

Borkum Riffgrund 2 Investor Holding GmbH (Lighthouse)

Rating Report / Project Finance



Rating: Senior notes / EUR 815.0m / maturing in June 2028

Rating	Expected loss	Expected risk horizon*	Notional	Payment period	Coupon (fixed)	Final maturity
A-	0.09%	2.11 years	EUR 815.0m	6 months	265bps	2028

The transaction closed on 11 December 2017. The final rating is based on the information provided as of December 2024 by Gulf Energy. Scope's ratings definitions are available at www.scooperatings.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 please refer to 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, Keppel Infrastructure Trust (KIT), Keppel Corporation
Structure / seniority / amortisation	HoldCo structure / senior notes / amortising to balloon

Rating rationale (summary)

The A- rating reflects the total expected loss (EL) of 0.09% over the loan's life until maturity (equivalent to a 2.11-year constant-exposure expected risk horizon). Key drivers are low operational risks, particularly in relation to sponsors and revenue generation, as well as robust credit metrics and resilience to cash flow stress scenarios. The Notes may be structurally subordinated to Ørsted's emergency funding, which is partly mitigated by a contractual cap on the servicing of such a loan, the robust governance and security framework, and the experienced sponsors and operator who have a significant economic interest in the project.

EL strength and PD strength rf	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.
EL strength and PD strength bbb+	Operational risks account for 32.4% of total EL. MHI Vestas' initial five-year service contract and warranty period and Ørsted's largely fixed-fee O&M contract and maintenance reserve mitigate risks from uncertainties in operating expenditure. Potential counterparty risks with respect to the service providers are low due to their long track record, strong market positions, good credit ratings and significant commitment to the project.
EL strength and PD strength a-	Revenue risks account for 24.0% 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.
EL strength and PD strength bbb+	Financial strength risks account for 32.7% of total EL. The transaction has average coverage ratios and demonstrates good resilience to cash flow stress. Refinancing risk is low due to the relatively small balloon amount. A balloon reserve account combined 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 end of the project life further reduce the refinancing risk at maturity.
EL strength and PD strength a	Project structure and compliance risks account for 10.9% of total EL. The notes may be structurally subordinated to Ørsted's emergency funding, which is partly mitigated by a contractual cap

Analytical Team

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

Team Head

Torsten Schellscheidt
+49 40 524 724-100
t.schellscheidt@scooperatings.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 2024

[Counterparty Risk Methodology](#)
July 2024

Scope Ratings GmbH

Lennéstraße 5
10785 Berlin
Tel. +49 30 27891 0
Fax +49 30 27891 100
info@scooperatings.com
www.scooperatings.com

[in](#) Bloomberg: SCOP



Borkum Riffgrund 2 Investor Holding GmbH (Lighthouse)

on the servicing of such a loan, the robust governance and security framework, and the experienced sponsors and operator who have a significant economic interest in the project.

Rating drivers and mitigants

Positive rating drivers

Experienced sponsors. All sponsors have good experience, acceptable credit quality with no outstanding equity contribution obligation, good technical capabilities, and significant economic incentives.

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.

Stable and predictable long-term revenues. No price risk due to fixed feed-in-tariffs during the term of the senior notes. The good quality and reliability of offshore wind yield in the German North Sea mitigate resource risk.

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 have a balloon payment (12% and benefit from a long tail period of 15 years from debt maturity to decommissioning date. However, positive cash flow generation after debt maturity will rely on captured power prices exceeding the regulator floor.

Positive rating-change drivers

Consistently and significantly higher cash flows than projected, or faster deleveraging than Scope's rating case, could lead to a rating upgrade.

Negative rating drivers and mitigants

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.

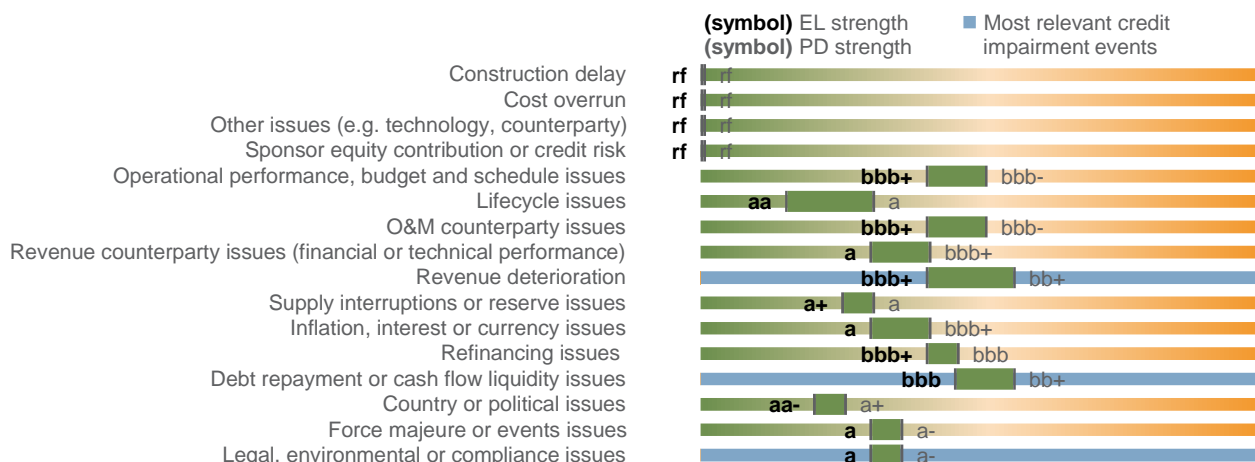
Volatile revenue generation. Conservative rating case assumptions and debt service coverage of above 1.3x, regulatory compensation and robust reserves largely mitigate revenue risk arising from wind speed volatility, grid disruptions, WTG outages and uncompensated losses related to negative price events.

Significant dependency on subsidies. Low regulatory risks, the strong project rationale, and high barriers to entry mitigate the risk of retroactive subsidy cuts. We note that the project's competitiveness has improved in the current high power price environment.

