Green Giraffe
The renewable energy financial advisors

Offshore wind – Energising an industry

An investor's perspective

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Gdansk– 13 February 2019

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
- 80+ professionals with offices in Cape Town (South Africa), Hamburg (Germany), London (UK), Paris (France), and Utrecht (the Netherlands)
- Multi-disciplinary skillset including **project & corporate 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 M&A advisory (such as contracting, tender advice, 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!**

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

80+ professionals in **5 countries**

Involved in over **130 renewable energy transactions or projects** with a total capacity of more than **30 GW**

Offshore wind – Energising an industry

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1. How value is created – risks in OW

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

1. How value is created

The 3 milestones of value creation in offshore wind

First step is completion of early to mid development, i.e. site is “fully permitted” – with no appeal possible

- Site control
- Grid connection
- Revenue regime
- Construction permits required at that time

Second step is to bring the project to Financial Close (FC)/Final Investment Decision (FID)

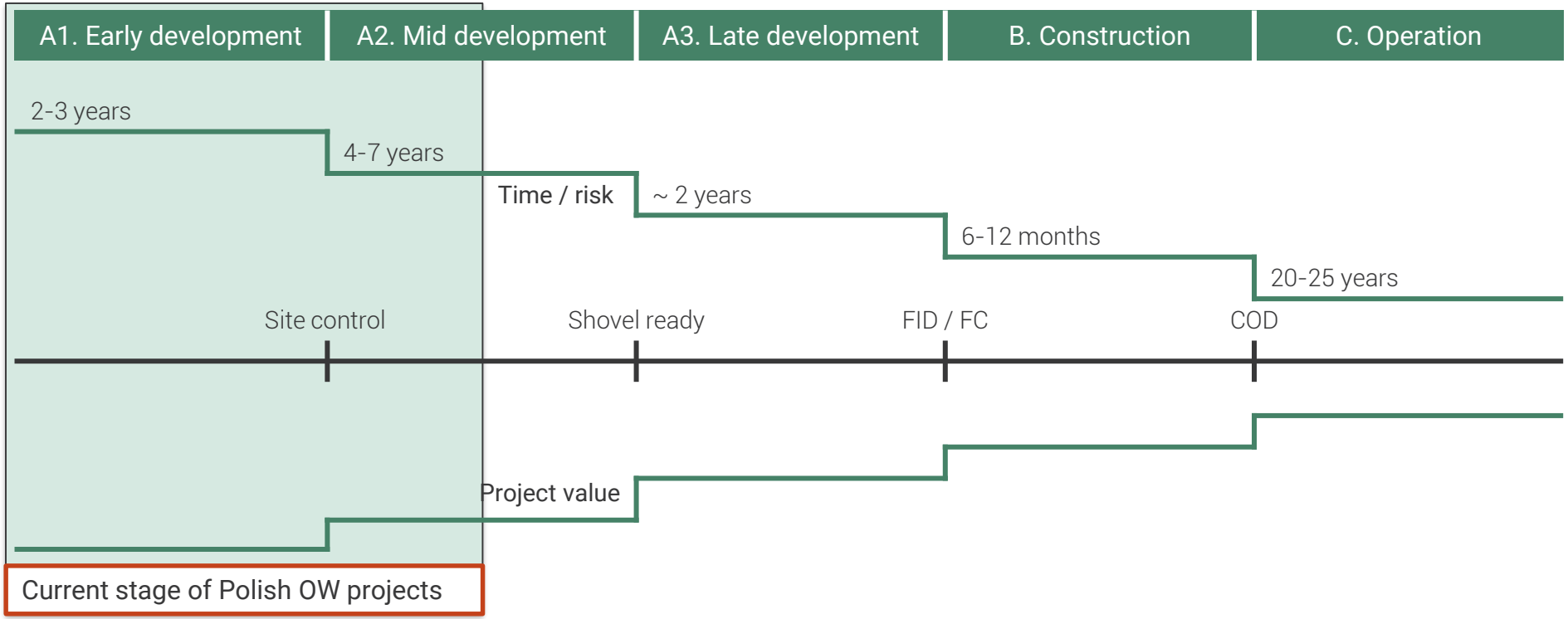
- Executed and effective contracts and all relevant permits irrevocable
- Unconditionally committed financing covering 100% of construction costs plus contingency
- Prior to FC/FID a project is still fully virtual
    - Projects can collapse a few weeks or days from financial close (see Cape Wind in the US)
    - Most construction equity is not paid in until FC actually happens
    - Contractors (and equipment) are not committed until FC, unless they get cash upfront (e.g. reservation fees)
    - A lot of European developers have failed at this stage

