MARC RATING METHODOLOGY

PROJECT FINANCE

OVERVIEW

MARC employs its project finance analytical framework to rate debt for projects such as toll roads, power stations or pipelines where the debt is principally repaid from the project's cash flow. Most projects would involve the formation of a project company, a legal entity newly established for the sole purpose of executing the project. It is separate from the operations of its sponsors. The allocation of project risks, meanwhile, is achieved by way of contractual arrangements between the project company and other participants. The project financiers have limited or no recourse to the project sponsors, and hence the identification of project risks and the analysis of such risks, including the allocation and mitigation of the risks, are central to assessing the credit risk of a project finance transaction.

MARC's project finance analytical framework focuses on identifying specific project risks, and assessing the risk mitigation and risk allocation measures in place. MARC's analytical focus is on the feasibility of the project and its sensitivity to the impact of potentially adverse factors. An assigned project finance rating typically focuses on the project's standalone repayment ability to make full and timely payment of financial obligations on a rated instrument. However, the project could actually rank somewhere along the corporate finance and project finance continuum in instances where the borrowing entity has other existing project activities of a related nature. In some cases, project sponsors provide some credit support for project debt.

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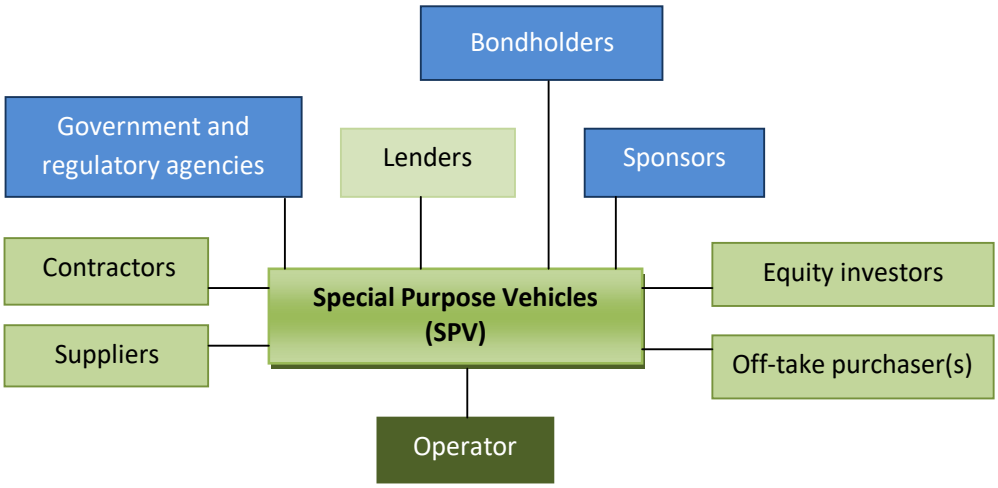

The key characteristics of project finance are:

- The project is ring-fenced in a special entity;
- Sponsors provide limited or no credit support;
- Project risks are allocated to parties best able to manage or mitigate them;
- A key driver of credit quality is the robustness of project cash flows to sensitivities; and
- Higher leverage at the project company and longer project debt tenures compared to corporate debt.

While the following analytical framework can be applied to various project finance transactions, MARC has released specific rating methodologies for toll roads and independent power producers (IPP). MARC's project finance ratings analytical framework considers the following project risks:

- Project sponsors/Management
- Siting and permitting risks (if applicable)
- Construction risk
- Demand/Offtake risk
- Operational risk
- Regulatory and political risks
- Financial risk
- Issue structure risk

When looking at project risks, the approach taken by MARC is, firstly, to identify and analyse project risks that may bear upon the project in its construction/pre-completion and operation phases. The approach reflects the understanding of changes in the nature and allocation of risks that typically occur between the construction and operation phases of a project. In general, credit risk tends to be higher at the inception of the project and reduces over the life of the project.

Of particular concern to MARC are events which could result in the project not being completed on time, on budget, or at all; not operating at its projected level of utilisation or failing to satisfy performance requirements; failing to generate sufficient cash flow to service project debt; or ending prematurely. The likelihood of the aforementioned risk events occurring is assessed by examining the allocation of project risks and risk management mechanisms employed to reduce them.

Some risks are analysed using financial models to assess the impact of different adverse scenarios on the ability of the project to meet repayment schedules and the sensitivity of debt service cover ratios to adverse deviations from key assumptions.

