

**Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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CASE No. 312 of 2018

Case of Supreme Industries Ltd. regarding forceful isolation of embedded Roof Top PV Solar plant capacity 1.36 MWp for captive use connected with internal bus of 415V.

**Coram
I. M. Bohari, Member
Mukesh Khullar, Member**

Supreme Industries Ltd.(Unit No. III)Petitioner

Vs

1. Director (Commercial),MSEDCL
2. Chief Engineer (Power Purchase) MSEDCL
3. Chief Engineer MSLDCRespondents

Appearance:

For the Petitioner : Shri T. N. Agarwal, (Rep.)
Shri Satish Shah, (Rep.)

For the Respondents : Shri Ashish Singh, (Adv.) , MSEDCL
Shri N. M. Choudhary, (Rep) , MSEDCL

ORDER

Dated: 13 March, 2019

Supreme Industries Ltd. (Unit No. III) (“**SIL**”) has filed this Case under Regulation 37 of Distribution Open Access Regulations, 2016 (“**DOA Regulation, 2016**”), to remove the difficulty arisen in the implementation of the said Regulations. SIL has also cited Sections 60, 66, 86(e) of the Electricity Act, 2003 (“**EA**”) for allowing restoration of its 1.36 MWp Solar Plant for self use in the same premises at 415 volts, which has been disconnected by MSEDCL.

2. SIL’s main prayers are as follows:

- a. *To admit the petition under section 37 of DOAR-2016 to remove difficulty under these regulations and directions under section 60 & 66 of Elect. Act-2003.*
- b. *To direct MSEDCL to allow restoration of solar power generation of capacity 1.36 MWp for self use in the same premises at LT 415V level. Approval of installation & charging has been obtained from competent authority after verification & testing of installations.*
- c. *We also appeal to allow to add further capacity of Captive Solar Power Generation upto 5.0 MWp to connect at LT 415V side after taking all precautions to avoid reverse flow of power to grid. This additional power will also be utilised to meet load in the same premises by us, We don't intend to inject the power to the Grid of MSEDCL/MSETCL.*
- d. *To direct the MSEDCL to compensate the loss suffered due to illegal instructions for isolation of Captive Solar Generation plant of capacity 1.36 MWp approx. loss suffered so far is Rs.65.18 lakh, calculation sheet is attached.*
- e. *Since the licensee has abused its dominant position by avoiding power market of Solar captive power plant, we appeal to the Hon'ble Commission to issue such directions as per section 60 of EA-2003 as it considers appropriate to a licensee which has caused an adverse effect on competition in electricity industry.*
- f. *The Hon'ble Commission may endeavour u/s 66 of EA-2003 to promote the development of a market in power in such manner as may be specified, in-house Solar Power Generation is also one of the area for promoting in power sector.*
- g. *As per section 86(e) of EA-2003 regarding functions of state commission, the Hon'ble Commission may ensure promotion of Generation of electricity from renewable sources of energy by providing suitable measures for allowing to operate Solar plant of capacity 1360 KWp for self use.*

3. The Petitioner states as follows:

3.1 Since 2007, SIL is a consumer of MSEDCL with contract demand 12 MVA and connected load of 26650 kW supplied power at 132 kV (EHV) level. The monthly power consumption is to the tune of 50 to 55 lakh units which are supplied by MSEDCL.

3.2 In view of the paramount importance of power generation from the renewable energy sources, the Government of India (GoI) declared targets of 175 GW capacity addition by 2022 which includes 100 GW from Solar Plants. Keeping this initiative of GoI in mind, SIL has installed roof top PV solar plant of capacity 1.36 MWp at its factory premises as embedded Captive Power Plant. This plant is estimated to

generate 1.90 lakh units, which is maximum 4 % of the total consumption implying that power generated by this solar plant will be 100 % consumed.

3.3 Under the scenario of less power consumption or shut down of the plant, it is necessary to prevent reverse flow of power to the grid for which SIL has provided reverse power flow protection relay in the system. Also, under the scenario of plant shut down, SIL has to stop power generation from the solar plant completely due to reverse power flow protection system in operation. Further, SIL has taken all due precautions not to inject single unit to MSEDCL/MSETCL's grid of 132 kV connected to its plant at point of supply.

3.4 SIL had also commenced the work of capacity enhancement of the solar plant up to 5.0 MWp on low tension (LT) 415 volts side. However, SIL had deferred this expansion in view of the forcible closure advice of the existing solar plant by MSEDCL.

3.5 The intention of seeking grid connectivity is only for the purpose of taking permission to connect the solar plant with internal bus of 415 volts. SIL had applied with MEDA on 6 November, 2017 to seek grid connectivity recommendations as per RE Policy, 2015 issued by Government of Maharashtra ("GoM"). After receiving letter dated 27 November, 2017 from MEDA, the Chief Engineer (CE) (Power Purchase) of MSEDCL directed his Superintending Engineer(SE) of Jalgaon to submit the technical feasibility report for evacuation of power generated from SIL's 1.36 MWp solar plant through the nearest 33/11 kV MSEDCL's sub-station. SIL's intention is not to evacuate a single unit to MSEDCL's grid as the power generated is for sole use of captive consumption. In the application submitted to MEDA, SIL has clearly mentioned use for captive purpose only.

3.6 Single line diagram ("SLD") annexed with the Petition shows that the flow of power from 132/ 11 kV sub-station through 11 kV line to crates and pallets plant at 415 volts. Also, roof top PV solar plant is connected at 415 volts at crates and pallets plant. Power generated by the solar plant will be completely used in the premises of SIL itself only. SLD further shows that reverse power relay model MRP-11, of L&T make is provided at locations to protect the reverse power flow to the grid. SIL has thus ensured that flow of power in reverse directions to the Licensee's grid is avoided and all the safety precautions as per the directions of the SE (Electrical), Inspection Circle, IEL Dept, Aurangabad ("**SE (Electrical)**") have been complied with.

