

## Overview of the framework

To meet the infrastructure deficit, the Twelfth Five Year Plan envisages a renewed thrust on investment in infrastructure, with greater participation from the private sector. Of the projected investment in infrastructure, about 29 per cent is envisaged in the power sector, of which about 47 per cent is expected from the private sector. Bulk of the private investment in power sector will be in the generation segment.

**Private investment to play a key role**

Power projects have been witnessing a significant interest from both domestic as well as foreign investors following the policy initiatives taken by the Government of India. However, the actual inflow of investment has been slower than expected, and future prospects would depend significantly on adoption of a comprehensive policy and regulatory framework necessary for addressing the complexities of Public Private Partnerships (PPP), especially for balancing the interests of Utilities and investors. To this end, a precise policy and regulatory framework is being spelt out in this Model Power Supply Agreement (MPSA).

**A comprehensive framework is a pre-requisite for PPP in electricity generation**

The framework contained in the MPSA addresses the issues which are important for investors as well as for limited recourse financing of debt. These issues include mitigation and unbundling of risks; allocation of risks and rewards; symmetry of obligations between the principal parties; precision and predictability of costs and obligations; reduction of transaction costs; force majeure; and termination. It also addresses other important concerns such as consumer protection, independent monitoring and dispute resolution.

The MPSA provides the basis for optimal utilisation of resources on the one hand and adoption of international best practices on the other. The objective is to secure value for public money while providing reliable and cost-effective electricity to the consumers.

This MPSA is a base document to be used by procuring utilities for inviting bids from prospective producers of electricity. Provision has also been made for power stations which are under construction or have been commissioned. It is based on Design, Build, Finance, Own, and Operate (DBFOO) model. Variations required for procurement of lignite-based and gas-based power stations may be evolved separately.

### Elements of financial viability

The three critical elements that determine the financial viability of generation projects are the contract period, fuel costs and capital costs. The contract period for a generation project should be fixed keeping in view the expected life of the generating plant. It could be fixed for a period of about 25 years, including the construction period, with provision for extension of 5 years at the option of either party. Such a timeframe should enable a robust project structure. So far as the Fuel Charge is concerned, the MPSA makes it a pass through, subject to appropriate safeguards, which would address a major risk faced by power producers due to

**Need to reduce capital costs**

uncertainty relating to fuel prices over the medium and long term. Since two of the three parameters stated above would be virtually pre-determined, capital cost is the variable that will determine the financial viability of a Power Station. Adoption of cost-effective specifications would, therefore, be essential for reducing capital costs that would ensure a competitive Fixed Charge.

### **Fixed Charge**

The Utility shall pay to the Supplier a Fixed Charge determined through competitive bidding for availability of the Power Station. The Fixed Charge determined for each accounting year shall be revised annually to reflect 30 per cent of the variation in wholesale price index (WPI). Since repayment of debt would be substantially neutral to inflation, the said indexation of 30 per cent is considered adequate. A higher level of indexation is not favoured, as that would impose an unjustified burden on the consumers. Such higher indexation would also add to uncertainties in the projections relating to returns on investment. Further, an annual reduction of 2 per cent in Fixed Charge is being stipulated so that the benefit of a depreciated asset is passed on to the consumers.

**Fixed Charge to be competitive**

### **Fuel Charge**

Fuel Charge is the amount payable by the Utility to the Supplier for the fuel utilised in generation of electricity. Since the risk of variation in fuel price cannot normally be managed by the Supplier, it must be passed on to the Utility, which, in turn, will have to reflect it in the distribution tariff. Since pass through of Fuel Charge affords full protection to the Supplier against potential losses on account of a rise in fuel prices, it follows that the benefit of reduced or concessional fuel prices cannot be retained by the Supplier. As a result, Fuel Charge cannot be a profit centre for the Supplier and the principles for determination of Fuel Charge must ensure that costs are recovered on the basis of actuals, assuming that the Supplier would function with the efficiency expected of a prudent and diligent operator.

**Fuel Charge to be a pass through**

The framework contained in the MPSA provides alternative formulations for determination of fuel costs depending on the source and pricing of fuel supplies. While coal supplies from Coal India will carry a regulated price, other supplies would have to be procured either from captive mines or from the open market. Each category of supply is, therefore, covered through its respective formulation. In case where fuel is to be procured from captive mines separately allotted to the Supplier by a Governmental Instrumentality, the cost of fuel may be fixed upfront with reference to the price charged by Coal India. Assuming a comparatively higher level of efficiency, the fuel cost payable to the Supplier may be fixed at say, 95 per cent of the Coal India price prevailing at the time of bidding, with appropriate indexation over the contract period with an added option of allowing the bidders to quote an even lower fuel cost which may be further limited to the costs determined by the Appropriate Commission.

