



Equity and debt in Taiwan OW

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Green Giraffe – The renewable energy finance specialist

We get deals done

Deep roots in renewable energy finance

- Launched in 2010 by experienced finance specialists with a **strong and proven track record** in renewable energy
- 70+ professionals with offices in Paris (France), Utrecht (the Netherlands), London (UK), Hamburg (Germany), and Cape Town (South Africa)
- Multi-disciplinary skillset including **project & structured finance, contract management, M&A, and legal** expertise



More than **EUR 20 billion** funding raised for renewable energy projects in **8 years**



70+ professionals in **5 countries**

High-quality, specialised advisory services

- Focus on projects where we can actually add value
- We can provide a holistic approach and are able to include sector-specific tasks in addition to traditional debt or equity advisory (such as contracting, strategic advisory and development services)
- Widening geographical reach beyond Europe, with a burgeoning presence in the Americas, Africa, and Asia
- Priority given to **getting the deal done!**

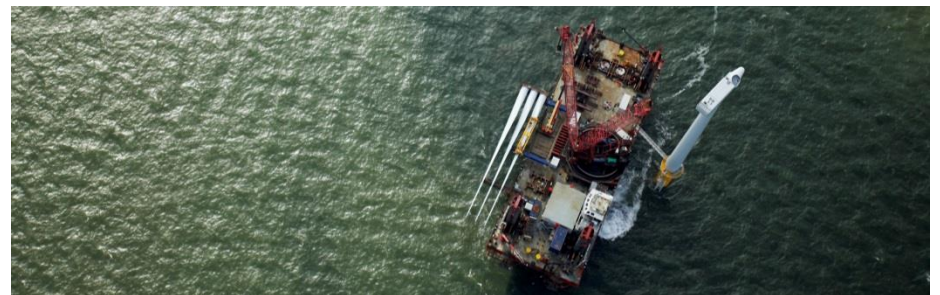


Involved in over **120 renewable energy projects** with a total capacity of almost **30 GW**

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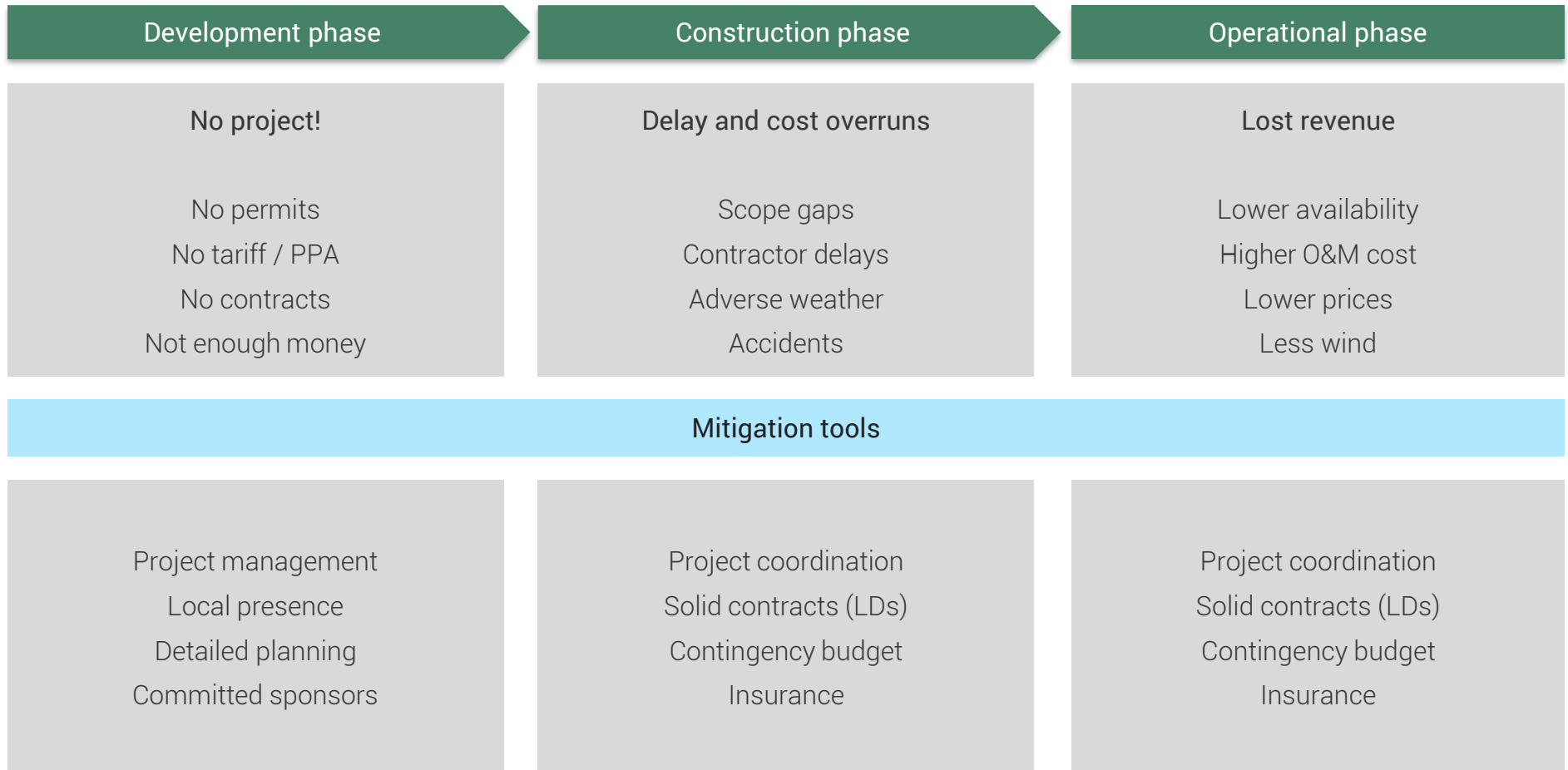
Table of contents