PROJECT SPONSORS/MANAGEMENT

The analysis of a project sponsor typically focuses on three main areas: 1) track record; 2) level of commitment; and 3) past and prospective financial performance and balance sheet strength.

Track record

MARC looks at the track record of the project sponsor(s) in supporting similar projects. The project sponsor(s) should be able to demonstrate a sufficient level of technical and managerial competence, and the ability to resolve project level issues.

Sponsor commitment

A project sponsor's commitment is assessed by looking at its vested interest in the success of the project, indicators of which include the project's potential to provide a strong return on investment (ROI), its equity interest and amount of equity investment committed to the project as well as the strategic importance of the project. The issue of commitment is particularly important where the project sponsors are newcomers to a particular industry or country. The ability and commitment of a project sponsor to resolve challenges facing the project, whether financial, technical or political, is also assessed by reference to the sponsor's historical commitment to other similar projects.

Financial strength

The sponsor's financial strength is often a key factor in MARC's rating analysis of greenfield project financings in which it is common to observe undertakings from project sponsors to complete construction, fund construction cost overruns, and infuse additional equity to maintain the project company's leverage covenant or cover debt service shortfalls. In instances where there is a shareholders' agreement, MARC would make note of moratoriums placed on project sponsors with respect to the sale of shares, if any, and restrictions on share transfers and/or share sell-downs, as well as provisions pertaining to capital calls.

SITING AND PERMITTING RISKS

This area of analysis considers factors specific to the project company and site which could pose implementation hurdles to obtaining the required permits and approvals within the project schedule. MARC takes note of environmental issues as identified by the project's environmental impact assessment (EIA) and required mitigation measures, if any, during the construction and operation phases of the project. Projects with significant environmental and/or resettlement impacts introduce added elements of pre-construction risk. Delays in the completion of environmental reviews and permitting processes by relevant authorities within the durations provided in the project schedule pose added challenges to project implementation.

CONSTRUCTION RISK

Construction risk will impact a project finance transaction's credit rating unless the risk is well mitigated. Proper risk allocation and mitigation measures are critical during the pre-completion phase in view of potential financial risks arising from schedule delays, cost overruns and performance shortcomings.

Infrastructure projects which are built pursuant to a concession agreement with the government will require the infrastructure facility (such as power plant or highway) to be constructed in a predetermined location, to certain specifications and within a specific time frame. Schedule delays and performance shortcomings may subject the concession to the risk of termination or trigger severe penalty payments to the offtaker.

MARC's analysis of construction risk covers the contractor(s), construction contracts, projected costs (including its components), technology used and measures employed to mitigate completion risk.

Contractors

Interface issues may be present where the project is to be delivered by a number of different contractors as opposed to projects in which a turnkey contract assumes single-point responsibility for the integration of construction works.

The contractor or contractors should have the technical expertise and financial capacity to complete the project. They should have a requisite track record in completing projects of similar complexity and size on time. The turnkey contractor should possess the capacity, financially and physically, to assume construction risks, although it is likely that the contractor will seek to pass through many of the potential risks to its own suppliers, subcontractors and other parties. The pass-through of risks to these project participants may be of little value if these parties are unable or unwilling to manage the consequences in the event risks do materialise. MARC will look at the turnkey contractor's financial position and operating track record for an indication of its ability to price contracts and assess risk adequately, and manage project risks.

Construction contract

The mechanism that complex infrastructure, power and industrial projects typically employ to allocate construction risks to the construction contractor is the lump sum turnkey contract, often in the form of an Engineering, Procurement and Construction (EPC) contract. Under an EPC contract, a single contractor assumes the risks of design, procurement, construction and commissioning with limited scope for time and cost variations. Among them are potential design and engineering problems, gaps and mismatches with respect to subcontract packages, changes in material and equipment prices and labour issues that typically arise in a large project.

The construction contract is reviewed together with the construction budget in order to determine the extent to which the project company or borrowing entity is protected against delay, cost overruns and defects. The feasibility of the construction schedule is assessed to the extent that an unrealistic schedule could otherwise be subject of a legal dispute. The contractor selection process and the adequacy of contingency in the construction budget are also reviewed.