The third step is the completion of the construction period, bringing the project into operation

- In addition to no construction risk, value can be created through improved production and O&M cost management

1. How value is created

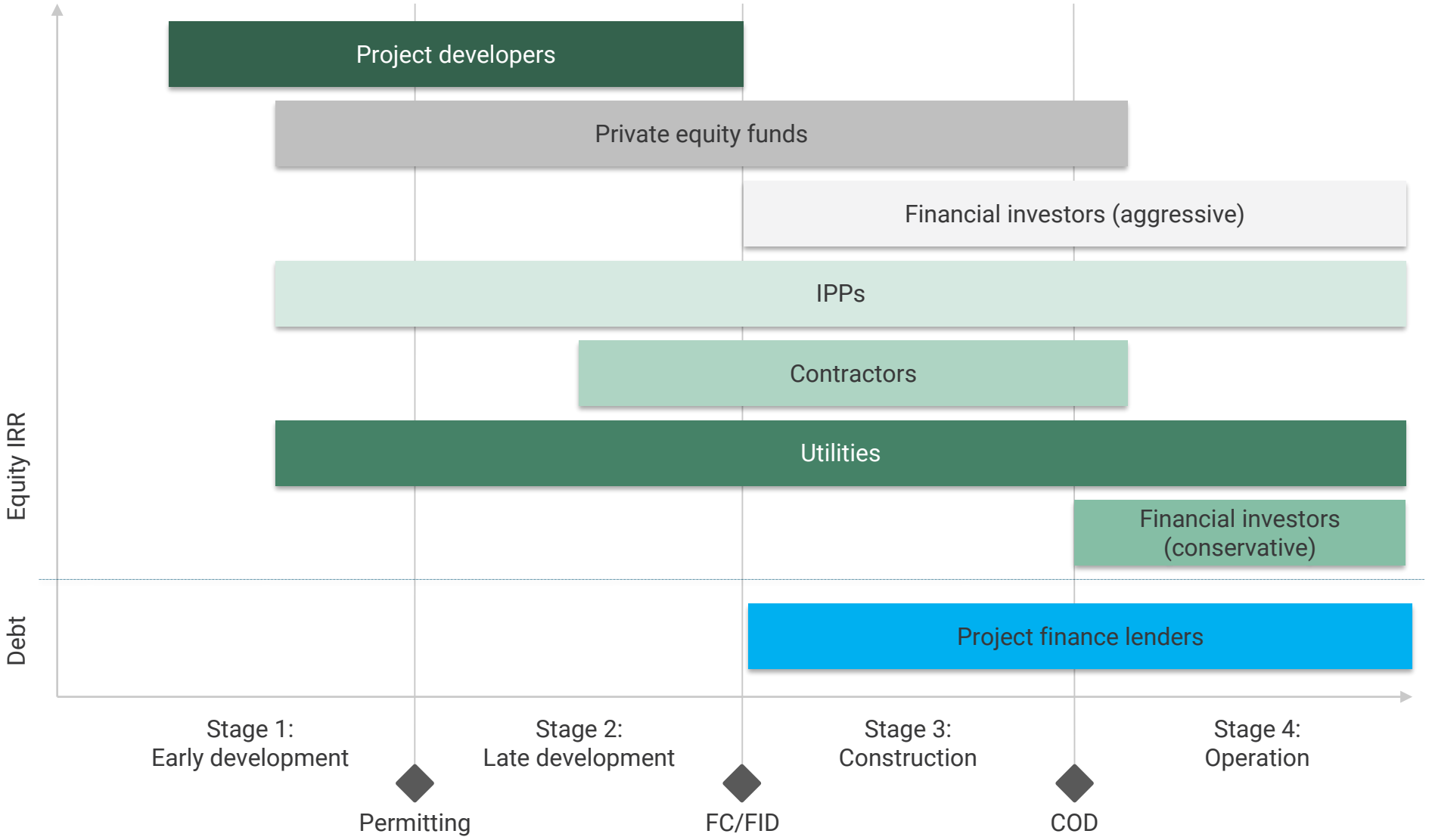
Most value is created during the development & contracting phases



