MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Generic Project Finance Methodology

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This rating methodology replaces the *Generic Project Finance Methodology* published in June 2021. This update clarifies the minimum project ownership interest of project finance holding companies rated using this methodology. These updates do not change our methodological approach.

Introduction

In this rating methodology, we explain our general approach to assessing credit risk globally of project finance and certain municipal infrastructure finance issuers that are not covered by an existing specialty project finance or infrastructure methodology, including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector. We refer to this sector as generic project finance.

We discuss the scorecard used for this sector. The scorecard[1] is a relatively simple reference tool that can be used in most cases to approximate credit profiles in this sector and to explain, in summary form, many of the factors that are generally most important in assigning ratings to issuers in this sector. The scorecard factors may be evaluated using historical or forward-looking data or both.

We also discuss other considerations, which are factors that are assessed outside the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. In addition, some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.[2] Furthermore, since ratings are forward-looking, we often incorporate directional views of risks and mitigants in a qualitative way.

As a result, the scorecard-indicated outcome is not expected to match the actual rating for each issuer.

Our presentation of this rating methodology proceeds with (i) the scope of this methodology; (ii) a sector overview, (iii) the scorecard framework; (iv) a discussion of the scorecard factors;

1 In our methodologies and research, the terms "scorecard" and "grid" are used interchangeably.

2 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

(v) other considerations not reflected in the scorecard; (vi) the assignment of issuer-level and instrument-level ratings; (vii) methodology assumptions; and (viii) limitations.

In Appendix A, we describe how we use the scorecard to arrive at a scorecard-indicated outcome. Appendix B shows the full view of the scorecard factors, sub-factors, weights and thresholds, and Appendix C provides information on our assessment of off-taker credit quality and our use of credit estimates for generic project finance.

Scope of This Methodology

This methodology applies to special or single purpose entities (SPEs) globally that are financed on a nonrecourse, project finance basis and whose primary[3] business purpose is limited, typically to one activity (a project financing).[4] Project financings covered by this methodology encompass a broad range of asset types, including the following: parking garages and meters; airport fuel facilities, baggage handling systems, and hangar facilities; stadiums and arenas; hotels and convention centers; shopping malls; rail; oil and gas production and rolling stock projects; unregulated pipeline and transmission lines; water and wastewater treatment, desalination and other industrial processing plants; chemical storage facilities, trigeneration and liquefied natural gas (LNG) facilities.

Certain US public sector infrastructure project obligors that issue debt through local municipal authorities but have predominantly private sector and project finance characteristics,[5] like some stadiums, hotel convention centers and trigeneration facilities, are also rated under this methodology. In cases where such assets are financed by US state or municipal authorities with debt that benefits from a pledge of sales taxes, hotel taxes or motor vehicle taxes, by utility rates, or by a general fund appropriation, the bonds are rated using the methodology for that type of state or municipal authority or for that pledge type.

This methodology does not generally apply to corporate entities but may apply during an interim period if the financing arrangements of a rated project finance entity are undergoing a transition to a corporate finance structure.[6]

This methodology excludes project financings that are analyzed using other existing project finance or infrastructure methodologies. These include toll roads, ports, airports, power generation projects, energy networks and utilities, and privately financed public infrastructure (i.e., private finance initiatives and public-private partnerships, which are known as P3s).

[3] The determination of a company's primary business is generally based on the preponderance of the company's business risks, which are usually proportionate to the company's revenues, assets, earnings or cash flows.

[4] This methodology also applies to generic project finance holding companies, including entities with a minority ownership, typically of at least 15%, in one or more projects or in a generic project finance holding company, provided that (i) there are strong structural features in the transaction documents that clearly delineate a fixed or essentially fixed percentage of project cash flows that will flow to the minority owner or (ii) the minority holder has some meaningful influence or control over decisions at the operating company or companies. In these cases, a key component of the analysis is our assessment of the stand-alone credit quality of the operating company(ies) determined by a rating committee in accordance with this methodology.

[5] Some US municipal infrastructure revenue enterprises have meaningful limitations on the scope of their activities and investments, and their financing structures often include maintenance of certain debt-service coverage ratios, reserves and other protections similar to a project financing.

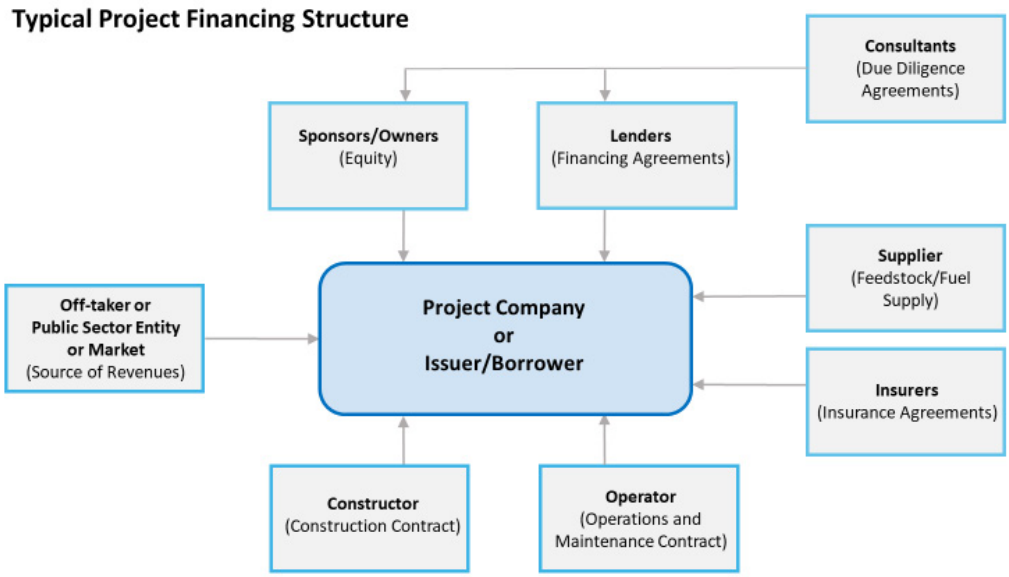
[6] Please see the discussion below of the principal differences between corporate finance and project finance structures.

Sector Overview

In a typical project financing, all of the key project and financial risks are identified upfront and contractually allocated to the project party best able to manage them efficiently. A typical project finance structure has many of the elements shown in Exhibit 1, including the use of an SPE or project company to issue nonrecourse financing. Another defining aspect of a project financing is documentation that limits the project's operating activities over time, so lenders can have a better understanding of the range of the project's long-term business and operating risks than is the case for corporates that are not restricted from entering new lines of business. One typical effect of these elements is that projects, once completed, prioritize the use of cash flow to service debt and make distributions to owners/sponsors rather than continuing to invest in the business beyond what is required to maintain existing assets.[7] These fundamental aspects of a project financing are very important because projects typically have higher debt levels compared to corporate issuers.

EXHIBIT 1

Typical Project Financing Structure



Source: Moody's Investors Service

Project finance infrastructure issuers and corporate infrastructure issuers are on a continuum, and Exhibit 2 outlines some of the key differences between them. We expect that a project finance infrastructure issuer would typically exhibit several, but not necessarily all, of the characteristics listed below. The fundamental differences include the meaningful limitations a project's financial covenants place on the project's business activity and investments, additional debt issuance and distributions to shareholders/sponsors. Without these, private sector issuers would be considered corporates and in almost all cases rated using a corporate methodology. Most project financing structures also include covenants that require maintenance of reserves and place material restrictions on asset sales and purchases, changes in control, granting of liens, and dealings with affiliated entities.

[7] The sponsor is typically the developer of the project; thus, an owner that takes responsibility for management of the project in its construction and operational phases. Where there are multiple owners, some owners may have a more passive role, or owners may co-manage the project.

EXHIBIT 2

Typical Project Finance and Corporate Characteristics

	Typical Project Finance Characteristics	Typical Corporate Characteristics
Nature of Issuer	Contractually based and generally has a finite life. Typically, there is at least one fundamental contract between the rated project issuer and the granting off-taker that gives the project issuer the right to generate/collect revenues in exchange for operating and maintaining (usually includes constructing as well) a particular asset for a given period of time. Generally referred to as off-take contract, concession, project agreement, license, lease, right to exploit a reserve, etc. In a well-structured project, the project issuer will contract out or allocate certain risks to parties able to efficiently manage them, including a construction contract, an operating and maintenance contract, a supply/fuel contract, and financing contracts.	Typically, no single contract is fundamental to the business of the issuer. Company exists and expands based on user demand for goods or services and remains in existence indefinitely with no specific finite life.
Business Scope	Single or special purpose entity; generally limited scope of business to the project and project-related activities, with restrictions on new business, asset sales, investments and acquisitions.	Few restrictions on the scope of business.
Asset Number	Single asset or product.	Multiple assets or products.
Construction Risk	Typically new build assets with construction risk initially that may or may not be exposed to large capital expenditures over time to maintain the asset in good working condition to meet availability and performance standards.	Usually operating assets and construction risk on any one asset is rarely a major risk for the entire company. Ongoing capital expenditures incurred to maintain competitive position.
Debt Profile	High leverage. Prevalence of amortizing long-term debt with limitations and tests before additional debt can be incurred, given that projects are generally highly leveraged upfront due to typically contracted cash flows. Project's book equity depletes over time and all or nearly all of the debt is repaid by end of off-take contract, concession, license, lease, asset useful life, natural resource reserve length, etc. Non-amortizing financing during construction typically replaced with long-term financing once operations begins.	Leverage varies. Prevalence of non-amortizing debt with few restrictions on ability to incur additional indebtedness. Assume company will refinance its debt rather than pay it down over time, and book equity is a key part of the company's capital structure.
Lender Security	Single or special purpose entity is ring-fenced, and debt issued is nonrecourse to the owners. The lenders have specific security in the material project contracts, revenues, accounts and account receivables, shares, assets, etc.	Varies with the leverage profile of the company. Typically no security for stronger issuers.
Lender Security - Revenues	Reliance on cash flows generated from a certain asset to repay debt.	Reliance on corporate cash flows or value of multiple assets to repay debt.
Lender Security - Covenants	Limitations on permitted distributions to shareholders, third-party-administered cash waterfall and controlled accounts, debt and business limitations.	Management discretion. Typically low level of protection with no third-party-administered cash flow waterfall.
Lender Security - Control/Oversight	Prevalence of direct agreements that provide step-in, cure and step-out rights for secured lenders. Meaningful performance triggers are present to ensure that in severe stress scenarios, control passes from equity to debt to achieve timely rectification, if needed. Lender oversight of the project also occurs through reviews of annual budgets and financial projections.	Management discretion. Typically publish annual audited financials and interim financial and operating performance reports.
Lender Security - Liquidity	Dedicated liquidity through debt service reserve funds, major maintenance, operating, ramp-up and other reserve types.	Management discretion. Typically no dedicated liquidity reserves or liquidity maintenance requirements.

Source: Moody's Investors Service

In some cases, our analysis for issuers rated using this methodology is informed by other sector methodologies relevant to the project's business operations. For instance, in assessing an LNG project finance issuer rated using this methodology, our analysis would typically be informed by our methodology that discusses the midstream energy sector.[8] For the issuers rated using this methodology that fall somewhere on the continuum between a project finance and a corporate issuer, typically due to weak project finance structural features, the considerations outlined in the corresponding sector-specific corporate methodology are likely to take on even more relevance in our assessment of the issuer's credit profile.

Generic project finance transactions span a fairly broad range of the ratings scale. Stronger projects with higher ratings tend to benefit from long-term contracts with sound creditworthy counterparties that provide for predictable recovery of costs and limit meaningful competition. At the lower end of the ratings spectrum, projects may have a challenging economic or competitive position (often related to weak or nonexistent contractual relationships), face uncertain net cash flows (which could arise from market price exposures or cost-revenue mismatches), use complex or untested technologies or have weak counterparties.

Scorecard Framework

The scorecard in this rating methodology is composed of three weighted factors. The three factors comprise a number of sub-factors.