When imported fuel is to be used, reliance should be placed on pre-selected coal indices used widely in international supplies of coal, but always subject to the actual

cost incurred by the Supplier. However, if bids are invited from producers having captive mines abroad, a ceiling equivalent to between 80 and 90 per cent of the prevailing price could be prescribed with appropriate indexation over the concession period. In all cases of imported fuel, the foreign exchange risk would have to be borne by the Utility as the Supplier would have no means to hedge such risk on a long-term basis.

Owing to some uncertainty in the quantum of coal supply by Coal India Limited, some of the provisions relating to coal to be procured from Coal India have been kept in square brackets as they may need modifications from time to time.

### **Station Heat Rate**

Conversion of fuel into electricity shall be computed on the basis of the Station Heat Rate (SHR) which must conform to pre-determined specifications. As the fuel charge would be a pass through, adhering to the prescribed SHR would be necessary in order to safeguard the interests of the Utility. The MPSA also provides for incentives in the form of an enhanced Fixed Charge if the Supplier is able to improve on the pre-specified Station Heat Rate. Incentivising an improved SHR would be a signal for achieving greater efficiency in the interest of saving fuel.

**Incentive for improved Station Heat Rate**

### **Fuel Supply Agreement**

As a condition precedent, the Supplier shall execute a Fuel Supply Agreement (FSA) containing the key elements specified in the MPSA, thereby aligning the principal provisions of these two contracts. The FSA shall provide the requisite assurance to the Utility for supply of fuel sufficient to generate a pre-determined quantum of electricity.

**FSA to be a condition precedent**

### **Additional Fuel Supply**

In the event of inadequate fuel supply under a Fuel Supply Agreement (FSA), the Supplier shall make best efforts to identify additional sources of fuel supply to meet such fuel shortage. The Supplier shall notify the Utility of the landed cost of such additional fuel and shall demonstrate that it will be procured at the best prices available. If the proposed landed cost is acceptable to the Utility and the Appropriate Commission, the Supplier shall procure such additional fuel for the agreed price and quantity.

### **Minimum Fuel Stock**

The Supplier shall maintain a minimum stock of fuel, which is sufficient for production of electricity and supply thereof to the Utility for a continuous period of 7 days. In the event of fuel shortage occurring on account of reasons not attributable to the Supplier, an amount equal to 70 per cent of the Fixed Charge shall be payable in respect of the non-availability arising out of such fuel shortage. In other words, the Supplier's risk of fuel supply will be mitigated to the extent of 70 per cent. This entire arrangement would help mitigate the risk of the Supplier on account of the

current fuel shortage as well as a possible backing down of the Power Station due to high costs of additional fuel supply. Since idle capacity would hurt the Supplier as well as the Utility, it is expected that both parties will have sufficient incentive to ensure optimum utilization of the Contracted Capacity.

### **Concessional Fuel**

Fuel which is procured by the Supplier through any form of concessional, preferential or captive allocation or sale by a Governmental Instrumentality shall be deemed as Concessional Fuel and earmarked for the benefit of the Utility. This will not include any fuel which is procured on the basis of market determined prices. If any Concessional Fuel, which is surplus to the requirement of the Utility, is utilised for production of electricity for sale to other buyers, the Supplier shall, in lieu of the use of such Concessional Fuel, pay to the Utility for each unit of electricity sold, a revenue share equal to the higher of: (a) Fixed Charge, and (b) 30 per cent of the gross sale revenue accrued from such buyers.

**Pre-emptive rights on Concessional Fuel**

### **Availability and Despatch of Power Station**

The Supplier shall operate the Power Station such that it is available for generation to the extent of 90 per cent of the Contracted Capacity which shall be deemed to be the Normative Availability for each accounting year. Any shortfall in the Normative Availability will attract damages. The Supplier shall declare the availability of the Power Station at frequent intervals and the Utility shall be free to direct the Supplier to produce and despatch electricity in accordance with the despatch instructions given by it from time to time. Payment of Fixed Charge shall be computed on the basis of availability of the Power Station while the Fuel Charge shall be payable only for the electricity actually produced and despatched.

**Fixed Charge to be paid for Availability of Power Station**

Normally, the Power Station shall be deemed as available to the full extent. In the event of any defect or deficiency, the Supplier must declare the actual availability so that its Fixed Charge is computed accordingly. The MPSA stipulates stiff damages in case of mis-declaration by the Supplier.

