reducing the dependency on (in most cases imported) fossil and nuclear resources.

Interesting prospects for financing wind and other renewable technologies came up in the context of the UN climate change discussions: The International Renewable Energy Alliance proposed at the COP15 in Copenhagen a Global Fund for Renewable Energy Investment, including a Global Feed-in Tariff programme. This proposal would enable mainly developing countries to invest on a large scale in renewable energy and has already attracted major interest

amongst governments and international organisations. Adopted in the frame of the UNFCCC, it would pave the way for an accelerated huge and worldwide boom of renewable energy deployment.

Increasing growth rates since 2001

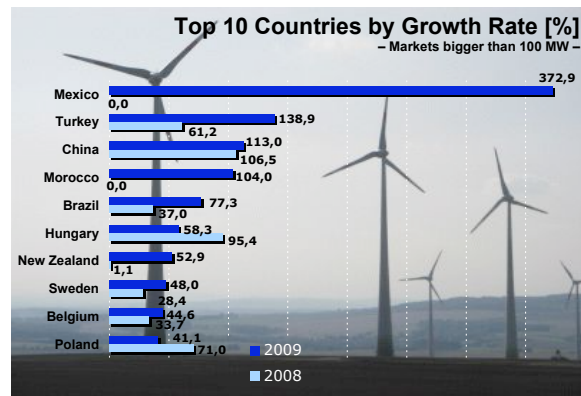


The growth rate is the relation between the new installed wind power capacity and the installed capacity of the previous year. The annual growth rate continued to increase since the year 2004, reaching 31,7 % in 2009 – the highest rate since 2001 –, after 29,0 % in 2008, 26,6 % in 2007, 25,6 % in the year 2006 and 23,8 % in 2005.

The highest growth rates of the year 2009 with more than 100 % could be found in Mexico which quadrupled its installed capacity, once again in Turkey (132 %) which had the highest rate in the

previous year, in China (113 %) as well as in Morocco (104 %).

It is encouraging to see that three of these four of the most dynamic markets can be found in Africa and in Latin America, both regions which are still lagging behind the rest of the world in the commercial use of wind power.

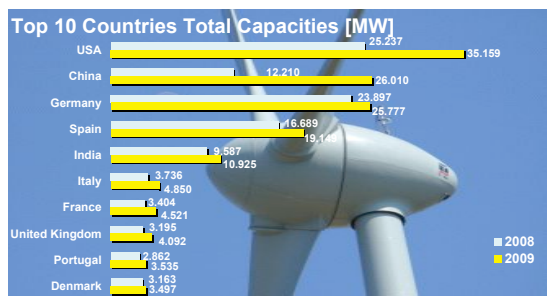


Amongst the major markets, also the USA (39,3 %), Canada (40,1 %) and France (32,8 %) showed growth rates above the average.

Leading wind markets 2009: China and USA strong, diversification continues

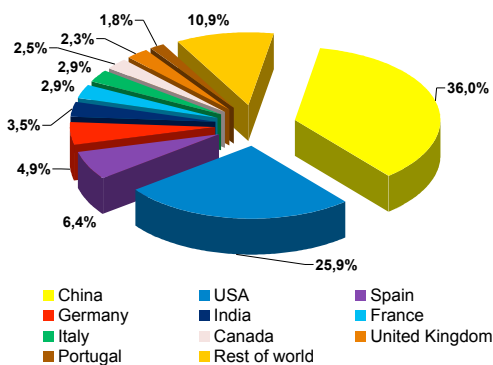
In the year 2009, altogether 82 countries used wind energy on a commercial basis, out of which 49 countries increased their installed capacity.

China and the USA established themselves as the by far largest markets for new wind capacity, together accounting for 61,9 % of the additional capacity, a share which was substantially bigger than in the previous year (53,7 %).



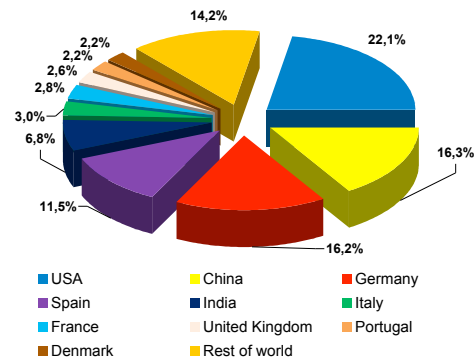
Nine further countries could be seen as major markets, with turbine sales in a range between 0,5 and 2,5 Gigawatt: Spain, Germany, India, France, Italy, the United Kingdom, Canada, Portugal, and Sweden.

