Explanatory Memorandum for the proposed amendments to the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2011

1. Background

1.1. The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2011 [hereinafter referred to as "MERC (MYT) Regulations, 2011"] were notified by the Maharashtra Electricity Regulatory Commission [hereinafter referred to as "MERC" or "the Commission"] on 4 February, 2011. MERC (MYT) Regulations, 2011 were amended through the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) (First Amendment) Regulations, 2011, which were notified by the Commission on 21 October, 2011.

1.2. The Generating utilities in Maharashtra have submitted to the Commission that the generating stations in the State are experiencing shortage of domestic coal from Coal India Limited (CIL) and its subsidiaries, which has led to instances of backing down of generating units. The utilities have further submitted that, it has become necessary to plan daily generation to satisfy the need for optimal utilisation of the available fuel to cater to power generation at the peak load hours and also in order to avoid penalising the generating companies for backing down of generating units at off peak hours. The generating utilities have therefore requested the Commission to allow declaration of variable generating capacity during the day at these thermal stations to meet the said requirements, on similar lines to that allowed by CERC through amendment of its MERC (MYT) Regulations, 2011.

1.3. After due consideration, the Commission initiates the present consultation for amendment of MERC (MYT) Regulations, 2011 for inclusion of an enabling provision to encourage generating stations to generate more power in peak hours and declare capacity as per peak hours considering optimum utilisation of fuel in a shortage scenario.

1.4. The following paragraphs provide a detailed description of the rationale and the corresponding amendments in the MERC (MYT) Regulations, 2011, on account of the above.

Existing provisions for computation of availability

1.5. As per Regulation 49.2 of the MERC (MYT) Regulations, 2011, in order to recover full Annual Fixed Charges, the generating unit / station has to achieve 'Target Availability' as specified in Regulation 44.1 of the MERC (MYT) Regulations, 2011. In case, the availability of any generating station is lower than the Target Availability, the Annual Fixed Charges shall be reduced proportionately. The relevant extract of the MERC (MYT) Regulations, 2011 is reproduced below:

> *"The full Annual Fixed Charges shall be recoverable at target availability specified in Regulation 44.1, recovery of Annual Fixed Charges below the level of Target Availability shall be on pro rata basis. At zero Availability, no Capacity Charges shall be payable."*

1.6. Availability is required to be computed as per the Regulation 2.1(7) of the MERC (MYT) Regulations, 2011, which is reproduced below:

> *" "Availability" in relation to a thermal Generating Station for any period means the average of the daily average declared capacities as certified by Maharashtra State Load Despatch Centre (MSLDC) for all the days during that period expressed as a percentage of the installed capacity of the Generating Station minus normative auxiliary consumption in MW, as specified in these Regulations, and shall be computed in accordance with the following formula:*
>
> $$Availability = 10000 \times \sum_{i=1}^{N} DCi \; / \{ N \times IC \times (100 - AUXn) \}\%$$
>
> *where - N = number of time blocks in the given period*
>
> *DC = Average Declared Capacity in MW for the ith time block in such period*
>
> *IC = Installed Capacity of the Generating Station in MW*
>
> *AUX = Normative Auxiliary Consumption in MW, expressed as a percentage of gross generation"*

1.7. As can be inferred above, availability is a function of Average Declared Capacity. Declared Capacity has been defined as per the Regulation 2.1 (20) of the MERC (MYT) Regulations, 2011, which is reproduced below:

"20 "Declared Capacity" means-

a. for a thermal Generating Station, the capability of the Generating Station to deliver ex-bus electricity in MW declared by such Generating Station in relation to any period of the day or whole of the day, duly taking into account the availability of fuel:

Provided that in case of a gas turbine Generating Station or a combined cycle Generating Station, the Generating Station shall declare the capacity for Units and modules on gas fuel and liquid fuel separately, and these shall be scheduled separately. Total declared capacity and total scheduled generation for the Generating Station shall be the sum of the declared capacity and scheduled generation for gas fuel and liquid fuel for the purpose of computation of availability and Plant Load Factor, respectively;"

1.8. Hence, Declared Capacity is a factor which significantly impacts the recovery of Annual Fixed Charges of a generating unit. However, as per the definition of the Declared Capacity as given above, a generating station will only be able to declare capacity proportional to the fuel available for generation of power at such capacity. Therefore, the recovery of the Annual Fixed Charges of a generating station is dependent on the availability of fuel as per the current provisions of the MERC (MYT) Regulations, 2011.

