Green Giraffe
The renewable energy financial advisors

Recent trends in offshore wind finance

WindEurope conference, Bilbao, 4 April 2019

A specialist advisory firm focused on renewable energy

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
- 85+ professionals with offices in Boston (USA), Cape Town (South Africa), Hamburg (Germany), London (UK), Paris (France), and Utrecht (the Netherlands)
- Multi-disciplinary skillset including **project & corporate finance, M&A, tendering, contracting, and legal** expertise

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 M&A advisory (such as contracting, tender advice, strategic advisory, and development services)
- Widening geographical reach beyond Europe, with a growing presence in the Americas, Africa, and Asia
- Priority given to **getting the deal done!**

Close to **EUR 25 billion** funding raised for renewable energy projects in **9 years**

85+ professionals in **6 countries** on 3 continents

Involved in over **150 renewable energy transactions or projects** with a total capacity of circa **35 GW**

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1. Debt vs equity

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

Large projects are typically developed through a standalone project company

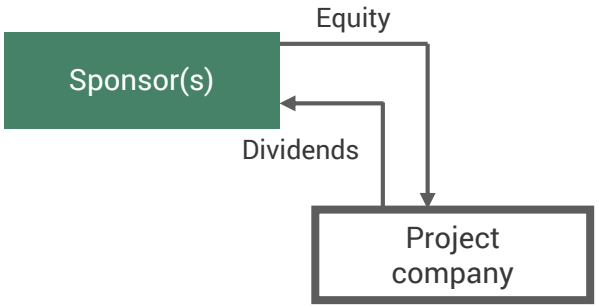
- Owned by the project investors
- With its own revenues & balance sheet and thus the ability to raise debt on its own merits

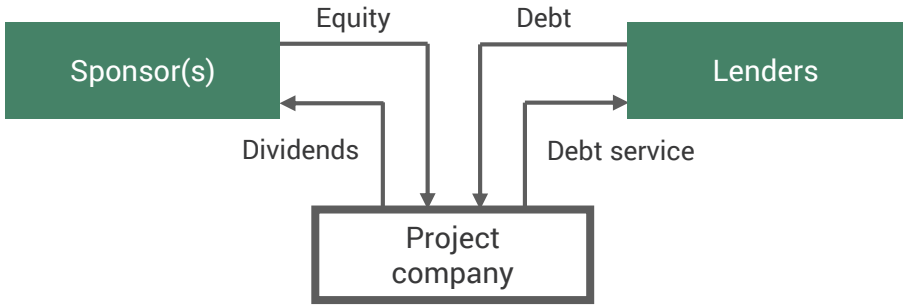
There are only two discrete sources of funding

- 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





All parties have a direct incentive to understand who will be funding the project

1. Debt vs equity

A quick reminder about project finance

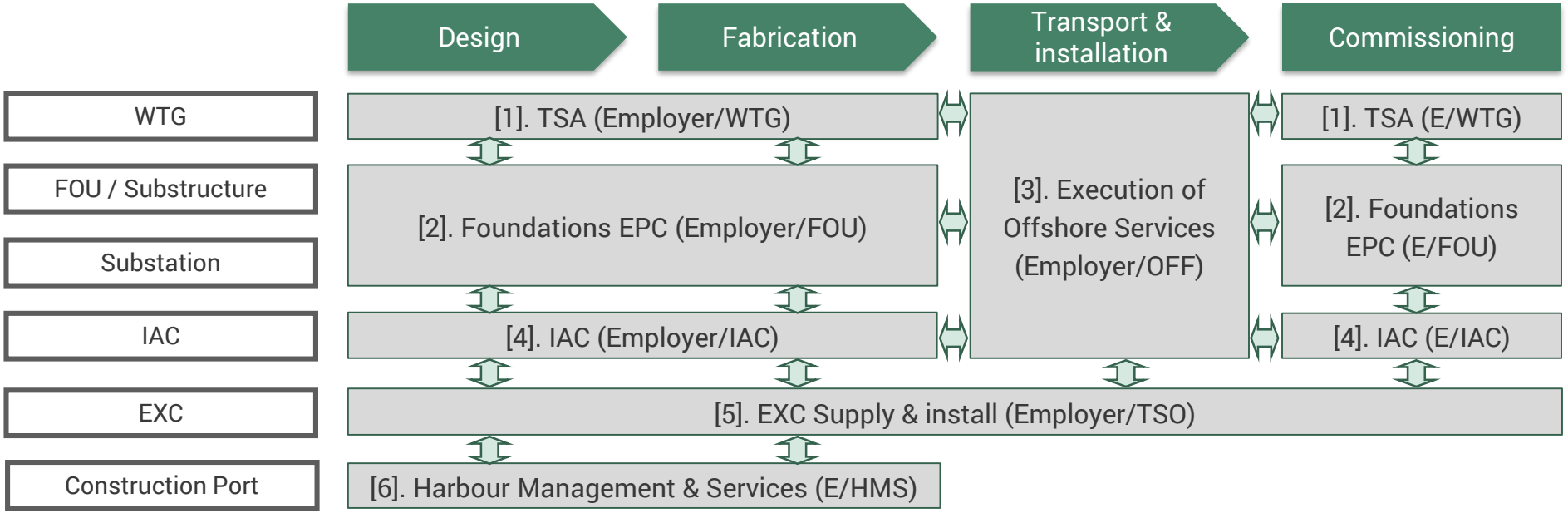
No recourse	No upside
Recourse to investors is contractually limited	**Lenders receive a fixed remuneration**
Lenders rely on project revenues only	Lenders do not benefit from better performance
Capital intensive projects requiring long term financing	**Low single-digit margins vs high leverage**
Lenders need long term operational performance	Risks to be commensurate with remuneration

- Lenders need to make sure that the project works on a standalone basis, with no third party commitments than those made at financial close. Such commitments must be realistic, credible and durable, both from a contractual and an economic standpoint
- This typically entails very detailed contractual frameworks and extensive due diligence

- Lenders need risks to be measurable and to have probabilities of occurring in the low single digits for investment to make sense. Risks which are (seen as) well understood are thus easier to bear
- Project finance lenders will usually have priority access to cash-flows and security on all assets, contracts and equity of the project

1. Debt vs equity

A complex contracting context



This contracting strategy is based on a typical multi-contracting strategy for a fixed-bottom offshore wind project. The scope is divided according to expertise, allowing the employer to control the different workstreams.

