PROJECT FINANCE

OVERVIEW

Generally, project finance involves raising of funds to finance a project (usually with limited recourse) in which the investors or providers of the funds focuses on the future cash flows from the project (usually secured through an offtake agreement) which serve as the primary source of funds to service and repay the loans taken to finance the project and/or provide the return on their equity invested.

The ability to repay principal and interest in a timely manner, which is what ECRL'Ss analysts rate, is dependent on the success of a single specific project or a series of project facilities. ECRL's project rating methodology focuses on identifying specific project risks, understanding how they affect credit quality and assessing the strength of mitigating measures.

Most of ECRL's's project finance ratings are driven by privatization activity, through which the government is able to avoid burdensome infrastructure investments and potentially benefit from efficiency gains by allowing those assets to be managed by the private sector.

Typically in project finance assessment, our analysis involves the following areas: principal project documents or agreements, sponsors, pre-completion risk, operational risk, offtake risk and structural aspects. The weighting and emphasis of the different risk elements will vary across different sectors and between cases, or on project basis, and the interrelationship among these factors can be an important source of both risk and/or credit strengths, hence forming the major rating drivers.

PRINCIPAL PROJECT AGREEMENTS

A crucial part of the rating process involves examining the terms and conditions of principal project agreements within the context of contractual and security structure of the project financing, particularly channeling of the cashflow which indicates the level of protection or comfort given to the lenders or providers of the funds. For privatized infrastructure projects, the concession agreement (CA) is the main legal document that usually stipulates the rights and obligations of the concessionaire and the government, set performance standards as well as outlining avenues for government intervention and termination of the CA. The CA also defines the project's revenue stream in that it sets out the tariff or rate mechanism together with the review provisions, and may sometimes incorporate a firm offtake volume. Other key project agreements include the construction or engineering and procurement contract (EPC), the operation and maintenance (O&M) contract, the offtake contract and long term supply contract which are discussed in the subsequent risk analysis.

SPONSORS

- **Track record**
  The analyst should look for previous involvement with projects that have been developed and operated successfully. Project sponsors should be able to demonstrate expertise through past experience with proven technology.

- **Level of commitment**
  The analyst also looks for evidence of the sponsors' commitment to the project. If the sponsors have significant resources and time already invested in the project,

they are less likely to abandon it. Higher levels of equity investments on the part of the sponsors are considered a positive factor when evaluating a project. The strategic importance and future impact of the project to the sponsor are also considered. For example, the sponsor's performance on a high profile project may heavily influence its chances for subsequent business within the country or state.

- **Financial strength**
  The financial strength and credit quality of the sponsors are important indicators of their ability to meet any future contingent calls such as additional equity injection. Should there be a shareholders' agreement which sets out the relationship between the sponsors and other shareholders, the analyst would seek to understand the conditions including moratoriums or events under which share transfers/sell-down of shares are permitted and also what would constitute or trigger shareholder default events.

PRE-COMPLETION RISK

Prior to operational commencement, the risks associated with a particular project include it not being completed on time, exceeded allocated budget and/or found to be sub-par or below required standard. In reviewing these risks ECRL would make assessment relating to the project including the contractors' background, terms of the construction contract, projected costs including its components, measures to counter delay risk, technology used and other mitigants in place.

- **Contractors**
  The contractors involved in the construction process are evaluated in terms of their experience, capability and credit quality. This includes review of every contractor's record of completing past projects on time, within budget and up to the required performance standards. The contractors should be able to demonstrate adequate experience, together with the technology employed in previous projects. In terms of manpower, they should be able to draw on a sufficient base of skilled and unskilled labour. ECRL would also assess the financial health of the contractors to ensure that, over and above the required performance bonds, they have the necessary means and financial resources to complete the project and/or meet any other concurrent obligations.

- **Projected Costs**
  In determining the reasonableness of the project costing, the analyst has to examine the terms of the contract, understand the costs components vis-à-vis assumptions attached to the construction budget and the timeline. Where possible, the cost of the project is compared with other similar projects. The analyst should be concerned if the sensitivity analysis performed in terms of variation in costs and timing result in cost overrun and its impact on the ability of the project to remain viable, including the capacity to meet future debt service obligations.

  The construction contract is reviewed to determine under what circumstances the contractors are able to absorb and/or pass on the risk of any price increase that might lead to cost overruns as well as other mitigating measures to reduce the risk of cost overruns. Similarly, when reviewing the construction budget, it is important to establish whether the budgeted cost is reasonable and achievable. Otherwise, the likelihood of future disputes could rise. For example, if a contractor is not making

sufficient returns on a project, the risk of non-completion may be higher. Moreover, the quality of the contractor's work may be compromised if the project is no longer considered an important priority, and consequently affect its operating performance and hence future cashflows.

