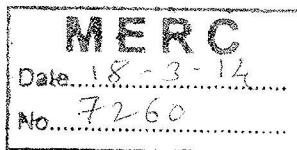


Annexure to Order dated 31 July, 2014 in Case No. 77 of 2013



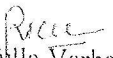
## Committee Report

On

### Grid Connectivity related issues of Renewable Energy Sources


Case No. 77 of 2013


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## 1. Background

M/s. Yashawant Sahakari Glucose Karkhana Ltd., Shri Tradco Dessan Pvt. Ltd. & M/s. Honest Derivatives Pvt. Ltd. (hereinafter referred as “the Petitioners”) filed a petition in Case No. 77 of 2013 for Grid connectivity of a Captive Power Generation Plant and authentication of generated units by MSEDCL (the Respondent) for obtaining Renewable Energy Certificates (REC) benefits.

Main Prayers of the Petitioners are as below:

- i. *The Respondent be directed to grant Grid connectivity and be further directed to carry out joint meter reading and to authenticate the same regularly as per REC requirements.*
- ii. *All other just and equitable reliefs be granted to the petitioner for the effective adjudication of this case.”*

In the present case, the Petitioners intend to get registered under REC mechanism, which mandates renewable energy based generation plants should be grid connected. However, unless the renewable energy based generation power plant is connected to the grid of concerned licensee, the project cannot be accredited and registered under REC mechanism. The Petitioners submitted that there are no guidelines on Joint Meter Reading (JMR) for claiming the REC from electricity generation for captive generation plants, so office of the MSEDCL was contacted to grant grid connectivity, for taking JMR and authenticate the same to make the project eligible under REC mechanism.

MSEDCL vide letter dated 18 March, 2013 mentioned that L.T. supply side is not in their scope.

Petitioners submitted that Biogas plants have been setup for their own use and do not intend to carry out any business which will compete with the Respondent.

## **2. Regulatory Proceedings & Formation of Committee under Case No. 77 of 2013**

The hearings in this matter were held on 16 July, 2013, 5 August, 2013, 30 October, 2013 & 7 January, 2014. The Commission vide Daily Order dated 7 January 2014 directed for the formation of Committee under Director (EE), MERC along with the representative from MSLDC, MSEDCL, MEDA, Petitioners, Consumer Representatives and Representatives from Renewable Energy Associations to look into the connectivity related issues of Renewable Energy sources in line with CEA (Technical Standards for Connectivity of the Distributed Generating Resources) Regulations, 2013. The Commission also directed the Committee to look into the Technical and Commercial issues involved in the matter and directed to submit its report to the Commission within 45 days.

The approved Term of Reference (ToR) for the Working Committee was sent to the Committee members vide letter dated 16 January 2014.

## **3. Terms of Reference (ToR) of Working Committee**

- 1) The Commission vide its daily Order dated 7<sup>th</sup> January 2014 in Case No.77 of 2013 directed as below:

*“the Committee under Director (EE), MERC including representative from MSLDC, MSEDCL, MEDA, Petitioners, Consumer Representatives and Representatives from Renewable Energy Associations is directed to look into the connectivity related issues of Renewable Energy sources in line with CEA (Technical Standards for Connectivity of the Distributed Generating Resources) Regulations, 2013. Committee is also directed to look into the Technical and Commercial issues involved into the matter and submit its report to the Commission within 45 days. Term of Reference (TOR) will be separately issued within a week.”*

- 2) In view of above, the Committee was formed under Director (EE), MERC along with the representatives from the following Organization/ Associations;

### **Nominated members for Working Committee by Parties:**

- Shri A.S. Ghogare (Executive Engineer), MSEDCL
- Shri. Jayant Kulkarni (Superintending Engineer), MSLDC
- Dr. J.V. Torane (General Manager), MEDA

- Shri Ashok Pendse, TBIA (Consumer Representative)
- Shri. G.N. Kamath, REDAM
- Shri. Abhijit Naik, Shri. Rajratan Agarwal & Shri. B.H. Gujrathi Representative from the Petitioners in Case No 77 of 2013

3) The approved ToR for the Grid Connectivity related issues of Renewable Energy sources is as follows:

i) Study of technical issues related to grid connectivity of Renewable Energy sources includes:

A) Issues of Connectivity:

- a) What should be the Minimum Voltage level for grid connectivity?
- b) Where should be Interconnection Point for LT network?
- c) Scope of Evacuation arrangement
- d) Certification/ Verification of connectivity arrangement

B) Metering Arrangement:

- a) Custody and responsibility of reading “internal” meters
- b) Meter specifications
- c) Metering arrangement for the purpose of REC
- d) Scope of Joint Meter Reading

C) Energy Accounting

- a) Treatment of line and Transformer losses
- b) Study of existing provisions
- c) Measurement and treatment of Auxiliary consumption, self consumption, import and export of power.

D) Reactive Energy drawl limits and grid standards related to harmonics, DC current injections etc.

- E) Study of safety measures and protection system requirement as per existing CEA standards & its amendments.
  - F) Study of relevant provisions in Draft FOR Model for Net metering Regulations.
  - G) Feasibility study of third party sale of LT connected RE projects.
- 
- ii) Review of existing LT grid connectivity provisions for Renewable Energy projects of others States.
  - iii) Defining roles and responsibilities of parties (i.e. DISCOM and Generating Company, SLDC), and devising the information protocols for connectivity of Renewable Energy Projects at appropriate voltage level in line with CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.
  - iv) Study of Commercial issues:
    - a) Recovery of Administrative cost associated with JMR, Credit notes issuance.
    - b) Reactive Energy Charges.
    - c) Parallel operating charges, Penalties or incentives, if any.
  - v) Preparation of draft terms and conditions for inter-connections for various Renewable Energy Sources.

#### **4. Proceedings of the Committee:**

The first meeting of Committee in this matter was held on 24 January, 2014 at MERC Office, Mumbai. During the meeting, point-wise discussion was held w.r.t. approved ToR and all the Members of Committee were requested to submit their views/submission on approved ToR.

The second meeting of Committee was held on 10 February, 2014 at MSLDC office, Airoli, Navi Mumbai. During the meeting, the detailed discussion was held on the issues raised and suggestions given by the Members of Committee on approved ToR. The Commercial issues involved in this matter were also discussed in the meeting.

The Members of Committee suggested that scope of the present study should be limited to only the Petitioners grid connected Captive Renewable Energy Projects.

