

Financing offshore wind

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With investments in the offshore wind sector set to increase from a few hundred million euros to tens of billions per year, the question of where the money will come from has been at the forefront of industry preoccupations. This article examines how equity investors and potential lenders look at the sector and in what ways they can be expected to contribute. The article focuses on Europe, as the US are still at the “pioneer” stage, while Chinese projects are likely to be funded under specific local conditions.

The market to date

Industry growth so far has largely been achieved by utilities, alone or in small partnerships, financing and building their own projects and keeping them on their balance sheet.

There are, however, other possibilities. "Non-utility" projects, undertaken by independent power producers (IPPs), may call on non-recourse debt financing from banks, particularly during the construction phase. As of end 2010, just over 10% of operational capacity (and a similar percentage of capacity under construction) had benefitted from non-recourse debt financing, with a smaller percentage having been refinanced through debt after completion:

(end 2010)	capacity (MW)	in %
Total operational offshore wind farms	2946	100%
Q7	120	4%
C-Power phase 1	30	1%
Belwind	165	7%
non-recourse construction debt	315	12%
Lynn & Inner Dowsing	194	6%
non recourse debt (operational projects)	509	18%

(end 2010)	capacity (MW)	in %
Total offshore wind farms in construction	3,300	100%
C-Power phases 2-3	295	9%
Borkum West 2	200	6%
non-recourse debt (projects under construction)	495	15%

In parallel to debt transactions, a number of equity transactions have taken place. Beyond utilities sharing risk on a given project, new buyers such as pension and private equity funds have emerged as contributors of additional non-utility finance:

(end 2010)	financial owner	capacity (MW)	in %
Total operational offshore wind farms		2946	100%
North Hoyle (67%)	Englefield/FIIA	60	2%
Nysted (50%)	PensionDanmark	83	3%
Lynn & Inner Dowsing (50%)	TCW	97	3%
Belwind (22%)	Rabo/Meewind	36	1%
financial investors		276	9%

(end 2010)	financial owner	capacity (MW)	in %
Total offshore wind farms in construction		3,300	100%
London Array phase 1 (20%)	Masdar	120	4%
Walney 1 & 2 (25%)	PGGM/Ampere	92	3%
Nysted 2 (50%)	PensionDanmark	207	6%
Gunfleet Sands (50%)	tbd	86	3%
financial investors		505	15%

A number of interesting conclusions may be drawn at this point. One is that there are alternative sources to utilities for investment in offshore wind. Another is that banks show willingness to take construction risk (via debt), preferably, so far, in non-utility projects. Meanwhile, financial investors (via equity) tend rather to seek a stake in already operational projects. These conclusions also point to the most likely routes for utilities looking for external sources of funding:

- recycling of project equity via the sale of (typically minority) stakes in operating projects; - non recourse financing of IPP projects prior to completion;
- non recourse refinancing of "utility" projects once they are operational.

Financial investors

In the long run, it is quite likely that offshore wind will be a very attractive asset class for a certain type of investor: with very stable, heavily regulated, long term cash flows, its revenue profile fits the needs of pension and similar funds with very long investment horizons. The various regulatory frameworks will offer investors fine-tuning according to specific preferences (fixed revenues in countries with feed-in regimes like Germany, access to some market upside in countries with green certificate regimes and grey power sold on the market, inflation mitigation in countries where support mechanisms are indexed, like the ROCs in the UK, etc...) and to diversify "political" risk exposure within a consistent and broadly stable European policy framework.

Such investment will follow the move into onshore wind, and volumes available are likely to be significant, as offshore wind offers the additional advantage of making large size tickets possible.

The big obstacles to date, of course, have been the lack of precedents in the market, and the perceived high risk of construction. Several years of operational data from the pioneer projects, and the current large build-up of assets, is resolving the first problem, as it appears that offshore wind farms are indeed able (sometimes after some "teething problems") to perform at high levels of availability. Construction risk is still an issue, which explains that the transactions that have taken place to date have mostly been post-completion, when the assets are operational. Operational assets are sold at low double-digit returns today and will in all probability find investors happy with high single digits in the near future.

It is likely that this will last - a majority of investors will probably remain unwilling to take any construction risk, and the developers able and willing to take that risk will certainly be glad to be able to sell their projects - or a fraction thereof - at a premium once they have successfully completed them.

This will thus provide, via "recycling" of the investments of early developers, a steady source of capital for the sector, with investors focusing on the different portions of the development cycle

- permitting, contracting, building and operating. Utilities will be able to keep operational control of the assets while carrying a smaller fraction of the initial cost on their balance sheet, and long term investors will get access to the long term revenue stream offered by the industry under the current regulatory framework.

Project finance

Moving on to consider non-recourse debt financing, it seems clear today that two markets have been developing side by side: one for completed projects, the other for projects to be built. The first is centred on London, following the initial refinancing by Centrica of its Lynn and Inner Dowsing assets (the "Boreas" transaction) in 2009, while the other has been focused on continental Europe, and in particular on the Benelux countries, where a series of deals including construction risk were closed by banks between 2006 and 2010.