1. The risks
2. Equity strategies
3. Debt providers
4. Taiwan considerations



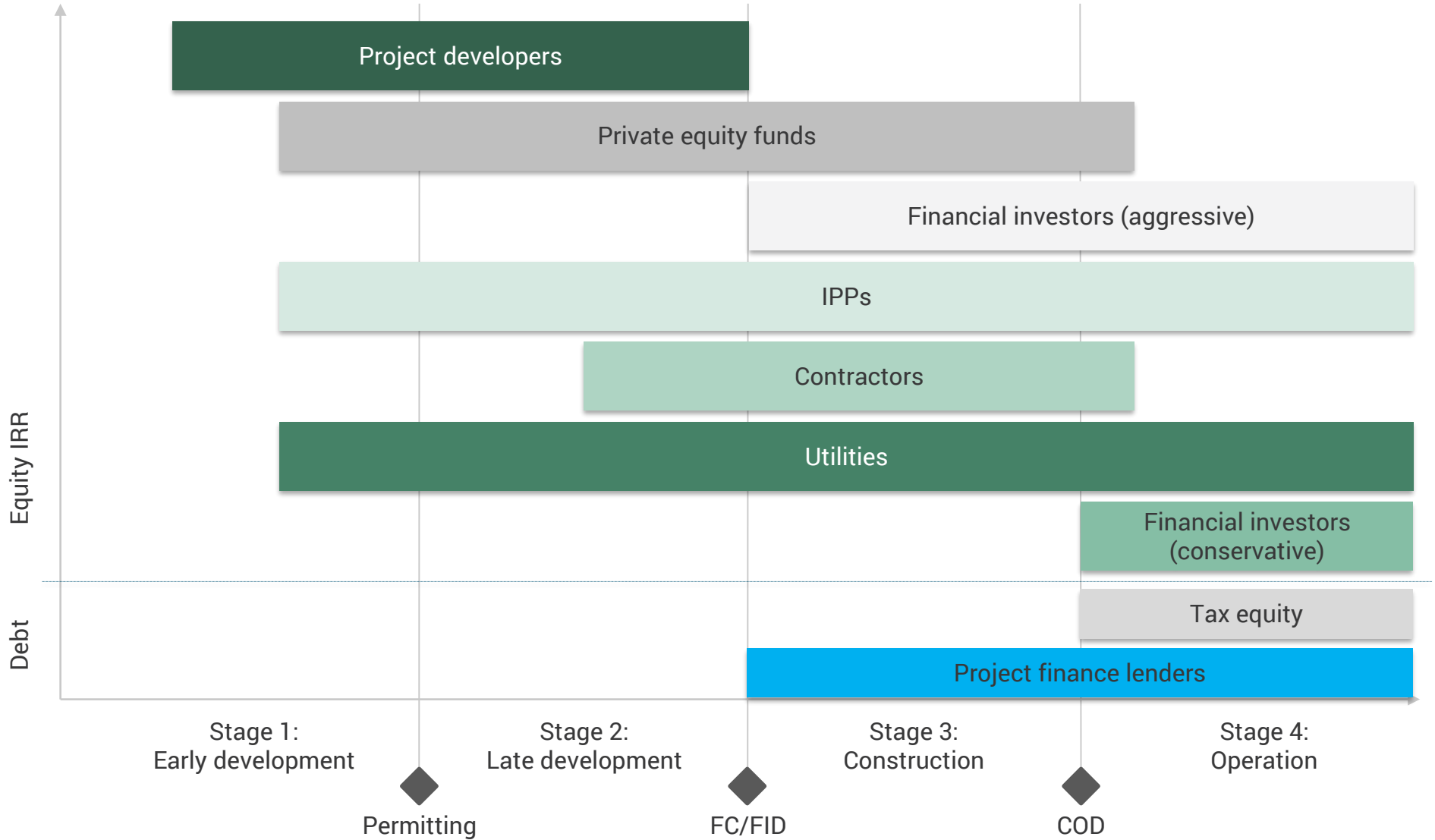
1. The risks

Risks are different in each project phase



1. The risks – and who will take them

Investor profiles



1. The risks – the stakeholders

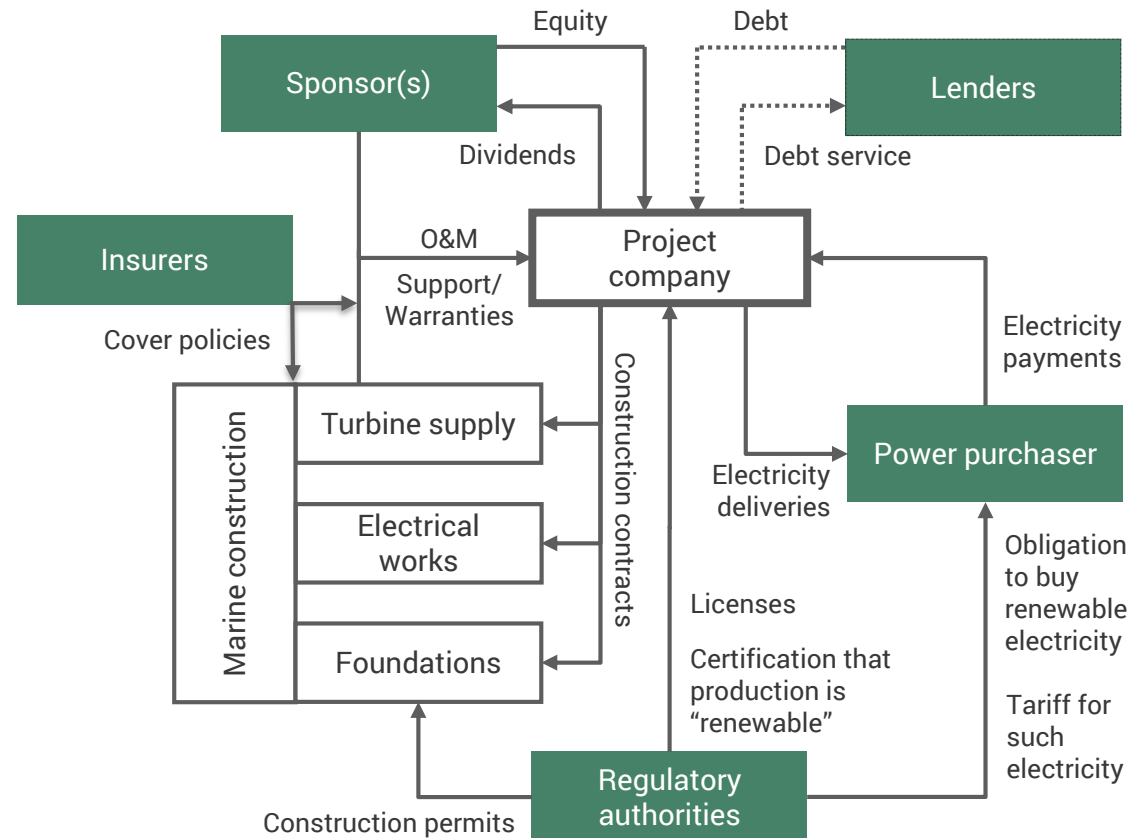
Offshore wind transactions are always heavily contracted

Major contracts include

- Permits, licenses, authorisations, etc...
- Construction/supply contracts
- Electricity sales contracts (and, if applicable, green certificates/RO/REC contracts)
- O&M contracts
- Insurance
- Financing documents

Parties with a stake in the financing and a say on the overall project structure may include

- Sponsors/investors
- Lenders (and their advisors)
- Contractors
- Insurers (and their advisors)



Offshore wind is a quintessential example of a comprehensive contractual structure

1. The risks – the first major decision (1)

“Balance sheet” (equity) vs “non recourse” (debt)