The Minutes of Meeting is enclosed as **Annexure- A** and **Annexure - B**.

Further, the Committee vide its letter dated 20 February, 2014 sought addition two weeks time for submission of report. (**Annexure - C**)

#### **5. Analysis and Committee's Observations as per Terms of Reference**

As per approved ToR and in line with the subsequent meetings of Committee, the issue wise analyses are as follows:

**i) Study of technical issues related to grid connectivity of Renewable Energy Sources includes:**

**A) Issues of Connectivity:**

**a) What should be the Minimum Voltage level for grid connectivity?**

Committee discussed that, if permitted, what is the appropriate voltage level for such connectivity? Should there be any norms or capacity (kWp) restrictions be specified for each voltage level? (e.g. upto 50 kW at 230 V, 50 kW to 500 kW at 440 V, 500 kW to 2 MW at 11 kV and > 2 MW at 22 kV/33 kV).

MSEDCL mentioned that the Petitioner can connect the captive generation plant to the Transmission or Distribution network. Grid connectivity norms shall be as per MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005 and Clause 2.1(j) of MERC

(Renewable Purchase Obligation, its compliance and REC framework Implementation) Regulations, 2010 (hereinafter referred as “MERC (RPO-REC) Regulations, 2010).

MSEDCL further mentioned that in case of 11 KV and above connectivity, the Generator shall be connected to electricity system through express feeder. So that there will be continuous corridor available for evacuation of generated power. The LT feeders are subjected to load shedding depending on the various categories. The load shedding on Agriculture LT feeders are up to 12 Hours. In such cases, the LT feeder may not be available for evacuation of power.

MSLDC mentioned that in the cases of captive plants, even though the interface point may be at HV side of the transformer, self consumption and gross generation measurement of such plants are bound to be at LV side. Such an interface is not defined in any Regulations.

The Petitioner mentioned that the interface point with distribution network is at 33 KV level. Hence, connectivity shall be at 33 KV Level with synchronization facility on LV side of 33/0.4 kV transformer.

The Committee noted that the Regulation 5.3 of the MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005 stipulates the classification of installation. The same is reproduced as under:

*“5.3 Except where otherwise previously approved by the Authority, the classification of installations shall be as follows:*

*(i) A.C. system*

*(a) Two wire, single phase, 240 volts-*

*General supply not exceeding 40 amperes*

*(b) Four wire, three phase, 240 volts between phase wires and neutral general supply exceeding 40 amperes and sanctioned load not exceeding 80 kW/ 100 kVA (107 HP) in all areas, except in Municipal Corporation areas where such limit would be 150 kW/ 187 kVA (201 HP)*

*(c) Three phase, 50 cycles, 11 kV/ 22 kV – all installations with contract demand above 80 kW/ 100 kVA (107 HP) in all areas, except in Municipal Corporation areas where such limit would be 150 kW/ 187 kVA (201 HP) and up to 1,500 kVA.*

*(d) Three phase, 50 cycles, 22 kV – all installations with contract demand above 1,500 kVA and up to 3,000 kVA*

*(e) Three phase, 50 cycles, 33 kV – all installations with contract demand above 1,500 kVA and up to 5,000 kVA*

*(f) Three phase, 50 cycles, extra high voltage – all installations with contract demand above 5,000 kVA*

*(ii) D.C. system*

*(a) Two-wire 130 volts*

*i. General supply not exceeding 10 amperes*

*ii. Motive power installations upto 1 BHP in aggregate*

*(b) Three wire, 460 volts between outers – Motive power installations of over 1 BHP”*

The voltage level and corresponding load limit as per MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005, reproduced as below:

Voltage level	Load Limit
	Standard of Performance Regulations, 2005
LT 1 ph	40 Amp
LT 3 Ph	>40 Amp to 80kW / 100 kVA in all area
	>40 Amp to 150 kW / 187 kVA in Municipal Corporation area
11 / 22 kV	>80 kW / 100 kVA to 1500 kVA
22 kV	1500 KVA to 3000 KVA
33 kV	1500 kVA to 5000 kVA
EHV	> 5000 kVA

**The Committee suggested that depending upon the voltage level for grid connectivity, the provisions of CEA (Technical Standards for Connectivity of the distributed generation resources) Regulations, 2013 or State Grid Code Regulations shall be applicable.**

**The Committee further suggested that renewable energy captive generating plant shall also comply with MERC (Standards of Performance of Distribution Licensees,**

**Period for Giving Supply and Determination of Compensation) Regulations, 2005 and Regulation 2.1(j) of MERC (RPO – REC) Regulations, 2010.**

**b) Where should be Interconnection Point for LT network?**

The Committee noted that the Regulation 2.1(j) of the MERC (RPO - REC) Regulations, 2010 stipulates the inter-connection point for renewable energy generating facility, as reproduced below:

*“2.1 (j) **"Inter-connection Point"** shall mean the interface point of renewable energy generating facility with the transmission system or distribution system, as the case may be:*

*(i) in relation to wind energy projects and Solar Photovoltaic Projects, inter-connection point shall be line isolator on outgoing feeder on HV side of the pooling sub-station;*

*Provided the Pooling Sub-station shall mean the sub-station at project site of the windfarm or solar power plant, as the case may be, and shall constitute step-up transformer and associated switchgear, and to the LV side of which, multiple (more than one) generating unit(s) (i.e. wind turbine generators or solar PV modules/arrays/inverter units) are connected.*

*(ii) in relation to mini/micro hydro power, small hydro power, biomass power, non-fossil fuel based co-generation power projects and solar thermal power projects, the inter-connection point shall be line isolator on outgoing feeder on HV side of generator transformer.”*

The Committee also noted that clause 2.1 (i) of CEA Technical Standards for Connectivity of Distributed Generation Resources 2013, defines Interconnection Point as below:

*“Interconnection point means a point on the electricity system, including a substation or a switchyard, where the interconnection is established between the facility of the applicant and the electricity system and where electricity injected into or draw from the electricity system can be measured unambiguously for the applicant”.*

MSLDC mentioned that in the cases of captive plants even though the interface point may be at HV side of the transformer, self consumption and gross generation measurement of such plants is bound to be at LV side. Such an interface is not defined in any Regulations.

Petitioner mentioned that the interface point with distribution Network is at 33 KV level. Hence connectivity shall be at 33 KV Level with synchronization facility on LV side of 33/0.4 kV transformer.

