



Early development stage funding for OW projects

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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
- 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



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



80+ 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 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!**

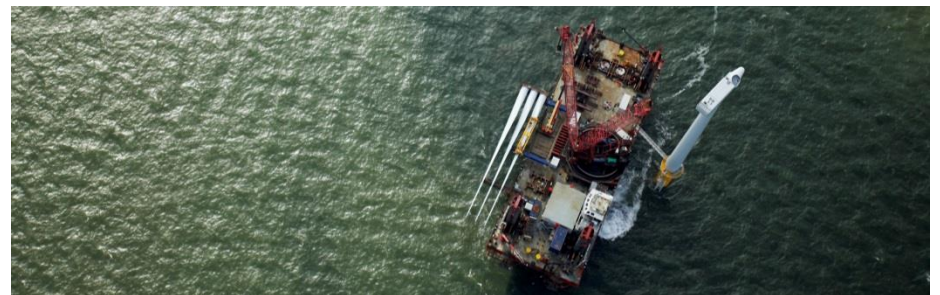


Involved in over **130 renewable energy transactions or projects** with a total capacity of more than **30 GW**

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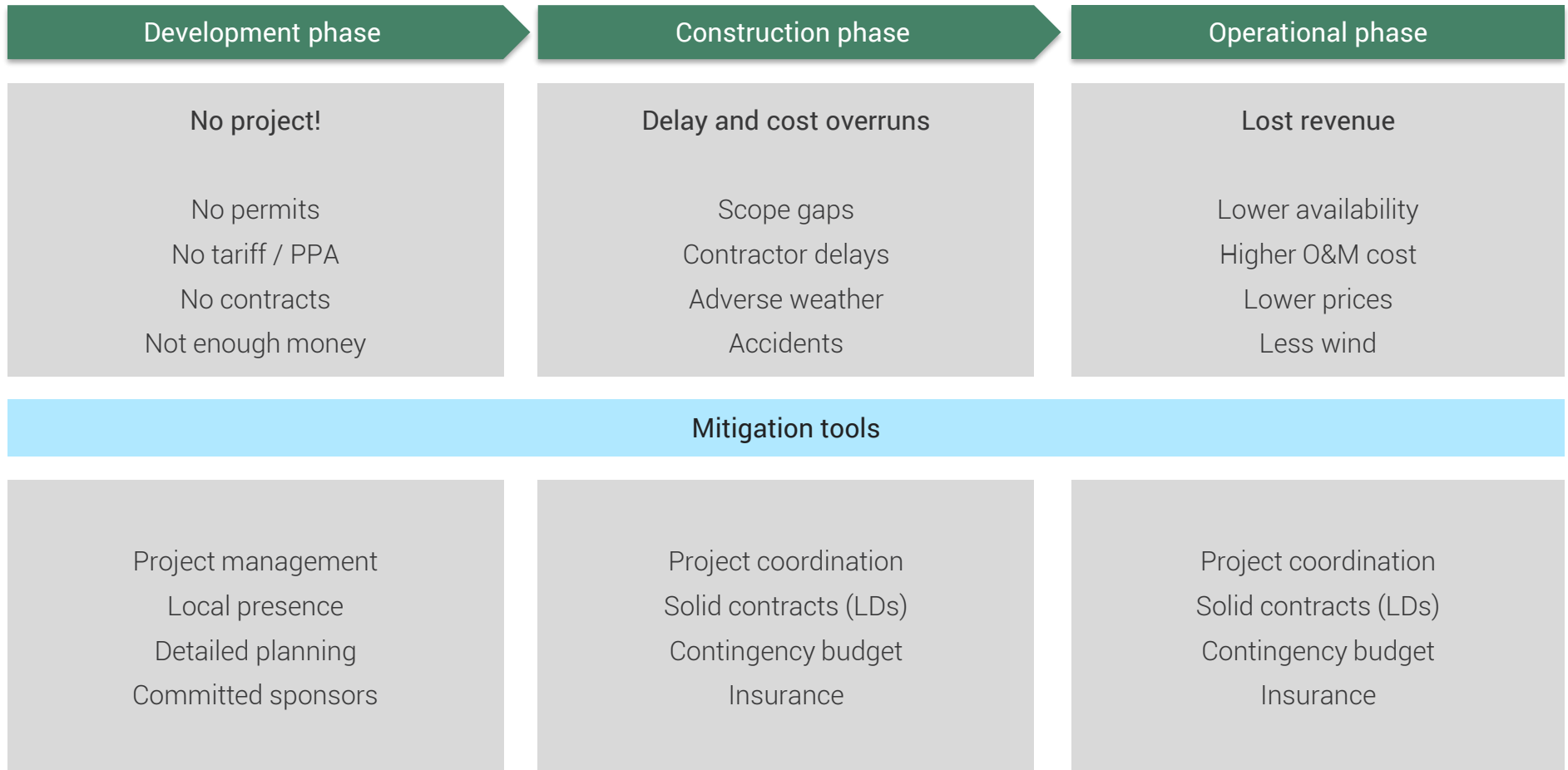
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1. Introduction – Risks in OW

