Borkum Riffgrund 2 Investor Holding GmbH – Senior Notes

Public Rating Report / Project Finance

Scope Ratings

Rating: Senior notes / EUR 815.00m / maturing in June 2028

1Rating	Expected loss	Expected risk horizon*	Notional	Payment frequency	Coupon (fixed)	Final maturity
A-	0.20%	3.67 years	EUR 815m	6 months	2.65%	2028

The transaction closed in December 2017. The final rating is based on the information provided by Gulf Energy Development as of September 2021. Scope's rating definitions are available at www.scoperatings.com

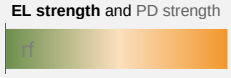
*The expected risk horizon is equal to the instrument's probability-weighted average duration under all scenarios when assuming a 0% discount rate. For more details, see the General Project Finance Rating Methodology.

Transaction and instrument details

Country / sector / status	Germany / Power / Operational
Group / sector / asset	Renewable power / Wind power generation / Off-shore wind power generation
Purpose	Funding of construction and operation of a 465 MW offshore wind farm in the German North Sea.
Issuer	Borkum Riffgrund 2 Investor Holding GmbH
Sponsors	Ørsted, Gulf Energy Development
Structure / seniority / amortisation	HoldCo structure / Senior notes / Amortising to balloon (12%)

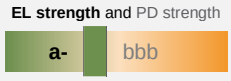
Rating rationale (summary)

The A- rating reflects the total expected loss (EL) of 0.20% over the loan's life until maturity (equivalent to a 3.67-year constant-exposure expected risk horizon). Key drivers are low risks during operation, especially regarding sponsors and revenue generation, as well as strong financials and resilience to cash flow stress scenarios. The risk of structural subordination is mitigated by a defined cap, the project's financial strength, a robust governance and security framework, and the sponsors' strong economic interests and funding obligations.

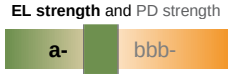


Construction risks account for 0.0% of total EL. Construction started in the third quarter of 2017 and was completed on schedule in the first quarter of 2019. Final acceptance took place in Q2 2019.

Operational risks account for 40.2% of total EL. The initial five-year service contract and warranty period by MHI Vestas and the largely fixed-fee operating and maintenance agreement by Ørsted, as well as a maintenance reserve, mitigate risks from operating expenditure uncertainties. Potential counterparty risks regarding the service providers are low because of their long-standing track records, strong market positions, good credit standing and significant commitment to the project.



Revenue risks account for 19.9% of total EL. Priority dispatch of electricity, the absence of price risk due to regulated fixed feed-in tariffs, and the generally good quality and reliability of the offshore wind resource mitigate the risk of revenue fluctuations. The project's strong economic rationale, negligible risk of retroactive regulatory change in Germany, and high barriers to entry compensate for the project's significant dependence on subsidies.



Financial strength risks account for 28.0% of total EL. The transaction has average coverage ratios and demonstrates good resilience to cash flow stresses. Refinancing risk is low thanks to the relatively small balloon amount. A balloon reserve account in combination with mandatory cash sweeps, regulated price floors for 10 years after maturity, and the fact that the notes mature at least 15 years before the project life ends further reduce refinancing risk at maturity.

Project structure and compliance risks account for 11.8% of total EL. The sponsors' funding obligations significantly reduce the likelihood of credit impairment events and compensate for the lack of direct access to the assets. The risk of structural subordination is very low and is mitigated by a defined cap, the project's financial strength, a robust governance and security framework, as well as the extensive experience, good credit quality and economic interests of the sponsors.

Analytical Team

Torsten Schellscheidt
+49 40 524 724-100
t.schellscheidt@scoperatings.com

Team Head

Torsten Schellscheidt
+49 40 524 724-100
t.schellscheidt@scoperatings.com

Business Development

Marc-Orell Stadthaus
+49 30 27891-243
m.stadthaus@scopegroup.com

Carlos Terré
+49 30 27891-242
c.terre@scopegroup.com

Related Research

General Project Finance Rating Methodology
November 2021

Legal Risks in Project Finance: Analytical Considerations
April 2020

General Project Finance Analytical Considerations
September 2017

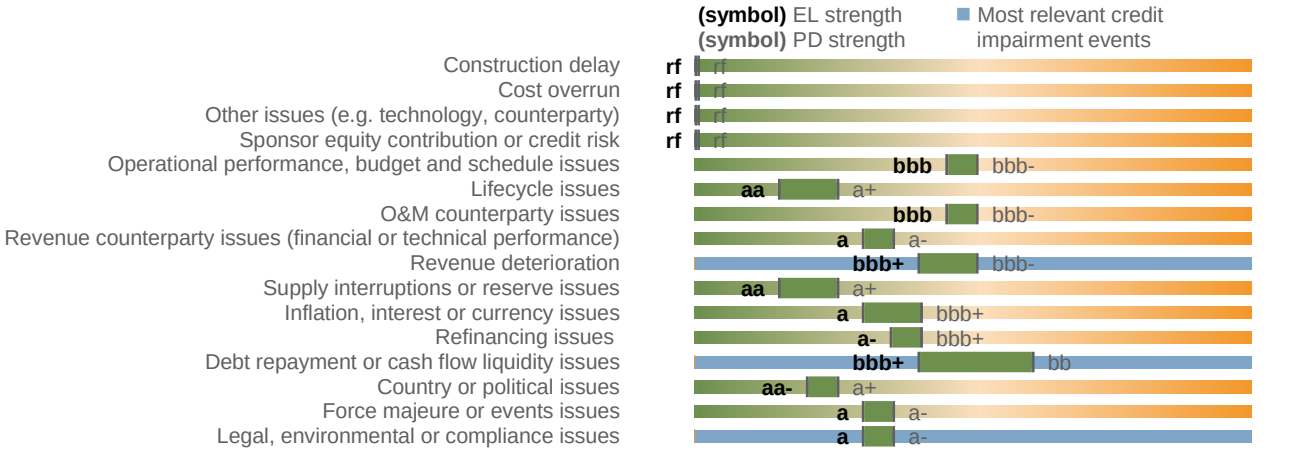
Scope Ratings GmbH
Lennéstraße 5
10785 Berlin
Tel. +49 30 27891 0
Fax +49 30 27891 100
info@scoperatings.com
www.scoperatings.com
Bloomberg: SCOP

Rating drivers and mitigants

Positive rating drivers	Negative rating drivers and mitigants
Experienced sponsors. All sponsors are highly experienced and have good credit quality, strong technical capabilities and significant economic incentives.	**Structural subordination.** The notes may be structurally subordinated to the sponsors' funding obligations during the operating phase in certain scenarios. The risk of structural subordination is very low and is mitigated by the defined cap, the financial strength of the project, the robust governance and security framework, as well as the extensive experience, good credit quality and economic interests of the sponsors.
Low operational risks. Ørsted will operate and maintain the project for 20 years. O&M contract prices are largely fixed. The O&M budget includes a sizable maintenance reserve based on the expected variable O&M charges (three-year rolling allocation). For the initial five project years, MHI Vestas provides O&M for the turbines via a comprehensive pass-through service warranty agreement.	**Volatile operating performance.** Conservative rating case assumptions based on P90 production and debt service coverage of more than 1.3x, as well as regulatory compensation and robust reserves, mitigated the operating underperformance in the first nine months of 2021. The shortfall was mainly due to lower-than-expected wind speeds, energy curtailments, grid outages, and negative price events, with the last three largely covered by regulatory compensation.
Stable and predictable long-term revenues. No price risk due to high fixed feed-in tariffs and a regulated price floor until operating year 20. The good quality and reliability of offshore wind yield in the German North Sea mitigate resource risk.	**Significant dependency on subsidies**. Low regulatory risks, the strong project rationale, and high barriers to entry mitigate the risk of potential retroactive subsidy cuts.
Strong resilience to cash flow stresses. The project demonstrates good resilience to cash flow stress scenarios, including lower wind turbine availability and average wind speeds, higher inflation, and variable operating costs.	
Limited refinancing risk. The notes are almost fully amortising to a small balloon (12%) and mature about 15 years before the project life ends. The period of regulated electricity price floors, which is almost twice as long as the time needed to repay the balloon based on P90 production divided by 1.34x, the absence of external debt, and a balloon reserve account further reduce refinancing risk.	