The process by which the project was awarded and adequacies of contingencies are also reviewed. The analyst should then be able to gauge whether the contract(s) provide significant motivation for the contractors to complete the project within the agreed terms, scope and timeframe.

- **Delay Risk**

  In order to determine the likelihood of the construction schedule being achieved, the analyst will review factors that could delay scheduled completion of the project including:

  a. strength and experience of contractors;
  b. length of the construction period – projects that have longer construction periods are generally considered more risky. Delay risk should be lower for projects with significant construction already completed;
  c. technology used – projects that involve new and unproven technology will more often than not run into unforeseen problems which could delay construction schedule;
  d. availability of building materials and supply, in particular if the materials have to be imported or can only be sourced from overseas;
  e. potential environmental and regulatory issues that may arise. For example, a hillslope incident may warrant a relook on the terrain or slope angle over which the project is being constructed, which may risk earlier EIA approvals and other permits being revoked;
  f. exposure to labour problems which could result from inadequate supply of manpower, high turnover and/or frequent changes in government regulations.

  Delay risk can be significantly mitigated by way of close monitoring by an expert third party, for example a prominent project management company. Additionally, there must controls over the disbursement of construction funds which can be dictated by milestone progress and/or certification of the construction works by independent architects or engineers.

- **Technology Risk**

  Essentially, the risk associated with a project that makes use of conventional technology is deemed lower due to its proven and extensive operating records.

  It is common to see contractors/equipment suppliers required to provide performance warranties over certain duration. The warranty period usually commences when the facility has undergone satisfactory testing. ECRL would also consider the contractors/equipment suppliers capacity to cover operating problems during start-up and initial operations. Since most key equipments have some general limited warranties, the analyst would need to examine the guarantee's level and duration, and the conditions for payment under the guarantee.

- **Other Contract Terms**
  In addition to the above, the analyst should also review other terms such as:

  Compensation and penalty payments If the project is not completed on time, within budget or up to the required performance standards, we normally seek what sort of penalty payment(s) that the contractors are liable to pay. They should at least mirror the payments that the project company may incur under any of the relevant project agreements. For example, if an Independent Power Producer (IPP) is required to compensate the offtaker in the event of delay in completion of the project, then it should be on a back-to-back basis i.e. passed on to the contractors who are responsible for such delay. Penalty payments should also be sufficient and timely to provide for lost revenue that would be required to service any outstanding debt.

  Resolving dispute Of particular concern is the potential impact of any disputes on cashflows. If the dispute is not resolved quickly through facilitative mechanism, it may likely result in delays and hence cost overruns.

  Insurance policies This should be comprehensively addressed and must be adequate to mitigate potential operational disruption.

  Connecting infrastructure If any connecting or support infrastructure has to be built, ECRL will review and incorporate the same framework and/or factors that have been outlined under pre-completion risk to assess its impact on the whole project.

OPERATION RISK

The analysis of operation risk focuses on issues that promote sustainability or continuous cashflow generation which would form the source of funds to service and repay the loans taken to finance the project. Our rating assessment usually involves the operator, the O&M arrangement which help preserve the facility in good working condition and where there is a product or output, whether there is a long term supply agreement for the raw material or input.

To reiterate, failure to meet expected performance standards and/or in the event the project costs over exceeded its budget could risk the project to suffer in terms of lower productivity or registering higher output per unit cost.

Operator

The operator will be assessed based on its past track record and experience in operating similar facility(s) using 'tried and tested' technology. Staffing will also be reviewed. The facility should be run by competent parties. For projects in emerging markets, it is often that the operator may use expatriates to staff the facility during the early operational phase and gradually hire local people and train them to operate the facility; the goal being to eventually replace the expatriates. The analyst will review the availability and qualifications of expatriate and local staff. From start-up or initial operations, adequate and continuous training must be provided by equipment suppliers and technical advisers to the designated

staff, in order to achieve and maintain optimal operating conditions. Over time, the project owner should consider engaging an independent expert to review the operations, particularly in identifying shortcomings and recommending measures or methods of improvement.

The analyst needs to evaluate the penalties and compensation clauses in the O&M contract. Compensation to the operator should be reasonable and provide adequate incentives for the operator to achieve or surpass projected performance. An operator that is under-compensated may be motivated to take shortcuts in its obligations (for instance delaying repair and maintenance or purposely reduce the frequency checks) which could impair the future performance of the facility. Penalties should ideally cover loss of revenue arising from substandard performance.

