Green Giraffe
The renewable energy financial advisors

Auction design and finance in offshore wind

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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

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 with a burgeoning presence in the Americas and Africa in addition to Europe
- Priority given to **getting the deal done!**

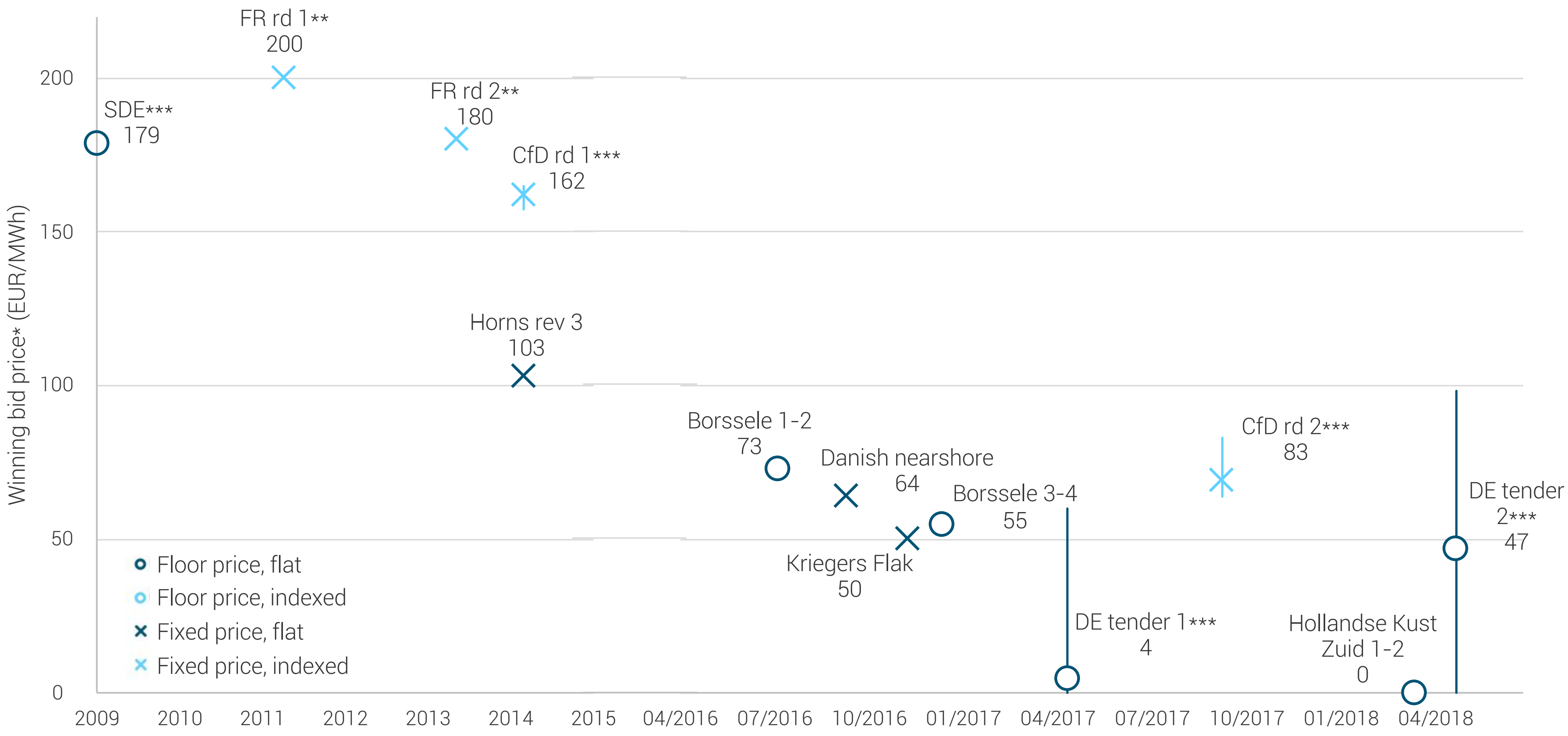
More than **EUR 20 billion** funding raised for renewable energy projects in **8 years**

