A WORD ABOUT WIND

SEPTEMBER 2016

LANDMARK DEALS

Featuring an interview with David Jones from Allianz Capital Partners

CONTENTS

Editorial: Brexit vote fallout

Top Ten: Key transactions of the last 12 months

Q&A: Jérôme Guillet on funding for offshore projects

Interview: Allianz's David Jones discusses US growth

Opinion: Lars Rytter on wind's next wave of M&A

Interview: ACWA's Paddy Padmanathan on MENA

EDITORIAL

by Richard Heap,
editor at A Word About Wind

"The deals done in the coming months and years will determine whether Brexit is a 'success'."

It is too early to tell what impact the UK's decision to leave the European Union in June will have on the country. But there is one key indicator that both sides are looking at: deals.

Leavers argue that the UK will be able to negotiate strong trade deals with other countries after Brexit and that corporates will stay active. Remainers fear this will not be the case.

And you can be sure commentators from both sides will seize on individual deals, both good and bad, to show 'Brexit effects'. That could be a big company choosing to downsize, or a British manufacturer securing a major overseas deal. Either way, Brexit will feature in the ensuing discussion, as it is the deals that are done in the coming months and years that will determine whether Brexit is a 'success'. Deals show if a market is healthy or not.

It is the same in the wind sector – and is one of the reasons we love coming to work in the morning. We know the next big deal is just around the corner, and that we will then work out what it means, what it says about the market, and what happened behind the scenes.

This is why we have chosen to focus on individual deals in our fourth special report of 2016.

In this report, we look at some of the most interesting deals of the last 12 months, including mergers, acquisitions, stock market listings, project financings, and more. We round up ten of the most interesting and important on page 5, and what they say about the market.

And we have also spoken to two big-name investors about their most important wind deals of the last year, and how these transactions fit into their broader investment strategies.

The first of these interviews is with David Jones, head of renewable energy at Allianz Capital Partners, which holds wind and solar assets worth over €3bn for German insurer Allianz (see page 10). Since the company first invested in renewables in 2005 it has focused on Europe, but in the last year has done its first deals in the US. Jones talks about that shift; how the Brexit vote could affect deal-making in Europe; and new markets that Allianz could enter.

And the second of these interviews is with Paddy Padmanthan, chief executive of Saudi Arabian water and electricity company ACWA Power (see page 17). The firm has a $32bn portfolio including 22.8GW of electricity-generating schemes; produces 2.5million cubic metres of water each year; and is now working on its first big wind farm, in Morocco. This is a key project in a market that has achieved global record lows for the cost of wind energy.

Padmanathan tells us all about Morocco; where the next key deals are likely to happen in the MENA region; and why low oil prices will continue to shape the demand for renewables.

And that is not all. We have also spoken to Green Giraffe managing director Jérôme Guillet (see page 8) about the latest shifts in funding for offshore wind, including Chinese investment and the US; while former Nordex, Senvion, Suzlon and Vestas man Lars Rytter (see page 15) gives us his view on what will be the next wave of mergers and acquisitions in the wind industry.

But first, have a look at page 5 – and let us know if you disagree. We'd love to hear.

All the best,

Rich

A Word About Wind
www.awordaboutwind.com
editorial@awordaboutwind.com
T: +44 (0)20 7193 6013
+1 (917) 310 3307

2nd Floor,
167-169 Great Portland Street,
London, W1W 5PF

Editor: Richard Heap
Designer: Lee Washington
Sales & Membership:
Joe Gulliver
Publisher: Adam Barber

Cover image: Grant Burton

Offshore Wind Project *Intelligence*

ATTEND RENEWABLES MARKETPLACE 2016 AND RECEIVE YOUR FREE BUMPER EDITION

The Offshore Wind Project Intelligence report is a high-level snapshot of the UK and European offshore wind markets.

Available exclusively to RenewableUK members and delivered directly to your inbox, it contains the latest in offshore wind **project news**, **portfolio analysis** and **new-build programme insight**.

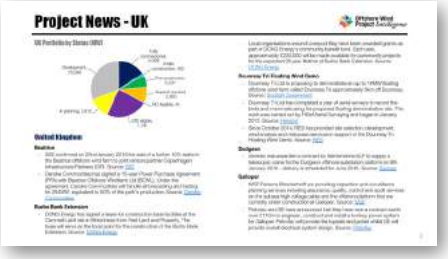
Each monthly edition will contain a five-year component related forecast and currently covers the following:

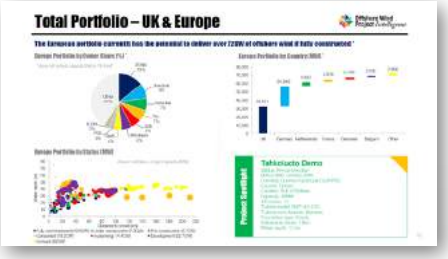
- **Foundations**
- **Turbines**
- **Array Cables**
- **Export Cables**
- **Substations**

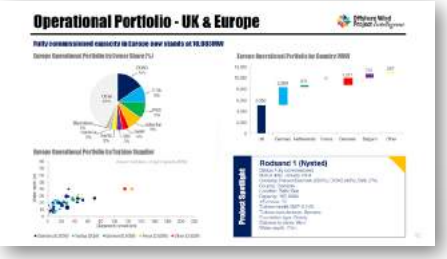
If you are interested in a 360° view of the market, this report is for you.

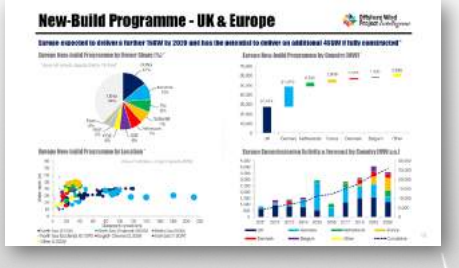
For more information on this report and other RenewableUK services please contact our Head of Membership at:

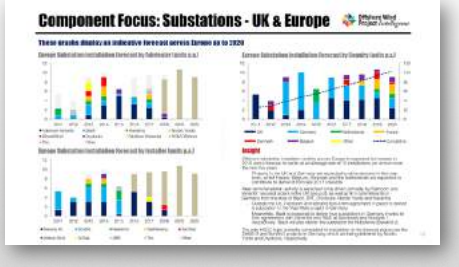
Jeremy.Sullivan@RenewableUK.com
+44 (0)20 7901 3016











DEALS OF THE YEAR

It has been a busy year in wind despite global economic headwinds. Here we look at ten of the most important mergers, listings and project-specific deals.