At the heart of these different trajectories are construction risks, and how they are perceived and managed by utilities (which dominate the UK market) and IPPs (which have been more active on the continent).

Given London's traditional dominance in project finance activities, it is not surprising to come across media coverage suggesting that banks are unable or unwilling to take construction risk, and this has been a source of frustration and angst for developers. A series of delays on new transactions, and relatively minor mishaps on operational turbines (notably the infamous "grouting" issue) have kept a negative spotlight on the industry in the UK and created a perception that it was de facto impossible to finance offshore wind farms. The continental experience shows that this could not be further from the truth, and suggests that it is worth discussing in more detail how the UK and continental markets differ and what that means for future project finance transactions.

Unusually high construction risk

Offshore wind construction presents a unique combination of challenges:

1) it is an inherently risky endeavour, with large scale construction and high precision work to be carried out in hostile conditions (the best sites for offshore wind farms are, well, windy, and thus naturally the least favourable to construction work). Weather risk is intrinsic, serious and unavoidable; it can cause delays in construction if the site is not accessible, and, in the worst cases, incidents.

2) the sector is at the intersection of industries that were previously distinct (wind turbine manufacturing and marine construction), with each industry representing a similar share of the overall construction budget and thus neither able to naturally take the lead on projects (unlike onshore projects, where turbines represent most of the cost and thus turbine manufacturers are more easily able to take responsibility for the ancillary tasks like civil works); turbine manufacturers were not familiar with work at sea; marine contractors - including those from the oil industry - were not used to the serial and very precise erection work required over many individual sites in a short period; no contractor from one group will willingly bear financial commitments in respect of work it does not really control by the other contractors.

3) as a brand new industry, offshore wind had initially to make do with equipment not specifically designed for its needs – existing jackup vessels, cranes and other marine equipment were borrowed on an ad hoc basis; turbines were onshore versions with more or less comprehensive

attempts at marinisation: it was neither easy nor even desirable to replicate what was done on the early projects. This is changing fast as specialised vessels and turbines specifically designed for offshore conditions are brought to market; but it means that there are few precedents and few experienced people.

4) in an attempt at minimizing installation costs, the industry has systematically tried to install the largest turbines available on the market, meaning that these were typically new designs with little or no track record of operations and which presented real risks of "teething problems." With many new entrants on the market, it means that a large portion of the turbines available to the sector are still untested.

So the risks are high, and nobody is in a natural position to bear these risks single-handedly. This means that risks must be allocated with the agreement of all interested parties, interfaces between contractors understood better than usual, and potential snowball effects identified. This generates complexity and a need for strong project management competence (something not usually available in the onshore wind industry, where it was not really required, or available in other industries, but in people unfamiliar with the particulars of wind turbines). As a result, occasional spectacular incidents or problems have caused severe losses for a number of parties in the budding industry

Despite this, many offshore wind developers are counting on lenders to bear construction risk without any completion guarantee, making this one of the few industrial sectors where banks would have to manage multi-contract structures without a dominant counter-party. Banks don't usually take such risks even in sectors they already know well!

A risk-adverse banking market

Additionally, this comes at a particularly difficult time for the banking market.

Following the financial crisis of 2007-08, we are going through a period when there is no syndication market, something which seems likely to last for a while yet. In practice, it means that banks will only commit EUR 50-75 million per individual transaction on a "take-and-hold" basis. Offshore wind projects, given their current scale (say 300-500 MW), would require billion-euro scale financings. In this market context, that means setting up large club deals involving at least 10-15 banks, or bringing in multilaterals, with their specific requirements and constraints. This makes offshore wind deals inherently complex and difficult to pull off today. Furthermore, post-crisis, banks are generally more conservative and risk-adverse, and as they lack relevant precedents in this sector they are thus particularly prudent in what they are willing to offer to offshore wind developers. If you need to bring in 15 banks and put together all their disparate sets of restrictive conditions, you're likely to end up with a rather uncompetitive financing structure, effectively the "worst of all worlds."

To add to the grim picture in the medium term, Basel 3 rules are likely to make long-term funding more expensive for commercial banks, something that they will have to pass on to clients, in particular in the project finance world, which requires such long maturities. While not applying to current deals yet, this is seen as a serious medium-term threat to the competitiveness of project finance for offshore wind.

And yet, despite all this, deals have happened, and more are in the works, at terms and conditions which have been seen as sufficiently attractive for very diverse groups of investors, including utilities (Centrica in Boreas, EDF and RWE in C-Power) or financial investors (ICW in Boreas, Blackstone in Meerwind).

"Utility" vs "non-utility" projects

The crux of the matter, and the big difference between the UK and continental approaches, is that the UK market is dominated by utilities to a much greater degree than the continental market, and utilities approach these risks differently from independent power producers and from banks.

For utilities, offshore wind farms are, first and foremost, just another power plant. They have the in-house management capacity to deal with the complexity of such projects, and to manage the cheaper multi-contracting route. It also means that they want to keep control of the project, and avoid unnecessary interference from outsiders, especially bankers and their multiple advisors. Offshore wind also offers utilities the possibility to deal with large industrial suppliers (like Siemens, Areva or GE) with which they have much more extensive dealings (this is different from onshore wind where there are many competitive "pure player" turbine manufacturers). With such familiar counterparties, they don't need to rely on detailed contractual terms but can manage these projects as part of a bilateral relationship with a supplier for whom they are a strategic client - the corporate ties are worth as much as any formal warranty package. They will also tend to take a slightly more conservative route and go for "safe" turbines coming from a big name or with a large track record (as can be seen in the string of contracts Siemens earned with its workhorse 3.6 MW turbine).

In that context, project finance was seen as too much trouble (interference in contract negotiation, more complexity, more risks of delays) and, given the favourable corporate bond market in the past couple of years, it was also more expensive and unneeded.

Conversely, smaller developers have a different approach: for them, project finance is vital, and its requirements cannot be avoided. The project structure, and the contracts, should be "bankable," and everything is driven by that fact. Non-recourse projects need to work on a stand-alone basis, and contracts, and in particular warranties, need to work without any reference to any possible commitment by any party beyond its formal obligations, or additional support from an outside party. Contracts thus need to be a lot more detailed and, in a multi-contract framework, interfaces need to be looked at much more closely. As banks tend to focus on downside scenarios, commercial negotiations also have to focus on slightly different issues, as banks don't really care about wringing out a few more percentage points of upside, but absolutely want to avoid the risk of catastrophic failure or delay. That typically means trying to transfer more risks to counterparties, which can have a cost, and impose cumbersome contracts to deal with all the "what if" scenarios wary bankers can come up with.

Advantages of bank involvement

The good news is that bringing the banks into the commercial negotiations can also have an upside. Given that developers can credibly tell their suppliers that the project (and the associated industrial orders) will not happen unless banks are satisfied with the contracts, they often have more leverage than utilities with such contractors, and they can actually obtain better terms with respect to warranties and risk allocation. Also, by bringing a third party into play, it is possible to get out of the zero-sum game typical of one-on-one negotiations: as long as banks are well protected against downside scenarios, they can be more relaxed about other things and accept more aggressive base scenarios; by increasing leverage, lenders can increase the returns for the project by more than the developer needs to give up to purchase the downside warranties from the suppliers.

Interestingly, it would also appear that non recourse finance and its intrusive due diligence, through the discipline it brings to a project, is an effective way to deal with multi-contracting risks. In this industry, banks know that corporate warranties do not eliminate interface risks; by imposing checks on all "hard" interfaces, irrespective of whether they are between contracts or between sub-contractors within a broader contract, they make sure that the risk is well understood and allocated. In fact, it can be argued that a well designed multi-contract structure is less risky than a full EPC contract with a large general contractor, which will typically reject requests for due diligence on its subcontractors and work timetable. Recent experience in the offshore wind sector has shown that such EPC contractors can experience severe failures and cost overruns, whether they are turbine manufacturers, marine contractors or general contractors, whereas, so far (and on the basis of an admittedly still small sample), project financed wind farms have been built within the budget and timetable agreed with the banks at financial close.

As of today, it can be argued that banks, through their intrusive review of all contracts and project plans, can provide a de facto "wrap" for multiple contracts more cheaply and more effectively than external contractors.

Looking ahead

Utilities, which have not allowed banks such an extensive role in their projects so far, have been frustrated by the project finance market refusal to take construction risk on the basis of their internal contractual negotiation skills and project management capabilities. Ongoing transactions suggest that banks might be willing to take construction risk on utility-negotiated projects on the basis of massive contingency budgets underwritten by the utilities. This is not particularly cost-effective, of course - indeed, contingencies in such transactions appear to be roughly double the size of contingencies in projects where project financiers have been involved in structuring and negotiating the project contracts.

The lesson from this is that, in all likelihood, for the next few years, construction risk project finance will be reserved for independent power producers which have no choice but to accept the early involvement of project financiers and advisors in their project deal, and utilities which deliberately take the same route - and which do in fact listen to these advisors. There will be a larger market for non-recourse refinancings of operational projects, taking place either jointly with the sale of (all or part of) such projects or as independent endeavours launched by the asset owners.

Current market trends suggest that pricing, maturity and other commercial terms for financings are not that different for pre-construction or post-completion financings (typically, the margin is 50 bp higher during the construction period than during the early years of operation) and tend to be driven by other factors, such as the quality of the project team, the strength of the entities owning the project and the discipline and transparency imposed in the contract negotiation phase to ensure full bankability of the project. Without going to the extremes of the Belwind example, where the financing closed despite the bankruptcy of the original sponsor, thanks to a capable project team which was able to remain on board as a new group of sponsors was created, it should be reassuring to project developers that project finance is not reserved only to the biggest players, and that high quality in project development and structuring can justify an external financing.

Looking further ahead, one can imagine that banks will at some point find again their appetite for junior or mezzanine tranches (which are currently mostly avoided), and that refinancings of

operating assets may at some point be financed through the bond market, but construction risk is likely to remain the realm of traditional project finance.