



Rating Criteria – Rating of Power Transmission projects

EXECUTIVE SUMMARY

Transmission is one of the most important aspects of the power delivery value chain, which involves the movement of power from generating stations to load centers. The Electricity Act of 1910 was enacted to regulate supply and use of power. Since the economic reforms of 1991, the entry of private generation companies took place in the sector and the CEA was empowered to fix the norms for determining the tariff of all generating companies.

India is the third largest producer and second largest consumer of electricity in the world with an installed capacity of 372.70 GW as of August 2020. Its power transmission capacities have consistently improved over the years witnessing a large scale of investments with transmission lines increasing from 1,96, 123 circuit kilometre (ckt) in 2007 to 4, 28, 582 circuit kilometre (ckt) as of August 2020 and transformation capacities of 9, 81, 503 MVA (Mega Volt Ampere) as of August 2020. This has resulted in the inter-regional transmission capacity increase to 102,050 MW as on Mar 2020 from 46,450 MW as on Mar 2015. In terms of ownership mix, state transmission companies accounted for 54.20% of the total transmission lines and 58% of the total sub-station installed capacity, followed by Central sector of 38.36% and 39% respectively and private sector accounts only about 7.44% and 4% respectively as on Mar 2020.

Power transmission infrastructure provides interconnectivity between power generation companies/power generation plants and distribution companies through evacuation of electricity via transmission lines/ grid connectivity, which in turn reaches the end consumer through distribution companies. Typically, there are two types of transmission projects, inter-state transmission projects which are governed as per regulations by the CERC (Central Electricity Regulatory Commission) and the intra-state transmission projects, governed by the SERCs (State Electricity Regulatory Commission(s)). The main authority involved in the transmission process is the Power Grid Corporation of India Ltd.

SCOPE

This criteria document covers a brief analysis of the attributes considered by Brickwork Ratings (BWR), while assessing the overall risks towards rating of power transmission projects. It focuses on the credit risk assessment of the Special Purpose Vehicles (SPVs) and analyzes various pre and post implementation risks in detail. A brief summary of the effect of these attributes on the overall credit rating of SPVs is highlighted which helps ascertain the debt servicing capacity and the ability of these transmission companies to undertake large scale power transmission infrastructure projects.

RISK ASSESSMENT AND RATING CRITERIA AT BRICKWORK RATINGS

Brickwork ratings factors in the various quantitative and qualitative risks that the SPVs/ companies are exposed to, while assessing the risks in these projects. As highlighted above, the key risks that transmission company may face in a transmission network project are the funding risk, underlying financing risks, legal risk, counterparty risk, wheeling charges, availability of transmission lines and transmission losses. These risks are considered to arrive at the rating of a transmission project. The risks and how they are incorporated in the rating framework are discussed in detail below.

Project risk:

The risks that a project is exposed to at the initial stages of construction have a huge role to play in its successful completion and operation. Delays in land acquisition and obtaining clearances at the beginning of the project can hinder the cash flows and impact the profitability negatively. These risks mainly include:

- **Project Planning & completion risk:** This includes the evaluation of the risks associated with the financial closure of the project, any associated technology risks or the track record of the sponsor in completing similar projects in the past and current status of the project.
 - **Funding risk:** The responsibility of funding for the project falls on the Special Purpose Vehicle (SPV) undertaking the project. Since transmission projects have a long gestation period, tying up funds can be a challenging task. Also, due to their high capital intensive nature, power transmission projects tend to have higher degree of leverage.
 - **Technology risk during construction:** Usage of advanced level technology and a trained manpower to operate it not only leads to timely completion but also helps reduce the maintenance costs during operations.
 - **Track record of sponsor:** An experienced sponsor having knowledge of all costs involved in the construction process, maintenance costs and an experience in undertaking similar projects adds confidence about his ability to successfully complete the project being evaluated. Also, knowledge of sponsor about the regulatory environment of the country where the project is being undertaken is extremely important.
 - **Stage of project completion:** The stage of project completion at the time of evaluation is assessed. Delays due to political intervention, greater level of competition and lengthy review process by government agencies may affect the timely completion of the project.
- **Project Implementation risk:** Brickwork assesses risks of delays in projects due to delays arising out of land acquisition, obtaining statutory clearances, reputation of the contractor and geographical risks etc.
 - **Level of land acquisition and track record of contractor:** A project which is at advanced stages of the land acquisition process is seen as a positive in its successful implementation. While assessing implementation risks, track record and experience of the EPC (Engineering, Procurement and Construction) contractor plays important role in execution of the projects. Further, in general transmission projects are linked to a particular power generation station/company, delays in commissioning the power station would also lead to have an impact on cash flows of the transmission projects.
 - **Environmental clearances:** Transmission projects should be able to figure out a middle ground between ensuring last mile connectivity and making sure the environmental impact due to the project is minimum. Necessary clearances should be obtained from the Ministry of Environment and Forests for use of forest land.
 - **Terrain complexity:** Projects located at hilly areas require huge operating and maintenance costs and are more susceptible to breakdowns of transmission lines, tripping of wires etc.
 - **Stabilization risk:** Stabilization is the period between completion of construction and start of power transmission. The ability of an SPV to maintain transmission line availability as per the Transmission Service Agreement (TSA) is assessed.