70+ professionals in **5 countries**

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

The move to tenders has brought a spectacular drop in prices

This has been true across all jurisdictions



The vertical line corresponds to the range of prices allocated in a given auction
* Bid prices exclude interconnection costs
** Based on estimates made in public statements (bid results are confidential)
*** Based on weighted MW-average for all projects awarded

What made the drop in prices possible

The right combination of a maturing industry and 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

What made the drop in prices 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 refinancings can be incorporated from the start in assumptions, lowering the long term cost of capital (and 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)

The lower pricing of offshore wind risk is not going away

What financiers are looking for

Auction regimes should focus on what helps bring the cost of capital down

As a reminder – offshore wind is a capital intensive industry

- Cost of capital drives LCOE more than anything else
- This is true for both balance sheet projects (investor equity) and project financed projects (weighted cost equity + debt)

As a general principle, financiers crave stability and predictability

- General reliability of governments/regulators (enforceable contracts, no retroactive changes, accessible regulators)
- For long term investments, visibility on revenues is highly valued
- In all cases, more visibility and certainty translates into cheaper capital

Offshore risks are now well understood, so the focus moves to price risk

- Fixed price regimes will attract cheaper capital (more debt, and cheaper debt and equity) and should have lower LCOE
- Investors and lenders can take merchant risk but will want to mitigate it through more conservative assumptions or transfer to third parties via PPAs or other forms of price hedging

There are "win-win" decisions in regulatory regime design

Auction regimes are not the same

Comparison of the main existing regimes – DE, FR, NL, UK

	NL	FR	DE (future)	UK
Allocation	Tender	Tender	Tender	Accreditation
Tenor (years)	15	20	20	15
Price regime	Floor	Fixed	Floor	Fixed
Inflated / indexed	No	Yes, for 60% of the tariff	No	Yes
Negative prices	No support for periods of > 6 consecutive hours	No risk	No support for periods of > 6 consecutive hours	Support cap = strike price
Grid connection	TSO	TSO (via separate tariff)	TSO	Project
Permits	With tariff	No	With tariff	Condition to auction
Devex support	Soil studies & EIA	No	Pre-development by BSH	No

Auction regimes are not the same

Key parameter 1 – permits and early studies

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Including the permit in the tender makes a huge difference

- French round 1 & 2 are still waiting for their final permits today
- Development equity is the most expensive and has a direct material impact on final LCOE