Other factors such as the importance of the project to the operator will also be analyzed. For example, a new operator who seriously wants be awarded similar projects in the future by the state or federal government would be concerned with its reputation and thus endeavor to achieve recognition for good performance on its maiden project.

Review of Operating Expenses

The ECRL's analyst would seek to determine the impact of potential volatility of operating expenses when performing the stress-test analysis on the projected cashflow. Generally, take-or-pay and pass-through clauses are viewed favorably in that potential volatility of future cashflows is minimized given that revenue becomes more predictable and identified operating cost components are reimbursable.

Although technology risk could be present post-completion stage, this is generally mitigated by the performance warranty and training/operating instruction given by the contractor or equipment supplier. As time goes by, this risk becomes less given the extended operating record and/or proven to be increasingly accepted by more operators/users and eventually regarded as conventional.

Supply Risk

A project's viability usually depends on its ability to produce output or product in order to generate cashflows/revenue. As such, one of the main concerns is continuous availability of input resources or raw materials, which are required in sufficient quantities and/or at certain prices. ECRL's analyst will be interested to see an arrangement involving long-term supply contract which should match the offtake contract, where applicable. In relation to the price, if the raw materials represent a pass-through cost, then fixing the price of the input is not as critical since it will be borne by the offtaker. Likewise, if the products are sold at market prices, usually there is less incentive to have a fixed-price contract for raw materials.

The analyst will also examine how the raw materials are supplied using supporting/connecting infrastructure through which they are delivered, for example transport piping used by refineries. Where the risk of interruption in the connecting infrastructure is considered high, reliable alternative supply routes or contingency measures should be available.

OFFTAKE RISK

In analyzing offtake risk, typical rating concerns are the market risk of the output/service and the credit risk of the offtaker(s). Market risk normally entails volume and price. To put into context, offtake risk may arise if demand for the output does not exist at the price at which it is provided or the offtaker is unable or refuses to honor its commitment to purchase the output/volume produced. ECRL acknowledges that although offtake contracts can provide cash flow certainty, an overriding consideration is how stable the cashflows are and hence the project's ability to meet its operating expenses and concurrently services the debt or borrowings taken to finance the project. ECRL believes that the best mitigant for a project that has exposure to commodity price risk is to be an efficient or low-cost producer. This increases the project's ability to service its debt at the bottom of the price cycles throughout the debt tenure.

While demand may exist for the project's output, the offtaker may not have the ability or willing to pay at prices necessary to make the project economical. For example, consumers may not be willing to pay for access to a toll road when an alternative free road exists.

Where there is single offtaker or monopoly such as a government-owned utility buying all the output of power projects/IPPs, demand risk of such project is shifted to that sole utility company. In analyzing the offtake demand for infrastructure projects, ECRL differentiates between multi-users and single or few-users projects. Single or few-users category usually involve price and volume risks for all or nearly-all of production have been allocated to the offtaker(s) through the concession structure/offtake contract(s). However, such long term contractual revenue streams could still be exposed to performance risk and counterparty credit risk.

For multi-users project, our analysis will focus on market risk i.e. the risk of insufficient demand for the project's output at the prices necessary to generate cashflows after incorporating the requirement to service and repay the rated debt, which enables the project to be economically viable. In addition to the above considerations, the following factors are examined:

Demand projections The underlying assumptions used in arriving at the demand projections.

Competition The competitive structure of the industry as well as impact of regulatory changes.

Proposed tariff or price of project's output An analysis of the need for the project upon the viability study – in reality, full value of contractual supports can only be given when basic economic fundamentals make sense in the light of prevailing market conditions.

Offtaker

The ability of the project to generate cashflows will be heavily dependent on the ability and willingness of the offtaker to purchase the output. Generally, in high-rated projects, the purchase contract is a take-or-pay agreement. The analyst will review the credit quality of the offtaker and the terms of the purchase contract including the pricing mechanism for the output and the presence of incentives. If the offtaker is 100%-owned or majority controlled by the government, the rating of the offtaker is dependent on the extent of the government's support. Under normal circumstances, the purchaser's credit rating provides the ceiling for the credit rating of the project.

Pricing mechanism The pricing mechanism of the offtake agreement should ensure a stable and predictable cashflow to the project so that it is able to meet its operating and maintenance expenses and service its debts. If the project has large fixed costs, such as a power project with debt service costs and a fixed commitment under a fuel supply agreement, the price paid for the output should, in large part be fixed, based on these costs.

Quality of output or plant The purchase contract may provide that the revenue will vary with the quality of the project's output. For instance, the offtake price in a power project may assume that the plant achieves certain efficiency standards related to the amount of fuel used to produce a defined amount of electricity. If these efficiency standards are not met, then the price paid for the power would be affected.