If the contractor fails to complete the project on time or if the project does not meet all the functional specifications, the contractor will be liable to compensate the project company. A performance bond, which the project company or its lenders can draw on, usually secures performance and fulfillment of the contractor's obligations under the construction contract. MARC will also take note of the financial cap on liability as provided for in the construction contract. During the construction phase, MARC will review the progress reports from the project's independent consulting engineer (ICE) to assess whether the construction works are executed in strict accordance with the turnkey contract.

Cost overruns risk

While cost overruns risk can be largely allocated under a fixed-cost and fixed specification turnkey contract, this may not be a feasible strategy where the level of project capital costs affects eventual cost recovery and the project's overall financial resilience. In such situations, contractual undertakings by financially capable project sponsors to fund cost overruns provide assurance that additional capital is committed to the project company to complete project construction. Strong project management and tight control of the project construction budget by the project company or project sponsor will be vital to lowering the risk of cost overruns.

The construction budget provides a baseline reference for subsequent monitoring and control of project costs. Variances in respect of particular cost categories signal the likelihood of problems and help shed light on problem areas. Overruns in cost might be due to lower-than-expected productivity, higher-than-expected wage rates and/or material costs or other factors. MARC expects to receive project status updates during the construction phase to confirm that the project is on time and on budget or otherwise.

Delay risk assessment

Project schedule targets may not be met due to a number of factors. An appropriate buffer should be included in the construction schedule to cater for unanticipated delays. The table below sets out the most common risk factors and the corresponding effects on projects.

Influencing Factor	Effect on construction schedule
Remaining construction period	Projects with longer remaining construction periods are generally viewed as higher risk. Delay risk is lower in projects nearer to completion.
Relocation issues	Utility and/or squatter settlement relocations can potentially be time consuming for highway projects.
Variations to design (change in the scope of work)	Variations normally have the effect of lengthening the construction period. Right of time extensions provide protection to the project company/ concessionaire that encounters change orders from the government during the course of construction.

Planned construction progress rate	Projects with a planned progress rate that is aggressive compared to benchmarks observed for similar construction tasks are viewed as more susceptible to delay risk.
Availability and supply of building materials	Disruptions in availability of equipment and materials could result in schedule delays.
Environmental and regulatory issues	Potential environmental and regulatory issues are risks which require attention. Non-compliance with environmental regulations may result in a stop-work order being issued, which could lead to considerable construction delays, or worse, permits being revoked.

MARC reviews the factors that could delay the completion of the project and considers the extent to which the construction schedule is able to accommodate schedule slippages.

The rating agency looks at the overall sufficiency of performance guarantees, penalties and damages provided in the turnkey construction contract or contracts to mitigate delay risk. During the construction phase, MARC will monitor actual construction progress against the construction schedule using the ICE's status reports.

Technology risk

Most project finance transactions that MARC have rated used proven technology. Projects that involve new technology, upscaling existing technology, or the use of equipment that does not have a long operating history are exposed to technology risk. For example, technology risk is present in a power project that incorporates a new gas turbine or is a scale-up from a pilot plant. MARC places considerable emphasis on the technical evaluation of the project given that technology risk affects the level of capacity the project is capable of operating at after construction, which, in turn, affects the project's ability to deliver cash flow. When reviewing projects employing new or unproven technology, MARC would insist on an independent evaluation of the project's technology.

MARC would expect to see meaningful risk mitigation for projects with considerable technology risk by way of performance guarantees from the construction contractor or equipment vendor. The length of guarantee required should vary with the technology involved. Additional performance guarantees may be required where modest differences in efficiency levels will

make a difference to the project's ability to meet its financial projections and service its debt, as in the case of power plants.

Force majeure risk

The definition of "force majeure" generally includes "risks beyond the reasonable control of a party, incurred not as a product or result of the negligence of the afflicted party, which have a materially adverse effect on the ability of such party to perform its obligations". Force majeure events generally can be divided into two basic groups: natural and political. Natural force majeure events include earthquakes, floods, fire and other natural disasters. Political force majeure events include terrorism and riots or civil disturbances. Force majeure events are, by definition, events which are not reasonably foreseeable/ are unlikely to occur.

Force majeure events can render the construction or operation of the project impossible, either temporarily or permanently. As such events do excuse a project from debt service, it is important for the project company to have insurance and other resources to tide it over for some period of force majeure and to allocate such risks to other parties as far as possible. Force majeure provisions should be consistent across project agreements to ensure an appropriate allocation of force majeure risks among project participants.