Negative rating-change drivers

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)



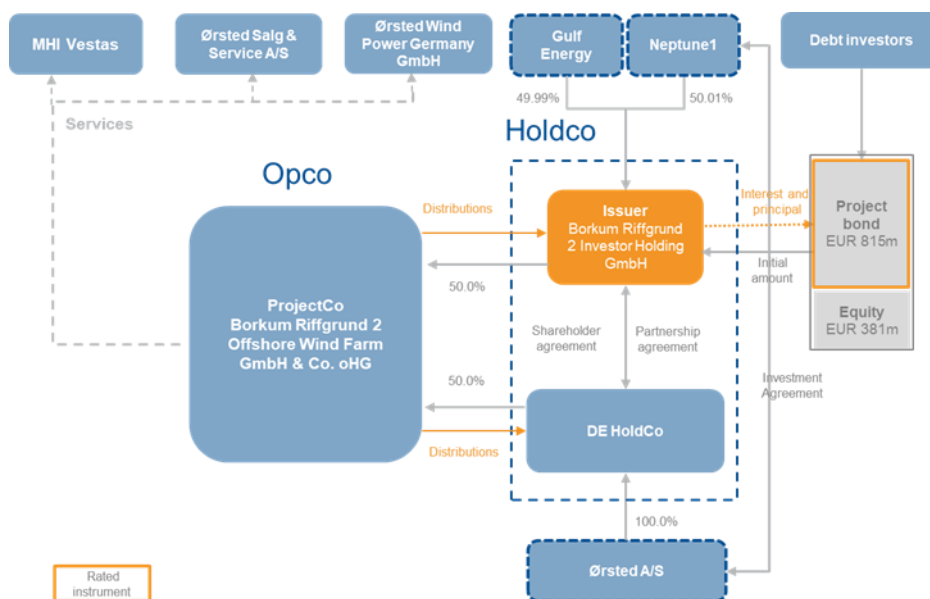
Source: Scope.

Table of contents

Rating drivers and mitigants	2
1. Transaction summary	3
2. Rating and project risk	4
3. Likelihood of credit impairment events	5
3.1. Probability of hard default	8
4. Severity of credit impairment events	8
4.1. Severity analysis of most relevant credit impairment events	9
4.2. Severity analysis of standard credit-impairment events	12
4.3. Recovery rate on hard defaults	13
5. Rating stability	13
6. ESG grid	14
7. Legal framework	14
8. Monitoring	14
9. Applied methodology and data ...	15
Appendix I Likelihood and expected recovery of credit impairment events	16
Appendix II Recovery distributions under all impairment events	17

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 DoWin 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%), Gulf Energy Development (25%) and Neptune1 (25%). The shareholders of Neptune1 are Keppel Infrastructure Trust (KIT, 82%) and Keppel Renewable Investments (KRI, 18%).

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 380.6m (as of 30 June 2024).

1.1. Performance update

The transaction continues to perform broadly in line with expectations with adequate debt service coverage ratios. The transaction continues to perform broadly in line with expectations with adequate debt service coverage ratios. Key performance indicators are slightly weaker than rating case assumptions for H1 2024, including production (-2%), revenues (-2.8%) and EBITDA (-6.5%). Lower than expected wind speeds and higher uncompensated losses related to negative price events, grid disruptions and WTG outages (such as the R32 WTG), were the main reasons for the slight underperformance

The 12-month backward-looking debt service coverage ratio (DSCR) was 1.29x to June 2024 compared with the rating case forecast of 1.33x.

2. Rating and project risk

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

The total EL on the rated instrument is commensurate with a A- rating. We calculated an EL of 0.09% over the lifetime of the instrument (equivalent to a constant exposure expected risk horizon of 2.11 years) under our rating case scenario (Scope's rating case), which is more conservative than the sponsor's base case scenario.

The EL reflects: i) the likelihood of several idealised credit impairment events with the potential to reduce payments originally promised to the investor; 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 in 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 the investor in the instrument.

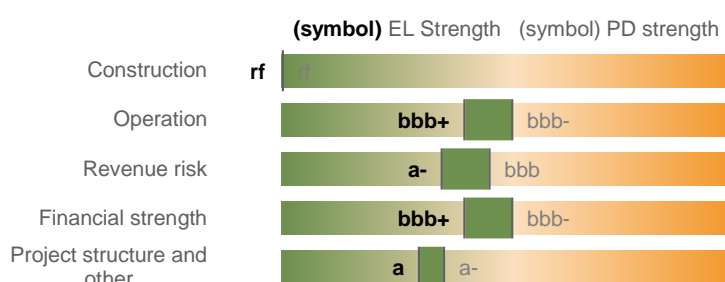
EL and PD strengths

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.

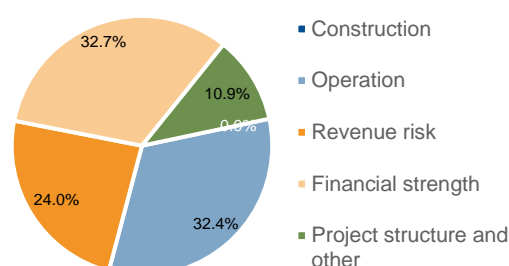
For example, an ELS of aa+ for the 'Supply interruptions' credit impairment event indicates that the project would be rated AA+ if all dimensions of risk were as safe as the availability of inputs for the project.

Figure 2: PD and EL strengths by risk area



Source: Scope.