Large projects are typically developed through a stand alone project company

- Owned by the project investors
- With its own revenues & balance sheet and thus the ability to raise debt on its own merits

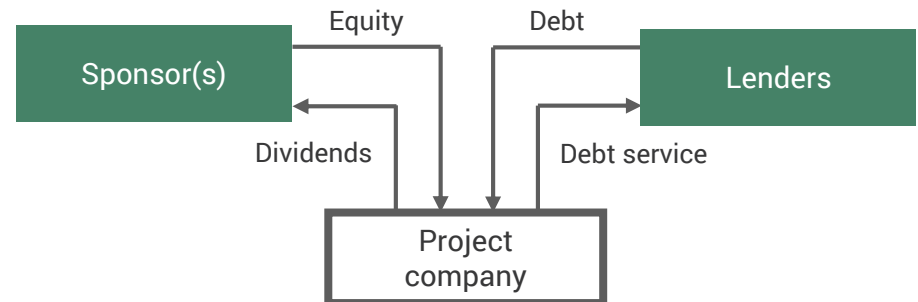
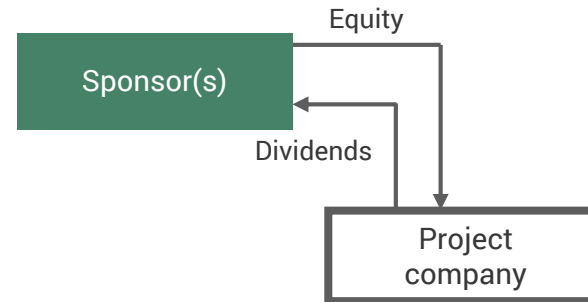
There are only two discrete sources of funding

- By the owners (directly via equity or shareholder loans, or indirectly via guarantees)
- By banks without recourse to the equity investors – this is “project finance”

The way a project is funded will have a material impact on how it deals with contractors

- In a project finance deal, you need to deal with the senior lenders' requirements!
- Tax, accounting, consolidation and rating issues

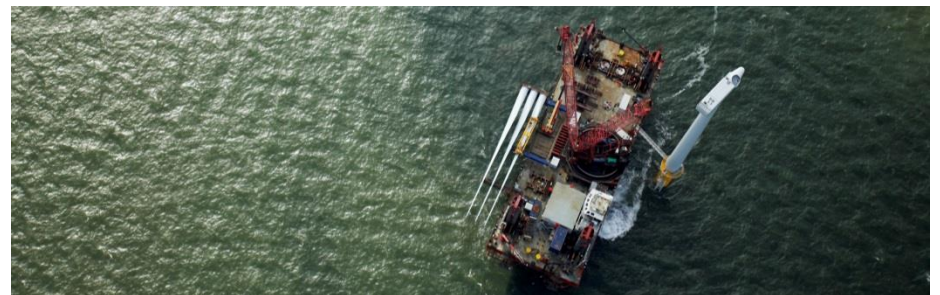
Using non recourse debt meander lenders will have a say over contracts. Doing so prior to construction imposes substantial changes to how such contracts are negotiated