**In view of the above, the Committee suggested that interface point with distribution network for the Petitioners shall remain at 33 KV level as specified in the Regulations. However, self consumption, auxiliary consumption and gross generation measurement of such plants shall be at LV side. The Committee further suggested that metering arrangement for the purpose of REC shall be in line with approved procedure for submission of data to MSLDC for Renewable Energy Certificate (REC). Measurement of self consumption, auxiliary consumption and gross generation shall be as specified under para (iii) (c) of this report.**

**c) Scope of Evacuation arrangement:**

The Committee suggested that evacuation cost up to inter-connection point shall be borne by RE Generator. Renewable energy captive generator shall bear the additional cost of evacuation arrangement for such grid connected systems.

**d) Certification/ Verification of connectivity arrangement:**

The Committee suggested that verification/certification of the configuration of CPP installation and connectivity arrangements shall be done by the Electrical Inspector before commissioning as per prevailing practices, so as to standardize the same.

The protocol for monitoring and third party verification (i.e., Electrical Inspector) for installation may be in line with provisions of Electricity Act 2003 and Indian Electricity Rules 2005 and amendments therein.

The Committee further suggested that while synchronizing the system, all concerned authorities shall be communicated.

**B) Metering Arrangement:**

Regarding metering arrangement, the Committee suggested as under:

**a) Custody and responsibility of reading “internal” meters:**

Custody of the internal meters should be with distribution licensee i.e. MSEDCL. Renewable energy captive generator shall bear the cost of metering arrangement. Further

Renewable energy captive generator shall provide unconditional access to MSEDCL to the metering arrangement.

Metering arrangement specified by the Commission from time to time shall be applicable.

**b) Meter specifications:**

The metering specifications shall be as per the CEA (Installation and Operation of Meters) Regulations, 2006 and the amendments therein.

Meters should be capable of reading Gross Power Generation, Self Consumption, Import and Export of Power, Auxiliary Consumption, etc.

**c) Metering arrangement for the purpose of REC:**

The metering arrangement shall be as per the CEA (Installation and Operation of Meters) Regulations, 2006 and amendments therein.

Generators shall match/ upgrade/ modify the protection & metering system, if required in future for smooth and safe operation with MSEDCL network.

It is suggested that metering arrangement for the purpose of REC shall be in line with approved “Procedure for submission of data to SLDC for Renewable Energy Certificate”. The self consumption and auxiliary consumption of renewable based CPP should be separated and metered, as the auxiliary consumption is not eligible for REC.

Metering system may also comply with CERC and MERC (REC-RPO) Regulations, 2010 & as amended from time to time.

The Special Energy Meters (ABT Compliant) shall be provided by the RE based captive power plant.

**d) Scope of Joint Meter Reading:**

As per “Procedure for submission of data to SLDC for Renewable Energy Certificate”, in case of RE projects connected to the distribution network, the concerned distribution licensee shall undertake JMR (along with concerned RE Generator) and maintain energy accounting information of such Renewable Energy Generator on monthly basis and submit energy injection report to the concerned SLDC on monthly basis.

In case of CPP, the meter data for self consumption shall be provided to SLDC by concerned distribution licensee, even though the RE Generator connected to the grid on EHV network.

### **C) Energy Accounting:**

#### **a) Treatment of line and Transformer losses:**

The Committee suggested that line losses to be accounted for as per State Grid code & MERC's respective Orders. Generator shall provide and maintain the necessary protection for parallel operation of its transformer.

Generator shall also provide metering arrangement at LT side for the measurement of Transformer losses.

#### **b) Study of existing provisions:**

As per the CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, clause 7 (5) specifies *"The process of certifying the energy injection shall be as stipulated in the detailed procedure to be issued by the Central Agency"*

Currently MSEDCL is issuing energy injection report based on the meter reading to all the RE generator eligible for REC as per MSLDC guidelines. MSLDC had also specified "Procedure for submission of data to SLDC for Renewable Energy Certificate".

Accordingly, the Committee suggested that Energy Injection Report to be issued as per MSLDC guidelines.

#### **c) Measurement and treatment of Auxiliary consumption, self consumption and import and export of power:**

MSEDCL suggested that the auxiliary consumption in absence of captive generation shall be billed at commercial tariff provided there is no energy purchase agreement executed between RE generator & MSEDCL.

The Committee suggested that renewable energy generator shall install separate meter for the measurement of gross energy generation, auxiliary consumption, self consumption and separate accounting for import & export of energy. MERC (Terms and Conditions for determination of RE Tariff) Regulations, 2010, specify the norms for auxiliary consumption of biomass and non-fossil fuel based cogeneration power plants. Further Committee suggested that auxiliary consumption recorded for RE generators shall be in line with the norms specified in MERC (Terms and Conditions for determination of RE Tariff) Regulations, 2010.

**D) Reactive Energy drawl limits and grid standards:**

The Committee suggested that during the operations of the power plant in parallel with the grid, if reactive power is drawn from the grid, generator shall compensate MSEDCL at applicable rate and shall be abided by MERC's respective Orders/ Regulations/ Policy of MSEDCL in regards to reactive power flow control and shall pay penalty/ incentive as applicable.

MSEDCL submitted that in case of any disturbance to other consumers of MSEDCL and if MSEDCL observes that grid disturbance caused due to grid connectivity of CPP, MSEDCL is liable to terminate the grid connectivity permission issued to such CPP.

The Committee further suggested that harmonic current injections from a generating station shall not exceed the limits specified in IEC 61727 as specified in the clause 5(11) of CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

The Committee further suggested that measurement of harmonic current injection, direct current injection and flicker shall be done with calibrated meters before commissioning of the project and once in a year in presence of the parties concerned and the indicative date for the same shall be mentioned in the connection agreement as specified in the clause 5(8)(2) of CEA(Technical Standards for Connectivity of the distributed Generation Resources) Regulations, 2013. The cost of measurement of harmonic current injection, direct current injection and flicker shall be borne by the Generator.

**E) Study of safety measures and protection system requirement:**

The Committee suggested that generator shall comply with Central Electricity Authority (Measures Relating to Safety and Electrical Supply) Regulations, 2010 and as specified under clause 5(6) of CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013

The Committee also suggested that Renewable CPP generator shall upgrade the protection system in accordance with the Regulations issued by MERC from time to time or MSEDCL policy at its own cost.