The scorecard also comprises five notching factors, which may result in upward or downward adjustments to the preliminary outcome, and a factor for off-taker risk that may constrain the rating.

[8] For a link to a list of our sector and cross-sector methodologies, please see the "Moody's Related Publications" section of this document.

EXHIBIT 3
Generic Project Finance Scorecard

Rating Factors	Factor Weighting	Sub-factors	Amortizing Debt Sub-factor Weighting	Non-amortizing Debt Sub-factor Weighting
Business Profile	50%	Market Position	25%	25%
		Predictability of Net Cash Flows	25%	25%
Operating Risk	20%	Technology	5%	5%
		Capital Reinvestment	5%	5%
		Operating Track Record	5%	5%
		Operator and Sponsor Experience, Quality and Support	5%	5%
Leverage and Coverage	30%	Debt Service Coverage Ratio (DSCR)	30%	15%
		Project Cash from Operations / Adjusted Debt		15%
Total	**100%**		**100%**	**100%**
		Preliminary Outcome		
Liquidity	(notching factor)			
Structural Features	(notching factor)			
Refinancing Risk	(notching factor)			
Construction and Ramp-up Risk	(notching factor)			
Priority of Claim, Structural Subordination and Double Leverage	(notching factor)			
		Preliminary Outcome after Notching		
Off-taker Risk	Potential Constraint			
		Scorecard-Indicated Outcome		

Source: Moody's Investors Service

Please see Appendix A for general information about how we use the scorecard and for a discussion of scorecard mechanics. The scorecard does not include or address every factor that a rating committee may consider in assigning ratings in this sector. Please see the "Other Considerations" and "Limitations" sections.

Discussion of the Scorecard Factors

In this section, we explain our general approach for scoring each scorecard factor or sub-factor, and we describe why they are meaningful as credit indicators.

Factor: Business Profile (50% Weight)

Why It Matters

Business profile is important because the business risk fundamentals of a project are key drivers of the long-term stability and sufficiency of future cash flow generation, which in turn sustains the project's financial viability over the term of the project debt (including any refinancing debt). Business profile also typically underpins our confidence level in the likely projection scenario(s) and often affects the extent to which we think downside scenarios could vary from the likely scenario(s). Credit quality over the project's debt term fundamentally depends on the strength and stability of the project's market position within its competitive operating environment and the impact that a project's specific volume and price risks have on the

predictability of its future net cash flows. The relative predictability of net cash flows over the debt term is important to differentiating projects that have notably different credit profiles, even if those projects may, over the shorter term, have similar coverage ratios.

Many projects have a limited ability to generate additional revenues to offset rising or unexpected costs. This is generally due to a project's intentionally limited scope of operations, contractual limitations, or an inability to raise prices or users fees without weakening the project's market position. For example, a project-financed stadium or hotel may be unable to raise prices and fees without losing customers.

How We Assess It for the Scorecard

Scoring is based on two sub-factors: Market Position; and Predictability of Net Cash Flows.

MARKET POSITION:

The scoring of this sub-factor is based on a qualitative assessment of the competitive environment in which a project operates and how competitive the project is within that market.

We consider a number of aspects within a project's competitive landscape with particular emphasis on the nature of competition for each project and the stability of the project's competitive position within its market. Competition is not limited to the competition arising only from similar assets, but also from all assets that serve a similar purpose. For instance, stadiums may compete with other live sports venues and more broadly with other forms of entertainment or watching sporting events at a bar or at home. For projects that are part of an industrial chain, with significant counterparty dependencies, the relevant competitive environment is not only that of the project's product or service but also that of the end product or service ultimately served by the industrial chain. For example, an LNG re-gasification plant is part of the industrial chain encompassing natural gas production, transportation, liquefaction, transportation, re-gasification and transportation to markets. The economics of liquefaction typically depend on the cost-effectiveness of sourcing gas, liquefying it and transporting it relative to the prices of energy in the receiving market.

Projects that are entrenched monopoly providers or have large market shares with significant barriers to entry typically face less competitive pressure and command greater pricing power. Barriers to entry may include high customer switching costs and unique assets or proprietary technologies that reduce the threat of new entrants.

The essentiality of the product or service to the contracted off-taker is also a key consideration in our view of the project's long term demand supporting more certain cash flows. The most essential products and services are expected to show steady demand with little volatility through the business cycle. Projects that offer less essential products and services may score highly for this sub-factor if they exhibit a strong market position and stability through economic cycles.

PREDICTABILITY OF NET CASH FLOWS:

The scoring of this sub-factor is based on a qualitative assessment of our view of the overall relative predictability of a project's future net cash flows, incorporating the potential net cash flow impact of a project's exposure to demand, volume, price and cost risks over the debt term, or until the debt is repaid if there is refinancing risk. Net cash flows consist of revenues less operating, maintenance and capital costs, which we typically consider over the life of the project, including many material pinch points. In our assessment, we also typically consider the potential for mismatch between revenues and costs over time.

Projects with strong off-take agreements that allow the project to collect sufficient revenues to recover all costs regardless of asset performance usually score higher for this sub-factor compared to projects with direct exposure to user demand that could change over time, like hotels and stadiums. Projects with limited contracted revenues, but a long established history of consistent and stable non-contracted revenues from stable demand may score up to the Aa category for this sub-factor. For contracted projects, we typically also consider the credit quality of the off-taker. Please see Appendix C for information on assessing off-taker credit quality and our use of credit estimates.

While a project's market position and its cash flow predictability may be interlinked in some cases, there are also many projects where the two sub-factors may have very different scoring. For example, a project may be exposed to broad competition with a below-average market position, but may have highly predictable net cash flows due to a strong off-take contract. Conversely, a project with very limited competition may have material volume exposure in its off-take contract that exposes the project to volatile volume risk, resulting in a more uncertain cash flow profile.

In assessing the relative predictability of net cash flows, we generally consider the potential for cash flow variability over the debt term (including any refinancing debt term). One project may have a much higher likelihood of generating a coverage ratio year-over-year that remains within a narrow band throughout the debt term, compared to another project that may have a much higher likelihood of volatility in the coverage ratio over the full debt term. For example, the project's off-take contract could expire a few years before the project debt matures, leading to a more uncertain long term cash flow profile toward the latter end of the debt term and thus to a lower sub-factor score. When there is a mix of more and less certain cash flows, we would generally consider the amount of debt that can be amortized from the more certain cash flows, and we would also consider the potential that volatility of cash flows could increase default risk, for instance by causing debt service coverage ratios (DSCRs) to be below 1.0x.

FACTOR
Business Profile (50%)

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Market Position	25%	Monopoly and sole provider of highly essential service over the debt term.	Entrenched monopoly for service/product over the debt term.	Limited competition for service/product over the debt term or very strong market position that is expected to remain very stable over the debt term.	Project is exposed to some competition but has a strong market position that is expected to remain relatively stable over the debt term.	Project is exposed to broad competition and has a moderate to somewhat strong market position that is expected to remain relatively stable over the debt term.	Project is exposed to broad competition and has a somewhat weak market position that is exposed to market changes over the debt term.	Project is exposed to intense competition and has an untested, uncertain or very weak market position that is significantly exposed to market changes over the debt term.	Project is exposed to intense competition and has an untested, uncertain or materially eroding market position that is likely to result in insufficient cash flow to cover the debt outstanding.
Predictability of Net Cash Flows	25%	Extremely high predictability of net cash flows with availability-like or guaranteed payments; and off-taker(s) have extremely strong credit profile(s), typically Aaa-equivalent.	Very high degree of predictability of net cash flows. Contracted net cash flows have no material volume/price risk; and off-taker(s) have very strong credit profile(s), typically Aa-equivalent. OR Long history of generating stable net cash flows with little to no exposure to economic cycles or changes in user preferences. OR Project provides a service/ product at highly competitive rates where it is highly unlikely to have a new lower-cost competitor.	High degree of predictability of net cash flows. Contracted net cash flows have limited volume/price risk; and off-taker(s) have strong credit profile(s), typically A-equivalent. OR Demonstrated track record of generating stable net cash flows with limited exposure to economic cycles or changes in user preferences. OR Project provides a service/ product at competitive rates where it is unlikely to have a new lower-cost competitor.	Good degree of predictability of net cash flows. Contracted net cash flows have moderate volume/price risk; and off-taker(s) have moderate credit profile(s), typically Baa-equivalent. OR Fairly certain and stable net cash flows modestly exposed to economic cycles or changes in user preferences.	Some degree of uncertainty with respect to net cash flows. Contracted net cash flows have notable volume/price risk; and off-taker(s) have moderate to weak credit profile(s), typically Ba-equivalent. OR Uncertain and volatile net cash flows exposed to economic cycles or changes in user preferences.	Material uncertainty with respect to net cash flows. Limited contracted net cash flows that may have material volume/price risk; and off-taker(s) have weak credit profile(s), typically B-equivalent. OR Uncertain and volatile net cash flows that are highly exposed to economic cycles or changes in user preferences.	Highly uncertain net cash flows. No contracted net cash flows or contracted net cash flows are highly volatile with contract exposed to potential termination; and off-taker(s) have very weak credit profile(s), typically Caa-equivalent. OR Highly uncertain and volatile net cash flows with material exposure to economic cycles or changes in user preferences.	Unknown, zero or negative net cash flows. No contracted net cash flows and contracted net cash flows are exposed to potential termination; and off-taker(s) have extremely weak credit profile(s). OR Highly uncertain and volatile non-contracted revenues with irreversible exposure to economic downturns or changes in user preferences.

Source: Moody's Investors Service

Factor: Operating Risk (20% Weight)

Why It Matters

Operating risks are important because the contract payment structures of most project financings rely on the asset(s) meeting certain availability or operating performance standards in order to receive payment from the off-taker or the users of the project. Non-contracted projects that are off-line cannot generate revenues and may incur additional expenses to restore operations. Thus, an important consideration in the viability of a project is its ability to meet contractual standards of availability.

Technology and operating issues may reduce or disrupt revenues, increase operating costs and capital expenditures, or result in the project paying liquidated damages to a contracted off-taker. In a single-asset project, if revenue generating capacity is disrupted because of operational problems, there is no alternative source of operating cash flows to meet debt service requirements, and the project may have to rely on its liquidity in the form of reserves, provided they have been set aside in sufficient amounts to deal with potential disruptions. In the absence of operating cash or reserves, project lenders would have to depend on the willingness of the project sponsor to inject equity to ensure the project returns to good working condition quickly. Given the nonrecourse nature of most project financings, sponsors will generally only support a project if it is in their best economic interest to make an incremental investment.

How We Assess It for the Scorecard

Scoring for this factor is based on four sub-factors: Technology; Capital Reinvestment; Operating Track Record; and Operator and Sponsor Experience, Quality and Support.

TECHNOLOGY:

The scoring of this sub-factor is based on a qualitative assessment of a project's relative technological complexity, how commercially proven and commonly used the technology is, and how long the technology has been in use. Our assessment is relative to the array of technologies covered under this methodology, which have ranged from low technology risk, like stadiums and hotels, to more technologically complex projects like utility-scale LNG plants and deep-water oil drill ships. While all of these examples use proven technologies, a higher level of specific expertise and experience is needed to operate the technology of an LNG plant or a deep-water drill ship compared to what is needed to operate a stadium or hotel.

Where the technology is untested, the scoring of this sub-factor is typically low. However, our assessment would typically include the performance support provided by the original equipment manufacturer/vendor, warranty periods, and the structure and duration of long-term services arrangements, if any, that are in place to mitigate the risk of performance failures and their impact on the overall project economics.

CAPITAL REINVESTMENT:

The scoring of this sub-factor is based on a qualitative assessment of the nature of the asset reinvestment work required to maintain normal operations and the forecast cost of these capital expenditures relative to the forecast excess cash flow or additional debt capacity over the project's debt term. Asset reinvestment work that requires a major project asset or portion of assets to be offline to perform maintenance activities would usually score toward the lower end of the spectrum, whereas new assets with straightforward and limited capital reinvestment needs (and thus minimal operating impact) over the debt term would achieve a higher score for this sub-factor.