- 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

1. How value is created – key parties & appetite

Investor profiles



1. How value is created – the stakeholders

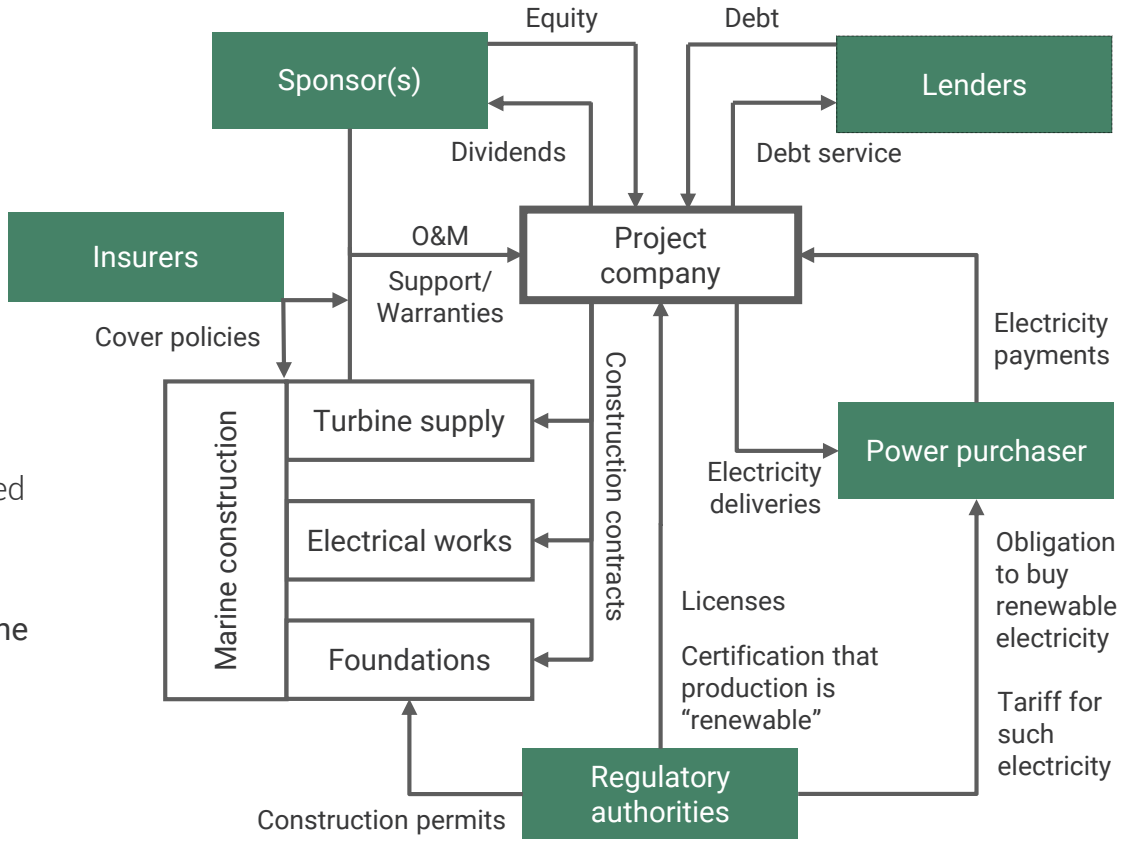
Offshore wind transactions are always heavily contracted

Major contracts include

- Permits, licenses, authorisations, etc.
- Construction/supply contracts
- Electricity sales contracts (and, if applicable, green certificates/RO 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