3.7 On 31 May, 2018 the MSEDCL team of Jalgaon after getting instructions from CE (Power Purchase), visited SIL's plant and issued a letter stating that the

aforesaid solar plant was connected to the system without the approval of the Competent Authority and further instructed SIL to isolate the captive solar plant from the grid. However, MSEDCL failed to mention that who is the Competent Authority and also failed to quote any Rules/ Regulation under which the said plant was disconnected. The solar plant was kept under observation and testing in the month of April/May, 2018.

3.8 MSEDCL, vide its letter dated 12 June, 2018 has correctly issued the technical feasibility recommendations for connecting the said solar plant with internal bus of 415volts on LT side. At the same time, SIL had also received a letter dated 5 June, 2018 from SE (Testing) of MSEDCL wherein discrepancies in the connectivity are indicated.

3.9 Even though, SIL's plant is for captive use in the same premises, the SE (Testing) advised to connect the said solar plant to the nearest 33/11 kV substation by providing independent check/main metering arrangement. This arrangement is generally suggested to the open access consumers for injecting power to the outsider and not for captive use in the same premises. If this arrangement is given effect then the power generated by SIL at its premises will have to be utilized through open access route by paying additional wheeling charges, transmission charges, transmission loss, wheeling loss and other incidental charges for open access implying that SIL will have to incur additional expenditure of Rs.2.00 per unit for connecting the said solar plant to 11 kV feeder before consuming at its end which will result in the said plant becoming economically unviable. This direction of MSEDCL is therefore illogical.

3.10 Further, MSEDCL's contention that the said solar plant was connected without approval of the Competent Authority is baseless as the SE (Electrical) vide his letter dated 8 January, 2018 has granted permission to connect the said solar plant to the internal bus of 415 volts. Thus, MSEDCL's conduct of forceful isolation of the said solar plant from the internal bus of 415V is incorrect..

3.11 On receipt of letters from SE (Testing), SIL had submitted on 4 June, 2018 the copies of approved letter of Competent Authority dated 8 January, 2018 and approved copies of drawing and SLD to SE Jalgaon of MSEDCL.

3.12 Further, vide its letter dated 20 June, 2018 addressed to CE (Power Purchase), CE (Commercial), SE Testing and SE Jalgaon of MSEDCL, SIL had indicated that the system consists of reverse power flow protection relay along-with the approval of the Competent Authority and had also confirmed to consume 100% power generated from the said solar plant in its premises without exporting any power to MSEDCL's grid.

3.13 SIL vide various letters had requested MSEDCL to allow it to connect the said solar plant to the internal bus at 415 volts but MSEDCL did not respond. Further, vide its letter dated 22 September, 2018 addressed to SE and CE Jalgaon of MSEDCL, SIL had intimated about loss of revenue for last 3 ½ months due to isolation of the said solar plant and had also requested to inform under which Act/Rule the said solar plant has been disconnected. However, MSEDCL has not addressed this letter also. The same matter was again pursued by SIL vide its letter dated 23 October, 2018. This was also not replied by MSEDCL.

3.14 The Central Govt., State Govt., and MNRE have been promoting usage of solar energy throughout country by various promotional and user friendly schemes. However, MSEDCL conduct of isolating the said solar plant is not in line with these promotional measures.

3.15 MSEDCL is also silent on all SIL's communications as cited above which shows lack of valid reason to disconnect the said solar plant. This casual approach of MSEDCL had made SIL to suffer after investing Rs.710 lakh in the said solar plant. SIL's accumulated generation loss from June 2018 onwards is 9.18 lakh units (approx.) amounting to Rs.65.18 lakh approx. till date. MSEDCL is liable to compensate the loss suffered due to illegal instructions for isolation of the said captive solar plant.

3.16 SIL had already installed the solar power generation meters at both the places in plant at 415 volts which record the generated units. This data will be submitted to SE (Electrical) along with quarterly returns in D form. MSEDCL may use these meters for recording solar generating units for taking benefit of RPO.

3.17 There is separate section in DOA Regulations, 2016 about connectivity. Section 5.1 reads as

“A Generating Station, including a captive generating plant, having installed capacity less than 5 MW may apply for Connectivity to the Distribution System, unless already connected, in accordance with the provisions in this Regulation.”

3.18 Also Section 5.4 of DOA Regulations, 2016 reads as

“Upon receipt of the application, the Distribution Licensee shall, in consultation with the State Transmission Utility (STU) if required, carry out the inter-connection study as specified in the relevant Regulations of the Central Electricity Authority governing technical standards for Connectivity to the Grid.”