Risks are different in each project phase



1. Introduction – The stakeholders

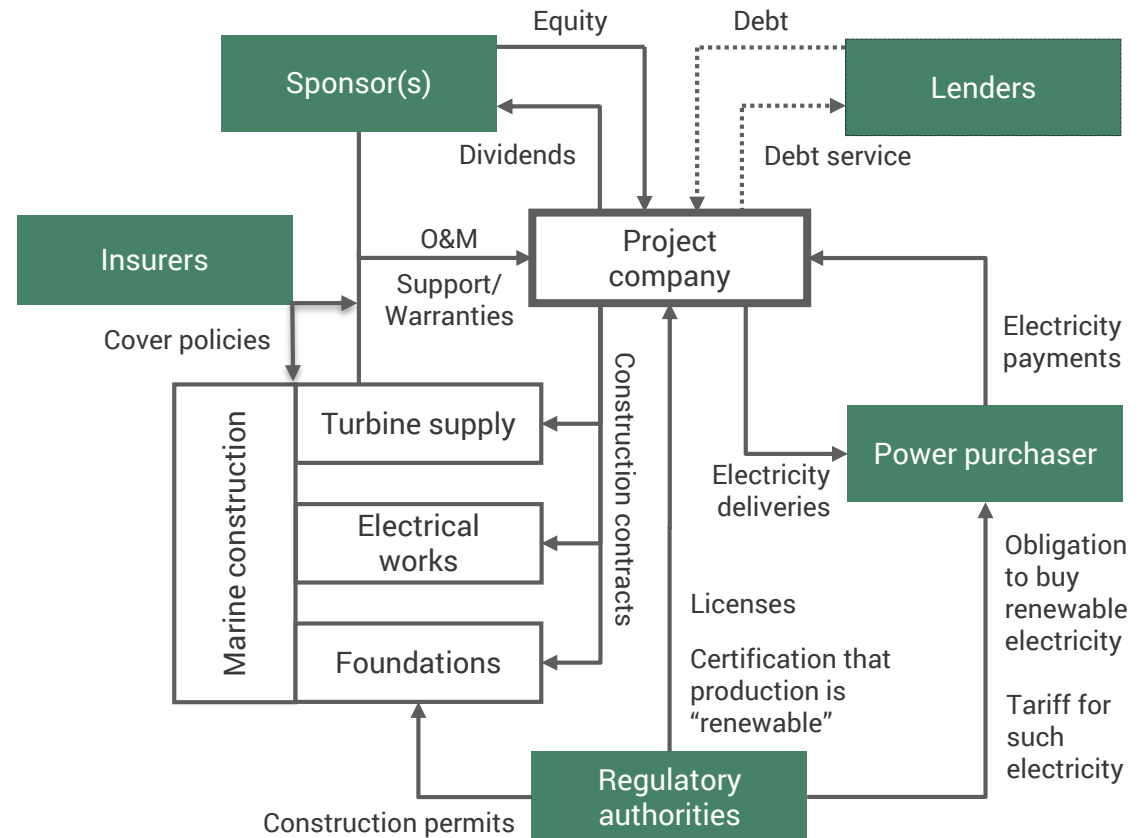
Offshore wind transactions are always heavily contracted