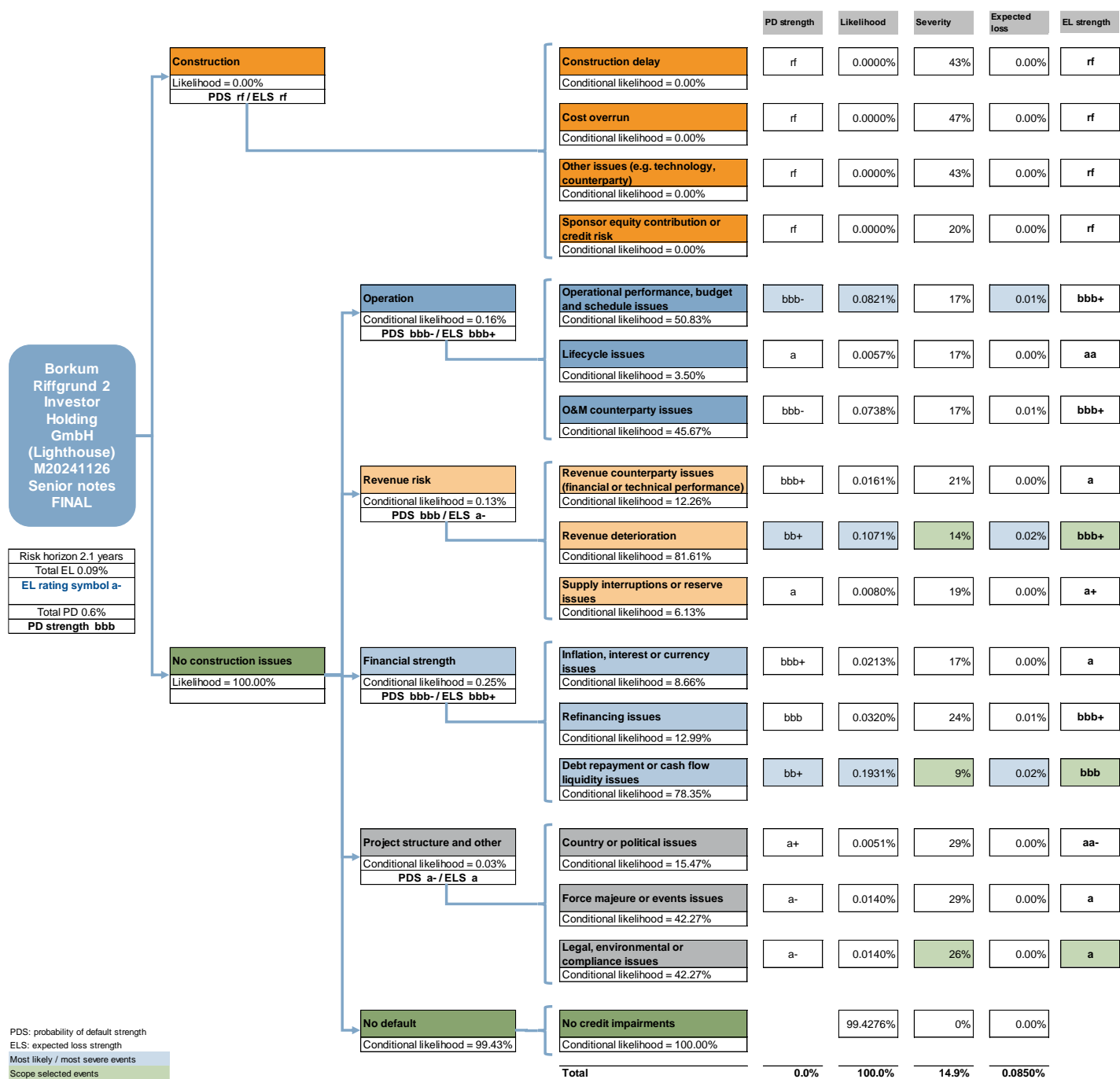
Figure 3: Share total EL contributions by risk area



Source: Scope.

Figure 4 shows the idealised credit impairment events that we consider when estimating the EL for the investor, expressed as a probability tree. The tree illustrates the expected likelihood of each impairment, as well its expected severity for the investor – 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 0.57% 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 by Ørsted (50% stake in the project, rated BBB+/Baa1/BBB+ by three reputable credit rating agencies or CRAs), Gulf Energy Development Public Company Limited (25% stake in the project, rated A+ by a local CRA), Keppel Infrastructure Trust (KIT) and Keppel Renewable Investments through Neptune1 (25%). The main partners have acceptable credit qualities, strong technical capabilities and significant incentives. Ørsted, in particular, has extensive experience in similar projects. KIT is the largest diversified business trust listed in Singapore with more than USD 7bn in assets under management and a solid track record in infrastructure assets.
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 broadly in line with rating case assumptions in 2020-2023. 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 DoWin 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.
	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).

Risk area	Risk factor	Score	Comment
	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 0.28% probability of hard default, equivalent to a one-year probability of hard default of 0.10%. 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. 49.42%).

4. Severity of credit impairment events

We calculated a total expected recovery rate of 85.15% 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).

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 41.9% 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.

Top three credit impairment events

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%

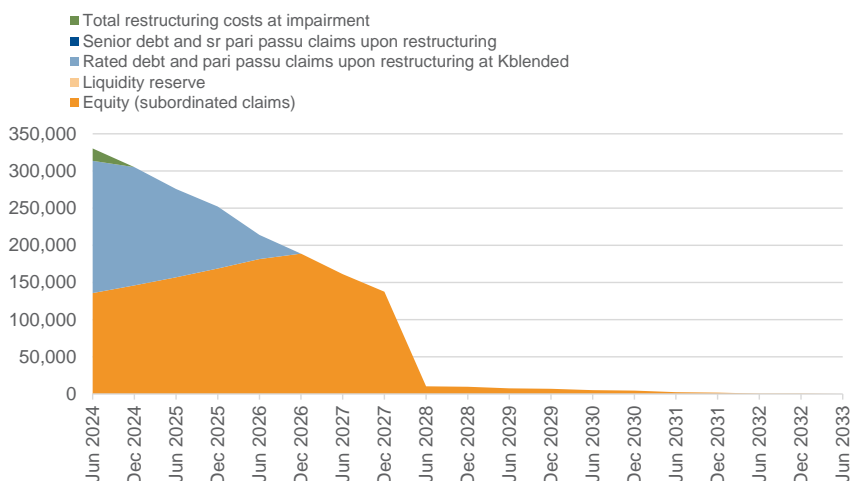
Source: Scope.

