AWEA Offshore Wind power 2012 – financing

Recent trends in the financing of offshore wind farms

Virginia Beach – 10 October 2012

Dr Jérôme Guillet

Green Giraffe
Energy Bankers

Recent trends in the financing of offshore wind farms

Table of contents

Green Giraffe Energy Bankers is a specialist advisory boutique focused on renewable energy

We have an unparalleled track record in successfully closing deals for our clients

- 18 professionals in London (UK), Utrecht (NL) and Paris (FR)
- Project & structured finance, M&A & contracting expertise
- Priority given to a limited number of clients

Advisor to C-Power to raise project finance debt

325 MW

C-Power

Belgium
2010

EUROMONEY ProjectFinance 2010 Deals of the Year

INFRASTRUCTURE AWARDS 2010

pfi AWARDS 2010

Advisor to Northwind to raise project finance debt

216 MW

Northwind Offshore Energy

Belgium
2012

Advisor to WindMW to raise project finance debt

288 MW

WindMW

The Blackstone Group

Germany
2011

Deals of the Year 2011

PFI AWARDS 2011 (Sponsor)

Financial advisory services French offshore wind tender

1,428 MW

energies EDF nouvelles

DONG energy

France
2012

Completed advisory missions for over 4,000 MW of proposed capacity

Bankability evaluation of a 10% stake in the Gwynt y Môr offshore wind farm 576 MW SIEMENS UK 2010	Acquisition of a stake in an offshore wind farm Undisclosed North America 2011	Tendering strategy of turbine manufacturer on offshore wind project Undisclosed Europe 2011	Non-recourse refinancing of a solar PV portfolio 24 MW CADMOS Spain 2011	Evaluation of a potential stake in an offshore wind farm 210 MW Highland Group Holdings Germany 2011	Evaluation of a stake in a solar PV project 8 MW BARCLAYS Infrastructure Funds France 2011
Bid for a 49% stake in the Gunfleet Sands offshore wind farm 172 MW Rabobank Ampère Equity Fund UK 2011	Financial advisory services - offshore wind Undisclosed BECHTEL US 2012	Financial advisory services – state waters offshore wind project 25 MW HIGHMARK ENERGY US 2012	Acquisition of a stake in the ForVEI solar PV portfolio 41 MW cdc infrastructure Italy 2012	Evaluation of a stake in the Belwind offshore wind farm 165 MW meewind Belgium 2012	Non-recourse financing of the Gode Wind 2 offshore wind farm 252 MW PNE WIND Germany

Wide variety of ongoing missions across Europe and North America

Non-recourse financing of the Cape Wind offshore wind farm 468 MW Cape Wind US	Equity and debt funding of the Gemini offshore wind farms 600 MW TYPHOON CAPITAL The Netherlands	Non-recourse financing of 25% stake in Walney offshore wind farm 92 MW PGGM Ampère Equity Fund UK	Strategic advisory Offshore investment fund Undisclosed SEAWIND Europe	Valuation of offshore wind farms at various stages of development 1,010 MW Highland Group Holdings Germany	Valuation of an offshore wind farm under development 400 MW AREVA Germany
Modelling support on Toul-Rosières 3 PV solar project 24 MW HSH NORDBANK France	Market intelligence on the offshore wind sector N/A US	Financing of an onshore wind farm Undisclosed Europe	Acquisition of an offshore wind farm Undisclosed Europe	Non-recourse financing of the Block Island offshore wind farm 30 MW DEEPWATER WIND US	Buy side mandate offshore wind farm Undisclosed meewind Belgium 2012

