

# Global Wind Market Update

## OVERVIEW OF THE GLOBAL WIND ENERGY MARKET

In 2011, the global wind power market increased by 6% compared to 2010, and the 40.5 GW of new wind power capacity represented USD 70 billion of investments.

The total cumulative capacity increased by 20% in 2011, reaching 238 GW. Slightly lower than the average capacity increase of 28% over the last 10 years.

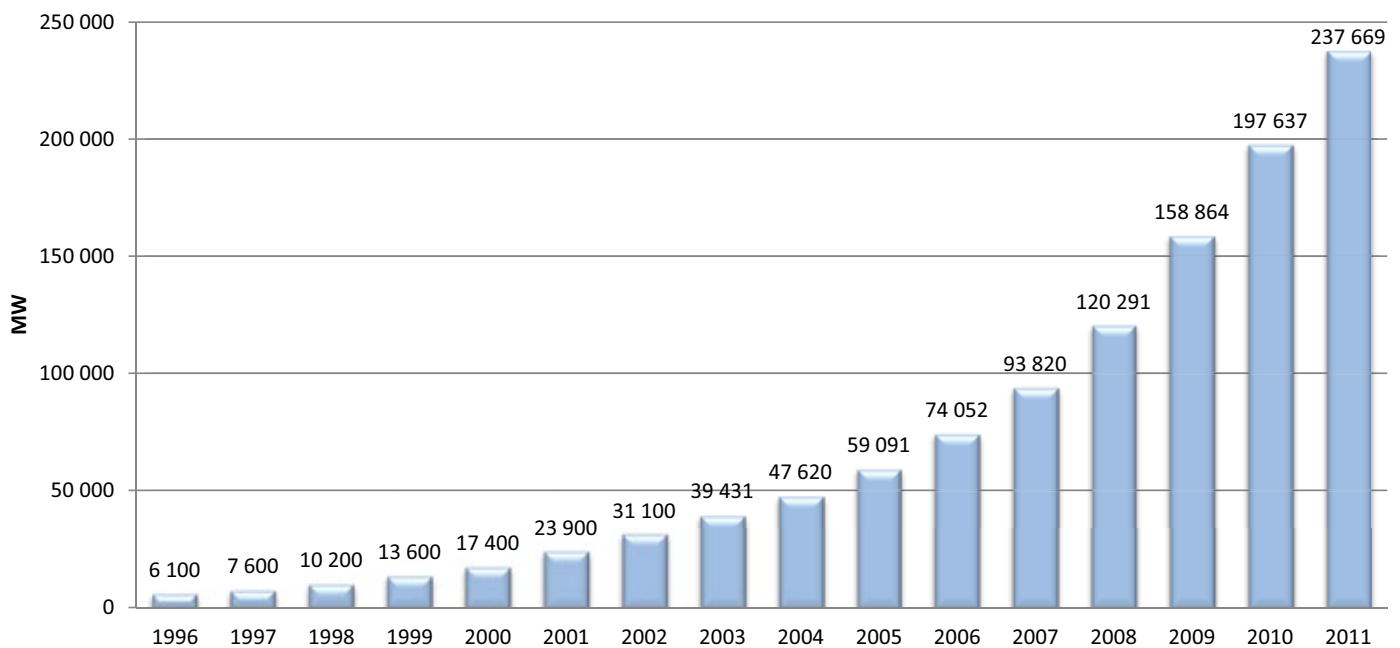


Figure 1: Global Cumulative Installed Wind Capacity (1996-2011) (GWEC, 2011)

The main drivers of growth in the global market were the Asian powerhouses of China and India. China represented about 43% of the global market, and India achieved another year of record installations. The two countries together accounted for just over 50% of the global market in 2011. Brazil is beginning to expand and, along with Mexico, will be one of the major growth markets in the coming years. South Africa is starting its deployment.

Among OECD countries, the USA market recovered, Canada had a record year, and Europe remained in position to supply 20% of its energy consumption from renewable energy in 2010. Offshore installations in Europe decreased slightly last year, but capacity in Romania, Poland and Turkey increased, as did the German market.

