

Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Case No. 110 of 2020

Petition of Cogeneration Association of India seeking relief/exemption under DSM Regulations, 2019 to Bagasse-based Cogeneration Power Plants at sugar factories in Maharashtra

Coram

I. M. Bohari, Member
Mukesh Khullar, Member

Cogeneration Association of IndiaPetitioner

V/s

Maharashtra State Load Dispatch Centre (MSLDC) Respondent No. 1
Maharashtra Energy Development Agency (MEDA)Respondent No. 2
Maharashtra State Electricity Transmission Co. Ltd. (MSETCL)Respondent No. 3
State Transmission Utility (STU)Respondent No. 4
Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) Respondent No. 5
Tata Power Co. Ltd. -Distribution Business (TPC-D) Respondent No. 6
Adani Electricity Mumbai Ltd. – Distribution Business (AEML-D)Respondent No. 7
BEST Undertaking (BEST)Respondent No. 8
Indian RailwaysRespondent No. 9
Gigaplex Estate Private Limited (GEPL)	...Respondent No. 10
Mindspace Business Parks Private Limited (MBPPL)	...Respondent No. 11

Appearance:

For the Petitioner	: Shri S. C. Natu (Rep.)
	: Shri Sanjay Khatal (Rep.)
For MSLDC	: Shri Eknath Denge (Rep.)

For MEDA	: Shri Arif Shaikh (Rep.)
For MSETCL (Rep.)	: Shri Sanjeevkumar Suradkar
For STU	: Shri S. D. Sharma (Rep.)
For MSEDCL	: Shri Harinder Toor (Adv.) Shri Rahul Chouhan (Adv.)
For TPC-D	: Shri Peyush Tondon (Rep.)
For AEML-D	: Shri Abaji Nararkar (Rep.)
For BEST	: Shri N.N. Chaugule (Rep.)
For Indian Railways	: Shri Rajnish Goyal (Rep.)
For GEPL and MBPPL	: Shri Nitin Chunarkar (Rep.)

ORDER

Dated: 9 November, 2020

1. Cogeneration Association of India, C/o MSFCSF Ltd., 1st floor, Sakhar Sankul, Shivajinagar, Pune (**Cogen**) filed a Case on 14 May 2020, seeking exemption to the Bagasse-based Cogeneration Plants from the MERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2019 (**DSM Regulations**) highlighting certain difficulties in implementation of DSM Regulations by these Plants. On 26 August 2020, an amended Petition was filed by Cogen seeking impleadment of Maharashtra State Electricity Transmission Co. Ltd. (**MSETCL**) and Maharashtra Energy Development Agency (**MEDA**) as respondents and raising few additional grounds in support of its Petition.
2. **Petitioner's main prayer is as follows:**
The Association hence prays to the Hon'ble Commission to consider our submissions as above under this review petition & give relief to these renewable energy projects, by exempting from the DSM Regulation, 2019.
3. **Petitioner has stated as follows:**
 - 3.1 Sugar cane harvesting involves 90% manual work through more than 10 Lakhs labourers engaged in sugar cane harvesting and transport activity. Therefore, there is no certainty for cane supply to sugar factories. Additionally, harvested cane cannot be stored. It has to be harvested and brought to the cane yard for crushing within six hours to ensure 'Non-Inversion' of sucrose. Therefore, there are recurring instances of 'No-Cane' leading to sudden unpredictable stoppages.
 - 3.2 Therefore, the cane crushing at the sugar factories varies substantially even on hourly and within hour basis. As a result, the bagasse generation varies substantially. The variable bagasse quantities are directly fed to the cogeneration boilers immediately after cane crushing and no storage of large quantities of bagasse is available during the

crushing operations. Hence, the power generation from the available varying quantities of bagasse also varies frequently every hour and within the hour also.