2. Commission's Observations

Coal Supply Scenario

2.1. The Commission has taken note of the following facts:

a) Coal mines in India were nationalised through Coal Mines (Nationalisation) Act, 1973. Although coal mining was opened for private sector in 1990s, very few coal production mines operated by private players are operational as on date. Therefore, domestic coal supply largely remains a sector controlled by

Coal India Limited (CIL) and its subsidiaries.

b) There has been a dispute between power generators and CIL with regard to provisions relating to supply of adequate coal in the model Fuel Supply Agreement (FSA). New Coal Distribution Policy issued on 18 October, 2007 provides that 100% of the quantity of coal as per the normative requirement of the consumers will be provided by CIL. However, CIL is signing FSAs which provide an assurance of only 80% of the normative requirement of coal. Options such as import of coal by CIL to meet its obligations under the LoAs and passing such additional costs of imported coal through different mechanisms have been discussed, but the same have been disputed by various stakeholders and the issue still remains unresolved.

2.2. Considering the above, the Commission is of the view that supply of domestic coal is practically beyond the control of the generating stations to which MERC (MYT) Regulations, 2011 are applicable and which obtain coal from CIL through linkage. Also the emerging coal supply scenario suggests that power generating stations getting coal supply through linkage coal face a risk of not getting supply of adequate coal to meet the Target Availability defined under MERC (MYT) Regulations, 2011 for recovery of full fixed charges.

2.3. This may lead to a situation where, a generating station, for which Tariff is regulated under Section 62 of the Electricity Act, 2003, is available for generation of power but is not able to declare availability on account of lack of supply of fuel. In such cases, the generating stations may end up being penalised for reasons, which are beyond its control.

2.4. Therefore, power generating stations unable to declare higher capacity as per the current definition of Declared Capacity as per the MERC (MYT) Regulations, 2011 due to lack of supply of fuel, are not able to recover the entire fixed charges as a result of not maintaining the Target Availability of power station. Hence, the intent to promote efficiency in generation through Availability Based Tariff is defeated.

2.5. The Commission is of the view that the capability to supply power needs to be recognised as a measure of performance for a generator, rather than allocating the risk of non-availability of fuel to power generators, which are getting linkage coal from CIL and its subsidiaries.

2.6. The proposed modification in Regulation 49.2 of the MERC (MYT) Regulations, 2011 shall serve two purposes:

a) Consumers shall be benefited as the generating station would optimally utilise the fuel to generate power in peak hours. This would narrow the demand-supply gap during peak hours and also reduce procurement of costlier short-term power; and

b) It would allow generating stations to recover their full fixed charges by meeting the requirements of Target Availability in the peak hours.

Provisions in CERC Tariff Regulations

2.7. As per the provisions outlined in Section 61 of the Electricity Act, 2003, the State Electricity Regulatory Commissions shall be guided by the principles and methodologies specified by the Central Electricity Regulatory Commission (CERC) for determination of Tariff applicable to generation companies and transmission licensees.

2.8. As per Regulation 21 (4) of the CERC Tariff Regulations, in case of shortage of fuel in the thermal generating station, the generating company is provided with an option to generate higher amount of power during peak hours by saving fuel during off-peak hours. In the above cases, such higher capacity is allowed to be declared on a day ahead basis to the concerned Load Despatch Centre to utilise its power generation capacity optimally in consultation with the beneficiaries. CERC Tariff Regulations consider the maximum peak hour ex-power plant capacity specified by the concerned Load Despatch Centre for that day as the Declared Capacity for calculation of the availability for that day.

