

Offshore Wind: A Finance Perspective

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Wind Finland Offshore, Helsinki, 14 May 2024

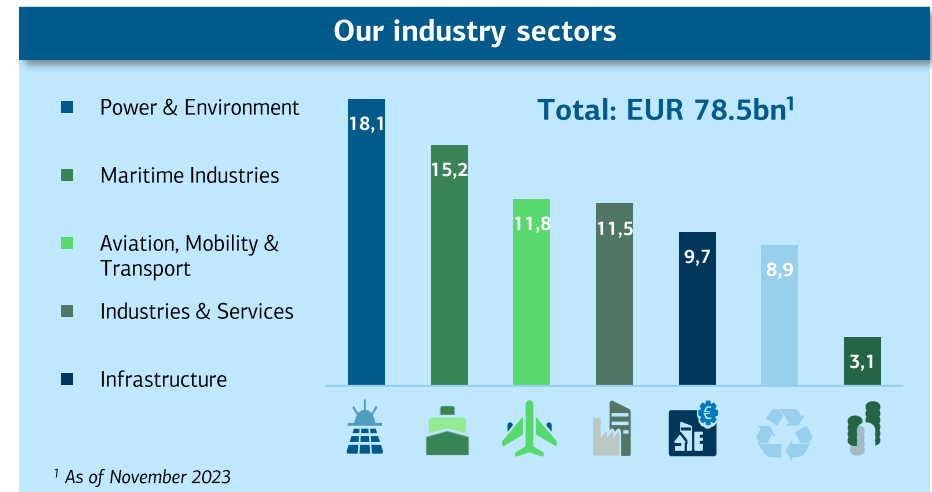
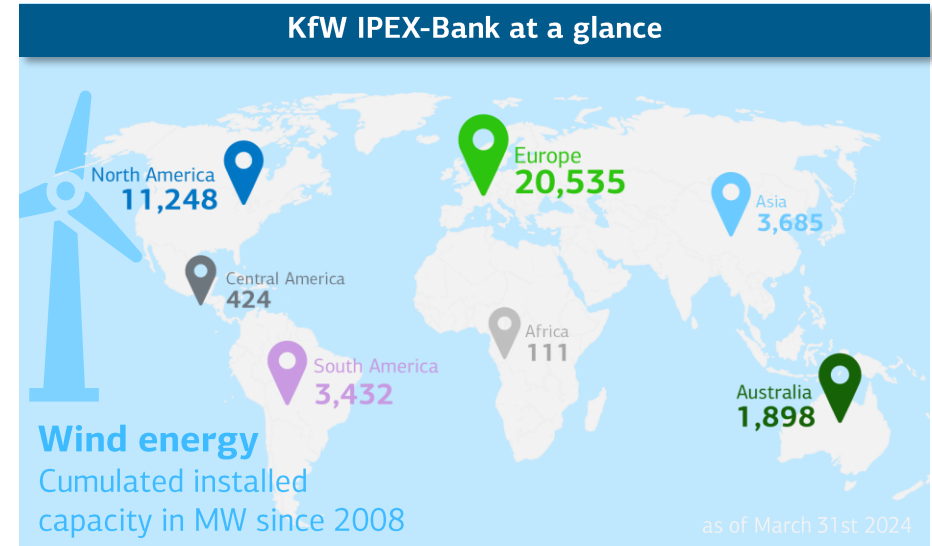
Agenda

- Who is KfW IPEX-Bank and what have we done in the Nordics and offshore financing?
- Offshore – worldwide and Finland: Status and outlook
- Finance perspective offshore:
 - Onshore vs. offshore
 - Key challenges
 - Key success factors
 - What's next?