- 3.3 The bagasse-based cogeneration power plants at sugar factories, hence, virtually have no fuel linkage, unlike, all other fossil fuel-based power plants due to fluctuations in the sugar cane availability and crushing, bagasse generation and limited operation days (maximum 130-140 days, in a year). Hence, the yardstick applied unilaterally for these plants is inappropriate.
- 3.4 Bagasse-based cogeneration power plants at sugar factories are required to meet the captive steam and power consumptions for sugar process and distillery/ethanol plants. The captive steam and power requirements also vary on hourly and within hour basis due to variations in cane crushing and process operations. Hence, the power generation, consumption and exportable surplus to the grid vary on hourly and within hour.
- 3.5 It is impossible to schedule any quantum of export power from these plants on 15-minute basis, as per the Regulation and these plants will be penalized heavily under the DSM Regulations.
- 3.6 The bagasse-based cogeneration power plants are Renewable Energy (RE) based plants and they must be exempted under the DSM Regulations.
- 3.7 As only 60-65% of the power gets exported to the grid, after meeting the fluctuating captive steam and power demand, most of these plants will not fall under the applicability clause of DSM Regulations as per which the Generating Plants with 25 MW and above installed capacity are covered under the Regulation. For example, a Generating Plant with the installed capacity of 30 MW may have the export capacity of only 20 MW, lower than that specified under the DSM Regulations. Hence, all these projects must be exempted from DSM Regulations.
- 3.8 Most of the sugar factories are located in rural areas where fluctuations in voltage and frequency is a common phenomenon. Many times, sugar factory cogeneration power plants trip due to these fluctuations in grid voltage, frequency etc. Post tripping of units, the plants somehow manage to synchronize the units with grid, after normalizing the other captive systems, during which substantial time is lost. Hence it is difficult to manage generation on fifteen minutes basis.
- 3.9 Sugar Industry is already under immense financial distress and has been put into Negative List by the banks resulting in significant hurdles for regular financing. The Governments, both at the Centre and State Levels, are seized with issues to save this important Rural Industry which is generating a good amount of employment in rural areas and benefiting to farmers.
- 3.10 Various schemes such as Interest Subvention for Ethanol production, Buffer Stock Scheme to regulate Sugar Supply and Export Scheme to reduce domestic sugar availability are being implemented for survival of the sugar industry. Deviation charges and other charges envisaged under DSM Regulations would add the difficulties presently being faced by the Sugar Industry, which should be avoided.

- 3.11 The other Generating Projects such as Solar Generating Plants, Wind Generating Plants, Coal-based Generating Plants, Hydro Generating Plants are all entrepreneur oriented with no impact on other stakeholders. Therefore, profit or losses are entrepreneur specific, however in case of Bagasse-based Cogeneration Projects, such impact does not remain restricted to Sugar Factory but same percolates to farmers as well who supply cane to the Sugar Factory. Therefore, any loss in Cogen Plants adversely affects farmers as well. The liability towards penalties can run into Crores of Rupees unsustainable for sugar factories to bear.
- 3.12 Bagasse-Based Cogen Projects are decentralized projects both in terms of power generation and captive consumption. These projects also ensure local availability of quality power. Therefore, the Transmission and Distribution losses are substantially reduced. Adverse impact on these units due to penalty provisions under the DSM Regulation can prove detrimental to overall energy grid stability, if these projects close down.
4. **MSLDC filed its reply on 28 May 2020 stating as under:**
- 4.1 Though the solar and wind projects are exempted in DSM Regulations, they are governed by MERC (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018. Hence, the Petitioner's contention regarding discrimination to Bagasse-based Cogeneration power plants lacks merit.
- 4.2 Other grounds raised by the Petitioner does not come under purview of MSLDC.
- 4.3 MSLDC being the System Operator for the State of Maharashtra, has to ensure adherence to Orders issued by the Commission from time to time. MSLDC shall act upon and follow the directives of the Commission for implementation of DSM Regulations.
5. **BEST filed its reply on 12 June 2020 stating as under:**
- 5.1 The DSM Regulations notified at Central Level i.e. Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, does not have applicability clause wherein the Regulations are made applicable to generators having installed capacity above certain threshold limit. However, while finalization of Intra-state DSM Regulations, the Commission observed that from visibility and system operations point of view, Sellers connected to Intra State Transmission System (**InSTS**) with installed generation capacity above certain threshold capacity limit needs to be brought under the ambit of DSM framework in the initial phase. Accordingly, generators having installed capacity more than 25 MW connected to InSTS including RE generators but excluding wind and solar generating stations are covered under the DSM framework with the enabling provision that this threshold capacity limit will be revised over the period. Thus, the Commission already indicated its intention to bring most of the generators under DSM framework in future period.
- 5.2 The objective of DSM Regulations is to maintain grid discipline and grid security as envisaged under the State Grid Code through commercial mechanism for deviation settlement through drawl and injection of electricity by the users of the grid. The

generators below 25 MW installed capacity including large number of RE generators such as biomass-based generators, bagasse-based generators and Cogeneration Plants are already out of ambit of the present Regulations. Hence, the charges towards deviation by these generators, will get socialized which will have to borne by Discoms in Regional DSM settlement.