- 3.19 Basically these connectivity regulations are part of Open Access Regulations made for the consumers who intend to generate the power and inject into the grid for captive purpose for use at some other location of the same group company. Under such situation the connectivity to the grid system is required and without which power can't flow to other location for captive consumption. Further, Section 5.1 cited above stipulates that it is not binding on captive consumption at the location where the generation and consumption is at the same location. In such case there is no reason to adapt Open Access Regulations for grant of connectivity.
- 3.20 Further, there is no violation of Section 138 of the EA as contended by MSEDCL. The said solar plant is connected to the SIL's internal bus at 415 volts in its premises which is not under the ambit of the MSEDCL license area.
- 3.21 SIL cites Section 60 of the EA as MSEDCL has abused its dominant position by restricting the use of the said solar plant to protect its business interests. SIL also cites Section 66 of the EA for development of the market as in-house solar power generation is also one of the area for promoting in power sector.
- 3.22 As per the MERC Net metering Regulations, 2015, Solar generation up to 1000 kW is qualified for net metering. In case if consumer of EHV level (132 KV) opts for net metering for capacity below 1000 kW, the consumer is permitted by MSEDCL to connect that solar plant at 415 volts while the flow of power to the grid is recorded at 132 kV metering system. In the case of SIL the said solar plant is also connected at 415 volts with due care to block reverse flow of power to the grid. Hence, in line with the net metering policy SIL may also be allowed to connect the said 1.36 MWp plant at 415 volts.
- 3.23 SIL also cites Section 86(e) of the EA regarding promotion and generation of power from renewable sources by providing suitable measures for connectivity with the grid. At present 1.36 MWp solar power plant is proposed and the plant upto 5 MWp capacity is under planning by SIL. Hence, suitable Orders/Guidelines are expected from the Commission to allow operation of the said solar plant instead of keeping it idle due to directions for disconnection of the same by MSEDCL.

4. In its Reply dated 19 December, 2018, MSEDCL stated as follows:

- 4.1 At present the connectivity to the grid is governed by Clause 1.3 of the procedure of grid connectivity in accordance with the DOA Regulations, 2016 and in line with Govt. Resolution dated 9 September, 2018 which is applicable to the applications made for grant of connectivity to the lines or associated facilities of the distribution system (i.e voltage level up to 33 kV; intended to be connected to MSEDCL's 33/11 kV , 22/11 kV sub-stations) received by MSEDCL on or after

the date notified by the Commission of coming into force of the DOA Regulations, 2016.

4.2 MSEDCL has raised the following issues , and stated that:

- (a) *Whether the Petitioner has filed any documentary evidence to satisfy that it falls within the definition of “Captive Generation”?*
- (b) *Whether the Petitioner is guilty of connecting its solar rooftop generation with its premises without valid permission from MSEDCL?*
- (c) *Whether a premises of a consumer of MSEDCL, can be fed power from rooftop generation without availing open access?*
- (d) *Whether reverse power relay model to control reverse import and export of energy from the solar rooftop generation can circumvent a Regulatory mechanism built through Sub-Ordinate Legislation?*
- (e) *Whether monetary/financial benefits can be a reason to evade the legal mandate?*

4.3 The issues discussed in detailed as below:

- (a) *Whether the Petitioner has filed any documentary evidence to satisfy that it falls within the definition of “Captive Generation”?*

SIL has not filed any documentary evidence to support its case that it falls under the definition of “Captive Generation”. In order to substantiate its case that SIL’s solar roof top is a captive generating plant, the mandatory provisions of Section 9 of the Electricity Act, 2003 read with Rule 3 of the Electricity Rules, 2005 along with several Orders of the Commission needs to be satisfied.

- (b) *Whether the Petitioner is guilty of connecting its solar rooftop generation with its premises without valid permission from MSEDCL?*

- (i) SIL has been guilty of connecting its solar roof top generation with its premises which is already connected to the “Distribution System” of MSEDCL. Such act of SIL is absolutely against the grid code and grid discipline. A solar roof top if connected without permission either to a consumer installation or to the grid causes severe grid instability issues.
- (ii) It is a matter of fact that SIL had initially applied for grid connectivity but changed its mind on a later date.
- (iii) The generating stations can apply for the Grid connectivity to Distribution System as per the Regulation 5 of DOA Regulations, 2016. Similarly, Imbalance charge, Reactive energy charge, banking of

Renewable Energy and commercial matters in relation to open access are governed by DOA Regulations, 2016.

(iv) The use of solar energy from the 1.36 MW Solar power Project of SIL for captive use will squarely fall under the purview of DOA Regulations, 2016. The generator shall be connected to MSEDCL's grid and not to internal bus of consumer. Therefore, SIL can apply for and avail of various regulatory provisions of Distribution Open Access so as to serve its purpose.

(v) The Commission in Order in Case No. 163 of 2017 in the matter of Petition of Cleanmax Enviro Energy Solutions Pvt. Ltd. has held that:

Net metering and Open Access are two different sets of arrangements for different eligible consumers and its Regulatory framework also has been provided by the two different Regulations. If these two arrangements are mixed up then there are various issues related to Grid security, accounting, billing, settlement etc. Hence, the Commission has made Net Metering Regulations for "below 1 MW" and Open Access for "1 MW and above" and cannot avail simultaneously by same consumer.

(c) Whether a premises of a consumer of MSEDCL, can be fed power from rooftop generation without availing open access?

(i) The premises of a consumer who is already connected to the "Distribution Network" of MSEDCL cannot be fed power off the grid through an independent source except as provided under the mechanism under "Net Metering" or "Open Access". In order to feed such power off the grid through an independent source, then the consumption end has to be completely isolated from MSEDCL's "Distribution Network" or else open access has to be mandatorily availed to account for both the powers being fed through common system otherwise this would lead to inadvertent import and export of power from MSEDCL without the same being accounted for in the system.

(d) Whether reverse power relay model to control reverse import and export of energy from the solar rooftop generation can circumvent a Regulatory mechanism built through Sub-Ordinate Legislation?

