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DISTRIBUTED GENERATION BASED FRANCHISEE FOR ELECTRICITY DISTRIBUTION

EXECUTIVE SUMMARY

A] BACKGROUND:

The State of Maharashtra has been witnessing serious shortage of electricity with many parts reeling under long and severe power shortages. The peak electricity shortage has increased from about 1,000 MW in 2001-02 to about 5300 MW in 2006-07. This has resulted into longer hours of load shedding in MSEDCL supply area. The gradual widening of Energy Demand – Supply gap has become a major challenge for the State Utilities. There is also a constraint on transmission capacity for wheeling power from outside the State. It is important to note that in Maharashtra, it is essential to increase electricity generation locally without overloading the existing transmission system. In order to tide over the crisis, ‘**Distributed Generation based Franchisee for Electricity Distribution**’ (DGBFD) option needs to be explored at least in Urban/Semi-urban areas or for select industrial feeders, where ability to pay higher tariff exists.

Further, innovative approaches such as CII-Pune Captive Model have yielded positive response from consumers as well as captive power industry in the recent past. Thus, to increase electricity generation locally without overloading the existing transmission system, it is essential to identify an appropriate model, which would allow local (distributed) generation and distribution of power with the involvement of private sector, local bodies, industrial associations, etc.

In this context, the Commission has appointed M/s ABPS Infrastructure Advisory Private Ltd. to prepare an Approach Paper has been developed to outline broad framework for operationalising DGBFD scheme. The Approach Paper discusses appointment of Franchisee by Distribution Licensee to distribute the electricity to consumers in the allocated area as per the tariff approved by the Commission and to generate the electricity corresponding to the demand-supply gap. The model envisages the installation of grid connected short-gestation generation capacity either in form of conventional sources or non-conventional sources, to make more generation available as well as reduced technical losses as the Franchisee generates electricity locally near load centre. In view of prevailing extreme shortages, the Franchisee may procure power from outside the State to supplement the existing captive capacity. The Franchisee will have to manage all technical and commercial functions of Licensee’s distribution system. The



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proposed concept promotes the participation from private sector and others at the local level to improve efficiency of distribution operations.

Considering that distributed generation is likely to be more expensive than average power purchase cost of the utilities, cost reflective tariffs for such supply are bound to be higher than the average tariffs of the utilities. Therefore, such an arrangement would primarily suit urban and semi-urban areas, as well as dedicated industrial feeders, where 'ability to pay higher tariffs' exists. However, the same concept can also be suitably adopted for rural areas, if beneficiaries demonstrate willingness to pay appropriate 'cost reflective tariffs' or the State Government provides the necessary subsidy concession.

This Approach Paper is an attempt to analyse and discuss the framework for the Franchisee arrangement and the roles of the Licensee and Franchisee as also the issues related to distribution management and generation. The purpose of the Paper is to invite comments and suggestions from utilities, consumer groups and other stakeholders with a view to developing a workable and effective framework.

B] REGULATORY FRAMEWORK:

The Electricity Act 2003 (EA 2003) has created pathways to reform the electricity sector. The different provisions under the EA 2003 are expected to result in improving efficiency and reliability of electricity supply to all parts of the country.

'Franchisee' has been defined in EA 2003 as follows:

"Franchisee means a person authorised by a distribution Licensee to distribute electricity on its behalf in a particular area within his area of supply".

The Franchisee arrangement will, primarily, be governed by the Franchisee Agreement between the distribution Licensee and the Franchisee. It follows that the Franchisee will be required to supply electricity as per the tariff approved by the Commission. At the same time, the generating company, a part of the proposed Franchisee, will sell electricity to the distribution division, by way of transfer pricing. Principles of efficiency and competition will be adopted by the distribution Licensee (MSEDCL in this case), and all organizations bidding for the proposed Franchisee arrangement will compete with each other. MSEDCL will purchase electricity from the selected Franchisee to meet a shortfall in the area of Franchisee. It may be noted that a generating company can supply electricity to any consumer under the Open Access regime. However, under the proposed Franchisee arrangement, electricity shall be supplied to the distribution Licensee for supply to consumers located only within the area assigned to the Franchisee.

The National Electricity Policy 2005 (NEP 2005) has given the following directions to improve electricity distribution:



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- a. Proper restructuring of distribution utilities essential for achieving efficiency gains.
- b. Adequate financing support to utilities. Such support could be provided with conditions to achieve pre-determined efficiency gains and for reducing cash losses.
- c. Appropriate governance structure to be in place to insulate these organizations from extraneous interference as also to ensure transparency and accountability.
- d. Private sector participation in distribution to reduce transmission and distribution losses and for improving services to customers.