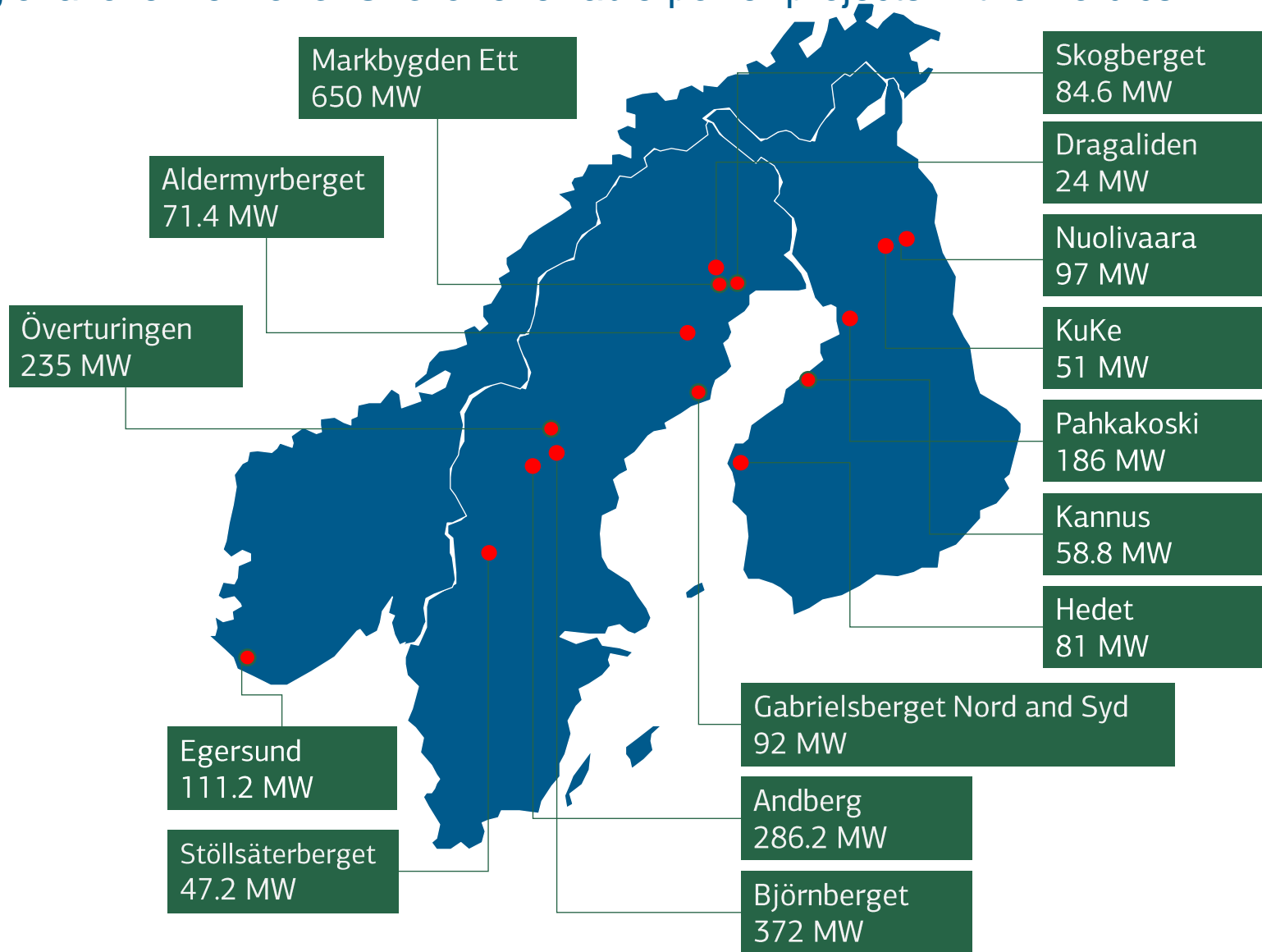
About KfW IPEX-Bank

Specialist financier in project and export finance with global reach

- 100% subsidiary of Germany's state owned promotional bank KfW
- Stable business model and strong external ratings: Moody's (Aa2), S&P (AA+)
- **Leading specialist financier -project and export finance solutions** with decades of experience
- Focus on medium to long-term lending solutions
- **Renowned for its sector expertise** and a strong track-record of complex projects in the key industry sectors
- **Experts in ECA coordination and advisory** with strong ties to all leading ECAs