It is also possible to find contractors who will tackle multiple packages and provide wraps for these (which reduces interface risk but typically comes at an additional cost)

Glossary

E: employer; **EPC:** engineering, procurement, construction; **EXC:** export cable; **FOU:** foundations; **HMS:** harbour management & services; **IAC:** inter-array cables; **OFF:** offshore services; **TSA**: turbine supply agreement; **TSO:** transmission system operator; **WTG**: wind turbine generator

1. Debt vs equity

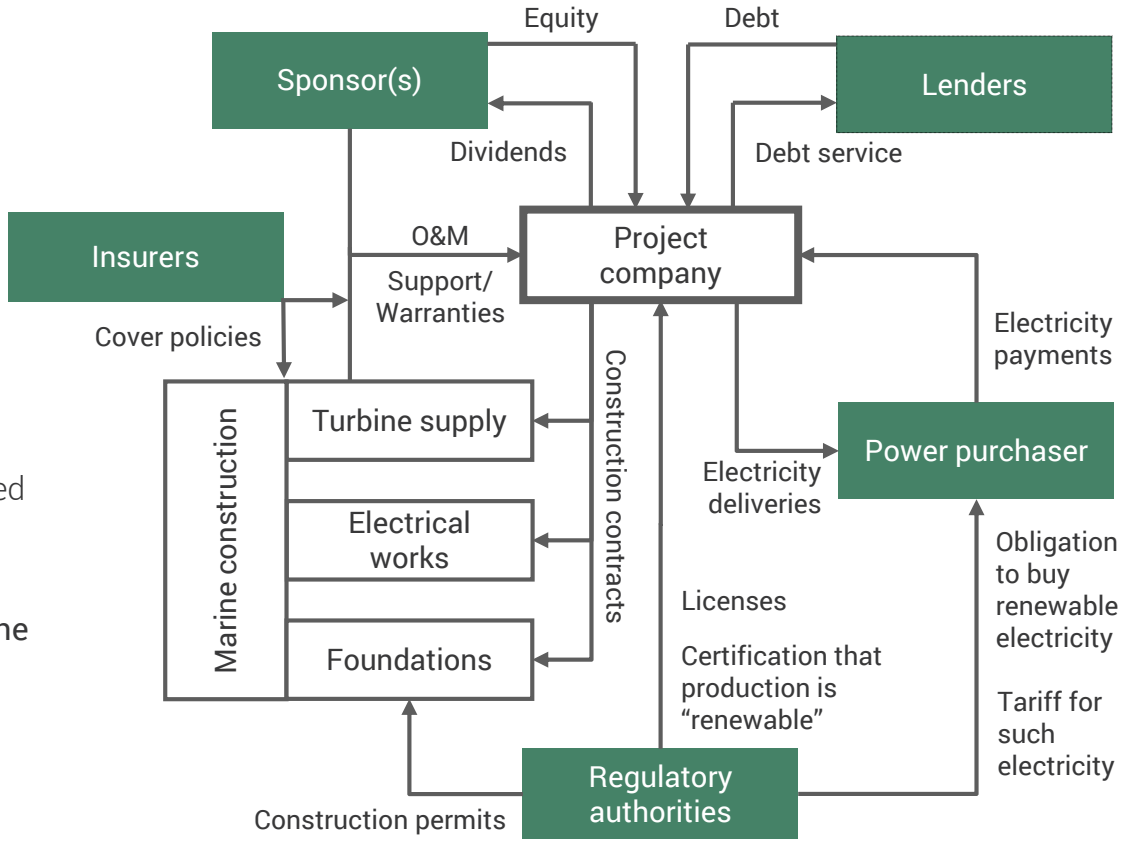
Offshore wind transactions are always heavily contracted

Major contracts include

- Permits, licenses, authorisations, etc.
- Construction/supply contracts
- Electricity sales contracts (and, if applicable, green certificates/RO contracts)
- O&M contracts
- Insurance
- Financing documents
- Direct agreements with key contractors, enforced by lenders in case of project default

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

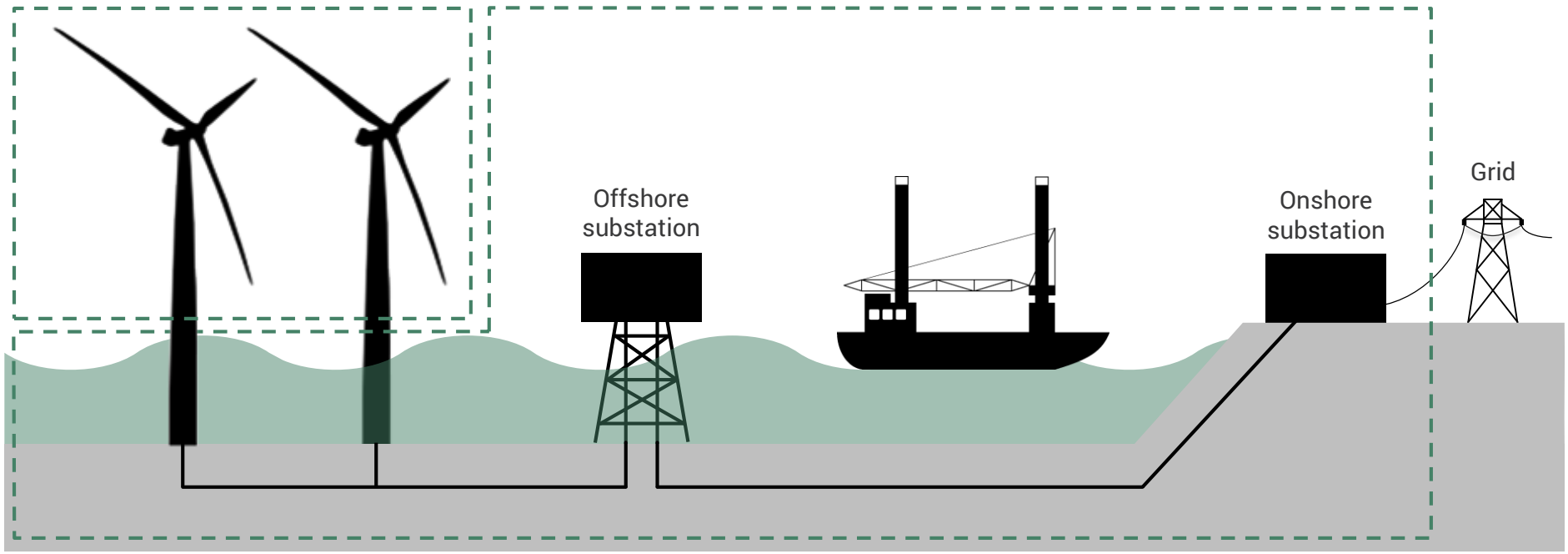
- Sponsors/investors
- Lenders (and their advisors)
- Contractors
- Insurers (and their advisors)



Offshore wind is a quintessential example of a comprehensive contractual structure