For the second year running, the majority of wind power installations were outside of the OECD countries, and

this trend is likely to strengthen even further in the near future. India reached the third place in terms of annual market share in 2010, and consolidated that position in 2011. India may surpass Spain in terms of installed capacity, and reach fourth position by the end of 2013.

## REGIONAL GROWTH

### Asia

China installed nearly 18 GW for the second consecutive year. However, for the first time in nearly a decade, the market did not show double or triple digit growth. The Chinese market seems to be entering a consolidation phase, in order to solve some of the issues created by its tremendous growth in previous years. The efforts of grid companies to improve their infrastructure are still limited, and do not match the pace of wind capacity installations.

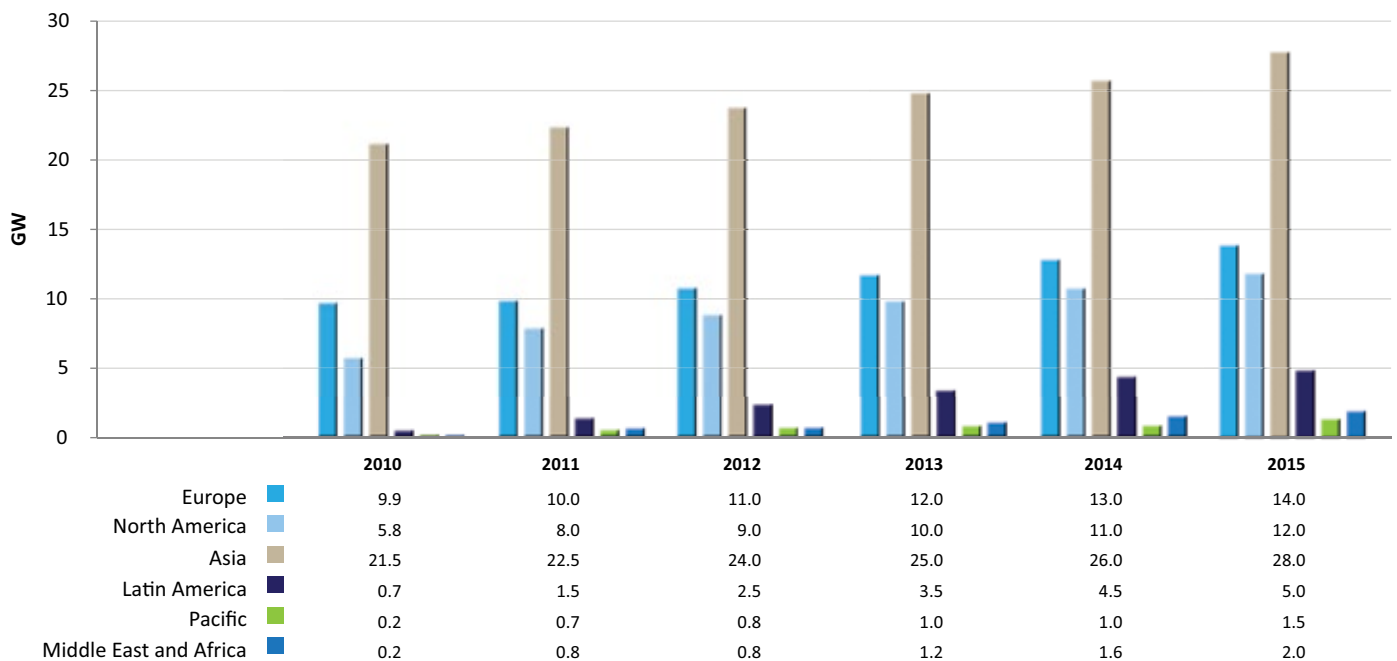


Figure 2: Annual Market Forecast by Region 2010-2015 (GWEC, 2011).

The new wind farm planning and grid connection rules, which came into effect in 2011, may accelerate this process. Strong political support will be required to modernise the grid, in particular from the network operator State Grid.

Due to the grid and interconnection issues, there is great interest both from the government and the industry to develop the offshore segment. However, regulatory and siting issues make it unlikely that the offshore target of 5 GW by 2015 will be achievable.