Revenue deterioration accounts for 18.2% of the total EL...**4.1.1 Revenue deterioration**

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 0.02% (EL strength: bbb+) over the senior instrument's 2.11-year expected risk horizon. This represents 18.2% of the senior instrument's total EL of 0.09%.

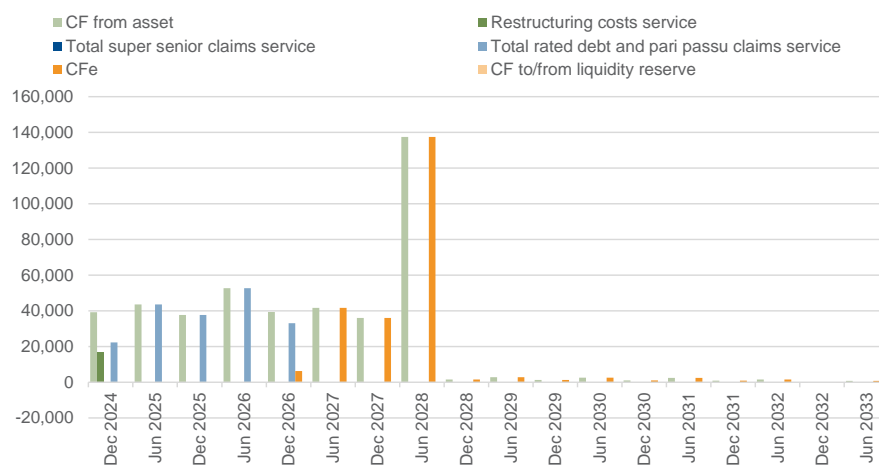
We derived the recovery rate under stress from our cash flow analysis. The analysis yields a recovery rate of 82.6% and is based on a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00%, respectively. The recovery analysis 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 the claims on the stressed project value are distributed.

Figure 7: Development of restructuring claims on stressed project value**Revenue deterioration (000s)**

Source: Scope.

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

Figure 8: Cash flows from restructuring claims to stressed project value**Revenue deterioration (000s)**

Source: Scope.

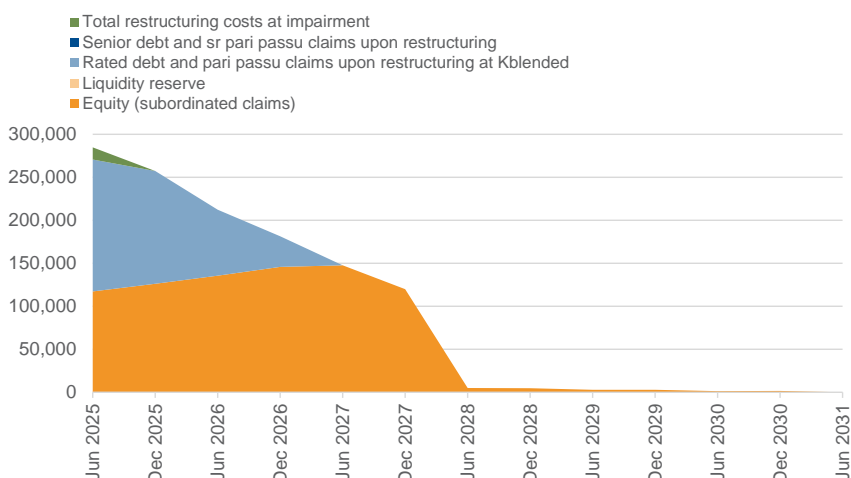
Debt repayment or cash flow liquidity issues contribute 19.5% of the total EL...

4.1.2 Debt repayment or cash flow liquidity issues

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 0.02% (EL strength: bbb) over the senior instrument's 2.11-year expected risk horizon. This represents 19.5% of the senior instrument's total EL of 0.09%.

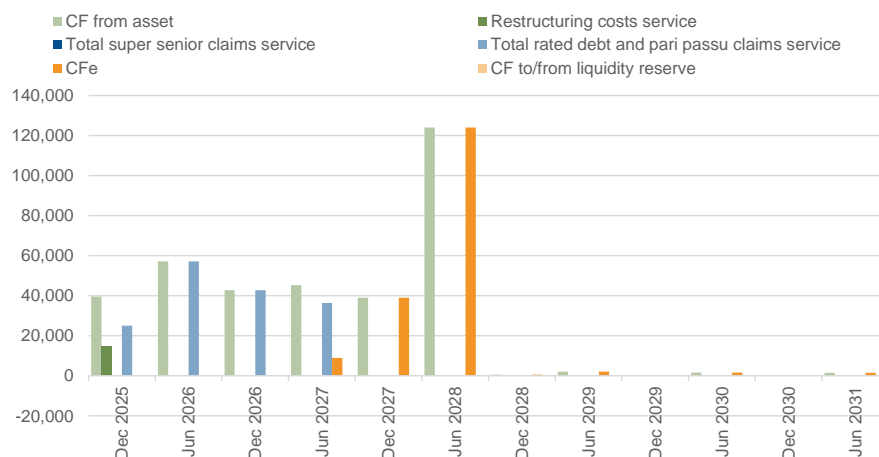
We derived the recovery rate under stress from our cash flow analysis. The analysis yields a recovery rate of 89.9% and assumes a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00%, respectively. The recovery analysis assumes 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 the claims over the stressed project value are distributed.

Figure 9: Development of restructuring claims on stressed project value**Debt repayment or cash flow liquidity issues (000s)**

Source: Scope.

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

Figure 10: Cash flows from restructuring claims to stressed project value**Debt repayment or cash flow liquidity issues (000s)**

Source: Scope.

