



# MARKET FORECAST 2016-2020

After setting new records in 2014, the wind power industry surprised many observers with another record breaking year in 2015, chalking up 22% annual market growth and passing the 60 GW mark for the first time in a single year; and this after having broken the 50 GW mark for the first time in 2014. Once again, the big story was China, installing an astonishing 30.8 GW against the backdrop of a slowing economy and nearly flat demand. Europe and the United States had surprisingly strong years; and Canada, Brazil, Mexico and other 'new' markets continued to develop.

### Three big trends will continue to drive growth in the medium term:

**Climate:** the positive outcome of the climate negotiations at the UNFCCC's COP 21 in December was an unexpected pleasant surprise. The long term targets adopted by 186 countries gathered in Paris is a *de facto* call for a 100% emissions free power sector by 2050 at the latest; and given the lack of any serious competition from any other emissions free power sources, this means a power sector supplied largely or completely by renewable energy, with wind and solar leading the pack.

The real test of the Paris Agreement, of course, will be in the implementation, and much could go wrong. However, we were heartened by the discourse at the dozen or so business conferences held in the margins of the Paris talks, where the message was clear: "the future is renewables, and that's the direction we're headed." It will take some time before that translates into concrete developments across a range of markets, but it may have already played a role in the very aggressive RE growth targets contained in the recently released 13<sup>th</sup> Five-Year Plan in China.

**Cratering prices:** while we have seen very low wind prices in the US market for some time, and the Brazilian and South African tendering systems have also generated low prices for the last several years, we have recently seen a spate of tender results in Egypt, Morocco, Peru and elsewhere with what up until now were unheard of prices outside the US plains states – in the vicinity of €40/MWh or below, and in the case of Morocco, below €30/MWh. The latest surprise was Mexico's first tender, with low prices for both wind and solar.

Is this the new normal? Time will tell, but it is clear that the costs of both wind and solar technology have fallen dramatically in recent years, and new and complex financing structures are creating the conditions for renewables to be competitive in an increasing number of markets. Of course, some of this is explained by the excellent wind resources in some of these locations, but the downward pressure on prices will continue, and not just in new markets. China is lowering its FIT for wind this year, and will do so again in 2018.

**US Market Stability:** The United States, as a pioneer in the global wind industry as well as having some of the best wind resources in the world, has had much lower prices than most of its OECD competitors for some time. The difficulty was always the on-again, off-again nature of the US market, as it was subjected to short term policy

frameworks which left policy gaps every few years and hampered the growth of the industry.

So it was very welcome news, and a big surprise to all except for those directly involved, when the US Congress passed and the President signed into law a long term extension and phase out of the Production Tax Credit (PTC), which has been the main federal policy support for wind energy in the US. The US wind industry now embarks on its longest-ever period of policy stability, and the potential implications of this go far beyond the US market: in terms of company strategies; manufacturing location choices; and development of the supply chain. Five years from now the US wind industry will be a very different and much stronger animal, we believe.

In addition to climate and competitiveness, energy security ranks high up on the list of drivers for the global market, as does the need to clean the air of the choking smog that is making more and more of the developing world's major cities unhealthy places to live. The demand for clean, sustainable and indigenous power sources to fuel economic growth will continue to grow, especially in emerging economies across Africa, Asia and Latin America.

So what about the short term? While it's very hard to turn the trends listed above into market forecasts for the next several years, we anticipate a period of sustained growth, although we do not expect the kind of spectacular growth we have seen in the last two years. After 'catching up' with the *Global Wind Energy Outlook*<sup>1</sup> Advanced Scenario in 2014, we've moved well ahead of it in 2015; and we now seem to have a much better chance of keeping on that track through 2020 than we thought 12 months ago.