The model of "reverse power relay" suggested by the Petitioner is absolutely contrary to the regulatory regime. Had that proposition been

viable or workable then the Commission would have definitely devised a methodology for the same and accounted for it in its Regulations. The model of “reverse power relay” has not been accounted for anywhere by the Commission by correctly noting the lacunas in the same. Some illustrative lacunas can be as under:

- (a) Any malfunction in the “reverse power relay” would lead to catastrophic effect on the grid.
- (b) What are the checks and balances on the “reverse power relay”.
- (c) Who monitors the function of the same?
- (d) What if a consumer deliberately manipulates the same for undue benefits?
- (e) Whether there are penalties envisaged under the Electricity Act, 2003 to penalize consumers who deliberately manipulate the “reverse power relay”?
- (f) What if the system fails and there is loss to MSEDCL? How would the quantification of losses take place?
- (g) A system which is not automated but solely depends on manual intervention cannot be allowed to run in a regulated environment of open access.

(e) Whether monetary/financial benefits can be a reason to evade the legal mandate?

- (i) As it is clear from the pleadings at Para 6 of the Petition, it is evident and clear that the entire Petition has been filed to save on regulated rates/tariff being allowed by the Commission in case a consumer seeks open access. The electricity being a dynamic commodity, Commission should also need to take serious note of such manipulations by consumers/generators who find out new ways to evade payment of regulated, approved tariffs and earn windfall gains.
- (ii) It is a matter of fact that SIL had initially applied for grid connectivity but changed its mind at a later date which only reflects its intention to manipulate the system.

5. At the hearing held on 20 December, 2018, SIL and MSEDCL re-iterated their submissions. Representative of SIL further stated that MSEDCL had discriminated SIL by allowing connectivity with the internal bus to other embedded solar plants installed by other industries in Maharashtra without application of DOA Regulations, 2014/2016 and completely relied upon reverse

power flow protection relay and zero volt sensor at invertors while allowing such connectivity.

6. In its Rejoinder dated 28 December, 2018, SIL has submitted its response to the issues raised by MSEDCL in its Reply. SIL's submission is as under:

6.1 Whether the Petitioner has filed any documentary evidence to satisfy that it falls within the definition of "Captive Generation"?

DOA Regulations, 2016 is not applicable to SIL as the power generated from the said solar plant will not flow out of its plant network since the said solar plant is installed to generate power exclusively for its captive consumption within same premises. Further, SIL has made its own 100% investment in the said solar plant and CA certificate in its support is submitted.

6.2 Whether the Petitioner is guilty of connecting its solar rooftop generation with its premises without valid permission from MSEDCL?

a. The security and safety of the grid is not compromised as the said solar plant has a valid permission of the Electrical Inspector, who is the only competent authority assigned by Govt. of Maharashtra to check an electrical installation from safety point of view. Further, Electrical Inspector has also routine annual plan to visit the installation to ensure compliances of safety measures by the consumers all the time.

b. As per the EA, Grid is defined as:
(32) "grid" means the high voltage backbone system of inter-connected transmission lines, sub-stations and generating plants;

c. Further Voltage levels are defined in IE Rule, 1956 as under:

(av) Voltage means the difference of electric potential measured in volts between any two conductors or between any part of either conductor and the earth as measured by suitable voltmeter and is said to be;

"Low" where the voltage does not exceed 250 Volts under normal conditions subject, however, to the percentage variation allowed by these rules;

"Medium" where voltage does not exceed 650 Volts under normal conditions subject, however, to the percentage variation allowed by these rules;

“High” where voltage does not exceed 33,000 Volts under normal conditions subject, however, to the percentage variation allowed by these rules;

“Extra High” where the voltage exceeds 33,000 Volts under normal conditions subject, however, to the percentage variation allowed by these rules;

d. In view of the above, and as per EA, grid means the high voltage backbone system of inter-connected transmission lines, sub-stations and generating plants. Since the said solar plant is connected at 415 volts which is a Medium voltage and not a High Voltage, the grid connectivity Rules and Regulations should not be made applicable to the said solar plant.

e. EA defines Open Access as below:

“open access” means the non-discriminatory provisions for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulation specified by the Appropriate Commission;

SIL has not used any transmission line and distribution system of MSEDCL for flow of power from solar roof top captive plant to consumption/load end. Its system is connected through internal bus of 415 volts which is not licensee’s distribution network and hence its Captive Solar Power installation does not fall under any provisions of Open Access Regulations.

f. MSEDCL compared SIL’s plant with Case No. 163 of Cleanmax Enviro Energy Solutions Pvt. Ltd. In Cleanmax case, the consumer had installed 990 KW Roof top Solar plant and wanted to avail net metering for captive generation and simultaneously also wanted to draw power through open access from Conventional generator M/s Sai Wardha. Presently, SIL is not availing any open access power and also not interested to go for net metering, hence decision of Commission in respect of Petition of Cleanmax is not applicable to its unit. Also, Case No. 97 of 2016 of Laxmi Organics was also referred during the hearing by MSEDCL. This case is also not applicable to SIL as in that case Laxmi Organics was connected at 22 kV but in this case SIL is connected to internal bus at 415 volts.

6.3 *Whether a premises of a consumer of MSEDCL, can be fed power from rooftop generation without availing open access?*

The arrangement of the said solar plant and its usage is legitimate as it does not fall under DOA Regulations, 2016. As such, there is no necessity to avail open access.