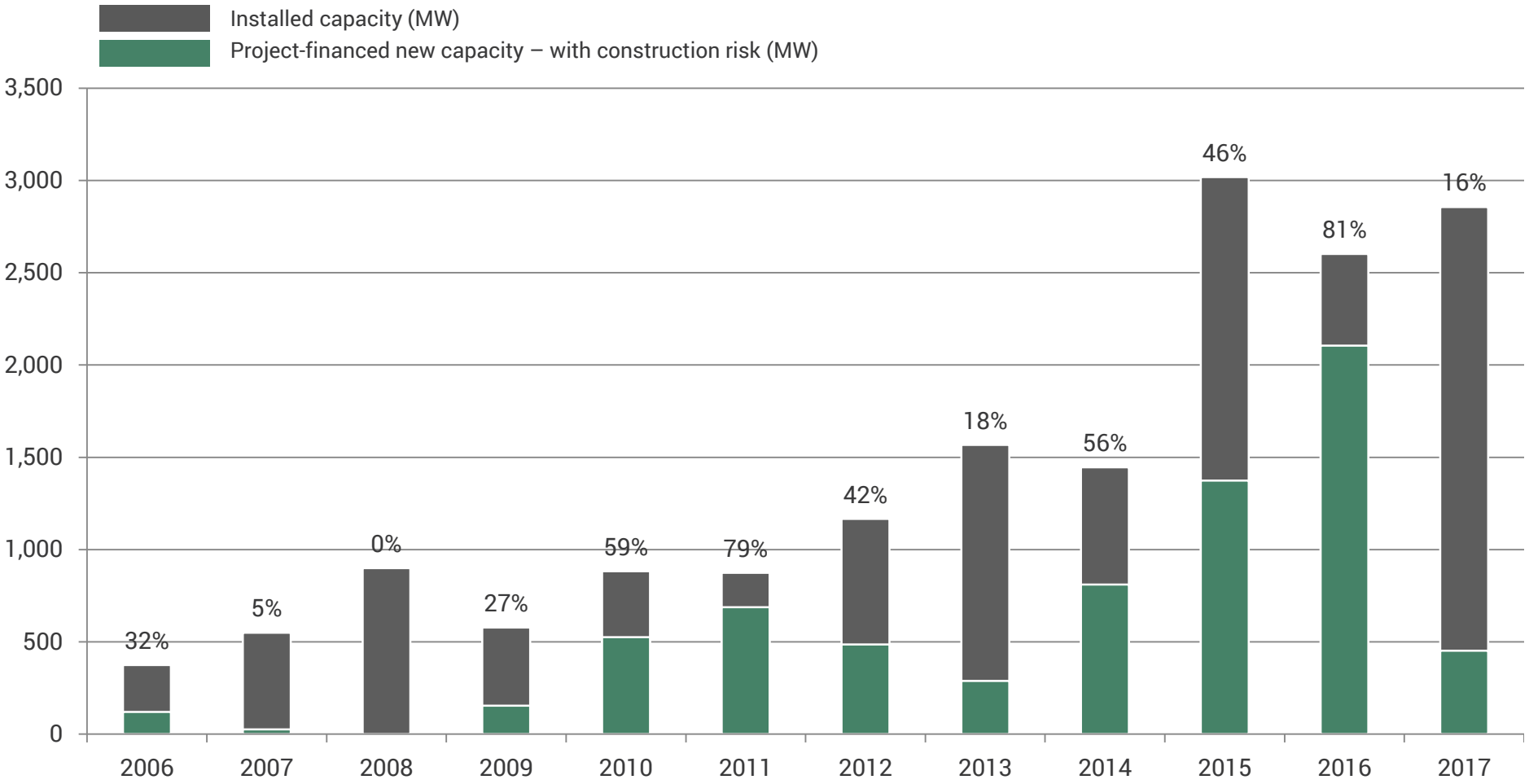
1. Debt vs equity

A simpler structure, as often used for debt transactions



1. Debt vs equity

Project finance already finances a significant fraction of overall new capacity



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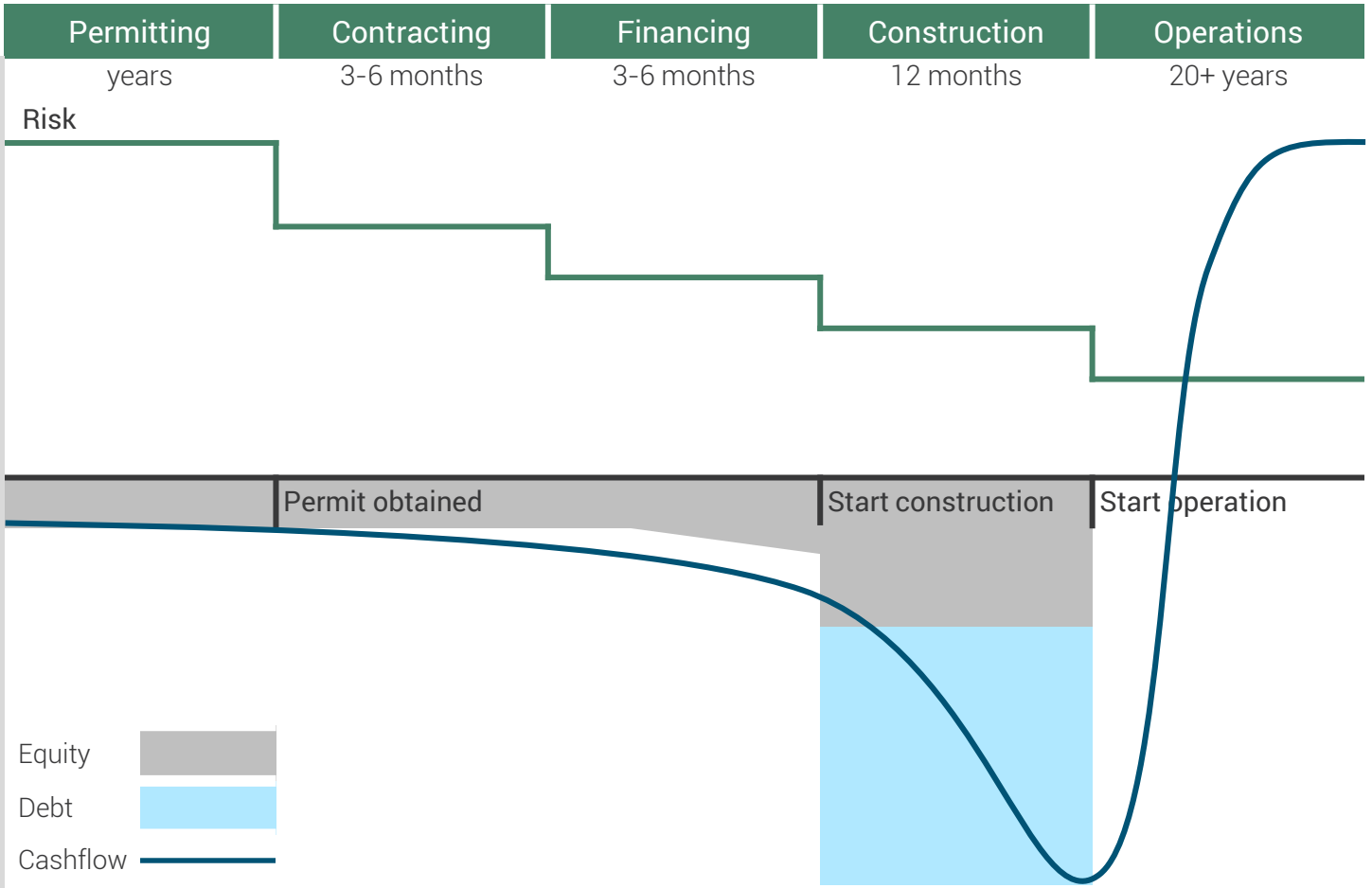
2. Equity strategies