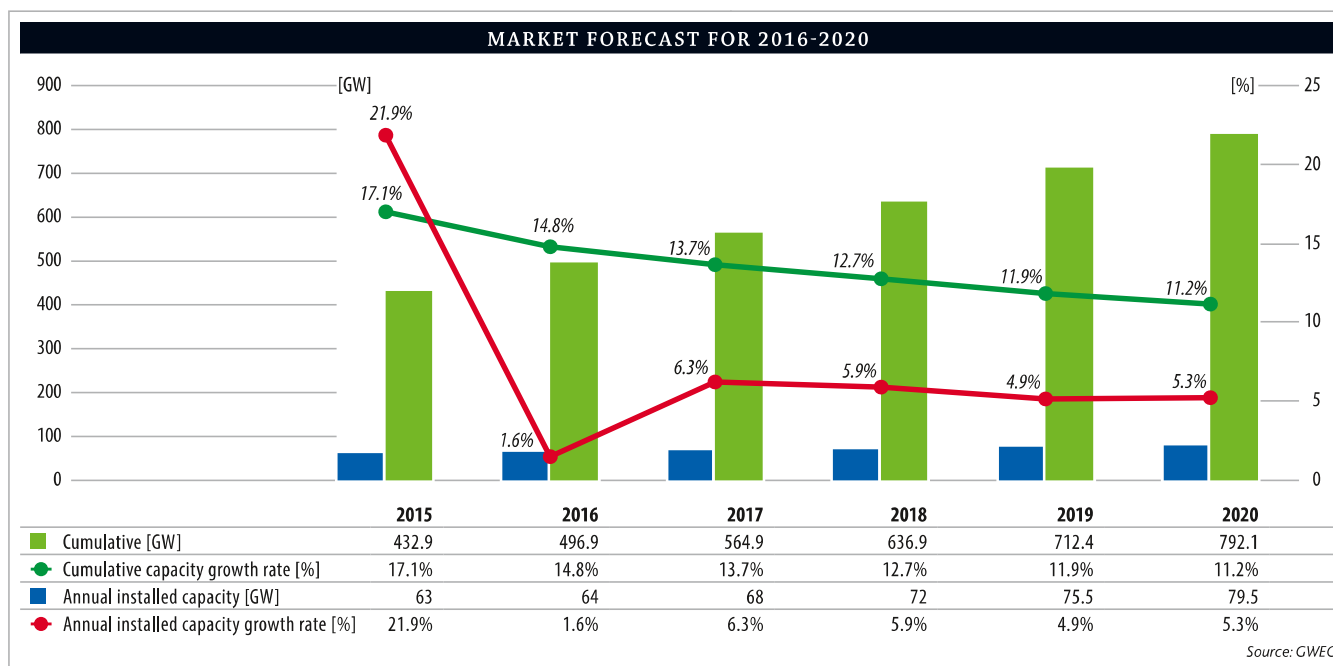
Last year at this time we projected a 2015 market of about 53 GW, and while it's nice to be prudent, that's quite a large variance. What were the main differences? China, for one: just as nobody predicted that China would install 23 GW in 2014, *nobody* predicted 30 GW in 2015...we were looking at a flat market in China for 2015. Likewise for the US, while we expected an increase in the US, we didn't expect that the market would essentially double from 2014 to 2015. For the rest of the world, we were reasonably close.

## REGIONAL MARKET DEVELOPMENT

Asia will continue to dominate the period from 2016-2020, capturing at least 50% of the global market, although its dominance may be tempered slightly towards the end of the decade. Europe will continue its steady pace towards its 2020 targets, although increasing policy uncertainty might mean some bumps in the road. With Mexico, Canada and the US all on a strong policy footing, North America should continue its strong growth for the rest of the decade.

Latin America will continue to be driven largely by Brazil, although there will be increasing contributions from

1 [http://www.gwec.net/wp-content/uploads/2014/10/GWEO2014\\_WEB.pdf](http://www.gwec.net/wp-content/uploads/2014/10/GWEO2014_WEB.pdf)



a variety of markets, including a large new potential market in Argentina. Africa and the Middle East continue to diversify, although in the short term it will be dominated by South Africa, Egypt and Morocco, with Kenya and Ethiopia coming on strong. The Pacific region will return to substantial growth with a period of policy stability in Australia.