**Penalties for mis-declaration**

### **Committed Capacity**

A pre-determined proportion of the Contracted Capacity alongwith similar capacity contracted between the Supplier and other distribution licensees shall at all times be dedicated for production of electricity and sale thereof to the Utility and/ or other distribution licensees with whom such agreements have been signed. In the event a Utility is unable to buy electricity generated from Concessional Fuel, the same will be offered to another Utility having a similar contract with the Supplier. In the event such capacity is not utilised on account of shortage of fuel, the Supplier will be free to procure fuel from the market and sell the electricity to third parties.

**Committed Capacity for the Utility**

## **Open Capacity**

Twenty per cent of the Committed Capacity shall be available to the Supplier for production of electricity and supply thereof to any buyer on the terms determined mutually between the Supplier and such buyer. Such buyers may include bulk consumers within the supply area of the Utility. This would not only facilitate the development of a power market, but also enable the Supplier to produce electricity for sale to bulk consumers at unregulated prices. Such an arrangement will help improve the financial viability of the Power Station, enhance power production and promote competition in generation and supply of electricity.

**Open  
Capacity for  
market sales**

Any proportion of the installed capacity that is in excess of the Committed Capacity shall be deemed to be merchant capacity which may be utilised by the Supplier in such manner as it deems fit.

## **Additional Capacity**

The Supplier may, with prior consent of the Utility and in accordance with applicable laws, create additional capacity in accordance with the provisions of the agreement. Eighty per cent of the additional capacity shall be deemed to be Committed Capacity and the balance shall be Merchant Capacity. The Supplier will be free to set up additional capacity based on fuel supplies to be procured at market rates and sell its production to other buyers at mutually determined tariffs.

**Additional  
capacity for  
improving viability**

## **Technical parameters**

Unlike the normal practice of focusing on construction specifications, the technical parameters proposed in the MPSA are based mainly on output specifications, as these have a direct bearing on the level of power generation. Only the core requirements of design, construction, operation and maintenance of the generation system have been specified, leaving enough room for the Supplier to innovate and add value. In sum, the framework focuses on the ‘what’ rather than the ‘how’ in relation to the production and supply of power by the Supplier. This would also provide the requisite flexibility to the Supplier to innovate and optimise on designs in a way normally denied under conventional input-based procurement specifications.

**Technical  
parameters for  
level of service**

## **Outcome orientation**

The efficiency of the Supplier would normally be reflected in the quality and reliability of power supply. The MPSA, therefore, identifies the key performance indicators relating to the availability and operation of the generation system and stipulates damages for failure to achieve the requisite levels of performance. In particular, the Supplier shall be required to ensure the availability of Contracted Capacity at pre-determined normative levels, which will make sufficient allowance for scheduled maintenance.

**Outcome  
orientation is  
the key**

## **Selection of Supplier**

Selection of the Supplier will be based on a two-stage process of competitive bidding. All project parameters such as the concession period, technical parameters and performance standards are to be clearly stated upfront. Based on these terms, the short-listed bidders will be required to specify their financial offer in terms of a unit Fixed Charge, without any qualifications. In some cases, the financial offer may also have to include the Fuel Charge based on the landed cost of fuel. The bidder who seeks the lowest unit charge should win the contract. The financial offer for the unit charge shall be made only for the initial year and the actual tariff payable to the Supplier will be revised annually based on pre-determined indexation.

**Competitive bidding on Fixed Charge will be the norm**

## **Risk allocation**

As an underlying principle, risks have been allocated to the parties that are best suited to manage them. Project risks have, therefore, been assigned to the private sector to the extent it is capable of managing them. These risks have also been mitigated to the extent possible. The transfer of these risks and responsibilities to the private sector would increase the scope of innovation leading to efficiencies in costs and services.

**Risk allocation and mitigation are critical**

The commercial and technical risks relating to construction, operation and maintenance are being allocated to the Supplier, as it would be best suited to manage them. On the other hand, all direct and indirect political risks are being assigned to the Utility.

**Commercial risks to be borne by Supplier**

## **Financial close**

Unlike other agreements for private infrastructure projects which neither define a time-frame for achieving financial close, nor specify the penal consequences for failure to do so, the MPSA stipulates a time limit of 180 days for achieving financial close (extendable for another 185 days on payment of a damages), failing which the bid security shall be forfeited. By prevalent standards, this is a tight schedule, which is achievable only if all the parameters are well defined and the requisite preparatory work has been undertaken.