The Indian market passed the 2 GW mark for the first time in 2010, and the 3 GW milestone in 2011. Due to important changes in India's incentive structure since April 2012, the installation rate might be lower in 2012 compared to previous years. However, the continued increase in electricity demand and current planned targets for renewables has turned India into one of the most dynamic world markets. At the same time, the future of grid modernisation and broader investment conditions will have a significant role in supporting the growth.

## North America

The market increased by more than 30% in 2011. The country installed 6 810 MW in 31 states, for a total installed capacity of almost 47 GW by the end of 2011, and over 50 GW in June 2012. Despite uncertainty surrounding the extension of the federal Production Tax Credit (PTC)

beyond December 2012, wind power is now established in 38 states, and the turbine and component manufacturing industry are present in 43 states. The national wind turbine manufacturers were able to supply about 60% of the content for the market in 2011, up from just 25% a few years ago. A stronger growth rate is expected in 2012, and prospects for 2013 will depend on the renewal of the PTC.

Canada had a record year in 2011, installing 1 267 MW. While the federal government is getting less involved in supporting wind power, provincial governments have increased their engagement. The installed capacity could reach 1 500 MW in 2012.

Canada now has a total installed capacity of 5 265 MW, and should meet the target set by industry of 10 GW by 2015. New procurement processes are underway in a number of provinces, and it was an encouraging sign that the government of Ontario, Canada's leading wind province, chose to highlight its progressive renewables policy in the October 2011 provincial elections, despite local controversies.

Mexico has not put direct support in place for wind power or other renewables. However, a number of fiscal and regulatory measures have recently been improved, which makes the country an attractive market for wind power investments. The cumulative capacity reached 569 MW in 2011, but expects to pass 2 GW by the end of 2012.

## Europe

Europe installed 10 281 MW of new wind power capacity in 2011, of which 9 616 MW was installed in the EU-27 countries. These numbers are almost identical to those of the 2010 market, which shows the stability provided to the European market by the long-term policy framework initiated by the renewable energy directive<sup>3</sup>. The cumulative wind capacity by September 2012 stood at over 100 GW.

In terms of annual installations, Germany was by far the largest market in 2011, installing 2 086 MW of new capacity. The UK came in second with 1 293 MW including 752 MW of offshore capacity, followed by Spain (1 050 MW), Italy (950 MW), France (830 MW), Sweden (763 MW) and Romania (520 MW). Turkey and Poland installed 470 MW and 436 MW respectively.

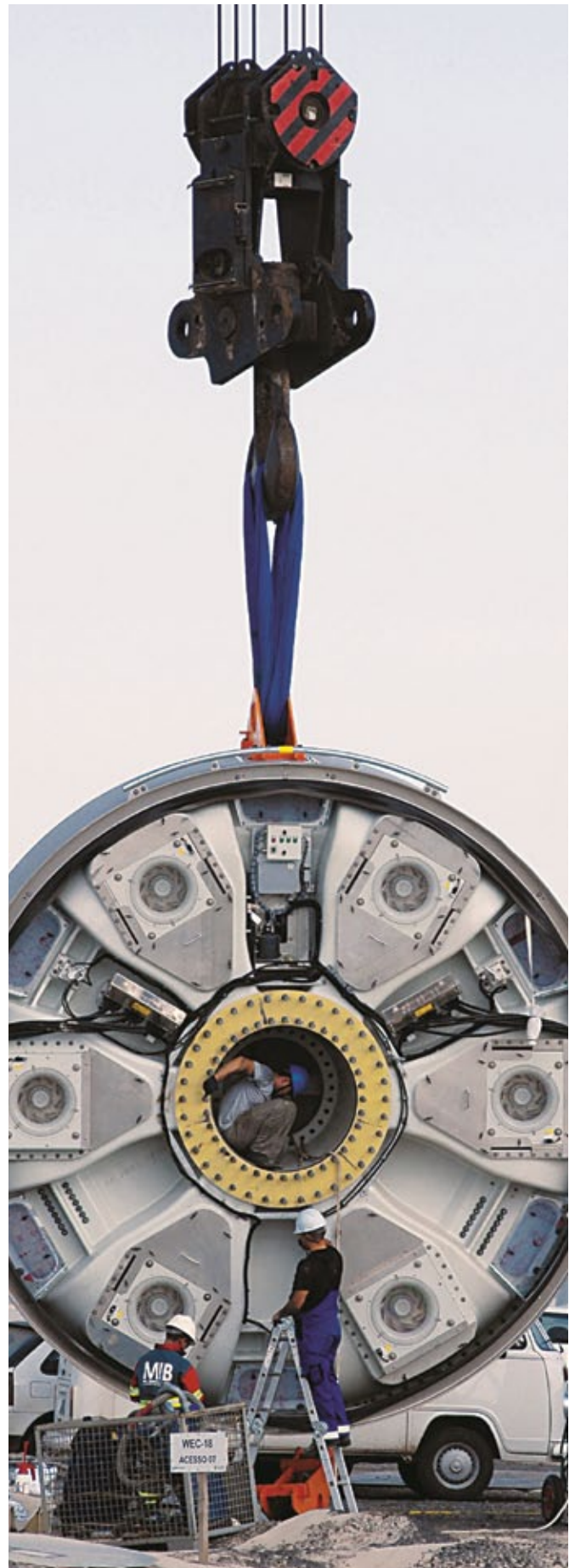
## Latin America

Brazil led the Latin America market with 583 MW of new installed capacity by end 2011, for a total of 1 509 MW. Brazil has a strong project pipeline of up to 7 000 MW to be installed by 2016. This large volume of projects has attracted manufacturers and component suppliers to establish factories, with the prospect of supplying, not only the Brazilian market, but also regional markets such as Argentina, Chile and Uruguay.

In 2011, Argentina installed 79 MW, which represents a doubling in total installed capacity. With its excellent wind resources, Argentina could be a major market if ways could be found to reduce the country's political risk. Chile installed 33 MW in 2011, and more projects under construction should be operational in 2012. In Central America, Honduras installed its first major project of 102 MW. The Dominican Republic (33 MW) and Costa Rica (13 MW) also added capacity in 2011.

## Africa

The established markets in North Africa stopped growing in 2011. The important event was Cape Verde's 23 MW plant coming on line, which will contribute to the national objective to raise the share of wind energy production to 25% by 2012 and to 50% by 2020. The other major step in Africa in 2011 was the announcement on 7 December of



Brazil ©Carlos Pereira/GWEC

<sup>3</sup> European Directive for the promotion of the use of energy from renewable sources (2009).

the preferred bidders for the first round in South Africa's "ReBid" programme. Wind energy represents 630 MW of a total of 1 450 MW of renewable power in the first round of bidding and may be awarded another 1 200 MW in the remaining rounds to be announced in 2012. This round was the first bidding under South Africa's long-range plan which envisages more than 8 000 MW of wind energy by 2030.

## Pacific

The Australian market added 234 MW in 2011 (up from 167 MW in 2010), bringing the country's total cumulative installed capacity to 2 224 MW. The state of South Australia has now passed the 1 000 MW level with 1 151 MW, and produces 20% of its electricity from wind power.



2011 was also noticeable for the passage of Australia's carbon legislation. The scheme sets a price of carbon for major industrial emitters of AUD 23/ton (USD 23.25/ton) beginning in July 2012 for three years, after which the price will float on a carbon exchange. The legislation also establishes a Clean Energy Finance Corporation to provide finance for renewable energy projects, and it is expected that this new legislation, combined with the revised Renewable Energy Target scheme, will accelerate the deployment of wind and other renewables in the coming years.

In 2011 New Zealand installed 109 MW for a total of 623 MW, a 20% increase in cumulative installed capacity. Wind now supplies just over 4% of New Zealand's electricity with no subsidy or special treatment.

### EXPECTED GROWTH TRAJECTORY FOR WIND ENERGY (2012-2016)

According to the Global Wind Energy Council, the industry is expected to continue to grow during the coming five years. The situation is difficult however, particularly for manufacturers, with a large oversupply of wind turbines adding to existing downward price pressure from general economic conditions.

Uncertainty about the future of carbon markets is also a concern. The prospects of a revitalisation of the Clean

Development Mechanism (CDM) in the next five years are limited, other than a relatively modest new source of demand from Australia.

The European Emission Trading Scheme already has a large number of credits available, inherited from the previous allocation periods. However, new potential markets in South Korea and China may start to have an impact on the carbon markets by the end of this period.

The future of the PTC in the USA will be the main variable affecting the overall market size over the next three to four years. This uncertainty will impact on the market volume, as the decision on PTC duration will affect both project and manufacturing investment in the USA. Despite an exceptional installation rate in 2012, 2013 will be less successful for the USA wind sector.

Overall, GWEC expects to see a global average annual market growth rate of about 8% for the next five years, but with a strong 2012 and a substantial decrease in 2013.

It estimates that total installations for the year 2012 will be about 46 GW, with a 19% cumulative market growth. This performance is well below the 28% average for the last 15 years, but represents substantial growth in difficult times. GWEC expects that total capacity will be just below 500 GW by the end of 2016, with an annual market of just under 60 GW in that year.

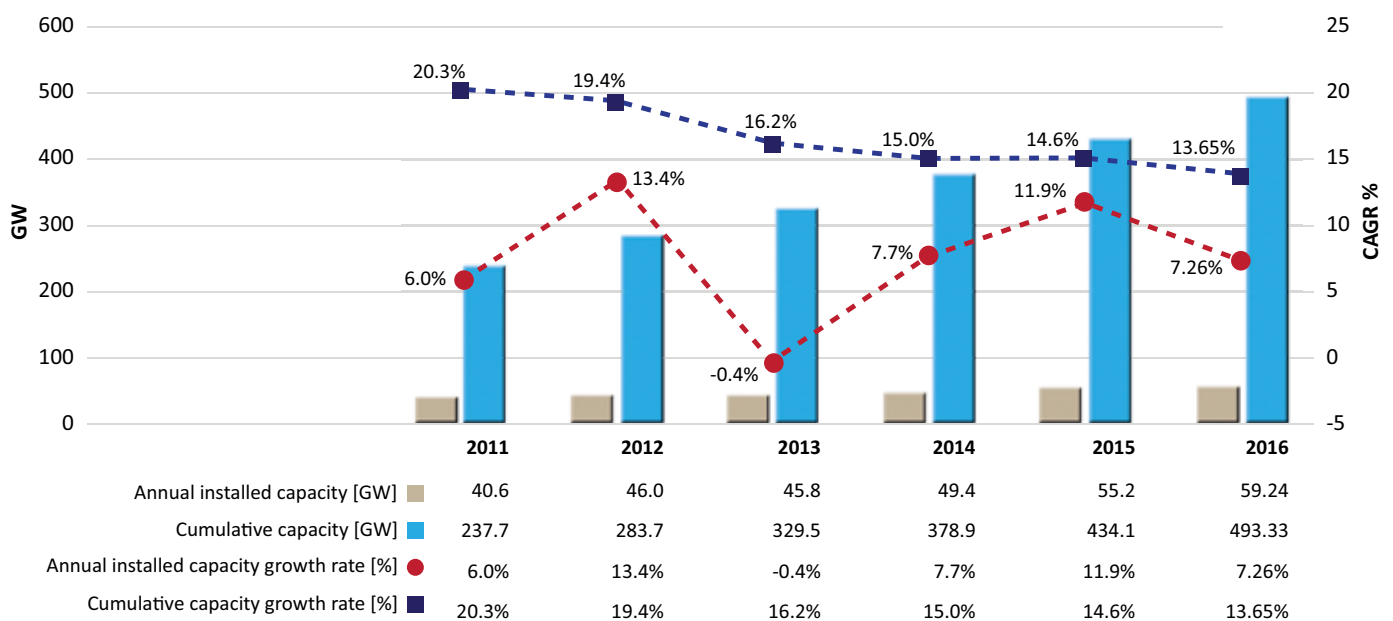


Figure 3: Expected growth trajectory 2012-2016