The proposed Franchisee concept will aid in achieving the objectives outlined by the NEP.

The Commission has notified various Regulations, inter-alia:

- MERC (Terms and Conditions of Tariff) Regulations, 2005
- MERC (Standard of Performance) Regulations, 2005
- MERC (Electric Supply Code and Conditions of Supply) Regulations, 2005, etc.

The provisions of these Regulations will have to be incorporated in the Franchisee Agreement.

C] DISTRIBUTED GENERATION:

Distributed Generation includes small, modular technologies for electricity generation, located close to the load. DG technologies are used both in stand-alone mode as well as in grid parallel mode. Conventional electricity generating stations are typically located close to the fuel source and away from the loads, and electricity generated is conveyed through the transmission system to the load centre, which often requires large investment. Transmission and distribution costs account for about 30 per cent of the cost of delivered electricity. DG technologies obviate the need for an expensive transmission system and minimise transmission and distribution losses. The typical timeframe for getting a new DG station on stream varies from 1 year to 3 years depending on the technology.

D] FRANCHISEE CONCEPT:

Distribution Licensee and Franchisee would enter into a Franchisee arrangement under which the Franchisee will manage the electricity distribution function in the designated area within the license area of the distribution licensee. The main elements of such an arrangement would include:



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- a. Distribution Licensee will supply electricity to the Franchisee at a pre-determined price as per the Franchisee Agreement.
- b. The Franchisee will supply electricity to consumers of the Licensee in the allocated area (a part of the total area of supply of licensee) as per the tariff (including reliability surcharge) approved by the Commission.
- c. The Franchisee will manage the electricity distribution system of the Licensee in the allocated area. The Franchisee will not only undertake maintenance of the distribution system, but also upgrade and strengthen the distribution system as per the requirements of the Licensee, with its approval.
- d. The Franchisee will manage metering, billing and collection with the help of the existing staff of the licensee (in addition, Franchisee will be required to add its own staff to manage any increase in business).
- e. Franchisee will remit a pre-determined share of the revenue collection at regular intervals to the Licensee, as per the Franchisee Agreement. The Franchisee will retain a portion of the revenue collection from consumers after deducting amount payable/paid to the licensee.
- f. Franchisee will operate under the overall guidance of the Licensee.
- g. The Franchisee will also generate electricity locally to meet any shortfall (i.e. demand supply gap) in its designated area, under the proposed scheme of 'Distributed Generation (DG) based Electricity Distribution Franchisee'.
- h. In the interim, the Franchisee may also procure power from outside the State to supplement the existing captive capacity and ensure zero load shedding.
- i. Sale of surplus power to the grid, if any.

The Franchisee will be required to offer (and commit) the following benefits:

- Improved reliability (lower number of outages) and quality (reduced voltage and frequency fluctuations, etc.) of electricity supply. With distributed generation, availability is expected to improve, thereby reducing incidence of load shedding.
- Improved electricity distribution function will lead to:
 - Lower T&D losses: Locally generated electricity will obviate the need for transmission over long distances. Extent of unaccounted electricity will reduce due to improved metering and better practices.
 - Better and reliable metering, accurate billing and improved collection
 - Better overall maintenance of distribution system (by adopting good management practices)



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- Upgradation and expansion of distribution system: The Franchisee will modernise and upgrade key components of the distribution system. The Franchisee will also strengthen the existing distribution system to accommodate any increase in business (in terms of number of consumers as well as in terms of energy supplied).
- Improved customer relations (reduction in number of complaints and grievances). Better and trained staff of Franchisee along with the selected staff of the Licensee suitably retrained and oriented towards consumers will help in improving customer relations.