Quantity A purchaser may be required to purchase a minimum quantity over a period of time, say a year, but is permitted to purchase the quantity at any time over this period. The variability of quantity purchased does not present a problem in itself, as long as the cost structure of the project reflects the demand for output. Difficulty arises if the purchaser is obligated to take a certain quantity of output but has a lot of leeway when the output will be purchased. In this case, the volatility of the revenue may make it difficult to meet ongoing expenses including debt service payments.

Incentives Typically, the purchase contract contains provisions for bonuses and penalties relating to quality, quantity or efficiency issues. In stronger projects, the risk of the project incurring penalty payments under the offtake agreement should be passed on to the parties that bear the responsibility for the penalties – which could be an operator, contractor, supplier or other party. This serves the dual purpose of motivating the other parties to perform their responsibilities and obligations up to the required standards, and requiring them to compensate the project if they fail to perform as required. Penalty payments should compensate the project for its operating costs, debt service expenses as well as the penalty payments that may be required to be paid to other parties involved in the project. For example, a power plant may not be able to deliver the contracted quantity of electricity to an offtaker because the fuel supplier fails to deliver the contracted amount of fuel. In this case, the project should be entitled to receive offsetting penalty payments from the fuel supplier to compensate for the required penalty payments to the offtaker.

STRUCTURAL ASPECTS

Structural analysis plays an important role in default risk assessment. While the stability of the revenue stream is heavily dependent on facility performance, the structure provides the framework that will define conditions placed on cashflow available for debt service. A sound project structure can limit interference with the project's cashflow and provide adequate safety nets in case of difficulties or problems arising from the risk factors.

Adequacy of cashflow ECRL will review the ability of the project to service project costs including the rated debt from alternative sources of funds. For example, tariffs that do not represent a good matching of revenue and expenses and are based on market price will expose the project to significant volatility in cashflow. This risk can be mitigated by the requirement for higher pro-forma debt service coverage ratio. Alternatively, a debt service reserve account which acts as liquidity buffer may be used to service debt during temporary difficulties encountered by the project. An operating reserve account may be used to

mitigate timing problems with revenue collection which may expose the project to a temporary shortage of funds that could lead to inability to meet operating expenses. The size of any reserve account is dependent on the extent and nature of the risks that the reserve is designed to mitigate. The required debt service coverage levels vary by the nature and extent of the project risks.

Key factors in the analysis are both the coverage level and the quality of coverage. We do not specify certain levels of coverage for each individual rating category. High coverage levels from relatively uncertain sources of net available cash provide no greater basis for credit strength than lower levels of coverage from similar sources. Working capital needs can be substantial on projects where there is a big gap in terms of timing of receiving payments from the offtaker/purchaser relative to the timing of payments made for operating expenses. In this case, working capital facilities should be available to provide the necessary liquidity.

Financial covenants Restrictions on payments to equity and subordinated debt-holders may be required. Distributions and/or cash withdrawals should be limited until all reserve requirements have been fully funded.

Termination payments should be sufficient to retire the outstanding rated debt. Insurance can also be used to mitigate some project risks, including certain force majeure risks or potential business interruption and replacement cost. The investors should have security over the insurance proceeds. Ultimately, even with additional credit enhancements, the strength of any structural features is still subject to the ability and willingness of the provider(s) in fulfilling its/their obligations.

Capital Structure The debt-to-equity ratio has an influence on the debt service coverage ratios and also evidences the sponsors' commitment to the project. The timing of the equity infusion and the necessity for backup equity commitment vary by project. A prudent level of equity percentage and investment in the project company both pre- and post-completion should be maintained. The actual level of equity needed would depend upon other risks associated with the project. Sometimes, owners may prefer to have the equity in the project in the form of subordinated debt. To be classified 'quasi-equity', the subordinated debt must be subordinated to principal and interest payments on senior debt.

Financing flexibility is also an important consideration in the capital structure analysis. If capital outlays are required to correct unexpected technical difficulties, the owner's ability to raise equity for the project somewhat limits the risk the project being over-leveraged. Also, the availability of a backup funding is critical to meet any unforeseen contingencies and in circumstances when the primary funding source is insufficient.

Legal issues Often, the value of the project's assets may not be sufficient to fully repay the debt taken to finance the entire project. Nevertheless, it is important that the bondholders have security over the project's assets, including assignment of the project contracts and any proceeds/cash accounts. This will address potential competing claims and increases the lenders' bargaining position if any dispute arises. Higher rated project financed transactions usually involve project companies that are typically structured as single-purpose entities. This requirement assures that cash is not diverted into potentially risky assets which are not related to the project.