The Committee also noted that in case of any planned /unplanned shutdown, breakdown on LT network, there should be a provision that renewable generator automatically gets isolated from the LT network, so that lineman can work on the line safely.

The Committee further suggested that generators shall maintain the communication facility between its control room and MSEDCL/ MSLDC system and MSEDCL/ MSLDC shall not be responsible for consequent unintended damages if any.

**F) Study of relevant provisions in FOR draft Model for Net metering Regulations:**

Highlights of FOR draft model for Net Metering Regulations are as below:

- FOR's draft model Net Metering Regulations are applicable for Rooftop Solar Grid Interactive systems based on Net metering.
- These Regulations do not preclude the right of relevant State Authorities to undertake rooftop solar projects above 1 MWp capacity through alternative mechanisms.
- This draft model Regulations also specifies that interconnection of the rooftop solar system with the network of the distribution licensee shall be made as per the technical standards for connectivity of distributed generated resources Regulations to be notified by the competent Authority.
- A variation in the rated capacity of the system within a range of five percent is allowed.
- Energy Accounting and Settlement: For each billing period, the licensee shall show the quantum of injected electricity by eligible consumer in the billing period, supplied electricity by distribution licensee in the billing period, net billed electricity for payment by the consumer for that billing period and net carried over electricity to the next billing period separately.
- In case of any dispute in billing it would be settled by the consumer grievance redressal forum and if issue still remains unresolved shall be settled by the concern State Electricity Regulatory Commission.
- The issuance of REC shall be as per the eligibility criteria specified under Central Electricity Regulatory Commission (Terms and conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 and subsequent amendments thereof
- The main Solar Meters shall be of 0.2s class accuracy and with facility for recording meter readings using Meter Reading Instrument (MRI). Check meters shall be mandatory for rooftop solar systems having capacity more than 20 kW. For installations size of less than and equal to 20 kW, the solar Check meters would be optional.

- Cost of new/additional meter(s) shall be borne by the eligible consumer and installed & owned by the distribution licensee. Eligible consumer shall follow the metering specifications, provisions for placement of meter as developed by the Distribution Licensee from time to time. Provided further that in case the eligible consumer is under the ambit of time of day tariff, meters compliant of recording time of day consumption/generation shall be employed.
- The meter reading taken by the distribution licensee shall form the basis of commercial settlement.

**The Committee noted that the Study of relevant provision in FOR's draft Model for net metering Regulations is applicable for grid connected rooftop solar projects and not applicable for present case.**

**G) Feasibility study of third party sale of LT connected RE projects:**

The Committee suggested that guidelines so framed may be considered only for Renewable Energy Captive Power plants. For third party sale, MERC Distribution Open Access Regulations, 2005 shall be made applicable.

**H) Eligibility and Registration for Certification:**

The Committee noted that in accordance with CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013, in case of renewable energy sources based co-generation plants, the connected load capacity as assessed or sanctioned by the concerned Distribution Licensee, shall be considered as the capacity for captive consumption for the purpose of issue of certificates, irrespective of the capacity of such plants covered under the power purchase agreement.

**The Committee recommended that certification on connected load or sanctioned load from the DISCOM shall be submitted to MEDA while submitting the application for accreditation.**

**ii) Review of existing LT connectivity provisions for Renewable Energy projects of others States:**

Petitioners submitted a report on LT grid connectivity issued by DGVCL to Ganesh Khand Udyog Sahakari Mandali Limited for operating 3.0MW of captive power plant in parallel with DGVCL grid system located at Dist. Bharuch.

The Committee noted the grid connectivity to distribution Grid for Generating Stations in various States summarized as under:

**a) Tamil Nadu:**

The connectivity conditions for small generators in Tamil Nadu Electricity Distribution Code, 2010 is as under:

*“8. Distribution System Interface with Small Generators—The electricity generated by the private developers pertaining to power projects based on renewable energy sources of wind, biomass etc or captive power plants shall be evacuated by interfacing with the distribution system or intra state grid. The voltage levels, connection points and connectivity conditions, safety etc., for such interfacing shall comply with the conditions laid down under Tamil Nadu Electricity Grid Code (TNEGC) and the regulations issued by the Authority in this regard.”*

Further, the connectivity conditions in Tamil Nadu Electricity Grid Code, 2005 are as under:

**“(7) Connection Points**

**(i) Generating Stations including IPPs:**

*Generating stations Switchyard Voltage may be at the level of 400,230 and 110 kV or as agreed to by the STU. Unless specifically agreed with the STU, the connection point shall be the outgoing feeder gantry of the Power Station switchyard. All the terminal, communication, protection and metering equipments owned by the generating agency, within the perimeter of their site shall be maintained by them. From the outgoing feeder gantry onwards, all electrical equipments shall be maintained by the STU.*

... ..

.....

**(iv) Captive Generators, Co-generators and HV consumers**

*The voltage level may be at 230, 110, 66, 33, 22, 11 kV or as agreed to by STU. Sub-stations shall be owned by Co-Generators, CPPs and the HV consumers. The connection point shall be the feeder gantry on their premises.”*

However, in Solar Energy Policy, the Grid Connectivity is allowed to LT System (415 V/ 240 V) for Solar PV having capacity less than 100 kWp. The details are as under:

Solar PV System Size	Grid Connectivity
< 10 kWp	240 V
10 kWp to <15 kWp	240 V/415 V
15 kWp to < 50 kWp	415 V
50 kWp to < 100 kWp	415V

**b) Kerala:**

The connectivity conditions in KSERC (Connectivity and Intrastate Open Access) Regulations, 2013 are as under:

***“4. Eligibility for connectivity.- (1) A consumer having contracted load above 12 MVA or a generating station having capacity above 12 MW shall be eligible to obtain connectivity to the intra-state transmission system and shall apply for connectivity in accordance with the provisions in the State Grid Code, unless already connected at the appropriate voltage level as specified in the State Supply Code.***

*(2) A consumer having contracted load of and below 12 MVA or a generating station having installed capacity of and below 12 MW shall be eligible to obtain connectivity to the distribution system and shall apply for connectivity as per the provisions of the State Supply Code or the State Distribution Code, unless already connected at appropriate voltage level as specified in the said Codes:*

... ..