Country Share of New Capacity 2009



Twelve markets for new turbines had a medium size between 100 and 500 Megawatt: Turkey, Australia, Denmark, Mexico, Brazil Ireland, Poland, Japan,

Country Share of Total Capacity 2009



New Zealand, Belgium, South Korea, and Greece.

The USA and China together represented 38,4 % of the global wind capacity. The top five countries (USA, China, Germany, Spain and India) represented 72,9 % of the worldwide wind capacity, slightly more than 72,4 % in the year 2008.

Although mainly due to the strong performance of China and the USA the top 5 markets could increase their share, still it could be observed that the diversification continued as well and that more and more countries were deploying wind energy on a larger scale.

By end of 2009, 17 countries had installations of more than 1'000 Megawatt, compared with 16 countries end of 2008, 13 countries end of the year 2007, 11 end of 2005.

Worldwide, 35 countries had wind farms with a capacity of 100 Megawatt or more installed, compared with 32 countries in the previous year and 24 countries four years ago.

A major newcomer on the list is a Latin American country, Nicaragua, which for the first time installed a larger grid-connected wind farm with the size of 40 Megawatt.

Wind share in electricity supply

All wind turbines installed globally by the end of the year 2009 contribute 340 Terawatt-hours to the worldwide electricity supply which represents 2 % of the global electricity demand.

This energy amount equals the electricity needs of Italy, an industrialised country with 60 million inhabitants and the seventh largest economy of the world.

In some countries and regions wind has become one of the largest electricity sources, the highest shares being:

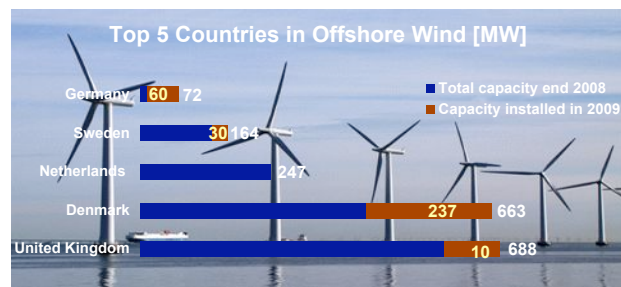
- Denmark: 20 %
- Portugal: 15 %
- Spain: 14 %
- Germany: 9 %

Offshore wind turbines

Offshore wind capacity continued to grow in the year 2009. By the end of the year, wind farms installed in the sea could be found in twelve countries, ten of them in Europe and some minor installations in China and Japan. Total installed capacity amounted to almost two Gigawatt, 1,2 % of the total wind capacity worldwide.

Wind turbines with a capacity of 454 Megawatt were added in 2009, with major new offshore wind farms in Denmark, the United Kingdom, Germany, Sweden and China.

The growth rate of offshore wind is with 30 % slightly below the general growth rate of wind power.



In Denmark, so far the largest offshore wind farm was inaugurated in the North Sea: Horns Rev II, 209 Megawatt.

China installed the first major offshore wind farm outside of Europe – a 21 Megawatt, near Shanghai.

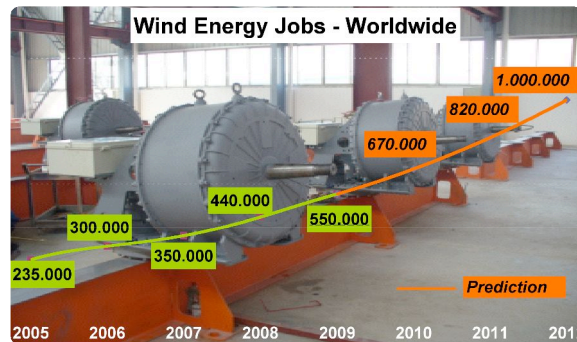
Position 2009	Country	Total Offshore Capacity [MW] end 2009	New Offshore Capacity [MW] installed in 2009	Total Offshore Capacity [MW] end 2008	Rate of Growth [%]
1	United Kingdom	688,0	104,0	574,0	18,1
2	Denmark	663,6	237,0	426,6	55,6
3	Netherlands	247,0	0,0	247,0	0,0
4	Sweden	164,0	30,0	134,0	22,4
5	Germany	72,0	60,0	12,0	500,0
6	Belgium	30,0	0,0	30,0	0,0
7	Finland	30,0	0,0	30,0	0,0
8	Ireland	25,0	0,0	25,0	0,0
9	China	23,0	21,0	2,0	1050,0
10	Spain	10,0	0,0	10,0	0,0
11	Norway	2,3	2,3	0,0	/
12	Japan	1,0	0,0	1,0	0,0
TOTAL		1955,9	454,3	1491,6	30,5