6.4 *Whether reverse power relay model to control reverse import and export of energy from the solar rooftop generation can circumvent a Regulatory mechanism built through Sub-Ordinate Legislation?*

- a. In the Indian Electricity Rules, 1956, there is provision of reverse power relay in generating system and as such SIL has provided the same to make compliance with the safety provisions of these rules.
- b. MSEDCL in its submission has stated that in case of any malfunctioning, it would lead to catastrophic effect on the grid. This type of reverse power flow protections are regularly used in electrical system all over the world. MSEDCL is opposing it just for the sake of denial without substantiating with any specific instance of failure of reverse power relay. For check and balances, these relays are tested regularly and report is submitted to Electrical Inspector annually.
- c. SIL has stated that it is not going to get any undue advantage from MSEDCL, even if single unit of power is injected. In fact, it will be losing its revenue as the MSEDCL is not going to pay for injected units. Hence there is no benefit available to it by making any manipulation in the operation of reverse power protection relay. The question of imposing any penalty does not arise as stated above; there is no chance of manipulation of reverse power flow protection relay. Even if by chance any power is injected into the grid, the consumer can't derive any financial or any other benefit from MSEDCL.
- d. SIL has provided double protection system i.e. one as Reverse power protection relay at High Voltage level and other inbuilt system provided in Solar DC/AC Inverter system which detects zero volt and stops generation of power. Hence, there is absolutely no chance of reverse power flow to MSEDCL grid when such a foolproof double protection system is provided. The system is totally automated and does not depend upon human intervention.

6.5 *Whether monetary/financial benefits can be a reason to evade the legal mandate?*

- a. The said solar plant is not under the ambit of DOA Regulations, 2016 as the plant is connected at LT level less than 650 volts which is not a grid level voltage. Hence, MSEDCL's contention of avoiding the payment of regulatory tariff charges is baseless.
- b. MSEDCL has abused its dominant position by advising SIL to disconnect the said solar plant which is not covered under the DOA Regulations, 2016 and also not covered under the Net Metering Regulations..

6.6 Further, the grid connectivity is not mandatory for SIL as it is not interested to claim any REC/RPO benefit for the renewable power generated from the said solar plant.

6.7 MSEDCL had discriminated SIL by allowing connectivity with the internal bus to other embedded solar plants installed by other industries in Maharashtra without application of DOA Regulations, 2014 / 2016. Some of the industries that had been allowed in the past such connectivity at internal bus are as under:

(i) M/s Bosch Ltd. Nashik: This Company is connected with MSEDCL at 132 kV level. The connectivity of 2.1 MWp rooftop solar PV plant has been allowed to feed at internal bus at 11 kV without charging any open access regulatory tariff charges. MSEDCL had completely relied on reverse power flow protection relay and zero volt sensor at invertors.

(ii) M/s Jindal Polyfilms Ltd., Mundegaon (Igatpuri): This Company is connected with MSEDCL at 132 kV level. The connectivity of 3.0 MWp rooftop solar PV plant has been allowed to feed at internal bus at 11 kV without charging any open access regulatory tariff charges. MSEDCL had completely relied upon reverse power flow protection relay and zero volt sensor at invertors.

(iii) M/s Finolex Cabled Ltd., Pune: The connectivity of 5 MWp solar PV plant to internal bus of 22 kV is allowed.

Thus, it is evident that MSEDCL has placed SIL on different ground as compared with the three cases mentioned above and hence, disconnection of the said solar

plant of SIL is completely against the prevailing laws and therefore, should be revoked.

7. In its additional submission dated 12 February, 2019, MSEDCL stated as below:

7.1 MSEDCL has submitted its additional reply on the following issues :

(a) Issue regarding grant of permission to MEDA on LT level 415V:

Application submitted to MEDA is enclosed in the submission. In this, power to be evacuated is given at 132/11kV substation in the premises of consumer. Application forwarded by MEDA to MSEDCL is for grid connectivity.

(b) Issue regarding Electrical Inspector is only competent authority to check electrical Installation:

MSEDCL is not denying that Electrical Inspector is Competent Authority to check the Installation. However, the permission to connect the Rooftop Solar is to be under the framework of Regulations framed by the Commission.

(c) Issue regarding Grid connectivity rules & regulations not applicable:

The Solar System is not stand alone system. Also, Consumer had itself applied for Grid connectivity; hence, Rules and Regulations for Grid Connectivity are applicable.

(d) Issue regarding Petitioner has not used transmission lines or distribution lines of MSEDCL hence Open Access is not applicable:

Below 1 MW : Provisions of Net metering Regulations is available. For 1MW & above : Consumer can avail Open Access and seek grid connectivity to MSEDCL Grid.

(e) Issue regarding not interested in REC/RPO benefit, hence, Grid connectivity is not mandatory:

Grid connectivity is not only mandatory for claiming REC/RPO but also required if connectivity of Generator of capacity 1MW & above is required by consumer for availing Open Access.

(f) Issue regarding Three other consumers are allowed to connect on LV bus:

Procedures for connectivity of such projects are not defined in Regulations. As per applications of three similar consumers, the grid connectivity permission is given on HT side (11/22KV) and not on LT side. Hence such allegations are incorrect.

7.2 In view of the above, the Commission may dismiss the present Petition and the prayers made therein, filed by the Petitioner, being devoid of any merits.

8. In its additional submission dated 16 February, 2019, SIL stated as under:

8.1 SIL has never stated that the other three consumers are allowed to connect at LV level. In fact, SIL had clearly stated that these three consumers were allowed to connect on their internal bus which may be LT or 11 kV or 22kV (other than the MSEDCL's supply voltage level).

8.2 MSEDCL allowed connectivity of embedded solar plant to other industries in the Maharashtra with internal bus without application of DOA Regulations, 2014 and 2016.

8.3 M/s Bosch Ltd., Nashik is a consumer connected with MSEDCL at 132 kV level. Connectivity of 2.1 MW rooftop PV solar plant has been allowed by MSEDCL with internal bus of 11 kV without charging any open access regulatory charges.