***7. Procedure for application for connectivity for a generating station to distribution system.- (1) All eligible generating stations including a captive generating plant, seeking connectivity to a distribution system, shall apply to the distribution licensee for connectivity in the format stipulated in the procedure as per State Distribution Code.***

*(2) The application shall be accompanied by a non-refundable fee as specified by the Commission from time to time in the manner to be stipulated in the State Distribution Code.*

*(3) The application for connectivity shall contain details such as, proposed geographical location of the generating station, quantum of power to be injected and such other details as may be laid down in the State Distribution Code.”*

In the Kerala Electricity Supply Code (Fourth Amendment) Regulations, 2008, the connecting voltage and loading limits are stipulated as under:

***“3. Sub Clause (5) of Clause 4 of the Kerala Electricity Supply Code, 2005 shall be substituted with***

(a)The supply voltage for different connected loads for new connections shall be as follows:

<b><i>Supply Voltage</i></b>	<b><i>Max Connected Load</i></b>	<b><i>Max Contract Demand</i></b>
240 V	5 kW	
415 V	100 kVA	
11 kV		3000 kVA
22 kV		6000 kVA
33 kV		12000 kVA
66 kV		20000 kVA
110 kV		40000 kVA
220 kV		>40000 kVA

*(b) For new consumers connected load permitted under LT may be limited to 100 kVA. But consumers existing as on the date of implementation of Kerala Electricity Supply Code, 2005 may be permitted to operate in LT up to a load of 150 kVA”*

Further, the connectivity conditions for Generating Stations in Kerala Electricity Grid Code, 2006 are as under:

***“9. Connection Points with Generating Company.-*** *The voltage at the point of connection with the transmission system may be 400/220/110/66 kV or as agreed to by the STU. The connection point shall be the outgoing feeder gantry point of the Power Station switchyard. The Metering Point shall be the outgoing feeder. All the protection and metering equipment within the perimeter of the Power Station shall be owned and maintained by the Generating Company. ”*

However, in case of Solar Energy Generators, it is proposed that the Solar generators should be allowed to connect to the distribution system. The capacity of the solar generators to connect on LT system is limited to the 50% of the capacity of distribution transformer.

The relevant extract of the draft KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 is as under:

***“5. Obligation of the distribution licensee to make available the connectivity to its distribution system.-***

*(1) The distribution licensee shall, without any discrimination, provide the connectivity to its distribution system for the solar energy system of every consumer in its area of supply,*

*(2) The connectivity shall be given in the order of the date of receipt of application from the consumer.*

*(3) The distribution licensee shall give connectivity to the solar energy system of any consumer provided the **cumulative capacity of solar energy systems connected to the distribution system under a particular distribution transformer does not exceed fifty percent of the capacity of the such transformer.***

*Provided that the distribution licensee shall make available on its website and in its local offices, the information relating to the capacity available for connecting the solar energy systems to the distribution transformer and shall update such information.*

*(4) If the cumulative capacity of the solar energy systems under a distribution transformer exceeds the limit as provided in sub regulation (3) above, the licensee shall, within a period of two months, replace such transformer with another transformer of required higher capacity. ”*

**c) Chhattisgarh:**

The connectivity conditions for the Generator in the Chhattisgarh State Electricity Supply Code, 2011 are stipulated as under:

***“Generator in consumer’s installation***

*12.1 Operations of a generator in the consumer’s installation to run in parallel with the licensee’s system is permissible only with the written consent of the licensee.*

... ..

***Connectivity with the grid***

*12.5 Procedure for availing connectivity with the grid by a generator shall be in accordance with provisions contained in CSERC (Connectivity and intra-State open access) Regulations, 2011 as amended from time to time. The technical standard safety and operational criteria with grid shall be in accordance with Central Electricity Authority (Measures relating to safety and electric supply) Regulations 2010 and Central Electricity Authority (Technical Standards for construction of electrical plant and*

*electric lines) Regulations 2010 as amended from time to time and Central Electricity Authority (Grid standards for operation and maintenance of transmission line) Regulations, as and when they come into force.*

*12.6 The voltage level-wise prescribed quantum of power for injection by a generating station/captive generating plant to the intra-State transmission system and distribution system shall be as specified in Chhattisgarh State Electricity Grid Code, 2007 as amended from time to time (State Grid Code hereafter). ”*

The CSERC (Connectivity and intra-State open access) Regulations, 2011 specified the connectivity conditions for Generator as under:

***“10. Grant of Connectivity***

*(1) The voltage level for injection of power by a generating station/captive generating plant to the intra-state transmission system and distribution system with reference to quantum of injected power shall be as specified in the State Grid Code.*

... ..

Table-1 Connectivity								
S No	Licensees system where Connectivity required	Nodal agency	Applicant	Max. Quantum of Power to be injected / offtaken into / from intra-state transmission system and / or distribution system	Application fee (Rs in lakhs)	Time frame for processing of application and execution of work		
1	STU	STU	Generating company or captive generating plant	1 MW and above and up to 50 MW	2	1. Informing feasibility after receipt of the application-30 working days. 2.Issue of demand note of estimate charges after issue of notice of feasibility -60 working days i.e Maximum 90 working days for processing application from date of receipt of complete application 3. Time frame for execution of connectivity shall be as specified in supply code for EHT connection		
				More than 50 MW and up to 250 MW	4			
				More than 250 MW and up to 1000 MW	6			
				More than 1000 MW	9			
			Bulk Consumer, captive user	1 MW and above and up to 50 MW	2	As above		
				More than 50 MW	4			
			Licensees	To be specified in detailed procedure				
2.	Transmission licensee other than STU	Transmission licensee	Generating company or captive generating plant	1 MW and above and up to 50 MW	2	Same as for STU		
				More than 50 MW and up to 250 MW	4			
				More than 250 MW	6			
			Bulk Consumer, captive user	1 MW and above and up to 50 MW	2	Same as for STU		
				More than 50 MW	4			
			Licensees	To be specified in detailed procedure				
			3	Distribution licensee	Distribution licensee	Generating company or captive generating plant	15 MW and below	2
Bulk Consumer, captive user	1 MW to 9 MW	2				As per the provision in supply code for HT connection		

Further, the connectivity conditions in Chhattisgarh State Electricity Grid Code are specified as under:

*“ 4.2.1 **Generating Stations:** The voltages at which a generating station may be connected with the grid of transmission or distribution licensee (as applicable) can be 400, 220, 132 or 33 KV. The connection point/interface point shall be the point at the sub-station of the licensee system where power is injected. The metering point shall be at the connection point / interface point.*

*Following are the prescribed quantum for injection of power to the state grid with reference to voltage of injection: -*