Employment in the wind sector

Also in 2009 the wind sector worldwide was a major job generator and created new employment:

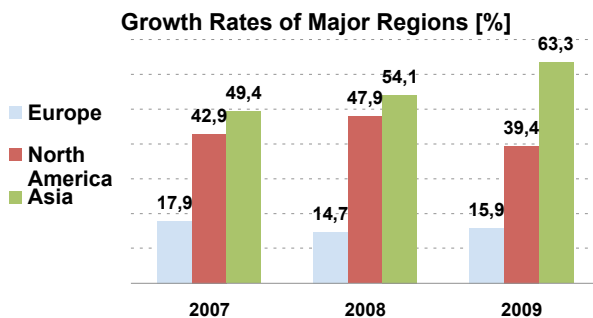
By the end of 2009, 550'000 persons were employed worldwide directly and indirectly in the various branches of the wind sector.

Within only four years, the wind sector worldwide more than doubled the number of jobs from 235'000 in 2005 to 550'000 in the year 2009. These 550'000 employees in the wind sector worldwide, most of them highly-skilled jobs, are contributing to the generation of 340 TWh of electricity.



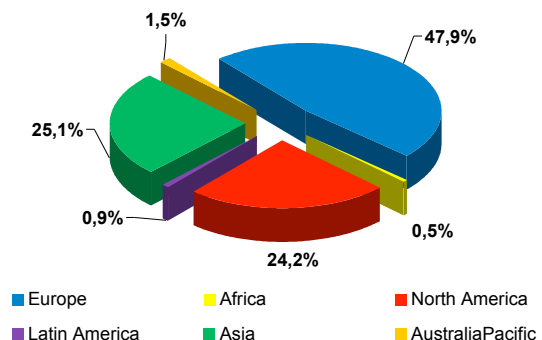
By the end of the year 2010, 670'000 employees are expected, and in 2012, the number of jobs is expected to reach one million.

Continental distribution



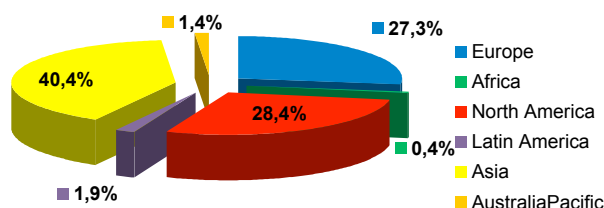
The most dynamic progress of the wind industry took place in Asia, followed by North America and the focus of the global wind sector moved further away from Europe.

Continental Share in Total Capacity 2009



For the first time, Europe accounted for less than half of the total capacity: In the past years, Europe's share had gone down from 65,5 % in 2006 to 61 % in the year 2007, 54,6 % in 2008 down to 47,9 % in 2009.

Continental Shares in New Capacity 2009

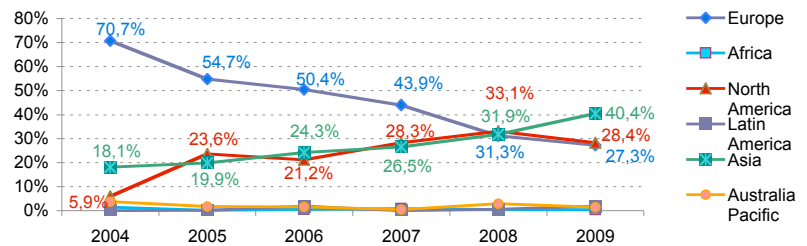


While five years ago Europe dominated the world market for wind turbines with 70,7 % of the new capacity, in 2009, Europe fell back to number three and only accounted for 27,3 % of the new installed turbines (2008: 32,8 %), closely behind North America (28,4 %, after 32,6 % in 2008).