## Asia

China surpassed the EU in cumulative installations in 2015, and will continue to drive Asian growth. Despite FIT cuts for wind as of this year and again in 2018, the new Five-Year Plan has upped the target for China's wind sector for 2020 once again, this time to 250 GW, which we would expect that the market will in fact exceed. Cutting the choking smog in major cities, reducing GHG emissions and enhancing energy security will be the main drivers. Also, we believe that we are now seeing the beginnings of the 'take-off' of the Chinese offshore sector, with about 1 GW of projects in the construction phase, adding a new dimension to the world's largest market.

Despite the Indian government's very public commitment to renewables' development, the wind industry only experienced modest growth in 2015, and it's not yet clear how fast the industry can grow given infrastructure limitations and the overall parlous state of the electricity industry's finances. The government is working hard to overcome these, however, and we expect modest growth in India throughout the period. Elsewhere in Asia, while we don't expect too much from South Korea and Japan in the short term, we do see new markets emerging every year, and the signing of the first PPAs in Indonesia are hopefully the beginnings of a large new potential market. Pakistan, the Philippines and Mongolia continue to grow, and we're hopeful that Viet Nam can begin to exploit its excellent wind resources before the end of the decade.

Overall, we expect the Asian market to roughly double between now and 2020, adding 177 GW over the period.

## Europe

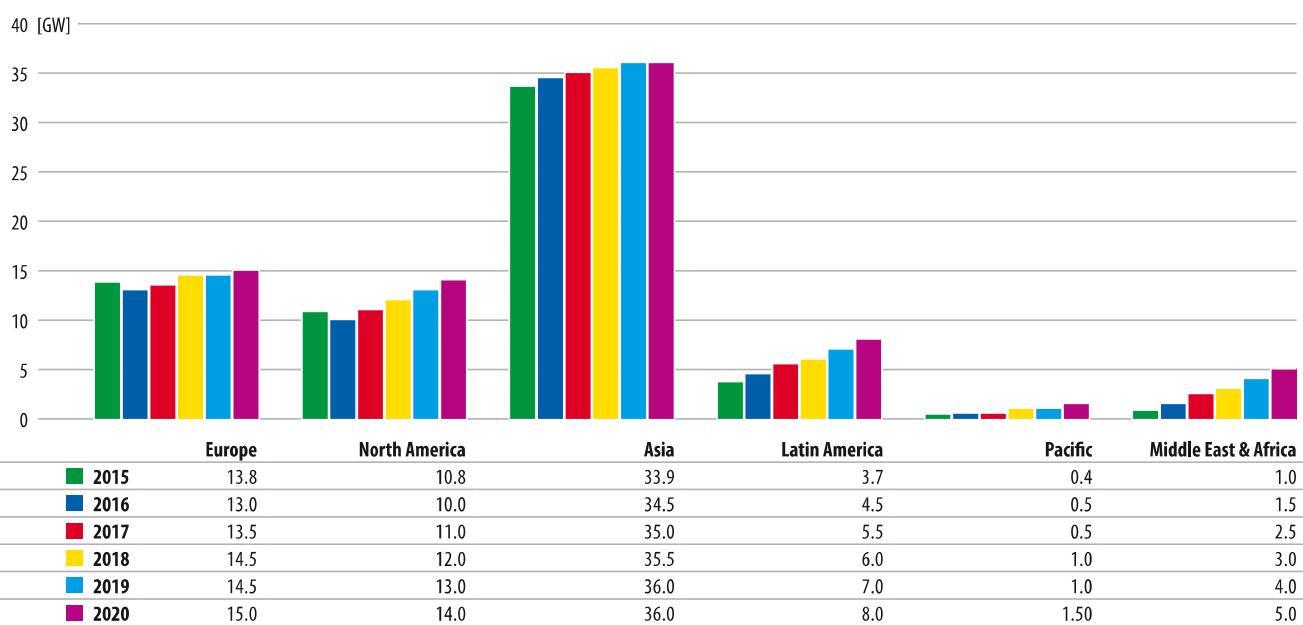
Germany posted extraordinary numbers in 2015, bolstered by more than 2 GW of offshore installations, which is not likely to be repeated in the near future. Poland was Europe's number two market last year, at least partly due to a rush to install prior to the change in the support scheme, and the UK is facing a period of policy instability which may, ironically, lead to stronger installations in the short term but does not bode well for the medium term. Turkey's market remains strong and is expected to grow significantly in 2016, and some southern European markets are recovering from the aftereffects of the financial crisis. However, it seems likely that there will be a small downturn in 2016, with later recovery at least in part dependent upon the outcome of EU-wide deliberations on post-2020 targets and support schemes.