What is a 'landmark' deal? In our view, it does not necessarily need to be the first, the biggest or the most complex. It can be, but it also needs to tell us something about how the wind sector is developing, by showing an important trend, marking a major milestone or shining a light on companies' investment strategies.

Here we pick the the deals that we think best fit this criteria. Our editorial team has looked back through all of our newsletters from the last 12 months, identified dozens of deals that were particularly interesting, and then narrowed it down to a final ten.

Agree? Disagree? Let us know your views at: editorial@awordaboutwind.com ■

Nordex acquires Acciona wind arm for €785m

Manufacturers are merging to balance their growth plans in established and new markets

It has been a busy year for manufacturer mergers and acquisitions. In November, General Electric concluded its €12.4bn buyout of French firm Alstom's energy assets; and, in June, Siemens and Gamesa signed binding agreements to form a company with combined sales of around €9.3bn.

But the most interesting to complete in the last 12 months was the €785m acquisition by German manufacturer Nordex of the wind arm of Spanish counterpart Acciona, which concluded in April.

In this deal, Nordex paid €366m in cash and issued 16.6million shares worth €419m to Acciona, and gave Acciona a 29.9% stake in Nordex. The deal gives Nordex a stronger foothold in emerging markets and the Americas, and access to Acciona turbines aimed at larger projects. This is significant given that Nordex is very exposed to the market in Germany, where growth is set to slow as the government limits the expansion of onshore wind.

The deal bolsters Acciona's presence in continental Europe, which is significant given that the emerging markets in which it specialises are higher risk than those that Nordex focuses on. It also gives Acciona access to more specialised turbines that can help it push into new markets.

This tie-up is important because it shows the challenge that companies in the wind sector are facing as they seek to strike a balance between operations in established and emerging markets.

Enel Green Power sells Portuguese arm for €900m

Institutional investment in established markets allows developers to recycle their capital

Firms across the wind sector have been eyeing moves into new markets. Led by Francesco Venturini, utility Enel Green Power embodied this shift when, in November, it sold Portuguese subsidiary Finerge to an arm of First State Investments for €900m.

Enel Green Power said it was selling its operations in the slow-moving Portuguese wind market to enable it to focus on expansion in emerging markets, particularly in South America.

This strategy carries risks, though. In 2015, investors took $735bn out of emerging markets, which is the first time in more than 25 years that more money flowed out of these areas than went in.

For Enel Green Power, this gives it an opportunity to buy cut-price assets in the wind sector, although it comes with the risk that the company could end up over-exposed to economies that are shrinking.

This deal is linked to a €3.1bn restructuring where parent company Enel has been reintegrating Enel Green Power into its main business, and thus putting renewables at the heart of its growth plans. It is a similar goal at its German counterparts E.On and RWE, which have been looking to put renewables at the heart of their future growth plans by splitting off their renewable operations into new subsidiaries.

China Three Gorges Corporation expands in Europe

Chinese investors seek infrastructure deals as financial troubles loom in their home market

In October, state-backed Chinese firm China Three Gorges Corporation agreed to buy a stake of up to 30% in the up-to-1.1GW Moray scheme in UK waters from EDP Renovaveis, as long as the scheme receives subsidy support from the UK government. This latter aspect is still in doubt.

It followed this in June by buying an 80% stake in WindMW, the developer of the 288MW Meerwind Sud and Ost in the German North Sea, from Blackstone. Meanwhile, in the onshore sector, the firm has agreed to buy 49% of two EDP portfolios in Italy and Poland totalling 598MW totalling €392m.

These deals show that Chinese investors are keen to buy into the European wind sector, and particularly in gaining offshore experience that they can use in China. We have also seen China's SDIC Power buy Repsol's UK offshore wind arm for €238m.

The interest being shown in Europe by wealthy Chinese investors should give wind firms the confidence that there will be money flowing into Europe, even if the financial markets slow after talks start over the UK's decision to leave the European Union.

Iberdrola forms US wind giant with $3bn UIL buyout

European investors are looking to grow in the US after production tax credit extension

In December, Iberdrola's US arm completed the buyout of UIL Holdings to form Avangrid, which is the US's second-largest wind producer with wind farms totalling 5.6GW among its $30bn assets.

The deal is worth around $3bn and involved listing Avangrid on the New York Stock Exchange. The Spanish utility announced the deal in February 2015 and said it was a way to diversify into the Americas and away from its paralysed home market.

The conclusion of the takeover in December could hardly have been better timed as it coincided with the decision of the US Congress to extend the wind production tax credit for five years, so that it applies to projects starting until the end of 2020.

This is a key incentive that has given long-term certainty to US wind developers and investors; and we expect to see other European firms like Iberdrola make a move in the US in the next few years.

Total makes renewables push with €950m Saft takeover

Oil and gas giants are looking afresh at green energy and storage after oil price drubbing

French oil and gas giant Total announced in May that it is set to buy energy storage specialist Saft Group for €950m. Saft manufactures batteries that are used by companies in sectors including rail, telecoms and aerospace; and Total sees the acquisition as a way to grow in renewable energy.

The timing of Total's move is relevant because it shows that oil and gas giants that have historically avoided investing in renewables including wind are now looking to do so. This is partly a result of the low price of oil, which is still trading at around $50 a barrel. Specifically, if investment from Total can help Saft make breakthroughs on battery storage then the whole wind sector could benefit.

Others that have made attempts to bolster investment in wind in the last year include Shell, which set up its wind-focused New Energies division in June; and BP, which has committed to renewing its interest in wind. These giants are all ones to watch.

