

Investors must assess fundamental value to capture stress resilience of merchant projects



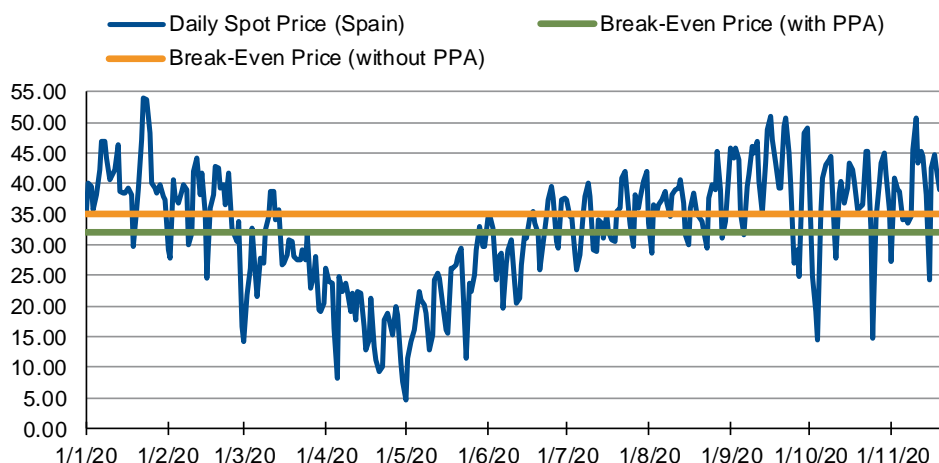
Scope
Ratings

The significant drop in energy prices caused by fallout from the pandemic underlines the critical importance of economic fundamentals and the importance of Black Swan risk in project finance credit analysis. Merchant projects have held up well during the crisis thanks to technological progress and other risk-mitigating factors.

Power prices have come under pressure across Europe since the beginning of this year, posing significant challenges for merchant projects. Increasing liquidity pressure has even been felt in regulated environments such as the Contracts for Difference scheme in the United Kingdom, where additional funding of the Low Carbon Contract Company (a government-owned company) through a one-off loan was required. But how have merchant risk projects performed in this environment?

Merchant projects are significantly exposed to the risk of market price fluctuations, since they are reliant on selling their output in the energy market, usually on a short-term basis. A typical merchant risk project in Spain saw spot energy prices plunging from around EUR 50/MWh at the beginning of the year to below EUR 10/MWh in April, for example (see Figure 1).

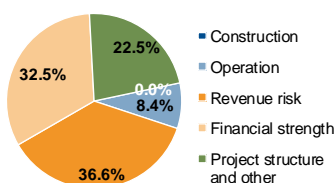
Figure 1: Energy price developments in 2020



Source: OMIE, Scope

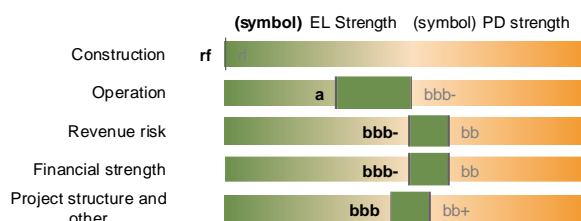
The massive drop in power prices has significantly increased liquidity pressure on all merchant projects and the likelihood of impairments. The risk distribution of a typical merchant project within Scope's expected-loss framework confirms that the highest risk contributions are related to revenue risk and financial strength (see Figure 2).

Figure 2: Distribution of risk



Source: Scope

Figure 3: Economic value matters!



Source: Scope

Analysts

Torsten Schellscheidt
+49 40 524724-100
t.schellscheidt@scoperatings.com

Team leader

Carlos Terre
+49 30 27891-242
c.terre@scoperatings.com

Business Development

Mike MacKenzie
+44 782 333 8061
m.mackenzie@scopegroup.com

Media

Keith Mullin
k.mullin@scopegroup.com

Related Research

General Project Finance Rating
Methodology
November 2020

General Project Finance
Analytical Considerations
September 2017

Scope Ratings GmbH

Lennéstraße 5
10785 Berlin
Phone +49 30 27891 0
Fax +49 30 27891 100

info@scoperatings.com
www.scoperatings.com



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Most merchant projects face the risk of becoming impaired if power prices fall below break-even over an extended period. The severity of these impairment events will be very different depending on how much long-term value there is in the project. The economic value is often large enough to mitigate the weaker probability of default (PD) strength of merchant projects and achieve better expected-loss (EL) strength. Figure 3 (above) shows that even in conservative restructuring scenarios, the higher revenue risk associated with merchant projects (which is reflected in a PD strength of bb) is usually mitigated fully by the economic value of the project, thereby improving the EL strength of bbb-.

Stress resilience of merchant projects

Scope first examines all-important structural features and risk factors to determine whether they are suitable to reduce the probability of credit impairment scenarios. We also emphasise analysis of fundamental economic value in credit analysis of merchant projects, highlighting its significant influence on the severity upon impairment.

Structural features

Virtually all merchant projects have structural features designed to mitigate liquidity risks that alter the likelihood of credit impairment events. These protective features include debt-service reserve accounts, distribution lock-up triggers, and cash sweeps. These mechanisms allow a project to temporarily continue servicing its debt in the event of an operational standstill or lower-than-expected operating cash flows. Both the protective elements and the recovery of power prices in the second half of 2020 were sufficient to ensure operation and debt service for most projects.

Power purchase agreements

Power purchase agreements (PPAs) help mitigate liquidity risks by reducing the likelihood of restructuring events. PPAs may reduce the break-even price for the project depending on the duration of these agreements and the contractually agreed power-price level. Several projects analysed by Scope imply a small reduction of the break-even price by up to 10% (e.g. from EUR 35/MWh without PPA to EUR 32/MWh with PPA, see Figure 1).

PPAs not only reduce the likelihood of credit-impairment events but, more crucially, the potential losses from these restructuring scenarios. The contractually agreed revenue stream serves as a secure source of cash flow unless the counterparty defaults. PPAs can therefore improve credit risk by lowering the probability of a credit-impairment event, and more importantly, the corresponding losses in these scenarios.

Technological progress

Technological progress can act as an important mitigant to compensate for lower power prices. Several projects analysed by Scope indicate that annual maintenance costs for solar power plants have fallen significantly within 10 years, from EUR 35k/MWh to EUR 5k-7k/MWh in 2020 (see Figure 4). A renegotiated contract for operation and maintenance services can therefore lead to much lower costs and better cash flows. This may reduce the likelihood of credit impairment events in Black Swan-like scenarios.

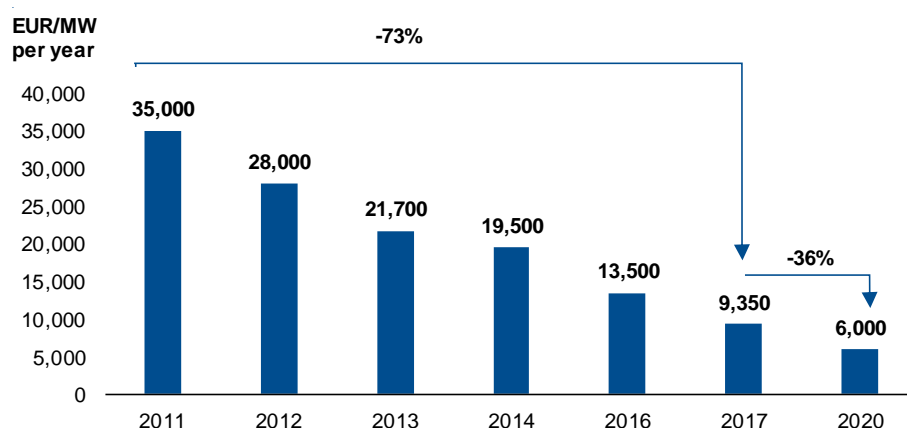
Structural features reduce the likelihood of credit impairment events but not the severity

PPAs reduce the likelihood of credit-impairment events...

...and more crucially reduce losses in restructuring scenarios

Technical progress reduces the likelihood of credit impairment events...

Figure 4: Evolution of operation & maintenance costs*



Source: Scope, BloombergNEF

...and potentially reduce losses in restructuring scenarios

Debt tails often reduce losses in restructuring scenarios

Economic fundamentals are a critical element of the analysis

Focus on project value and project lifetime coverage ratios

Moreover, a sustainable reduction in operating expenses can either partially compensate for the fall in energy prices or even become a positive cash flow driver if energy prices recover in the medium term. Potential losses from these restructuring scenarios may even be lower if the long-term economic value of the project increases.

Debt tail

Many merchant projects are expected to operate and produce cash flows for many years, often significantly exceeding the debt maturity. The present value of the future cash flows in this debt tail is often significant. The expected cash flows in the debt tail represent value in excess of the debt instrument. These excess cash flows represent economic value available in restructuring upon a credit impairment (e.g. by extending the debt maturity), thereby decreasing the project's expected severity upon credit impairment.

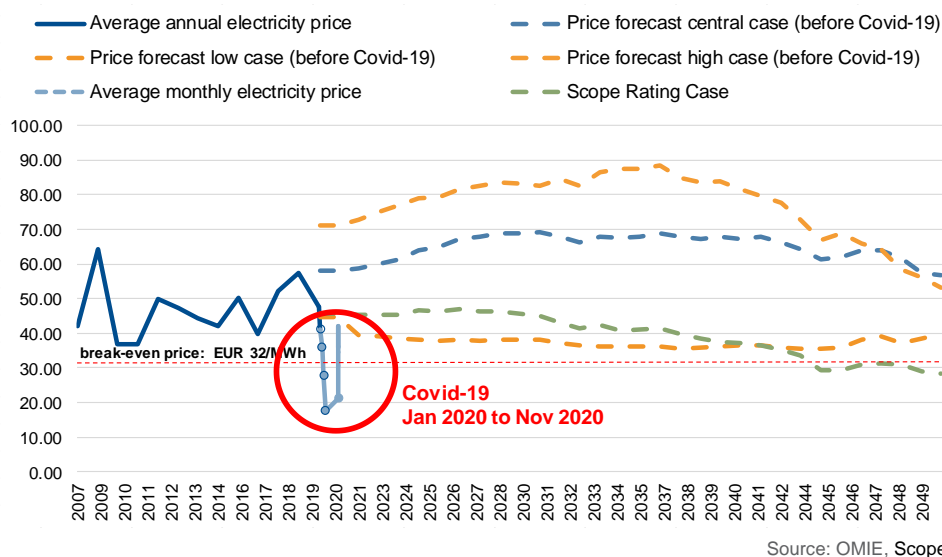
Economic fundamentals to drive severity

The economic fundamentals of a project over its life are a critical element of Scope's analysis. Strong economic fundamentals are particularly relevant for merchant projects that rely exclusively on the competitiveness of their output.

Investors in merchant projects must apply additional scrutiny in their analysis when assessing a project's long-term fundamental value. The implications of a potential credit impairment will be very different across projects, even when virtually all merchant projects in the countries most affected by Covid-19 are facing liquidity stresses (and hence a rising likelihood of impairment).

Scope pays a lot of attention to stressed values of project lifetime coverage ratios (PLCRs). A short-term fall in energy prices does not usually have a major impact on the PLCR if the project has a long remaining lifetime. Energy prices have returned to more normal levels, so the negative impact on the net present value of project cash flows so far has been negligible. Our cash flow estimates are also based on certain assumptions for energy prices and costs in the rating case, which are often more conservative than in the sponsor case so serve as an additional buffer. Figure 5 (below) shows that power prices recovered to levels close to rating-case assumptions in the second half of 2020.