Legal, environmental or compliance issues account for 4.3% of the total EL...

4.1.3 Legal, environmental or compliance issues

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 0.00% (EL strength: a) over the senior instrument's 2.11-year expected risk horizon. This represents 4.3% of the senior instrument's total EL of 0.09%.

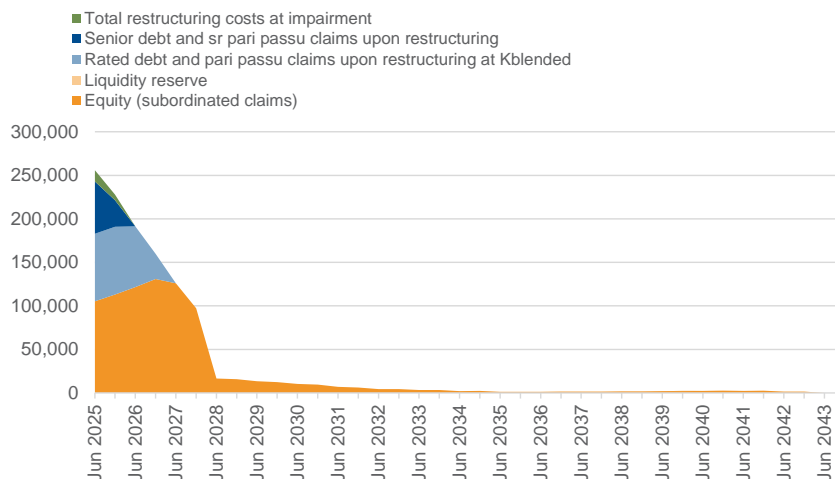
We derived the recovery rate under stress from our cash flow analysis. The analysis yields a recovery rate of 69.3% and assumes a Project sale scenario with a stressed capital structure upon restructuring of 56.67% and cost of debt and equity of 3.98% and 15.00%, respectively. The recovery analysis assumes 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 Holding 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 the claims over the stressed project value are distributed.

Figure 11: Development of restructuring claims on stressed project value

Legal, environmental or compliance issues (000s)

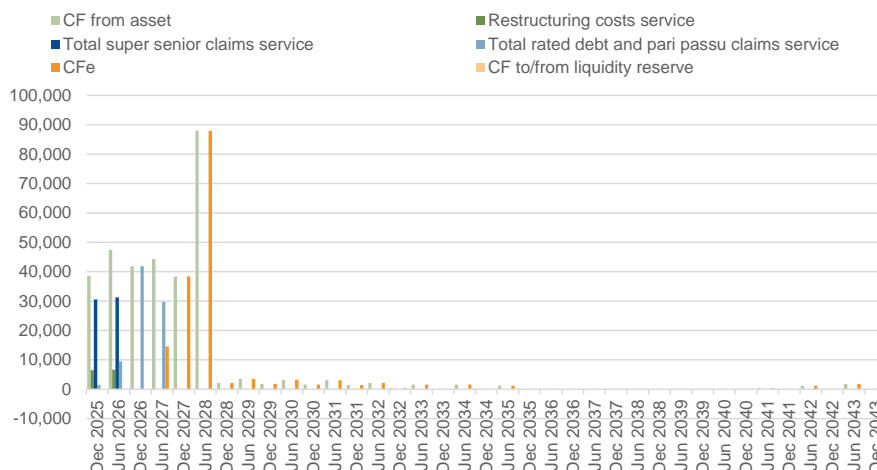


Source: Scope.

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

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

Legal, environmental or compliance issues (000s)



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 37.37%, 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 calculate 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 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 69.95%. This hard recovery rate is linked to the probability of hard defaults reported in section 3.1 (i.e. 0.28%). We derived this value by considering that the EL to the investor in the rated instrument (i.e. 0.09%) is constant, irrespective of the definition of the event of default considered in the analysis.

5. Rating stability

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.

The rating is resilient to sizeable changes in assumptions

Figure 14: Sensitivity results

Analytical assumption tested	Shifts considered to inputs	Result
Rating case	No shifts	a-

<u>General stress</u> to all risk factors in all areas	Scores reduced by one level	bb+
<u>Shock stress</u> 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	bb+
<u>Haircut to recovery</u>	25% haircut to recovery assumptions	bbb
















Source: Scope

6. ESG grid

We analysed ESG risks by examining risk factors (section 3) and recovery risk factors (section 4) of the project. 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

Environmental		Social		Governance	
Air pollution and GHG emissions		Employment and labour management		Management, supervision and anti-corruption	
Energy efficiency		HSE management		Governance system	
Hazardous substances and waste		Social value, affordability, local community relations, human rights		Financial structure complexity	
Material sourcing and resource management		Customer stewardship and personal data privacy		Reporting and transparency	
Physical risks		Regulatory, reputational and social resistance risks		Political risks, lobbying and public relationships	

Source: Scope.

With regards to the environmental pillar: Considerations regarding the Air pollution and GHG emissions ESG theme are a credit positive for the project. Offshore wind produces power without emitting harmful exhaust into the air and contributes to the reduction of carbon emission in energy production. Considering regarding other themes within the environmental pillar and the themes within the social and governance pillars are neutral for the project.

7. Legal framework

We believe that these agreements are legal, valid, binding and enforceable. The transaction conforms to international standards and supports our general legal analytical assumptions.

8. Monitoring

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 the occurrence of any events affecting the project's creditworthiness.