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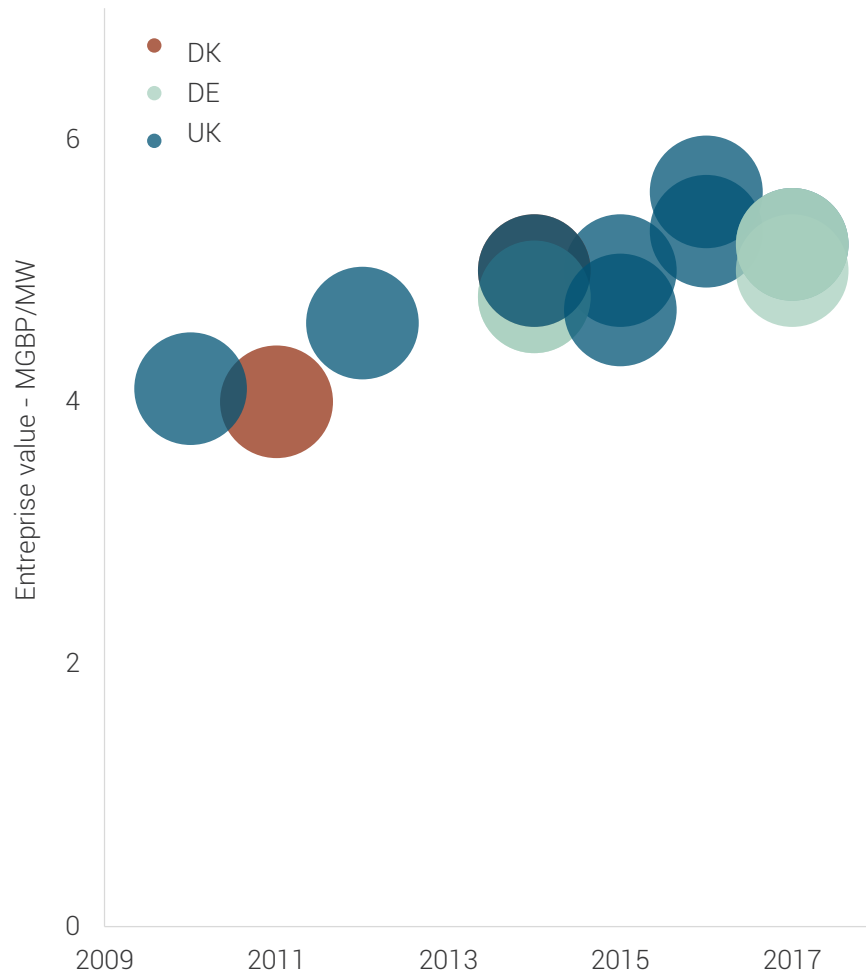
Table of contents

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2. Equity strategies
3. Debt providers
4. Taiwan considerations



2. Equity strategies – we see consistent project valuations

The baseline – recent operating projects with long term (high) fixed tariff



An attractive asset class

- Long term, highly stable and predictable cash flows
- Large volumes for individual transactions
- Increasingly understood risk, with good track record

Offshore wind 101

- The natural first step for new investors in the sector is to buy a stake in an already built project, with a strong operator and a fixed tariff
- The IRR for such unlevered assets is the "sovereign risk" reference for all other offshore wind projects

Additional risks are then priced in

- Leverage
- Construction risk
- Merchant risk (beyond tariff, or even earlier)

This graph only shows transactions after COD

2. Equity strategies – a long term decrease in OW premia

The market as it was before the tenders

An active equity market

- Renewable energy assets are trading at high prices as investors competitively chase yield, pushing down IRRs
- Continued high transaction volume in offshore wind in 2017 (both for projects and companies like GIB & A2Sea)
- Transactions for assets under development (Dogger Bank), at FC (Deutsche Bucht) or operational (North Hoyle)
- Emergence of Chinese buyers (CTG, SDIC) and continued active presence of Japanese and Canadian investors