Asia became the new continental leader, accounting for 40,4 % of the newly installed wind turbines (31,5 % in 2008).

Latin America (1,5 %, up from 0,6 %) and Africa (constantly at 0,5 %) still counted for only minor shares of the total capacity. Both continents were able to increase substantially their shares in new installations to 1,5 % in the case of Latin

Continental Shares in New Wind Capacity



America (2008: 0,4 %) and 0,4 % in the case of Africa (2008: 0,3 %).

Africa

All wind turbines installed in Africa in 2009 had a capacity of 770 Megawatt (0,5 % of the total worldwide capacity), out of which 169 Megawatt were added, in two countries, Egypt and Morocco.

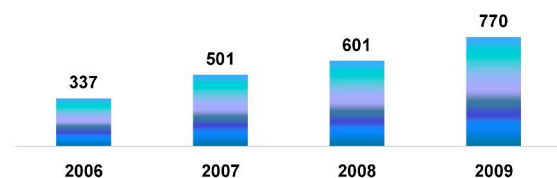
Although Africa was already on a comparatively low level, the growth rate of 28 % was again below the global average of 31,6 %.

However, an increasing number of African governments were getting aware of the potentials of wind energy in their countries and showed interest in setting up the necessary frameworks.

A major breakthrough was the introduction of the first feed-in tariff on the continent by the South African National Electricity Regulator NERSA – whose effective implementation will be decisive in the year 2010. With the new regulations in place, South Africa has the potential to take the lead in Sub-Saharan Africa and to become an example for other countries in the region.

New wind projects are on the way in the leading countries Egypt and Morocco, but also in new markets like in the already mentioned South Africa, in Ethiopia, Kenya, Namibia, Tunisia as well as in Cap Verde.

Total Installations in Africa [MW]



It is encouraging to see that industrial activities in manufacturing of wind turbines have started on the continent as well, mainly in Egypt. It can be expected that the creation of stable markets on the continent has the potential to lead to the establishment of domestic wind industries in several African countries.

In light of the fact that the majority of the African population still has no access to electricity grids, small, decentralised and stand-alone wind energy systems, in combination with other renewable energies, will have to play a key role. This process of deploying technologies for rural electrification is still in its early stage. The main limiting factors are still the lack of access to know-how as well as to financial resources.

In this context, the outcome of the UN climate change discussions and the potential establishment of a Global Fund for Renewable Energy Investment would offer huge opportunities for many African countries to bypass one of the major barriers for wind energy investments: the lack of financing options.

Asia

Asia became the world's wind locomotive in the year 2009, mainly due to the two large markets China and India. The total installed wind capacity in Asia reached 40,0 Gigawatt (25,1 % of the global capacity). The continent had the second highest growth rate of all world regions (63,3 %, after 54,1 % in 2008) and added 15,5 Gigawatt in 2009.

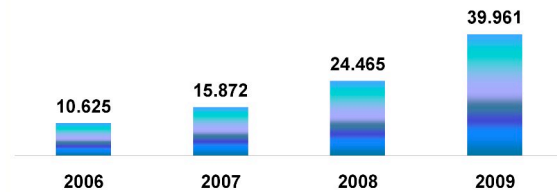
In the fourth consecutive year, China doubled its installations and became number one in terms of new installations and number two in terms of total wind capacity, with 26 Gigawatt. This impressive pace of wind deployment reflected clearly the priorities of the Chinese government to achieve a sustainable energy supply system that is based to a major degree on domestic renewable energy resources. China also introduced in 2009 a feed-in tariff which guarantees a fixed remuneration over the lifetime of a project.

For the first time, Chinese wind turbine manufacturers were amongst the top five manufacturers worldwide, although they did not yet start to export their products on a noteworthy level and almost exclusively supplied the domestic Chinese market. 2010 may mark the starting year for the Chinese export of wind turbines to other parts of the world.

Australia and Oceania

The region added 555 Megawatt in the year 2009, reaching a total capacity of 2388 Megawatt. The growth rate of 30,3 % was only slightly below the global average. Both in terms of new as well as total capacity, the region represented 1,5 % of the global capacity – far more than the region represents in terms of population.

Total Installations in Asia [MW]



The second largest Asian market remained India, with a 14 % growth rate reaching a total capacity of 11 Gigawatt. Further modest growth can be expected in the future.