Borkum Riffgrund 2 Investor Holding GmbH (Lighthouse)

Scope analysts are available to discuss the rating analysis

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 2024, which can be downloaded from 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 information about the project from Gulf Energy. This included the borrower's financial accounts, incorporation documents, material project contracts; 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

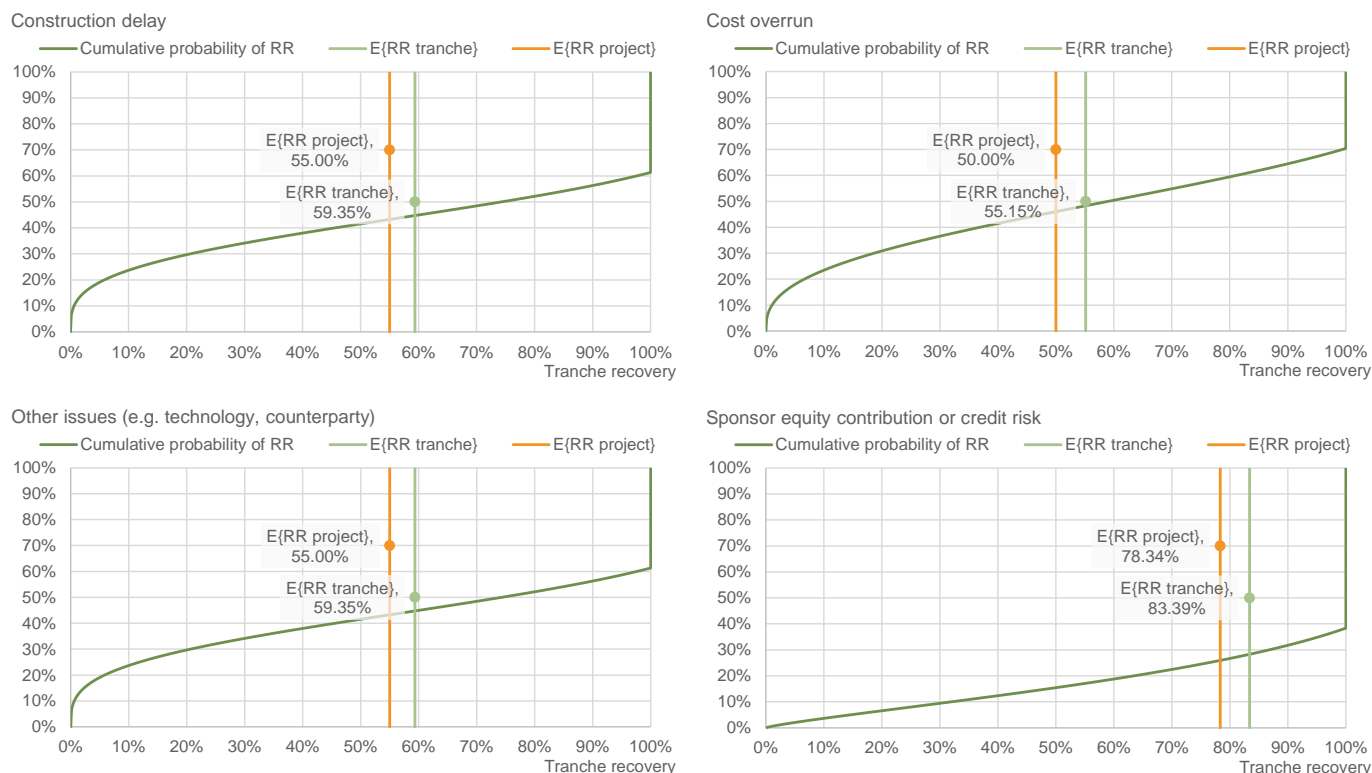
Event	Probability	Expected recovery	EL contribution
Construction delay	0.00%	57.12%	0.0000%
Cost overrun	0.00%	53.07%	0.0000%
Other issues (e.g. technology, counterparty)	0.00%	57.12%	0.0000%
Sponsor equity contribution or credit risk	0.00%	80.25%	0.0000%
Operational performance, budget and schedule issues	0.08%	82.98%	0.0140%
Lifecycle issues	0.01%	82.54%	0.0010%
O&M counterparty issues	0.07%	82.89%	0.0126%
Revenue counterparty issues (fin. or tech. performance)	0.02%	78.79%	0.0034%
Revenue deterioration	0.11%	85.60%	0.0154%
Supply interruptions or reserve issues	0.01%	80.85%	0.0015%
Inflation, interest or currency issues	0.02%	82.89%	0.0037%
Refinancing issues	0.03%	76.30%	0.0076%
Debt repayment or cash flow liquidity issues	0.19%	91.43%	0.0165%
Country or political issues	0.01%	70.67%	0.0015%
Force majeure or events issues	0.01%	70.67%	0.0041%
Legal or environmental or compliance issues	0.01%	74.02%	0.0036%
No credit impairment events	99.43%	100%	0%
TOTAL FOR RATED EXPOSURE	0.57%	85.15%	0.09%

Source: Scope.

Appendix II Recovery distributions under all impairment events

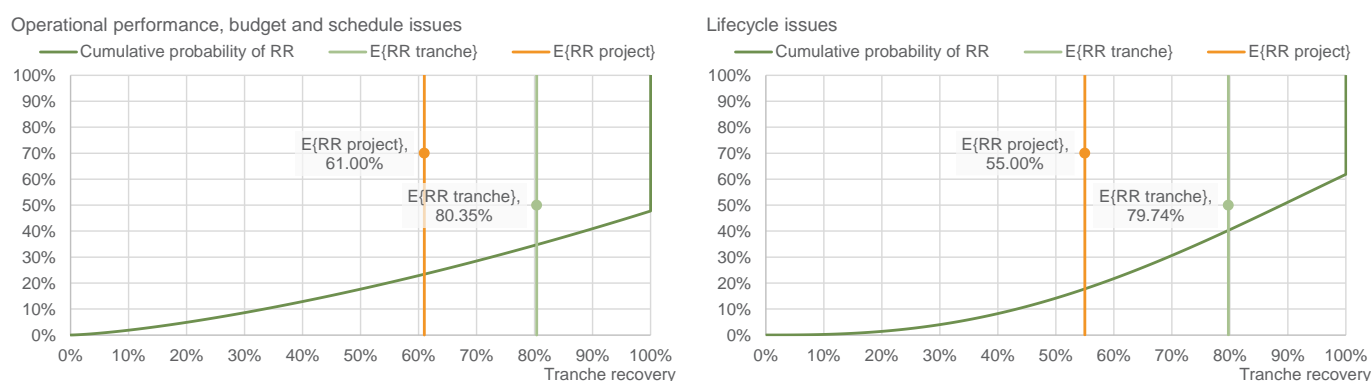
The following charts show the recovery distributions we assumed for the analysis of the expected recovery of the rated instrument under the different credit impairment events considered in our methodology. The charts also show the expected recovery at the project level and rated-tranche level to illustrate 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 the time-value of money and credit for amortisation.

