



## ICRA'S RATING METHODOLOGY FOR IPPS

ICRA's rating methodology for Independent Power Producers (IPPs) follows the traditional risk assessment framework for infrastructure projects, besides focusing on the fundamental competitiveness of the IPPs as a key credit determinant.

Historically, the cash flows to an IPP would be determined by the formula that is laid out in the Power Purchase Agreement (PPA) signed with the sole purchaser, that is, the State Electricity Board (SEB). While in the initial stages, the PPAs were negotiated, many of the newer IPPs have been set up through the competitive bidding route. Usually, the PPAs provide for capacity payment charges linked to availability and pass-through of all variable costs, subject to certain normative parameters being met. The IPP would still need to complete construction and commissioning of the plant within the time schedule and costs as approved in the PPA, and also ensure that the plant operates in accordance with the normative parameters as specified in the PPA.

In practice, however, it is observed that despite the contractual obligations being clearly defined in the PPAs, several IPPs have run into rough weather on account of the financial constraints faced by most SEBs. Further, additional uncertainty has crept in following changes in the regulatory structure governing the Indian power sector, and the attempts at reforms and restructuring.

ICRA's rating methodology for IPPs considers the various risks that a power plant could be exposed to. The focus of this discussion is on the IPPs that have PPAs with SEBs (which is usually the case). For the sake of analytical convenience, the risks are grouped under the following heads:

- **Permitting risk**
- **Funding risk**
- **Construction risk**
- **Operating risk**
- **Demand and Payment Risk**
- **Force Majeure Risk**
- **Political and Regulatory Risk**
- **Legal Issues And Transaction Structure**

Each of these risks is discussed at some length here, along with the possible risk mitigants.

### Permitting Risk

Permitting risk refers to a company's ability to secure all statutory clearances required for constructing and operating a power plant, as well as comply with the environmental norms applicable. ICRA evaluates issues related to land acquisition, rehabilitation and resettlement, and also examines the status of various environmental clearances required in accordance with the laws of the land. Typically, these clearances are required from a variety of agencies, like the Ministry of Environment and Forest, Pollution Control Board, Central Electricity Authority, Department of Civil Aviation, and so on. The risks under this head vary, depending on the nature of the power plant; while permitting risk would be critical for a hydro-electric project, it would perhaps be minimal for a gas turbine project, and somewhere in between for a thermal power plant. Since clearances in the Indian context still have the potential of causing inordinate delays that cannot be budgeted for, this area, while appearing to be relatively uncomplicated, could have a major influence on the credit rating.

## Funding Risk

A project company's ability to tie up the requisite finances and its planned capital structure are the focus of analysis here. Usually, most projects have a high leverage, and while equity is arranged privately from sponsors, the IPP would be dependent on financial institutions and banks for arranging the debt component. Often, while in-principle sanctions are in place, final disbursements are delayed on account of the IPPs' inability to fulfill various pre-disbursement conditions usually involving opening of letters of credit and/or escrow account by the principal purchaser, namely the SEB or its successor entities). In assessing the funding risk, ICRA considers the extent to which the funding is already in place and the likelihood of the balance funding being available in time, so that the project's progress is not delayed in any way. The reasons for going in for a rated debenture issue, whether to replace high cost funds that may have been obtained from other sources, or to have a bridge finance, are also examined. Clearly, the strength of the sponsors is an important risk mitigator even though project finance is expected to be a 'non-recourse'. This is based on ICRA's assumption that in the Indian context, most credit-worthy sponsors would, normally, have an obligation towards the project that extends beyond making available the initial equity component alone. The strength of the promoter would also impart financial flexibility in funding cost overruns or other contingencies.

The capital structure of an IPP is evaluated to assess whether the debt-equity ratio is in conformity with that of power projects of similar size and complexity. The average cost of debt and the foreign exchange component in both equity and debt are also looked at. ICRA believes that while foreign exchange risks are a pass-through according to the PPA, a high foreign exchange component, especially in the equity structure, can adversely affect a project's tariff structure in the long run and thereby erode its competitiveness. Also, as a World Bank study has pointed out, the primary source of competitive advantage for IPPs lies in its ability to find financing at the lowest cost, as differences in technical and operating abilities have become virtually indistinguishable among front-runners.