Dong Energy concludes £11bn listing in Copenhagen

Offshore wind giant concluded the largest stock market listing so far in 2016

Danish utility and leading offshore wind developer Dong Energy, led by chief executive Henrik Poulsen, pulled off the biggest stock market listing of the year so far in June as it listed 17.4% of the company in Copenhagen.

This valued the firm at 106.5bn Danish kroner (£11bn) and enabled the Danish government to cut its shareholding from 58.8% to 50.1%; and Goldman Sachs to cut its own shareholding from 17.4% to 13.4%. Goldman bought a 19% stake in Dong in a controversial deal that concluded in 2014 and nearly brought down the government, and has doubled the value of its investment since then.

The deal is significant because it has shown that investors have confidence in Dong's plans to invest in Europe, where it is working on projects including the 1.2GW Hornsea 1 and 580MW Race Bank, and to expand in Asia and North America. This should support growth in offshore wind globally.

It is also important that the firm managed to seal the deal after three previous aborted attempts, as it shows that investors are confident in offshore wind as an asset class. The conclusion of the IPO came despite economic uncertainty in Europe.

The only other notable wind IPO this year was Senvion's listing of 28.75% of the firm in Frankfurt in March to raise €294m. This followed the firm's aborted attempt to raise €700m for a 46% stake.

RES Americas sells rights to 1GW Ocean Wind

RES supports growth of US offshore sector in pioneering deals with Dong Energy

In February, RES Americas sold development rights to Dong Energy for a potential 1GW offshore scheme called Ocean Wind in US waters, off the coast of New Jersey. This followed a similar deal that the companies concluded in June 2015 for the potential 1GW Bay State scheme off Massachusetts.

These two deals have attracted interest because of Dong's move into US offshore, but we find it interesting how RES is gaining value from these deals. RES has shown it can win development rights for offshore schemes in Bureau of Ocean Energy Management auctions, which it can then use to bring in commercial partners such as Dong. This gives RES a stake in any development on the site while also saving companies like Dong the time and hassle of entering the auction process.

We expect to see more deals of this kind as the BOEM awards more offshore development rights, and it could also provide a commercial model as offshore wind takes off in Asia.

Google signs 701MW of power purchase agreements

Developers benefit as blue-chip firms step up renewable energy plans after Paris agreement

Google signed power purchase agreements totalling 701MW at four wind farms in December to power its data centres in the US and Europe. The online search giant agreed to buy electricity from EDF Renewable Energy's 200MW Great Western wind farm in the US state Oklahoma, as well as a 200MW deal with RES Americas and 225MW with Invenergy. Meanwhile, in Europe, it agreed a 76MW deal with Eolus Vind in Sweden.

The timing of the deal is significant as it came shortly before the conclusion of the United Nations COP21 climate change talks in Paris, where 196 countries signed the Paris climate deal. These nations committed to limiting 2050 global warming levels to below 2°C from pre-industrial levels; and the talks were accompanied by a slew of blue-chip companies making commitments to wind and other renewables. These included Goldman Sachs, Nike, Starbucks and Wal-Mart.

The Google deals highlight the growing importance of wind power to blue-chip companies, which benefit from long-term certainty over their electricity costs and the good PR that comes with buying from renewable sources. This in turn is a benefit for wind farm owners, and non-utility customers accounted for 52% of the 4GW of US wind PPAs last year.

However, some experts warn this could prompt utilities to seek protection from these direct deals.

SunEdison slides after $2.2bn Vivint deal collapses

Aborted Vivint deal sparks panic in renewable energy yieldcos and crisis at SunEdison

On 20 July 2015, US developer SunEdison announced a $2.2bn acquisition of domestic solar firm Vivint Solar to enable it to expand its service offer. The deal followed an eight-month buyout spree during which SunEdison, then led by chief executive Ahmad Chatila, moved into the wind sector by buying US firm First Wind for $2.4bn; and announced takeovers of Continuum Wind, Latin American Power and a stake in Brazil's Renova.

However, the Vivint deal also highlighted to investors how debt-laden the business had become; and how reliant it was on continued growth at its listed yieldcos TerraForm Global and TerraForm Power.

Investor confidence and SunEdison's share price both plummeted, which resulted in Vivint terminating the deal in March, and started the company's decline into bankruptcy protection.

This has since forced SunEdison to retrench from its plans in the wind sector. The firm has axed its planned acquisitions in wind as it has struggled to find the money to complete them, and shifted its focus to its core solar sector. It has been selling operational wind farms and development projects, including the planned 600MW King Pine project in US state Maine, as it seeks to recapitalise.

This now-collapsed deal has also highlighted problems with the unsustainable growth model of US listed yieldcos, which offered investors high returns that could only be delivered if they kept buying assets. Competition from other investors in the sector has pushed prices to unsustainable levels. The bright side is that smart investors will now know that wind farms are not fast-growth assets.

SSE reaches £2.6bn financial close on 588MW Beatrice

UK offshore wind sector faces uncertainty over Brexit vote impact and government policy

On 23 May, an SSE-led group reached financial close on the £2.6bn 588MW Beatrice scheme in waters off Scotland. The 84-turbine project is set to be located in the Outer Moray Firth, and is owned by SSE (40%), Copenhagen Infrastructure Partners (35%) and SDIC Power (25%).

This is important as it was the last major offshore wind financing concluded for a scheme in UK waters. Companies seeking funding for schemes in UK waters are now facing some uncertainty after the British people voted on 23 June to leave the European Union, which has caused currency fluctuations, hit bank balance sheets, and called into question UK offshore wind subsidies. Further subsidy support is dependent on cost reduction targets being met.

Beatrice is also the first development-stage offshore wind farm in European waters with Chinese backing to reach financial close. China's SDIC Power bought Repsol's Beatrice stake in February.

Q&A: JÉRÔME GUILLET, MD, GREEN GIRAFFE

Richard Heap met Green Giraffe managing director Jérôme Guillet to discuss the latest shifts in offshore deal-making, including tendering changes, emerging markets and Chinese investment.