Regional overview of **onshore** renewable power projects in the Nordics

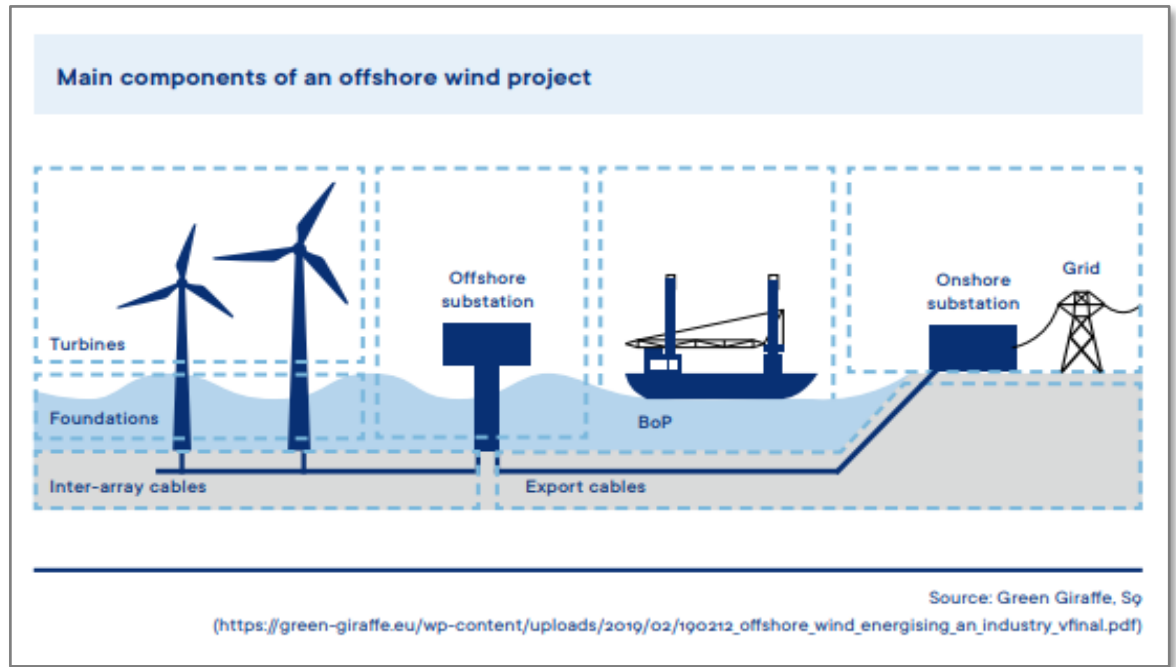


Finance perspective

Onshore vs. offshore

Comparing key parameters

- Project sizes
- Turbine size
- CAPEX
- Technologies
 - Turbines
 - Foundations
- Construction
- Operation
- Offtake
- Merchant share
- E + S
- Financing structure



Source: WindEurope

Key challenges

- Three main reasons for disputes during projects:

- Delay issues



- Cost overruns

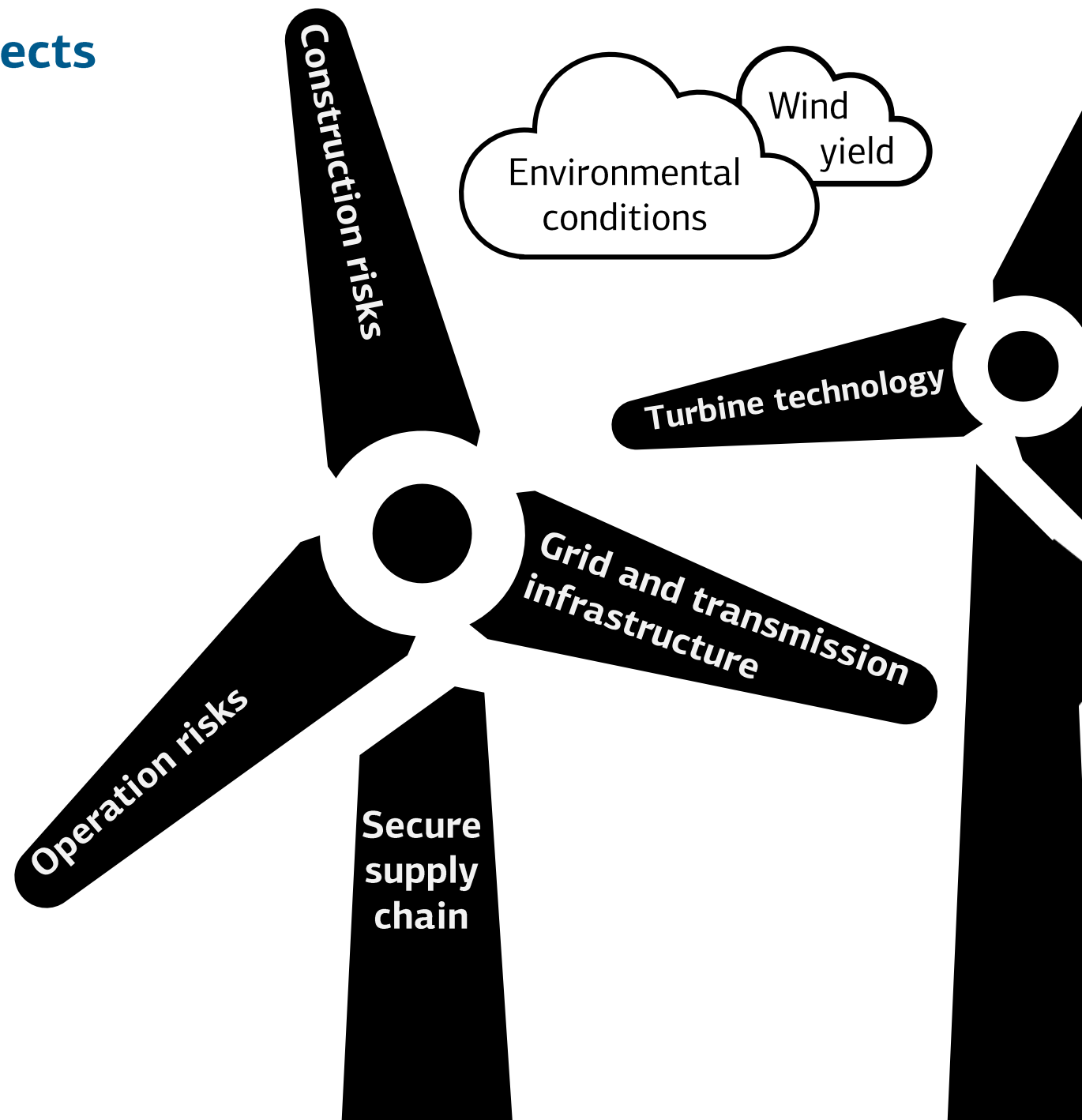


- Defects



Risks in offshore projects

- Further risk factors:
 - Political risk
 - Permitting issues
 - Counterparty risk
 - Price risk



Risks in offshore projects

Experiences from our portfolio

Offshore financed since 2010, first operational since 2014

Construction:

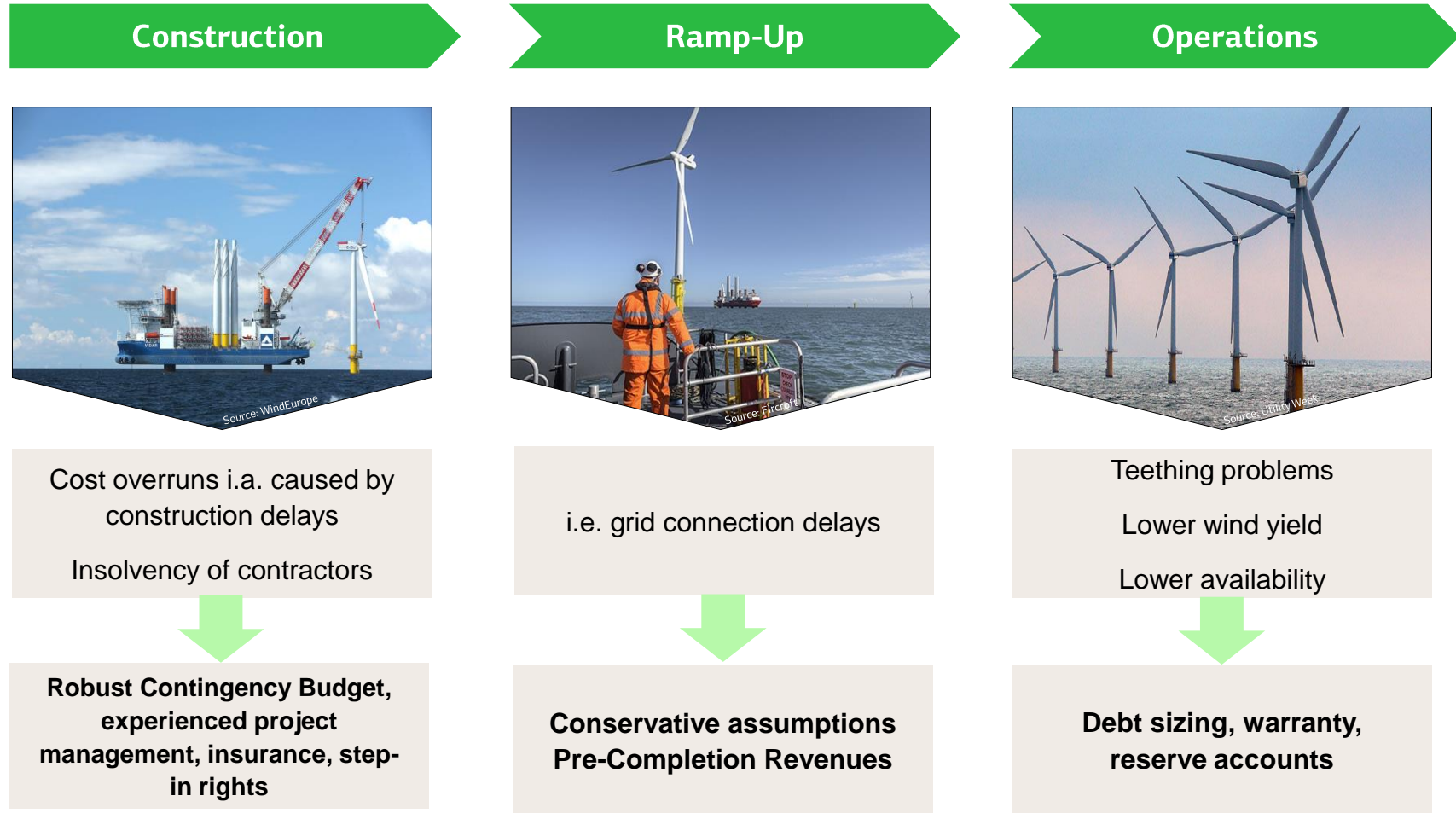
- Bankruptcy of contractors: manufacturer (Senvion 2019), OSS contractor
- Foundation installation: combination of wrong evaluation of soil condition + operator errors
- Delays from vessel unavailability and tight weather windows
- Early years: grid delays

Operation:

- EYA
- Mostly strong performance, availabilities above 95% for most turbines
- Most incidents insurable events

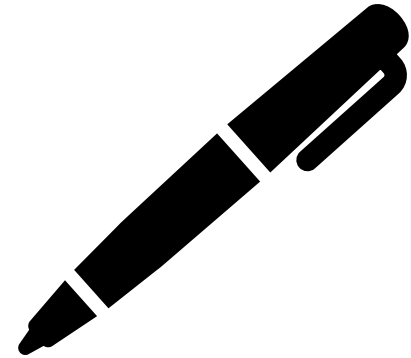
Key risks in offshore projects

Mitigation methods



Key Success Factors from a Bank's Perspective

- High quality of projects
- Strong and experienced sponsors
- Strong supply chain and strong contracts
- Excellent capabilities of major project parties
- Supportive and reliable political and regulatory environment including tender design
- Good advisors (legal, technical)
- Convincing track record
- Balanced financing structure with sufficient and practicable mitigants and risk buffers (contingencies, LDs, liability caps, conservative time and cost budgets)
- Include financial institutions like ECAs, EIB, public support schemes