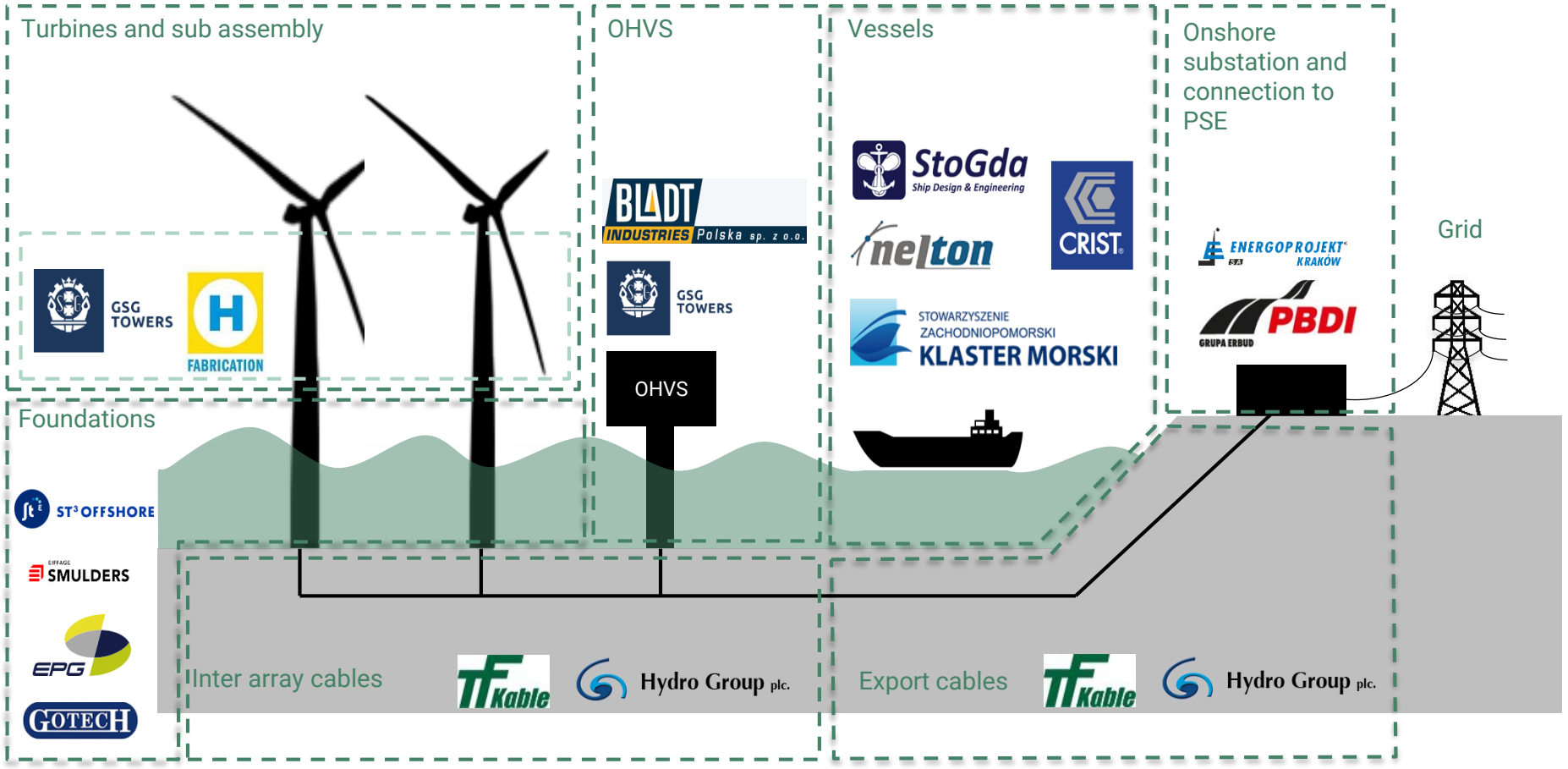
- Sponsors/investors
- Lenders (and their advisors)
- Contractors
- Insurers (and their advisors)



Offshore wind is a quintessential example of a comprehensive contractual structure

1. How value is created – the local supply chain

Many Polish companies have been involved on offshore wind projects in other EU countries



Source: Green Giraffe

Polish supply chain is now lining up and is eager for success on its domestic market

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2. How investors look at it

Points of attention when analysing projects in new jurisdictions

1. Country context?

- Regulatory framework (FiT, CfD, green certificate, tax incentive, direct subsidy, merchant?)
- Country risk (sovereign rating, confidence of no retroactive change, etc.)
- Supply chain (experience of local subcontractors, close to experienced countries, expected bottlenecks)
- Currency risk (is it stable?)

2. Rationale of the project?

- Economic benefit of the project for the country & population
- Technical conditions: for example strong wind, good soil, no earthquake, unexploded ordnance, etc.