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. Introduction – A major decision

“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

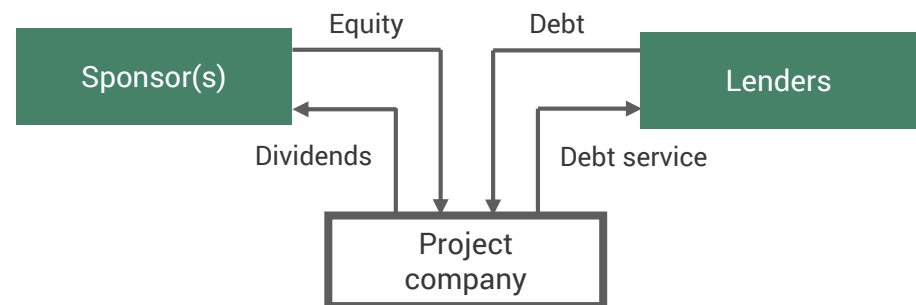
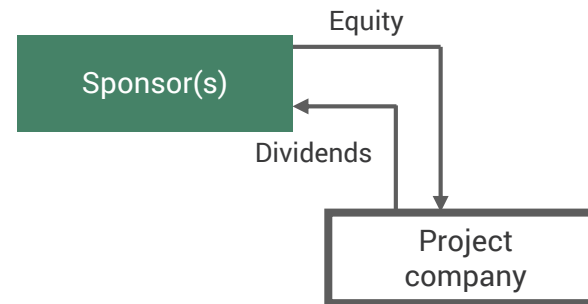
There are only two discrete sources of funding

- 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 means lenders will have a say over contracts. Doing so prior to construction imposes substantial changes to how such contracts are negotiated



1. Introduction – Risk & value creation (1)

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)

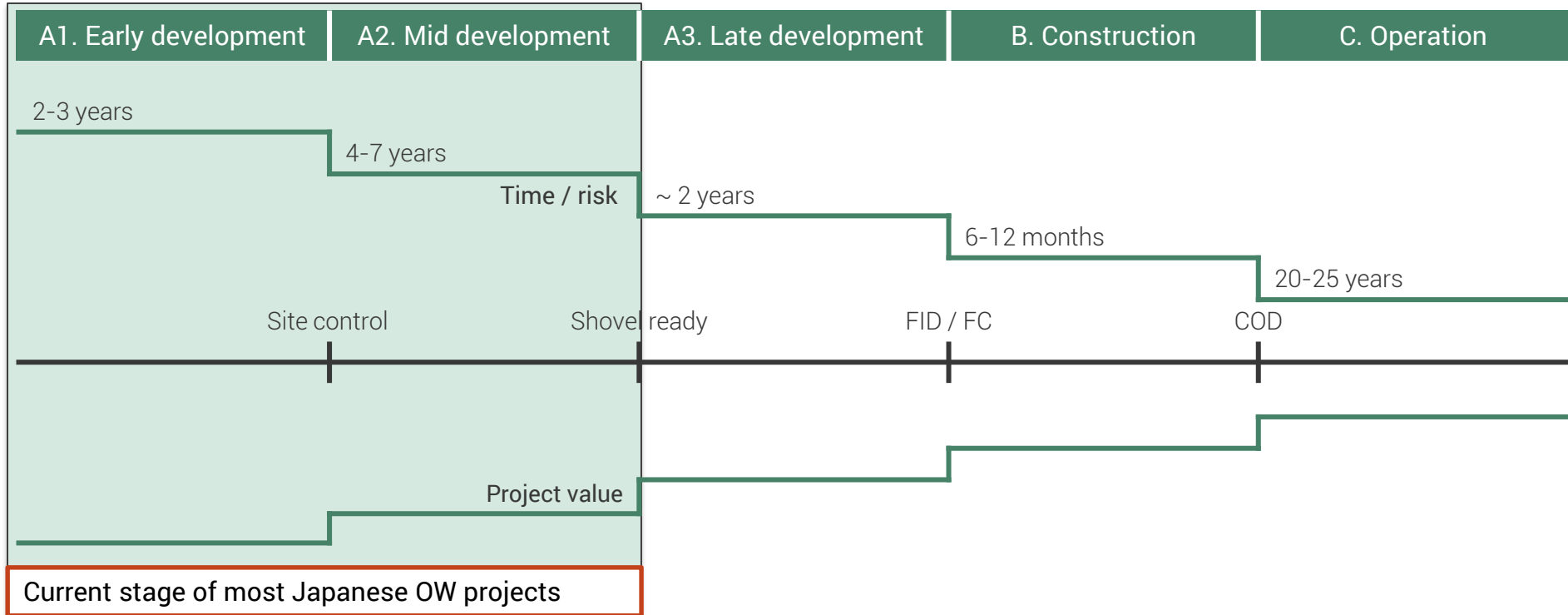
- Executed and effective contracts and all relevant permits irrevocable
- Unconditionally committed financing covering 100% of construction costs plus contingency
- Prior to FC/FID a project is still fully virtual
 - Projects can collapse a few weeks or days from financial close (see Cape Wind in the 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. Introduction – Risk & value creation (2)

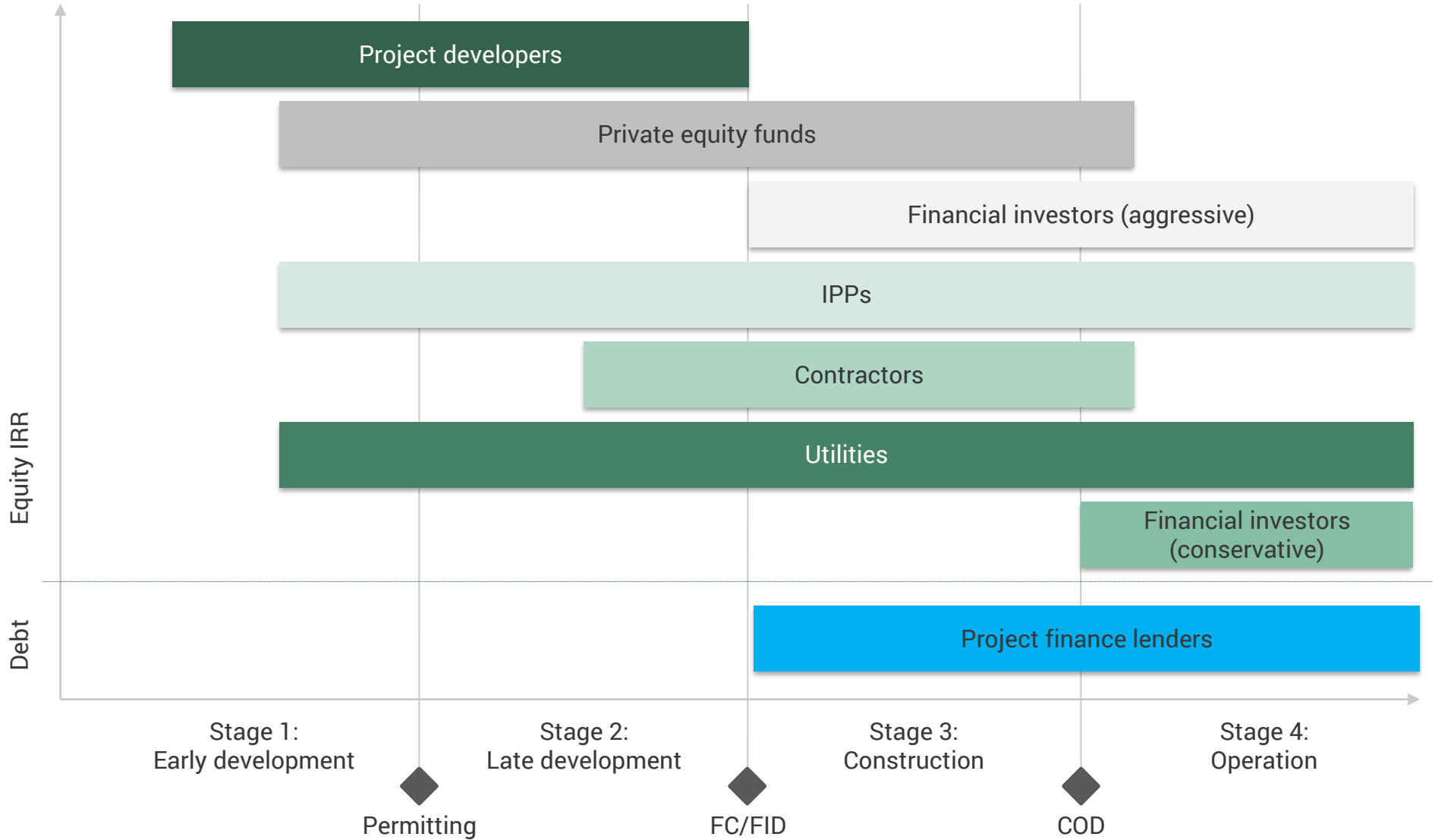
Most value is created during the development & contracting phases