<i>Sl. No.</i>	<i>Voltage of Injection</i>	<i>Maximum Quantum of power that can be injected into grid</i>
1.	33 KV	Up to 15 MVA
2.	132 KV	Up to 75 MVA for single circuit and 150 MVA for double circuit
3.	220 KV	Up to 200 MVA for single circuit and 400 MVA for double circuit

*4.2.3 All the generating plants including captive generating plants having injection and / or drawal requirements from the grid up to and including 15 MVA shall have connectivity with the grid under either of following modes, at their own cost, unless otherwise specified by the Commission subject to technical feasibility:-*

- 1. At nearest EHV sub-station through dedicated 33 KV line.*
- 2. At nearest 33/11 KV sub-station through dedicated 33 KV line.*
- 3. At 33 KV switching or pooling sub-station through dedicated 33 KV line.*
- 4. No tap connectivity on 33 kv line shall be allowed.”*

Further, in Chhattisgarh, the Solar PV projects are allowed to be connected on LT System. The relevant extract of CSERC (Determination of tariff for procurement of power from Rooftop PV Solar Power Projects by distribution licensees of State) Regulations, 2013 is as under:

***“(C) Grid Connectivity***

*(i) Subject to fulfillment of other technical requirements, Rooftop PV and other grounded PV Solar Power Projects connected to the distribution network at voltage levels 33kV and below shall alone be eligible for generic tariff determined for such projects under these Regulations*

<i>SPV Capacity</i>	<i>Type</i>	<i>Evacuation level</i>
<i>50 kW-100 kW</i>	<i>Roof top/ ground mounted</i>	<i>Min 415V, 3 Phase, 50 Hz</i>
<i>101 kW – 1000 kW</i>		<i>Min 11 KV, 3 Phase, 50 Hz</i>

***Provided that if the installed capacity of the SPV project is more than the contracted load with licensee than the developer shall bear the applicable infrastructure***

*augmentation / development charges, if any according to the provisions of prevailing Supply Code to facilitate the concern licensee for power evacuation.*

*(ii) In general the requirements specified by CEA for connectivity would be applicable.*

*(iii) Connectivity with distribution system of the licensees will be carried out by distribution licensee in the presence of representative from distribution licensee, Chief Electrical Inspector and State agency. ”*

**The Committee noted that except for solar projects, connectivity for Captive Generating Power Plants has been stipulated at HT level only.**

### **iii) Roles and responsibilities of parties & protocols for connectivity of Renewable Energy Projects:**

The Committee suggested that the functions, roles and responsibilities of entities involved under REC mechanism should be as per CERC REC detailed procedure dated 09 November 2010 and its amendment therein.

The Committee further noted that CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013 defines the roles and responsibilities of parties as below:

#### **a) Role of Applicant:**

- *The Applicant shall be responsible for the planning, design, construction, reliability, protection and safe operation of its own equipment subject to the regulations for construction operation and maintenance and connectivity and other statutory provisions.*
- *The Applicant and user shall furnish data as prescribed by the appropriate licensee in a non-discriminatory manner.*
- *The Applicant and user shall provide necessary facilities for communication and storage of data and parameters as may be stipulated by the appropriate licensee in a non-discriminatory manner*
- *The Applicant and user shall coordinate with the appropriate licensee on the issues including but not limited to protection, safety, and metering.*

**b) Role of Distribution Licensee:**

*The appropriate licensee shall carry out the inter-connection study to determine:-*

- *The point of inter-connection, required interconnection facilities and modifications required on the existing electricity system, if any, to accommodate the interconnection,*
- *the maximum net capacity of the distributed generation resource at a particular location for single-phase generators connected to a shared single-phase system, based on the configuration of the electricity system and imbalance in the power flows that distributed generation resource may cause,*
- *likely impact, if any, on the quality of service to consumers connected to the electricity system and measures to mitigate the same,*
- *additional measures to ensure safety of the equipment and personnel*

*(7) Every connection of a requester's system to the electricity system shall be covered by a connection agreement between the applicant and appropriate licensee, which shall contain general and specific technical conditions, applicable to that connection.*

*(8) The appropriate licensee shall inform the concern State Transmission Utility within thirty days of acceptance of application for connectivity of a generating station to electricity system operating at voltage level below 33 kV. The concern State Transmission Utility in turn inform the state load dispatch centre with details of installed capacity, generator capabilities, connectivity, connectivity and likely date of commissioning or date of commercial operations.*

**Accordingly, the Committee suggested that the provisions of CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013 and CERC REC procedure shall be made applicable.**

**iv) Study of Commercial issues:**

**a) Recovery of Administrative cost associated with JMR, Credit notes issuance:**

The Committee suggested that administrative cost associated with JMR, credit note issuance by MSEDCL to captive renewable energy generator shall be in accordance with MERC Regulations and amendments therein / Orders or MSEDCL policy.

**b) Reactive Energy Charges:**

The Committee suggested that the reactive energy consumption/ injection into the grid by captive renewable energy generator shall be in accordance with the prevalent MERC Regulations / Orders and MSEDCL Policy and as amended from time to time.

**c) Parallel operating charges, Penalties or incentives, if any.**

The Committee suggested that any power which is injected in the MSEDCL grid from renewable energy CPP without any EPA shall be considered as unintended (infirm) power and no compensation shall be paid by MSEDCL.

The Committee further suggested that renewable energy generator shall pay parallel operating charges/ transmission charges/ any other charges related to parallel operation as may be decided by MERC from time to time and applicable from time to time / as per prevailing norms of MSEDCL.

**v) Preparation of draft Terms and Conditions for inter-connections for various RE Sources:**

The Committee recommended that terms and conditions for inter-connections for various RE sources should be as per prevailing practices adopted by the distribution licensees.