## Construction Risk

Construction risks refer to risks associated with the physical construction of a power plant as well as stabilisation of its process parameters. Delays in either can lead to time and cost overruns. Fixed-price, fixed-time contracts, with adequate clauses for liquidated damages, are usually the mitigant against construction risk (essentially, the risk gets transferred to the Engineering, Procurement & Construction, or EPC, contractor). However, the analysis gets more complicated when there is no EPC contractor, and a set of packages is awarded to a number of individual contractors. While this enables the IPP to reduce capital costs, multiplicity of contractors is viewed negatively since a high level of expertise is required to co-ordinate individual packages and manage the entire process. Usually, a reputed erection/construction supervisor is appointed for the purpose, and the reputation of the supervisor is what ICRA draws comfort from, unless, of course the sponsors have demonstrated their expertise in building and running power plants in the past. The cushion that is available in the completion schedule of the project vis-à-vis the provisions of the PPA also serve as a risk mitigator to some extent. However, in all project ratings, ICRA carries out a sensitivity analysis to evaluate the impact of delay in commissioning or in stabilisation of process parameters on the projected cash flows and debt servicing ability. The liquidated damages clauses, which are part of the contract with the EPC contractor or the Operation & Maintenance (O&M) contractor, are also evaluated to assess their adequacy with respect to the loss of profits and/or liquidated damages payable by the developer.

## Operating Risk

The operating risks for a power plant arise from two sources: uncertainty over fuel supply; and, possibility of plant performance being lower than the normative parameters as specified in the PPA. An assessment of fuel supply risks involves evaluation of the sources of supply, locational proximity to the sources, reserve availability, contractual obligation of the seller, and price of supply. The extent to which the power plant is able to obtain more favourable terms in the Fuel Supply Agreement (FSA) as compared with the IPP's obligations under the PPA is a major credit risk determinant. In case capacity payments are linked to availability, and inadequate fuel supplies result in the plant not being 'available', the IPP's debt servicing capacity could be seriously undermined. So, either the contractual obligations should be strong enough to mitigate the fuel risks, or ICRA must take a view on the alternative fuel sources (both in terms of availability and price).

Experience shows that while fuel costs are a pass-through, an unsustainable increase in power purchase costs, following rise in feedstock prices, brings about the possibility of power purchasers abdicating their obligations. It is, therefore, necessary to model an IPP's cost of production over a range of fuel prices, and this is critical especially for liquid fuels which have a significantly higher price volatility than, say, coal. Besides, increasingly, IPPs are looking at alternative fuels like natural gas and liquefied natural gas (LNG) as fuel source. In such cases, the proportion of prices that is linked to dollar movements, and the extent to which the prices will fluctuate with international crude prices, also need to be evaluated.

In terms of physical operations, an IPP would need to attain at least the PPA-stipulated norms on availability and heat rate. The risks related to availability and heat rate get mitigated to the extent that they are borne by the O&M contractor (via the relevant liquidated damage clauses). If the equipment suppliers/O&M contractors take an equity exposure in the project, the same is viewed positively. Since most IPPs use proven technology (successful in Indian conditions), the risks on this count are not very significant. A comparison of the heat rate, availability and other operating parameters attained by similar running plants with the PPA stipulations (to examine if the PPA stipulations are achievable) usually suffices.

## Demand and Payment Risks

Evaluating risks associated with demand and payment is possibly the most important aspect of the assessment process. Demand risks are normally sought to be mitigated through PPA provisions, which include availability-linked capacity payments, energy charges allowing for pass-through of variable costs (within stipulated levels) and payment security mechanisms. However, considering the weak financial position of most SEBs, ICRA's analysis goes beyond mere examination of the PPA provisions alone. Some of the key areas assessed are discussed here.

- **Projected demand-supply scenario:** While the overall energy shortages in the country are well known, the situation varies considerably from State to State. ICRA would therefore estimate the likely demand and supply levels under reasonable assumptions of projected capacity additions, both by IPPs and existing units (through expansion/modernisation). While estimating demand growth, the composition of the customer base and the likely drivers of demand growth are also examined. While projecting supplies, ICRA, besides considering capacity factors, also takes into account the fuel sources on which the existing/planned units are based since non-availability of feedstock at economical prices could introduce variance between actual generation and the template capacity. With the gradual strengthening of the Inter-Regional Grid and the likelihood of a National Grid being established, ICRA also factors in the possibility of export of cheap power from the Central Power Sector Units (CPSUs) from power surplus regions to power deficient ones.
- **Cost Competitiveness :** Most Electricity Regulatory Commissions (ERCs) are emphasizing "merit order dispatch" to optimise the cost of purchase. This follows directly from the fact that capacity charges being a sunk cost, the SEBs will have to consider the variable cost of power to minimise their cost of purchase. An IPP's projected variable cost of generation and its likely position in the "merit order", in ICRA's opinion, is the single most important determinant against demand risks. Further, given the changing structure of the industry, a generating company with a competitive cost structure would be in a position to also explore other avenues for sale of power, including sales to bulk customers and trading companies, which can significantly reduce the demand and payment risks associated with selling to SEBs. An evaluation of an IPP's cost competitiveness is, therefore, one of the most important components of risk assessment of an IPP. However, ICRA does acknowledge the fact that transmission & distribution constraints and system reliability may require plants to be run even if they are not cost competitive.
- **State of SEB finances:** Most PPAs provide for a three-tier payment security mechanism (PSM) consisting of Letter of Credit, Escrow and Guarantee from the State Government. ICRA, rather than scrutinising the details of the PSM, focuses more on the overall state of the SEB's finances, the rate of return it has earned on assets, the total escrow cover it has granted to other IPPs/utilities and the State Government's track record in subsidy payments to the SEB. In the short term, most SEBs are critically dependent on regular inflow of subsidies, both for earning a positive rate of return and for stable cash flows. The State Government's finances, its commitment to reforms, and the extent of its support to SEBs have a critical impact on IPP ratings.