If capital expenditures are unambiguously, contractually recoverable from an off-taker, then we would typically score the project's financial metrics based on the broad rating category that corresponds to our assessment of the off-taker's credit quality.[9]

OPERATING TRACK RECORD:

The scoring of this sub-factor is based on a qualitative assessment of how a project's operations have performed compared to industry norms for that particular asset type. Historical operating performance provides an indication of likely future performance. If there is no operating track record, we would score this sub-factor according to our expectation of future operating performance based on how other similar projects with similar technologies have performed and on the reputation and quality of the operator and sponsor. Where a project receives revenues regardless of its operating performance, the scoring is typically high. Where there is material uncertainty about the operating performance, the scoring is typically low.

OPERATOR AND SPONSOR EXPERIENCE, QUALITY AND SUPPORT:

The scoring of this qualitative sub-factor considers the balance between the importance of the operator and the importance of the sponsor to the project's operating and financial performance.

We typically assess the credit quality of the operator and its experience with the asset type, working in the jurisdiction where the project is located, and providing services under a similar operating and maintenance contractual framework. We may also consider how replaceable the operator is without disrupting the project. The importance of the operator's experience, sophistication and credit quality typically increases when the project is technologically complex and it has few options to replace the operator at a similar cost.

Our assessment also focuses on the strength and commitment of the sponsor and the likelihood that the sponsor would provide future financial or operating support to the project, if needed. The nonrecourse nature of project debt results in lenders having no or limited recourse to the sponsors (which are the owners of the equity interest in the SPE). Sponsors have an economic interest in the project in the form of future cash flow distributions, which may provide incentives to provide incremental financial support in order to protect these distributions. However, we typically consider that sponsors will be willing to walk away from a project when economic incentives disappear. For instance, if future cash flows are unlikely to be sufficient to pay both future debt service and distributions to sponsors, the sponsor typically has no economic incentive to provide assistance in the form of an additional equity injection.

In assessing the sponsor's economic incentives, we often consider the discounted value of expected future distributions to sponsors or, where available, the market value of the project relative to its debt. Discounted cash flow analysis is more likely to be straightforward for contracted projects than for non-contracted projects, because the future cash flows of the latter are harder to predict, requiring scenario analysis. In summary, the greater the economic value of the investment to the sponsor, the more likely the sponsor is to provide financial support to the project. We also consider the ability of the sponsor to provide support (its credit quality), and we differentiate sponsor ownership between strategic and financial investors. Strategic investors typically have a longer-term investment horizon relative to financial investors, and they are generally more likely to protect their investment should a need arise. In our analysis of sponsor support, we typically also consider the track record of the sponsor in providing support to the issuer or to other owned projects in times of stress or financial need (e.g., a major capital investment or advantaged supply agreement).

[9] Please see Appendix C for information about when we use monitored ratings, an affiliate with a monitored rating and credit estimates for off-takers.

FACTOR
Operating Risk (20%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Technology	5%	Absence of or very limited exposure to a commercially proven technology/ process with minimal if any moving components.	Simple, commercially proven technology/process with minimal moving components.	Simple, commercially proven technology/ process with few moving components.	Commercially proven technology/process with some complex elements but well understood and considered standard for the industry. OR Commercially proven technology/ process that has experienced limited operating challenges that are unlikely to reoccur.	Commercially proven technology/ process with several complex elements requiring specialized skills to operate and maintain. OR Commercially proven technology/ process that has experienced periodic operating challenges that may reoccur at times.	Most of technology is considered to be proven, but certain elements are untested or have limited operating history. OR Commercially proven technology/ process that has experienced significant operating challenges that are likely to persist.	Commercial technology is unproven and untested with no operating track record, or technology has high obsolescence risk. OR Commercially proven technology/ process that has experienced material operating challenges that are highly likely to continue.	Commercial technology is unproven and untested with no operating track record and unlikely to perform as expected. OR Commercially proven technology/ process that has experienced irreversible operating challenges.
Capital Reinvestment	5%	No capital reinvestment exposure.	Limited capital reinvestment required to maintain strong operating performance. Capital work is easily scheduled with no real operating impact. Excess cash flow comfortably exceeds amount needed to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with strong credit quality, typically A-equivalent or higher.	Modest, predictable and easily scheduled capital reinvestment required to maintain good operating performance. Capital work has limited operating impact. Excess cash flow exceeds amount needed to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with above-average credit quality, typically Baa-equivalent.	Ongoing capital reinvestment required to maintain satisfactory operating performance to meet contractual performance standards. Capital work has some operating impact but can be scheduled to limit downtime. Excess cash flow is sufficient to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with average credit quality, typically low-Baa-to-high-Ba-equivalent.	Active major maintenance and capital reinvestment essential to operating performance. Capital work impacts operations by requiring the project to be off-line for some time. Excess cash flow is not sufficient to fund all capital needs over the debt term and some additional debt may be issued. OR Capex costs are fully recovered from off-taker with speculative-grade credit quality.	Material capital reinvestment required. Capital work requires project to be off-line for a sizable time period. Excess cash flow is not sufficient to fund all capital needs over the debt term and material additional debt is likely to be issued. OR Capex costs are fully recoverable from off-taker with highly speculative-grade credit quality.	Capital reinvestment required to operate the project exceeds the value of the project. Operations are expected to be negatively impacted by insufficient capital reinvestment. Additional debt required to fund all capital needs over the debt term. OR Capex costs are fully recoverable from off-taker that is unable to adequately fund them.	Capital reinvestment required to operate the project materially exceeds the value of the project. Operations have been negatively affected by insufficient capital reinvestment. Additional debt required to fund all capital needs. OR Capex costs are fully recoverable from an off-taker that cannot or will not fund them given uneconomical project.

Operating Track Record	5%	No project operating exposure. May have limited contract administration exposure.	Excellent operating track record in top tier compared to industry norms for asset performance.	Strong operating track record better than industry norms for asset performance.	Average operating track record in line with industry norms for asset performance.	Adequate operating track record with some issues. OR No operating track record but high expectation of adequate operating performance when operations begin.	Limited or challenging operating track record. OR No operating track record with uncertain expectations for operating performance when operations begin.	Weak operating track record with volatile or uncertain operating profile despite years of operations. OR No operating track record with highly uncertain expectations for operating performance when operations begin.	Very poor operating track record with volatile operating history. OR No operating track record and expect poor operating performance when operations begin.
Operator and Sponsor Experience, Quality and Support	5%	Best-in-the-industry operator/sponsor with unmatched experience, extremely strong credit profile and an unparalleled track record of excellent performance and will unquestion-ably support the project in any capacity at any time.	Highly experienced operator/sponsor with very strong credit profile and an extensive track record of strong performance. Sponsor has a demonstrated track record of providing financial or operational support to the project without question. Sponsor support is certain if performance problems occur.	Experienced operator/sponsor with a strong credit profile and an established track record of very good performance. Sponsor has provided operational or financial support when needed. Sponsor support is highly likely if performance problems occur.	Competent operator/sponsor with a moderate credit profile and a limited track record of performance but expected to be capable. Sponsor has provided operational or financial support to the project at times. Sponsor support is likely if performance problems occur.	Operator/sponsor has limited track record with the project type or industry and may have a moderate to weak credit profile. Sponsor may have provided limited operational or financial support to the project. Future sponsor support is unlikely if performance problems occur.	Operator/sponsor has very limited track record with the project type or industry or a challenging operating history with weak performance on similar projects and may have a weak credit profile. Sponsor has not supported or was unable to support the project in the past when needed. Sponsor support is highly unlikely if performance problems occur.	Inexperienced or financially weak operator/sponsor with little to no track record or experience with the project type or industry and a very weak credit profile. No sponsor support expected if performance problems occur.	Substandard operator/sponsor with no track record or experience with the project type or industry or past experience is poor and credit profile is extremely weak. No sponsor support expected if performance problems occur.

Source: Moody's Investors Service

Factor: Leverage and Coverage (30% Weight)

Why It Matters

Leverage and coverage measures are critical indicators of a project's financial flexibility and long-term viability, including the ability to adapt to changes in the economic and business environments in the segments in which the project operates. All else being equal, leverage and coverage metrics differentiate the financial flexibility among projects to withstand lower revenues or higher costs.

We consider financial metrics to be particularly relevant when analyzed in the context of a project's fundamental risk profile, because project financings exhibit a wide range of business and operating risk profiles and thus distinct likelihoods of experiencing cash flow disruptions or variability. Similar coverage ratios between two projects with different business and operating risk profiles typically do not provide them with the same capacity to address the variable impact of these risks. For example, one project may be a monopoly with no volume and price risk and highly certain cash flows, while another may operate in a very competitive environment resulting in volatile cash flows. Thus, at the same rating level, the latter project would need considerably lower leverage and stronger coverage in order to balance the higher cash-flow volatility risk. In many cases, higher volatility of cash flows, combined with the resultant lower confidence level we would have in the ability of the latter project to achieve its projected financial metrics, would mean that the latter project would be rated lower than the former.

We note that some projects have unambiguous off-take contracts that allow the project to recover all operating and capital expenditures from the off-taker on a timely basis over the life of the contract. In these cases, the credit quality of the off-taker is typically one of the most meaningful drivers of the project's fundamental risk profile.

How We Assess It for the Scorecard

Scoring for this factor is based on two sub-factors: Debt Service Coverage Ratio; and Project Cash from Operations/Adjusted Debt.

We apply different thresholds for the two metrics, depending on our assessment of the overall project risk, which is our consolidated view of the project's combined business and operating risks.

We classify project financings into four fundamental project risk profile categories — cost recovery, low project risk, medium project risk or high project risk. The table below provides general descriptions of each project risk category.

EXHIBIT 4
Fundamental Project Risk Profile Categories

Cost Recovery	Off-take contract includes full and unambiguous recovery of all operating, debt service and capital costs with at least a 1.0x DSCR.
Low Project Risk	Contracted revenues have limited volume and price risk, or non-contracted revenues are stable and supported by a strong market position that ensures net cash flows are highly predictable. Technology is simple, well understood and proven with a good operating track record by an experienced operator/sponsor, with limited capital expenditures needed over the debt term. Business Profile and Operating Risk factors generally score in the Aaa to A range.
Medium Project Risk	Contracted revenues may have some variability due to volume or price exposure or operating performance risks, or non-contracted revenues are fairly predictable but may be volatile at times despite the project's maintenance of a sound competitive market position. Technology is proven but relatively more complex and requires a competent operator/sponsor and consistent capital reinvestment to maintain sound operations. Business Profile and Operating Risk factors generally score in the Baa to Ba range.
High Project Risk	Contracted revenues are limited and uncertain, with mostly non-contracted and highly volatile or uncertain revenues. Project may have complex operating and capital reinvestment requirements to ensure adequate performance and may have an inexperienced operator/sponsor that is unlikely or unable to support the project if problems occur. Business Profile and Operating Risk factors generally score in the B to Caa range.

Source: Moody's Investors Service

The fundamental risk profile of a project is normally expected to stay the same through the life of the debt because it relates to characteristics expected to be enduring, such as contractual allocation of risk, or a market advantage reinforced by structural barriers to entry; in some circumstances, however, it could change. For instance, an important contract counterparty could undergo financial stress, or a change in law or regulation could alter the competitive landscape. In most cases, the decision to change our assessment of fundamental project risk would indicate a material change in our overall view of a project financing's creditworthiness, that would be accompanied by a change in our expectation of appropriate credit metrics for a given rating category. In cases where project risk is assessed to be borderline or in-between two categories, the scorecard is based on the project risk category that best matches the overall characteristics of the project; however the rating is likely to be informed by a scenario analysis based on the adjacent project risk category. We note that a one-category change in our assessment of a project risk may result, in a limited number of cases, into a multi-notch change in the scorecard-indicated rating.

The cost recovery project risk classification applies only to projects that have unambiguous off-take contracts that ensure the project timely recovers all of its costs, including debt service, resulting in a stable, typically sum sufficient, DSCR throughout the project life. Under this contractual arrangement, we would typically score the project's financial metrics based on the broad rating category that corresponds to our assessment of the credit quality of the off-taker(s).