## 6. Recommendation of Committee:

Sr. No.		Issues as per Terms of Reference	Recommendations of Committee																
i)	Study of Technical issues of grid connectivity of RE sources																		
	A)	Issue of connectivity & interconnection points	<p>1) Should be in accordance with MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005 and clause 2.1(j) of MERC (RPO-REC) Regulations, 2010.</p> <p>Whenever applicable, it shall also comply with CEA (Technical Standards for connectivity of Distributed Generation Resources) Regulations, 2013.</p> <p>The voltage level and corresponding load limit as per MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005, reproduced as below:</p> <table><tr><th rowspan="2">Voltage level</th><th>Load Limit</th></tr><tr><th>Standard of Performance Regulations, 2005</th></tr><tr><td>LT 1 ph</td><td>40 Amp</td></tr><tr><td rowspan="2">LT 3 Ph</td><td>&gt;40 Amp to 80kW / 100 kVA in all area</td></tr><tr><td>&gt;40 Amp to 150 kW / 187 kVA in Municipal Corporation area</td></tr><tr><td>11 / 22 kV</td><td>&gt;80 kW / 100 kVA to 1500 kVA</td></tr><tr><td>22 kV</td><td>1500 KVA to 3000 KVA</td></tr><tr><td>33 kV</td><td>1500 kVA to 5000 kVA</td></tr><tr><td>EHV</td><td>&gt; 5000 kVA</td></tr></table> <p>2) However, MSEDCL submitted that in case of 11 KV and above connectivity, the Generator shall be connected to electricity system through express feeder. Hence there is continuous corridor available for evacuation of generated power. The LT feeders are subjected to Load shedding depending on the various categories. The load shedding on Agriculture</p>	Voltage level	Load Limit	Standard of Performance Regulations, 2005	LT 1 ph	40 Amp	LT 3 Ph	>40 Amp to 80kW / 100 kVA in all area	>40 Amp to 150 kW / 187 kVA in Municipal Corporation area	11 / 22 kV	>80 kW / 100 kVA to 1500 kVA	22 kV	1500 KVA to 3000 KVA	33 kV	1500 kVA to 5000 kVA	EHV	> 5000 kVA
Voltage level	Load Limit																		
	Standard of Performance Regulations, 2005																		
LT 1 ph	40 Amp																		
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	>40 Amp to 150 kW / 187 kVA in Municipal Corporation area																		
11 / 22 kV	>80 kW / 100 kVA to 1500 kVA																		
22 kV	1500 KVA to 3000 KVA																		
33 kV	1500 kVA to 5000 kVA																		
EHV	> 5000 kVA																		

			<p>LT feeders are up to 12 Hours. In such cases, the LT feeder may not be available for evacuation of power.</p> <p>3) The Committee suggested that interface point with distribution network for the Petitioners shall remain at 33 KV level as specified in the Regulations. However, self consumption, auxiliary consumption and gross generation measurement of such plants shall be at LV side.</p> <p>4) The Committee suggested that evacuation cost up to inter-connection point shall be borne by RE Generator. Renewable Energy Captive Generator shall bear the additional cost of evacuation arrangement for such grid connected systems.</p> <p>5) The Committee suggested that verification/certification of the configuration of CPP installation and connectivity arrangements shall be done by the Electrical Inspector before commissioning as per prevailing practices, so as to standardize the same.</p>
	B)	Metering Arrangement	<p>1) The meters shall meet the criterion as specified in the CEA (Installation and Operation of Meters) Regulations, 2006 and the amendments therein.</p> <p>2) Meter should be capable of reading gross energy generation, auxiliary consumption, self consumption and separate metering for import and export of power.</p> <p>3) Metering arrangement for the purpose of REC shall be in line with MSLDC approved procedure i.e. "Procedure for submission of data to SLDC for Renewable Energy Certificate". Hence, The Special Energy Meters (ABT Compliant) shall be provided by the Captive Power Plant.</p> <p>4) Metering system shall comply with CERC and MERC (REC-RPO) Regulations, 2010 and as</p>

			amended from time to time.
	C)	Energy Accounting	<p>1) Concerned distribution licensee shall undertake joint meter reading (along with concerned RE Generator) and maintain energy accounting information of such Renewable Energy Generator on monthly basis.</p> <p>2) Line Losses shall be accounted for as per State Grid code &amp; relevant MERC Orders. Generator shall also provide metering arrangement for the measurement of Transformer losses.</p>
	D)	Reactive Energy drawl limits and issues related to harmonics, DC current injection etc.	Should be in line with relevant MERC Orders on Non-fossil fuel based Co-generation projects and CEA (Technical Standards for connectivity of Distributed Generation Resources) Regulations, 2013.
	E)	Study of safety measures and Protection system	Generator shall comply with Central Electricity Authority (Measures Relating to Safety and Electrical Supply) Regulations, 2010 for the purpose of safety as specified under clause 5(6) of CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.
	F)	Study of relevant provision in draft Model FOR net metering Regulations.	Not applicable for this case.
	G)	Feasibility study of third party sale of LT connected RE projects.	The Committee suggested that guidelines so framed may be considered only for Renewable Energy Captive Power plants. For third party sale, MERC Distribution Open Access Regulations, 2005 shall be made applicable.
	H)	Eligibility and Registration for Certification	1) The Committee recommended that in accordance with CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013, in case of renewable energy sources based co-generation plants, the connected load capacity as assessed or sanctioned by the concerned distribution licensee, shall be

			<p>considered as the capacity for captive consumption for the purpose of issue of certificates, irrespective of the capacity of such plants covered under the power purchase agreement.</p> <p>2) The Committee further recommended that certification on connected load or sanctioned load from the DISCOM shall be submitted to MEDA while submitting the application for accreditation.</p>
ii)	<b>Review of existing LT grid connectivity provisions for Renewable Energy projects of others States.</b>		The Committee noted that except for solar projects, connectivity for Captive Generating Power Plants has been stipulated at HT level only in various States.
iii)	<b>Defining roles and responsibilities of parties (i.e. DISCOM and Generating Company, SLDC), and devising the information protocols for connectivity of Renewable Energy Projects at appropriate voltage level in line with CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.</b>		In case of REC mechanism: Responsibilities of generating company, DISCOM's, SLDC should comply the CERC REC Regulations, 2010 and amendment there under and as per "Detailed procedure under REC mechanism submitted by the Central Agency (NLDC)"
iv)	<b>Study of Commercial Issues</b>		
	a)	Recovery of Administrative cost associated with JMR, Credit note issuance	As per prevalent MERC Regulations / Orders or MSEDCL policy shall be applicable as amended from time to time.
	b)	Reactive Energy Charges	As per prevalent MERC Orders/Regulations.
	c)	Parallel operating charges, Penalties or incentives, if any	Renewable Energy Generator shall pay parallel operating charges/ transmission charges/ any other charges related to parallel operation as may be decided by MERC from time to time, applicable from time to time / as per prevailing norms of MSEDCL.
v)	<b>Preparation of draft Terms and Conditions for inter-connections for various RE Sources</b>		The Committee recommended that terms and conditions for inter-connections for various RE sources should be as per prevailing practices adopted by the distribution licensees. MSLDC submitted that the case may be considered as isolated one as it could attract large number of applications.