For example, it is important for the project company to be relieved of its obligations under the take-or-pay provisions in the fuel supply contract in the event no revenue is being received during a force majeure event under a power purchase agreement. Any observed weaknesses in contract provisions, to the extent that it affects the project's risk exposure to force majeure events, will be factored in qualitatively in MARC's rating analysis.

DEMAND/OFFTAKE RISK

In certain concessions for certain types of economic infrastructure such as toll roads and water distribution, the project company bears market (demand) risk and revenues are typically derived directly from the users of the infrastructure rather than the government. Users provide a third-party income stream to amortise the project company's debt. The demand for economic infrastructure and willingness to pay user charges depend on many factors including the capacity of users to pay, price regulation, the overall infrastructure supply chain and alternative ways of meeting demand.

In project-financed toll roads, for example, MARC's analysis of demand risk will focus on customer willingness to pay tolls, demand elasticity, justification of the value attributed to time and travel savings, and alternative transport modes. Availability-based take-or-pay arrangements with a single offtaker, meanwhile, have been characteristic of power and water treatment projects financed in the domestic bond market.

It is the norm for the government to retain demand risk in social infrastructure PFI/PPP (Private Finance Initiative/Public Private Partnerships) concessions and provide revenue directly through a performance-based payment mechanism. The private sector is paid a service payment (or availability payment) by the government subject to the private sector providing contracted facilities and services in line with the contract standards. In light of such PPP agreements, market risk is negligible in social infrastructure PFI/PPP concessions which have spanned hospitals, prisons, courthouses and police stations.

Demand risk is frequently the most significant risk that affects the long-term creditworthiness of non-concession commodity-based projects (such as mining, natural resources and industrial metals projects) which sell their output in an open market. Such projects are largely exposed to volume and price risks.

Offtake contracts

A project company may obtain its revenue from a single offtake purchaser, as observed in infrastructure projects in the domestic power and water sectors. Generally, in higher rated projects, the offtake agreement is a long-term take-or-pay contract or an availability-based payment structure with a creditworthy offtaker that helps the project achieve cash flow predictability and stability, cover operating costs and service its debt comfortably. A take-or-pay offtake contract essentially allocates volume and price risks to the offtaker.

Fixed revenue flows should ideally be linked to fixed costs, and variable revenue flows with variable costs to eliminate basis risk and protect operating margins. The term of the offtake contract should be sufficient in length to amortise the contemplated project debt. However, the effectiveness of such risk mitigation is dependent in part on the creditworthiness of the offtaker and its motivation to honour the contract. MARC believes that the economics and the reasonableness of the contract are the ultimate determinants of an offtaker's motivation to honour a contract. The rating of the project finance transaction with a single offtaker in a monopoly setting is normally capped by the rating of the offtaker.

The project may have one or more offtake contracts. A commodity-based project that sells into open markets can also benefit from offtake contracts that provide for committed purchase of the project's output at market pricing. Offtake contracts could be of a lesser importance for projects with a favourable competitive position that is derived from a superior cost structure. Such projects are more likely to demonstrate resilience to cyclicality, seasonality and volatility, and the ability to replace offtakers. A commodity-based project may also attempt to mitigate price risk by using hedging arrangements with a reputable hedging counterparty.

The following are the core areas of analysis in respect of MARC's assessment of revenue risk in projects.

Risk Area	Analytical Focus
Commodity price risk (projects with no offtake contracts for industrial output)	• Global supply/demand and industry cycles • Industry cost structure • Capacity additions proposed by existing players • Historical price trends & historical price volatility • Industry productivity growth and technology changes • Arrangements to hedge price risk
Volume risk	• Market size & growth prospects • Price elasticity of demand • Short-term marginal production cost (in the case of industrial projects) • Substitutes/competing alternatives • Changes in import/export regulations and changes in tariffs, duties or taxes
Offtake contract sustainability	• Credit quality of offtaker • Economics and reasonableness of contract • Performance conditionality of offtake contract • Legal structure
Rate setting/toll pricing regime (where relevant)	• Nature of rate-setting mechanism (responsiveness to changes in cost structure) • Transparency of tariff/toll pricing regime • Rate affordability • Political will to raise tariffs

Projects holding concessions for demand-based transportation such as bridges, roads, ports, railways and other land transportation projects typically face both volume and toll pricing approval risk. Independent expert studies provide the basis for MARC's assessment of likely minimum throughput for transportation projects. All other things being equal, a well-defined pricing regime will provide stability and predictability for the project company's cash flows. Competing alternatives will have to be analysed.