8.4 Similarly, Jindal Polyfilms Ltd. Mundegaon (Igatpuri) is connected with grid at 132 kV level. Connectivity of 3 MW rooftop PV solar plant has been allowed with internal bus of 11 kV. MSEDCL totally relied upon reverse power flow protection relay and zero volt sensors provided at invertors by consumers.

8.5 The above two consumers are connected with grid at 132 (EHV) level. The solar connectivity is granted by MSEDCL on 11 kV internal bus of consumer which is not a grid of MSEDCL. Similarly, SIL has also connected the solar plant with internal bus of 415 V instead of its internal 11 kV bus. Thus for consumer who is fed from grid at 132 kV level, connecting solar power at their internal bus of LT or 22 kV has no differentiating characteristics and hence are similar in meaning and nature as for as internal bus is connected.

8.6 In view of the above, SIL's prayer for allowing connectivity of embedded solar power plant is justified and legitimate.

Commission Analysis and Ruling:

9. SIL is an EHV 132 kV consumer of MSEDCL having contract demand of 12 MW and connected load of 26650 kW. It has installed a roof top PV solar generation capacity of 1.36 MWp for self-use in its factory premises at LT 415 volts level. This solar roof top PV generation plant is estimated to generate 4 % of its total consumption and with sole use of its captive consumption. It has also commenced to enhance the solar plant capacity to 5 MWp for connecting to its internal LT 415 volts. The Petitioner is requesting to allow the restoration of its 1.36 MWp solar plant installed in its factory premises at LT 415 volts level, which is disconnected by

MSEDCL and also to allow addition of capacity upto 5.0 MWp by connecting at LT 415V side after taking all precautions to avoid reverse flow of power to grid.

10. SIL in support of its claim has contended as under:

- 10.1 The said solar plant would not have been disconnected by MSEDCL as it had no valid reasons to disconnect the same since due care by installing the reverse power flow relays for the safety and security aspects of the grid was taken while connecting the said solar plant to the internal bus at 415 volts. Also, the said solar plant was permitted by the concerned Electrical Inspector. Hence, SIL has sought that MSEDCL should be directed to restore the said solar plant and also compensate for the losses to the tune of Rs. 65.18 lakhs in view of forceful disconnection of the said solar plant by MSEDCL.
- 10.2 SIL's intention of seeking grid connectivity is only for the purpose of taking permission to connect its 1.36 MWp roof top solar plant with SIL's internal bus of 415 volts as per the RE Policy of GoM. SIL's intention of seeking grid connectivity was not to evacuate a single unit to MSEDCL grid as the solar power generated is for sole use of captive consumption. However, advice of MSEDCL for connecting the said solar plant to its nearest 33/11 kV sub-station by providing independent check and main metering arrangement will result into wheeling of its captive consumption through open access arrangement. This would result in additional expenses of Rs. 2.00 per unit at which the roof top solar plant becomes economically unviable.
- 10.3 Regulation 5.1 of the DOA Regulations, 2016 stipulates connectivity for injection and drawl of power at different locations and without which power cannot flow to other location for captive consumption. It is not binding on the captive consumption at the location where the generation and consumption is at the same location. In such case there is no reason to adopt the DOA Regulations for grant of connectivity.
- 10.4 MERC Net metering Regulations, 2015, qualifies net metering for solar PV generation capacity up to 1000 kW. In case when the solar roof top plant capacity is below 1 MWp then such consumer is allowed connectivity at LT internal bus at 415 volts under the Net Metering Regulations even if the consumer is connected to MSEDCL at EHV level. In similar way, SIL should also be permitted to connect the said solar plant at 415 volts even if the capacity is above 1 MWp. In case if consumer of EHV level (132 KV) opts for net metering for capacity below 1000 kW, the consumer is permitted by MSEDCL to connect solar PV plant at 415 volts while the flow of power to the grid is recorded at 132 kV metering system. In the case of SIL the said solar plant is

also connected at 415 volts with due care to block reverse flow of power to the grid. Hence, in line with the net metering policy SIL may also be allowed to connect the said 1.36 MWp plant at 415 volts.

- 10.5 Under Section 86 (1) (e) of the EA, the Commission is mandated to ensure promotion of generation of electricity from the renewable sources of energy.
- 10.6 MSEDCL has allowed the connectivity of such captive solar plants at the internal bus after the consumer metering point via installations of reverse power flow relays for other consumers. However, in case of SIL, MSEDCL is objecting to such connectivity at the internal bus of 415 volts. Thus, MSEDCL has placed SIL on different ground.

11. MSEDCL, on the other hand, has contended as under:

- 11.1 SIL has not filed any documentary evidence to satisfy that it falls within the definition of captive generation.
- 11.2 SIL's action of connecting the said solar plant to the internal bus at 415 volts is against the grid code and grid discipline as such solar plants can apply for the grid connectivity as per the Regulation 5 of the DOA Regulations, 2016 and hence, the said solar plant for captive use will squarely fall under the purview of DOA Regulations, 2016.
- 11.3 The said solar plant can feed power to the grid under net Metering or open access mode. Also, the consumption end has to be completely isolated from the grid or else open access has to be mandatorily availed to account for both the powers being fed through the common system.
- 11.4 Reverse Power Flow Relay installed by SIL is not allowed under the existing Regulatory Framework and any malfunction in the same would lead to catastrophic effect on the grid.
- 11.5 SIL is trying to save on regulated rates/tariff being allowed by the Commission in case it seeks open access.