Similar provisions in Tariff Regulations of other State Commissions

2.9. The Commission noted that certain other State Commissions also provide for similar provisions for declaration of availability for generating stations facing fuel shortage in line with the provisions of CERC Tariff Regulations:

- Regulation 59.4 of the Gujarat Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2011; and
- Regulation 40.5 of Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions of Determination of Generation Tariff) (Revision II) Regulations, 2012.

3. Amendments

3.1. Considering the above, the Commission is of the view that there is a need to amend the MERC (MYT) Regulations, 2011 for inclusion of the provision for allowing the generating units facing fuel shortage to declare the maximum peak hour capacity as the Declared Capacity for that day. Accordingly, the amendments given in the following paragraphs are proposed in the MERC (MYT) Regulations, 2011.

3.2. Following shall be included as a first proviso to Regulation 49.2 of MERC (MYT) Regulation, 2011:

> *"Provided that in case of fuel shortage in a thermal generating station, the generating company may propose to deliver a higher MW during peak-load hours by saving fuel during off-peak hours. The Maharashtra State Load Despatch Centre shall specify a pragmatic day-ahead schedule for the generating station to optimally utilise its MW and energy capability. The declared capacity (DCi) for the purpose of computation of availability as per Regulation 2.1 (7) in such an event shall be considered equal to the maximum peak hour ex-power plant MW schedule specified by the Maharashtra State Load Despatch Centre for that day."*

3.3. As the definition of Declared Capacity needs to be modified as per the above mentioned provision, Regulation 2.1 (20)(a) of MERC (MYT) Regulations, 2011 is proposed to be replaced by the following paragraph:

> *"for a thermal Generating Station, the capability of the Generating Station to deliver ex-bus electricity in MW declared by such Generating Station in relation to any period of the day or whole of the day, duly taking into account the availability of fuel or water, and subject to further qualification in the relevant regulations, inter-alia Regulation 49.2.*
>
> *Provided that in case of a gas turbine Generating Station or a combined cycle Generating Station, the Generating Station shall declare the capacity for Units and modules on gas fuel and liquid fuel*

separately, and these shall be scheduled separately. Total declared capacity and total scheduled generation for the Generating Station shall be the sum of the declared capacity and scheduled generation for gas fuel and liquid fuel for the purpose of computation of availability and Plant Load Factor, respectively;"

3.4. As per Regulation 35.1 of the MERC (MYT) Regulations, 2011, the components covered for computation of working capital are as follows:

"(a) In case of coal based/oil-based/lignite-fired Generating Stations, working capital shall cover:

(i) Cost of coal or lignite for one and half months (1½) for pit-head Generating Stations and two (2) months for non-pit-head Generating Stations, corresponding to Target Availability;

(ii) Cost of oil for two (2) months corresponding to target availability;

(iii) Cost of secondary fuel oil for two (2) months corresponding to target availability;

(iv) Operation and Maintenance expenses for one (1) month;

(v) Maintenance spares at one (1) per cent of the historical cost; and

(vi) Receivables for sale of electricity equivalent to two (2) months of the sum of annual fixed charges and energy charges calculated on target availability;

minus

(vii) Payables for fuel (including oil and secondary fuel oil) to the extent of one (1) month of the cost of fuel calculated on target availability.

(b) In case of Gas Turbine/Combined Cycle Generating Stations, working capital shall cover:

(i) Fuel cost for one (1) month corresponding to target availability duly taking into account the mode of operation of the Generating Station on gas fuel and / or liquid fuel;

(ii) Liquid fuel stock for fifteen (15) days corresponding to target availability;

(iii) Operation and maintenance expenses for one (1) month;

(iv) Maintenance spares at one (1) per cent of the historical cost; and

(v) Receivables for sale of electricity equivalent to two (2) months of the sum of annual fixed charges and energy charges calculated on target availability,

minus

(vi) Payables for fuel (including liquid fuel stock) to the extent of one (1) month of the cost of fuel calculated on target availability."