Project financing with market risk exposure, i.e. where a level of either price or volume risk exists, will typically have much higher equity funding relative to offtake contract-supported project financing. Market risk could stem from sharply reduced demand, i.e. lost sales whether as a result of quality problems in producing output, cancellation of orders and/or the absence of committed

offtake. Capacity additions may also outpace demand growth, leading to a squeeze on margins. Project financing exposed to commodity price risk such as pulp and paper, petroleum and mining projects needs to demonstrate an ability to withstand cyclicality, seasonality and volatility in commodity prices through the term of the debt. Projects are exposed to commodity price risk when the price of the project's output is determined by international commodity markets.

OPERATIONAL RISK

Once the project moves into the operational phase, MARC's analysis focuses on operating risks: required inputs may cost more than anticipated; or the project's access to critical inputs is curtailed; or the risk of failing to adequately maintain the assets that generate the project's cash flow. MARC's analysis of operating risk is therefore focused on primary risks that could impede the efficient and continuous operation of the project, and the generation of cash flow to satisfy project lenders and owners.

Operating cost

The cash flow of the project may be affected by higher-than-projected operating expenses (opex). Raw material pricing risk can be mitigated by raw material pass-through provisions in the project's offtake contract(s). Pass-through provisions help mitigate margin compression during periods of high raw material cost volatility. MARC believes that the involvement of an operations and maintenance (O&M) operator in the estimation of O&M costs at an early stage of an infrastructure project will improve the certainty of operational costs, and reduce O&M cost risks. Cost risks are managed during the tenure of project debt by limiting opex to approved operating costs only and instituting tight control over project accounts. The O&M budget estimates should be based on a detailed schedule of plant maintenance and planned overhauls.

Operator

Where the role of the O&M operator is critical to the project's success and performance predictability, O&M operator expertise and its performance record is a principal credit determinant. For example, it would be more important for a power project to be operated by a reputable and financially sound operator whose performance is secured by performance bonds compared to a toll road project. O&M contracts should allow project sponsors to replace the O&M operator for subpar performance. To the extent operational efficiencies drive satisfactory operating margins, MARC will identify potential challenges to achieving operating assumptions in the base case financial projections and associated risk mitigation.

MARC would request for the ICE's periodic reports on operations, where available, to help identify technical and operating problems which could affect the reliability of operations and the project's ability to achieve forecast financial performance.

Assessment	Analytical Focus
Past track record and experience	The operator's past track record and experience in operating similar facilities and technology, as well as incentives to maintain a good performance record.
O&M planning and staffing	The approach to O&M planning taken by the operator to ensure reliable operation of project assets and the strength of operational staff in terms of experience, qualification and availability. MARC also looks at the adequacy of training provided by equipment suppliers and technical advisers and arrangements in place for ongoing review of the operations by independent experts.
O&M contract	Parameters of agreed upon performance levels to which the operator will operate the project. The reasonableness and adequacy of incentives for the operator to meet performance standards as provided for in contract-specified penalties and compensation. Under-compensated operators may be motivated to take shortcuts, which could impair facility performance. Penalties should ideally cover loss of revenue arising from substandard performance.

Feedstock/Raw material risk

The stability and predictability of cash flow available for debt service during the rated debt's term is affected not only by the availability of basic feedstock and other raw materials in the quantity and quality needed, but also by the price of the feedstock and raw materials. Long-term supply contract arrangements with principal suppliers can provide assurance of adequate supplies of the necessary volume and quality of feedstock. The risk of supply disruptions and corresponding risk mitigation with respect to potential alternative sources of supply are evaluated. There might be little that the project can do to mitigate margin volatility risk if long-term fixed price contracts for the feedstock are not available and no pass-through provisions have been incorporated in the offtake agreement to transfer higher costs associated with volatility in the market price of the project's feedstock to the offtaker.

Technology

Maintenance and performance risk is lower when the technology is conventional and proven, with an extensive operating track record. Nevertheless, there should be evidence of qualified technical staff and

availability of spare parts to ensure that maintenance standards are met. The expertise may be acquired through technical collaboration/partnerships with a foreign entity.

Insurance

Insurance has an important role in providing financial protection from loss of income during the project's operational phase, whether as a result of technical issues, human error or events beyond the control of the project company. Coverage for energy and infrastructure projects will typically be purchased for physical loss or damage to plant/assets, machinery breakdown, business interruption and force majeure. As in the pre-completion stage, insurance cover on public liability is also expected. MARC will also look into the financial strength of the project's insurers.