For projects with fully amortizing debt, we use one metric to assess leverage and coverage — the DSCR, with a weighting of 30%.

For projects with non-amortizing debt, we use two metrics to assess leverage and coverage — the DSCR and the ratio of project cash from operations to total adjusted debt (Project CFO/Debt), with weightings of 15% each.

Projection Scenarios and Relevant Period for Ratio Calculations

In general, the focus of our assessment of leverage and coverage financial metrics is forward-looking. We generally use cash flow projections based on our own assessment of the most likely financial and operating parameters and sensitivities. We also typically consider a number of downside or sensitivity scenarios to test the resiliency of the project's cash flows. Our central scenario and sensitivities may be informed by third-party technical or market consultants, and they may be different from the owner's or sponsor's projections. For projects that have a track record, historical performance generally has a strong influence on our view of

likely future results, unless there is a material change in the project's operating parameters or market dynamics. As a result, historical results are among the drivers that can cause changes to our central scenario and downside or sensitivity scenarios over time.

Debt service coverage ratios are calculated on a forward-looking basis for the relevant projection period. For fully amortizing projects, the relevant projection period is a forward-looking period through the life of the debt. For non-amortizing projects, the relevant forward-looking projection period extends through the expected full life of the project debt, including any refinancing periods.

Project cash from operations to adjusted debt ratios are calculated on a forward-looking basis. For projects in construction, the ratio is calculated from the start of steady-state operations.

DEBT SERVICE COVERAGE RATIO (DSCR):

The scoring of this sub-factor is primarily based on the average annual or minimum annual DSCR[10] for the relevant projection period. Because project financings covered by this methodology encompass a wide range of financing structures and project types, the scoring of the projected DSCR may be based on the forecast minimum annual DSCR, or it may primarily be based on the average but informed by the minimum, or vice versa. For example, for cost-recovery projects and other projects that have fully amortizing debt and are fully contracted over the debt term, we would typically use the average annual DSCR over the debt term, because we would expect low variability over the relevant projection period. For projects that are primarily dependent on non-contracted net cash flows, our focus is primarily on the forecast minimum annual DSCR,[11] because the forecast average annual DSCR may not reflect the intrinsic risk. For these projects, coverage levels may be very volatile over the relevant period, and there may be important stress periods. In those cases, our assessment of the appropriate level of DSCR used for scoring this sub-factor would also be informed by the expected stability/variability of the DSCR and a comparison of the average annual and minimum annual DSCRs over the relevant projection period. The assigned score ultimately represents our forward-looking view of the DSCR level that represents the overall risk in the projected trajectory of the project's ability to service its debt.

To calculate the DSCR for any 12-month period, the numerator is cash flow available for debt service (CFADS), and the denominator is scheduled interest and principal payment.[12]

- CFADS is equal to cash flow from operations (after tax and working capital changes, but before interest expense) less major maintenance capital expenditures plus or minus scheduled transfers from/to major maintenance, operating or debt service reserves,[13] if the transaction structure includes these reserves.
- For fully amortizing projects, scheduled interest and principal payment equals cash interest and principal paid or required to be paid in the relevant period as defined in the project bond indenture or loan agreement, excluding any cash sweeps.

[10] The DSCR considers a 12-month period. This is consistent with the DSCR calculation for covenants in most project financings, which are typically calculated based on a 12-month period and tested at each debt service payment date. Average DSCRs for periods of greater than 12 months are calculated as the average of the individual 12-month DSCRs.

[11] Minimum DSCRs are more relevant in circumstances where they could be sustained over more than a single period, or where the volatility of cash flows is such that it is uncertain how long a stress period could last. In a contracted projects, a single pinch-point DSCR may be less relevant, especially if debt service reserves are ample.

[12] For minority interests in projects, the numerator of the DSCR ratio is the proportionate share of the operating company's CFADS, and the denominator of the ratio is the sum of the proportionate share of the operating company's debt service (including any debt service for obligations that sit between the operating company and the minority holding company) plus 100% of the minority holding company's debt service. This approach to calculating metrics may also inform our analysis of non-minority partially-owned projects. Please also see additional guidance in the section on notching factors.

[13] For clarity, debt service reserve draws that are due to insufficient net cash flows and subsequent replenishment of the debt service reserve are not included in CFADS.

» For non-amortizing projects, only the scheduled interest to be paid in the relevant period is used to calculate the DSCR.

» When the rating pertains to the senior secured facilities, we include only the interest and required principal repayment of the senior facilities, provided the project financing structure includes robust inter-creditor arrangements where fully subordinated and mezzanine lenders (junior facilities) have no rights to accelerate or enforce their rights until the senior facilities are repaid in full, and the payment of subordinated interest and principal is subject to distribution lock-up thresholds.[14] If this is not the case, we calculate the DSCR based on total debt (senior plus junior). Similarly, if there is holding company debt that does not benefit from similar robust intercreditor arrangements related to subordination and lack of rights, then we would analyze the project's financial metrics on a consolidated basis, including the holding company debt (see the "Notching Factors" section).

PROJECT CASH FROM OPERATIONS TO ADJUSTED DEBT:

The scoring of this sub-factor is primarily based on the average annual or minimum annual Project CFO/Debt over the debt term. Because project financings covered by this methodology encompass a wide range of financing structures and project types, the scoring of the projected Project CFO/Debt may be based on the forecast minimum annual Project CFO/Debt, or it may primarily be based on the average but informed by the minimum, or vice versa. For projects that are fully contracted over the debt term, we would typically use the average annual Project CFO/Debt over the debt term, because we would expect low variability over the debt term. For projects that are primarily dependent on non-contracted net cash flows, our focus is primarily on the forecast minimum annual Project CFO/Debt. This forecast average annual Project CFO/Debt may not reflect the intrinsic risk of the project, because cash flows may be very volatile over the debt term. In those cases, our assessment of the appropriate level of Project CFO/Debt used for scoring this sub-factor would also be informed by the expected stability/variability of the Project CFO/Debt and a comparison of the average annual and minimum annual Project CFO/Debt over the debt term. The assigned score ultimately represents our forward-looking view of the Project CFO/Debt level that represents the overall risk in the projected trajectory of the project's ability to service its debt.

To calculate Project CFO/Debt,[15] for any 12-month period, the numerator is project cash from operations and the denominator is the total adjusted debt of the project.

» Project cash from operations (Project CFO) equals CFADS (as defined above) less interest payments.

» Total adjusted debt equals total debt outstanding at the end of the 12-month period, adjusted for leases.[16]

» Project CFO/Debt for the relevant period is calculated by taking the sum of each annual Project CFO in that period and dividing by the sum of each period-end total adjusted debt.

[14] Although we may exclude this interest from the DSCR and Project CFO/Debt, we usually consider the impact of this additional debt on the credit profile of the project qualitatively. For example, additional subordinated or holding company debt can change the economics of the project and decrease the sponsor's incentives to support it in periods of stress. Additional debt can also increase the likelihood that the project's ownership will change during the tenor of the senior debt.

[15] For minority interests in projects, the numerator of the Project CFO/Debt ratio is the proportionate share of the operating company's CFO, and the denominator of the ratio is the sum of the proportionate share of the operating company's total adjusted debt (including any debt that sits between the operating company and the minority holding company) plus 100% of the minority holding company's debt. This approach to calculating metrics may also inform our analysis of non-minority partially-owned projects. Please also see additional guidance in the section on notching factors.

[16] For our approach to adjusting leases, please see our cross-sector methodology that discusses our financial statement adjustments used in the analysis of non-financial corporations. A link to our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this document.

FACTOR

Leverage and Coverage (30%*[1])

Sub-factor	Sub-factor Weighting	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
					Amortizing Debt Profile				
DSCR	**30%**								
DSCR (Cost Recovery)		Score DSCR at the level of off-taker credit quality							
DSCR (Low) [*2]		≥ 5x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.15x - 1.4x	1.05x - 1.15x	1x - 1.05x	< 1x
DSCR (Medium) [*3]		≥ 7x	5x - 7x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.2x - 1.4x	1.1x - 1.2x	< 1.1x
DSCR (High) [*4]		≥ 10	7x - 10x	5x - 7x	3.5x - 5x	2 - 3.5x	1.4x - 2x	1.2x - 1.4x	< 1.2x
					Non-amortizing Debt Profile				
DSCR	**15%**								
DSCR (Cost Recovery)		Score DSCR at the level of off-taker credit quality							
DSCR (Low)		≥ 5x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.15x - 1.4x	1.05x - 1.15x	1x - 1.05x	< 1x
DSCR (Medium)		≥ 7x	5x - 7x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.2x - 1.4x	1.1x - 1.2x	< 1.1x
DSCR (High)		≥ 10	7x - 10x	5x - 7x	3.5x - 5x	2 – 3.5x	1.4x - 2x	1.2x - 1.4x	< 1.2x
Project CFO / Adjusted Debt	**15%**								
Project CFO/Adjusted Debt (Cost Recovery)		Score Project CFO/Debt at the level of off-taker credit quality							
Project CFO/Adjusted Debt (Low) [*5]		≥ 40%	25% - 40%	15% - 25%	10% - 15%	6% - 10%	3% - 6%	1% - 3%	< 1%
Project CFO/Adjusted Debt (Medium) [*6]		≥ 65%	40% - 65%	25% - 40%	15% - 25%	9% - 15%	4% - 9%	2% - 4%	< 2%
Project CFO/Adjusted Debt (High) [*7]		≥ 90%	60% - 90%	35% - 60%	20% - 35%	12% - 20%	5% - 12%	3% - 5%	< 3%

[*1] For fully amortizing projects the weight of the DSCR is 30%. For non-amortizing or partially amortizing projects, the weight of the DSCR is 15% and the weight of the ratio of Project CFO/Adjusted Debt is 15%.

[*2] For the linear scoring scale, the Aaa endpoint value is 8x. A value of 8x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

[*3] For the linear scoring scale, the Aaa endpoint value is 10x. A value of 10x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

[*4] For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

[*5] For the linear scoring scale, the Aaa endpoint value is 55%. A value of 55% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

[*6] For the linear scoring scale, the Aaa endpoint value is 85%. A value of 85% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

[*7] For the linear scoring scale, the Aaa endpoint value is 120%. A value of 120% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Notching Factors

The Business Profile, Operating Risk, and Leverage and Coverage factors represent the key ratings drivers that reflect the fundamental business, operating and financial risks for an operating project with a standard project financing structure that does not require refinancing. However, the project's financing structure and whether it faces construction and ramp-up risks are also key components of our assessment of a project's credit profile. While many project finance structures follow a similar pattern, others are more bespoke in ways that can add to or mitigate risks. Construction and ramp-up add another dimension of risk for certain issuers. Notching factors capture some of the wide-ranging variances incorporated into project financing structures and the risks associated with projects in construction.

Our assessment of these notching factors may result in upward or downward adjustments to the preliminary outcome that results from the three weighted scorecard factors. Adjustments may be made in half-notch or whole-notch increments, based on the notching factors descriptions below. Off-taker Risk considerations can also constrain the rating.

In aggregate, the notching factors can theoretically result in a total of up to 4 upward notches or up to 21 downward notches from the preliminary outcome to arrive at the scorecard-indicated outcome. In cases where we consider that the credit weakness or credit strength represented by a notching factor, or by these factors in aggregate, is greater than the scorecard range, we incorporate this view into the project's rating, which may be different from the scorecard-indicated outcome.

Liquidity

Why It Matters

Liquidity is a fundamental consideration in our project rating assessment given its importance in providing a project with the ability to withstand periodic disruptions in the receipt of revenues due to unforeseen circumstances, including operational and performance issues. We typically consider liquidity sources that are available to a project in the form of debt service reserves, major maintenance reserves, operating or similar reserves and committed working capital facilities or other forms of supplemental, committed liquidity.