Figure 5: Historical and forecast annual average day-ahead prices in Spain (EUR/MWh)



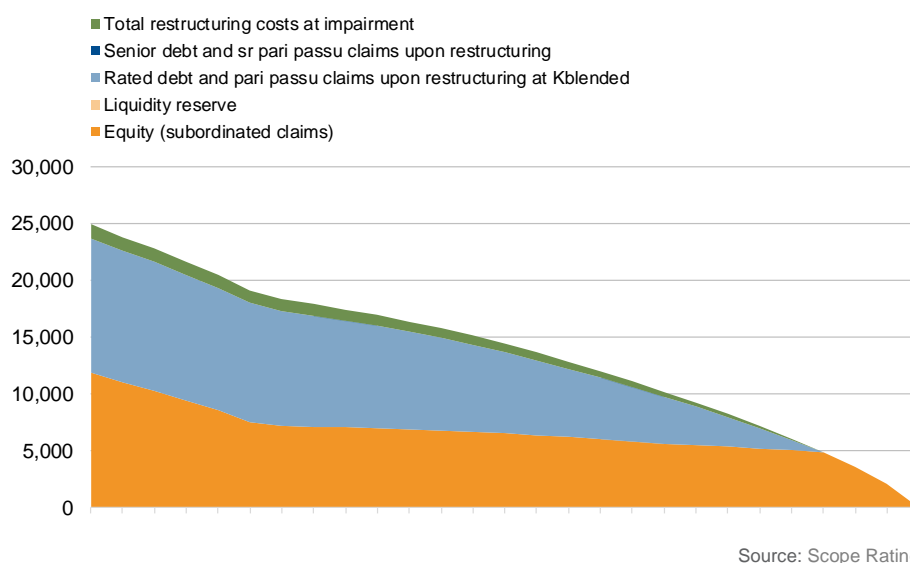
Stress scenario of continued low energy prices has manageable impact on recovery rates

Several merchant projects analysed by Scope suggest that persistently lower power prices would have a manageable impact on the long-term fundamental value of the project. Recovery rates in 'Revenue deterioration' events for these projects fall by an average of 20% compared to the rating case if we assume long-term energy prices of EUR 25/MWh.

These recovery-rate calculations, as of the time of impairment, are applicable to the exposure outstanding at the time in the instrument's life. We have considered **project sale scenarios**, in which the project is sold to new debt and equity investors (see Figure 6). The new financing conditions assume that cost of equity and cost of debt will both increase by 50% and that the leverage of the restructured project is 16.67% lower than in the pre-restructuring project (e.g. D=60% E=40% becomes D_R=50% E_R=50%).

Figure 6: Potential financing structure after the sale of the project

Revenue deterioration (000s)



The economic value of merchant projects is often large enough to compensate for the higher revenue risk

Only proper analysis of economic value can reveal strength and weakness of merchant projects

Conclusion

Most merchant projects face the risk of becoming impaired if power prices fall below break-even over an extended period. The severity of these impairment events will be very different depending on how much long-term value there is in the project. It is important to note that the economic value is often large enough to mitigate the weaker probability of default (PD) strength of merchant projects and to achieve a better expected-loss (EL) strength.

Merchant projects may hide strengths and weaknesses for investors that only proper credit analysis that considers the economic value of a project can reveal. The likelihood of an impairment tells only one part of the story that can result in losses for the investor. To calculate the expected loss for the investor, it is necessary to analyse the severity of potential restructuring events, as this will provide the relevant credit view capturing the full credit-risk characteristics in this asset class.

The analytical elements presented above reflect some of the most relevant areas in the assessment of merchant projects. For additional details, please refer to Scope's [General Project Finance Rating Methodology](#). For an introduction to project finance risk for investors that are new to infrastructure and project finance, please refer to our [General Project Finance Analytical Considerations](#), which sets the context for our methodology.



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Scope Ratings GmbH

Headquarters Berlin

Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891 0

London

111 Buckingham Palace Road
UK-London SW1W 0SR

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

Edificio Torre Europa
Paseo de la Castellana 95
E-28046 Madrid

Phone +34 914 186 973

Paris

23 Boulevard des Capucines
F-75002 Paris

Phone +33 1 8288 5557

Milan

Regus Porta Venezia
Via Nino Bixio, 31
20129 Milano MI

Phone +39 02 30315 814

info@scoperatings.com

www.scoperatings.com

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Scope Ratings GmbH, Lennéstraße 5, 10785 Berlin, District Court for Berlin (Charlottenburg) HRB 192993 B, Managing Director: Guillaume Jolivet.