- 12.** The Commission notes that the instant case is filed by SIL to remove the difficulty under Regulation 37 of the DOA Regulations, 2016. The difficulty faced by SIL is that it has been obligated by MSEDCL to avail open access in case SIL has to connect the said solar roof top plant. Also, if it seeks open access it will have to connect the said solar plant to the nearest 33/11 kV substation of MSEDCL. Thus, this will have

two-fold impact on SIL viz. one by way of erecting a separate feeder to the nearest MSEDCL sub-station and two by way of paying the applicable charges with regard to open access. Thus, the said solar PV plant will be commercially unviable.

13. Regulation 5.1 of DOA Regulations, 2016 specifies as under:

“A Generating Station, including a captive generating plant, having installed capacity less than 5 MW may apply for Connectivity to the Distribution System, unless already connected, in accordance with the provisions in this Regulation.”

The Commission observes that currently the transactions that involves third party sale or self use at the distant location from the generator location, which require wheeling of power from one place to another place, including a captive generating plant are covered under the DOA Regulations, 2016. Such transactions are effected by seeking connectivity as per the Regulation 5.1 of the DOA Regulations, 2016. However, in the instant case the said solar plant is installed for self use at the same location (co-located) with internal distribution network of consumer and beyond point of supply provided by MSEDCL. Such arrangement is not covered under the DOA Regulations, 2016.

14. Also, the generated power from the said solar plant will be consumed for self use instantaneously by the loads connected by SIL without injecting/exporting a single unit in the grid/MSEDCL due to installation of the reverse power flow relay as advised by Electrical Inspector. Also, there is no isolated mode operation of the said solar roof top plant. This implies that there is parallel operation of both the sources viz. MSEDCL as well as generation of the power from the said solar roof top plant. Such parallel operation is recognized either by the existing DOA Regulations, 2016 through grid or by the existing Net Metering Regulations.

15. There is demarcation between both the DOA Regulations, 2016 and the Net Metering Regulations. Former permits contract demand above 1 MW whereas the later allows the rated capacity of solar roof top upto 1 MWp. The Commission observes that since the rated capacity of the said solar roof top plant is more than 1 MWp and since the DOA Regulations, 2016 does not cover the co-located/embedded captive generating plants, the dispensation sought by SIL is not recognized under the extant Regulatory framework. Further, the captive generating plants below 1 MWp are allowed to be connected to the internal bus by installing the net meter at the metering point under the Net Metering Regulations. However, in the instant case, the capacity is above 1 MWp, which is barred from availing the net metering facility. It is also pertinent to note that the petitioner had earlier applied for grid connectivity under Regulation 5 of the DOA Regulations 2016 and thereafter changed its stance. In this case though the Petitioner has filed this Case under the relevant provisions of DOA Regulations 2016,

the Petitioner is actually seeking reliefs from the provisions of two different Regulations, and also outside the purview of both the existing Regulations.

16. The issue of connectivity of a captive co-located generating plant was before the Commission in Case No. 77 of 2013 where-in MSEDCL had not permitted M/s. Yashwant Sahakari Glucose Karkhana Limited, Shri Tradco Deesan Private Limited and M/s. Honest Derivatives Private Limited to connect their 1.063 MW biogas plant in the factory premises for captive use citing that it is not under its jurisdiction and also that the guidelines regarding grid connectivity on the LT distribution network had not been put in place. The Commission in the said Case formed a Committee for looking into the connectivity-related issues of RE sources in line with the CEA Regulations and the technical and commercial issues involved in such arrangements. The Commission accepted the report of the Committee and directed that issue of grid connectivity at LT internal bus can be resolved as per the recommendations of the Committee. The relevant Para. is as under:

18.1. Noting the oral and written submissions of the Petitioners and other parties concerned, the Commission had framed the relevant Terms of Reference to be addressed jointly by them along with the Commission's Director (EE). Having considered it, the Commission accepts the Report, submitted through the Director (EE) on 18 March, 2014, and its recommendations as setting out the principles, guidelines and modalities on the basis of which the technical, commercial and other issues arising in the Petitioners' and similar cases can be viably addressed. These recommendations, summarized at para. 17 of this Order and elaborated in the Committee's Report, build on existing legal, regulatory and other dispensations. The Commission directs that the Petitioners' and similar cases be resolved accordingly by all the parties concerned....

(Emphasis added)

The Commission in the said Case had allowed connectivity at LT internal bus subject to CEA (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013 and also held that the verification/certification of the configuration of CPP installation and connectivity arrangements should be done by the Electrical Inspector before commissioning, as per prevailing practices, for the purpose of standardization. The Commission regarding safety measures and protection system held that the generator should comply with the CEA (Measures Relating to Safety and Electrical Supply) Regulations, 2010 for the purpose of safety, as specified under clause 5(6) of the CEA (Technical Standards for Connectivity of

the Distributed Generation Resources) Regulations, 2013. The relevant Para. is as under:

17. The issue-wise recommendations of the Committee are as follow:

17.1 Technical issues of grid connectivity of RE sources:

i) Connectivity and interconnection points

1) Connectivity should be in accordance with the 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.

Wherever applicable, the CEA (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013 must be complied with.

.....

3) The interface point with the distribution network for the Petitioners should remain at 33 KV level as specified in the Regulations. However, self-consumption, auxiliary consumption and gross generation measurement of such plants should be on the LV side.

4) The evacuation cost up to the inter-connection point should be borne by the RE Generator. The RE Captive Generator should bear the additional cost of evacuation arrangements for such grid-connected systems.

5) Verification/certification of the configuration of CPP installation and connectivity arrangements should be done by the Electrical Inspector before commissioning, as per prevailing practices, for the purpose of standardization.

.....

iv) Reactive Energy drawal limits and issues related to harmonics, DC current injection etc.