How much interest from investors are you seeing in offshore wind?

It's becoming more mainstream. We now have a lot of assets in operation, so people are getting more comfortable with the risk for operational assets.

The utilities are looking to recycle cash and other sellers are looking to make a profit, and on the investor side it's becoming a better understood asset class and it is still providing attractive returns. It's also providing scale, so that's of interest to a number of players, and it's green energy so it's good.

Are new players entering the market?

In terms of investor types, it's not that different. There's an increasing number of financial investors, many of which are passive investors looking to take stakes behind someone with operational expertise. These include pension funds, infra funds, even corporates behaving as investors. The numbers are increasing, but the types of investors aren't really changing.

And what about investors from China?

The Chinese are not frequent investors in the power market, at least not in Europe, so it is definitely a new thing to see them investing in offshore wind. It's the new sector for everybody, and they have projects on their shores, so maybe they want to learn. Will we see more? Yes, probably. But don't ask me to evaluate the political or strategic rationale behind these moves!

What sort of returns could they get?

For unlevered operational assets you're probably at 7%, and for construction risk it's a bit more. Then if you lever it you get a bit more again. All of these numbers depend on what kind of assumptions you make but, once you normalise it to a standard set of assumptions, you see reasonable consistency on pricing.

What is the next big transaction that you're working on?

We are advising on the debt raising processes at the up-to-370 MW Norther and 309 MW Otary projects in the Belgian North Sea, which are due to reach financial close in the next few months. Belgium has been changing its offshore wind tariff, so the exact timing depends on the formalities around that.

What is the next big trend you expect in offshore?

The move to tenders for feed-in tariffs is going to be a small revolution in the sector.

It's not going to change how projects are financed, but rather how they're developed. Who's bearing the development expense?

What kind of risks are you taking pre-tender and pre-bid? It's going to be interesting to see which tenders bring the most value or attract the most appetite.

With Borssele I and II, which was awarded in July, you've already seen strong consortia with contractors involved, and that seems logical when you're trying to minimise the price of energy. Contractors know they are going to be pushed hard by the winning bidders, or excluded altogether if a rival is part of the winning bid, so they're going to say they want to do it directly and take an active part in these tenders.

Will the move to bigger turbines increase risks?

Offshore has always used cutting-edge turbines that are relatively or completely new, and that seems to have been a good risk to take to date.

There have always been teething problems but they've always been solved and, as long as bigger turbines continue to bring down the development costs, then that move towards bigger turbines will continue.

Which are Europe's most interesting emerging markets?

We are seeing decent volumes coming out of the Netherlands and France, alongside the established markets of the UK and Germany. There is also Belgium and Denmark. You're going to have several countries building 500MW-1GW each year.

> "The US will happen. The question is whether the next project is going to be in three years, seven years or ten years."

What about North America?

The US will happen. The question is whether the next project is going to be in three years, seven years or ten years. But offshore wind makes sense in the Boston/New York area because they already pay high electricity prices and there's no other obvious source to increase capacity or replace ageing plants.

If Europeans can show the costs are being brought down then the Americans will do it. They will make the rules that make it possible to build schemes at prices that they can tolerate politically.

And Asia?

With China, it's hard to say how much it's going to be open to outsiders. There have been a couple of deals with Siemens and Ramboll, but it's still pretty marginal.

Taiwan is a place where they seem to be reasonably open to bringing in European expertise. And, of course, there is Japan, but they've got their own industrial base so they're probably going to be do it largely on their own with some European experience. And they will focus on floating in any case, given their geography.

Other than those, I don't know. Offshore wind doesn't make sense if you can do onshore wind or solar, as it's more expensive and not as simple. There aren't many places where you get low depths offshore, good winds and people willing to pay the additional tariffs. ■

BUILDING AN ALLIANZ

David Jones, head of renewable energy at Allianz Capital Partners, tells A Word About Wind about doing deals in new markets and how the firm has grown through tough times

The UK's decision to leave the European Union in June will cast a long shadow over many major European investors – but means opportunities for cash-rich players.

Allianz Capital Partners, the alternative asset investment platform of German insurer Allianz, is in this cash-rich group. The firm owns wind farms worth over €3bn in Europe and the US, and funds deals off its balance sheet. This will mean it can keep doing deals even if uncertainty following Brexit causes problems for commercial lenders in Europe.

We went to meet David Jones, head of renewable energy at Allianz Capital Partners, in his office in Knightsbridge in London to discuss the investor's strategy in the wind sector, and its key deals in the last 12 months, including its move into the US.

He also discusses plans for emerging markets, lack of interest in offshore, and challenges for the global economy.

Jones says the UK's Brexit vote would have little impact on the firm's investment plans. Allianz has not bought wind farms in the UK for reasons including long-term power price uncertainty, energy policies, and because the company is uncompetitive against other bidders after it has priced currency risk into its deals.

"The Brexit vote doesn't really change anything for us as we were not UK market participants anyway, but it does certainly increase the currency risk issue. That is even more uncertain after the Brexit vote," he says.

Jones started his career in the mainstream power sector, working on coal, gas and nuclear power stations. He held senior business development positions with natural gas firm El Paso, UK utility National Power and US firm Sithe Energies before moving to Shell, where he was head of the company's wind division.

Vital statistics

Name: David Jones
Born: January 1964 in Gloucester, UK
Educated: Wycliffe College, Gloucestershire; University College London
Lives: London and Gloucestershire

Career: Worked in senior business development roles in El Paso, National Power and Sithe Energies before joining Shell, where he became head of Shell WindEnergy. Joined Allianz Capital Partners in October 2004 to head its move into renewable energy, and has since led on investments of more than €3bn in wind and solar in Europe and the US.

Personal interests: Small scale farming and viticulture, wildlife conservation, family

He joined Allianz Capital Partners in October 2004 before the company made its initial commitment to renewables in 2005, when it announced plans to invest €300m-€500m in onshore wind in Europe by 2010. In the event, the fallout from the global financial crash of 2008 helped the firm grow its wind portfolio twice as quickly as planned, to €1bn by 2010.