As against the conventional PSM, some IPPs are evaluating the possibility of selling the entire power to Power Trading Corporation, which in turn would sell it and recover dues from the beneficiary States. Some other States, in association with lending agencies, are experimenting with finances linked to reforms in the sector. These innovations pose additional challenges in terms of assessing the counterparty credit risk.

## Force Majeure Risk

Usually, projects are more vulnerable to force-majeure events owing to the single-asset nature of their operations. The force majeure risks are therefore mitigated through insurance contracts and, to an extent, through specific provisions in the PPA that guard against such events. The type of insurance cover with respect to the risk covered and its adequacy in the event of catastrophic losses and disruption of normal business are therefore evaluated. Also assessed are:

- the provisions in the PPA with respect to force majeure events, and
- the termination clauses in the PPA.

## Political and Regulatory Risks

As discussed, given the financial condition of the SEBs and the gap between the cost of power and the tariffs, the amount of subsidy received from State Governments is a key factor determining the financial viability of the SEBs. However, subsidies, which are a great strain on Government resources, are no long-term solution for the financial problems of the SEBs. Also, PPAs create contingent liability for the State Government, which is expected to step in if the SEB is unable to honour its obligations. These obligations, if not managed judiciously, can undermine the Government's creditworthiness over the long term. Therefore, the steps being taken by the State Governments to reform and restructure the power sector so as to ensure its long-term viability need to be evaluated.

Given this backdrop, ICRA analyses the recent regulatory and public-policy history of the State Government, the manner in which the State Government has attempted to create a public opinion in favour of reforms, and the political will that has been demonstrated in these matters.

The constitution of the ERCs has introduced yet another dimension to risk assessment. The tariff philosophy that is being advocated by the ERCs has shown variations across States. While some ERCs have been liberal in granting tariff raises, others have set very stiff performance targets that must be achieved by the utilities seeking tariff hikes (thus, in the latter case, the tariff hikes have been lower than what the utility may have sought). In the long run, the ERC prescriptions are expected to lead to an overall improvement in efficiency, but in the short term, the different tariff philosophies are likely to have a major impact on the cash flows and liquidity positions of the SEBs. This, in turn, would affect the payment capacity of the SEBs.

## Legal Issues & Transaction Structure

Legal risks involve an analysis of the contracts to ensure that all risks have been identified and allocated amongst the project participants. Also, contracts should be clear, comprehensive and enforceable. A related area involves a review of the transaction structure to evaluate features available to provide additional protection to the bondholders. This could include

- ◆ creation of reserve funds for debt servicing
- ◆ stipulation on minimum coverage ratios that must be met before payment to sub-ordinate debt holders or declaration of dividends
- ◆ credit enhancement features like cash collateral for payment of interest during construction period, completion guarantees by sponsors and guarantee for debt servicing by other external entities
- ◆ restriction on the ability of the project company to take on additional debt

## Summing up...

As in the case of debt instruments, ICRA's rating methodology for IPPs involves a qualitative analysis (as discussed so far) complemented by financial projections covering the life of the instrument. The financial projections seek to evaluate the adequacy of cash flows vis-à-vis the debt servicing requirements. Sensitivities are also drawn up to project the IPP's performance under a range of variables, the most commonly used ones being time and cost overrun, volatility in fuel prices, and projected receivables from the SEBs.

ICRA uses the financial projections to gain a thorough understanding of the robustness of cash flows and the debt servicing ability of the IPP in question. However, the final rating assigned relies a great deal on a qualitative evaluation of the various risk factors discussed earlier. Apart from the strength of contracts in place, evaluation of cost competitiveness is one of the most important credit determinant for an IPP.

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