- 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. Introduction – Key parties & appetite

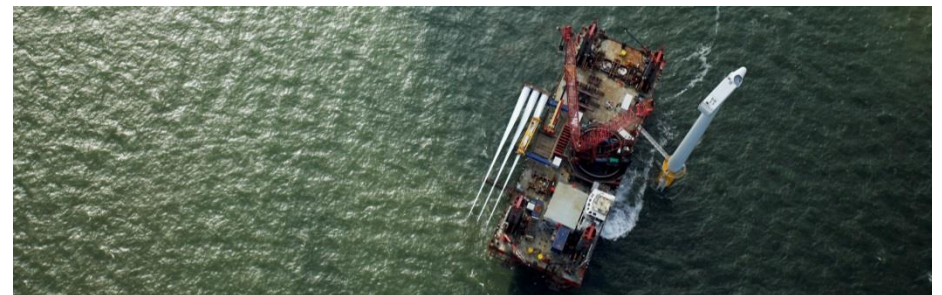
Investor profiles



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2. Early stage development considerations

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?)



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



2. Rationale of the project?

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



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. Early stage development considerations

Current status of Japanese OW projects

Early stage projects with development risk generally see low transaction values

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 highly speculative, instead projects are valued on a ratio per MW

However investors will negotiate the value based on their view of the 4 major following risks

Key development risks	Status to de-risk	Japanese OW projects status
Offtake	PPA/FiT secured	FiT tender expected in Q2-Q4 in Japan
Permitting (incl. EIA)	Free from any claims?	Some sites going through initial consultations with METI with clear path to full permitting process
Grid connection	Grid connection secured?	Some sites secured a grid connection via a tender, others pending
Site control	Site control secured?	Sea bed occupancy to be awarded together with FiT via a tender in Q2-Q4 2019

Design risk will also be seen as a critical item, especially for floating projects – given the higher uncertainty existing around the technology

Last, the regulatory framework, political support and risk of retroactive change will also be scrutinized by investors (rationale for the country to develop offshore wind, cost of electricity etc.)