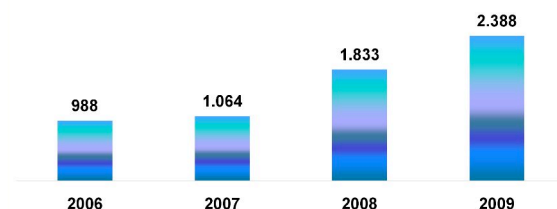
The Indian wind industry became a global player in the past few years and will expand this role in the next years, based on the success of a robust home market.

Three medium-size Asian markets were Japan (total capacity 2 Gigawatt), the island of Taiwan (436 Megawatt) and South Korea (364 Megawatt).

It has to be stated that, beyond these five markets, there are still huge potentials untapped on the continent and that many countries have not yet looked seriously into wind technology.

Potentially promising markets are for example Iran, Pakistan, the Philippines or Vietnam, and major wind farms are on the way in countries like Jordan or Mongolia.

Total Installations in Australia-Pacific [MW]



Especially New Zealand with an installed capacity of 511 Megawatt and a growth rate of 50,8 % showed a major increase,

while Australia had a growth of 25,6 % and a total installation of 1'877 Megawatt.

Australia set up a renewable energy target for the year 2020 of annually

45'000 GWh, split between large scale and domestic installations which is expected to attract further investment and growth.

Europe

With a share of 47,9 %, almost every second turbine installed worldwide could still be found in Europe: The European wind sector added 10'474 MW in the year 2009, substantially more than in the previous years: 8'607 MW in 2007 and 8'928 MW in 2008.

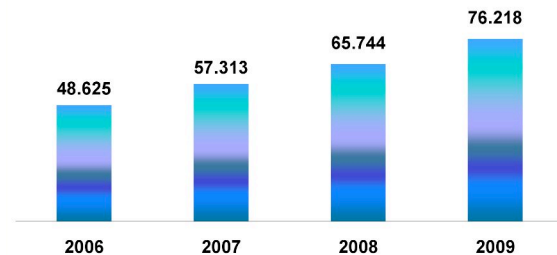
Both in terms of total and additional capacity, Germany (25'770 Megawatt/ 1'880 Megawatt) and Spain (19'149 Megawatt/2'460 Megawatt) were still by far the biggest markets, but also with modest growth rates (7,9 % and 14,7 %).

European medium-sized markets with strong growth of around 30 % were Italy (4'850 Megawatt/new: 1'114 Megawatt), France (4'521 Megawatt/additional: 1'117 Megawatt), and the United Kingdom (4'092 Megawatt/added: 894 Megawatt).

Very dynamic growth could be seen in some Eastern European countries: Estonia (81,8 % growth, 142 Megawatt total capacity), Lithuania (68,0 %, 91 Megawatt), Hungary (58,3 %, 201 Megawatt) and Poland (41,1 %, 666 Megawatt)

The Danish, German and Spanish wind turbine manufacturing industries were still dominating in many wind markets around the world and are expected to continue

Total Installations in Europe [MW]



their leading role in the coming years, although new international competitors are expected to come up in Asia and in America.

An increasing interest in promotion of community based wind farms can be observed in several European countries and also on the European level. While there is a strong and continuous tradition in such approaches especially in the Nordic countries as well as in Germany, also e.g. in the United Kingdom community power seems to play a still small but increasing role.

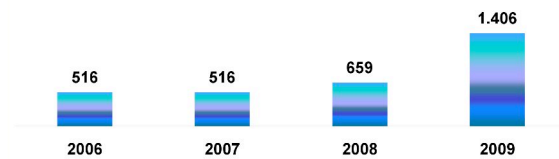
At the same time Europe is the leading continent in offshore installations where 99 % of the offshore wind turbines can be found. European discussions about a supergrid connecting offshore wind farms of the countries around the North Sea seem to offer promising prospects for this technology.

Latin America

With 113,3 % increase, Latin America showed the highest growth rate of all world regions and reached a total capacity of 1'406 Megawatt. This development, after several years of stagnation, is mainly due to the two largest markets, Brazil (78,5 % increase, total 600 Megawatt) and Mexico (372,9 %, 402 Megawatt).

Especially Brazil is in the position to establish itself as the leading wind country in the region that also has a strong domestic manufacturing industry, with several international companies

Total Installations in Latin America [MW]



already producing wind turbines in the country.