E] SCHEME OF OPERATION:

The proposed scheme of Franchisee operation is based on the principles of 'Public Private Partnership'. The distribution Licensee will permit the private sector organization, local bodies, industrial associations, etc., to utilise the distribution assets of the Licensee located in a designated area (which is electrically demarcated). Selected staff of the Licensee in that designated area can be deputed to the Franchisee to support the electricity distribution operations. The Franchisee will organize balance staff required for electricity generation activity as well as for the distribution function. The principal elements of the operating scheme include:

- Power purchase from Licensee
- Electricity generation by a division of the Franchisee
- Power purchase from outside the State, if required, to supplement the existing captive capacity.
- Sale of surplus power to grid, if any.
- Compliance with standards relating to connectivity and reporting requirements of Franchisee (being a generating company)
- Transfer pricing to its electricity distribution division
- Distribution of electricity to consumers
- Metering, billing and collection
- Levy tariff of the Licensee as regulated by the Commission

As the generation of electricity using DG technology option will be the responsibility of the Franchisee, Licensee may not be required to have separate power purchase agreement with the Franchisee. The Licensee will be required to submit diverse information to the Commission under the present Regulations, whilst the Commission will have no direct interaction with the Franchisee. The Franchisee will enter into all the arrangements with respect to fuel supply, Engineering, Procurement & Construction



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(EPC) and financing of generation project. The generation division of the Franchisee will oversee day-to-day operations of the generating station which will be synchronized with the grid of Licensee. The generation, by and large, is expected to be connected at 33/22/11 kV level.

The Franchisee will maintain all the records with respect to the transfer price for electricity generated and supplied to consumers via the distribution system of the Licensee under its operational control. These records will be required by the Licensee for its periodical tariff related and other filings before the Commission. This information will be required by the Regulator to determine the distribution tariff, reliability surcharge and other charges stipulated by the Licensee to consumers.

The Franchisee will be required to follow Standards of Performance as stipulated by the Licensee. The Licensee can ask the Franchisee to form a Consumer Grievance Redressal Unit/Forum at the office of the Franchisee to address consumer grievances. The Franchisee will also manage the metering at the consumer end, the details of which are elaborated in subsequent sections.

F] ROLE OF DISTRIBUTION LICENSEE:

Prior to signing of Franchisee Agreement, a Licensee needs to initiate steps (a) selection of areas to offer to Franchisee organisations; and (b) bid document preparation and bid process management. The Licensee will have to initiate the exercise of gathering data related to each distribution circle or each of the feeders. Criteria for selecting candidate feeders include:

- Key performance indicators like distribution loss, collection efficiency, etc.
- Electrical separation of designated area of supply under consideration
- Composition of load and consumers
- Nature, composition and quality of assets
- Ease of establishing baseline

The Licensee would invite bids for the Franchisee operations on the basis of bid documents. The Bid Document related to designated area of supply will provide all the information in respect to the area, inter-alia:

- Geographical area;
- Description of the existing electricity distribution system (length of HT/LT lines in circuit kilometres, number of distribution transformers, number of poles, substations, etc.), schematic diagram and other related drawings;



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- Load data, load profile, load duration curve, annual energy input (in MU), consumer categories and classification;
- Metering status, billing history, distribution loss, and collection efficiency.

G] ROLE OF DISTRIBUTION FRANCHISEE:

Responsibilities of Franchisee are as follows:

- Supply of electricity to consumers of the Licensee
- Proper operation and maintenance of assets of the Licensee
- Set up a generating station using DG technology option
- Undertake projects to upgrade distribution infrastructure
- After retaining agreed percent of the revenue as per the Franchisee Agreement, the balance amount would be credited to the Licensee periodically. The Franchisee will be provided with certain powers to disconnect electricity supply of defaulting consumers. The Franchisee will take all efforts to reduce and prevent incidence of electricity theft. The Franchisee will undertake periodic testing of all meters to check the accuracy and reduce the incidence of slow/tampered meters.
- Demand Side Management
- Franchisee will manage the metering aspect at the consumer end, which includes:
 - Replacing defective meters and also introduce static energy meters, as well as time of the day meters for specific categories of consumers.
 - Manage metering, billing and collection functions in the designated area of supply in accordance with the appropriate billing cycle.
 - Ensure billing accuracy in order to ensure revenue in proportion to electricity consumed.
- Franchisee has to follow grid code while drawing power from the licensee.
- Franchisee will employ its own staff and also utilize selected staff on deputation from the Licensee for managing operations in the designated area of supply. The Franchisee will have the right to accept or reject the staff opting for deputation from the Licensee and to take existing interested staff on deputation from Licensee.

Key Concerns:

- Data used for Baseline Estimation: Accuracy of the baseline data is of crucial importance for ultimate success of the proposed scheme. The Licensee should make all efforts to establish correct and accurate baseline, on which it will



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evaluate the performance of the Franchisee. Errors and inaccuracies in data is a concern, and must be addressed appropriately.

- Service to consumers: Often the service to consumers deteriorates when margins of a Franchisee come under pressure. The Franchisee starts cutting corners in order to save on certain costs, which ultimately result in lower service standards. These facts have to be taken into consideration by the Licensee. The Licensee can institute an appropriate monitoring process to address these aspects.
- Ability to generate adequate revenue to sustain operations: Under circumstances where Franchisee management has a short-sighted approach, its operations suffer in the long run. Operations suddenly become un-sustainable due to negative growth in business. Many a time, high incidence of interest costs and other financial commitments can have effect on the operations of Franchisee.

H] RELIABILITY SURCHARGE:

The Franchisee will have to meet capital expenditure over and above operating expenses related to the electricity distribution system. Electricity from the new generating station will certainly be expensive as compared with the electricity purchase price from the distribution Licensee. This incremental cost will have to be compensated to the Franchisee, which will ensure reliable electricity supply. This incremental charge will be determined by the Commission based on the information submitted by the Licensee for each Franchisee area. The Commission may authorise the Licensee to allow its Franchisee to recover this incremental cost by way of a Reliability Surcharge from specific category of consumers and in a manner stipulated by the Commission.

I] FRANCHISEE AGREEMENT:

Some of the features of the Agreement are as follows:

- a. Performance delivery/Performance Parameters: The Franchisee Agreement shall spell out all the performance parameters and terms of supply of electricity to the Franchisee. The Agreement will also have specific mention of electricity Supply Code and Standards of Performance to be maintained by the Franchisee.
- b. Assets listing: Existing electricity distribution infrastructure/assets of Licensee in the designated area will be listed in the Agreement. Report of the approved valuation consultants will be provided in the appendix to the Agreement. The Licensee will adequately insure all the assets and a clause to that effect will be included.



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- c. Ownership of Assets: The Agreement will also define the ownership of the assets (both existing and additional). The Agreement will also provide guidelines for maintenance of the assets and asset register. The Franchisee will also have to report to Licensee any loss or damage to the assets during the currency of the Agreement.
- d. Investment plan: The Agreement will include duly approved year-wise investment plan for addition of assets to cater to the estimated increase in consumer base and load growth.
- e. Wheeling charges: In the event of procurement of electricity from sources other than the Licensee, the Franchisee will have to pay wheeling charges to the Licensee for using its network.
- f. Frequency and mode of payment: The Franchisee will pay charges to the Licensee periodically or, as per the billing cycles. The Agreement will define terms and mode of payment by the Franchisee to the Licensee, and conditions for delayed payment charges. The conditions for invoking the Bank Guarantee in the event of default will be spelt out.
- g. Default conditions: The Agreement will also define the conditions under which the Agreement could be terminated.

J] SELECTION OF FRANCHISEE:

Distribution Licensee will select a Franchisee from among the qualified Bidders. The Licensee will evaluate Bidders on technical and financial parameters. The salient features of the selection criteria could be as below:

Technical parameters:

- o Organizational Background can be evaluated by considering history of the company, business and operational performance (group sales turnover, existing asset base, financial performance of the group) for past three years, management team and major achievements in the existing business.
- o Relevant Experience can be determined by length and nature of experience in electricity distribution or in retail operations, team leader background, value of projects executed in the past, value of contracts executed (if vendor/manufacturer of electrical equipment) and quality of service.



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Financial Parameters:

- Growth in business targeted
- Investment planned for upgrading existing distribution system
- Transfer price of electricity generated
- Value Added in Distribution

In addition to these parameters, one of the following parameters can be used for evaluation of the bid and can have maximum weight.

Lowest Price quoted for electricity purchase from distribution Licensee: Franchisee will purchase electricity from the Licensee. Rate at which the Franchisee can purchase and sell the same to consumers finally (as per the tariff applicable) will depend upon the efficiency of managing distribution function and cost of electricity generated.

Lowest cost of operation: Bidders can be asked to furnish the cost of operations of the distribution system. Lowest cost of operation can indicate the optimum efficiency of electricity distribution system operations as well as generation operations. At the same time, trajectory of cost of operations projected in the business plan will also indicate the level of efficiency of operations.

Revenue collection and collection efficiency: Bidders can be asked to bid for the quantum of revenue willing to be shared by the Franchisee with the Licensee as well as parameters like collection efficiency.

This Approach Paper is being presented for discussion and for receiving comments and suggestions on the concept and operating framework.