3. State of development?

- Community (fishermen, neighbours, etc.) and EIA
- Permits status, land/sea lease, ports
- Grid connection
- PPA
- Technology chosen?
- Advancement of construction contracts negotiation

4. Team?

- Project team: why is it the right choice for an investor?
- Advisors' experience?
- Contractors: already in contact with main contractors

5. Financial?

- What is the business case?
- What is needed (early equity? Construction equity? Debt?)
- Control kept by the client
- Timing for fund raising, FC/FID and COD

2. How investors look at it

Valuation types

Early stage development transactions are valued following a per MW ratio

- As a general principle: early stage projects with development risk are not valued on the basis of expected future cash flows because these cash flows are regarded as speculative, instead projects are valued on a ratio per MW
- Valuation is linked to the "fully permitted" concept and the visibility of getting there, i.e. depends on the risks

Using the DCF methodology implicitly assumes that a project is fully permitted with 100% certainty

- This valuation does not capture the volatility linked to the risk associated with the development status of the project
- It would theoretically be possible to account for development uncertainties through the DCF methodology by using a substantially higher risk premium at the very least for the development period and associated costs (and thus a higher weighted cost of capital than for a fully permitted project) in the DCF calculation
- Given the capital-intensive nature of projects, the effect of that would be stark and has not been practice in the sector

2. How investors look at it

Regulation 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

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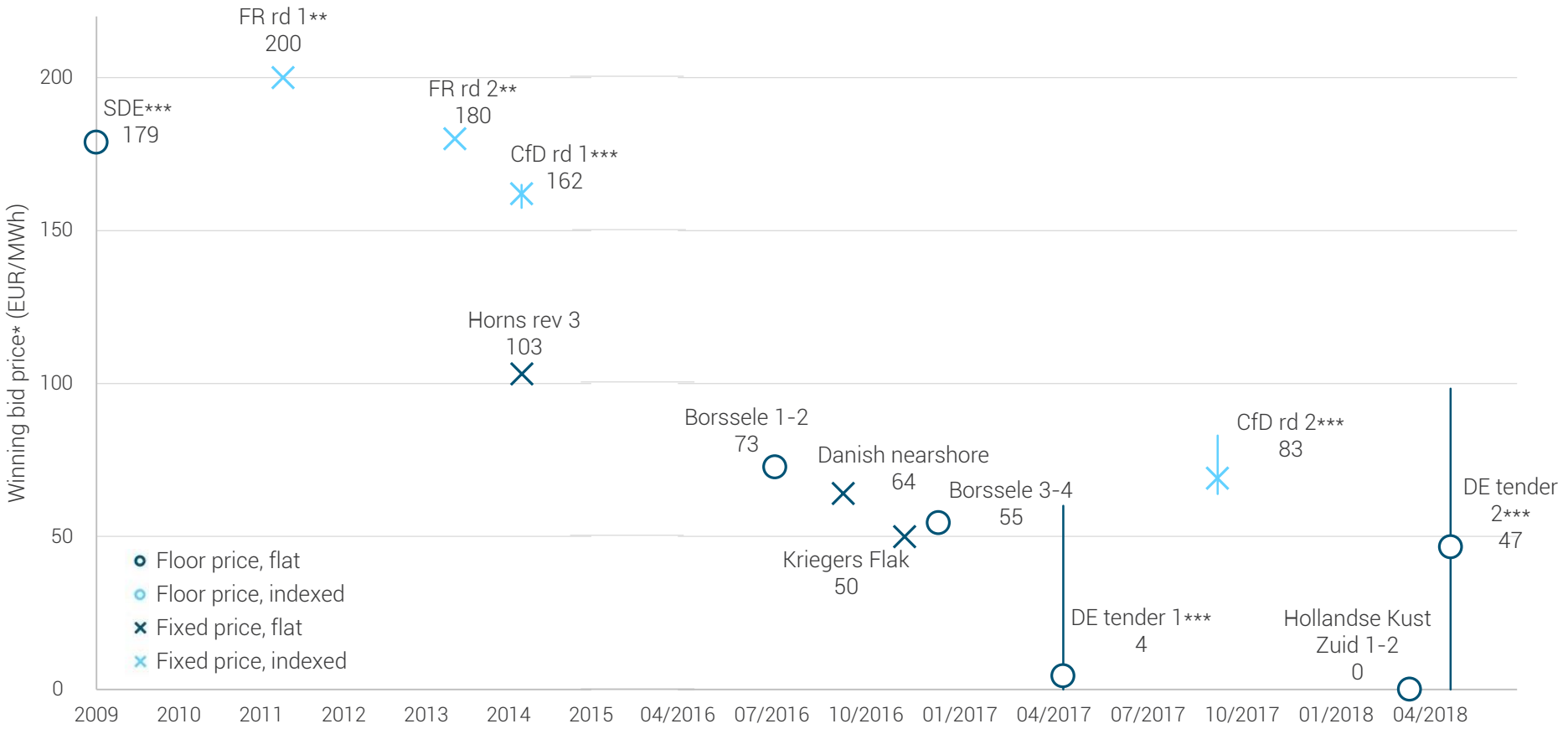
3. How support regimes compare