Prices have been very consistent

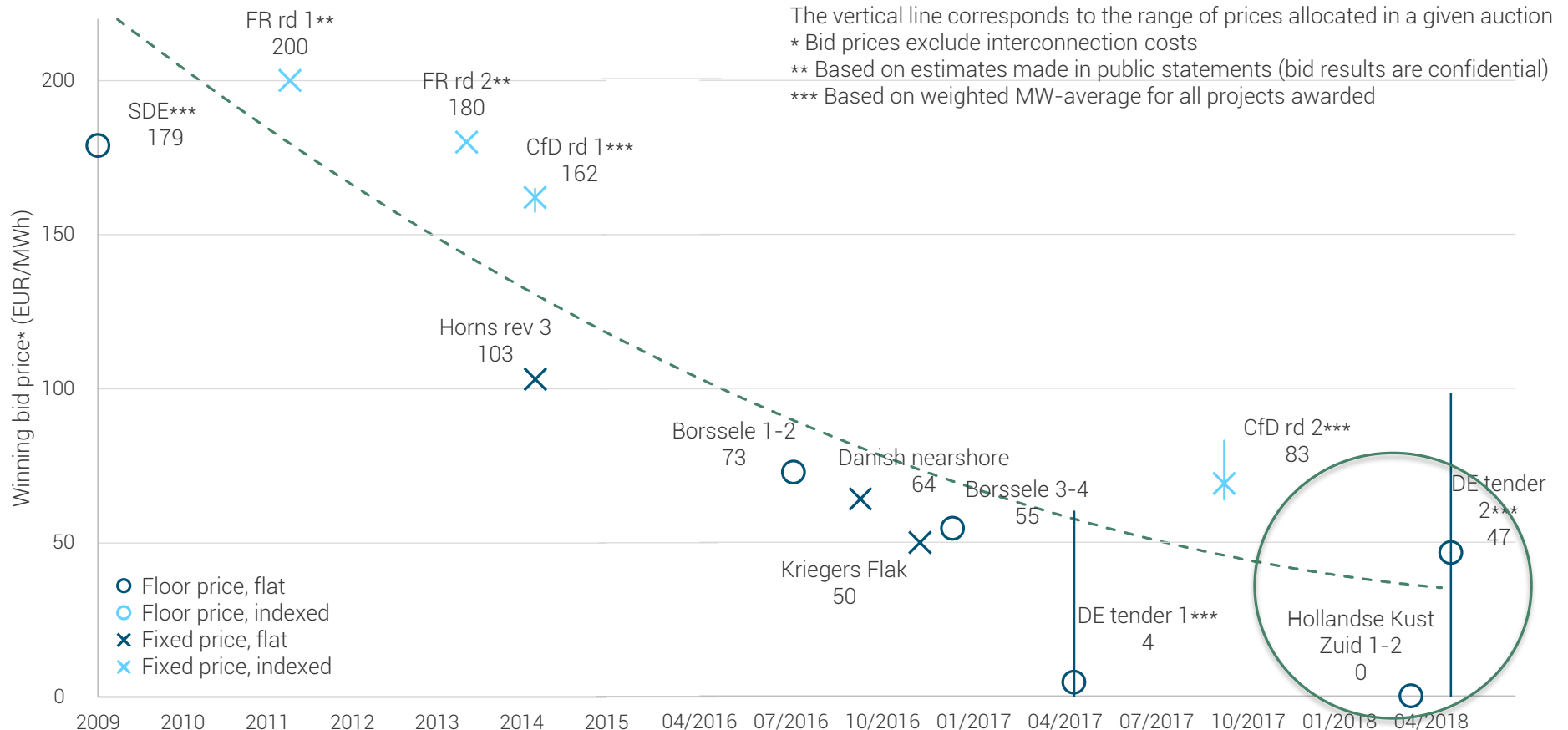
- There was a clear differentiation between development stages all the way to operating projects
- Decent, if regularly shrinking, premium for construction risk and early development (permitting) risk
- Prices are relatively insensitive to technology or tariff and regulatory regime

Evolution of investor return expectations (2010-2016)



2. Equity strategies – What do tenders change?

Background context – falling power prices for offshore wind projects



Recent tenders in continental Europe have shown that some investors are willing to build offshore wind projects with 40 EUR/MWh tariffs i.e. 50 USD/MWh (2018 prices) ex-grid

2. Equity strategies – what the tenders tell us

What made the price drops possible: a maturing industry plus regulatory pressure

More experience and more competition across the value chain

- Competitive funding for all phases of projects – development, construction and operation, with multiple willing investors
- The supply chain is getting more comfortable with the risks and both costs and “buffers” are going down
- The consolidation of the sector has actually helped build strong competition amongst a small number of credible players for all core tasks (turbine suppliers, marine construction companies with “wrap capabilities”, suppliers for cables, offshore substations, foundations, and installation vessels)

Developers are also willing to be more aggressive, especially in the context of tenders

- Build up of experience and know-how translates into more willingness to take construction and long term operation risks
- Knowledge of the potential upsides from projects (improved performance, lower costs, and sale/refinancing potential)
- The move to tenders for pre-developed sites reduces the need to commit high-risk (and thus expensive) devex

Local incentives

- Tenders are still national, and there are local reasons for parties to bid, especially for “home” players
- Scarcity effect of some tenders (e.g. Germany under the transition tenders of 2017 and 2018)

The auctions accelerated the downward movement of tariffs but the industry was ready

2. Equity strategies – what the tenders tell us

What made the price drops possible: financial optimisation was essential

The financial context is favourable (but that is the only factor the industry does not control)

- Record low cost of money
- Investors seeking higher returns and finding the long term stable revenue flows of the industry very attractive

But the background context is only a small part of the story, and the other factors will not go away

- Perception of offshore wind risk is improving as experience and track record builds up
- Downward movement on returns has been steady but reasonably slow – nobody has done anything stupid
- Industry has built up a solid, highly professional track record of solving issues and avoiding losses – there's still a premium as marine construction will always be risky, but risk is managed transparently and effectively