How We Assess It for the Scorecard

We may consider making an adjustment to the preliminary outcome from the scorecard depending on the overall level of liquidity incorporated into the project's financing structure. We typically consider the type (e.g., cash versus letter of credit versus surety bond), size and quality of the reserves (including the credit quality of the letter of credit or surety bond provider). In assessing the type of liquidity, we typically consider whether it is accessible on demand, and whether it adds to the project's debt when accessed. Cash, a letter of credit or an on-demand surety product are all considered liquid, whereas insurance or a surety performance bond guaranteeing contract performance is not generally considered liquid, owing to the potential for denial of a claim or delay in payment. We typically also consider the terms of the project-backed letter of credit or surety bond, including whether it extends to the term of the debt or if it has to be renewed before project debt is repaid. Moreover, we normally review the repayment terms related to a drawing thereunder and consider the impact that repayment will have on cash flow. A letter of credit or surety bond that is required to be repaid immediately upon drawing provides limited liquidity protection, whereas one that can be repaid over time can, depending on the terms, be very manageable for the project. The overall project liquidity assessment may result in an adjustment of two notches down to two notches up, although a two notch upward adjustment would be rare and limited to cases of exceptionally strong liquidity characteristics. Standard liquidity for projects typically would not result in any adjustment.

The level of liquidity that is considered standard depends on the potential cash flow volatility of the project. A six-month debt service reserve (DSR) is a standard liquidity feature for a fully contracted, fully amortizing project, but projects with higher cash flow volatility may require higher reserve levels, such as a 12-month DSR, in order to have no downward notching for liquidity, all else being equal. In cases where there are additional risks that could disrupt cash flow for an extended period of time, our baseline expectation for reserves would typically be higher. For example, stadium project financings are typically subject to risks of prolonged strike or other event risks that may disrupt cash flows for an extended period, and we would generally expect these projects to maintain at least 12 months of liquid reserves in order to receive no downward notching for this factor. A major maintenance reserve (MMR) may be considered necessary for a project with a lumpy maintenance profile and limited ability to recover the costs in the period in which they occur. An MMR and an operating reserve may also be necessary for projects with new technology and uncertain lifecycle needs in order to have no downward notching for liquidity.

We may also consider any supplemental levels of liquidity in addition to the DSR or the MMR. For example, a project with significant additional operating reserves, sponsor contingent equity commitments and committed working capital facilities in the structure in addition to a standard DSR and MMR would typically score up to one positive notch in this factor. However, while we consider reserves in their totality, these additional forms of liquidity do not replace the importance of having a dedicated debt service reserve in the financing structure, particularly in order for a project's debt to be rated in the investment-grade category.

Structural Features

Why It Matters

Because this methodology primarily applies to SPEs financed on a nonrecourse, project finance basis with a limited business purpose, having standard structural features is considered a baseline. Structural features place important controls on the issuer and provide rights to creditors that can help to decrease default risk, for instance due to step-in rights to cure defaults under project contracts, or lessen the severity of loss through collateral pledges.

For holding companies, including issuers with a minority ownership interest, key structural protections are those that help to assure a continued stream of distributions to the holder sufficient to meet its debt service requirements. Protections may be achieved through a combination of the terms of debt (if any) at the operating company, the holding company's/minority holder's debt terms, and a shareholders' agreement among the owners . However, some project structural features, such as cash traps at the operating company level, may increase risk to the creditors of holding companies/minority holders.

Otherwise healthy projects can be pulled into a sponsors' bankruptcy filing. In these cases, debt service may be kept current at the project level, but solvent healthy projects may be filed for bankruptcy protection due to the ease of operation from having all entities as debtors-in-possession while in bankruptcy. A project with multiple owners, each with bankruptcy blocking rights, is less likely to be pulled into a sponsor bankruptcy than a wholly owned project.

How We Assess It for the Scorecard

Financing arrangements for projects tend to be highly structured and offer protective elements to lenders, due in part to their high initial leverage levels. The baseline expectation for an assessment of the credit profile of a project as described in the preceding sections is that the financing structure includes the standard features below. The absence of one or more standard project finance structural features or the presence of unusually strong structural features that enhance protection for creditors may result in a downward or upward adjustment of up to two notches. A material weakness may cause the assigned rating to be below the scorecard-indicated rating, even after incorporating negative notching. As explained in the

"Scope of This Methodology" section, the lack of project finance structural features may also cause an issuer to be rated using a different methodology.

Some standard project finance structural features include:

- The project company is a limited purpose entity created to engage exclusively in the specified project business and enter into the relevant contracts
- Standard lender security package including security on all key project contracts, tangible assets, accounts, revenues and shares in the project company
- Trustee-administered cash flow waterfall of accounts
- Limitations on additional indebtedness, buying and selling assets, mergers and consolidations, and investment types
- Limitations on distributions of excess cash flows
- Limitations on change of control or ownership, especially if sponsors are important to the project
- Lender step-in rights and remedies to delay concession/lease termination or termination of material contracts
- Frequent and regular reporting of compliance with contractual and financial obligations
- Covenanted hedging policies, including for interest rates and commodity exposures, when the off-take or supply contracts do not transfer commodity risks to other parties
- Insurance that covers all typical project risks and provides business interruption with reasonable deductibles

We also consider the extent of ring-fencing protecting the project debt in determining the level of ratings separation from the sponsor's consolidated credit profile and in assessing the impact of upstream leverage (i.e., at an intermediate holding company level) on the rating of project level debt. For this analysis, we typically consider the extent of separation provided by the actual structural features in the project's transaction documents, including those listed above.

Additionally, we typically consider other elements of independence of the project from the sponsor, including whether or not there is a requirement to have at least one independent director and his or her role(s), particularly whether his or her affirmative vote is needed to take material corporate actions, including entering into a bankruptcy filing. These considerations may take on greater importance when the credit profile of the project is otherwise materially better than the credit quality of the sponsor/parent, or if the magnitude of any intermediate-level holding-company debt is significantly large such that the probability of default for upstream entities from an owner-induced voluntary bankruptcy is substantial. In circumstances where the project-level debt holder's position is weakened by the existence of a weak sponsor or upstream leverage, the project rating could be notched lower to reflect this higher risk of default if adequate ring-fencing measures are not in place.

Other considerations in assessing the level of ratings separation between the sponsor and the project include the sponsor's intentions, the structure of the ownership and the underlying contractual arrangements and economics.

Contractual arrangements at the project level can also be important considerations for assessing the impact of a stressed sponsor on a project. For instance, in assessing whether a sponsor is likely to seek voluntary bankruptcy protection for the project, we may consider any contractual relationships between the sponsor

and the project, whether a project bankruptcy would lead to a termination event under any project contract(s) and whether the termination event would benefit the sponsor or be harmful to the sponsor (or the sponsor's creditors).

The requirement of a termination payment in the event of a termination event may be a cause for an upward notching adjustment if the required payment (1) is sized to cover and repay all outstanding debt; and (2) will be paid by a creditworthy counterparty.

We score structural features based on their effect on the creditors at the level of the debt we are rating. For projects with rated debt at a holding company (whether wholly, partially or minority owned), we consider structural strengths and weaknesses in this notching factor from the perspective of how they may affect the project and the distributions expected to be received. Structural features may also affect our assessment of the Priority of Claim, Structural Subordination, and Double Leverage notching factor.

For projects with a minority ownership interest, we typically assess the extent to which the structural features of all relevant agreements provide the minority owner's creditors with key protections help to assure a continued stream of distributions to the minority holder sufficient to meet its debt service requirements. For example, the shareholders' agreement may provide minority owners with veto rights over key decisions (such as material changes to the underlying business, distributions, incurrence of debt, filing for bankruptcy), while the terms of the debt at the holding company may prescribe the minority owner's exercise of these rights.

Refinancing Risk

Why It Matters

A project that requires access to the capital markets to refinance all or a portion of the project debt outstanding at its contractual maturity date increases credit risk due to the uncertainty surrounding the availability of credit in the future and the issuer's ability to achieve manageable credit terms. Refinancing risk is especially pronounced for projects that are experiencing other issues, e.g., operational difficulties, contractual disputes, counterparty weakness, or changed market dynamics.

How We Assess It for the Scorecard

In this notching factor, we consider the size, timing, and profile of the refinancing need relative to the certainty of future cash flows; any risk mitigants the issuer has in place, such as liquidity reserves, cash sweeps, and long-term interest rate hedges; credit market conditions and appetite for the type of project; and the expected impact the refinancing will have on leverage and coverage metrics, inclusive of holding company and subordinate debt.

In this factor, refinancing risk can have up to three notches (one full alpha rating category) of negative impact on the scorecard-indicated outcome, but project issuer's ratings incorporate our full view of the impact of refinancing risk when it exists. Thus, pronounced or imminent refinancing risk may cause an issuer's assigned rating to be below its scorecard-indicated rating. We may not apply downward notching to projects that are very resilient or well protected from refinancing risk. There is no possible upward notching under this category.

Construction and Ramp-Up Risk

Why It Matters

The scorecard before considering this factor is oriented to a project with steady state operations, and construction can add material, incremental risk, since the project cannot operate if it is not completed. Depending on the nature of the project, the timeframe of post-completion ramp-up of the project to its contractual requirements or its full competitive potential can also be a very sensitive period that has a large bearing on the overall success of the project.

How We Assess It for the Scorecard

In assessing this factor, we consider the incremental risk posed by construction or ramp-up to full operations, as well as the principal mitigants for these risks. We typically assess construction complexities and the possibility for cost overruns or delays, contractual mitigants and available liquidity. Where construction risks are moderate and well-mitigated, we may not apply any notching. In cases where construction or ramp-up risks are material, we may adjust the scorecard-indicated outcome downward by as much as three notches. When we view that construction or ramp-up risk is so severe that it would not fully be captured by a three-notch downward adjustment, the assigned rating may be lower than the scorecard-indicated outcome, and in some cases, significantly lower. In cases where construction or ramp up risk is a rating constraint, the credit profile of a project financing would typically improve when the project is completed and has established steady-state operations and a post-construction financial performance history.

Construction risk covers the period from financial close to final completion of the project, whereas ramp-up covers the period between completion and steady state where the project starts generating revenues but may still be exposed to market acceptance or performance tuning and start-up commissioning risks. In projects with phased construction, ramp-up on earlier phases may coincide with construction during later phases.

We employ the general guiding principles discussed in our methodology for privately financed public infrastructure projects (PFI/PPP/P3)[17] in the construction period to assess the magnitude of construction and ramp-up risk and the appropriate level of downward notching adjustments, if any, to the scorecard-indicated outcome before considering this factor. Some key aspects considered in the assessment of construction risk may include: an assessment of the complexity of the asset being constructed, including the construction methods, constraints and other considerations; the construction risk allocation; the constructor's experience, credit strength and contractual requirements; the amount of liquidity available for delays and/or cost overruns; and the robustness of construction period monitoring.

Our liquidity analysis during the construction period typically considers whether the project has the ability to pay cost overruns and debt service during construction until such time that the project is able to begin receiving revenue.

The liquidity available to mitigate a delay could be a combination of liquidated damages obligated to be paid by the EPC contractor, letters of credit, cash-funded debt service reserves, funded contingency amounts included in the project budget, committed cost overrun facilities and cash holdbacks.

The relative importance of the credit quality of the contractor in our assessment of construction risk generally depends on the extent of the project's reliance on any unsupported LDs from the contractor and

[17] Private finance initiatives and public-private partnerships, or P3s. For a link to an index of our sector and cross-sector methodologies, please see the "Moody's Related Publications" section.

the ease of finding a replacement contractor with similar expertise at a similar price. Liquidity risk during construction can be mitigated if the LDs are supported by standby external sources, such as letters of credit from highly rated banks.

The same considerations would apply to projects with expansion capital investment, for instance an increase in the scope or capacity of the project.

Priority of Claim, Structural Subordination and Double Leverage

Why It Matters

The scorecard-indicated outcome before considering this factor is typically oriented to a senior secured debt rating of an operating project and does not consider debt positioning within a consolidated capital structure. Debt positioning can lead to downward notching in the scorecard.