"The immediate aftermath of the financial crisis, in 2009 and 2010, was a very good time for us. There was a shortage of project finance, and we really benefited from that. There were people pulling back from deals because they couldn't get the financing and we were able to step into deals, so it helped us for a while until things normalised," he says.

Developers have found little issue with availability or cost of capital in the interim years, but ongoing uncertainty in Europe is again providing an opportunity for firms like Allianz.

GROWING IN WIND

The initial €500m that Allianz Capital Partners committed to wind, back in 2005, came from German insurers and life assurance firms; and the company invested it through its Allianz Renewable Energy Partners (AREP) I and II funds.

It then diversified its investor base in its following three funds — AREP III, IV and V — to include French and Italian investors.

The business has also diversified in terms of the markets it has invested in. AREP I and II started by investing in schemes in Germany, France and Italy, but has since broadened out to invest in projects in Sweden, Austria, Finland and the US.

It typically invests in schemes worth €50m-€250m on an unleveraged basis, and favours operational assets or those in the construction phase as this restricts its exposure to development risk.

In total, Allianz Capital Partners has built a portfolio of 71 renewables assets, of which 64 are wind farms and the other seven are solar parks. The company made a move into solar in 2010 and 2011, when it bought seven solar schemes in Italy and France, but it has not done further solar deals because it has not seen good returns in its preferred markets.

Earning its stripes: Allianz Capital Partners has started investing in US wind farms

Source: jnn1776 via Flickr

Jones says that buying low-risk assets outright tallies with Allianz's risk-averse strategy. By not investing in the development phase, Allianz Capital Partners is protected from the risk that a project could be refused or fail to secure a transmission link. In addition, by buying a project outright it cuts its exposure to risks caused by low wind speeds or power prices.

He says: "A wind farm is naturally volatile… and, if you're 80%-plus leveraged, then a low wind year may mean you're still servicing the debt but you're not producing any dividend for the equity, whereas we are much less exposed to that. If we get a low wind year we get proportionally less revenue, clearly, but our returns are much less exposed to that volatility."

"I would certainly say that for the next couple of years we're pretty confident. We'll just have to see after that."

One market that Jones and his team have avoided is Spain, where the market is paralysed after the government stopped new renewables subsidies in 2012 and made retrospective cuts in the following two years. Jones says avoiding Spain was more luck than judgement.

"We were fortunate not to have any investments in Spain. We looked at Spain and bid for assets, but we didn't have any success, so we had a bit of luck really in avoiding that," he says.

MAKING IT STATESIDE

You could also argue that Allianz Capital Partners has struck it lucky in the US. Jones says his team started looking at the market in May 2015 and, after further investigation, agreed its first deal in the country in December. This coincided with the US Congress extending the nation's wind production tax credit for five years, which is set to mean further opportunities.

The firm's first US wind deal concluded in February, when Allianz Capital Partners bought the tax equity in EDF Renewable Energy's 250MW Roosevelt and 50MW Milo wind farms in Roosevelt County in New Mexico in a deal alongside Bank of America Merrill Lynch.

It followed this in May by taking a tax equity stake in a 200MW wind project in Texas in a deal alongside State Street Corporation. Jones says that the firm planned to move into the US regardless of any extension of the PTC, and expects more deals this year.

"We realised that, if the production tax credit was not extended, then it might be a relatively short initiative, but we would hopefully still have made several investments," he says, and adds that there is still uncertainty given the phased reductions in the PTC through to 2020.

"It's still potentially limited. Nobody knows what's happening with any certainty post 2020. There's a staircase of reducing production tax credits until then and it remains to be seen how viable projects will remain as the staircase goes down. I would certainly that say that for the next couple of years — this year and next — we're pretty confident. We'll just have to see after that."

The difference in the firm's approach in the US market is driven by the US system, where investors do not receive subsidies in the form of feed-in tariffs. Instead, investors either invest in the cash equity for the scheme, where they receive cash benefits of energy sales, or tax equity, where they gain tax benefits such as accelerated depreciation. Allianz Capital Partners invests in tax equity as it can then send those tax benefits to its parent company.

Jones says one of the biggest challenges in the US and Europe is the high prices being paid for wind assets, but adds that returns are still attractive compared to government bonds.

He says that typical returns from wind farms are now 5%-6% in all European markets on Allianz's own risk assumptions, but that they were as low as 4% for new German projects.

"We're all in danger of overpaying for assets, but it's not just wind assets. I think the price of assets has generally got very high."

"It's got worse. Absolutely. We're all in danger of overpaying for assets, but it's not just wind assets. I think the price of assets has generally got very high, which is due to an oversupply of capital and an undersupply of good assets," he says.

FURTHER DIVERSIFICATION

Following the US move, Allianz Capital Partners is looking to expand into new markets in the next couple of years. Jones says that the company has been considering deals in riskier developing markets in Africa, Asia and South America, but that it would be looking for higher returns than it could get in Europe in exchange for the potential higher risks.

He says: "Where the returns are higher, the risks tend to be higher as well. We are scanning the markets to find where the risk-return balance is acceptable, so that is where there is good solid renewables legislation, regulation, rule of law, political stability and so on. But I don't believe we will be going to real frontier markets."

Jones says the attraction of dealing in stable wind markets in Europe is that investors are very unlikely to lose their money, particularly those buying assets outright: "It would require an extremely unlikely combination of circumstances to result in you not recovering your investment cost over the operational life of a wind farm."

"As you move into more exotic markets, the actual risk of capital loss increases, so it's a big decision to move out from an environment where you perceive the risk of capital loss to be negligible to where there's a credible risk of capital loss. To do that, you need to be able to see materially better returns in the base case… and feel that you are getting properly compensated for taking that extra risk. That's how we look at developing markets."

This means that Allianz Capital Partners could potentially do a deal outside Europe and North America in 2017, but no sooner, and there are likely to be opportunities in Europe as the start of formal Brexit negotiations increases volatility.

Indeed, Europe was the focus of the firm's diversification in 2015.