Auction regimes are not the same

Key parameter 2 – tariff regime

	NL	FR	DE (future)	UK
Allocation	Tender	Tender	Tender	Accreditation
Tenor (years)	15	20	20	15
Price regime	Floor	Fixed	Floor	Fixed
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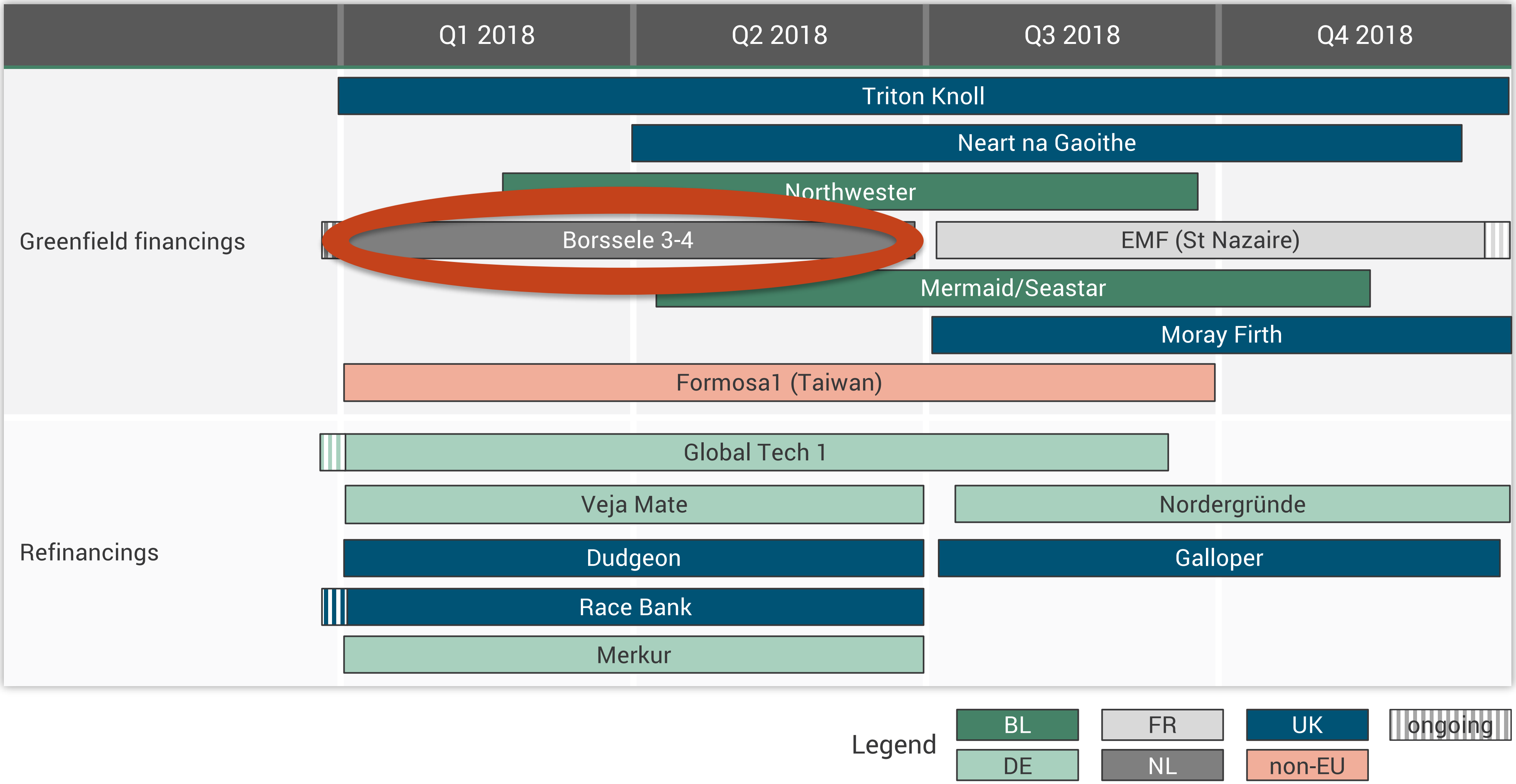
The price formula creates wildly different incentives

- Floor regimes encourage zero-bids, with as-of-today unpredictable consequences
- Long tenors are more attractive to long term investors with cheap capital
- Lack of indexation increases the headline tariff while unnecessarily pushing macro-economic risk on the project