Positive rating-change drivers	Negative rating-change drivers
A stronger operational track record in terms of revenues in the short term, or faster deleveraging compared to Scope's rating case, could result in a rating upgrade.	Lower energy production or consistently lower cash flows in the operating phase than assumed in our rating case could lead to a rating downgrade.

Credit impairment events (summary)



Source: Scope

Borkum Riffgrund 2 Investor Holding GmbH – Senior Notes

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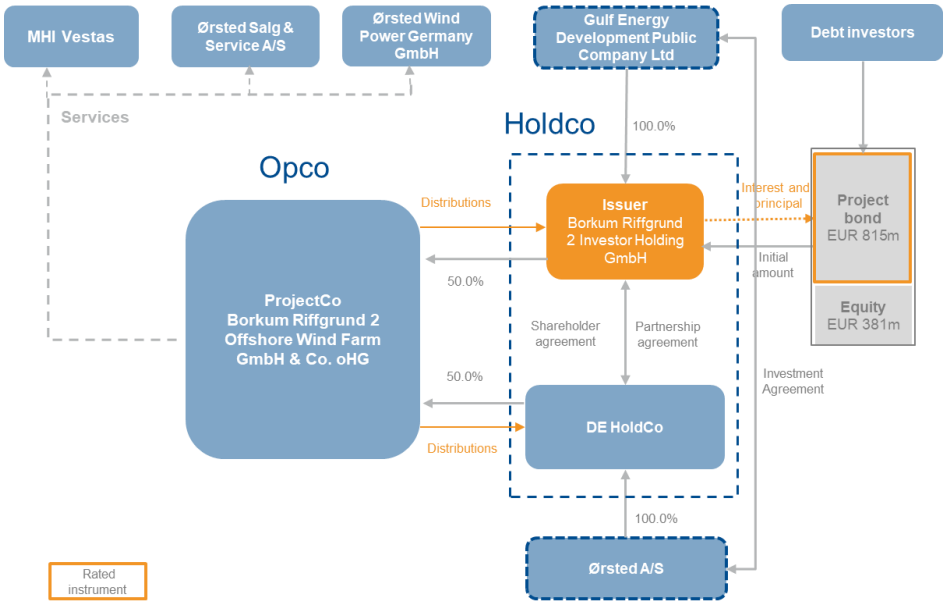
1. Transaction summary

Figure 1: Simplified representation of the transaction structure



Source: Transaction documents and Scope

Borkum Riffgrund 2 is a joint investment of Ørsted and private equity investors. The wind farm is located in the German exclusive economic zone of the North Sea and has a total capacity of 464.8 MW, consisting of 36 monopile and 20 suction bucket-supported MHI Vestas V164 turbines with a capacity of 8.3 MW each. It holds an unconditional grid connection commitment from the responsible transmission system operator (TSO) TenneT TSO GmbH on the DolWin 3 grid connection. Development and construction were managed by Ørsted. Construction commenced in Q3 2017 and was completed on schedule in Q1 2019. Final acceptance occurred in Q2 2019. Ørsted (or an affiliate) also manages operation and maintenance of the wind farm and provides a route to market for the electricity produced by the wind farm for a period of 20 years under two separate power purchase agreements. The project is fully operational and is currently owned by Ørsted (50%) and Gulf Energy Development (50%).

Ørsted initially divested a 50.0% share in the project and retained the remaining interest. For this purpose, an unlimited partnership under German law was established (Borkum Riffgrund 2 Offshore Wind Farm GmbH & Co. oHG or 'Opco'). Borkum Riffgrund 2 Holding GmbH ('DE HoldCo') and Borkum Riffgrund 2 Investor Holding GmbH ('Investor HoldCo') each hold a 50.0% equity stake in OpCo and have equal voting rights under a partnership agreement. OpCo entered into a construction agreement with Ørsted at a pre-agreed construction price with holdings in all relevant permits and assets.

Borkum Riffgrund 2 Investor Holding GmbH is an SPV whose purpose is limited to the management of the 50.0% stake in Opco and its proportionate funding. Funding obligations during construction were financed through the issuance of senior secured amortising registered notes ('senior notes') with a total volume of EUR 815m and a subordinated equity facility of EUR 381m. There is no further external debt at project level. Due to a delayed final acceptance date and a longer-than-expected ramp-up period, the first repayment date was moved from 30 June 2019 to 31 December 2019. The outstanding volume of senior notes currently amounts to EUR 584m (as of 30 December 2021).

2. Rating and project risk

The rating on the instrument reflects the transaction's financial and legal structure; the value of the security package; the borrower's competitive position; the sponsors' experience and alignment of interests; and the counterparty exposures to key partners in construction (if applicable) and operation.

The total EL on the rated instrument is commensurate with an A- rating. We calculated an EL of 0.20% over the lifetime of the instrument (equivalent to a constant-exposure expected risk horizon of 3.67 years) under our rating case scenario (Scope's rating case), which is more conservative than the sponsors' base case scenario.

The EL reflects: i) the likelihood of several idealised credit impairment events with the potential to reduce payments originally promised to investors; and ii) the severity of such credit impairment events. Credit impairment events represent default-like situations that could impair the project's credit performance in relation to the rated instrument.

Our analysis focuses on 16 credit impairment events grouped into five areas of risk: i) Construction; ii) Operation; iii) Revenue risk; iv) Financial strength; and v) Project structure and event risk.

Figure 2 shows the probability of default (PD) and EL strengths of the instrument in relation to the five risk areas considered in our analysis. Figure 3 shows the relative contribution of each risk area to the total expected loss for an investor in the instrument.

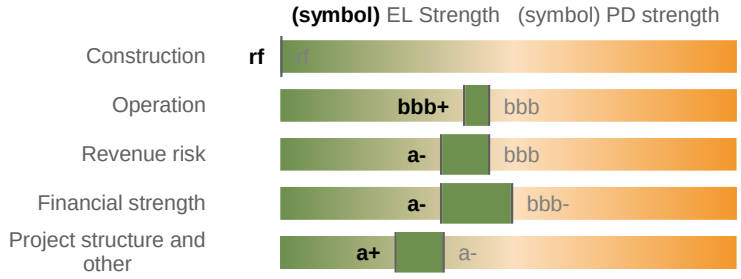
EL and PD strengths

We use EL strength (ELS) and probability of default strength (PD strength or PDS) to indicate the relative robustness of the different credit risk dimensions of a project.

The ELS and PDS indicate what the rating of the project would be if all other credit dimensions were as risky as the dimension under analysis. This is expressed with a symbol from our rating scale but written in lowercase to denote that the strength indication is not a rating.

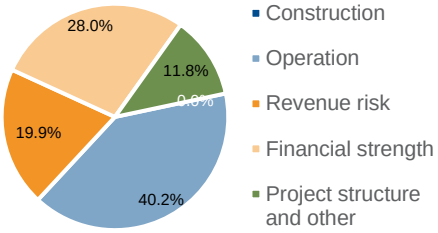
For example, an ELS of aa+ for the 'Supply interruptions' credit impairment event indicates that the project would be rated AA+ if all dimensions of risk were as safe as the availability of inputs for the project.