Major wind farms were also installed in Chile, Costa Rica, the Netherlands Antilles and Jamaica.

Mainly Brazil, Chile and Mexico offer interesting prospects in the near future and are expected to inaugurate major wind farms also in the year 2010.

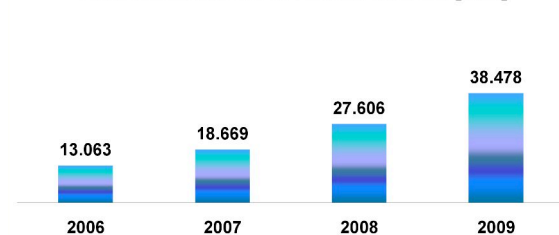
North America

Again in the year 2009 North America showed strong growth above the global average (39,4 %), reaching a total capacity of 38'478 Megawatt. The USA alone added 9'922 Megawatt, breaking a new record that only China exceeded, but still continued as world leader in overall capacity (35'159 Megawatt). Canada added 950 Megawatt to a total of 3'319 Megawatt.

In the light of the financial crisis, the federal government of the USA gave special incentives for investment in wind farms and, in addition, more and more US states started discussing and adopting favourable legal frameworks for wind energy in order to attract investment.

Even more than in Europe, community power approaches have become a driving force in the political discussion. The Government of Ontario introduced in

Total Installations in North America [MW]



the aftermath of the World Wind Energy Conference 2008 *Community Power a Green Energy Act*, which represents the first feed-in law in North America comprising tariffs for the different renewable energies, including wind. As a worldwide innovation, the Act offers special incentives for community and first nations based projects.

The example of Ontario already encouraged other jurisdictions in North America to follow with similar legislative proposals. It can be expected that more feed-in tariffs will be implemented in the near future.

Future prospects worldwide: 1'900'000 Megawatt in 2020

The wind sector showed impressive growth rates in the year 2009, in spite of the global financial crisis and against the predictions of various organisations.

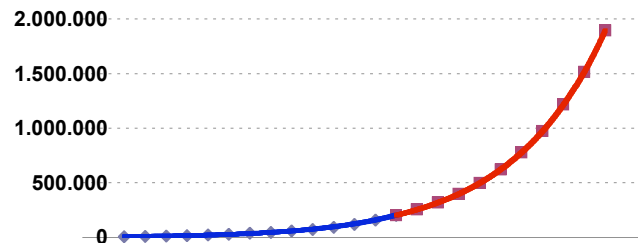
Increasing awareness of the economic, social and environmental benefits of wind energy will further boost investment in new wind farms.

Assuming that the global financial situation will improve substantially in the near future, many further world regions will be able to raise the funds that are necessary to speed up wind energy deployment.

Another positive factor will be the supportive role of the International Renewable Energy Agency – founded in January 2009 and becoming more operational in 2010. IRENA with its current 143 member countries will contribute to the global dissemination of know-how and through acting as a balancing lobby at international decision making processes such as the UN climate change negotiations.

On the one hand, the United Nations failed to come to a climate change agreement at the COP15 in Copenhagen – which might have brought additional incentives for investment in emission free technologies such as wind. However, wind investment so far was only marginally based on the contributions from carbon finance. Additional funds currently under discussion may give additional incentives and increase the growth rates of wind power mainly in the developing world.

Total Installed Wind Capacity 1997-2020 [MW]
Development and Prognosis



Further growth can especially be expected in the leading wind markets China (with its recently implemented feed-in tariff), USA (with more and more favourable frameworks expected both on national but also on state level), Germany, Spain and India and in many further countries in Europe, especially in Eastern Europe, but also in many Asian and Latin American countries. Major projects are also expected to be implemented in some African countries, notably in South Africa with its feed-in tariff and in North Africa.

Another, often neglected success factor of wind are community power ownership models. Such models are re-gaining strength and are expected to contribute substantially to the further growth of wind power in many world regions, by mobilising additional economic and social support for wind technology. New and notable examples can be found in the United Kingdom (in particular in Scotland), Canada, Australia as well as in South Africa and in many other parts of the world.

Based on the accelerated growth rates, WWEA increases its expectations for the future growth of the global wind capacity: By the end of the year 2020, at least 1'900'000 Megawatt can be expected to be installed globally.