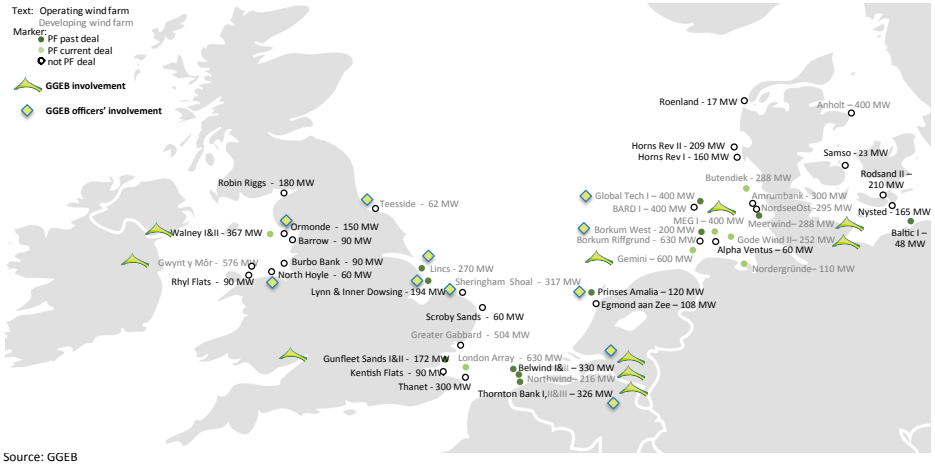
Green Giraffe Energy Bankers

Recent trends in the financing of offshore wind farms

Table of contents

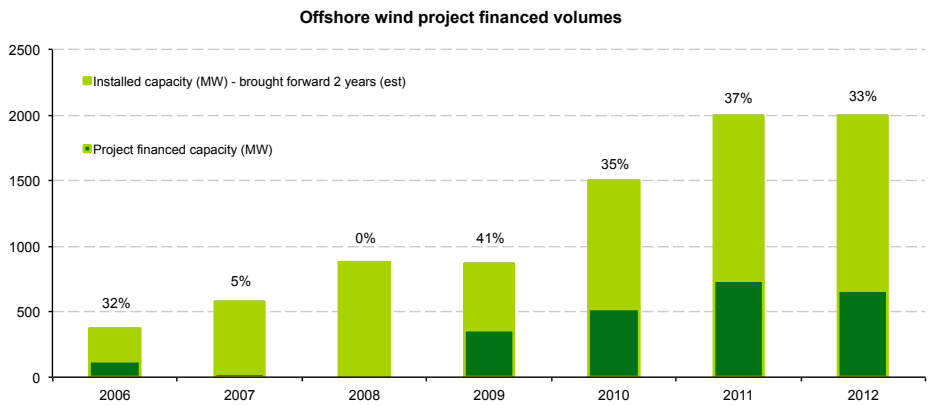
1. The project finance market for offshore wind – how big is it?

Active projects



Source: GGEB

Offshore wind project finance trends



A European story

- 4,620 MW (4,336 MW in Europe) installed capacity as of mid-2012
- UK and Denmark are still the market leaders
- 866 MW connected in 2011, after 883 MW in 2010 and 577 MW in 2009 – the first 3 years of industrial-scale activity – and 2012 will be above 1 GW
- Significant pipeline of offshore wind projects beyond 2012 with 6 GW currently under construction and over 17 GW fully consented

A massive need for capital, and thus for PF

- Projects under construction see committed investments of EUR 15 billion over the next 2-3 years.
- Around 30% of the near term pipeline has been project financed (compared to 10% in the early years)
- Total investment of EUR 80 billion or more is expected over the decade
- Developers, and to an increasing extent utilities, will need to rely on PF to fund that investment pipeline

1. The project finance market for offshore wind – deals and players

The general project finance context				
Typical project finance conditions - offshore	Leverage	Maturity post-completion	Pricing	Maximum underwriting
2006-2007	60:40	10-15 years	150-200 bp	50-100 M
2009	70:30	15 years	300 bp	30-50 M
2010-2011	65:35	12-15 years	250-300 bp	50-75 M
Current market	70:30	10-15 years	275-375 bp	30-50 M

- Banks are refocusing – again - on known clients, core countries and strategic sectors of activity
  - The only good news is that **offshore wind is unambiguously "strategic" for many banks** today
  - **Countries where offshore wind is developing are seen as "safe"** (Germany) and core for most banks – the USA is a special case
- Margins are shooting up again
  - This reflects an increase in the banks' cost of funding rather than an increase in the cost of risk
  - But the underlying long term cost of money is falling (in a mirror image), so **the overall cost of debt is actually decreasing**
- Structures (ratios, maturity, covenants) have actually been quite stable since 2007