2. Early stage development considerations

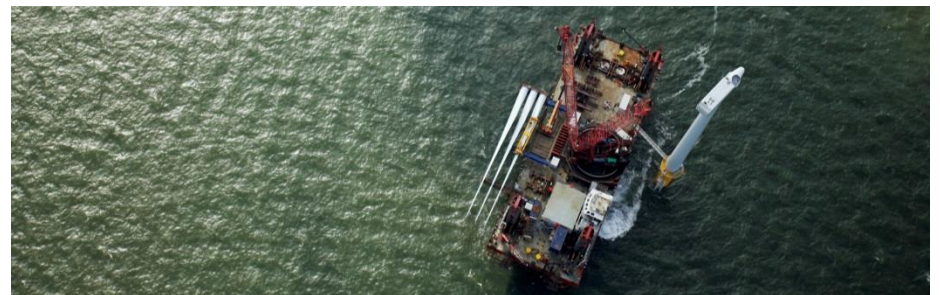
Key risks during early development

Risk	Description	Past project examples
Political / regulatory	<ul style="list-style-type: none"> • Change in renewable energy target • Permit procedure amendment • Change in tariff level & structure 	<ul style="list-style-type: none"> • Canadian offshore wind projects Windstream and Trillium were cancelled due to Ontario government's moratorium on offshore wind development • Change in FiT in Taiwan for 2019 (much lower FIT than in 2018 post tender and change in FIT structure)
Access to devex funding	<ul style="list-style-type: none"> • Change in sponsor's appetite to the project • Failure to secure development financing 	<ul style="list-style-type: none"> • Côte d'Albâtre was cancelled due to private-sector partners declining to stay involved • Dounreay Tri missed the ROC deadline and was therefore cancelled due to lack of funding from the project company
Conflict with stakeholders	<ul style="list-style-type: none"> • Usage right by other industries • Environmental impact • Agreement with fishermen community, ports 	<ul style="list-style-type: none"> • Eolfi's W1N floating wind project in Taiwan saw its EIA rejected due to the proposed boundaries of the project overlapping with a cross-strait navigation channel

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3. Valuation considerations

Valuation by DCF

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

A fully permitted project has had a very consistent valuation over time of 0.2-0.3 MEUR/MW in Europe

- Projects before FC/FID will get a fraction of that depending on an evaluation by buyers of how close they are to being "fully permitted" and getting to FC
- The recent increase in valuations for some projects in the late development stage comes from the windfall effect of comparing projects with a 150 EUR/MWh tariff to projects with a 50 EUR/MWh tariff, the new reality following tenders
- The difference in expected income is so large that even taking into account a discount factor for not yet fully developed projects, we have seen additional premiums in the 0.5-1 MEUR/MW range

3. Valuation considerations

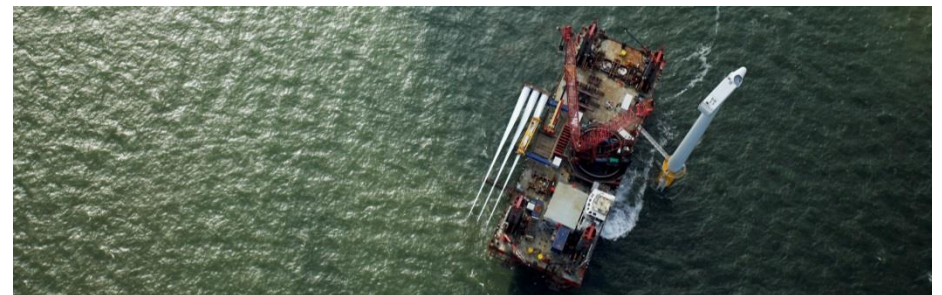
Co-development options



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4. Key parties & appetite

Some degree of appetite for early deals

Industrial investors will dominate the early projects

- Utilities interested to test a new market segment
- Oil & gas companies looking to enter into the renewable energy sector, making use of their competence in offshore structures
- IPPs looking for the “next new thing”
- Small developers – if they can find the early development equity
- A few private equity players who want to take advantage of projects which are first-movers

Strong political support required

- Outright funding required for early projects (demonstrators and pilot projects), in addition to a specific tariff for power
- Public funding programs can contribute (as EIB in Europe for instance)

Lateral investments also required, which require public support or at least encouragement; these are needed to

- Foster technology advancement
- Improve the coastal infrastructure capacity, and
- Support, where relevant, the necessary onshore grid upgrades and transmission extensions