Figure 2: PD and EL strengths by risk area



Source: Scope

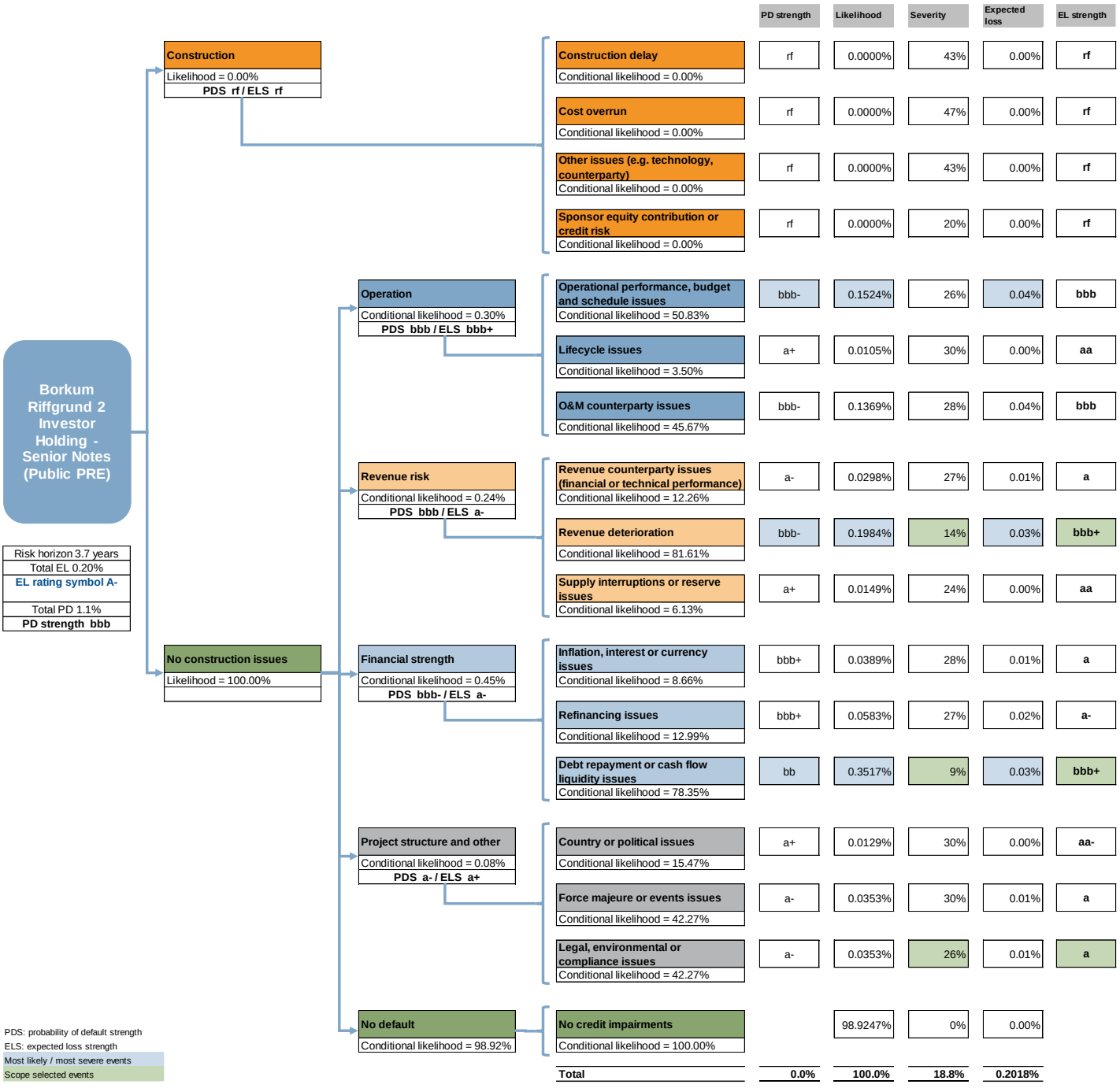
Figure 3: Share total EL contributions by risk area



Source: Scope

Figure 4 shows the idealised credit impairment events that we consider when estimating the EL for investors, expressed as a probability tree. The tree illustrates the expected likelihood of each impairment, as well its expected severity for investors – taking into account the leverage of the project. The three most relevant credit impairment events for this transaction are highlighted in green. The most relevant events as regards the impairment likelihood and contribution to total EL are highlighted in light blue.

Figure 4: Visual summary of the project's risks, impairment likelihoods and EL contributions



Source: Scope.

3. Likelihood of credit impairment events

We calculated an expected impairment likelihood of 1.08% for this project, commensurate with a PD strength of bbb when expressed using the levels of our idealised PD curves, as per our methodology. The project's PD strength and EL results from the aggregated risk of the construction and operational phases. Figure 2 shows the PD strengths of the different risk areas of this project. PD strengths determine the likelihood of credit impairments under the scenarios linked to the risk area.

We considered 23 risk factors that contribute to the project's total credit risk and drive the likelihood of credit impairment events. These risk factors are categorised in the same five risk areas that we use to group credit impairment events, with the risk contribution from

sponsors impacting all five areas of risk. We assessed the risk contribution of each risk factor using a scoring model in the context of the instrument. The likelihood of a given risk area triggering a credit impairment event (PD strength of risk area) is derived from the scores of the different risk factors (see Figure 2).

Figure 5 summarises the scores assigned to each of the risk factors defined in our methodology.

Figure 5: Summary of the project's risk factor scores

Risk area	Risk factor	Score	Comment
Sponsors	Sponsor's experience, track record and importance of the project	**Low**	Borkum Riffgrund 2 (Project Lighthouse) is a joint investment of Ørsted (50% stake in the project, rated BBB+/Baa1/BBB+ by three reputable credit rating agencies or CRAs) and Gulf Energy Development Public Company Limited (50% stake in the project, rated A- by one local CRA). Both partners have at least good credit quality, strong technical capabilities and significant incentives. Ørsted, in particular, has extensive experience with similar projects.
Construction PDS rf	Construction complexity, permits, design and technology	**n/a**	Construction commenced in Q3 2017 and was finished on schedule in Q1 2019. Final acceptance occurred in Q2 2019.
	Construction contracts, budget and schedule	**n/a**	idem
	Construction funding and liquidity package	**n/a**	idem
	Counterparty risk	**n/a**	idem
	Equity contribution risk	**n/a**	idem
Operation PDS bbb	Operational complexity, technology and standing	**Average**	Operational complexity is average (high technical demands that require specialised equipment and operating skills). Following a prolonged ramp-up period in 2019, which was marked by recurring, unexpected grid outages, energy curtailments and technical issues, the project performed well in 2020 (in line with rating case assumptions). Conservative rating case assumptions based on P90 production, debt service coverage of more than 1.3x, regulatory compensation and robust reserve accounts mitigated operating underperformance during the first nine months of 2021. This underperformance was mainly due to lower-than-expected wind speeds, energy curtailments, grid outages and negative price events, with the latter three largely covered by regulatory compensation. Since 1 January 2020, curtailment claims are compensated at a rate of 100% (95% previously), grid outages are compensated at a rate of 90% of the applicable feed-in tariff (FiT), but only after certain grace periods (such as a continuous interruption over 10 consecutive days or 18 days in aggregate spread over a calendar year), and negative price events are compensated only when shorter than six hours. The interlink between the offshore converter stations DolWin Alpha and Gamma is positive from our point of view, as it allows power to be exported in the event of grid outages.

Risk area	Risk factor	Score	Comment
	O&M contracts, budget and planning	**Low**	Comprehensive O&M contracts are in place for 20 years and the term of the senior notes. Maintenance and servicing of the wind turbine generators will initially be delivered by MHI Vestas via a pass-through service and warranty agreement (SWA) for the first five years, including a production-based availability warranty of 96%, and thereafter by Ørsted. Overall, the O&M budget includes a fixed budget, a variable budget and a budget for maintenance reserves. Provision of a three-year variable maintenance reserve on a forward-looking basis of projected variable operation and maintenance fees (three-year rolling allocation: 100% in year one, 66% in year two and 33% in year three). Over the term of the senior notes, 85% of the total costs (on a net present value basis) will be attributable to fixed operating costs and PPA fees and 15% to variable fees. The concept and budgets were validated by independent third-party experts, and the assumptions are in line with those of other offshore wind farms operated by Ørsted, according to the technical advisor.
	Lifecycle risk	**Very low**	Lifecycle risk is very low due to the comprehensive O&M contracts, including the provision of spare parts. No major capex programme is expected.
	Counterparty risk	**Low**	The wind turbine manufacturer and the O&M provider have adequate credit quality and good track records. MHI Vestas and Ørsted are rated Baa1 and BBB+ respectively by at least one reputable CRA. There are sufficient alternatives available in the market (e.g. Deutsche Windtechnik) despite the high specialisation required.
Revenue risk PDS bbb	Revenue contract	**Very low**	No price risk until maturity of the rated notes due to support from German FiT regulation. Under the well-established German subsidy regime, the project will receive statutory revenues for electricity sales to the market consisting of: i) an initial (accelerated) FiT for eight years (operating years 1-8) of EUR 184/MWh; ii) an extended (regular) FiT of EUR 149/MWh for an additional 18 months (operating years 8-9.5); and iii) a price floor of EUR 39/MWh thereafter (operating years 9.5-20). The regulatory framework is stable, transparent and supportive, with very low probability of adverse changes. There are no mismatches with other contracts.
	Economic fundamentals	**Average**	Economic fundamentals account for an average level of risk contribution. The high dependence on FiT is a significant negative, while high barriers to entry, the priority dispatch and a strong project rationale are positive.
	Supply / Reserve risk	**Low**	Uncertainty is low from wind yield (10-year average of 4.2% by DNVGL) and regarding the total project (10-year average of 8.0%), especially when compared to other intermittent energy sources (e.g. onshore wind). High-quality wind data measured over 10-plus years at FINO 1 provide comfort on assessment of resources. No dependence on feedstock supply.
	Supplier risk	**n/a**	No supply risk because wind is a natural phenomenon.
	Offtaker risk	**Low**	Ørsted Salg & Service A/S (rated Baa1 by one reputable CRA) is the offtaker through a direct marketing agreement. It can be replaced at short notice in the event of insolvency, and there are many alternatives on the market.
Financial strength PDS bbb-	Debt repayment	**Average**	Historic (projected) minimum debt service coverage ratio of 1.25x (1.33x) in Scope's rating case (P90 / availability 96% / cost inflation: 1.7% p.a.); note life coverage ratio (NLCR) acceptable at 1.32x; debt/equity acceptable at 70/30. Scheduled amortisation profile with a 12% balloon at maturity. Provision of a six-month debt service reserve account at the issuer level, but the required balance can be reduced by the amount of any acceptable letter of credit (required rating: A-/A3 by a reputable rating agency) for the benefit of the security trustee. Balloon reserve account funding starts three years before final redemption date of 2028.