1. The project finance market for offshore wind – early deals

4 transactions just before and after the financial crisis

- **Q7 (also known as Princes Amalia)** (2006, the Netherlands, 120 MW, Vestas V80, EUR 219 M financing)
  - The very first deal – set a number of precedents (debt sizing principles, multi-contract construction risk taken via heavy due diligence and contingent funding, 10-year O&M package)
  - 3 MLAs, 3 additional banks, plus key support from EKF
- **C-Power phase 1** (2007, Belgium, 30 MW, Repower 5M, EUR 126 M financing)
  - Consolidation deal – a more aggressive version of the Q7 structure (longer tenor, some merchant risk)
  - Confirms that new turbines, even very large ones, are bankable
  - 1 MLA, 3 additional banks, no multilateral
- **Belwind phase 1** (2009, Belgium, 165 MW, Vestas V90, EUR 544 M financing)
  - First deal post-financial crisis – allowed to confirm that the early structures were sound (construction risk, some merchant risk) while increasing the size thanks to heavy multilateral involvement
  - 3 MLAs, EIB and EKF, no syndication – heralded the "club deal" period
- **Boreas** (2009, UK, 194 MW offshore, Siemens 3.6-107, GBP 340 M financing)
  - First UK deal, with a large number of banks (14 altogether)
  - No construction risk, but funding under the UK ROC regime, with some merchant risk

1. The project finance market for offshore wind – early deals

Pioneers & precedent-setting, but with a small number of players

- **Successful structures – and really non recourse!**
  - DD + Contingent mechanism structure to bear construction risk validated in subsequent deals
  - Construction risk with multi-contract structure validated and repeated
  - Repeated with several different turbines, sponsors and regulatory regimes
  - All early projects built within agreed budget and timetable, and now operating to full satisfaction

- **A fairly small number of players involved**
  - Only a small number of institutions actually took construction risk
  - Heavy reliance on a small number of multilaterals (EKF, EIB)
  - The same advisors and people in almost every deal

- **A difficult market context**
  - No syndication market for what are fairly large deals – thus a need for *everybody* on each deal
  - Lack of precedents at a time banks were retreating to favored clients and familiar risks

1. The project finance market for offshore wind – recent deals

5 deals in 2010-2011, all in continental Europe

- **C-Power phase 2** (2010, Belgium, 325 MW, Repower 6M, EUR 913 M financing)
  - Aggressive structure building on existing precedents (18 year financing, 70:30 leverage, multi-contracting construction strategy with contingency structure, use of a 6MW turbine)
  - 7 MLAs, EKF, Euler-Hermes, EIB
- **Borkum West 2** (2010, Germany, 200 MW, Areva M5000, EUR 510 M financing)
  - First deal in Germany, and first deal with (relatively recent) Areva 5MW turbines; building on precedents (construction risk with contingency structure) but slightly less aggressive terms (leverage)
  - 4 MLAs, 7 additional banks, EIB and NRW
- **Meerwind** (2011, Germany, 288 MW, Siemens 3.6 MW-120, EUR 884 M financing)
  - First transaction with construction risk for Siemens turbines, first with a private equity investor, and first under the new KfW offshore wind programme
  - 7 MLAs (including London-based banks), EKF, KfW
- **Globaltech 1** (2011, Germany, 400 MW, Areva M5000, EUR 1047 M financing)
  - First deal for a 400 MW wind farm and beyond EUR 1 bn, supported by the KfW programme
  - 4 MLAs, 12 additional banks (including several newcomers to offshore), EIB, KfW
- **Baltic 1** (2011, Germany, 48 MW, Siemens 2.3 MW, EUR 138 M financing)
  - 3 commercial banks & EIB in post-completion refinancing of the first German commercial wind farm