3.5. As can be inferred above, the cost of fuel is a significant component of the working capital requirement of a generating company. As the fuel requirement of a unit facing fuel shortage in a particular year reduces, corresponding working capital also reduces proportionately. Therefore, the approval of working capital as per Regulation 35.1 of MERC (MYT) Regulations, 2011, should also factor the reduction in the fuel requirement.

3.6. Considering the above, when the generating units facing primary fuel shortage prefer to declare higher availability during the peak hours as per amended Regulation 49.2, the fuel cost component of the normative working capital requirement for such units needs to be reduced on a pro-rata basis by a ratio of the Actual Average Generation in MW for the entire year to the Average Declared Capacity. However, this is proposed to be carried out at the time of comparison of actual performance of the generating station with the projected performance.

3.7. Hence, the following is proposed to be included as a first proviso to Regulation 35.1 (a) (i) of the MERC (MYT) Regulations, 2011:

"Provided that in case of a unit availing the provision of declaring higher capacity during the peak hours as per Regulation 49.2, the fuel cost component of the working capital requirement as mentioned above for such unit shall be reduced on a pro-rata basis by a ratio of

the Actual Average Generation in MW for the entire year to the Average Declared Capacity. This reduction shall be carried out at the time of comparison of actual performance of the generating company with the approved performance."

3.8. As per MERC (MYT) Regulations, 2011, Tariff determination is required to be carried out station-wise, phase-wise or unit-wise. However, under circumstances of fuel shortage, when a unit declares higher availability during the peak hours as per the amended Regulation 49.2, it must be ensured that each of these units must undergo Tariff determination separately. This is to ensure that the benefit of declaring higher availability for the unit facing fuel shortage is restricted to the respective unit only.

3.9. Hence, the following is proposed to be included as a first proviso to Regulation 38.2 of the MERC (MYT) Regulations, 2011:

"Provided that in case of a unit availing the provision of declaring higher capacity during the peak hours as per Regulation 49.2, Tariff determination for such unit must be carried out separately and not phase-wise or station-wise."

3.10. As per the first proviso to Regulation 49.8, the generation loss on account of any backing down instruction from Maharashtra State Load Despatch Centre is required to be considered for calculating the actual generation for the purpose of computing PLF Incentive. However, if a unit opts to declare higher capacity during the peak hours as per first proviso of amended Regulation 49.2, the lower generation during the off-peak hours is an implication of the decision by the generating company to utilise the fuel for generation in the peak hours. Hence, the lower generation during off-peak period in such instances shall not be considered as generation loss on account of backing down instructions from Maharashtra State Load Despatch Centre.

3.11. Hence, the following is proposed to be included as a second proviso to Regulation 49.8 of the MERC (MYT) Regulations, 2011:

"Provided that in case of a unit availing the provision of declaring higher capacity during the peak hours as per Regulation 49.2, the reduction in power generation during the off-peak hours on such days shall not be considered as generation loss on account of backing down

instruction from Maharashtra State Load Despatch Centre."

3.12. If a generating unit utilises the provision of the amended Regulation 49.2, it will not be possible for such unit to operate the unit at the higher capacity declared for the peak period during off-peak period. Thus, the Regulation related to demonstration of Declared Capacity also needs to be modified

3.13. Hence, following proviso is proposed to be included as a first proviso to Regulation 51.1 of the MERC (MYT) Regulations, 2011:

> *"Provided that in case of a unit availing the provision of declaring higher capacity during the peak hours as per Regulation 49.2, the Maharashtra State Load Despatch Centre shall accept the capacity declared, scheduled and demonstrated during the peak load hours as the Declared Capacity for the entire day. In such cases, the unit shall not be required to demonstrate the Declared Capacity on request of the Maharashtra State Load Despatch Centre in the off-peak hours on such days when the provision of Regulation 49.2 are availed by the unit."*

3.14. Based on the amendments as mentioned above, the Commission has issued the draft Maharashtra Electricity Regulatory Commission (Multi Year Tariff) (Second Amendment) Regulations, 2011.