Figure 16: Recovery distributions under construction credit impairment events

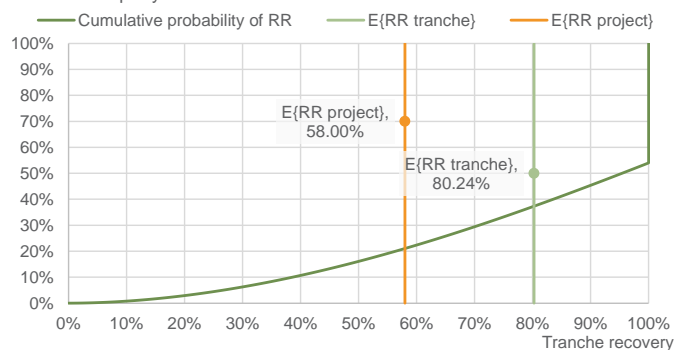


Source: Scope

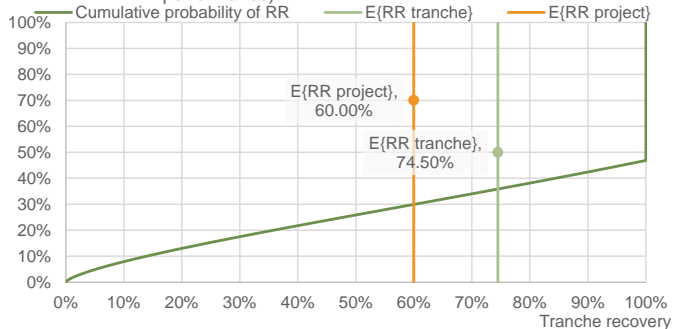
Figure 17: Recovery distributions under operational credit impairment events



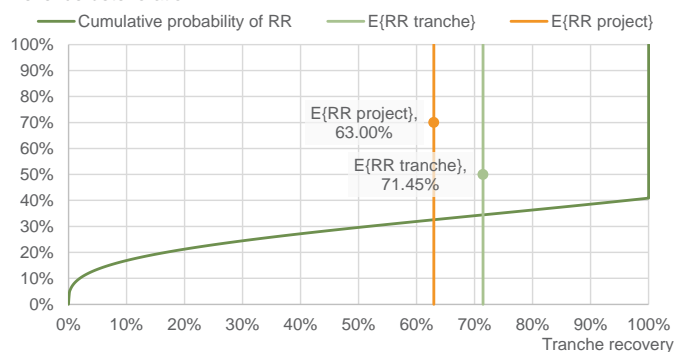
O&M counterparty issues



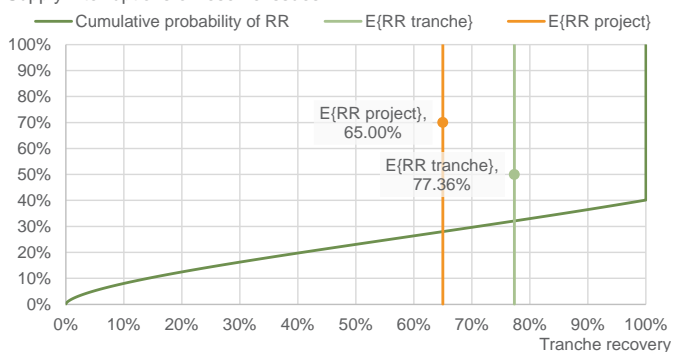
Revenue counterparty issues (financial or technical performance)