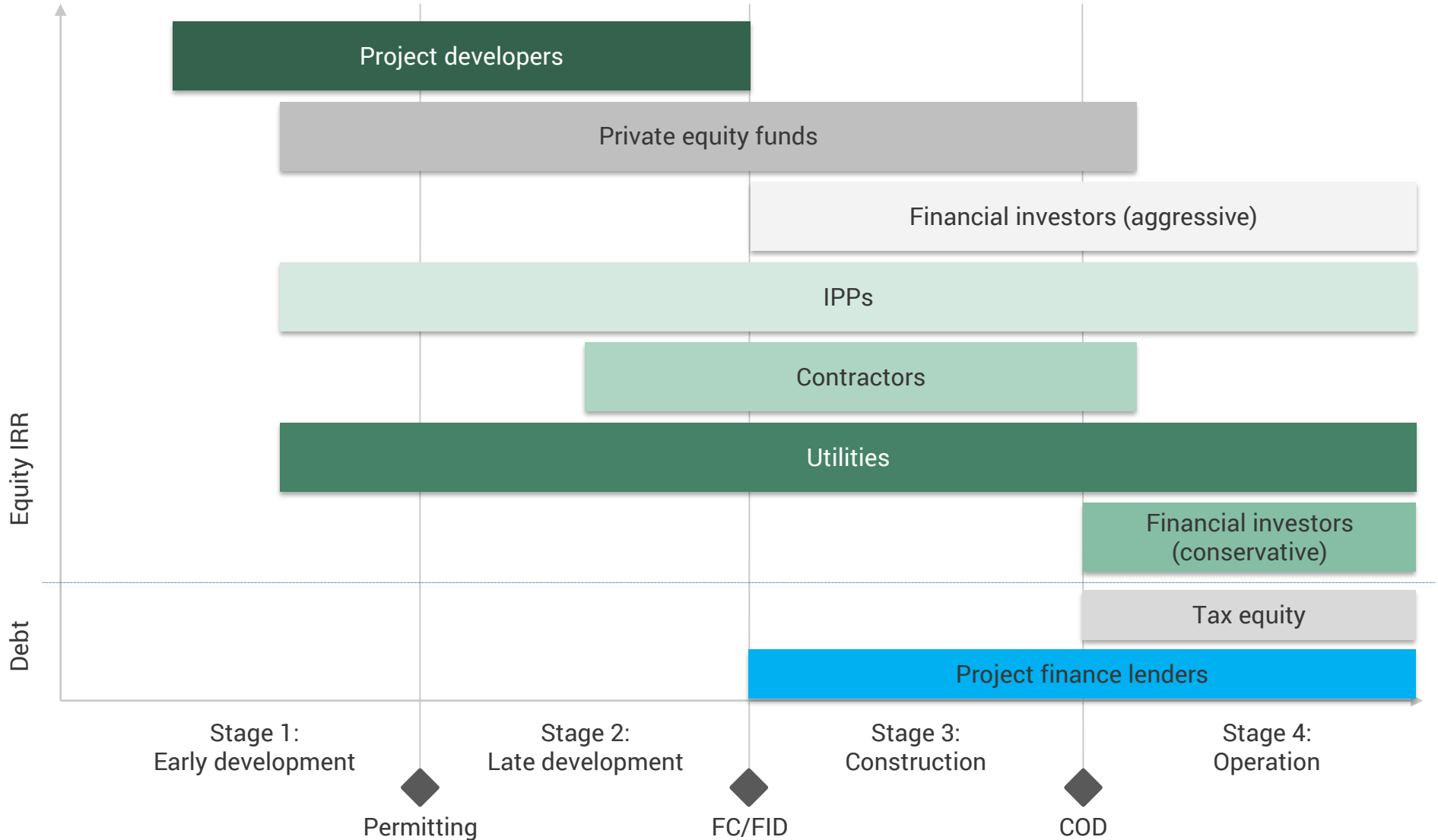
Financial optimisation has become sophisticated

- Increasing experience in selling (stakes of) operational projects to long term financial investors at high valuations
- Such equity refinancings can be incorporated from the start in assumptions, lowering the long term cost of capital and bid prices (but of course reducing the opportunities for capital gains that existed under the old price regimes)
- In parallel, the debt market has shown it was ready to take construction risk on attractive terms (leverage, pricing, covenants) and to offer even more attractive terms once projects are completed (and such refinancing terms can also be anticipated)

The lower pricing of offshore wind risk is not going away

2. Equity strategies – a bit more about the investors, again

Investor profiles



2. Equity strategies – what works

Several successful equity strategies

There are buyers for almost every profile of risk

- There is appetite for every kind of risk (development, construction, operations, merchant, etc.)
- There is appetite for every size of ticket (minority, majority, levered, unlevered)
- Returns are consistent with the risks taken

Current European equity strategies are based on aggressive assumptions

- Lower capital expenditure thanks to competitive supply chain
- Assumptions that projects will be refinanced with cheaper capital (whether debt or equity) once operational
- Limited premium for construction risk

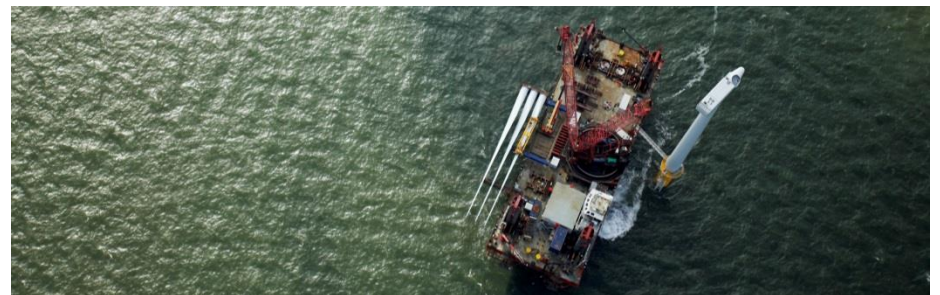
Recent new auction results (Massachusetts, Taiwan) suggest there will be a minimal premium for “new market” risk

- Major European contractors expected to follow investors in new markets and build the local supply chain
- Aggressive financial structuring from the get-go, on the assumption that refinancings will indeed take place
- Experienced players involved in the projects