Last July, Allianz Capital Partners entered Austria by buying four projects with combined capacity of 65MW from Austrian developer ImWind, for an undisclosed sum.

It also made a move into Finland by buying the 21MW six-turbine Jouttikallio project from local firm OX2 in a deal that completed in January 2016, again for an undisclosed sum. The scheme is due to complete by the end of this year.

OFFSHORE SCEPTICISM

One area where Jones does not expect to do imminently deals is the offshore sector, because he says that he does not see high enough returns for the extra risk. He says that, as Allianz Capital Partners is a euro-

Red alert: Investors risk overpaying for wind farms as asset prices remain high

Source: Chuck Coker via Flickr

based investor, there are currency issues with doing deals on schemes in UK waters. He says that once the currency risk is factored in, "we are pretty close to seeing an onshore return for an offshore risk, and that doesn't make sense".

Meanwhile, he says that support structures in Germany, which is Europe's second-largest offshore wind market, offer feed-in tariffs for less than ten years, which does not give long-term certainty. After those ten years, the project's owners gain their returns from selling the electricity at market prices, but Allianz is bearish on the future direction of energy prices.

"We don't see a good enough return to justify the risks of investing offshore."

Jones adds that there are a large number of unknowns about the performance of offshore wind farms after their first ten years.

"If it's a wind farm that has been ten winters in the North Sea, it definitely won't be as good as a new one. What's the availability going to be like? Without a tariff above the wholesale electricity prices, the risk to that business after the tariff period, often only ten years in Germany for example, is pretty high and we don't see a good enough return to justify that risk."

However, he says there is good potential in the emerging offshore market in France, where the government is looking to build 3GW of capacity by 2023 and an extra 3GW after 2023. Allianz does not take development risk, which means it is still far too early for it to do deals in French offshore, but Jones says the combination of 20-year feed-in tariffs and the euro currency make it more appealing. It could get involved by the end of this decade.

The company's investment strategy will continue to be flexible in the face of big changes in Europe, and the potential election of Donald Trump as US president, which could be a disaster for wind and renewables more widely. Trump is a climate change sceptic and has threatened to pull the US out of the Paris climate change deal agreed in December.

"One has to be flexible," he says. "That's the key to being able to manage and grow the business by being diversified, by being able to move around geographically. That's what we're trying to do."

Given the big challenges facing Europe, that is what it will have to do. ■

M&A WAVE SHOWS BIGGER IS BETTER

Lars Rytter is partner at Aventage Consulting

He has worked for Nordex, Senvion, Suzlon and Vestas, and been involved on three large wind OEM mergers

https://aventageconsulting.com

Consolidation in the supply chain and by Chinese giants will take on wind's M&A baton from large European firms

We are coming out of the wind sector's third major period of consolidation, and can see in these deals how the sector is reaching a more mature status.

The first major round of mergers and acquisitions took place in 2004, when NEG Micon and Vestas merged; and when Siemens bought Denmark's Bonus Energy.

The second wave of M&A activity took place in 2006 and 2007, during which Suzlon took over Repower – now called Senvion – after a long battle with Areva, and acquired Hansen Transmission.

The financial crisis of 2008 and 2009 curtailed M&A activity for five years, but the crisis also had the effect of suppressing costs across the value chain. This meant that M&A activity had to resume as size and increasing market share became critical to success. The crisis also led to a boom in emerging markets such as south and central America, as well as southern Africa, and meant that manufacturers needed global supply chains.

> "The crisis of 2008 and 2009 curtailed M&A activity... but it had to resume as increasing market share became critical to success."

In this third round we have seen a series of big M&A deals. Gamesa and Areva have formed offshore specialist Adwen, which is now subject to more speculation; Vestas sold 50% of its offshore division to Mitsubishi to set up MHI Vestas; General Electric took over Alstom, with wind being a small part of the deal; Suzlon sold Senvion to Centerbridge Partners; Nordex bought Acciona; and Siemens Windpower and Gamesa. So what do these deals say about the market?

The wind sector today is divided into three large blocks: China; onshore outside China; and offshore. China is dominated by homegrown players, with only around 10% of the market being handled by global manufacturers such as Vestas and Gamesa.

For that small group of companies that cover both onshore and offshore, deep

"We expect the next wave of industry M&A to happen downstream in the value chain. In other words, among suppliers to the manufacturers."

pockets, a robust profit & loss account, and preferably a diverse and global corporate positioning are key.

The most significant of these deals is the merger between Siemens and Gamesa, which is seeking to create a world leader in onshore as well as offshore. Gamesa has a strong footprint in emerging markets, where most onshore growth will happen in future, while Siemens brings substantial financial muscles as well as top spot in the offshore sector.

Siemens will, with this merger, challenge Vestas as the world's second largest turbine maker by market share.

Another big mover is Nordex, which with its Acciona deal is set to jump from a position outside the top ten in terms of market share to a potential place in the top five.

As the industry is maturing, the demands on OEMs are rapidly increasing in terms of the performance and quality of project execution, the ability to further invest in new technologies; new market entry; and manufacturing footprint. All of this means it is a major advantage to be big.

This will also affect the nature of the fourth major wave of M&A.

There is a chance that companies like Senvion and Enercon could be bought out by another big player, but we expect the next wave of industry M&A to happen downstream in the value chain. In other words, among suppliers to the manufacturers.

We have previously seen ZF Friedrichshafen investing in Hansen Transmission, and the subsequent buyout of Bosch Rexroth's wind gearbox arm. We expect this to continue, as the corporate players existing tier one suppliers seek to grow market share.

Particular attention must also be paid to Chinese suppliers with the cost base, ambition and improving technological and quality capability needed to justify moving out of their home market and domestic customer base. They will do well overseas because the Chinese import/export bank helps their funding, so they don't rely on local banks.

This activity will be key as the market continues to mature. ■

ACWA MAKES A SPLASH

Paddy Padmanathan, chief executive at ACWA Power, talks to Richard Heap about the firm's wind deals and wind's prospects in the solar- and oil-rich Middle East

North African nation Morocco is still outside the top 30 countries in the world ranked by total wind capacity. Its 787MW at the end of last year put it 31st.

But the country has gained the attention of investors and developers in the last year for the very low levelized cost of energy that it expects to generate from wind farms. The Moroccan government announced in January that it was attracting tenders from developers at around the $25/MWh-$30/MWh level, which is a global milestone.

We are unlikely to see figures like that replicated in many parts of the world. Morocco benefits from exceptionally strong winds and the low-cost loans available for projects that help support developing nations. This combination of factors is proving attractive to companies seeking to invest in Moroccan wind. One of these is ACWA Power, the Saudi Arabian electricity and water company that expanding its reach in renewables.

In this interview, ACWA chief executive Paddy Padmanathan talks to A Word About Wind about the firm's wind plans in Morocco and the wider MENA region; and how the sector fits into its overall strategy. He also talks about regional politics, oil prices and why he got involved with ACWA when he was planning to take early retirement.

RETIREMENT RE-THINK

Originally from Sri Lanka, Padmanathan studied civil engineering in the UK at the University of Manchester. He then spent 24 years working for US engineering and construction firm Black & Veatch, during which time he worked in ten countries. His final role at the company was as vice president in charge of business development.

"I am a civil engineer, and in my early days it was boring and mundane. I used to

Vital statistics

Name: Paddy Padmanathan
Born: April 1958 in Jaffna, Sri Lanka
Educated: University of Manchester, UK
Lives: Riyadh, Saudi Arabia

Career: Qualified as a civil engineer. Spent 24 years at US-headquartered engineer and contractor Black & Veatch working on municipal infrastructure, energy and water projects, most recently as vice president and corporate officer. Joined ACWA Power as chief executive in 2005.

Personal interests: Exploring the planet, keeping fit, reading, spending time with grandchildren

do roads, airports, urban infrastructure. That's where I spent my first 15 years. Then I started to get involved in desalinated water and power generation as a developer," he says.

It was this experience that attracted the interest of Mohammad Abdullah Abunayyan, who set up ACWA in 2002 to benefit from Saudi Arabia's nascent water and power privatisation programme. He approached Padmanathan in 2005.

ACWA was not a typical start-up, and the water sector was not a new departure for Abunayyan, who is a key member of one of Saudi Arabia's main business families. He chairs Abunayyan Holding, which has been involved in the power and water sectors since 1950, after initially starting out by supplying diesel turbines to farmers to support irrigation before expanding into the housing sector in the 1970s.

Despite this track record, Padmanathan says he was not immediately convinced.

"I had recently stepped out of a fairly interesting and busy career at Black & Veatch. I was pursuing my dream of taking early retirement at the age of 47 and wanting to do something more fun for myself. That was my plan."

Abunayyan did not think much of the idea: "Mohammad said: 'No, don't be stupid. Come and help me with this. It'll be much more fun.' I said: 'You're joking.' And he said: 'Don't worry. It's okay. I'll help you on the first projects.' So that's how

Wind debut: ACWA Power's first wind project was the 1.1MW Hofa in Jordan

I started. I was the fourth person in the company. Actually, the fifth, after the driver."

Padmanathan joined ACWA in 2005 and, as the team grew, officially became chief executive two years later. ACWA now develops, owns and operates electricity and desalinated water plants in 13 nations in the Middle East, Africa and Southeast Asia. Its $32bn portfolio includes 22.8GW of electricity-generating assets; produces 2.5million cubic metres of desalinated water every day; and supports 3,500 jobs.

The company is 83% owned by eight large Saudi conglomerates: Abunayyan Holding, Al Muhaidib Group, Al Mutlaq Group, Al-Rajhi Group, Al-Toukhi Group, Badad International, Future Industrial Investments and Omar Kassem Alesayi.

Saudi Arabian government investment arm Sanabil Direct Investments owns 12%; and the Saudi Public Pension Agency holds the remaining 5%. This means the firm is privately-backed and, says Padmanathan, completely self-funded.

ACWA spent its first five years focusing exclusively on schemes in its home market, and its main focus during this time – 2004 to 2009 – was on water desalination and fossil fuels. The Abunayyan connection was surely instrumental as the firm won its first four tenders for large desalination projects in its first two years: Marafiq, Petro-Rabigh, Shuaibah and Shuqaiq, all of which were worth between $1.5bn and $3.5bn.

The business tried to get support for renewable energy projects too, but could not do so due to the lack of a renewable energy policy in the country. It only started to make inroads on renewables when it began expanding overseas from 2009, into countries including Morocco, South Africa and the United Arab Emirates.

RAMPING UP RENEWABLES

ACWA's first projects in these countries were concentrating solar power, which use mirrors to concentrate the sun's energy on a fixed point to drive a turbine or engine that creates electricity. Padmanathan says it focused on solar because in the MENA region it is cheap to produce, reliable and matches the needs of its customers.

The cost of solar has kept falling since then, and ACWA is at the forefront of the sector. In January 2015, it won the tender to develop 200MW for the Dubai Electricity & Water Authority at Mohammed bin Rashid Al Maktoum Solar Park. This helped pave the way for subsequent phases to achieve rates of 2.99¢/kWh, a record low.

"It's very reliable. There is a component of energy that we only use when the sun is shining – air conditioning – so obviously there is absolutely no storage issue there. It is pretty much load-matched," he says. Padmanathan adds that solar can be competitive in other countries even if it does not hit 2.99¢/kWh.

He says: "You can't supply energy at 5¢/kWh using any fuel today, even today when energy prices have come down, fuel prices have come down. Whether you accept that 2.99¢/kWh is a repeatable number or not is neither here nor there. The bottom line is that anything below 5¢/kWh, nobody beats it anyway."

This fits with ACWA's 'fuel agnostic' strategy. Padmanathan says that ACWA's focus is less on the type of power it is using, and more on how it can drive down the costs of its developments to make them far cheaper than its rivals.

This is an approach it is looking to use in the wind sector, but the firm has found competition tough so far.

ACWA was one of the bidders, alongside Spain's Gamesa, in the Moroccan government's record-breaking 850MW wind tender where results were announced in January. Morocco said that most of the bids were around the $30/MWh mark, but the eventual winners Enel, Nareva and Siemens committed to develop at $25/MWh.

It would be a herculean task to significantly undercut the competition at such rates, but that will not stop ACWA from trying:

"In Saudi Arabia, solar is very reliable. There is a component of energy we only use when the sun is shining – air conditioning – so there is no storage issue there."

"We will bid in anything else that comes up," he says. ACWA is also working on a project that gives it a foothold in Morocco.

CALLING ON KHALLADI

The firm has owned a tiny interest in wind since 2011, when it bought a controlling stake in Jordan's Central Electricity Generation Company. CEGCO provides 50% of Jordan's power and most of this comes from thermal, but the company also owns two wind farms: the 1.1MW five-turbine Hofa and 320kW four-turbine Ibrahimiya.

It has since made a more impressive investment in the market with plans for the 120MW Khalladi project, east of the port city of Tangier by the Strait of Gibraltar.

Khalladi was being developed by UPC Renewables until ACWA bought a controlling stake in the project company in October 2014. ACWA now owns 70% of the scheme, which is set to cost $180m and be made up of 40 Vestas turbines. The European Investment Bank's Argan Infrastructure Fund owns 25% and UPC the remaining 5%.

The development is set to cost $180m to build and has power purchase agreements in place for 85% of its electricity with three large cement firms, but the rates in these deals have not been disclosed. Any remaining power is to be sold to Morocco's state utility Office National de l'Electricité et de l'Eau Potable. These deals have given ACWA and its backers financial certainty; and the development reached financial close in June.

The project is funded with a debt-to-equity ratio of 77:23. The debt package includes $140m of long-term non-recourse project financing funded by the European Bank for Reconstruction & Development and the Moroccan commercial bank BMCE Bank. Construction is underway and the project is due to begin operating by early 2018.

ACWA is also considering building a 100MW second stage at Khalladi. Padmanathan says the appeal of the Moroccan market includes the strong winds, a well-structured legal framework, demand from energy buyers, and a reliable transmission grid operator.

Khalladi should equip ACWA with knowledge that it can take into other markets.

SIGHTS SET ON SAUDI

Padmanathan sees the potential to build 30GW of wind farms in ACWA's home market: "Saudi Arabia has got tens of thousands of megawatts of wind potential, in our view. Perhaps not as spectacular as the Moroccan sites, especially the ones in southern Morocco where you've got wind blowing very steadily for nearly 20 hours a day at very high speeds, but Saudi Arabia has got some very good sites too," he says.

He feels that the country's rulers are now also committed to clear renewable energy policies. ACWA's previous attempts to build wind farms in Saudi Arabia in the late 2000s were scuppered by a lack of political support, but he says that has changed.

In 2010, the government formed the King Adbullah City for Atomic & Renewable Energy to develop alternatives to fossil fuels, and in 2013 it set out plans to build 54GW of renewables, including 9GW of wind, by 2032. This target has since been pushed back to 2040, and many in wind will doubt Saudi Arabia's commitment.

"Saudi Arabia has got tens of thousands of megawatts of wind potential. Perhaps not as spectacular as Morocco, but it has some very good sites."

Making it in Morocco: ACWA inaugurated the first 160MW of the Noor solar array in April

"In my view, renewable energy has got its own momentum regardless of oil prices."

Padmanathan says he is confident, though. He says that the low oil prices that have plummeted from over $100 a barrel in mid-2014 to under $50 a barrel now have hit Saudi Arabia's finances, and "given Saudi Arabia a wake-up call". This has forced the country to take stock and draw up future plans that are less reliant on oil.

"That brought about some realism and, given that it coincided with renewable energy becoming very cost-competitive, the analysis has been showing that: 'Wow, okay. A decent part of our energy should be coming from renewables because it is the most cost competitive solution, compared with pumping more gas into the system."

But would it scale down renewables plans if oil prices rocket again?

"I don't think so. Government are people. The minute we become more efficient and more cost conscious… we never go back completely to the old ways. In my view this has got its own momentum and it will just move on regardless of oil prices."

Egypt is another market in the MENA region that ACWA has been looking at for wind schemes. It has attracted investment from international manufacturers like Siemens, developers including Gamesa and utilities including Enel Green Power, as well as local players. Its government has also allocated more than 1.6GW of a planned 2GW of new capacity. However, a recent announcement puts all this at risk.

In May, the government revealed that international arbitration would not be available for wind projects in the country, meaning all disputes would have to be heard locally. This has given investors little confidence that any investments they made in Egypt would be protected, and Padmanathan says it could be fatal for the market.

He says: "Arbitration from an international seat is extremely important for someone if they are to go and pour hundreds of millions of dollars into any country."

So where else would ACWA invest? Padmanathan is adamant it is not looking to do deals beyond the Middle Eastern, African and Southeast Asian markets in which it currently operates: "That is a challenge for the next five years," he says.

He is now 58, and there is still no sign of that early retirement. ■

KEY DATES

Top decision-makers in wind energy finance trust A Word About Wind to deliver news, analysis and new business connections.

You can take advantage of our membership and subscription services, and join over 2,500 other senior industry executives, by signing up for the service today. To register for a free 30-day newsletter trial visit: www.awordaboutwind.com

Our rapidly-expanding membership base benefits from a range of intelligence, insight and networking services. In addition to the newsletter, published three times every week, we also publish special reports and run events. You can see key dates for our forthcoming programme of reports and events below:

Events

8th September	Quarterly Drinks Q3
27th October	Annual Conference
24th November	Quarterly Drinks Q4

Reports

November	Top 100 Power People
January 2017	Finance 2017
March	Top secret report - TBC
May	Emerging Markets

"Membership helps me stay connected to the leading industry participants and to keep updated on the weekly news impacting the sector."

Nicola Riley, Head of Wind Energy UK, Fichtner

Vital market insight at A Word About Wind annual conference in 2015

A WORD ABOUT WIND