For project finance debt, the terms of the financing structure typically have a high degree of influence on the relative credit risk of different debt classes, including holding company debt,[18] due to the payment priorities set out in the project finance waterfall. Unlike a typical (non-LBO) corporate structure, where cash flows quite freely among affiliates, such that the probability of default is very close among debt classes at all levels of the corporate family, many project finance structures contain distribution tests and cash traps that can cause probabilities of default for different debt classes to diverge. Project finance debt classes are thus typically notched,[19] relative to one another, based on the priority of claim in a distress scenario for the project as a whole and based on the incremental risk of default for each debt class. In the case of minority holding company debt, probability of default may be further differentiated. The project waterfall may specify the payments that are paid directly to the minority owner, such that the probability of an interruption of distributions is the same for the minority owner and the majority owner, or the minority holder may face incremental risks, for example that the majority owner might withhold distributions in order to make further investments in the project operating company.

How We Assess It for the Scorecard

The most typical structural feature that differentiates default probability is the minimum DSCR for distributions. Since debt service at the holding company debt is typically paid solely from distributions from the project operating company, a high minimum DSCR distribution test is a strength for the project, but it materially increases the risk of default at the holding company. We would also consider how close the actual DSCR is to the minimum. If the DSCR distribution test is set at 1.25x and the project has an established, stable DSCR in the range of 2.0x, we may consider that holding company debt has relatively minor incremental default risk. If the DSCR distribution test is set at 1.25x and the actual DSCR is in the range of 1.3x-1.4x or is volatile, the downward notching of the holding company debt below the senior secured project debt would generally reflect both the higher expected default risk and the higher expected loss given default. For a holding company with a minority interest in the underlying project(s), we consider how the project's performance, in combination with the transaction agreements, affect probability of default and loss upon default at that level. Considerations may include the control, if any, that minority holders have over the dividend policy; major uses of cash, such as expansion, acquisitions and operating company capital expenditures; key business decisions, such as incurrence of additional debt; and key corporate decisions, including filing for bankruptcy. Limited control or absence of control is likely to lead to a greater downward notching adjustment.

[18] Debt at a holding company on top of debt at the project operating company is also called double leverage.

[19] For the purposes of the notching guidance in this methodology, and on the basis of historical average loss experience across corporate ratings at various horizons, a one-notch downgrade can be thought of as generally implying an average 60% increase in expected losses for investment-grade ratings (Aaa to Baa3) and generally implying an average 40% increase in expected losses for non-investment-grade ratings (Ba1 and lower).

In addition to considering the DSCR distribution test and robustness of senior cash flows relative to those tests, ratings for junior classes would typically also consider the DSCR based on the total debt burden.[20] When the overall debt burden is unsustainable, ratings of senior debt may also be negatively affected. In these cases, we would also consider the strength of the intercreditor protections for senior lenders and the track record of the jurisdiction in upholding the contractual rights of senior creditors.

In assessing relative loss given default of the different debt classes, we would typically consider the amount of debt and percentage of total debt that each class represents. As a project nears default, notching among debt classes may widen, because there may be more granular information about expected recovery values and the loss implication for each debt class.

Off-taker Risk

A key consideration for most contracted project financings is the credit quality of the off-taker. For fully contracted projects, the off-taker may represent the sole source of revenues, and the long-term purchase contract with the off-taker is often a fundamental project strength because it insulates the project from market forces, such as changes in commodity prices or a reduction in demand for services. The level of dependence on the off-taker is related to the difficulty the project would encounter in finding a replacement contract on substantially similar terms. When such a replacement is readily available, dependence on the off-taker is low. In assessing a project's level of dependence on the off-taker, we consider the sensitivity of the project rating to off-taker(s) credit quality. There is typically a high dependence on an off-taker in cases where (i) 10% or more of the project's revenue is fully contracted under a long-term purchase contract with the off-taker and (ii) the project meets a specific need of the off-taker, and may be less valuable to other potential off-takers, such that the contract may not easily be replaced on the same terms.

In cases where the project has a high dependence on the off-taker, the credit profile of the off-taker typically acts as a constraint on the project's rating. However, there may be some de-linkage when an off-taker is undergoing stress, when there is often case-specific information. For instance, we may have a better view of the likelihood that the off-taker payments would continue in a bankruptcy scenario, or the recovery implications for the project if it were to sell its products or services into a competitive market.

Please see Appendix C for more information on our assessment of off-taker credit quality when there is high dependence and our use of credit estimates.

In addition to credit quality, our assessment of off-taker risk may include considerations related to the strategic importance of the project to the off-taker and the relationship between the project and the off-taker, especially any indications of off-taker satisfaction or dissatisfaction with the project's operations or the value of the product and services that the project provides relative to equivalent market alternatives.

[20] For project holding companies, including those with a minority interest, we may also consider how robust the distributions projected to be received are in relation to debt service at that level, taking into consideration the typically greater volatility of cash flows at the holding company level relative to the operating company. We may assess the holding company's proportionate share of the residual cash flow available after the operating company has serviced all operating company debt (and any intermediate holding company debt senior to the rated debt) compared to the holding company's total debt and debt service, and we may perform scenario analysis. If cash coverage of debt or debt service at the holding company is weak, or we consider that there is some weakness in the stability of holding company cash flows, greater downward notching is likely. Stronger ratios combined with strong stability of holding company cash flows may support lower or, in very limited cases, even no downward notching adjustment.

Other Considerations

Ratings may reflect consideration of additional factors that are not in the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors include financial controls and the quality of financial reporting; corporate legal structure; the quality and experience of management; assessments of corporate governance as well as environmental and social considerations; exposure to uncertain licensing regimes; and possible government interference in some countries. Regulatory, litigation, liquidity, technology and reputational risk as well as changes to consumer and business spending patterns, competitor strategies and macroeconomic trends also affect ratings.

Following are some examples of additional considerations that may be reflected in our ratings and that may cause ratings to be different from scorecard-indicated outcomes.

Other Counterparty Risks

A key consideration for all project financings is the extent to which a project is exposed to counterparty risk. Rapid deterioration of the financial condition of a project's key counterparty could have a significant adverse impact on the project's cash flows. A project may also have credit exposure when a material contract contains termination provisions based on a third party, for example the ability to terminate upon the actions, inactions or bankruptcy of the sponsor or its affiliates.

Insufficient contractual protection may also weaken a project's resiliency to adverse shocks. For example, a project can be significantly exposed to force majeure risks due to its limited business scope and small asset size. Where key insurance protections are limited or absent, for example a long deductible period before the project can receive business interruption payments, a project would be entirely dependent on its reserves and any sponsor support to bridge the period until it can generate cash flow. Also of importance are the force majeure provisions in the off-taker contract, including the requirements for a return to service and any deadline that may be imposed.

Other counterparty risks for a contracted project include the potential loss or termination of fuel supply, transportation or hedging contracts, an insurance policy, or construction or operating contracts.

Structural Weakness or Complexity

Projects are contractually based. In a well-structured project, many important risks are allocated to parties able to efficiently manage them, including a construction contract, an operating and maintenance contract, a supply/fuel contract, and financing contracts. In order to be effective in allocating risks to other parties, the various contracts need be structured to work in concert. For example, in order for lenders to have a collateral interest in an off-take agreement and step-in rights to cure a default by the project, there needs to be a consent to assignment that includes these provisions. In cases where contracts or gaps in contracts expose a project to risks that are not captured in the scorecard, the assigned rating may be lower than the scorecard-indicated outcome.

Projects exhibiting an unusual level of structural complexity and diversity of key counterparties can become exposed to increasing documentation, counterparty, contract administration and dispute risks that may cause assigned ratings to be lower than scorecard-indicated outcomes.

Management Strategy

The quality of project and sponsor management is an important factor supporting a project's credit strength. Assessing the execution of business plans over time can be helpful in assessing management's business strategies, policies and philosophies and in evaluating management performance relative to performance of competitors and our projections. Management's track record of adhering to stated plans, commitments and guidelines provides insight into management's likely future performance, including in stressed situations.

Financial Controls and Technical Advisors

We rely on the accuracy of audited financial statements and/or financial models to assign and monitor ratings in this sector. The quality of financial statements and/or financial models may be influenced by internal controls, including the proper tone at the top, centralized operations and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statement or delays in regulatory filings may indicate weaknesses in internal controls.

We may also rely to a varying extent on the opinions and estimates of technical advisors, for instance an independent engineer's assessment of construction risk, a market advisor's report on the nature and depth of demand and competitive sources of supply, or a geological advisor's estimate of the extent of a natural resource and its likely cost of production. Material revisions in these advisors' opinions and estimates can cause our forward view of financial metrics to change, or they can change our overall confidence level that the project can achieve a particular level of cash flow. For instance, a geological consultant might call into question its own prior estimate of total resource based on lower production levels in the initial phase of a project before it can re-estimate the resource. The resultant uncertainty could cause the assigned project rating to be below the scorecard-indicated outcome.

Additional Metrics

The metrics included in the scorecard are those that are generally most important in assigning ratings to issuers in this sector; however, we may use additional metrics to inform our analysis of specific projects. These additional metrics may be important to our forward view of metrics that are in the scorecards or other rating factors. For instance, for amortizing projects we may look at project availability and forced outage rates, actual versus budgeted costs of operations and their trends, and the cost and schedule of major maintenance outages relative to budget. For non-contracted projects, we may place additional consideration on trends in revenues, costs and operating margins. We also generally consider trends affecting cash flow available to make payments to reduce debt under sweep mechanisms.

Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness, which may cause actual ratings to be lower than the scorecard-indicated outcome. Event risks — which are varied and can range from leveraged recapitalizations of sponsors/owners or off-takers to sudden regulatory changes to force majeure events that interrupt contracts to liabilities from an accident — can overwhelm even a stable, well-capitalized project. Some other types of event risks include M&A, asset sales, spin-offs, litigation, pandemics, significant cyber-crime events and shareholder distributions.

Environmental, Social and Governance Issues

Environmental, social and governance (ESG) considerations may affect the ratings of issuers in the generic project finance sector.

Project finance issuers are subject to varying degrees of regulatory oversight, including environmental standards, an area of increasing scrutiny with possible regulatory changes, notably in the area of carbon emissions. Due to the wide variety of project finance issuers rated using this methodology, the extent of exposure to carbon transition risks[21] ranges from very high to very low. Effects of carbon and other regulations may entail limitations on operations, higher costs, and higher potential for technology disruptions and demand substitution. Regional differences in regulation, implementation or enforcement may advantage or disadvantage particular issuers. Our view of future regulations plays an important role in our expectations of future financial metrics as well as our confidence level in the ability of an issuer to generate sufficient cash flows relative to its debt burden over the medium and longer term. While financial metrics are considered in the scorecard, in some circumstances, regulatory considerations may also be a rating factor outside the scorecard, for instance when regulatory change is swift.

In assessing the environmental regulatory exposure of a carbon-intensive project or a project related to a carbon-intensive product such as coal, oil or petrochemicals, we would generally consider the potential long-term implications of such regulation on each material counterparty. For example, the strategic importance of a coal-related project to the off-taker could decrease over time if the demand for coal were to drop as customers substituted other fuels in their operations. Even if the project were contractually insulated from demand and price risks, increased regulations could render the contract less economically attractive to the off-taker and increase credit risk for the project. For instance, the off-taker might seek to strictly enforce provisions permitting termination due to operational difficulties, whereas in a more benign economic and regulatory environment, the off-taker might have been willing to work with the project to cure the problem or to defer any enforcement. Similarly, a project in a sector that is in secular decline is less likely to receive discretionary support from the sponsor/parent.

Governance issues are important for sponsors and may be important for projects, although strong structural features of a project financing may mitigate many governance-related risks. Among the areas of focus in corporate governance are audit committee financial expertise, the incentives created by executive compensation packages, related party transactions, interactions with outside auditors and ownership structure. For some projects, social issues may also be important considerations.