Position 2009	Country / Region	Total capacity end 2009 [MW]	Added capacity 2009 [MW]	Growth rate 2009 [%]	Position 2008	Total capacity end 2008 [MW]	Total capacity end 2007 [MW]	Total capacity end 2006 [MW]
1	USA	35.159,0	9.922,0	39,3	1	25.237,0	16.823,0	11.575,0
2	China	26.010,0	13.800,0	113,0	4	12.210,0	5.912,0	2.599,0
3	Germany	25.777,0	1.880,0	7,9	2	23.897,0	22.247,4	20.622,0
4	Spain	19.149,0	2.460,0	14,7	3	16.689,0	15.145,1	11.630,0
5	India	10.925,0	1.338,0	14,0	5	9.587,0	7.850,0	6.270,0
6	Italy	4.850,0	1.114,0	29,8	6	3.736,0	2.726,1	2.123,4
7	France	4.521,0	1.117,0	32,8	7	3.404,0	2.455,0	1.567,0
8	United Kingdom	4.092,0	897,0	28,1	8	3.195,0	2.389,0	1.962,9
9	Portugal	3.535,0	673,0	23,5	10	2.862,0	2.130,0	1.716,0
10	Denmark	3.497,0	334,0	10,6	9	3.163,0	3.125,0	3.136,0
11	Canada	3.319,0	950,0	40,1	11	2.369,0	1.846,0	1.460,0
12	The Netherlands	2.240,0	5,0	0,2	12	2.235,0	1.747,0	1.559,0
13	Japan	2.056,0	176,0	9,4	13	1.880,0	1.528,0	1.309,0
14	Australia	1.877,0	383,0	25,6	14	1.494,0	817,3	817,3
15	Sweden	1.579,0	512,0	48,0	16	1.066,9	831,0	571,2
16	Ireland	1.260,0	233,0	22,7	15	1.027,0	805,0	746,0
17	Greece	1.109,0	119,0	12,0	18	989,7	873,3	757,6
18	Austria	995,0	0,0	0,0	17	994,9	981,5	964,5
19	Turkey	796,5	463,1	138,9	25	333,4	206,8	64,6
20	Poland	666,0	194,0	41,1	19	472,0	276,0	153,0
21	Brazil	600,0	261,5	77,3	24	338,5	247,1	236,9
22	Belgium	555,0	171,0	44,6	22	383,6	286,9	194,3
23	New Zealand	497,0	172,0	52,9	26	325,3	321,8	171,0
24	Chinese Taipeh	436,0	78,0	21,8	23	358,2	279,9	187,7
25	Norway	431,0	2,0	0,5	20	429,0	333,0	325,0
26	Egypt	430,0	40,0	10,3	21	390,0	310,0	230,0
27	Mexico	402,0	317,0	372,9	34	85,0	85,0	84,0
28	Korea (South)	364,4	86,4	31,1	27	278,0	192,1	176,3
29	Morocco	253,0	129,0	104,0	32	124,0	125,2	64,0
30	Bulgaria	214,2	56,7	36,0	28	157,5	56,9	36,0
31	Hungary	201,0	74,0	58,3	31	127,0	65,0	60,9
32	Czech Republic	191,0	41,0	27,3	29	150,0	116,0	56,5
33	Finland	147,0	4,0	2,8	30	143,0	110,0	86,0
34	Estonia	142,3	64,0	81,8	36	78,3	58,6	33,0
35	Costa Rica	123,0	49,5	66,9	37	74,0	74,0	74,0
36	Lithuania	91,0	37,0	68,0	38	54,4	52,3	55,0
37	Ukraine	90,0	0,0	0,0	33	90,0	89,0	85,6
38	Iran	82,0	0,0	0,0	35	82,0	66,5	47,4
39	Chile	78,0	58,0	288,6	47	20,1	20,1	2,0
40	Nicaragua	40,0	40,0	new	new	0,0	0,0	0,0
41	Luxembourg	35,3	0,0	0,0	39	35,3	35,3	35,3
42	Philippines	33,0	8,0	31,8	42	25,2	25,2	25,2
43	Argentina	29,8	0,0	0,0	41	29,8	29,8	27,8
44	Jamaica	29,7	9,0	43,5	44	20,7	20,7	20,7
45	Latvia	28,5	1,6	5,9	40	26,9	26,9	26,9