1. The project finance market for offshore wind – recent deals

The banking market is there if the transactions are well structured

- **It is possible to close billion-euro transactions**
  - 4 billion-euro-scale deals in one year, including 2 in Germany in the exact same time frame
  - More than 30 banks are now active, and more than 20 have construction risk exposure
  - A number of different public financing institutions can be tapped – none is indispensable

- **A consensus is slowly emerging on how to structure deals**
  - Multi-contracting structures with a small number of counterparties (2-7) and strong due diligence
  - Early involvement of banks or bank advisors in contractual negotiations, with input and control on specific issues (warranty exclusions, LD caps, interface definition & matrix, availability of vessels and other critical path equipment, project management, shareholding retention clauses)
  - Debt sizing rules and underlying operational assumptions are becoming more consistent across deals
  - Specific focus on appropriate long term O&M arrangements

There is enough money for good projects

- Non recourse finance requires a specific discipline and approach to project risks
- Sponsors which cannot or *do not want* to follow that discipline will not raise non recourse debt

1. The project finance market for offshore wind – 2012 activity

Deal activity has finally reached the UK

- **Gunfleet Sands** (2012, UK, 86 MW (Marubeni's 50%), Siemens 3.6MW, GBP 158 M financing)
  - First non-recourse financing of a minority stake in an offshore project
  - Confirmed appetite of Japanese institutions for the sector (NEXI risk, funded by SMBC and Mizuho)

- **Lincs** (2012, UK, 270 MW, Siemens 3.6MW, GBP 425 M commercial financing)
  - First non-recourse financing including construction risk in the UK
  - Largest amount of commercial bank risk to date

- **Northwind** (2012, BE, 216 MW, Vestas V112, EUR 595 M commercial financing)
  - Yet another new turbine model, and many new participants (ONDD, GIEK, PensionDanmark)
  - Favorable structure (70% gearing, 15-year maturity, full construction risk)

A number of **OFTO transactions** have also taken place in the UK over the past two years on a non-recourse basis

Markets are still open – including for 15 year deals
The proportion of offshore wind investment being financed is actually increasing, despite the gloom

1. The project finance market for offshore wind – some diverging trends

Market segments – A geographical split

- **The UK market**
  - Long delays on early deals and no construction risk taken until Lincs (and then only partially)
  - Large gap between expectations of (utility) investors and what the market was willing to do
  - Bad image of PF generated by focus of banks on relatively minor technical glitches (ie grouting issues)
  - A lot of side activity on the OFTO refinancing side

- **The continental market**
  - Large scale transactions with construction risk have become a regular (if not yet frequent) occurrence
  - Increasing number of banks and sponsors with the right experience and track record
  - Range of possible commercial terms is widening, as actors seek different objectives:
    - Raising funds
    - Increasing leverage and returns
  - Construction period remains “hard work”

Market segments – 2 corporate splits

- **Utilities vs IPPs**
  - Utilities did not really need project finance (whereas IPPs did and had to accept market terms)
  - Project finance was seen as more complex, more expensive, and more time-consuming – and not really non-recourse (at least in the eyes of the rating agencies)
  - Project finance requirements for early deals were seen as especially annoying by utilities (intrusive due diligence, desire by banks to influence contractual structure) and generally incompatible with their own way of mitigating project risks