**Financial close to be time bound**

The MPSA represents the comprehensive framework necessary for enabling financial close within the stipulated period. Adherence to such time schedules will usher in a significant reduction in costs besides ensuring timely provision of the needed infrastructure. This approach would also address the typical problem of infrastructure projects not achieving financial close for long periods.

## **Conditions Precedent**

Procuring approval of the Appropriate Commission for payment of Tariff by the Utility to the Supplier has been proposed as condition precedent to be satisfied by the Utility before financial close. Execution of a Fuel Supply Agreement and procurement of applicable permits have been proposed as conditions precedent to be satisfied by the Supplier. The Utility would provide reasonable support and

**Fulfilment of conditions precedent**

assistance to the Supplier in procuring the FSA and applicable permits. Damages have been prescribed for delay in fulfilling the conditions precedent by the Utility as well as the Supplier.

### **Commencement of commercial operations**

The MPSA provides that before commencing the commercial operation of the generation system, the Supplier will be required to furnish a completion certificate to demonstrate its compliance with the specifications relating to safety, reliability and quality of supply. The option of phased completion has also been provided.

**Certification  
prior to  
commissioning**

### **Operation of the Power Station**

The Supplier is expected to demonstrate a high standard of operation and maintenance of the Power Station with a view to ensuring the requisite level of reliability and availability. Any violations would attract damages. In sum, operational performance would be the most important test of service delivery as it would have a direct bearing on the supply of electricity to the Utility.

### **Right of substitution**

The project assets may not constitute adequate security for lenders. It is the project revenue streams that constitute the mainstay of their security. Lenders would, therefore, require assignment and substitution rights so that the concession can be transferred to another company in the event of failure of the Supplier to operate the project successfully. The MPSA accordingly provides for such substitution rights.

**Lenders will have  
the right of  
substitution**

### **Force majeure**

The MPSA contains the requisite provisions for dealing with force majeure events. In particular, it affords protection to the Supplier against political actions that may have a material adverse effect on the project.

### **Termination**

In the event of termination, the MPSA provides for a calibrated termination payment by the Supplier or the Utility, as the case may be. This arrangement also provides the requisite protection of public resources like concessional fuel, which would be transferred to the Utility in the event of termination.

**Pre-determined  
termination  
payments should  
provide  
predictability**

Termination payments have been quantified precisely as compared to the complex formulations in most concession agreements relating to infrastructure projects. Political force majeure and defaults by the Utility would qualify for adequate compensatory payments to the Supplier and will thus guard against any discriminatory or arbitrary action by the Utility.

Upon expiry of the specified concession period, the Supplier would be entitled to a termination payment which will be a pre-determined proportion of the Project Cost. However, the Utility and the Supplier would have the right to seek an extension of 5

years in the concession period and in such an event, no termination payment shall be due and payable.

### **Monitoring**

Day-to-day interaction between the Utility and the Supplier has been kept to the bare minimum by following a ‘hands-off’ approach, and the Utility shall be entitled to intervene only in the event of a material default. Checks and balances have, however, been provided for ensuring full accountability of the Supplier.

Monitoring of construction, operation and maintenance has been kept at bare minimum level and is proposed to be undertaken through the Utility’s Engineer (a qualified firm) that will be selected by the Utility through a transparent process. Its independence would provide added comfort to all stakeholders, besides improving the efficiency of project implementation. The primary objective of monitoring is to keep the Utility informed as it has a vital stake in the reliable supply of electricity which is essential for meeting its obligations to the consumers.

The MPSA provides for a transparent procedure to ensure selection of well-reputed statutory auditors, as they would play a critical role in ensuring financial discipline. As a safeguard, the MPSA also provides for appointment of additional or concurrent auditors.

**Selection of auditors**

To provide enhanced security to the lenders and greater stability to the project operations, all financial inflows and outflows of the project are proposed to be routed through an escrow account.

### **Miscellaneous**

The MPSA addresses other important issues such as dispute resolution, suspension of rights, change in law, insurance, indemnity, and disclosure of project documents. It incorporates the best practices that would enable a fair and transparent framework for private participation.

**An effective dispute resolution mechanism is critical**

### **Conclusion**

Together with the Schedules, the proposed contractual framework addresses the issues that are likely to arise in financing of generation projects on DBFOO basis. The proposed policy and regulatory framework contained in the MPSA is critical for attracting private participation with the concomitant efficiencies and lower costs, necessary for accelerating growth and making electricity affordable.