REGULATORY AND POLITICAL RISKS

Any concession that has been awarded or project that has been approved under a certain policy regime is exposed to potential changes which may take place between the time the investment is made and the time at which project debt is fully repaid from project cash flows. Such regulatory risk is inherent in many infrastructure projects, particularly utilities. Consistency of government policy towards the sector will be assessed along with the likelihood that policy changes will be introduced that would better serve public policy objectives.

In addition, MARC also considers the project asset's strategic importance, which may determine the level of government support towards the project. The strategic importance of projects and their essentiality are likely to change over time as service delivery requirements or performance requirements change.

FINANCIAL RISK

Financial analysis is a key component in project rating. Key areas examined by MARC are cash flow and financial flexibility.

Cash flow analysis

MARC's cash flow analysis focuses on cash flow protection and entails evaluation of the predictability and stability of the project's cash flow stream as well as the project's ability to service debt under numerous stressed scenarios. MARC undertakes sensitivity analyses to determine the project's ability to withstand threats or challenges to its capacity to generate stable and predictable cash flows.

In a start-up project, MARC expects a feasibility study to provide the basis for the project's financial projections. Stress tests will be conducted on financial

projections to assess the resilience of the project's financing structure and the robustness of cash flow coverages under various downside scenarios. The stress cases, which could include reduced demand/offtake, reduced plant availability, increasing costs, poor operating efficiency and slower receivables collection, are usually reasonable downside scenarios that can occur based on MARC's experience with similar projects.

The level of finance service coverage ratio (FSCR) necessary for a given rating level varies depending on the project's business risk and the variability of the project's earnings and cash flow. Strong cash flow quality may support higher debt leverage.

Financial flexibility

The project company's debt capacity, the financial strength of the sponsor, its capacity and willingness to issue equity, and its dividend policy are relevant to MARC's review of the company's financial flexibility. Important determinants of financial flexibility would be the project company's incremental debt capacity, access to lines of credit and other sources of funds to meet unforeseen cash requirements and address shortfalls in operating cash flow generation.

Reserve accounts provide important structural protection for senior debt and the flexibility to absorb downside events. Potential exposure to operating challenges that could reduce cash flow may be minimised with the financial support of fully funded O&M reserves while the project can draw on debt service reserves to meet debt service payments in the event of intermittent cash flow shortages.

ISSUE STRUCTURE RISK

A project's financing structure is of critical importance to MARC's analysis. MARC believes that the level and structure of project debt can increase or lower default risk; sponsors' incentive to manage a project through challenging conditions is typically affected by the size of the equity layer in a project's capital structure. Sponsors who have already recouped their original investment would have a lower vested interest in the outcome of the project. MARC will look at broader measures of capitalisation than the gearing levels alone; debt leverage is assessed in relation to project-level business, regulatory and financing risks.

The legal structure of the issuer, meanwhile, could provide insulation in the event of sponsor bankruptcy where the issuer is structured as a special-purpose vehicle (SPV). The project finance SPV is typically not allowed to engage in other business activities, which could affect its ability to maintain a constant risk profile. Pre-funded debt service reserves, an amortising debt structure and a sound financial covenant package will add some level of credit support to the rating.

The focus of MARC's analysis of a project financing's structural provisions is given in the following exhibit.

Assessment	Analytical Focus
Debt structure	Equity contribution provided by way of subscription of shares and subordinated debt. The equity layer in the project's capital structure should accommodate the project's risk profile and provide a meaningful level of credit protection for senior debt. Amortisation of principal before maturity and its effect on refinancing risk.
Financial covenants	Covenants and distribution tests to trap cash at the project company. Current and projected financial headroom with regard to gearing and other financial covenants. Restrictions on ability to incur additional debt. Adequacy of debt service reserves.
Security package	Collateral position of the rated debt; assignment of project contracts, revenues and deposits accounts.
Legal structure	The strength of ring-fencing arrangements and the degree of insulation from the risk of financial failure at the parent.

Conservative debt levels will provide the project company with a higher degree of operating flexibility when faced with shocks or underperformance. The amortisation profile of the project debt, meanwhile, drives the project's debt service coverage and its refinancing risk. MARC believes that the amortisation profile of the debt should be designed to closely match expected cash flow generation.