## **Annexure – A – Minutes of Meeting held on 24 January, 2014**

1. Director (EE), MERC welcomed the members of the committee and briefed about the Commission's directive during the hearing held on 7<sup>th</sup> January 2014 in the above matter to form a Technical Committee along with the representatives from MSLDC, MSEDCL, MEDA, Petitioners, Consumer Representatives & Representatives from Renewable Energy Associations. Further, he added that the approved ToR was made available to all the members of committee on 16<sup>th</sup> January 2014, for their ready reference.

The Committee discussed the issues as per approved ToR during the meeting.

Committee discussed that whether scope of present study can be restricted only upto Renewable Energy Captive power plants.

Grid connectivity norms shall be as per MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2005 and clause 2.1(j) of MERC (Renewable Purchase Obligation, its compliance and REC framework Implementation) Regulations, 2010.

2. SLDC submitted that in all cases of Captive plants even though the interface point may be at HV side of the transformer, self consumption and gross generation measurement of such plants is bound to be at LV side. Such an interface is not defined in any Regulations. SLDC submitted that as per present practice, the licensee while giving connectivity should satisfy for connectivity standards.
3. Shri B. H. Gujrathi, YSGKL mentioned that interface point with distribution network is at 33 KV level. Hence connectivity shall be at 33 KV Level with synchronization facility on LV side of 33/0.4 kV transformer.
4. MSEDCL mentioned that Energy accounting, Meter Specification and arrangement to be complied in line with existing regulatory framework and State Grid codes.

Reactive Energy drawl limits and charges should be in line with existing provisions for RE sources

5. The Committee discussed that for the purpose of REC monitoring of self consumption, Auxiliary consumption, import and export of energy are mandatory and RE captive generators should provide meters to measure these parameters. JMR should be taken to verify these parameters. Discom may decide to increase metering points as per requirements. Auxiliary Consumption of plant should match with the existing norms specified for RE sources.
6. Committee members are requested to submit their comments on ToR issued vide letter dated 16<sup>th</sup> January 2014.

## **Annexure – B – Minutes of Meeting held on 10 February, 2014**

Minutes of Committee meeting held on 10<sup>th</sup> February, 2014 in the matter of Grid Connectivity related issues of Renewable Energy Sources in Case No. 77 of 2013

1. The Committee meeting in the matter was held on 10 February 2014 at MSLDC office, Airoli, Navi Mumbai.
2. Director (EE), MERC chaired the meeting. During the meeting, the point wise discussion was made *w.r.t* suggestions given by the members of committee on approved ToR during the meeting held on 24 January, 2014.
3. The Committee discussed the following issues in details;
  - a. Issues of Connectivity:
  - b. Metering Arrangement:
    - e) Custody and responsibility of reading “internal” meters
    - f) Meter specifications
    - g) Metering arrangement for the purpose of REC
    - h) Scope of Joint Meter Reading
  - c. Energy Accounting:
  - d. Study of safety measures and protection system requirement as per existing CEA standards & its amendments.
  - e. Review of existing LT grid connectivity provisions for Renewable Energy projects of others States.
  - f. Roles and responsibilities of parties (i.e., DISCOM and Generating Company, SLDC),
4. The Committee also discussed the contents of the Draft report of the Committee which is to be submitted to the Commission.
5. The Director (EE), MERC proposed that considering the paucity of time, based on the discussions held in two meetings all the members shall submit their suggestions and recommendations which can be incorporated in the Draft report of the Committee and after incorporating suggestions / recommendations of the members the Draft Report will be circulated to the all members for finalizing the Draft report.
6. The meeting concluded with vote of thanks to the chair.

MERC/TECH-XII/

Date: 20.02.2014

To  
Principal Secretary  
Maharashtra Electricity Regulatory Commission  
World Trade Centre, 13th Floor,  
Cuffe Parade, Mumbai 400 005.

Subject: Submission of Committee Report formed under Case No 77 of 2013.

Ref: Petition filled by M/s. Yashawant Sahakari Glucose Karkhana Ltd., Shri Tradco Dessan Pvt. Ltd. & M/s. Honest Derivatives Pvt. Ltd. in Case No. 77 of 2013 for Grid connectivity of a captive power generation plant and authentication of generated units by MSEDCL for obtaining REC benefits.

Respected Sir,

With reference to above, the Hon'ble Commission in its hearing held on 7th January, 2014 directed as under:

*“the Committee under Director (EE), MERC including representative from MSLDC, MSEDCL, MEDA, Petitioners, Consumer Representatives and Representatives from Renewable Energy Associations is directed to look into the connectivity related issues of Renewable Energy sources in line with CEA (Technical Standards for Connectivity of the Distributed Generating Resources) Regulations, 2013. Committee is also directed to look into the Technical and Commercial issues involved into the matter and submit its report to the Commission within 45 days. Term of Reference (TOR) will be separately issued within a week.”*

In view of the above, progress made by the Committee on the direction given by Hon'ble Commission is as follows:

1. The Committee conducted its two meetings held on 24 January, 2014 in the office of the Commission and on 10 February, 2014 at MSLDC office. The working Committee also

sought the approved Terms of Reference (ToR) from the Commission on 16 January, 2014.

2. During both the meetings of the Committee, all the members of the Committee except Consumer Representative deliberated and discussed the approved ToR. The Committee also initiated the task of preparation of report, which is at final stage.
3. Shri Ashok Pendse, Consumer Representative and Shri G. N. Kamath, REDAM requested one week more for the providing their views on ToR/ Report.

In view of above, as the preparation of Report by the Committee has been initiated, time required to compile the approved ToR wise views/discussions of all the Committee Members and its finalization shall take few days. Therefore, the Committee request two weeks extension for submission of its Report to the Commission.

Thanking you,

Yours Sincerely,

Sd/-	Sd/-	Sd/-	Sd/-
(Prafulla Varhade)	(A. S. Ghogare)	(A. P. Rewagad)	(Abhijit Naik)
Director (EE)	MSEDCL	MSLDC	Petitioner's Representative

Sd/-	Sd/-	Sd/-
(Ashok Pendse)	(G. N. Kamath)	(Dr. J. V. Torane)
TBIA, Consumer Representative	REDAM	MEDA

Copy to Members of the Committee: