MARKET FORECAST FOR 2014 – 2018

California, US © GWEC

On the whole, the market diversification trend which has emerged over the past several years intensified during 2013, and is expected to continue to do so over the next several years. New markets outside the OECD continue to appear, and some of them will begin to make a significant difference to overall market figures. Inside the OECD, as wind power approaches double digit penetration levels in an increasing number of markets, and as demand growth either stalls or goes backwards, incumbents feel increasingly threatened. The fight for market share and policy support in these markets is becoming more and more intense. As a result, most of the growth in the coming years will be in markets outside the OECD.

The competition with incumbent fossil generation will continue until and unless there is a global price on carbon, a prospect which few look for any time soon. However, regional and national carbon markets are starting to show some promise, although it will take some time to see if they begin to have a systemic effect on the market. The shine is starting to come off of the notion of the 'Golden Age of Gas', much touted in recent years, as the environmental and climate impacts of the fracking revolution in the US begin to emerge, and as artificially low prices begin to rise. That, combined with political unrest in the hydrocarbon-rich parts of the world, has given wind and other renewables a competitive boost in terms of price.

Today, in the absence of a concerted effort to combat climate change, it is wind's cost competitiveness that is its greatest advantage in the market place. In Brazil, South Africa, Turkey, Mexico and elsewhere, wind is competing directly and successfully with heavily subsidized incumbents – so successfully in fact that in an auction last August in Brazil, wind power was excluded to 'give the other energy sources a chance'. Wind is coming in about 30% cheaper than the notorious giant World Bank financed coal-fired power plants in South Africa, and we have heard tell of PPAs being signed for wind power in the US as low as USD 20/MWh; which of course translates into about USD 43 with the PTC, but still extremely competitive.

National and regional policy are still the main drivers for wind energy deployment. The boom and bust cycle in the US is driven by on-again, off-again policy; China's support for wind as a major pillar of its energy strategy supports the continued growth in that market; and in the EU, the debate over 2030 climate and energy policy dominates the perspective for wind going forward, both on and offshore. But it is safe to say that market growth over the next five years will be concentrated in Asia, Latin America, and Africa – that's where the 'easy' growth from rapid increase in demand and strong economic growth will come from.

The 2013 market saw China back on top, installing about five times as much wind power as Germany in the number two spot. The 2012 market leader, the US, dropped back to sixth place, behind Canada (which had a record year), and just ahead of Brazil. Despite a lackluster year, India moved into fourth place, right behind the UK, which had a good year both on and offshore.

When we did our projections for the 2013-2017 market one year ago, we underestimated the drop in the US market by about 3 GW; but because of the nature of the PTC re-authorisation and the strong pipeline of new projects, we look to make up that 3 GW in 2014. All in all, 2014 looks to be a record year, with annual market growth of about 34%, to bring the annual market to about 47 GW, with strong installations in North America and Asia, and the Brazilian market really beginning to come into its own. Brazil, Mexico and South Africa will figure increasingly strongly in the annual market figures in the years to come. After 2014, we expect the market to return to a more 'normal' annual market growth of 6-10% out to 2018. Cumulative growth will rise to nearly 15% in 2014, but average 12-14% from 2015 to 2018. Total installations should nearly double from today's numbers by the end of the period, going from just over 300 GW today to just about 600 GW by the end of 2018.

This puts us more or less on track although a bit behind the 'moderate' scenario in our last Global Wind Energy Outlook published in 2012. In order to put the industry back on the track of the strong growth numbers from the last decade, we will either need to see a global price on carbon or unexpectedly strong economic and demand growth, or both; and neither of them seem likely from the vantage point of March 2014, at least within the five year period out to 2018.

REGIONAL DISTRIBUTION

While global markets will continue to be dominated by Asia, Europe and North America, new markets start to make a real difference over the next five years. We can expect Brazil to move up to 3rd or 4th place in the annual market rankings over the next couple of years, and break into the top ten in terms of cumulative installations as early as the end of 2014. South Africa is finally taking off, and this will hopefully lead to a mini-boom in Southern and Eastern Africa over the next five years. The real wild cards at this point in time are Saudi Arabia, with its ambitious goal of up to 50 GW of solar and wind by 2030; and Russia, where there are early signs that it might begin to exploit its enormous wind resources in the not too distant future.

ASIA

Last year we were somewhat skeptical about the Chinese government's ambitious target of 18 GW in new installations in 2013; in fact they installed just over 16 GW, rebounding from 2012's slump to 'only' 12.9 GW. In the meantime, the government has set a new target of 200 GW of wind by 2020,

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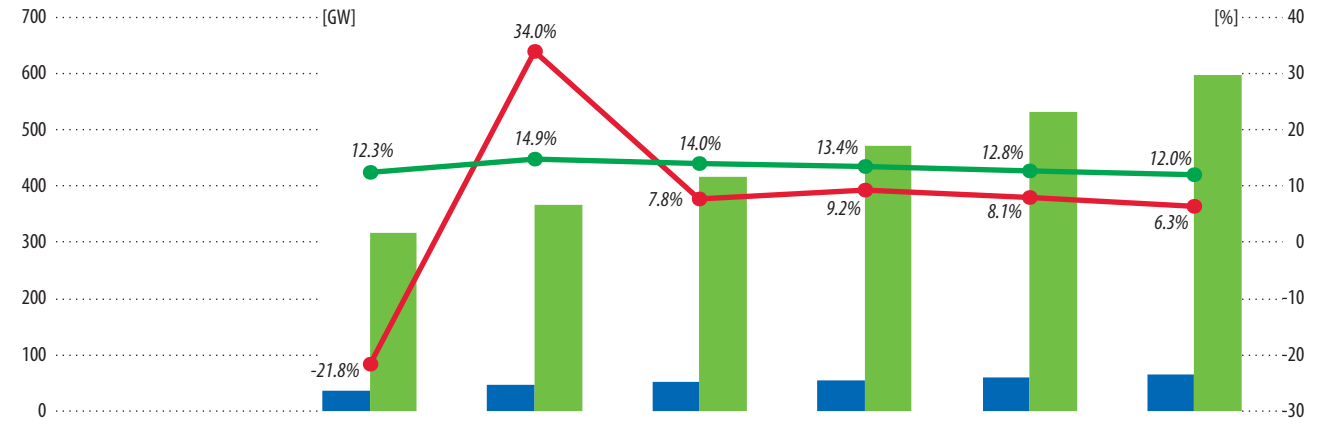


	2013	2014	2015	2016	2017	2018
Cumulative [GW]	318.1	365.4	416.4	472.1	532.3	596.3
Cumulative capacity growth rate [%]	12.3%	14.9%	14.0%	13.4%	12.8%	12.0%
Annual installed capacity ([GW]	35.3	47.3	51.0	55.7	60.2	64.0
Annual installed capacity growth rate [%]	-21.8%	34.0%	7.8%	9.2%	8.1%	6.3%

Source: GWEC

which implies a market of at least 15.5 GW a year for the rest of the decade; and if the past is any indication, they are likely to exceed it. Furthermore, the Chinese offshore segment is expected to get underway in earnest in 2014.

In India, much will depend on the outcome of the national elections to be held in May of 2014. The paralysis that currently plagues New Delhi, resulting in the stop/start policy situation which has hampered market growth over the past two years, will hopefully come to an end. A new 'National Wind Mission' is a welcome step, but what is really needed is clear, stable national policy and government investment in infrastructure, including strengthening transmission, to continue to fuel India's economic growth.

The post-Fukushima energy revolution continues to stall in Japan, at least as far as wind power is concerned, and we expect moderate markets of 2-300 MW per year over the coming period, until and unless the electricity market reform, which was almost passed last year, becomes a reality. While heavily emphasizing offshore, this market will probably not rack up large numbers until at least the end of this decade. South Korea will move steadily forward with its offshore programme while the onshore industry struggles; and we are likely to see a steady stream of new projects in Mongolia, the Philippines, Pakistan and Thailand.

All in all, nearly 120 GW of new wind power will be installed in Asia over the five year period, and Asia will very likely pass Europe in terms of cumulative installed capacity when we do the totals at the end of 2014.

EUROPE

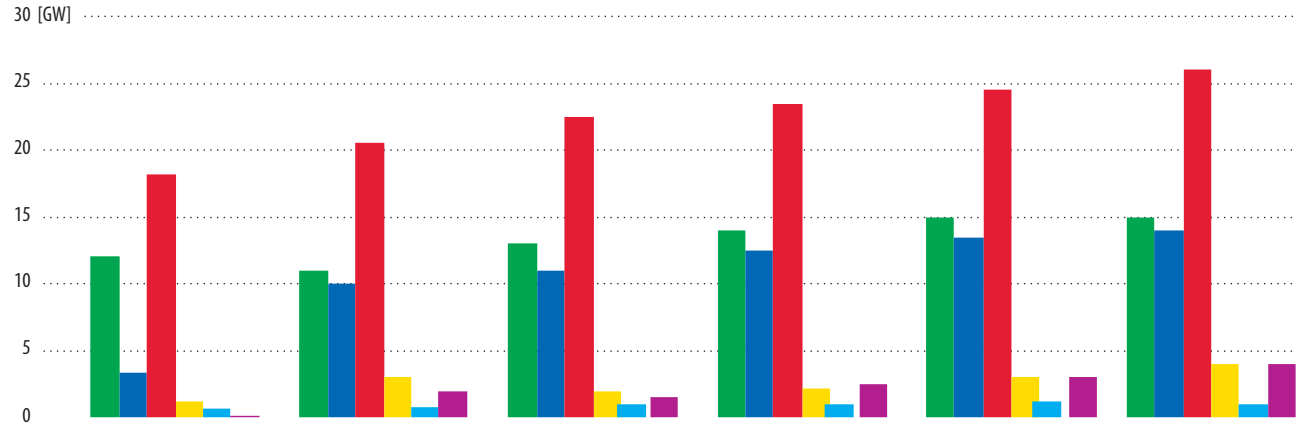
The European market shrunk by almost 6% in 2013, which was less than many expected; but somewhat worryingly, there was more concentration in the two leading markets (Germany and the UK) than has been the case for a number of years. Chopping and changing of policies by politicians continues to be the bane of many markets, and the economic collapse in Spain has hit Europe's second largest market very hard. France, Italy and Bulgaria are just a few of the promising markets which have stalled in the last year.

The offshore segment increased its annual market by 50% to install over 1,500 MW, but given the debate in a number of key markets it's not clear if and how Europe is going to meet its target of somewhere in the vicinity of 40 GW in the water by 2020. However, it is expected that Germany will finally pick up some of the slack in offshore and its onshore market is expected to remain strong, along with Poland, Sweden, Denmark, Portugal and some others; but it's going to be a rocky few years until and unless the debate over 2030 policy is decided. Regardless, the strength of the existing 20/20/20 legislation will support the installation of about 68 GW over the period from 2014 to 2018.

NORTH AMERICA

The US finished a disastrous 2013 with its strongest ever pipeline of projects – more than 12,000 MW under construction – and this bodes well for 2014 and 2015 installations. But what next? Will the PTC be extended again? Solid proposals for comprehensive energy tax reform are in the works, but do they have a chance of passing a fractious Congress? Anyone

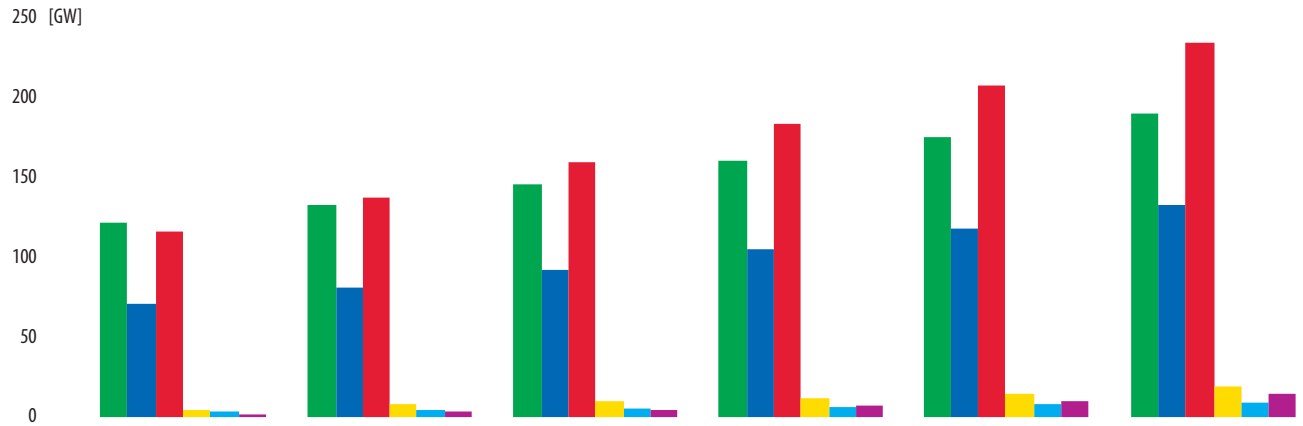
ANNUAL MARKET FORECAST BY REGION 2013-2018



	2013	2014	2015	2016	2017	2018
Europe	12.03	11	13	14	15	15
North America	3.06	10	11	12.5	13.5	14
Asia	18.22	20.5	22.5	23.5	24.5	26
Latin America	1.24	3	2	2.2	3	4
Pacific	0.66	0.8	1	1	1.2	1
Middle East and Africa	0.09	2	1.5	2.5	3	4

Source: GWEC

CUMULATIVE MARKET FORECAST BY REGION 2013-2018



	2013	2014	2015	2016	2017	2018
Europe	121.5	132.5	145.5	159.5	174.5	189.5
North America	70.8	80.8	91.8	104.3	117.8	131.8
Asia	115.9	136.4	158.9	182.4	206.9	232.9
Latin America	4.8	7.8	9.8	12.0	15.0	19.0
Pacific	3.9	4.7	5.7	6.7	7.9	8.9
Middle East and Africa	1.3	3.3	4.8	7.3	10.3	14.3

Source: GWEC

with answers to these questions should step to the head of the class.

Canada had a record year in 2013, and is likely to have another in 2014, and a strong 2015, but beyond that remains a question mark, and a question to be answered on a province-by-province basis. Mexico's energy market reform is actually a long term bright spot, as combined with a national renewable electricity target of 35% by 2024, it amounts to the government challenging the wind industry to install ~2,000 MW a year from now until 2024, which is the most likely means for achieving that target. Key implementing legislation following the constitutional amendment last December is expected in April 2014, and much will be clearer by when this is settled.

Needless to say, North America is the most difficult part of this forecast, as it is the most volatile of all markets. Nonetheless, we expect to see an additional 61 GW of new wind power installations coming on line in the region from 2014-18.