Position 2009	Country / Region	Total capacity end 2009 [MW]	Added capacity 2009 [MW]	Growth rate 2009 [%]	Position 2008	Total capacity end 2008 [MW]	Total capacity end 2007 [MW]	Total capacity end 2006 [MW]
46	Croatia	27,8	9,6	52,9	50	18,2	17,2	17,2
47	Netherlands Antilles	24,3	12,0	97,6	54	12,3	12,3	12,0
48	South Africa	21,8	0,0	0,0	43	21,8	16,6	16,6
49	Guadeloupe	20,5	0,0	0,0	45	20,5	20,5	20,5
49	Uruguay	20,5	0,0	0,0	46	20,5	0,6	0,2
51	Colombia	20,0	0,0	0,0	49	19,5	19,5	19,5
51	Tunisia	20,0	0,0	0,0	48	20,0	20,0	20,0
53	Switzerland	17,6	4,0	29,0	52	13,8	11,6	11,6
54	Russia	16,5	0,0	0,0	51	16,5	16,5	15,5
55	Romania	14,0	7,0	100,0	56	7,0	7,8	2,8
56	Guyana	13,5	0,0	0,0	53	13,5	13,5	13,5
57	Vietnam	8,8	7,5	600,0	66	1,3	0,0	0,0
58	Cuba	7,2	0,0	0,0	55	7,2	2,1	0,5
59	Israel	6,0	0,0	0,0	57	6,0	6,0	7,0
59	Slovakia	6,0	0,0	0,0	58	6,0	5,0	5,0
59	Pakistan	6,0	0,0	0,0	58	6,0	0,0	0,0
62	Faroe Islands	4,1	0,0	0,0	60	4,1	4,1	4,1
63	Cape Verde	2,8	0,0	0,0	62	2,8	2,8	2,8
64	Ecuador	2,5	0,0	0,0	61	4,0	3,1	0,0
65	Mongolia	2,4	0,0	0,0	63	2,4	0,0	0,0
66	Nigeria	2,2	0,0	0,0	64	2,2	2,2	2,2
67	Belarus	1,9	0,9	77,3	68	1,1	1,1	1,1
68	Antarctica	1,6	1,0	165,0	73	0,6	0,0	0,0
69	Jordan	1,5	0,0	0,0	65	1,5	1,5	1,5
70	Indonesia	1,4	0,2	16,7	67	1,2	1,0	0,8
71	Martinique	1,1	0,0	0,0	68	1,1	1,1	1,1
72	Falkland Islands	1,0	0,0	0,0	70	1,0	1,0	1,0
73	Eritrea	0,8	0,0	0,0	71	0,8	0,8	0,8
74	Peru	0,7	0,0	0,0	72	0,7	0,7	0,7
75	Kazakhstan	0,5	0,0	0,0	74	0,5	0,5	0,5
75	Namibia	0,5	0,0	0,0	74	0,5	0,5	0,3
75	Syria	0,5	0,1	22,5	76	0,4	0,3	0,3
78	Dominican Republic	0,2	0,0	0,0	77	0,2	0,0	0,0
79	Dominica	0,2	0,0	0,0	77	0,2	0,0	0,0
80	North Korea	0,2	0,0	0,0	77	0,2	0,0	0,0
81	Algeria	0,1	0,0	0,0	80	0,1	0,0	0,0
82	Bolivia	0,01	0,0	0,0	81	0,01	0,01	0,01
Total		159.213,3	38.312,0	31,7		120.902,9	93.930,4	74.122,8



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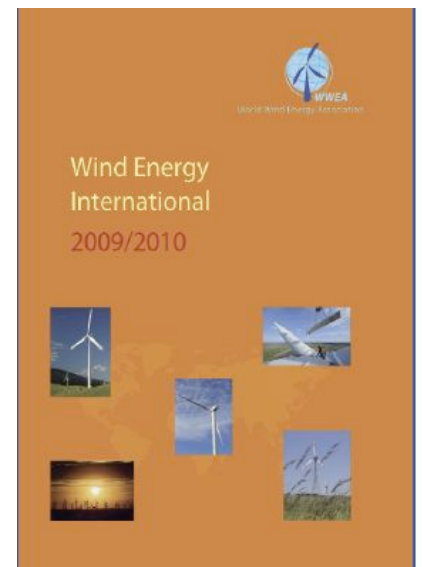
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