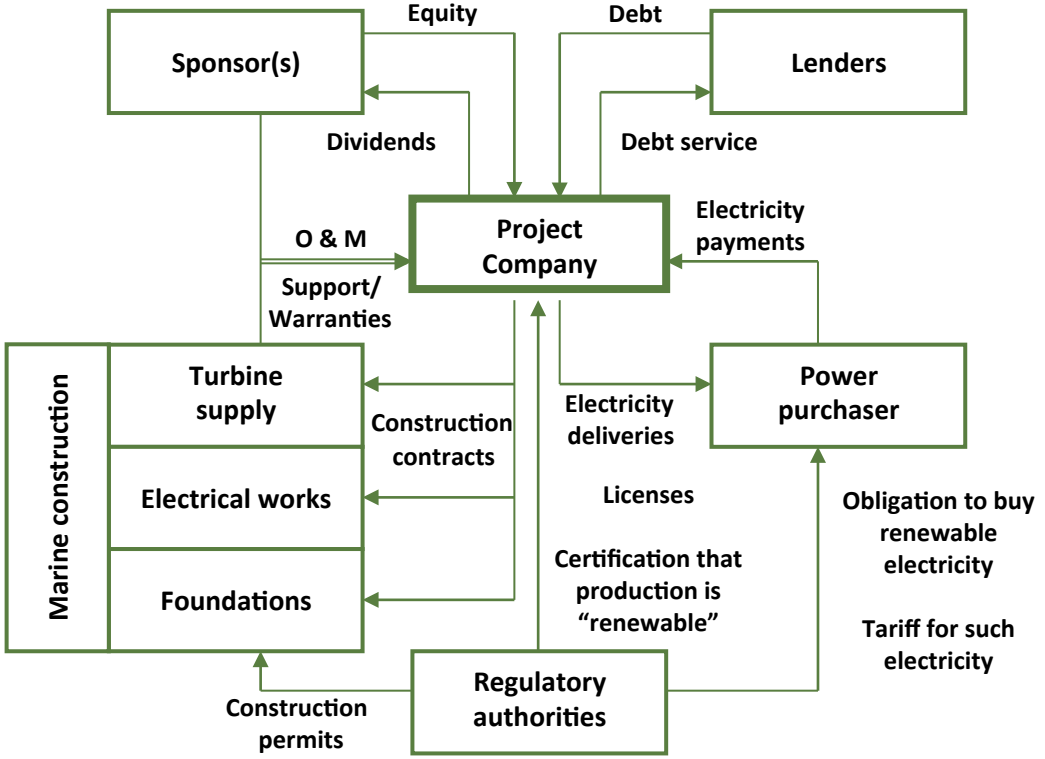
- **Investors looking for money vs higher IRRs**
  - Amongst investors going the project finance route, not everybody has the same objectives or the same ability to negotiate terms with banks
  - Some investors have successfully obtained more favorable terms from the banking market – notably leverage and pricing
  - As the market broadens, investors will increasingly be able to extract more competitive terms – if they have the right project and market approach

1. The project finance market for offshore wind – the contractual structure

PF transactions are always heavily contracted

Major contracts include:

- permits, licenses, authorisations, etc…
- construction/supply contracts
- electricity sales (and, as relevant, green certificates / RO) contracts
- O&M contracts
- financing documents



Wind and offshore wind in particular are quintessential examples of comprehensive contractual structures

1. The project finance market for offshore wind – risk analysis

Offshore wind adds new risks to traditional PF risks

- **Regulatory / political risk** – no to permitting risk, yes to (some) regulatory change risk
- **Price / market risk** – no to volume risk, yes to (some) price risk
- **Counterparty risk** – increasing attention as projects grow in size
- **Technology risk** – core risk, but banks have shown willingness to bank new turbines
- **Wind risk** – easier offshore than onshore; wake effect is key worry
- **Construction risk** – still the toughest risk (multi-contracting), not done in London market yet
- **Operating risk** – taken on the basis of long term O&M agreements with WTG manufacturers

German energy giant E.on warned on Tuesday that the country's green energy revolution is at risk from delays in connecting offshore wind farms to the grid. The company said it will put two large projects on hold unless the grid operators speed up the construction of power lines.

New profit warning triggers Vestas credibility crisis

Oops, ovality!

Offshore wind farm grout failure may cost £25 million

12/08/2010 Email to a friend Comment on this article

Grout injected during the erection of offshore wind farms is breaking up, leading to concerns over their structural integrity, according to engineers at Scottish Southern Energy.

Scour's threat to Europe's offshore wind farms is sinking in

A question mark hangs over the long-term stability of Europe's shallow-water turbines, after research linked to the Horns Rev 1 wind farm found that high-powered currents were causing the stone "armour" around the base of monopile foundations to collapse.