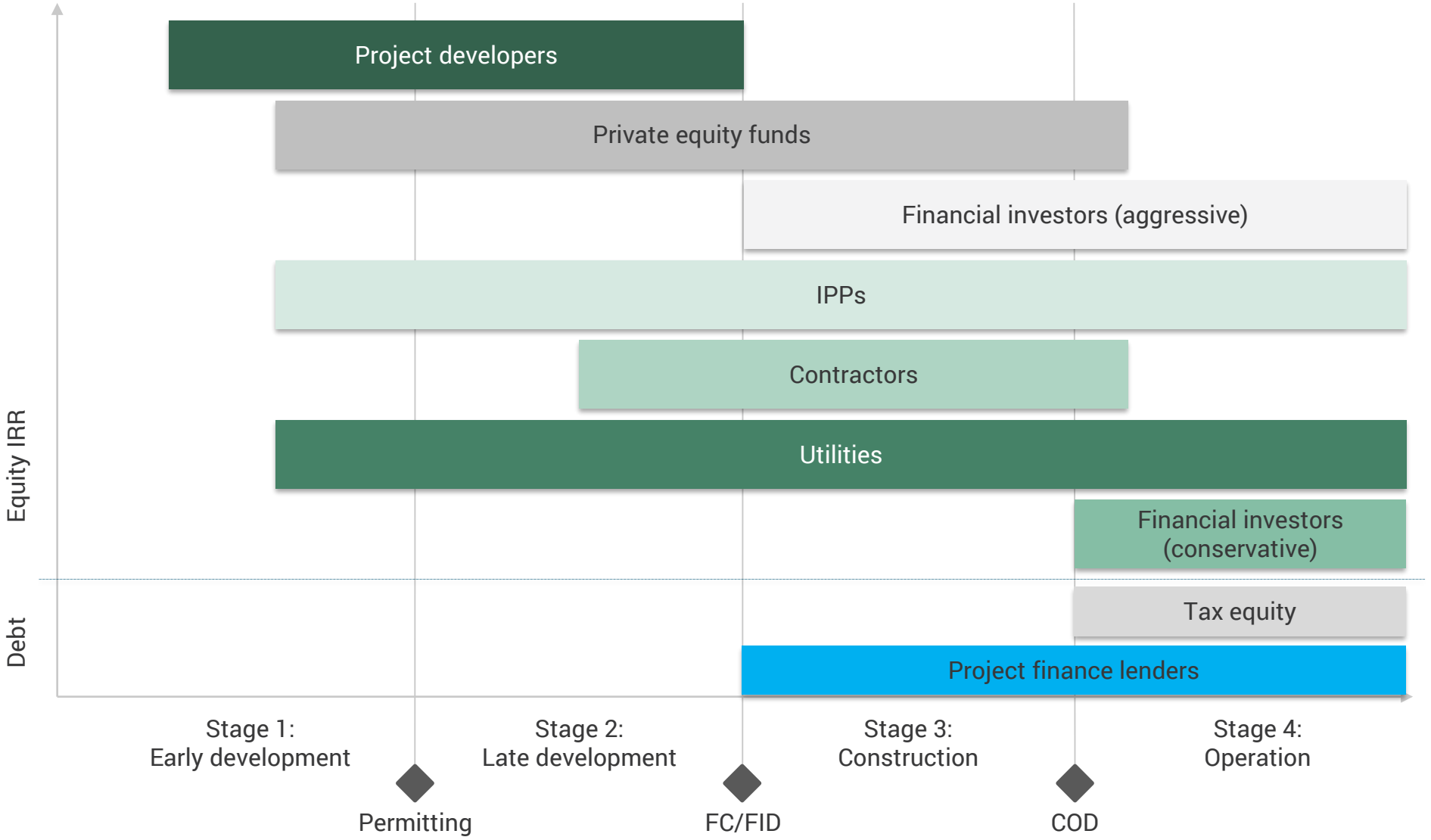
Most value is created during the development & contracting phases

- Renewable energy projects generally follow similar patterns of development
- Project risk/return profile transforms over time: a project "de-risks " as key development milestones are realised (key permits, contracts, financing, construction, operation)
- Most investor appetite is for the construction or operating phases, not many investors are keen to take permitting or financing risk
- Most value is created in the contracting/financing phase as these parameters will largely determine project economics later



2. Equity strategies

Investor profiles and appetite depending on the stage of development



2. Equity strategies

Decreasing cost of capital in a relatively liquid market

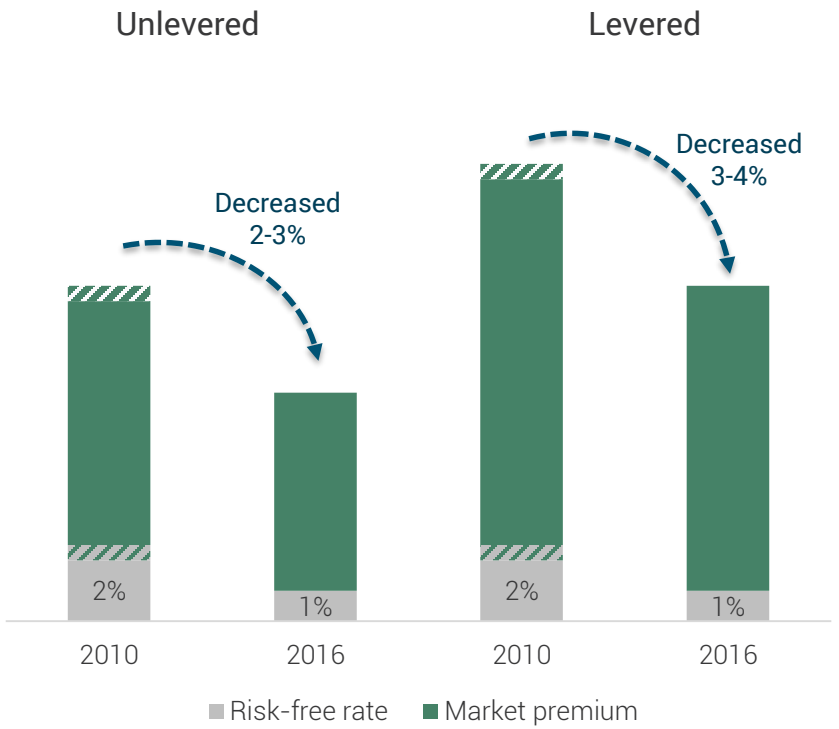
An active equity market

- Renewable energy assets are trading at high prices as investors competitively chase yield, pushing down IRRs
- Continued high transaction volume in OW (both for projects and companies like GIB, A2Sea, SHL, Reetec, MPI)
- Transactions for assets under development (Yeu & Noirmoutier), at FC (Triton Knoll) or operating (Veja Mate)
- Emergence of Chinese buyers (CTG, SDIC) and continued active presence of Japanese and Canadian investors, in addition to traditional European players

Prices have been very consistent

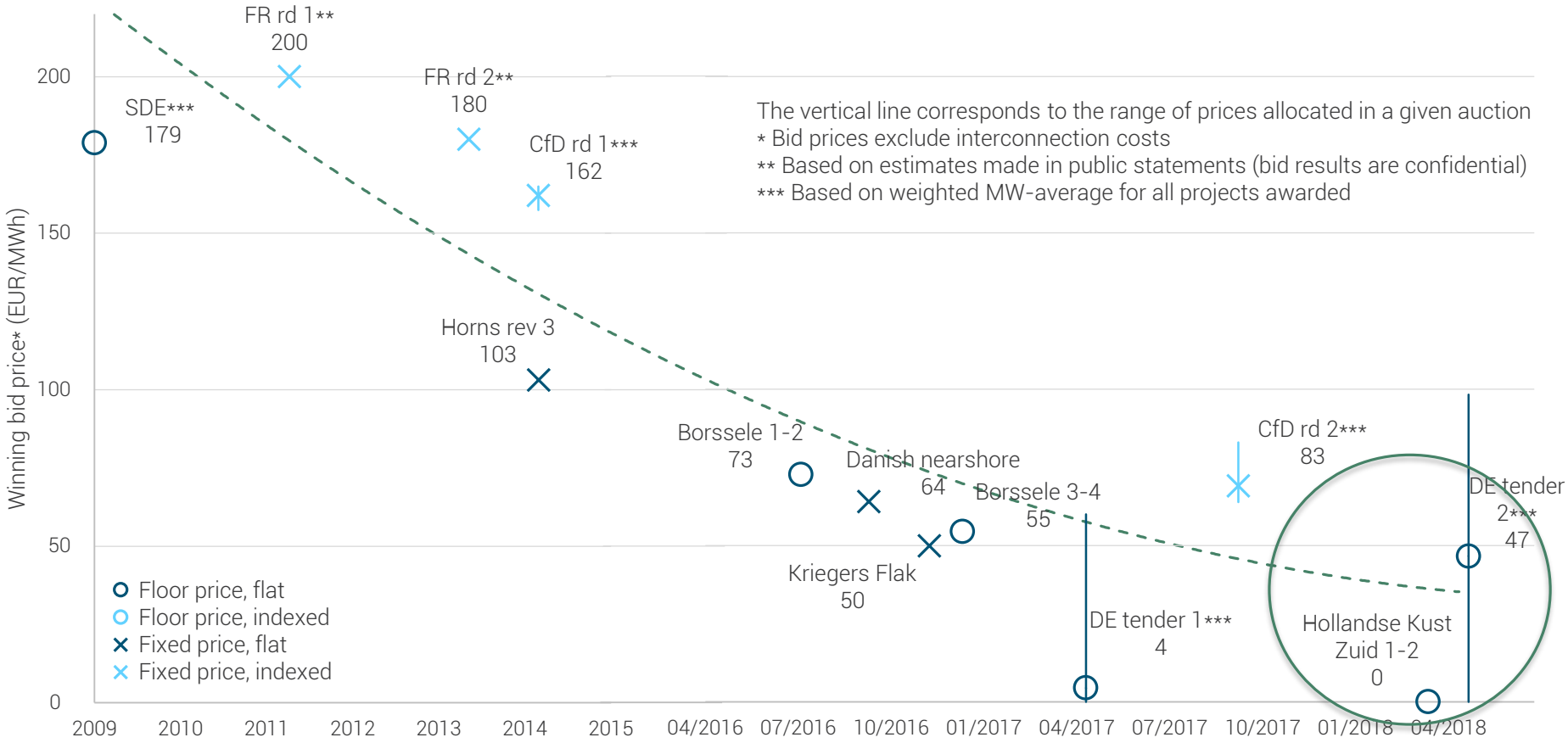
- There was a clear differentiation between development stages all the way to operating projects
- Decent, if regularly shrinking, premium for construction risk and early development (permitting) risk
- Prices are relatively insensitive to technology or tariff and regulatory regime

Evolution of investor return expectations (2010-2016)



2. Equity strategies

Consistent policy has resulted in falling power prices for OW projects



Recent tenders in continental Europe have shown that some investors are willing to build OW projects with 40 EUR/MWh tariffs (2018 prices), excluding grid connection

2. Equity strategies

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 OW 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) operating 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 OW risk is not going away

2. Equity strategies

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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3. Debt finance

Stuff happens, offshore

A crane collapsed in the marshalling harbour

A monopile sank and was damaged

3. Debt finance

Risks are different in each project phase

Development phase	Construction phase	Operational phase
No project!	**Delay and cost overruns**	**Lost revenue**
No permits No tariff / PPA No contracts Not enough money	Scope gaps Contractor delays Adverse weather Accidents	Lower availability Higher O&M cost Lower prices Less wind
Mitigation tools		
Project management Local presence Detailed planning Committed sponsors	Project coordination Solid contracts (LDs) Contingency budget Insurance	Project coordination Solid contracts (LDs) Contingency budget Insurance

3. Debt finance

Construction risk – banks focus on interfaces between key tasks as well as between contracts

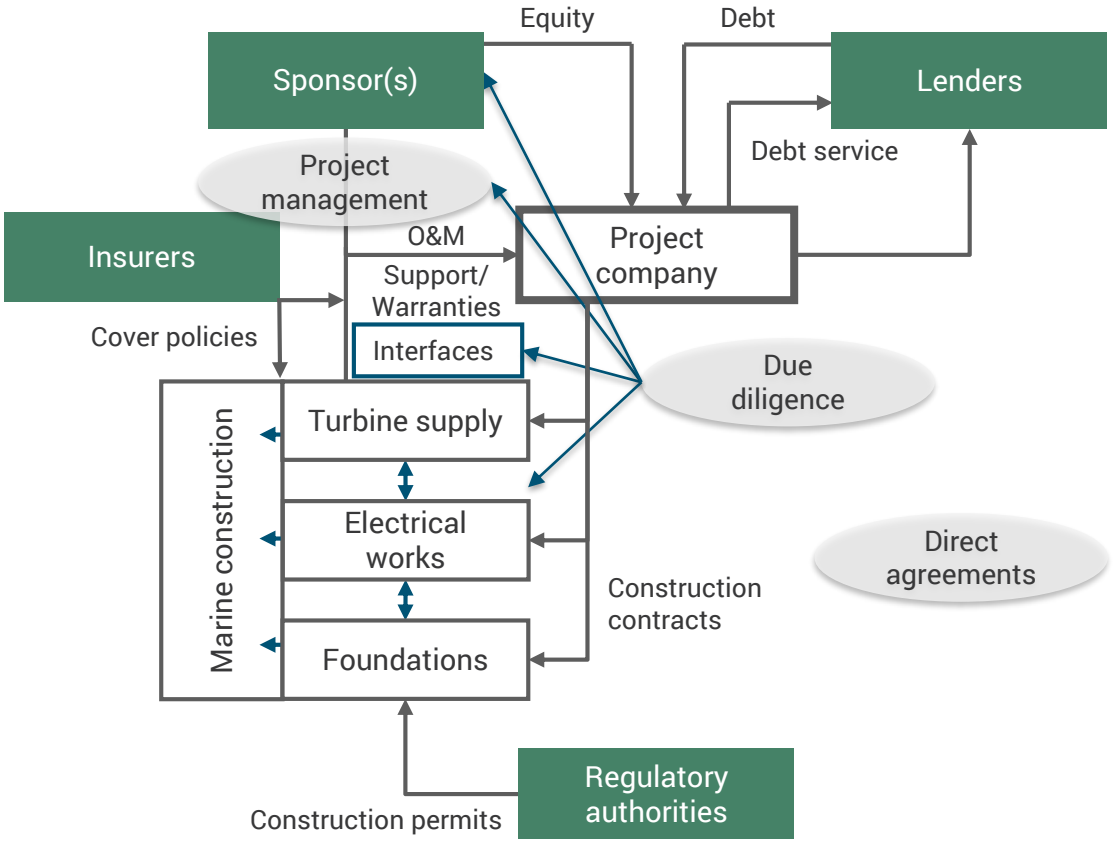
Several completely different industries

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

No obvious general contractor!

And yet banks do take construction risk

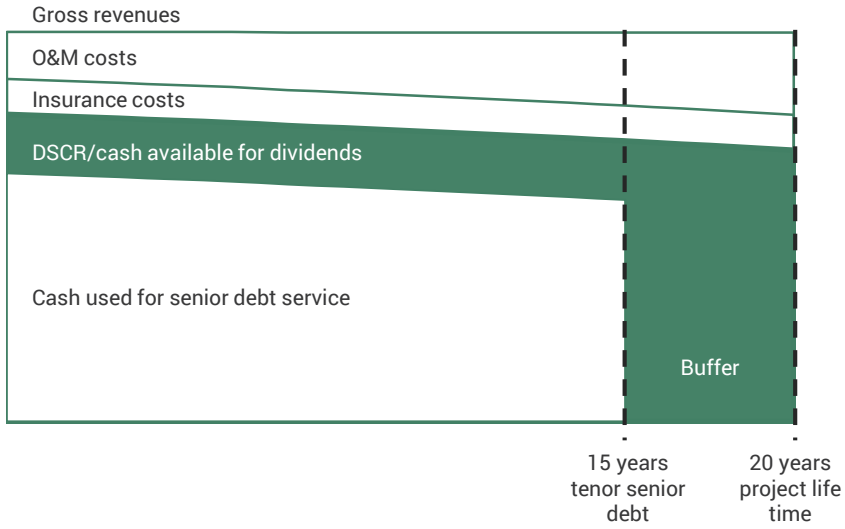
- Focus on project management
- Focus on key interfaces
- Understanding of critical path items
- Heavy involvement in contract negotiation



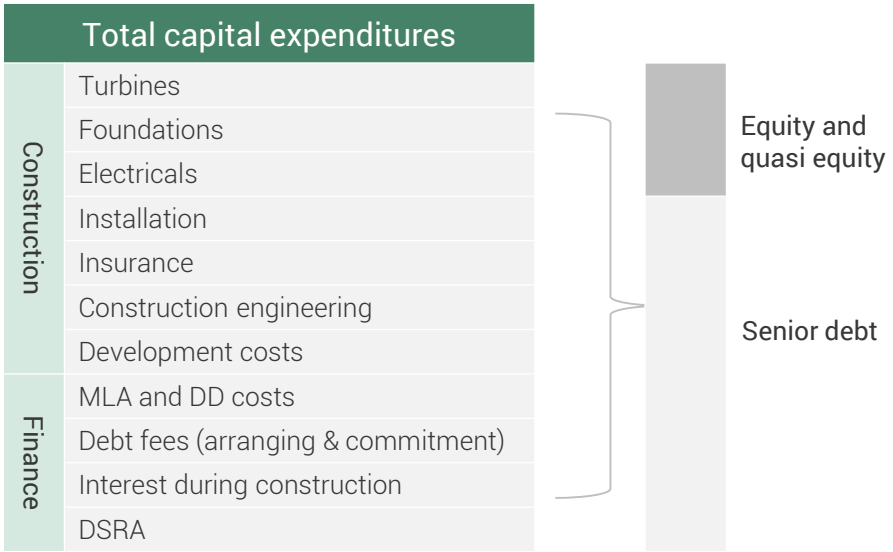
The higher risks borne by the banks impose different development and contractual approaches

3. Debt finance

Revenue side constraint



Capital expenditure constraint



Offshore DSCR constraint: 1.20-1.25 with P90

- No or very limited price risk on revenue side
- Net availability number in the 95-97% range
- Contracted O&M cost assumptions
- Full insurance package included

Debt : Equity < 75:25

- No tolerance for junior debt mechanisms
- Some tolerance for pre-completion revenues
- General preference for equity to be paid upfront

3. Debt finance

Debt sizing principles – Revenue constraint

Operation cash flows	
=	**Cash Flow Available for Debt Service (CFADS)**
÷	Target DSCR
=	**Maximum debt service**
–	Interest
=	**Maximum principal repayment**
Σ	**Maximum debt amount based on revenues**

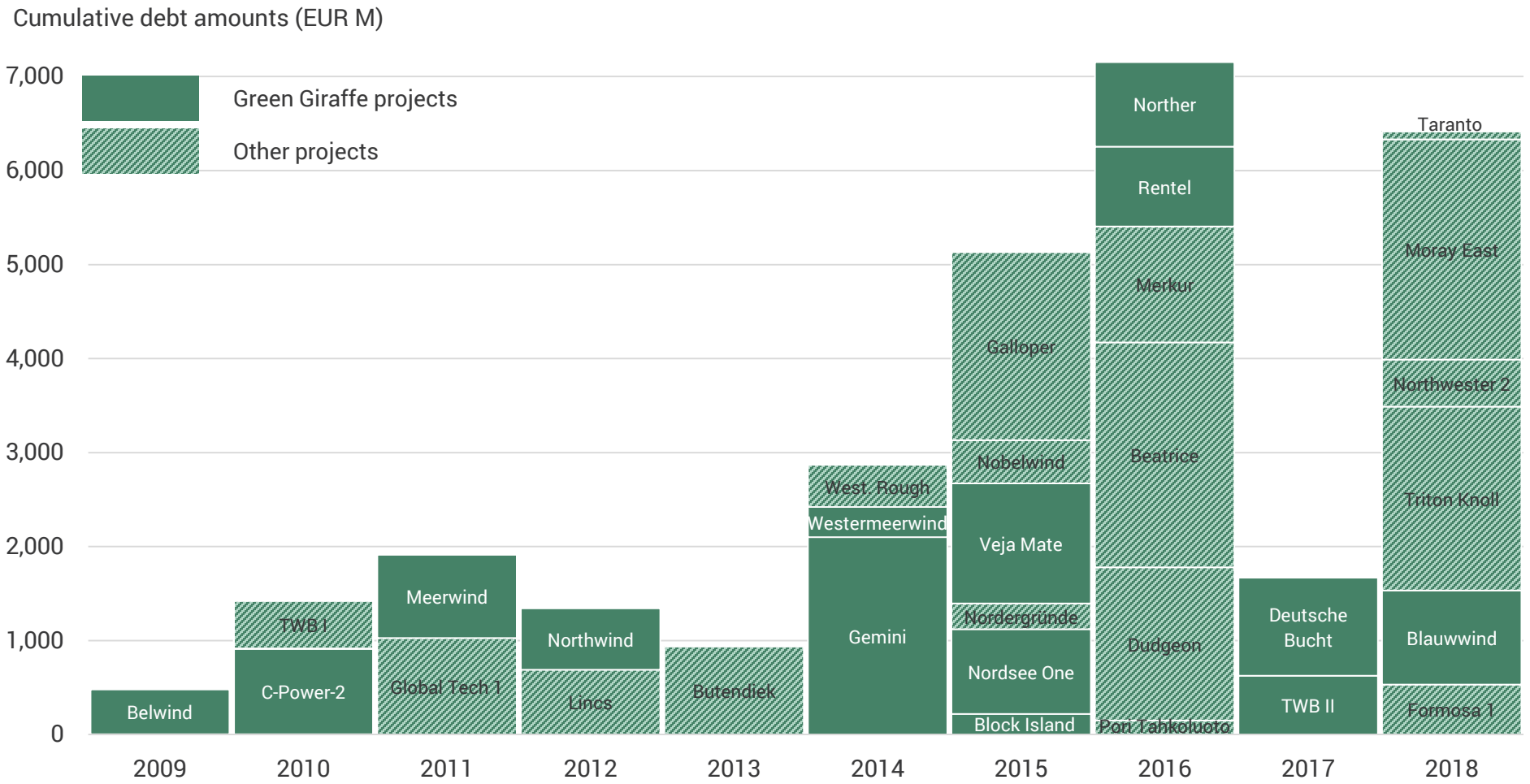
Capital expenditure constraint

Construction cash flows	
+	Total Capex
+	Interest during construction
+	Bank fees
+	Corporate tax during construction
=	**Total investment (“Project Costs”)**
×	Max gearing
=	**Maximum debt amount based on Project Costs**

Debt quantum = minimum debt amount based on the two constraints

3. Debt finance

Greenfield transactions



3. Debt finance

Offshore wind has now become mainstream

Since the crisis, banks have refocused on known clients, core countries and strategic sectors of activity

- The good news is that offshore wind is unambiguously "strategic" for many banks today
- Countries where offshore wind is developing are seen as "safe" (Northern Europe) and core for most banks

There is more funding available than there are bankable deals

- Fewer deals brought to the market than banks were ready for, leading to frustration and pent-up demand
- Increased capacity does not translate into lower standards, so weak projects will not be financed
- Excellent liquidity for good projects

Increased diversity of structures

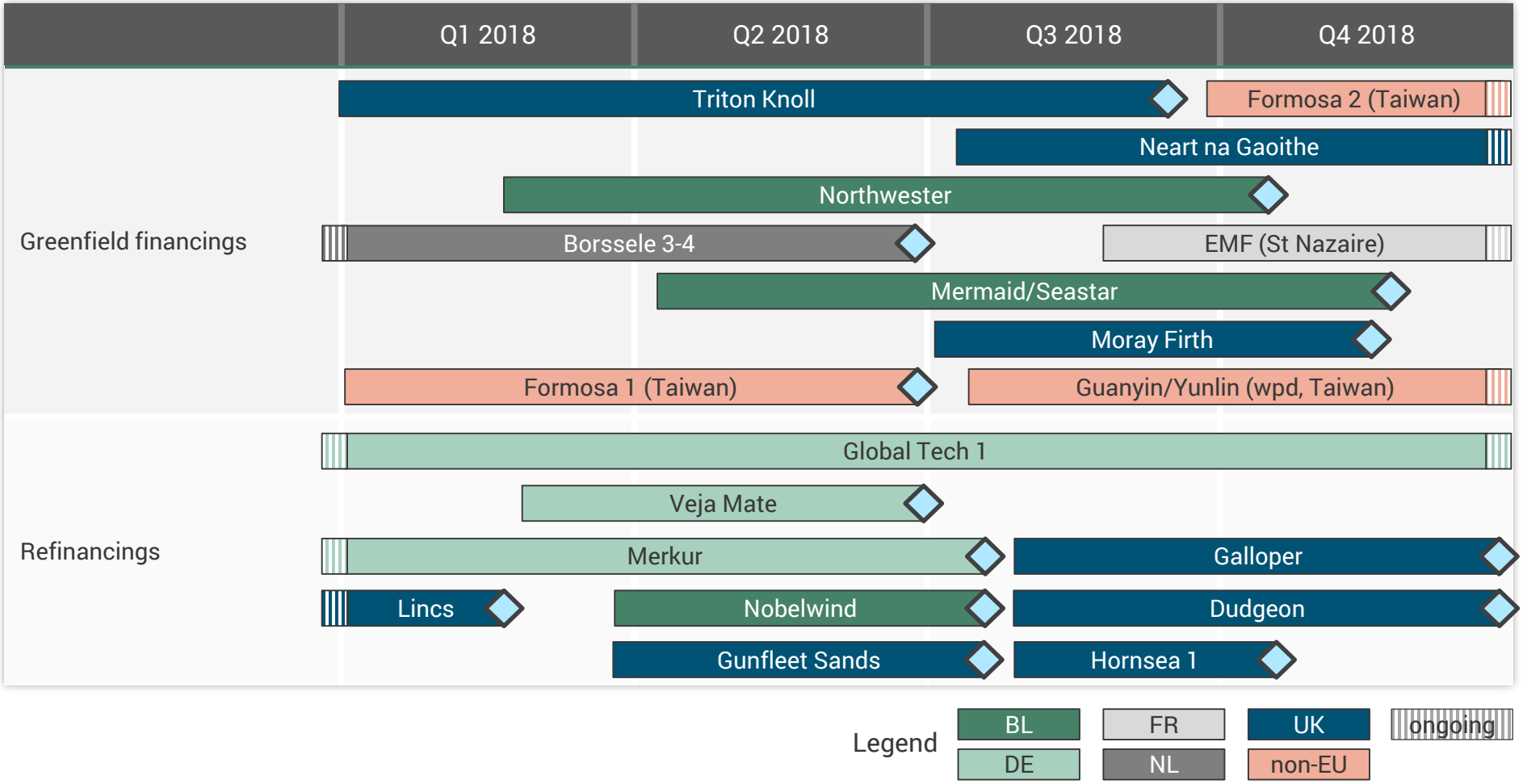
- Multiple post-construction refinancings, including refinancings done pre-COD with completion guarantees
- Bond market tapped, albeit not for construction risk
- Construction risk capacity available in all jurisdictions (including the US and Taiwan)

Record number of projects funded last year

- Several large greenfield projects
- Largest transaction ever with Hornsea 1, which includes several tranches tapping several markets

3. Debt finance

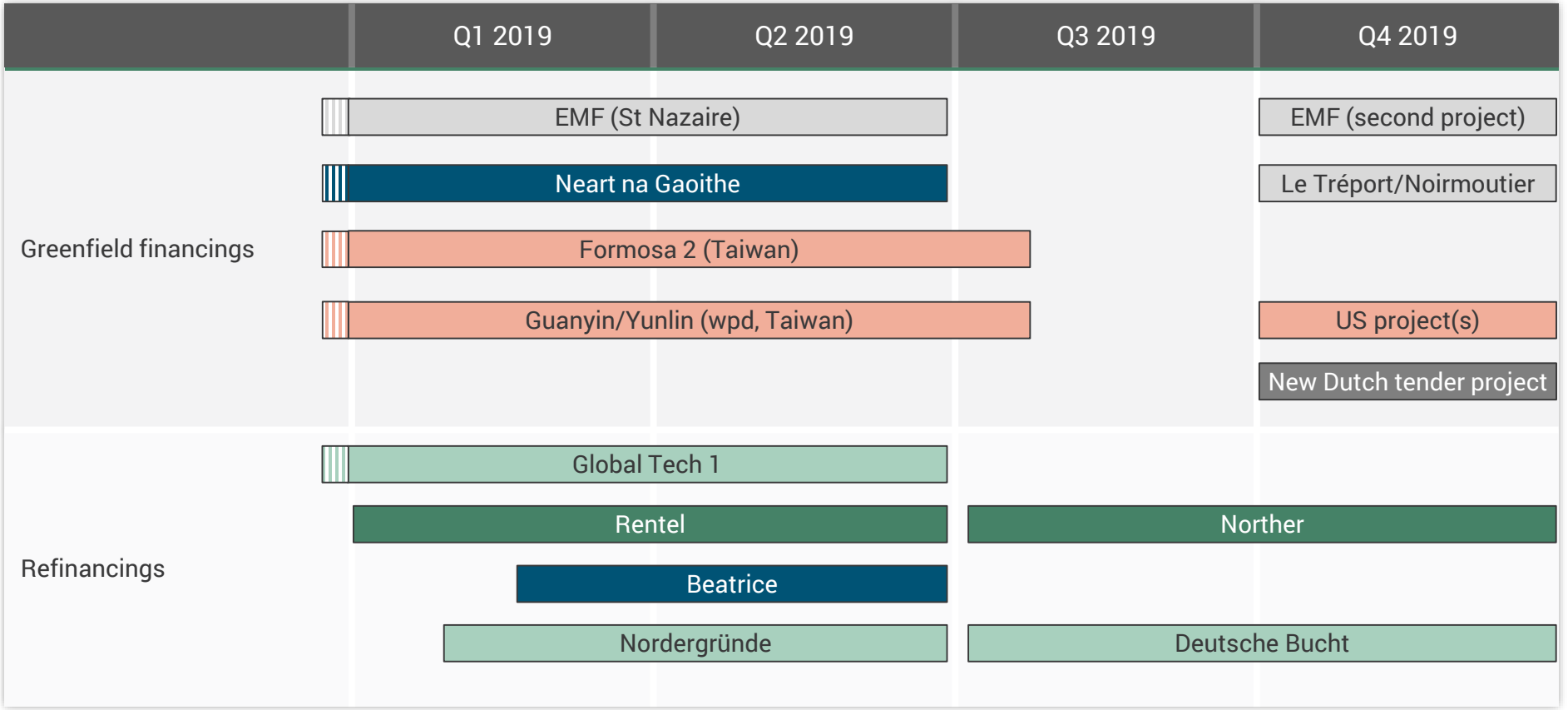
2018 was an extremely busy year for offshore wind finance – with limited merchant risk



Given the volumes to be raised, the most attractively structured deals with have an edge

3. Debt finance

A number of deals can already be anticipated for 2019



Activity is likely to include additional projects and refinancings

3. Debt finance

Market trends (for greenfield projects)

Typical project finance conditions - offshore	Leverage	Maturity post-completion	Pricing	Maximum underwriting
2006-2007	60:40	10-15 years	150-200 bps	EUR 50-100 M
2009-2013	65:35	10-15 years	300-350 bps	EUR 30-75 M
2014-2015	70:30	10-15 years	200-250 bps	EUR 100-200 M
2016-2017	75:25	15-17 years	150-225 bps	EUR 100-150 M
2018	75:25	15-18 years	120-175 bps	EUR 100-150 M

Debt is currently extremely cheap

- Margins rose after the crisis (reflecting higher bank cost of funding), but have been trending down since 2014
- With low underlying rates, the overall cost of >15-year debt is now well below 3%

Structures (ratios, maturity, covenants) have actually been quite stable since 2007

- Debt terms fundamentally driven by regulatory framework (duration, merchant risk, public financing opportunities)
- Commercial fights are rarely about debt sizing or pricing
- General improvement in commercial terms over the past few years

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