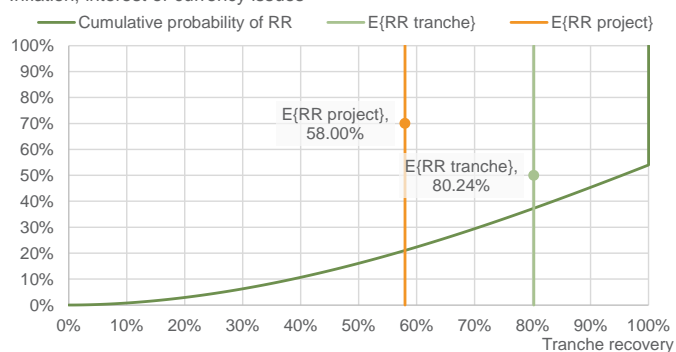
Revenue deterioration



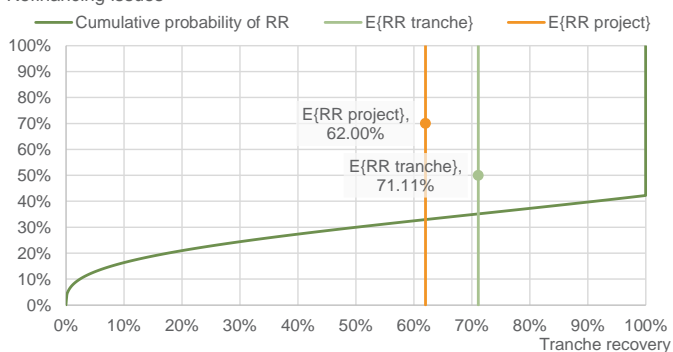
Supply interruptions or reserve issues



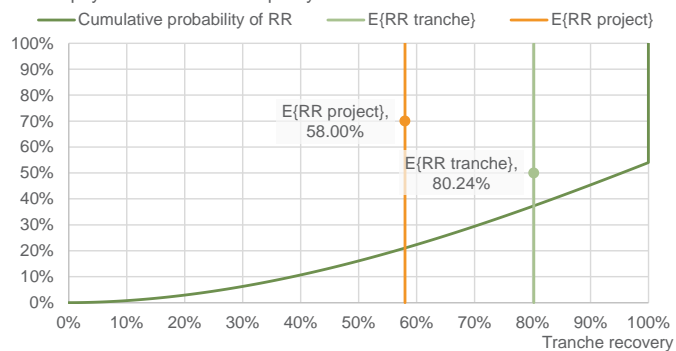
Inflation, interest or currency issues



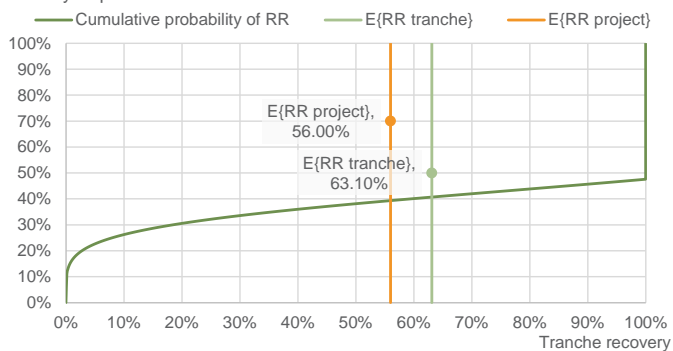
Refinancing issues



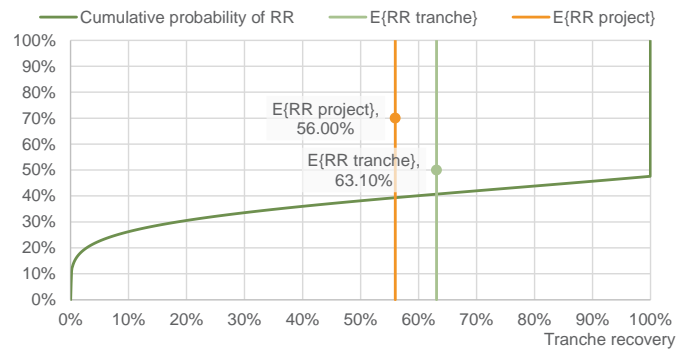
Debt repayment or cash flow liquidity issues



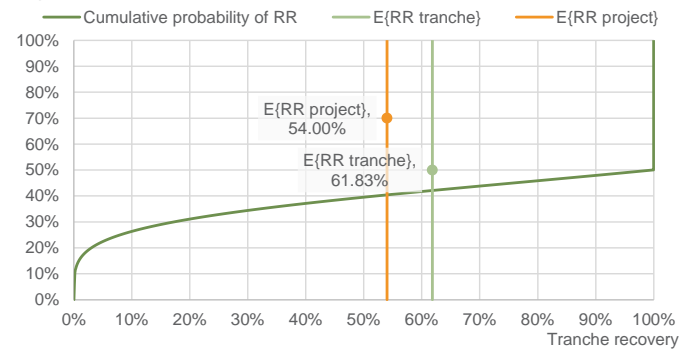
Country or political issues



Force majeure or events issues



Legal, environmental or compliance issues



Source: Scope



Borkum Riffgrund 2 Investor Holding GmbH (Lighthouse)

Scope Ratings GmbH

Headquarters Berlin

Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891 0

Oslo

Karenslyst allé 53
N-0279 Oslo

Phone +47 21 62 31 42

Frankfurt am Main

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

Phone +49 69 66 77 389-0

Madrid

Paseo de la Castellana 141
E-28046 Madrid

Phone +34 91 572 67 11

Paris

10 Avenue de Messine
F-75008 Paris

Phone +33 6 62 89 35 12

Milan

Via Nino Bixio, 31
20129 Milano MI

Phone +39 02 30315 814

Scope Ratings UK Limited

52 Grosvenor Gardens
London SW1W 0AU

Phone +44 20 7824 5180

info@scoperatings.com

www.scoperatings.com

Disclaimer

© 2025 Scope SE & Co. KGaA and all its subsidiaries including Scope Ratings GmbH, Scope Ratings UK Limited, Scope Fund Analysis GmbH, Scope Innovation Lab GmbH and Scope ESG Analysis GmbH (collectively, Scope). All rights reserved. The information and data supporting Scope's ratings, rating reports, rating opinions and related research and credit opinions originate from sources Scope considers to be reliable and accurate. Scope does not, however, independently verify the reliability and accuracy of the information and data. Scope's ratings, rating reports, rating opinions, or related research and credit opinions are provided 'as is' without any representation or warranty of any kind. In no circumstance shall Scope or its directors, officers, employees and other representatives be liable to any party for any direct, indirect, incidental or other damages, expenses of any kind, or losses arising from any use of Scope's ratings, rating reports, rating opinions, related research or credit opinions. Ratings and other related credit opinions issued by Scope are, and have to be viewed by any party as, opinions on relative credit risk and not a statement of fact or recommendation to purchase, hold or sell securities. Past performance does not necessarily predict future results. Any report issued by Scope is not a prospectus or similar document related to a debt security or issuing entity. Scope issues credit ratings and related research and opinions with the understanding and expectation that parties using them will assess independently the suitability of each security for investment or transaction purposes. Scope's credit ratings address relative credit risk, they do not address other risks such as market, liquidity, legal, or volatility. The information and data included herein is protected by copyright and other laws. To reproduce, transmit, transfer, disseminate, translate, resell, or store for subsequent use for any such purpose the information and data contained herein, contact Scope Ratings GmbH at Lennéstraße 5, D-10785 Berlin. Public Rating are generally accessible to the public. Subscription Ratings and Private Ratings are confidential and may not be shared with any unauthorised third party.