Risk area	Risk factor	Score	Comment
	Sensitivity to cash flow stress scenarios	**Low**	The project demonstrates good resilience to cash flow stress scenarios (min/avg DSCR = 1.19x/1.30x with a P99 uncertainty yield; 1.28x/1.41x with var. opex +20% etc.). The highest sensitivities are in the areas of cost inflation and variable operating expenses. Technical default is reached when annual cost inflation exceeds 8.6% and variable operating expenses increase by 308.7% (EUR 2m per month).
	Inflation, interest rate and FX risk	**Low**	Limited sensitivity to inflation scenarios, mainly related to O&M services. Operating costs are indexed to inflation, but FiT revenues are not. The project can absorb annual cost inflation of 8.6% from 2022 to 2043 before reaching the technical default threshold of 1.125x. No interest rate or FX risks.
	Refinancing risk	**Low**	Refinancing risk is low because the small balloon at maturity (12% or EUR 100m) is mitigated by setting up a balloon reserve account (target amount EUR 75m via cash sweeps) within the last three years and the possibility to refinance based on: i) the state-guaranteed price floor of EUR 39/MWh until Dec 2038 (no merchant risk); ii) a P90 wind resource assumption; iii) a target ADSCR of 1.34x, as well as the asset's marginal life until Dec 2043.
	Counterparty risk	**Low**	The implementation of a cash pool with Nordea Bank (rated by Scope to be sufficiently stable to support the assigned rating) poses low risk; the account bank is Deutsche Bank (rated A2/A-/A-by three reputable CRAs), which essentially forwards the semi-annual interest and principal payments and must have a required rating of at least A- under the common terms agreement (CTA).
Project structure and other PDS a-	Financing and legal framework, compliance	**Low**	The notes may be structurally subordinated to the sponsors' funding obligations during the operating phase in certain scenarios. The risk of structural subordination is very low and assumes default of the project and Gulf Energy. Other risk-mitigating factors include the defined cap on these financing obligations (up to a maximum of EUR 20m per year), the financial strength of the project, the robust governance and security framework, as well as the extensive experience, good credit quality and economic interests of both sponsors. The project can absorb the maximum amount of these funding obligations without triggering a technical default. Adequate creditor protection clauses and financial covenants: Default: 1.125x ADSCR (historical) / NLCR; lock-up: 1.175x ADSCR (historical, projected), 1.225x NLCR.
	Country risk	**Very low**	Enforcement procedures in Germany are well established. Germany benefits from very strong sovereign credit quality (Scope: AAA), which provides comfort regarding its ability to maintain and implement policies.
	Events and force majeure risk	**Low**	Force majeure events are unlikely and the project benefits from good insurance coverage.

Source: Scope.

3.1. Probability of hard default

This instrument faces a lifetime 0.89% probability of hard default, equivalent to a one-year probability of hard default of 0.14%. We derived the lifetime probability of hard default considering the likelihood of credit impairment events combined with the probability of incomplete recoveries after restructuring events (i.e. 82.95%).

4. Severity of credit impairment events

We calculated a total expected recovery rate of 81.23% on credit impairments for the project. The total expected recovery rate is the probability-weighted average recovery rate of all 16 credit impairment events considered under our project finance rating methodology (see Figure 4).

Top three credit impairment events

We performed a detailed estimation of the expected severity of the three credit impairment events that are most relevant for investors. These are: i) Revenue deterioration; ii) Debt repayment or cash flow liquidity issues; and iii) Legal, environmental or compliance issues

(see Figure 6). These three credit impairment events together contribute 33.6% of the EL for investors.

We analysed all other credit impairment events using standard recovery assumptions and applied adjustments to reflect the project's specific characteristics. These adjustments are based on the instrument's seniority, coupon, repayment profile, and project-specific recovery risk factors, which are further detailed in section 4.2.

4.1. Severity analysis of most relevant credit impairment events

We performed a fundamental analysis of the expected recovery rate for the most relevant credit impairment events by stressing cash flows to investors using the project's financial model.

We stressed the key inputs to the project's financial model based on the conditions implied by the respective credit impairment event. We derived the expected recovery rate by calculating the net present value of all cash flows available for debt service under the assumptions of the respective most relevant credit impairment event.

Figure 6: Most relevant credit impairment events

	Name	Driver	E{RR}
Top event 1	**Revenue deterioration**	The project is exposed to adverse weather conditions as well as resource and technical risk (e.g. availability risks), which could increase the volatility of revenues, especially when the service warranty agreement with MHI Vestas expires.	85.6%
Top event 2	**Debt repayment or cash flow liquidity issues**	The risk of repayment issues increases in the last three years of the notes' term due to balloon refinancing and required cash sweeps.	91.4%
Top event 3	**Legal, environmental or compliance issues**	The notes may be structurally subordinated to emergency funding from DE HoldCo.	74.0%

Source: Scope.

4.1.1 Revenue deterioration

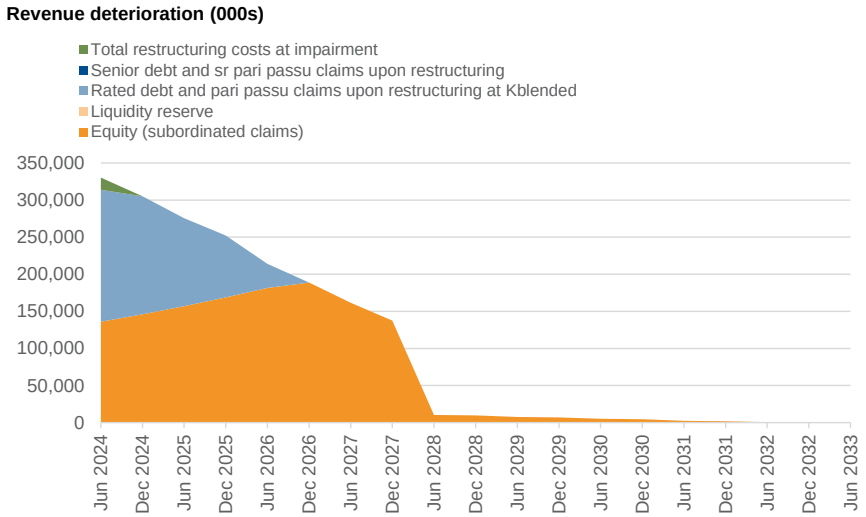
Revenue deterioration accounts for 14.2% of the total EL…

We expect a recovery rate of 85.6% on the instrument upon impairment owing to Revenue deterioration events. The EL contribution from such events is 0.03% (EL strength: bbb+) over the senior instrument's 3.67-year expected risk horizon. This represents 14.2% of the senior instrument's total EL of 0.20%.

We derived the recovery rate under stress from cash flow analysis. The analysis yields a recovery rate of 85.6% based on a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00% respectively. The recovery analysis assumes the repayment of claims via Sweeps. Adverse weather conditions and technical issues with the wind turbines lead to significantly lower wind yields (P99 from Jan 2023 to Sep 2043) and lower turbine availability (down 15% from Sep 2023 to Dec 2025).

Figure 7 shows how claims on the stressed project value are distributed.