4. Key parties & appetite

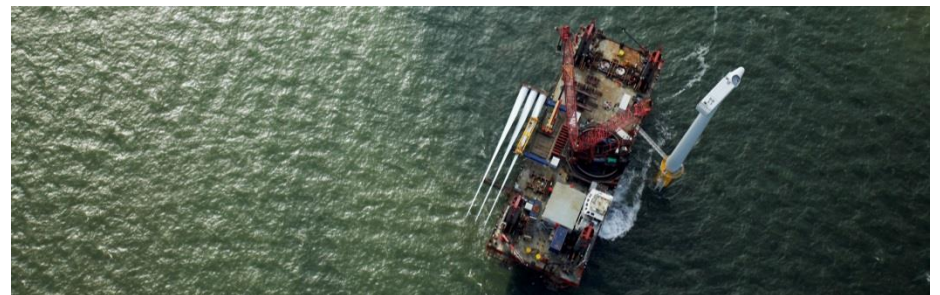
Parties likely to be interested in participating in early equity financing

Parties type	Level of interest	Examples	Comments
Contractor	Medium	Aker, Siemens, MHI Vestas, Van Oord, SHL, DEME	Can provide funding to support projects & secure pipeline. Want perspective on exit after COD
Utility / Oil & Gas	High	EDF, EDPR, Engie, Iberdrola, Orsted, Vattenfall, EnBW, Total, Exxonmobil, Shell, Equinor, RWE, E.On, Innogy	Several involved, sensing large scale potential. Want active role. With conservative assumptions & long term plans
IPP	High	NPI, CGN, Masdar	Would want to be actively involved from early stage development, looking for potentially higher returns. Pragmatic co-developers
Trading houses	High	Mitsui, Marubeni, Sumitomo, Mitsubishi	Some actively involved
Developer	High	Wpd, John Laing, RES, Mainstream, Parkwind, PNE	Would want to be actively involved from early stage development, looking for higher returns
Private equity & funds	Medium	CIP, DEShaw, Goldman Sachs	Can enter during early development, although would generally prefer investing at a later development stage

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5. Conclusion

Equity strategies follow the level of uncertainties & competition on a given market

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

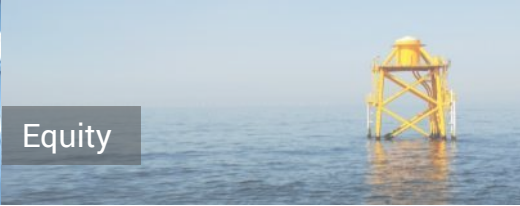
- Major European contractors expected to follow investors in new markets and build the local supply chain
- Aggressive financial structuring from the get-go
- Experienced players involved in the projects

Taiwan provides a good example of what should be avoided on the regulatory side from investors' perspective

- A number of investors invested early stage pre allocation round & 2019 FIT have been significantly decreased post allocation
- These changes and other regulatory changes (additional grid cost, lengthy permitting) may impact FID and create a lot of uncertainties as well as it may impact premium investors require for other emerging markets



Debt



Equity



Strategic



Contracting

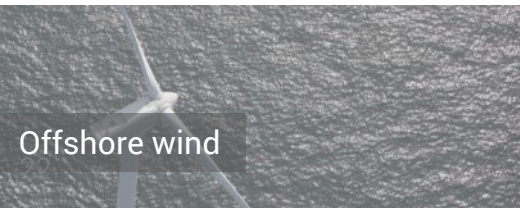


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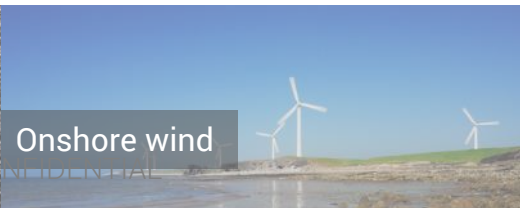
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Offshore wind



Onshore wind



Solar power



Other renewables