Operational risk:

It includes all factors responsible for the operational efficiency, financial closure and successful and timely completion of the project.

- **Financial risk:** Brickwork assesses the ability of an SPV to generate sufficient cash flows to meet its debt obligations as well as maintain liquidity to fund the project in case of delays, adequacy of cash flows after

considering the tariff as per the Transmission Service Agreement (TSA), operating and maintenance cost, debt repayment and interest servicing are assessed. The degree of leverage of the project, ability of sponsor to raise funds during delays in receipt of operational revenues, availability of a debt service reserve account (DSRA) which acts as a buffer for use in times of delayed payment from the concession authority and contingent liabilities also help assess the financial credibility of the project.

- Cash flow adequacy
 - Sensitivity of DSCR to cost escalation
 - Leverage and coverage indicators
 - Liquidity and Financial flexibility of the sponsor
 - Debt/equity and repayment structure
 - Accounting quality
 - Off balance sheet exposure
- **Criticality risk:** The power sector is regulated by the CERC at the central level and SERC at the state level. Power transmission projects are exposed to tariff regulation risks by the CERC and SERC and national security threats from cyber security, attack on physical infrastructure, and threats from espionage, theft etc. which leaves the power system vulnerable. These projects are also exposed to force majeure risks i.e. catastrophic risks which cannot be mitigated and occurrence of which lies in the 99th percentile tail risk. However, presence of a force majeure clause in the concession agreement which mentions the compensation to be given to the SPV in case of such events is important.
 - **Counterparty credit risk:** In power projects, the counterparty is mostly a government entity so risk of non-payment is low. However, there may be delays in receipt of annuities which may lead to asset liability mismatches. A counterparty with a diversified power projects portfolio is seen favorable. Also, under the Point of Connection (PoC) mechanism, Power Grid Corporation of India Ltd. (PGCIL) acts as a Central Transmission Unit and is responsible for collection of transmission charges from all the designated customers of inter-state transmission services and the amount is pooled together to make the payments to various transmission licensees, which makes the counterparty risk very low.
 - **Business risk:** Brickwork assesses the following parameters to assess the operational efficiency of the project.
 - **Power transmission risk:** Repeated breakdowns in transmission lines can increase the O&M costs and have an impact on the annual fixed charge. Also, line availability has to be maintained at the threshold level as per TSA or in case of a Central /State owned transmission company, the target transmission lines availability is approved by the CERC/SERC. Maintenance of a higher than normative line availability is seen as a credit positive for the project.
 - **Demand and pricing/tariff risk:** Power transmission is a natural monopoly which makes demand risk very low, which supported by a long-term TSA. However, revision in tariff charges by CERC/SERC can have a bearing on the operating cost.
 - **Operational performance and track record:** Risk management approach to minimize costs and ensure that the assets achieve optimum performance helps reduce unexpected downtime and its associated costs.
 - **Technology risk during upgradation:** The technology-in-use is in accord to the latest industry developments yet has proven record for superior performance and poses limited challenges to the transmission network. Adoption of latest and high complexity technology ensures operational efficiency and timely completion of projects without maximizing the cost inputs.
 - **Management and corporate governance:** A highly motivated, competent management with an efficient risk management team adds to the strength and viability of the project company.

CONCLUSION

In lieu of the aforementioned attributes which take into account the various risks associated with the project implementation, stability of cash flow of the project, liquidity and debt servicing capacity, track record of sponsor, an analysis of the promoter's ability to handle these risks is undertaken with the instrument being rated. Project completion risk accounts as the most significant to arrive at the stand alone rating of the SPV during the implementation phase, while post implementation risk shifts towards cash flow generation as against debt servicing obligations. Also, certainty of future cash flows generation plays a critical role as its revenues are linked with the line availability of the transmission network, unlike power generation companies where it depends upon actual unit generation. Further, projected financials provide revenue visibility and key risk factors such as (DSCR, DE Ratio, IRR, availability of free cash flows, liquidity, and available working capital facilities) influence the rating output significantly.

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