For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.[22]

Sponsor/Parent Support

While sponsor support is considered in the scorecard, in some cases that support may have more impact on ratings than indicated in the scorecard. For example, a number of project finance issuers are government-related issuers that may get uplift in their ratings due to expected government support. However, for certain issuers, government ownership can have a negative impact on the underlying baseline credit assessment. For example, price controls, onerous taxation and high distributions can have a negative effect on an issuer's underlying credit profile.

[21] Generally, carbon transitions risks relate to an expectation that regulations will mandate overall lower emissions of carbon-containing gases such as carbon dioxide and methane over time. For instance, a tax on carbon emissions could increase operating costs for a carbon-intensive enterprise, decrease demand, create product substitution risks, and accelerate the development of alternative technologies.

[22] An index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

For construction projects, the timing and certainty surrounding the funding of the equity in a project is also a key part of our analysis. If equity is not injected at financial close, the rating could be negatively affected if the project does not have equity commitments that are provided by highly rated sponsors or supported by letters of credit issued by highly rated banks.

Assigning Issuer-Level and Instrument-Level Ratings

After considering the scorecard-indicated outcome, other considerations and relevant cross-sector methodologies, we typically assign a senior secured project finance instrument rating. We may also assign ratings to other debt classes and to project finance holding companies in accordance with the "Notching Factors" section above. For issuers that benefit from rating uplift from government ownership, we may assign a Baseline Credit Assessment.[23] We may also assign an issuer rating.

Key Rating Assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.[24]

Limitations

In the preceding sections, we have discussed the scorecard factors and many of the other considerations that may be important in assigning ratings. In this section, we discuss limitations that pertain to the scorecard and to the overall rating methodology.

Limitations of the Scorecard

There are various reasons why scorecard-indicated outcomes may not map closely to actual ratings.

The scorecard in this rating methodology is a relatively simple tool focused on indicators for relative credit strength. Credit loss and recovery considerations, which are typically more important as an issuer gets closer to default, may not be fully captured in the scorecard. The scorecard is also limited by its upper and lower bounds, causing scorecard-indicated outcomes to be less likely to align with ratings for issuers at the upper and lower ends of the rating scale.

The weights for each factor and sub-factor in the scorecard represent an approximation of their importance for rating decisions across the sector, but the actual importance of a particular factor may vary substantially based on an individual issuer's circumstances.

Factors that are outside the scorecard, including those discussed above in the "Other Considerations" section, may be important for ratings, and their relative importance may also vary from project company to project company. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.[25] Examples of such considerations include the following: how sovereign credit quality affects non-sovereign issuers, the assessment of credit

[23] For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

[24] A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

[25] A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

support from other entities, the relative ranking of different classes of debt and hybrid securities, and the assignment of short-term ratings.

We may use the scorecard over various historical or forward-looking time periods. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way.

General Limitations of the Methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. Issuers in the sector may face new risks or new combinations of risks, and they may develop new strategies to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for an issuer's future performance; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as scorecard inputs or in other considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, industry competition, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

Appendix A: Using the Scorecard to Arrive at a Scorecard-Indicated Outcome

1. Measurement or Estimation of Factors in the Scorecard

In the "Discussion of the Scorecard Factors" section, we explain our analytical approach for scoring each scorecard factor or sub-factor,[26] and we describe why they are meaningful as credit indicators.

The information used in assessing the sub-factors is generally found in or calculated from information in the project's financial statements or regulatory filings, derived from other observations or estimated by Moody's analysts. We may also incorporate non-public information.

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of an issuer's performance as well as for peer comparisons. Debt service coverage ratios are calculated on a forward-looking basis for the relevant projection period, as described in the discussion of the Leverage and Coverage factor. Project CFO to adjusted debt is calculated on a forward-looking basis over the debt term. Our view of forward-looking ratios may be informed by historical ratios. Furthermore, the factors in the scorecard can be assessed using different time periods. For example, rating committees may find it analytically useful to examine both historical and expected future performance for different time periods.

Financial metrics may incorporate analytical adjustments that are specific to a particular project financing.

2. Mapping Scorecard Factors to a Numeric Score

After estimating or calculating each sub-factor, each outcome is mapped to a broad Moody's rating category (Aaa, Aa, A, Baa, Ba, B, Caa or Ca, also called alpha categories) and to a numeric score.

Qualitative factors are scored based on the description by broad rating category in the scorecard. The numeric value of each alpha score is based on the scale below.

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	3	6	9	12	15	18	20

Source: Moody's Investors Service

Quantitative factors are scored on a linear continuum. For each metric, the scorecard shows the range by alpha category. We use the scale below and linear interpolation to convert the metric, based on its placement within the scorecard range, to a numeric score, which may be a fraction. As a purely theoretical example, if there were a ratio of revenue to interest for which the Baa range was 50x to 100x, then the numeric score for an issuer with revenue/interest of 99x, relatively strong within this range, would score closer to 7.5, and an issuer with revenue/interest of 51x, relatively weak within this range, would score closer to 10.5. In the text or table footnotes, we define the endpoints of the line (i.e., the value of the metric that constitutes the lowest possible numeric score, and the value that constitutes the highest possible numeric score).

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
0.5-1.5	1.5-4.5	4.5-7.5	7.5-10.5	10.5-13.5	13.5-16.5	16.5-19.5	19.5-20.5

Source: Moody's Investors Service

[26] When a factor comprises sub-factors, we score at the sub-factor level.

3. Determining the Overall Scorecard-Indicated Outcome

The numeric score for each weighted sub-factor (or each factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor), with the results then summed to produce an aggregate numeric score before notching factors (the preliminary outcome). We then consider whether the preliminary outcome that results from the three weighted factors should be notched upward or downward[27] in order to arrive at an aggregate numeric score after notching factors (the preliminary outcome after notching) based on Liquidity, Structural Features, Refinancing Risk, Construction and Ramp-Up Risk, and Priority of Claim, Structural Subordination and Double Leverage, or constrained based on Off-taker Risk considerations. In aggregate, the notching factors can result in a total of up to 4 upward notches or up to 21 downward notches from the preliminary outcome. This preliminary outcome after notching may be adjusted downward (not upward) based on our assessment of Off-taker Risk considerations, which can act as a cap on the scorecard-indicated outcome.

The aggregate numeric score before and after notching factors and after Off-taker Risk considerations is then mapped back to an alphanumeric based on the ranges in the table below. For example, an issuer with an aggregate numeric score before notching factors of 11.7 would have a Ba2 preliminary outcome based on the ranges in the table below. If the combined notching factors totaled two upward notches, the aggregate numeric score after notching factors would be 9.7, which would map to a Baa3 preliminary outcome before notching. If there were no off-taker constraint, the scorecard-indicated outcome would also be Baa3.

[27] Numerically, a downward notch adds 1 to the score, and an upward notch subtracts 1 from the score.

EXHIBIT 5

Scorecard-Indicated Outcome

Scorecard-Indicated Outcome	Aggregate Numeric Score
Aaa	x ≤ 1.5
Aa1	1.5 < x ≤ 2.5
Aa2	2.5 < x ≤ 3.5
Aa3	3.5 < x ≤ 4.5
A1	4.5 < x ≤ 5.5
A2	5.5 < x ≤ 6.5
A3	6.5 < x ≤ 7.5
Baa1	7.5 < x ≤ 8.5
Baa2	8.5 < x ≤ 9.5
Baa3	9.5 < x ≤ 10.5
Ba1	10.5 < x ≤ 11.5
Ba2	11.5 < x ≤ 12.5
Ba3	12.5 < x ≤ 13.5
B1	13.5 < x ≤ 14.5
B2	14.5 < x ≤ 15.5
B3	15.5 < x ≤ 16.5
Caa1	16.5 < x ≤ 17.5
Caa2	17.5 < x ≤ 18.5
Caa3	18.5 < x ≤ 19.5
Ca	19.5 < x ≤ 20.5
C	x > 20.5

Source: Moody's Investors Service

In general, the scorecard-indicated outcome is oriented to the senior secured rating. For issuers that benefit from rating uplift from parental support, government ownership or other institutional support, we consider the underlying credit strength or Baseline Credit Assessment for comparison to the scorecard-indicated outcome. For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers.[28]

[28] A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

Appendix B: Generic Project Finance Scorecard

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Business Profile (50%)									
Market Position	25%	Monopoly and sole provider of highly essential service over the debt term.	Entrenched monopoly for service/product over the debt term.	Limited competition for service/product over the debt term or very strong market position that is expected to remain very stable over the debt term.	Project is exposed to some competition but has a strong market position that is expected to remain relatively stable over the debt term.	Project is exposed to broad competition and has a moderate to somewhat strong market position that is expected to remain relatively stable over the debt term.	Project is exposed to broad competition and has a somewhat weak market position that is exposed to market changes over the debt term.	Project is exposed to intense competition and has an untested, uncertain or very weak market position that is significantly exposed to market changes over the debt term.	Project is exposed to intense competition and has an untested, uncertain or materially eroding market position that is likely to result in insufficient cash flow to cover the debt outstanding.
Predictability of Net Cash Flows	25%	Extremely high predictability of net cash flows with availability-like or guaranteed payments; and off-taker(s) have extremely strong credit profile(s), typically Aaa-equivalent.	Very high degree of predictability of net cash flows. Contracted net cash flows have no material volume/price risk; and off-taker(s) have very strong credit profile(s), typically Aa-equivalent. OR Long history of generating stable net cash flows with little to no exposure to economic	High degree of predictability of net cash flows. Contracted net cash flows have limited volume/price risk; and off-taker(s) have strong credit profile(s), typically A-equivalent. OR Demonstrated track record of generating stable net cash flows with limited exposure to economic	Good degree of predictability of net cash flows. Contracted net cash flows have moderate volume/price risk; and off-taker(s) have moderate credit profile(s), typically Baa-equivalent. OR Fairly certain and stable net cash flows modestly exposed to economic cycles or	Some degree of uncertainty with respect to net cash flows. Contracted net cash flows have notable volume/price risk; and off-taker(s) have moderate to weak credit profile(s), typically Ba-equivalent. OR Uncertain and volatile net cash flows exposed to economic cycles or	Material uncertainty with respect to net cash flows. Limited contracted net cash flows that may have material volume/price risk; and off-taker(s) have weak credit profile(s), typically B-equivalent. OR Uncertain and volatile net cash flows that are highly exposed to economic	Highly uncertain net cash flows. No contracted net cash flows or contracted net cash flows are highly volatile with contract exposed to potential termination; and off-taker(s) have very weak credit profile(s), typically Caa-equivalent. OR Highly uncertain and volatile net	Unknown, zero or negative net cash flows. No contracted net cash flows and contracted net cash flows are exposed to potential termination; and off-taker(s) have extremely weak credit profile(s). OR Highly uncertain and volatile non-contracted revenues with irreversible exposure to economic

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
			cycles or changes in user preferences OR Project provides a service/ product at highly competitive rates where it is highly unlikely to have a new lower-cost competitor.	cycles or changes in user preferences OR Project provides a service/ product at competitive rates where it is unlikely to have a new lower-cost competitor.	changes in user preferences.	changes in user preferences	cycles or changes in user preferences	cash flows with material exposure to economic cycles or changes in user preferences	downturns or changes in user preferences.
Factor: Operating Risk (20%)									
Technology	5%	Absence of or very limited exposure to a commercially proven technology/ process with minimal if any moving components.	Simple, commercially proven technology/process with minimal moving components.	Simple, commercially proven technology/ process with few moving components.	Commercially proven technology/process with some complex elements but well understood and considered standard for the industry. OR Commercially proven technology/ process that has experienced limited operating challenges that are unlikely to reoccur.	Commercially proven technology/ process with several complex elements requiring specialized skills to operate and maintain. OR Commercially proven technology/ process that has experienced periodic operating challenges that may reoccur at times.	Most of technology is considered to be proven, but certain elements are untested or have limited operating history. OR Commercially proven technology/ process that has experienced significant operating challenges that are likely to persist.	Commercial technology is unproven and untested with no operating track record, or technology has high obsolescence risk. OR Commercially proven technology/ process that has experienced material operating challenges that are highly likely to continue.	Commercial technology is unproven and untested with no operating track record and unlikely to perform as expected. OR Commercially proven technology/ process that has experienced irreversible operating challenges.

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Capital Reinvestment	5%	No capital reinvestment exposure.	Limited capital reinvestment required to maintain strong operating performance. Capital work is easily scheduled with no real operating impact. Excess cash flow comfortably exceeds amount needed to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with strong credit quality, typically A-equivalent or higher.	Modest, predictable and easily scheduled capital reinvestment required to maintain good operating performance. Capital work has limited operating impact. Excess cash flow exceeds amount needed to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with above-average credit quality, typically Baa-equivalent.	Ongoing capital reinvestment required to maintain satisfactory operating performance to meet contractual performance standards. Capital work has some operating impact but can be scheduled to limit downtime. Excess cash flow is sufficient to fund all capital needs over the debt term. OR Capex costs are fully recovered from off-taker with average credit quality, typically low-Baa-to-high-Ba-equivalent.	Active major maintenance and capital reinvestment essential to operating performance. Capital work impacts operations by requiring the project to be off-line for some time. Excess cash flow is not sufficient to fund all capital needs over the debt term and some additional debt may be issued. OR Capex costs are fully recovered from off-taker with speculative-grade credit quality.	Material capital reinvestment required. Capital work requires project to be off-line for a sizable time period. Excess cash flow is not sufficient to fund all capital needs over the debt term and material additional debt is likely to be issued. OR Capex costs are fully recoverable from off-taker with highly speculative-grade credit quality.	Capital reinvestment required to operate the project exceeds the value of the project. Operations are expected to be negatively impacted by insufficient capital reinvestment. Additional debt required to fund all capital needs over the debt term. OR Capex costs are fully recoverable from off-taker that is unable to adequately fund them.	Capital reinvestment required to operate the project materially exceeds the value of the project. Operations have been negatively affected by insufficient capital reinvestment. Additional debt required to fund all capital needs. OR Capex costs are fully recoverable from an off-taker that cannot or will not fund them given uneconomical project.

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Operating Track Record	5%	No project operating exposure. May have limited contract administration exposure.	Excellent operating track record in top tier compared to industry norms for asset performance.	Strong operating track record better than industry norms for asset performance.	Average operating track record in line with industry norms for asset performance.	Adequate operating track record with some issues. OR No operating track record but high expectation of adequate operating performance when operations begin.	Limited or challenging operating track record. OR No operating track record with uncertain expectations for operating performance when operations begin.	Weak operating track record with volatile or uncertain operating profile despite years of operations. OR No operating track record with highly uncertain expectations for operating performance when operations begin.	Very poor operating track record with volatile operating history. OR No operating track record and expect poor operating performance when operations begin.

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Operator and Sponsor Experience, Quality and Support	5%	Best-in-the-industry operator/sponsor with unmatched experience, extremely strong credit profile and an unparalleled track record of excellent performance and will unquestion-ably support the project in any capacity at any time.	Highly experienced operator/sponsor with very strong credit profile and an extensive track record of strong performance. Sponsor has a demonstrated track record of providing financial or operational support to the project without question. Sponsor support is certain if performance problems occur.	Experienced operator/sponsor with a strong credit profile and an established track record of very good performance. Sponsor has provided operational or financial support when needed. Sponsor support is highly likely if performance problems occur.	Competent operator/sponsor with a moderate credit profile and a limited track record of performance but expected to be capable. Sponsor has provided operational or financial support to the project at times. Sponsor support is likely if performance problems occur.	Operator/sponsor has limited track record with the project type or industry and may have a moderate to weak credit profile. Sponsor may have provided limited operational or financial support to the project. Future sponsor support is unlikely if performance problems occur.	Operator/sponsor has very limited track record with the project type or industry or a challenging operating history with weak performance on similar projects and may have a weak credit profile. Sponsor has not supported or was unable to support the project in the past when needed. Sponsor support is highly unlikely if performance problems occur.	Inexperienced or financially weak operator/sponsor with little to no track record or experience with the project type or industry and a very weak credit profile. No sponsor support expected if performance problems occur.	Substandard operator/sponsor with no track record or experience with the project type or industry or past experience is poor and credit profile is extremely weak. No sponsor support expected if performance problems occur.
Factor: Leverage and Coverage (30%)									
					Amortizing Debt Profile				
DSCR	**30%**								
DSCR (Cost Recovery)					Score DSCR at the level of off-taker credit quality				
DSCR (Low) *2		≥ 5x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.15x - 1.4x	1.05x - 1.15x	1x - 1.05x	< 1x
DSCR (Medium) *3		≥ 7x	5x - 7x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.2x - 1.4x	1.1x - 1.2x	< 1.1x

Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
DSCR (High) *4		≥ 10	7x - 10x	5x - 7x	3.5x - 5x	2 - 3.5x	1.4x - 2x	1.2x - 1.4x	< 1.2x
					Non-amortizing Debt Profile				
DSCR	**15%**								
DSCR (Cost Recovery)					Score DSCR at the level of off-taker credit quality				
DSCR (Low)		≥ 5x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.15x - 1.4x	1.05x - 1.15x	1x - 1.05x	< 1x
DSCR (Medium)		≥ 7x	5x - 7x	3.5x - 5x	2x - 3.5x	1.4x - 2x	1.2x - 1.4x	1.1x - 1.2x	< 1.1x
DSCR (High)		≥ 10	7x - 10x	5x - 7x	3.5x - 5x	2 – 3.5x	1.4x - 2x	1.2x - 1.4x	< 1.2x
Project CFO / Adjusted Debt	**15%**								
Project CFO/Adjusted Debt (Cost Recovery)					Score Project CFO/Debt at the level of off-taker credit quality				
Project CFO/Adjusted Debt (Low) *5		≥ 40%	25% - 40%	15% - 25%	10% - 15%	6% - 10%	3% - 6%	1% - 3%	< 1%
Project CFO/Adjusted Debt (Medium) *6		≥ 65%	40% - 65%	25% - 40%	15% - 25%	9% - 15%	4% - 9%	2% - 4%	< 2%
Project CFO/Adjusted Debt (High) *7		≥ 90%	60% - 90%	35% - 60%	20% - 35%	12% - 20%	5% - 12%	3% - 5%	< 3%
Liquidity			(notching factor)						
Structural Features			(notching factor)						
Refinancing Risk			(notching factor)						
Construction and Ramp-up Risk			(notching factor)						
Priority of Claim, Structural Subordination and Double Leverage			(notching factor)						
Off-taker Risk			Potential Constraint						

*1 For fully amortizing projects the weight of the DSCR is 30%. For non-amortizing or partially amortizing projects, the weight of the DSCR is 15% and the weight of the ratio of Project CFO/Adjusted Debt is 15%.

*2 For the linear scoring scale, the Aaa endpoint value is 8x. A value of 8x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

*3 For the linear scoring scale, the Aaa endpoint value is 10x. A value of 10x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

*4 For the linear scoring scale, the Aaa endpoint value is 15x. A value of 15x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x or worse equates to a numeric score of 20.5.

*5 For the linear scoring scale, the Aaa endpoint value is 55%. A value of 55% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

*6 For the linear scoring scale, the Aaa endpoint value is 85%. A value of 85% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

*7 For the linear scoring scale, the Aaa endpoint value is 120%. A value of 120% or better equates to a numeric score of 0.5. The Ca endpoint value is 0%. A value of 0% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Appendix C: Assessing Off-taker Credit Quality and the Use of Credit Estimates for Generic Project Finance

Off-taker credit quality is a consideration in two sections of the methodology:

» Scoring for the Predictability of Net Cash Flows sub-factor.

» Off-taker Risk – in cases of high dependence on the credit quality of the off-taker, the off-taker's credit profile typically acts as a cap on the project's rating.

The level of dependence on an off-taker is related to the difficulty the project would encounter in finding a replacement contract on substantially similar terms In assessing a project's level of dependence on the off-taker, we consider the sensitivity of the project rating to off-taker(s) credit quality. There is typically a high dependence on the off-taker in cases where (i) 10% or more of the project's revenue is fully contracted under a long-term purchase contract with the off-taker and (ii) the project meets a specific need of the off-taker, and may be less valuable to other potential off-takers, such that the contract may not easily be replaced on the same terms.

Approach for Assessing the Credit Quality of High Dependence Off-takers

Where a project has high dependence on the off-takers(s), the off-taker's credit quality is assessed using one of the following:

(1) a monitored public or private rating[29] of the off-taker (the reference is typically an issuer rating or a senior unsecured rating); or

(2) a monitored public or private rating[30] of an affiliate of the off-taker and, after considering the off-taker's legal position and the importance of its activities to the corporate family (or where the off-taker is a government enterprise, its importance to the government), a rating committee views the credit quality of the off-taker as being at or near that of the rated affiliate or government.

Where there are multiple off-takers[31] we typically consider the weighted average credit profile of the off-takers.

Alternative Approach for Low Dependence Off-takers

Where a project has low dependence on the off-taker(s), we may use credit estimates to assess off-taker credit quality.[32] The aggregate use of credit estimates for low dependence off-takers would be limited by a market-based replacement test, described below.

In cases where sufficient information is not available to assess an off-taker's credit quality or the related cash flows are very small, we may consider the expected project cash flows from off-take agreements excluding that entity, and we may exclude these cash flows in our calculation of financial metrics, or where market-based sales are a viable option, we may consider a scenario where the excluded off-taker's contracted sales are replaced by merchant sales. In these cases, we typically base our assessment of off-taker credit quality on the weighted average credit profile of the remaining off-takers.

[29] Ratings are assigned using the relevant sector methodologies.

[30] Ratings are assigned using the relevant sector methodologies.

[31] When off-taker obligations are joint and several, we typically consider the highest-rated off-taker and its maximum potential contractual share in calculating the weighted average credit quality.

[32] Please see our cross-sector methodology that discusses credit estimates. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Determination of Aggregate Use of Credit Estimates for Low Dependence Off-takers

To determine the aggregate use of credit estimates in assessing the credit profile of a project's off-taker(s), we apply a market-based replacement test to assess the impact on the project's cash flows and credit profile of losing all the contracts of low dependence off-takers and replacing them with off-take contracts, forward sales agreements, or in some cases spot sales at prevailing market rates.[33]

- If the credit profile of the project under this scenario (as indicated by the scorecard-indicated outcome) is at least equivalent to that prior to the test, then the dependence of the project on those off-takers is considered low and a credit estimate may be used to assess the credit quality for each of those off-takers.
- If the market replacement test results in a scorecard-indicated outcome that is lower than that of the project prior to the test, then the dependence of the project on those off-takers is considered high, and we do not use credit estimates. Instead, we use one of the two assessment methods enumerated in "Approach for Assessing the Credit Quality of High Dependence Off-takers" above to determine the credit profile of each of the off-takers.
- As an alternative, we may disregard in our analysis the contracts associated with the off-takers where credit estimates would otherwise be used, and we would use the contracted cash flows and weighted average credit quality of the remaining off-takers.

Where credit estimates are used to assess weighted average credit quality for purposes of scoring the Predictability of Net Cash Flows sub-factor or for the Off-taker Risk notching factor, we would apply a two-notch haircut to each credit estimate. We would not apply a jump-to-default test. (Please see our cross-sector methodology for the use of credit estimates,[34] which describes the jump-to-default test.)

In some cases, we may use credit estimates as supplementary information in our analysis.

[33] When information about the availability or pricing of replacement off-take contracts is not available, we would use forward sales agreement prices, and when that information is not available, we would consider prevailing spot prices. Based on market conditions and the specific operating profile of the project, there may not be a market for the project's output, in which case the market-based replacement value would be zero.

[34] A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of our sector and cross-sector credit rating methodologies can be found here.

For data summarizing the historical robustness and predictive power of credit ratings, please click here.

For further information, please refer to *Rating Symbols and Definitions*, which is available here.

Moody's Basic Definitions for Credit Statistics (User's Guide) can be found here.

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