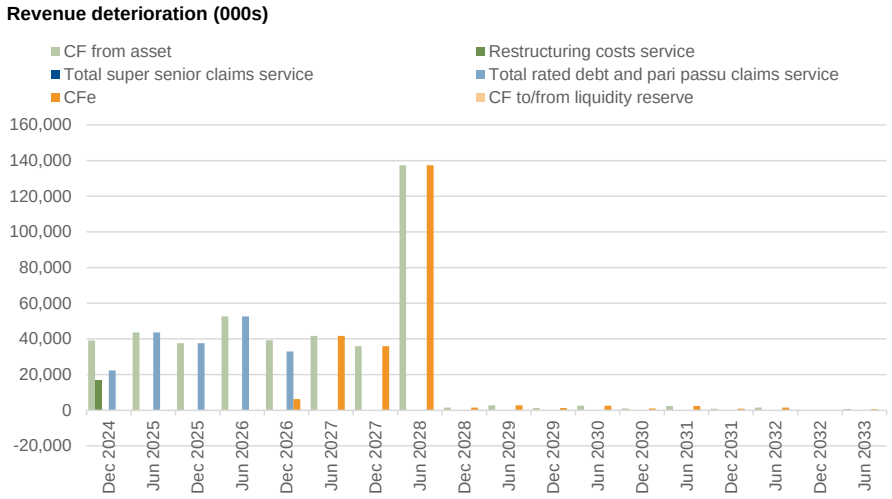
Figure 7: Evolution of restructuring claims on stressed project value



Source: Scope

Figure 8 shows the cash flows allocated to project stakeholders after restructuring.

Figure 8: Cash flows from restructuring claims to stressed project value



Source: Scope

4.1.2 Debt repayment or cash flow liquidity issues

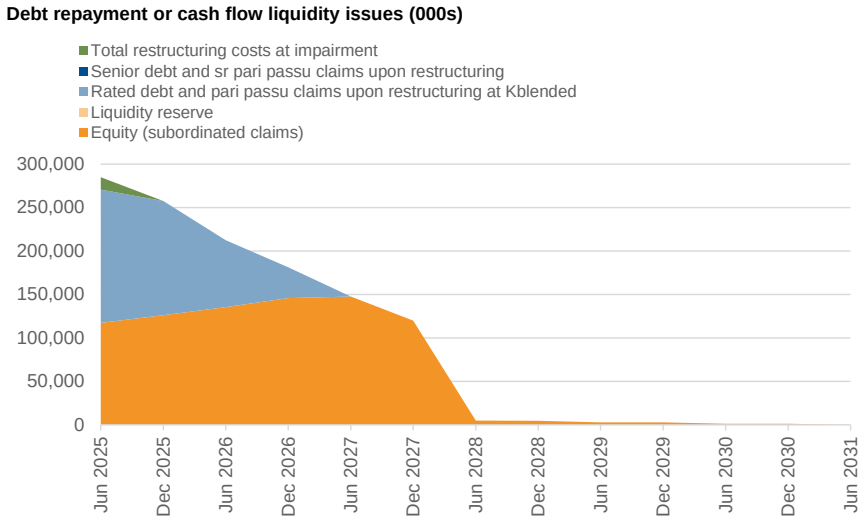
Debt repayment or cash flow liquidity issues contribute 14.9% of the total EL…

We expect a recovery rate of 91.4% on the instrument upon impairment owing to Debt repayment or cash flow liquidity issues events. The EL contribution from these events is 0.03% (EL strength: bbb+) over the senior instrument's 3.67-year expected risk horizon. This represents 14.9% of the senior instrument's total EL of 0.20%.

We derived the recovery rate under stress from cash flow analysis. The analysis yields a recovery rate of 91.4% and assumes a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00% respectively. The recovery analysis assumes the repayment of claims via Sweeps. In 2024 and 2025, wind turbine availability is 15% and 20% lower respectively due to technical issues, which subsequently leads to the replacement of the O&M provider and 20% higher operating expenses from 2026 onwards.

Figure 9 shows how claims over the stressed project value are distributed.

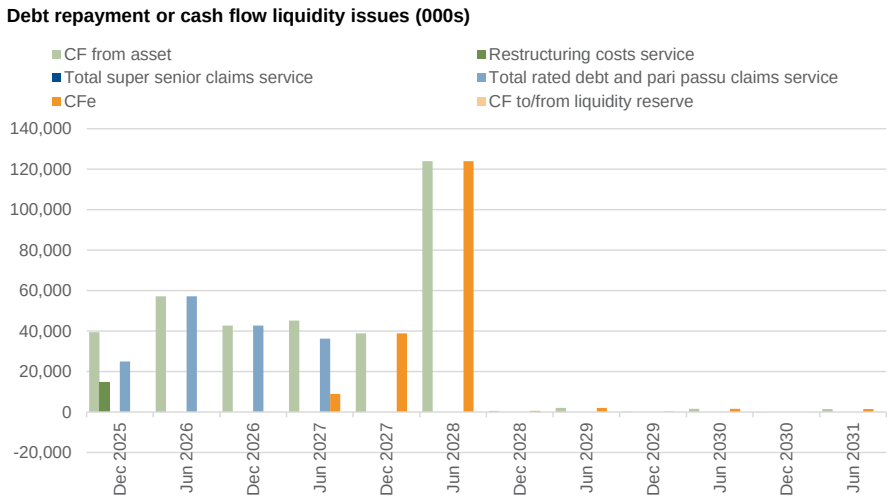
Figure 9: Evolution of restructuring claims on stressed project value



Source: Scope

Figure 10 shows the cash flows allocated to project stakeholders after restructuring.

Figure 10: Cash flows from restructuring claims to stressed project value



Source: Scope

4.1.3 Legal, environmental or compliance issues

Legal, environmental or compliance issues account for 4.5% of the total EL…

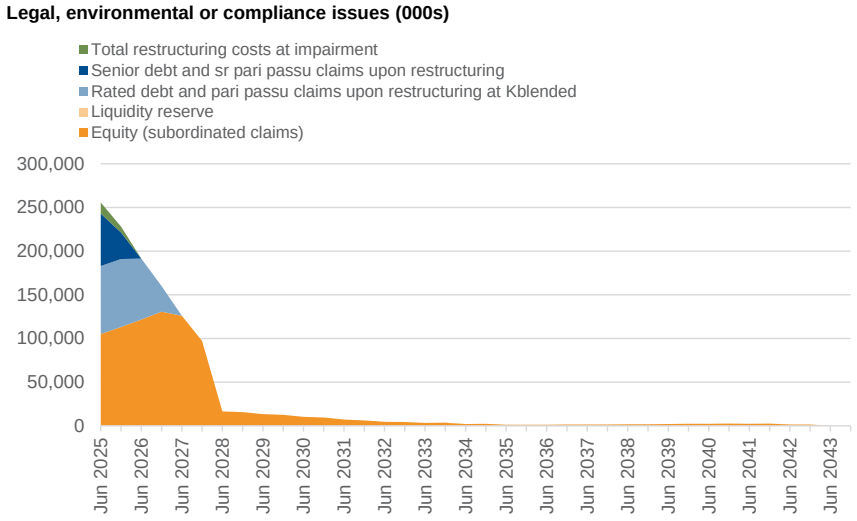
We expect a recovery rate of 74.0% on the instrument upon impairment owing to Legal, environmental or compliance issues events. The EL contribution from these events is 0.01% (EL strength: a) over the senior instrument's 3.67-year expected risk horizon. This represents 4.5% of the senior instrument's total EL of 0.20%.

We derived the recovery rate under stress from cash flow analysis. The analysis yields a recovery rate of 74.0% and assumes a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00% respectively. The recovery analysis assumes the repayment of claims via Sweeps. Unexpected technical difficulties lead to a gradual reduction in the technical availability of the wind turbines (2024: negative 5%, 2025: negative 8%) and to an unscheduled

replacement of major components, which stabilises availability at negative 5% from 2026. Due to a funding default by Borkum Riffgrund 2 Investor GmbH, the new components are financed through EUR 60m of emergency funding from Ørsted (from 2023-26), which has priority over lenders in this restructuring scenario.

Figure 11 shows how claims over the stressed project value are distributed.