The move to tenders has brought a spectacular drop in prices – and is linked to cost of capital



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

3. How support regimes compare

Key parameter 1 – Tariff regime

	DE	FR	NL	UK
Allocation	Tender	Tender	Tender	Accreditation
Tenor (years)	20	20	15	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	Pre-development by BSH	No	Soil studies & EIA	No

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

3. How support regimes compare

Key parameter 2 – Permits and early studies

	DE	FR	NL	UK
Allocation	Tender	Tender	Tender	Accreditation
Tenor (years)	20	20	15	15
Price regime	Floor	Fixed	Floor	Fixed
Inflated / indexed	No	Yes, for 60% of the tariff	No	Yes
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Including the permit in the tender makes a huge difference

- French rounds 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

3. How support regimes compare

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

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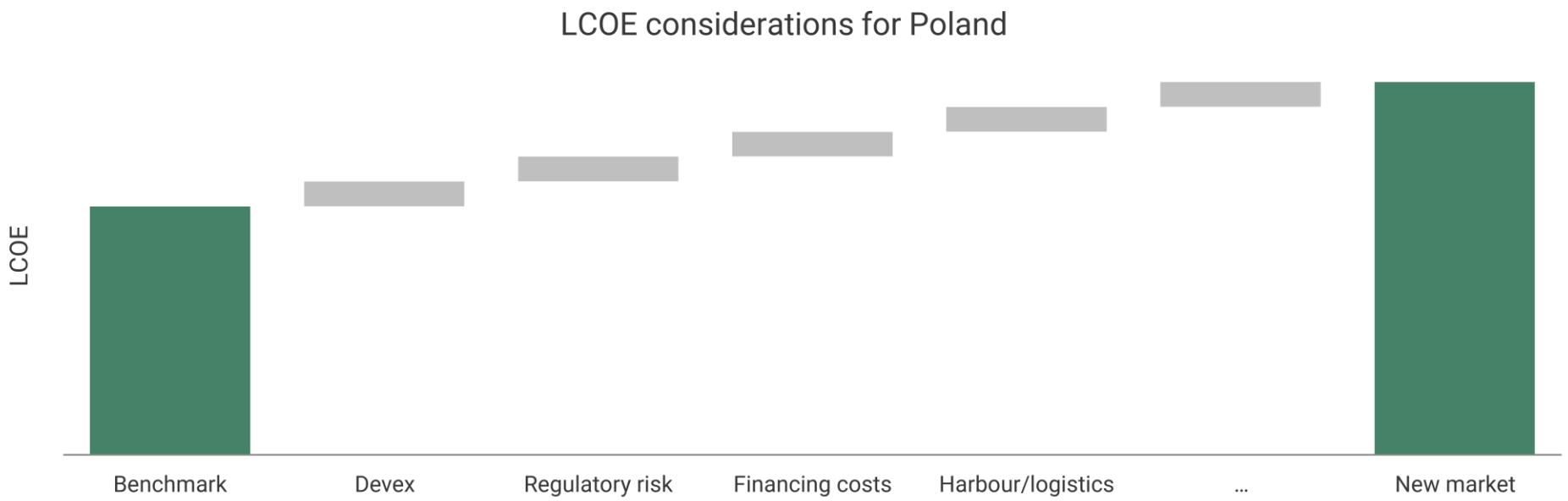
Before moving to tender regimes, all countries kickstarted their industries by the use of dedicated support regimes via FIT or CfD

3. How support regimes compare – LCOE expectations

Benchmarks vs actual prices – every market is different



Initial projects will need a higher tariff to take into account the country specifics

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4. Summary

Offshore wind made in Poland – what do we need?

I Poland has huge potential in the Baltic Sea with 10GW of offshore wind envisaged to be built by 2040 in order to help reduce carbon emissions and the local industry

II A large number of projects have been developed over several years without a clear regulatory framework accomodating the specifics of offshore wind

III The experience of other markets should be taken into account to drive the offshore development in a “smart way” and build local expertise & capacity with a long term view

IV A clear regulatory framework and a stable long term outlook will bring down prices and give comfort for investors to make significant long-term investments

V A comprehensive offshore act with direct support for the first wave of projects is needed to kick start the Polish offshore wind industry

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