Offshore wind is one of the most complex industries to be project-financed

Recent trends in the financing of offshore wind farms

Table of contents

2. Equity transactions in offshore wind

Notable transactions in the early years

- **Gode Wind 1** (2007, DE, 80 turbines, 90% sold by PNE Wind to Econcern)
  - Sale of a permitted project to an investor explicitly focusing on non recourse financing
  - Project purchased back by PNE Wind following bankruptcy of Econcern (and recently sold to DONG)

- **Boreas** (2009, UK, 194 MW, Siemens 3.6 MW, 50% sold by Centrica to TCW)
  - Portfolio (which also included a 36 MW onshore wind farm) sold as fully operational assets
  - Transaction simultaneous with financial close of a long term non recourse refinancing of the portfolio

- **Walney** (2010, UK, 367 MW, Siemens 3.6 MW, 24.8% sold by DONG to PGGM/Ampere)
  - Transaction closed before final construction of the project (which was already well under way)
  - Deal includes completion commitments by DONG
  - First equity sale to pension funds
  - Transaction designed from the start to allow for refinancing of the minority stake (still pending)

- **Nysted** (2010, DK, 166 MW, Bonus 2.3 MW, 50% sold by DONG to PensionDanmark)
  - Transaction amount of EUR 94M, valuing the project at 1.15 MEUR/MW
  - One of the first offshore wind projects, with a 10 year track record
  - Show utilities are willing to take long term O&M risk on the basis of a good track record

2. Equity transactions in offshore wind

Major transactions in recent years

- **Anholt** (2011, DK, 400 MW, Siemens 3.6 MW, 50% sold by DONG to PensionDanmark & PKA)
  - Transaction closed before construction started, with DONG providing a 15 year O&M contract and a completion guarantee
  - At DKK 6 billion (EUR 805 M – 4.03 MEUR/MW) it is the largest equity transaction to date in the market

- **Nördlicher Grund** (2011, DE, 80 turbines, 100% sold by Eolia to Blackstone)
  - Project sold with permits but an otherwise early stage of development
  - Demonstrates appetite of some financial investors for full development risk

- **Gunfleet Sands** (2011, UK, 172 MW, Siemens 3.6 MW, 50% sold by DONG to Marubeni)
  - Transaction announced at GBP 200 M (EUR 230 M), ie a price of 2.65 MEUR/MW, after completion
  - Debt of GBP 158 M obtained from Japanese banks, reducing hard equity cost to ca. 0.60 MEUR/MW
  - Transaction confirms growing interest in offshore wind from Japanese investors

- **Borkum Riffgrund West** (2011, DE, 400 MW, 100% sold by EnergieKontor to DONG)
  - Purchase of permitted project by DONG at EUR 30 M, ie 0.08 MEUR /MW

- **Borkum Riffgrund I** (2011, DE, 277 MW, Siemens 3.6 MW, 50% sold to LEGO group)
  - Project previously purchased from PNE in 2009 at EUR 56 M – 0.20 MEUR/MW
  - Sale of 50% to private investor at DKK 4,700 M (EUR 630 M - 4.66 MEUR/MW) includes construction costs + development premium

- **Gode Wind I, II & III** (2012, DE, 900 MW, 100% sold by PNE to DONG)
  - Purchase of 3 projects at various stages of development by DONG at EUR 157 M, ie EUR 0.17 MEUR /MW

2. Equity transactions in offshore wind – some lessons

The investor market is there (also) if the transactions are well structured

- **A wider range of investors beyond utilities than people assume**
  - Infrastructure funds and pensions funds (PensionDanmark, TCW, PGGM)
  - Private equity groups (Blackstone, etc)
  - Corporations with specific strategies (LEGO, Colruyt, Marubeni)
  - …. and many more sniffing around the sector

- **Valuations are actually relatively consistent**
  - Permitted projects – development cost + premium @ 200kEUR/MW
  - Contracted projects – construction cost @ 3.5MEUR/MW unlevered (or 1.1 MEUR/MW levered)
  - Operational projects – linked to regulatory framework and IRR target of investors (8-10%)