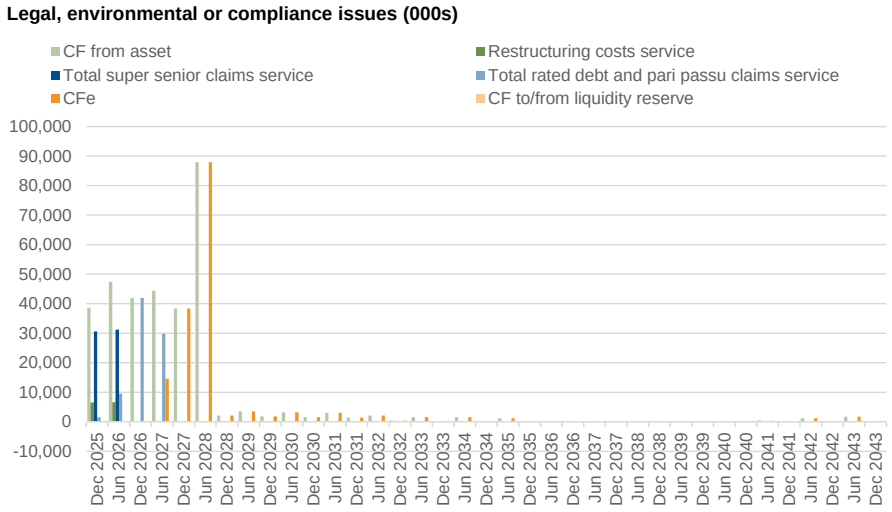
Figure 11: Evolution of restructuring claims on stressed project value



Source: Scope

Figure 12 shows the cash flows allocated to the project stakeholders after restructuring.

Figure 12: Cash flows from restructuring claims to stressed project value



Source: Scope

4.2. Severity analysis of standard credit-impairment events

We analysed all other credit impairment events using our standard recovery distribution assumption for each type of event. We assigned the project our 'Lower-asset-value resilience' assumptions as defined in our General Project Finance Methodology. The assets of the project have a limited useful life of around 25 years (decommissioning date). The project is partially exposed to cyclical risks during operating years 10-20 (because of the above-the-base-price of EUR 39/MWh) and operating years 20-25 (because of full

market price risk); and the project is exposed to higher maintenance risks during operating years 20-25.

To calculate expected recovery rates specific to the rated instrument (i.e. tranche-specific recovery rates), we adjusted the standard recovery rate distribution for each event to capture the project's capital structure (section 4.2.1) and assessed the project's specific recovery strength (section 4.2.2).

4.2.1 Seniority and leverage of rated exposure

We adjusted each recovery rate distribution to incorporate the protection to investors resulting from the seniority and leverage of the rated instrument at the expected impairment times. We estimate a protection by subordination of 6.02%, and a detachment point of 100.00% at the expected time of impairment during operation, and have used these values to calculate the expected recovery rates. We calculated the first-loss protection buffer using the financial balance sheet (i.e. based on the present value of future cash flows) rather than the accounting balance sheet.

4.2.2 Recovery risk factors

We then adjusted the standard recovery assumptions to the specific characteristics of the rated instrument. The analysis of the recovery risk factors resulted in a haircut of 0.0% to the expected tranche-level recovery rates derived from the previous steps.

We assessed the project's specific recovery strength by applying the recovery risk factors shown in Figure 13.

Figure 13: Recovery risk factors

Recovery risk factor	Recovery score	Assessment
Project security	**Average**	Investors benefit from a typical security package for this kind of transaction, including step-in rights (direct agreements for all major arrangements) looking through the holdco structure. The notes are secured by a first security over all of the issuer's assets (e.g. shares, bank accounts, etc.).
Collateral enforceability	**Average**	The German legal system is proven, although resolution times are average when compared to those of other Western European countries.
Recovery enhancements	**Average**	Indemnities and termination provisions are standard.
Fundamental economic value of the project	**Average**	The recovery risk from the fundamental economic value of the project is average due to the combination of stable cash flow generation (driven by FiTs and low wind-related uncertainty) and a project life coverage ratio of 1.30x under conservative rating case assumptions.

Source: Scope

4.3. Recovery rate on hard defaults

The expected recovery upon a hard default of the rated instrument is 77.37%. This hard recovery rate is linked to the probability of hard defaults reported in section 3.1 (i.e. 0.89%). We derived this value by considering that the EL to an investor in the rated instrument (i.e. 0.20%) is constant, irrespective of the definition of the event of default considered in the analysis.

5. Rating stability

The rating is resilient to sizeable changes in assumptions

This section shows the sensitivity of the rating to changes in the input assessments as considered by the analysts. This analysis has the sole purpose of illustrating the sensitivity of the rating to input assumptions and is not indicative of expected or likely scenarios. Figure 14 shows how the model implied rating changes for each rating sensitivity scenario.

Figure 14: Sensitivity results

Analytical assumption tested	Shifts considered to inputs	Result
Rating case	No shifts	A-
General stress to all risk factors in all areas	Scores reduced by one level	BB+
Shock stress to the risk area with the most relevant credit impairment event	Scores driving risk area of most-relevant credit impairment event (i.e. Revenue deterioration) reduced by two levels	BBB-
Haircut to recovery	25% haircut to recovery assumptions	BBB

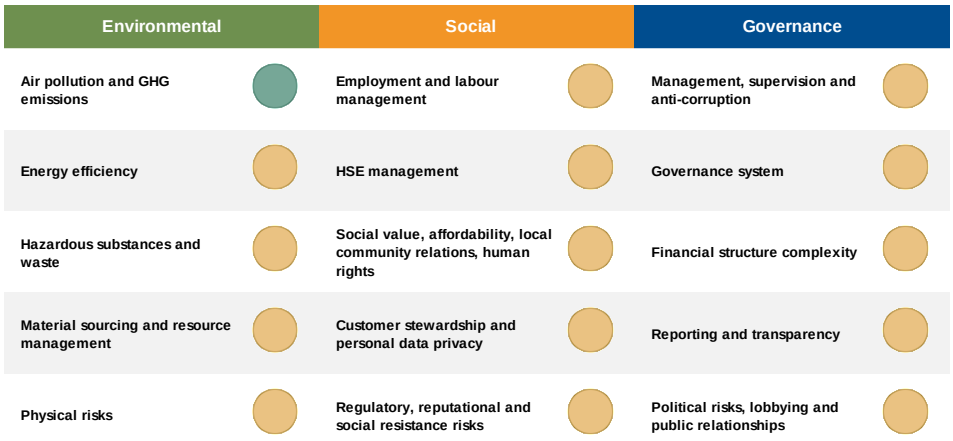
Source: Scope

6. ESG grid

We analysed ESG risks by examining the project's risk factors (section 3) and recovery risk factors (section 4). The relationship between credit risk and ESG factors is not direct because ESG factors only impact the performance of a project indirectly and in ways that can be opposite for two given projects. Investors should consider ESG as a different and separate dimension with respect to which a project should be analysed.

The ESG grid in Figure 15 highlights how ESG themes within the three ESG pillars (environmental, social and governance) influence the credit risk of this project and whether they do so in a positive (i.e. less credit risk for the project) or negative way (i.e. more credit risk for the project). Our ESG grid promotes transparency in credit analysis and shows how credit risk relates to relevant ESG themes.

Figure 15: Project ESG grid



Source: Scope

With regard to the environmental ESG pillar, the offshore wind park produces power without emitting any harmful exhaust gases into the air. The park requires essentially no water to operate, and so it does not pollute water resources or strain supplies in the region. This reduces the risk of stricter environmental protection laws triggering additional capex needs and adverse regulatory action.

7. Legal framework

We believe that these agreements are legal, valid, binding and enforceable. This is also supported by the opinion of the lenders' legal counsel, a reputable multinational legal firm. The transaction conforms to international standards and supports our general legal analytical assumptions (see Legal Risks in Project Finance – Analytical Considerations, dated April 2020 and available on www.scoperatings.com).

8. Monitoring

Scope analysts are available to discuss the rating analysis

We will monitor the rating over the life of the rated instrument. Our monitoring analysis will be based on the construction reports produced during the construction phase, the payment and performance reports to be provided periodically by the management company during the operational phase, and any other available information such as financial accounts and compliance certificates. The rating will be monitored continuously and will be reviewed on an annual basis, or upon occurrence of any events affecting the project's creditworthiness.

Scope analysts are available to discuss all the details surrounding the rating analysis and are available to discuss the ongoing monitoring of the transaction.

9. Applied methodology and data

We applied the analytical framework described in our General Project Finance Rating Methodology, dated November 2021, downloadable on www.scoperatings.com.