The offshore sector, while unlikely to repeat 2015's 3 GW performance, which was about 24% of the overall EU market, seems on quite solid footing at the moment. The new generation of >5GW turbines is now starting to get rolled out in Europe and progress has been made on cost reduction targets, although there is still some way to go. Overall, we expect Europe to continue more or less in line with its 2020 targets, and add about 70 GW of new capacity between now and 2020.

## North America

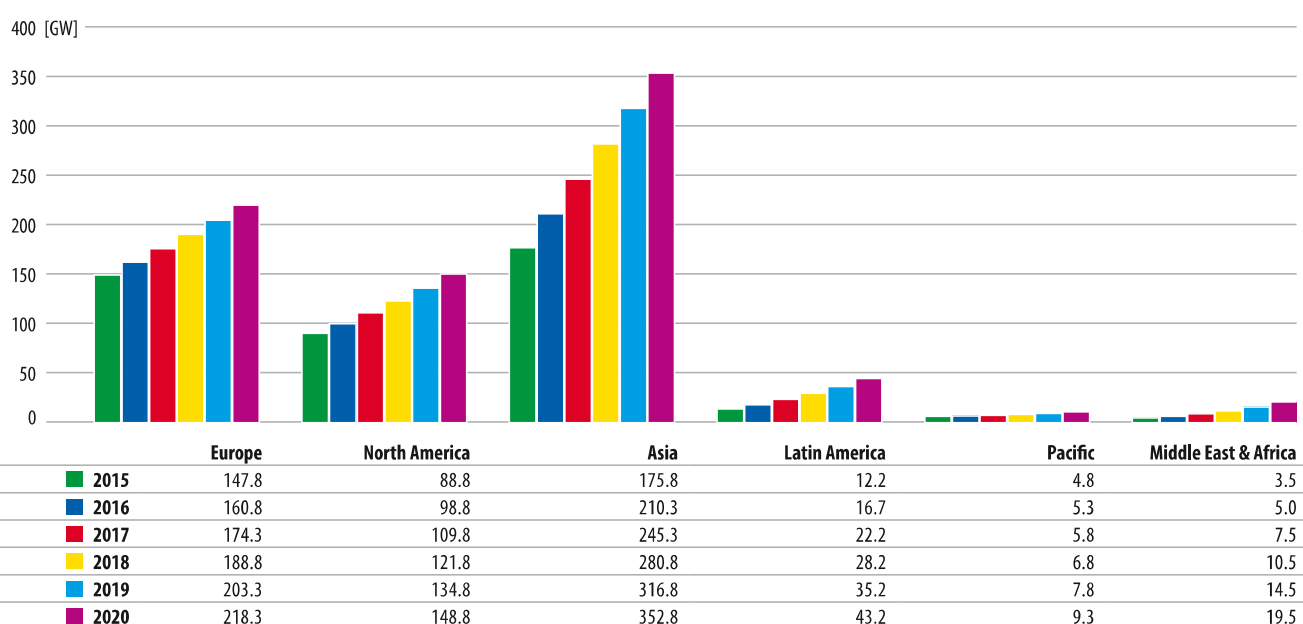
The US has always been very difficult to call because of the precarious, short term nature of the federal support scheme for wind power. Now that this is no longer the case, at least for the next five years, it becomes difficult to call for another reason, i.e., it could grow spectacularly, far above current predictions, depending on a number of