For instance, a back-ended debt amortisation profile would be inconsistent with mature project-financed toll roads that produce steady cash flow generation. Refinancing risk would also be lower for a debt which is continuously amortised compared to debt which is structured with limited amortisation requirements. On the other hand, an aggressive debt amortisation schedule could result in a weaker liquidity position and lower margin for error where financial projections are concerned.

To be considered "equity-like", subordinated debt should be deeply subordinated in terms of its position in the cash flow waterfall and priority in the event of foreclosure, have no acceleration rights before senior debts are repaid and should not be allowed to cross-default to the senior debt. The financing documentation of investment grade project finance debt would typically prohibit the project from making equity distributions until debt service reserves are fully funded and pre-and post-distribution tests are met. For details of MARC's approach to rating subordinated debt or hybrid securities, see the criteria report "Equity Credit and Notching Approach for Corporate Subordinated Debt and Hybrid Securities".

OTHER CONSIDERATIONS

Parent-subsidiary and Group Linkages

Where the rated obligation is structured with substantial recourse to project owners, MARC will assess the significance of the operational and financial linkages to determine the degree of parent-subsidiary relationships and implicit intra-group support before arriving at the issue rating.

The greater the degree of integration of a group member into the overall group and the quality and size of its related party transactions, the more the creditworthiness of that entity will be interlinked with the creditworthiness of other group companies.

In addition to the usual operational and strategic ties that link the credit profiles of group members, MARC also considers the rating interdependencies between the group members that are created as a result of intercompany loans, financial guarantees, as well as cross-default and cross-acceleration provisions under financing documents.

MARC assesses the extent of any rating uplift or drag respectively arising from the issuer's exposure to stronger or weaker group members, whichever applicable, in order to determine its adjusted rating consistent with its methodology "Group Rating Methodology".

RATING SYMBOLS & DEFINITIONS
CORPORATE DEBT RATINGS

LONG-TERM RATINGS

MARC's Long-Term Ratings are assigned to debt issues with maturities of more than one year. These debt ratings specifically assess the likelihood of timely repayment of principal and payment of interest over the term to maturity of such debts.

Investment Grade

AAA Indicates that the ability to repay principal and pay interest on a timely basis is extremely high.

AA Indicates a very strong ability to repay principal and pay interest on a timely basis, with limited incremental risk compared to issues rated in the highest category.

A Indicates that the ability to repay principal and pay interest is strong. These issues could be more vulnerable to adverse developments, both internal and external, than obligations with higher ratings.

BBB The lowest investment grade category; indicates an adequate capacity to repay principal and pay interest. More vulnerable to adverse developments, both internal and external, than obligations with higher ratings.

Non-Investment Grade

BB While not investment grade, this rating suggests that the likelihood of default is considerably lower than for lower-rated issues. However, there are significant uncertainties that could affect the ability to adequately service debt obligations.

B Indicates a higher degree of uncertainty, and therefore greater likelihood of default. Adverse developments could negatively affect repayment of principal and payment of interest on a timely basis.

C High likelihood of default, with little capacity to address further adverse changes in financial circumstances.

D Payment in default.

Note: Long-Term Ratings from AA to B may be modified by a plus (+) or minus (-) suffix to show its relative standing within the major rating categories. Bank-guaranteed issues will carry a suffix (bg), corporate-guaranteed issues (cg), issues guaranteed by a financial guarantee insurer (FGI) (fg), and all other support (s) when such guarantees or support give favourable effect to the assigned rating.

SHORT-TERM RATINGS

MARC's Short-Term Ratings are assigned to specific debt instruments with original maturities of one year or less, and are intended to assess the likelihood of timely repayment of principal and payment of interest.

Investment Grade

MARC–1 The highest category; indicates a very high likelihood that principal and interest will be paid on a timely basis.

MARC–2 While the degree of safety regarding timely repayment of principal and payment of interest is strong, the relative degree of safety is not as high as issues rated MARC-1.

MARC–3 The lowest investment grade category; indicates that while the obligation is more susceptible to adverse developments, both internal and external, the capacity to service principal and interest on a timely basis is considered adequate.

Non-Investment Grade

MARC–4 The lowest category; regarded as non-investment grade and therefore uncertain in terms of capacity to service principal and interest.

D Payment in default.