What's next

- Floating
- Offtake with merchant share
- Power to X with offshore

Get in touch with us – we will be glad to advise you

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Backup

Overview: Offshore Wind Expertise

<p>Poland 2023</p>  <p>Baltic Power 1,140 MW</p> <p>Project Financing</p> <p>EUR 4.400.000.000</p> <p>MLA ECA-Agent</p>	<p>Germany 2023</p>  <p>EnBW He Dreih</p> <p>Wind Offshore Corporate Finance EIFO</p> <p>EUR 500.000.000</p> <p>Co-Arranger</p>	<p>France 2022</p>  <p>Leucate 30 MW Floating Offshore Wind</p> <p>Project Financing</p> <p>EUR 283.000.000</p> <p>MLA</p>	<p>United States 2021</p>  <p>OWP Vineyard Wind Turbines</p> <p>Project Financing</p> <p>USD 2.344.000.000</p> <p>Lender</p>	<p>Germany 2021</p>  <p>KNK Ocean Breeze</p> <p>Arcadis Ost 1 257 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 565.000.000</p> <p>MLA</p>	<p>France 2021</p>  <p>Courseulles-Sur-Mer 448 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 2.140.000.000</p> <p>MLA</p>
<p>France 2020</p>  <p>Fécamp 497 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 2.419.000.000</p> <p>MLA</p>	<p>Taiwan 2020</p>  <p>Changfang & Xidao 591 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 2.300.000.000</p> <p>MLA Security-Agent Co-ordinating Bank</p>	<p>United Kingdom 2019</p>  <p>Neart na Gaothe 448 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 2.286.000.000</p> <p>MLA</p>	<p>France 2019</p>  <p>St. Nazaire 480 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.918.000.000</p> <p>MLA</p>	<p>Taiwan 2019</p>  <p>Yunlin Offshore Windfarm 640 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 2.000.000.000</p> <p>MLA Security-Agent Co-ordinating Bank</p>	<p>Belgium 2018</p>  <p>Seamade 487 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.154.000.000</p> <p>MLA</p>
<p>United Kingdom 2018</p>  <p>Hornsea One 1218 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 3.300.000.000</p> <p>Lender</p>	<p>United Kingdom 2018</p>  <p>Triton Knoll 860 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 1.750.000.000</p> <p>MLA</p>	<p>Germany 2017</p>  <p>Deutsche Bucht 200 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.043.000.000</p> <p>Bookrunner, MLA Security & Facility-Agent</p>	<p>Germany 2017</p>  <p>Trianel Borkum II 200 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 661.000.000</p> <p>MLA Security & Facility-Agent Model Bank</p>	<p>United Kingdom 2016</p>  <p>Walney I + II</p> <p>Project Financing</p> <p>GBP 208.000.000</p> <p>Arranger</p>	<p>Belgium 2016</p>  <p>Rentel 309 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 853.000.000</p> <p>MLA</p>

Overview: Offshore Wind Expertise

<p>Germany 2016</p>  <p>Merkur 396 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.140.000.000</p> <p>MLA Security & Facility-Agent Model Bank</p>	<p>United Kingdom 2016</p>  <p>Beatrice 588 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 1.430.000.000</p> <p>MLA</p>	<p>United Kingdom 2016</p>  <p>Dudgeon 402 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 1.266.000.000</p> <p>MLA</p>	<p>Germany 2015</p>  <p>Veja Mate 402 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.600.000.000</p> <p>Bookrunner, MLA Security & Facility-Agent</p>	<p>Germany 2015</p>  <p>Nordergründe 11 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 335.000.000</p> <p>Bookrunner, MLA Security & Facility-Agent</p>	<p>Germany 2015</p>  <p>Nordsee One 332 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 900.000.000</p> <p>Bookrunner, MLA Security & Facility-Agent</p>
<p>Germany 2015</p>  <p>Baltic 2 288 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 541.000.000</p> <p>MLA</p>	<p>United Kingdom 2013</p>  <p>London Array 630 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 266.000.000</p> <p>MLA</p>	<p>Germany 2013</p>  <p>Butendiek 288 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 937.000.000</p> <p>Bookrunner, MLA Security & Facility-Agent Model Bank</p>	<p>Belgium 2012</p>  <p>Northwind NV 216 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 596.000.000</p> <p>Arranger</p>	<p>United Kingdom 2012</p>  <p>Lincs 270 MW Wind (Offshore)</p> <p>Project Financing</p> <p>GBP 1.000.000.000</p> <p>MLA</p>	<p>Germany 2011</p>  <p>Baltic I 48,3 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 138.000.000</p> <p>MLA Model Bank</p>
<p>Germany 2011</p>  <p>Meerwind 288 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 900.000.000</p> <p>MLA Security & Facility-Agent Model Bank</p>	<p>Germany 2011</p>  <p>Global Tech I 400 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.047.000.000</p> <p>MLA</p>	<p>Germany 2010</p>  <p>Borkum West II 200 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 545.000.000</p> <p>MLA</p>	<p>Belgium 2010</p>  <p>C-Power II 325 MW Wind (Offshore)</p> <p>Project Financing</p> <p>EUR 1.007.000.000</p> <p>Arranger ECA-Agent</p>		