### ANNUAL MARKET FORECAST BY REGION 2016-2020



Source: GWEC

### CUMULATIVE MARKET FORECAST BY REGION 2016-2020



Source: GWEC

political and economic factors which are impossible to determine at this stage. Regardless, we expect a strong and increasingly stable market in the US over the next five years.

The big picture view of the Canadian market has also improved of late, with the recent election of a Liberal government in Ottawa led by Justin Trudeau, which is determined to resume Canada's leadership role in the inter-

national climate debate. Coupled with a very progressive provincial government in Alberta and increasing market diversity across the country, the world's 7<sup>th</sup> largest market (6<sup>th</sup> in terms of annual market in 2015) looks set for a period of solid growth. Mexico's newly reformed market is just getting underway, so it's too early to say whether it will reach its target of 2 GW/year any time soon. Overall, we would expect the North American market to add about 60 GW over the next five years.





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### Latin America, Central America and the Caribbean

Despite Brazil's political and economic woes, the wind sector continues to power ahead, although with some headwinds. With another 10 GW already contracted by 2019, and two auctions scheduled for 2016, we remain cautiously optimistic. Elsewhere in the region Chile and Uruguay will add capacity in 2016, although Uruguay is likely to pause there for a while. Peru's recent successful and very low priced tender results could mean that market is going to move in earnest, and there are some stirrings in Colombia.

But the big new story in Latin America is Argentina, with the advent of a new government and a new commitment to utilizing the country's vast renewable energy sources, sorting out the electricity sector's finances and re-establishing itself as a leader in the international climate debate. We could have a sizeable new South American market relatively soon. Much could go wrong, of course, but the current government is working hard to put things in place as soon as possible. We expect to see 30 GW of new wind power across the region by 2020.

### Africa and the Middle East

Jordan inaugurated its first wind farm in 2015, underlining the diversification of the uptake of wind power across the region, although most of them are small markets, at least for now. South Africa, despite Eskom's financial woes which prevented the round four projects from reaching financial close in 2015, will continue to be the largest market in the region. Morocco will see a number of projects come on line over the next five years, mostly from the famous tender won by the consortium of EGP, Nareva and Siemens early this year. Egypt is still

a sleeping giant, waiting for the pieces to fall into place with their new support systems, but they still maintain very aggressive targets for 2022.

Ethiopia is rapidly taking steps to allow IPPs to take advantage of their tremendous wind resources, which augurs well for that market, and Kenya's Lake Turkana project finally started construction during 2015. Elsewhere in the region a number of smaller projects are at various stages of development, and we are very optimistic about the spread of wind power across Africa to meet the development needs of its growing economies, which will result in about 16 GW of new installations out to 2020.

### Pacific

After a relatively quiet year in the main market in the Pacific, Australia seems poised for another round of growth based on the clarification of the Renewable Energy Target, bringing some visibility to the market out to the end of the decade. Australia's new Prime Minister has shown a more positive attitude towards renewables than his predecessor, and the market for wind in Australia is expected to nearly double over the next 5 years. This, combined with some activity in the Islands and New Zealand, leads us to anticipate that about 4.5 GW will be added in the region in the period from 2016-2020

So, this is what we expect to see over the next five years, from the vantage point of the end of March 2016. While we can expect that there will be both positive and negative surprises in various markets, the larger factors driving the industry are robust and likely to remain so for the period. We'll revisit this in 12 months' time to see how accurate we were and to adjust the projections once again.

A close-up, profile view of a man with a beard and mustache, wearing a blue wristband, working on a small electronic component. He is in a workshop or lab setting with a computer monitor and shelves in the background.

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