The information supporting our rating analysis was adequate. We used internal and external data sources for the rating of this transaction. We received from Gulf Energy Development information about the project, including the borrower's financial accounts, incorporation documents, material project contracts; as well as due diligence reports; financial and security documents; legal opinions; and the transaction's financial model.

Appendix I Likelihood and expected recovery of credit impairment events

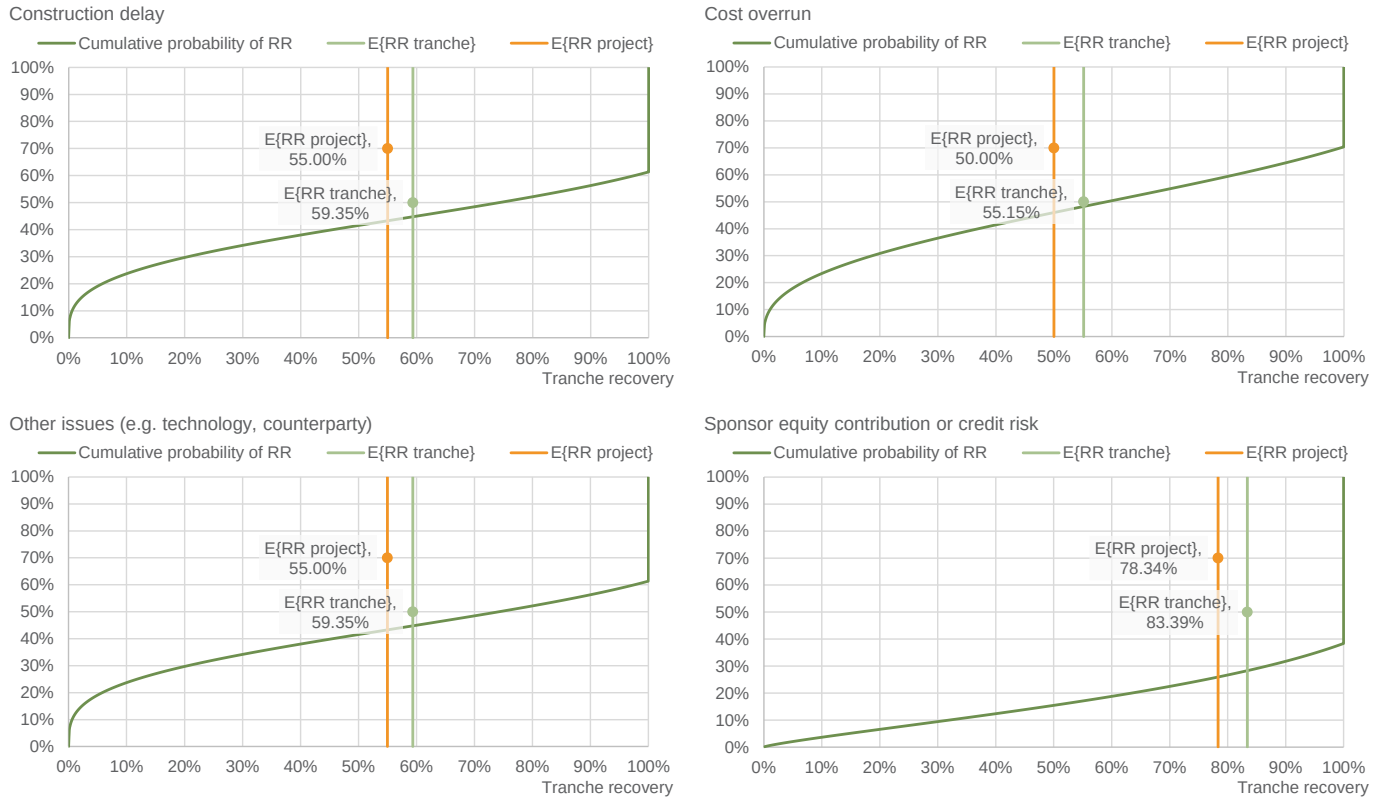
Event	Probability	Expected recovery	EL contribution
Construction delay	0.00%	57.12%	0.0000%
Cost overrun	0.00%	53.07%	0.0000%
Other issues (e.g. technology, counterparty)	0.00%	57.12%	0.0000%
Sponsor equity contribution or credit risk	0.00%	80.25%	0.0000%
Operational performance, budget and schedule issues	0.15%	73.94%	0.0397%
Lifecycle issues	0.01%	69.96%	0.0032%
O&M counterparty issues	0.14%	72.00%	0.0383%
Revenue counterparty issues (fin. or tech. performance)	0.03%	72.86%	0.0081%
Revenue deterioration	0.20%	85.60%	0.0286%
Supply interruptions or reserve issues	0.01%	76.00%	0.0036%
Inflation, interest or currency issues	0.04%	71.90%	0.0109%
Refinancing issues	0.06%	73.49%	0.0155%
Debt repayment or cash flow liquidity issues	0.35%	91.43%	0.0301%
Country or political issues	0.01%	69.52%	0.0039%
Force majeure or events issues	0.04%	69.52%	0.0107%
Legal or environmental or compliance issues	0.04%	74.02%	0.0092%
No credit impairment events	98.92%	100%	0%
TOTAL FOR RATED EXPOSURE	1.08%	81.23%	0.20%

Source: Scope.

Appendix II Recovery distributions under all impairment events

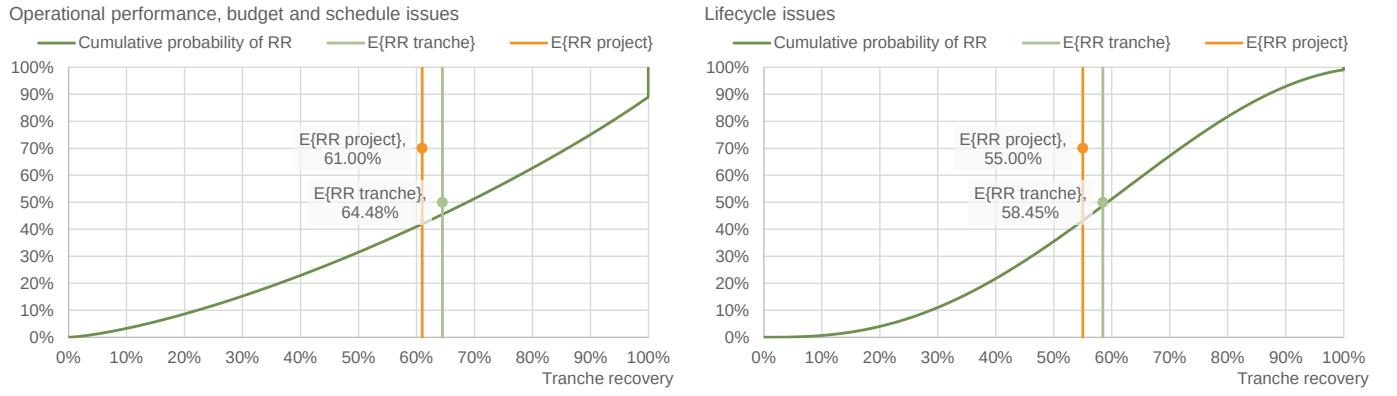
The following charts show the recovery distributions we assumed for the analysis of the expected recovery of the rated instrument under the different credit impairment events considered in our methodology. The charts also show the expected recovery at the project level and rated-tranche level to illustrate how the capital structure influences recovery. The recoveries shown in these charts are before adjustments to consider the recovery characteristics of this project, and before adjustments for time-value of money and credit for amortisation.