- **Trade off between construction risk and returns now closely examined**
  - As more assets are operational, the universe of investors grows and IRR targets are going down
  - A number of investors are now looking to take construction risk to improve returns (to double digits)
  - A “bankable” deal is also one which many investors can find attractive

Recent trends in the financing of offshore wind farms

Table of contents

3. What's the best route? – EPC or not?

Banks focus on interfaces between key tasks as much as those between contracts

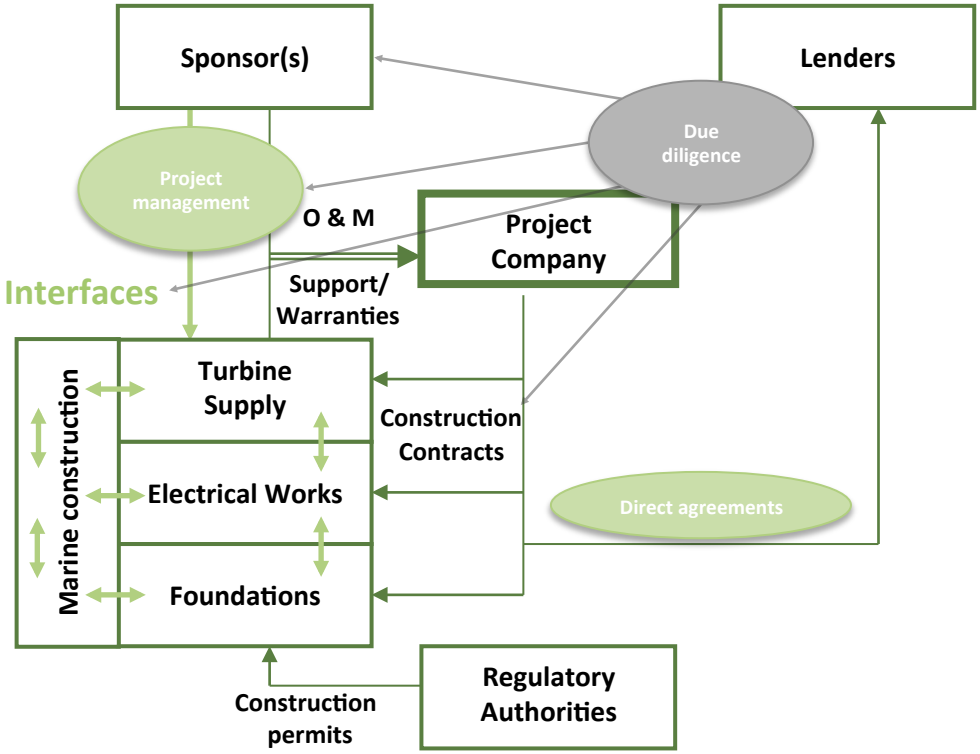
Several completely different industries

- Turbine manufacture
- Foundation / steelwork supplies
- Electricals
- Cabling
- Marine construction work

No obvious general contractor

And yet banks do take construction risk

- Focus on project management
- Focus on key interfaces
- Understanding of critical path items
- Heavy involvement in contract negotiation



The higher risks borne by the banks impose different development and contractual approaches

3. What's the best route? – the ratings issue

How rating agencies look at non-recourse debt for offshore wind remains a contentious isue

- **Ratings agencies have a negative view on non-recourse debt**
  - They consider that utilities will not walk away from a strategic project and thus debt is not really non-recourse
  - In countries where power is sold to the market, utilities which provide PPAs are considered to have a long term liability under the project and this is counted against them by ratings agencies
  - Finally, certain utilities have covenants in their corporate credit facilities which prevent them from doing project finance if they control the project (and utilities typically prefer to control projects)

- **Utilities have gone toward equity solutions**
  - Use of UJVs or IJVs which allow pro rata consolidation of project equity
  - Sale of minority stakes (up to 49.9%) in projects