These should be in line with the relevant Commission Orders on non-fossil fuel based Co-generation projects and CEA (Technical Standards for connectivity of Distributed Generation Resources) Regulations, 2013.

v) *Safety measures and protection system*

The generator should comply with the CEA (Measures Relating to Safety and Electrical Supply) Regulations, 2010 for the purpose of safety, as specified under clause 5(6) of the CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

17.2 *Review of existing LT grid connectivity provisions for RE projects in other States*

The Committee noted that, except for solar projects, connectivity for CPPs has been stipulated only at HT level in different States.

(Emphasis added)

17. The Commission observes that in the instant case the submission of MSEDCL fails to indicate the legal provisions under which the solar roof top PV plant could not be allowed connectivity to the internal bus. It is further observed that MSEDCL has also not responded to the query of the Petitioner regarding the competent Authority, which sanctions such connectivity. On the other side, it is observed that the Petitioner had provided double protection system i.e. one as Reverse power protection relay at High Voltage level and other inbuilt system provided in Solar DC/AC Inverter system which detects zero volt and stops generation of power. Further, the Commission notes the submission of the Petitioner that it had not compromised on security and safety of the grid and has got the permission of the Electrical Inspector, who is a competent authority assigned by Govt. of Maharashtra.
18. Further, the Petitioner has also submitted that MSEDCL is resorting to discriminatory treatment and in support of this claim has given details of three different cases where solar grid connectivity of higher quantum has not only been approved and but is also operational. MSEDCL has not denied this and has submitted various issues which differentiates this case from the three cases. As contended by MSEDCL, the three connections which are being referred to are on High Tension and that the Petitioner is seeking connectivity on Low Tension level and that the Petitioner is seeking reliefs under two different Regulations. The Commission does not intend to analyse these three cases as all the details of these cases are available as a part of the proceedings of this case and more so due to the reasons listed at Para 7. The Commission directs MSEDCL to ensure uniformity by following the relevant Regulations of MERC and the CEA Regulations 2013, modified from time to time.

19. The Petitioner has also referred to the provisions of section 60, 66 and 86 (1) (e) of the EA 2003.

(A) The Commission rules that with regard to directions to MSEDCL under section 60 (Dominant Position) of the EA 2003, the petitioner has not submitted any record or justification for substantiating its claim about misuse of MSEDCL of its dominant position. On the other hand, MSEDCL has submitted the various provisions of the two Regulations in force and has also put forth the aspect of grid security and safety.

(B) With regard to the provisions of section 66 of the EA 2003 (Market Development), the Commission rules that the mandate of developing a market is independent of the provisions of the Regulations and under its inherent powers the market development is undertaken by the Commission independently.

(C) The provisions of Sec 86 (1)(e) of the EA 2003 are,

promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

20. Thus, considering these provisions, the Commission opines that though it is incumbent upon the Commission to provide suitable measures for connectivity with grid for RE, the same can be done only through Regulations. The existing provisions of the Net Metering and DOA Regulations do not permit the relief sought by the Petitioner and the fact that this case does not fall under purview of the existing two Regulations (Net Metering and DOA Regulations) and further that same relief cannot be granted under two different Regulations, there is a need to revisit this issue holistically through framing a Regulations after following previous publication procedure/public consultation process. The Commission also notes that technical issues with regard to grid connectivity at LT level of co-located Solar Plants and its financial impact on Distribution Licensees need to be addressed. Parameters for grid security for connecting solar plants for captive use beyond the point of supply of consumer would need to be evolved after detailed deliberations with the stakeholders/public.

21. In view of the foregoing, the Commission is of view that the issue of getting connectivity to the internal LV bus in case of captive co-located generating plants will be clubbed and addressed through a a Public Consultation Process. The same would be undertaken by the Commission by way of amending the Net Metering Regulations, 2015 framing new Regulations as recently ruled by the Commission in Case No. 20 of 2019, which was filed by MSEDCL. In the meantime, the

Commission directs MSEDCL to desist from taking any action against the Petitioner and allow connectivity to said solar roof top PV plant of the Petitioner at LT internal bus.

22. SIL has also sought compensation of the losses to the tune of Rs. 65.18 lakhs in view of forceful disconnection of the said solar plant by MSEDCL. The Commission observes that under the extant regulations there is ambiguity to connect the said solar plant even-if it is beyond the metering point. Also, connection of such solar plant and not operating the same in isolated mode tantamounts to parallel operation of two sources of power supply. The Commission is of the view that in case of parallel operation concerning the safety aspect the consumer needs to formally inform the licensee before connecting such captive generating plant. Mere Electrical Inspector permission does not entitle the consumer to connect such captive solar plant. Hence, the Commission is not inclined to give any relief to SIL with regard to the compensation sought by it from MSEDCL. Hence, the following Order:

ORDER

1. **Case No. 312 of 2018 is partly allowed.**
2. **The Commission will club the issue of getting connectivity to the internal LV bus in case of captive co-located generating plants in the Consultative Public Process in respect of amending the Net Metering Regulations, 2015 / framing new Regulations as recently ruled by the Commission in Case No. 20 of 2019.**
3. **In the meantime, the Commission directs MSEDCL to desist from any action against the Petitioner and allow connectivity to said 1.36 MWp solar roof top PV plant of the Petitioner at LT internal bus. Commission further rules that, pending action at Sr no. 2 of this order, any further expansion beyond 1.36 MWp by SIL, which is allowed as an interim dispensation, will be at their own risk, cost and subject to adherence to safety norms.**

Sd/-
(Mukesh Khullar)
Member

Sd/-
(I. M. Bohari)
Member