Figure 16: Recovery distributions under construction credit impairment events

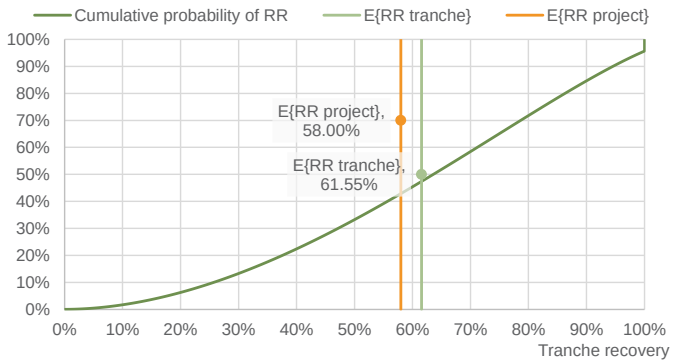


Source: Scope

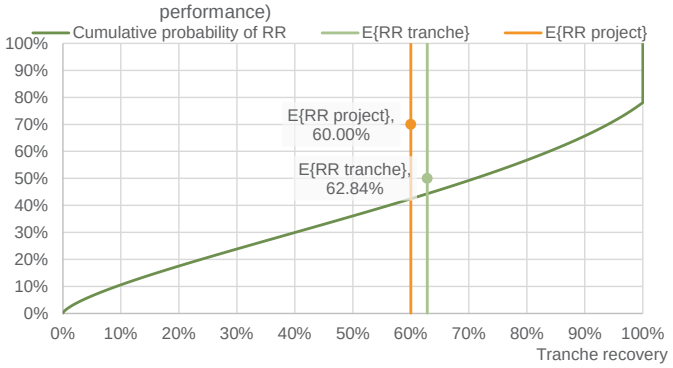
Figure 17: Recovery distributions under operational credit impairment events



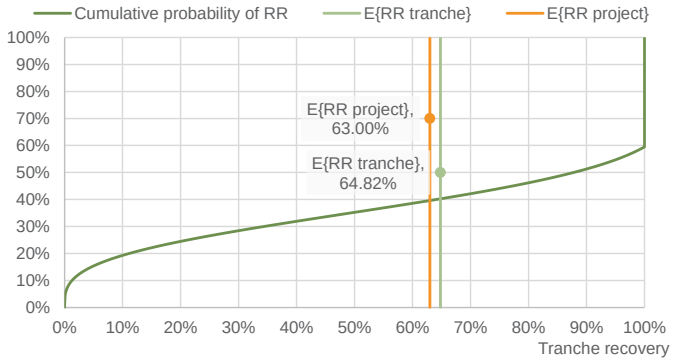
O&M counterparty issues



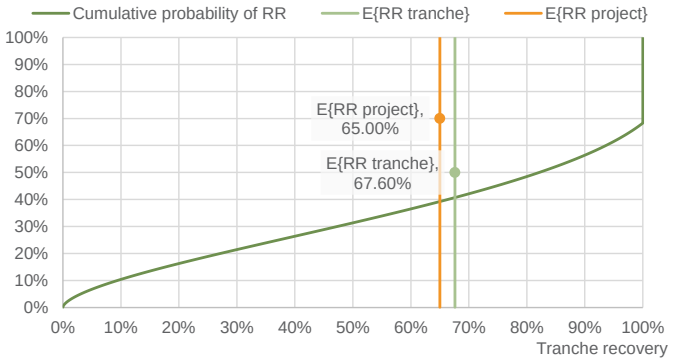
Revenue counterparty issues (financial or technical performance)



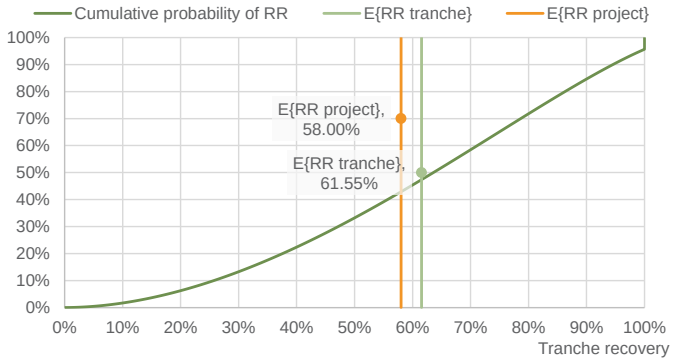
Revenue deterioration



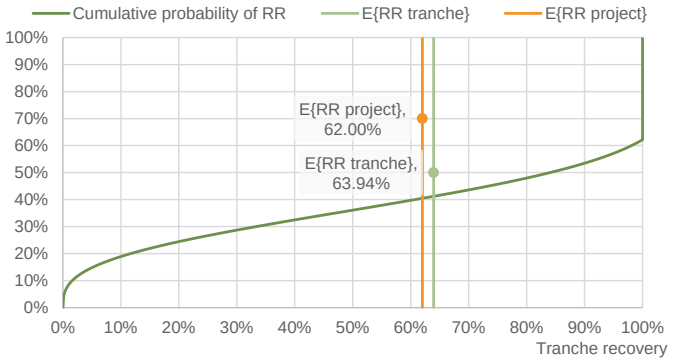
Supply interruptions or reserve issues



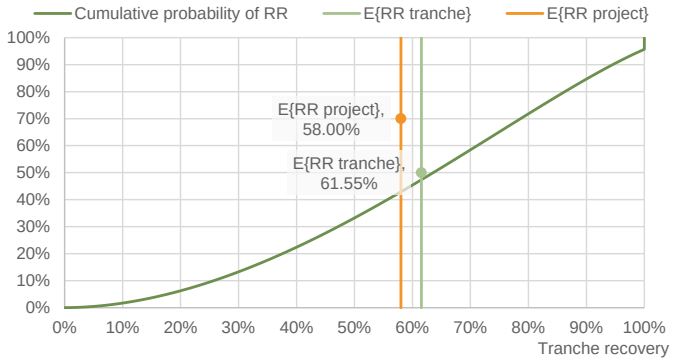
Inflation, interest or currency issues



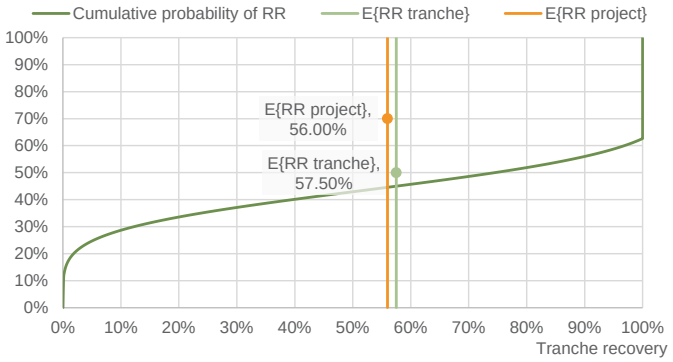
Refinancing issues



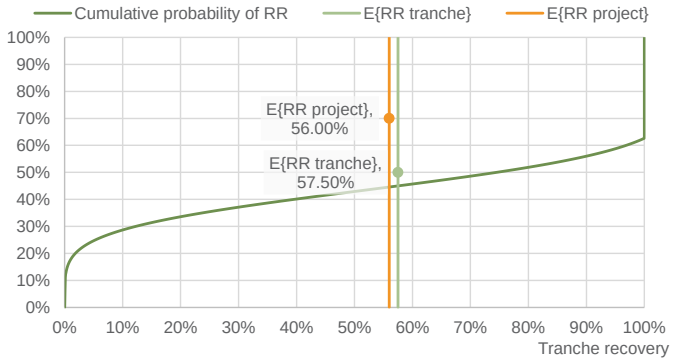
Debt repayment or cash flow liquidity issues



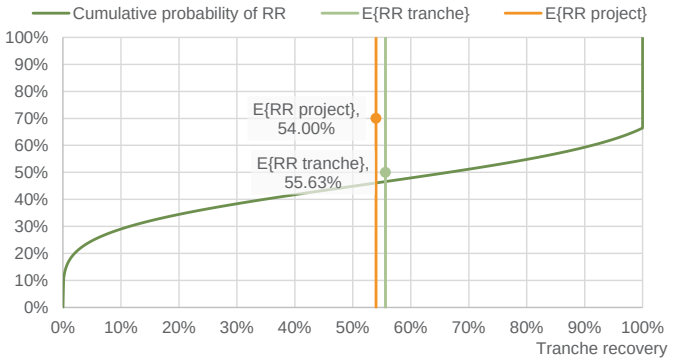
Country or political issues



Force majeure or events issues



Legal, environmental or compliance issues



Source: Scope

Scope Ratings GmbH

Headquarters Berlin
Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891-0

Frankfurt am Main
Neue Mainzer Straße 66-68
D-60311 Frankfurt am Main

Phone +49 69 66 77 389 0

Paris
23 Boulevard des Capucines
F-75002 Paris

Phone +33 6 62 89 35 12

Oslo
Karenslyst allé 53
N-0279 Oslo

Phone +47 21 62 31 42

Madrid
Paseo de la Castellana 141
E-28046 Madrid

Phone +34 91 572 67 11

Milan
Via Nino Bixio, 31
20129 Milano MI

Phone +39 02 30315 814

Scope Ratings UK Limited

London
52 Grosvenor Gardens
London SW1W 0AU

Phone + 44 2078245180

info@scoperatings.com
www.scoperatings.com

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