- **This comes in addition to the other perceived issues of non recourse debt**
  - More expensive
  - Intrusive involvement of multiple external parties
  - No results (UK market perception)

3. What's the best route? - At least there is choice

There are actually plenty of routes open

- **Non recourse debt for greenfield projects**
  - The "full scope "project finance version, allowing significantly lower equity commitments
  - It is available, but requires to go through a specific discipline
  - Subject to rating agencies perception (as discussed separately)

- **Non recourse refinancing of operational projects**
  - Available now that more projects are actually operational and have good track records
  - Simpler than greenfield as all construction contractual & management issues have been resolved
  - May take the form at some point of portfolio refinancings (and allow for sale of minority stakes in these as well)

- **Sale of minority stakes in projects, pre- or post-completion**
  - Allows to recycle capital invested in existing projects into new ones without loss of operational control
  - Recent transactions have shown there is appetite from many types of investors for these assets
  - Most interested investors to date prefer to avoid construction risk, but that will change
  - Allows capture of value through long term O&M arrangements or PPAs

3. What's the best route? – Pick your fights

The coming fights between lenders, investors and contractors

- **How intrusive is the due diligence?**
  - Review of interfaces, sub-contracts, logistics and project management – irrespective of contractual structure
  - Review of technology, supply chain, quality control processes, key personnel, sub-contractor creditworthiness
- **How involved are the banks (or relevant advisors) in contract negotiation?**
  - Requirement for a number of PF-standard clauses
  - More explicit warranty and interface language
  - Decision on number of contracts
  - Responsibility for vessels
  - Parent company guarantees or performance bonds
- **How strict are the financial covenants?**
  - Detailed information – and at times, validation of decisions
  - Share retention clauses
  - Debt sizing principles
- **What are the terms and conditions for long term O&M?**
  - Tenor, scope, liability, fixed price, counterparty
  - Options to exit after a few years

3. What's the best route? – Can PF be made to work?

Project finance for offshore wind is not just about leverage

- It helps improve **risk discipline** for the project
  - More external eyes on contracts, interfaces and detailed project structure
  - Specific focus by banks and their advisors on potential downside scenarios
  - Project can "work" on a stand-alone basis (which makes it easier to sell)

- It can help investors – *and contractors!* – obtain **more favorable contractual terms**
  - Using banks as a "bad cop" can be useful in contractual negotiations (*true for both investors and contractors!*)
  - 3-way negotiations can allow you to get away from zero-sum negotiations

- It's ***really*** **non-recourse**
  - Banks take construction risk on the basis of the contracts and committed contingency mechanisms
  - While sponsor involvement is valued, banks evaluate deals with no expectation of additional cash in

- It's **no longer so expensive**
  - Recent deals have seen overall cost of >15-year debt at 6%

3. What's the best route? Can PF be made to work (2)?

You cannot improvise a project finance deal

- It needs to be an **early decision** by investors
  - A lot of the value from project finance discipline comes at an early stage, when choosing the contractual structure and negotiating the relevant contracts
  - The good news is that a lot of that work can be done without involving large banking groups, by using a small number of specialised advisors

- It requires **experienced advisors**
  - Bring in at your side entities which have credibility as lenders' advisors and ask them to look at the project from the perspective of lenders
  - Technical advisors (Mott, Sgurr) are indispensable
  - We believe we can also bring value in pre-packaging a deal that banks will accept

- Investors and contractors need to be **committed to it**
  - Counterparties will accept to incorporate banks' requirements in their commercial offers only if they really believe that the project will not happen without external financing
  - Do take into account the feedback from specialised advisors, otherwise it won't work

Where to reach us

Paris

8 rue d'Uzès, 75002 Paris

tel: + 331 4221 3663

email: fr@green-giraffe.eu

Utrecht

Maliebaan 92, 3581 CX Utrecht

tel: + 31 30 820 0334

email: nl@green-giraffe.eu

London

133 Houndsditch, London EC3A 7BX

tel: +4475 5400 0828

email: uk@green-giraffe.eu

http://www.green-giraffe.eu

Green Giraffe
Energy Bankers