There is still a lot of activity with fixed price regimes

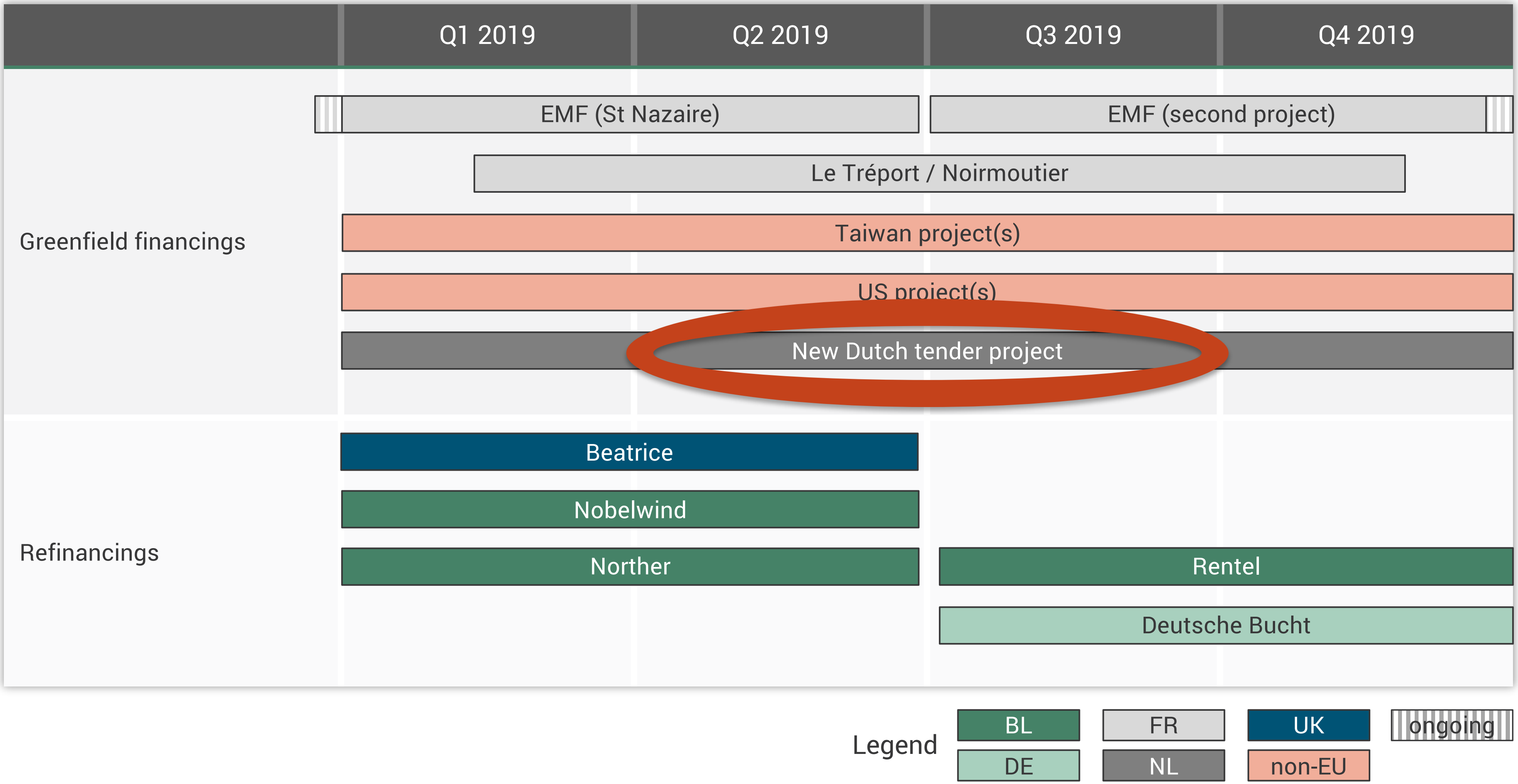
2018 is an extremely busy year for offshore wind finance – with limited merchant risk



A new equilibrium between projects and lenders may be found

There is still a lot of activity with fixed price regimes

A number of deals can already be anticipated for 2019



Activity is likely to include additional projects and refinancings

So far, the perspective of merchant projects is not visible

Market trends (for greenfield projects)

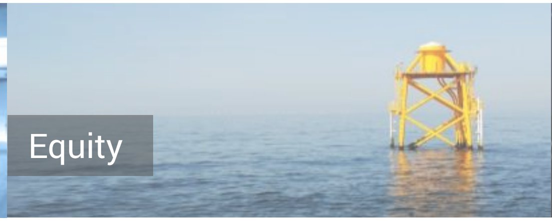
Typical project finance conditions - offshore	Leverage	Maturity post-completion	Pricing	Maximum underwriting
2006-2007	60:40	10-15 years	150-200 bps	EUR 50-100 M
2009-2011	65:35	10-15 years	300 bps	EUR 30-50 M
2012-2013	70:30	10-15 years	300-375 bps	EUR 50-75 M
2014-2015	70:30	10-15 years	200-250 bps	EUR 100-200 M
2016-2017	75:25	15-17 years	150-225 bps	EUR 100-150 M

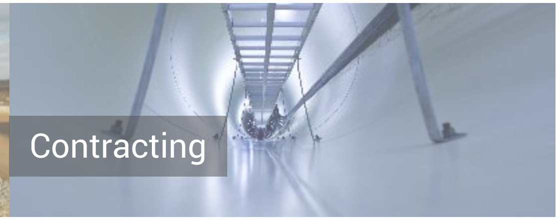
Debt continues to be extremely cheap

- Margins have been trending down since 2014
- With underlying rates still low, the overall cost of 20-year debt is now below 3%

Structures (ratios, maturity, covenants) have been steadily improving (for borrowers)

- Debt terms fundamentally driven by regulatory framework (duration, merchant risk, public financing opportunities)
- Key “hard limits” have been breached in recent deals (1.30 P90 DSCR and 70:30 debt:equity ratio
- Nothing crazy is being done, but banks are definitely feeling the competitive pressure like everybody else





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