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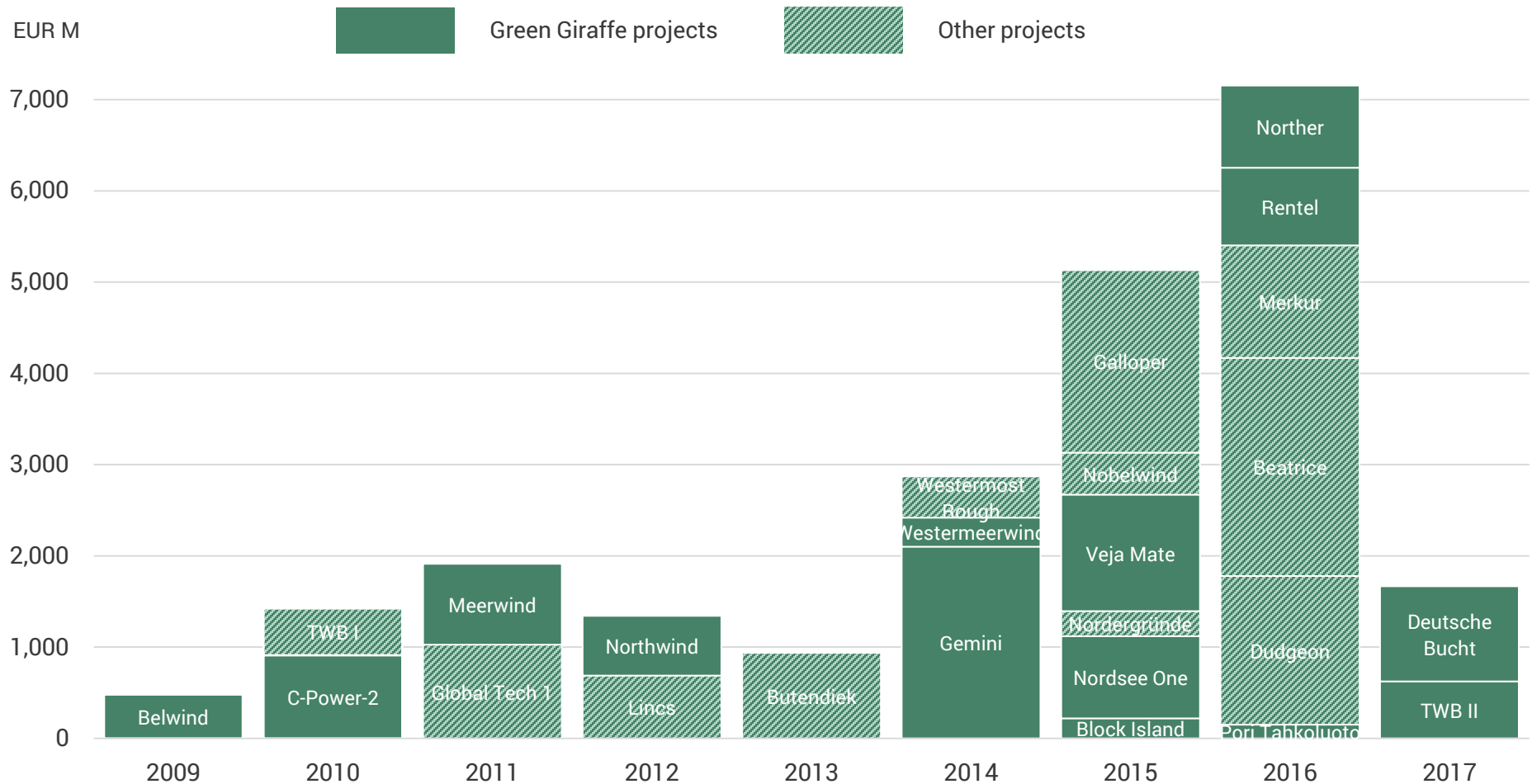
Table of contents

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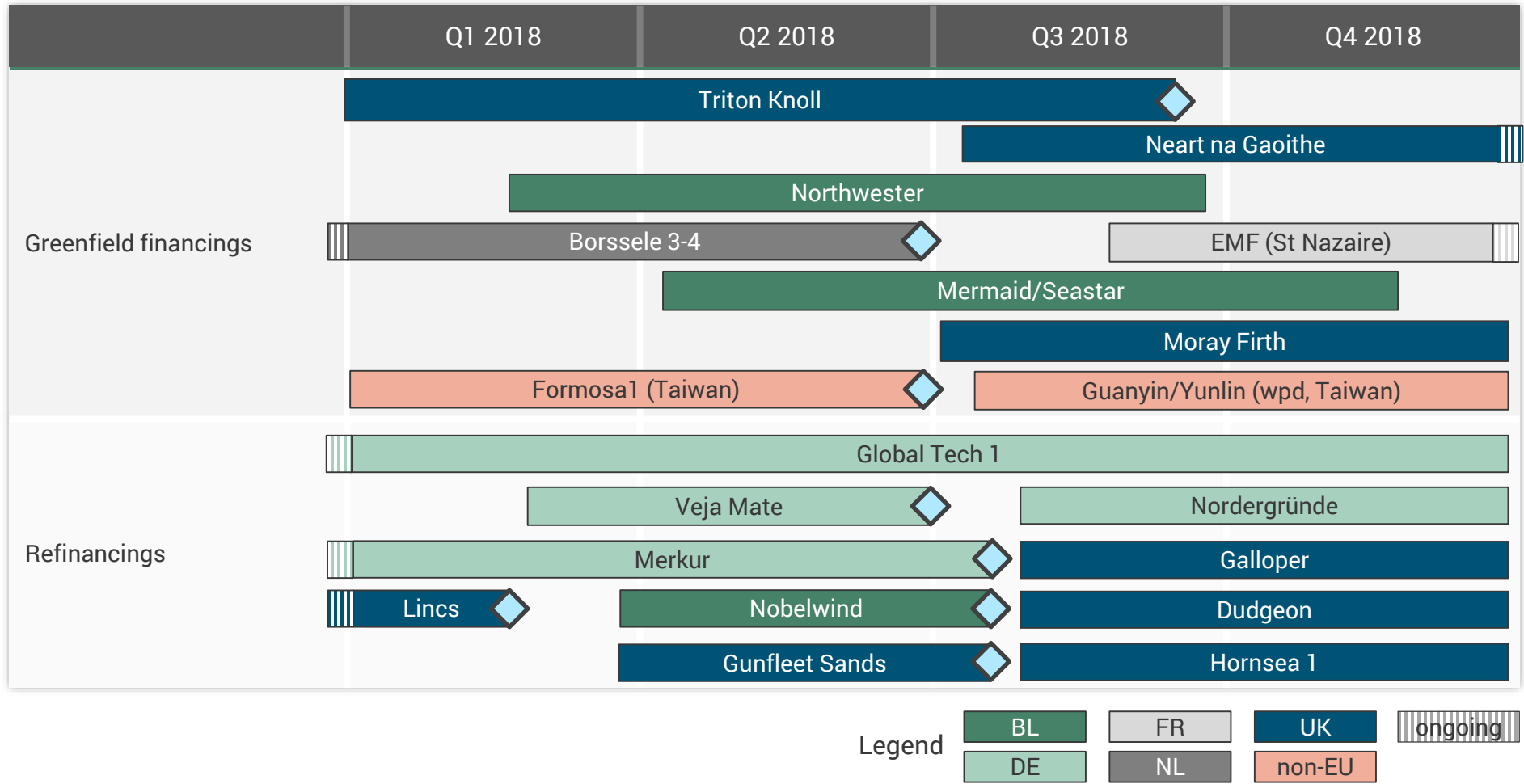
3. Debt providers – a quick history of offshore wind

The debt market has grown with the industry



3. Debt providers – the activity in 2018

Current market activity shows there is plenty of funding for the industry

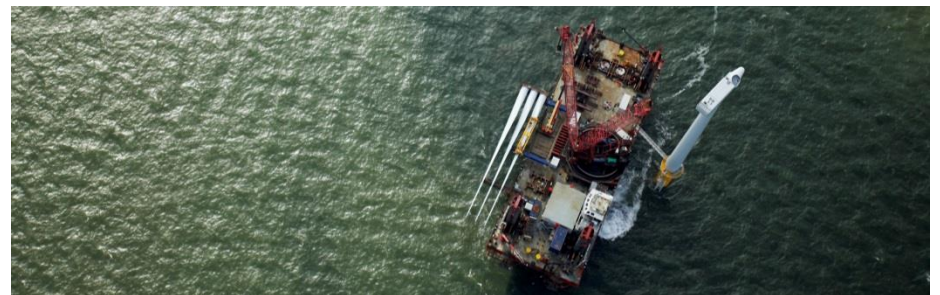


Project finance for offshore wind is fully mature

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Table of contents

1. The risks
2. Equity strategies
3. Debt providers
4. Taiwan considerations



4. Taiwan considerations

Comparison to Europe

| Opportunities | Challenges |
|--|--|
| Strong wind resource | Early projects need to help develop the supply chain |
| Allocation round projects benefit from relatively strong tariffs | No extension of life after 20-year period |
| 20-year tariff period | Projects must finance transmission assets |
| Clear project pipeline | Insurance and financing |
| First-mover advantage | Regulatory costs |
| Regional opportunities | Site conditions (seismic activity, typhoons, etc.) |

4. Taiwan considerations

Valuation is the result of a combination of factors

Key valuation factors

- 1 Production
- 2 Availability
- 3 Negative prices / Merchant prices / Inflation
- 4 O&M costs / Inflation / Decommissioning costs
- 5 Discount rate

What the buyer will consider

- 1 P50? P75? Seller's EYA / Buyers' EYA? Refreshed pre-construction EYA only? Operational data?
- 2 Guaranteed / Demonstrable uplift
- 3 Market revenues
- 4 Contract benchmarking dates / Supporting studies and technical advice
- 5 Depends on buyer, and related min yield

In highly leveraged transactions, the buyers' yield and IRR are expected to be volatile. Securing a robust revenues story validated by experts helps to lower the discount rate



Debt



Equity



Strategic



Contracting

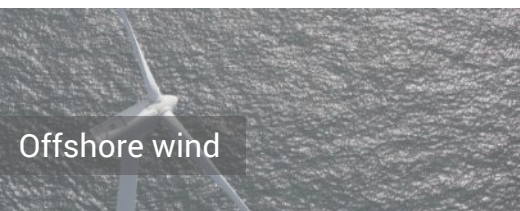


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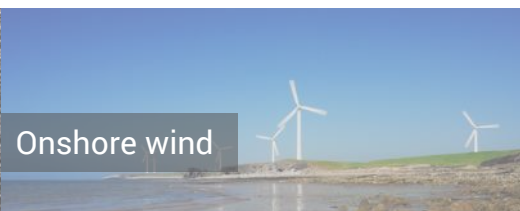
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Offshore wind



Onshore wind



Solar power



Other renewables