Note: Short-Term Ratings will also carry a suffix (bg) for bank-guaranteed issues, (cg) for corporate-guaranteed issues, (fg) for FGI-guaranteed issues, and (s) for all other support when such guarantees or support give favourable effect to the assigned rating.

RATING OUTLOOK

MARC's Rating Outlook assesses the potential direction of the Corporate Debt Rating over the intermediate term (typically over a one- to two-year period). The Rating Outlook may either be:

POSITIVE which indicates that a rating may be raised;
NEGATIVE which indicates that a rating may be lowered;
STABLE which indicates that a rating is likely to remain unchanged; or
DEVELOPING which indicates that a rating may be raised, lowered or remain unchanged.

SUKUK RATING SYMBOLS & DEFINITIONS

LONG-TERM RATINGS

MARC's Long-Term Ratings are assigned to sukuk issuances with maturities of more than one year. These ratings specifically assess the likelihood of timely payment of the instrument issued under the various Islamic financing contract(s).

Investment Grade

AAA$_{IS}$	Extremely strong ability to make payment on the instrument issued under the Islamic financing contract(s).
AA$_{IS}$	Very strong ability to make payment on the instrument issued under the Islamic financing contract(s). Risk is slight with degree of certainty for timely payment marginally lower than for instruments accorded the highest rating.
A$_{IS}$	Strong ability to make payment on the instrument issued under the Islamic financing contract(s). However, risks are greater in periods of business and economic stress than for instruments with higher ratings.
BBB$_{IS}$	Adequate ability to make payment on the instrument issued under the Islamic financing contract(s). Vulnerable to moderately adverse developments, both internal and external.

Non-Investment Grade

BB$_{IS}$	Uncertainties exist that could affect the ability to make timely payment on the instrument issued under the Islamic financing contract(s).
B$_{IS}$	Significant uncertainty exists as to timely payment on the instrument issued under the Islamic financing contract(s). Slight adverse developments could impair ability to make timely payment.
C$_{IS}$	Possesses a substantial risk of default, with little capacity to address further negative changes in financial circumstances.
D$_{IS}$	Failed to make scheduled payment on the instrument issued under the Islamic financing contract(s).

Note: Long-term Ratings from AA to B may be modified by a plus (+) or minus (-) suffix to show its relative standing within the major rating categories. Bank-guaranteed issues will carry a suffix (bg), corporate-guaranteed issues (cg), issues guaranteed by a financial guarantee insurer (FGI) (fg), and all other support (s) when such guarantees or support give favourable effect to the assigned rating.

SHORT- TERM RATINGS

MARC's Short-Term Ratings are assigned to sukuk issuances with original maturities of one year or less, and are intended to assess the likelihood of timely payment of the instrument issued under the various Islamic financing contract(s).

Investment Grade

MARC-1$_{IS}$	Extremely strong capacity to make timely payment on the instrument issued under the Islamic financing contract(s).
MARC-2$_{IS}$	Strong capacity to make timely payment on the instrument issued under the Islamic financing contract(s). Timeliness of payment is slightly susceptible to adverse changes in operating circumstances and economic conditions.
MARC-3$_{IS}$	Adequate capacity to make timely payment on the instrument issued under the Islamic financing contract(s). Moderately adverse changes in operating environment and economic conditions may weaken financial capacity to make timely payment.

Non-Investment Grade

MARC-4$_{IS}$	Vulnerable to non-payment of instrument issued under the Islamic financing contract(s). Capacity to make payment on the instrument is dependent upon favourable business, financial and economic conditions.
D$_{IS}$	Failed to make scheduled payment on the instrument issued under the Islamic financing contract(s).

Note: Ratings will also carry a suffix (bg) for bank-guaranteed issues, (cg) for corporate-guaranteed issues, (fg) for FGI-guaranteed issues, and (s) for all other supports when such guarantees or supports give favourable effect to the assigned rating.

RATING OUTLOOK

MARC's Rating Outlook assesses the potential direction of the rating on the sukuk over the intermediate term (typically over a one to two-year period). The Rating Outlook may either be:

POSITIVE	which indicates that a rating may be raised;
NEGATIVE	which indicates that a rating may be lowered;
STABLE	which indicates that a rating is likely to remain unchanged; or
DEVELOPING	which indicates that a rating may be raised, lowered or remain unchanged.

MARC has refined its Project Finance methodology which is available on the website at www.marc.com.my. This methodology supersedes MARC's "Project Finance" published in 2015.

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