- 5.3 In order to bring discipline in injection/drawl by State Entities, the deviation charges need to be borne by the respective generators to avoid undue burden on consumers of other State Entities. The Bagasse-based Cogen power is firm in nature unlike infirm Wind and Solar RE power and its power is schedulable. If these generating plants are exempted from DSM Regulations, the burden of its deviation will be further passed on to the consumers of discoms which should be avoided.
- 5.4 In view of the above, the Commission should not grant the relief as sought by the Petitioner.

6. MSEDCL filed its reply on 20 August 2020 stating as under:

- 6.1 The power generated by the Bagasse-based Cogeneration plants installed by the sugar factories are required to meet the captive consumption which includes the sugar process and distillery/ ethanol plants and the remaining surplus power is injected into the grid. Out of the installed capacity of the plant, 30-40 % of the power generated is used for captive consumption and the remaining 60-70 % power is exported to the grid.
- 6.2 Therefore, the DSM Regulations may be made applicable to the Bagasse-based Cogeneration plants on the basis of the export capacity (season and off-season) of the plant whichever is higher rather than the installed capacity of the plant.

7. MEDA filed its reply on 16 September 2020 stating as under:

- 7.1 The injection to grid by partially captive Cogeneration plants is not just dependent upon the generation planning but it also depends on actual consumption which varies throughout the day due to change in consumption and sugarcane crushing load condition which also depends upon manual labour for harvesting sugarcane.
- 7.2 Captive generators and in situ captive projects are excluded from DSM Regulations.
- 7.3 Therefore, installed capacity of Cogeneration projects should be considered after deducting their captive energy i.e. power at delivery point should be considered for DSM or Captive capacity of Cogeneration plants should be decided as per their Energy Purchase Agreements (EPAs) with Discoms or last three-year average captive usage.
- 7.4 MEDA supports the Petition. Since Cogeneration Plants are helpful to grid and hence penalty levied towards non-compliance of DSM Regulations should be substantially reduced so that the Petitioner are not adversely affected.

8. At the e-hearing held on 13 October 2020:

- 8.1 The representative of Cogen reiterated its submissions as made out in the Petition and stated that:

- i. MEDA has supported the present Petition and suggested that installed capacity of Cogeneration projects should be considered after deducting their captive energy i.e. power at delivery point should be considered for DSM.
 - ii. MSEDCL has suggested that DSM Regulations may be made applicable to the Bagasse-based Cogeneration plants on the basis of the export capacity (season and off-season) of the plant whichever is higher rather than the installed capacity of the plant. However, the Cogeneration plants are under shutdown during the off-season period.
 - iii. If exportable capacity is considered as the basis for applicability of DSM Regulations instead of installed capacity, barring two plants, rest of the Bagasse-based Cogeneration plants would be outside purview of DSM Regulations.
 - iv. Bagasse-based Cogeneration Plants are not Generating Companies, but these are food process industries connected to grid at downstream voltage levels.
 - v. The Petitioner has also filed a Writ Petition (WP) before the Hon'ble High Court challenging the DSM Regulations. However, the Petitioner has decided to withdraw the Writ Petition and necessary Application has been filed before the Hon'ble High Court. However, the withdrawal of the WP is yet to be allowed by the Hon'ble High Court.
- 8.2 The Advocate for MSEDCL re-iterated the submissions as made out in its replies and stated that there should not be any blanket exemption as sought by the Petitioner.
- 8.3 Representative of BEST and MSLDC stated that they have already filed their respective replies and same may be considered by the Commission while deciding the Petition.
- 8.4 Representative of MEDA re-iterated its submissions as made out in its replies.
- 8.5 Representatives of TPC-D, AEML-D, MSETCL, STU, Railways, MBPPL and GEPL stated that they have no submissions to make and the Commission may appropriately decide the Petition.

Commission's Analysis and Ruling

9. Through present Petition, the Petitioner is seeking relief to the Bagasse-based Cogeneration plants in terms of exemption from the DSM Regulations for these plants. The Petitioner has cited various issues/difficulties that would likely be faced by these plants in implementation of these Regulations.
10. The Commission notes that the Petitioner has also filed a Writ Petition before the Hon'ble Bombay High Court challenging the DSM Regulations and seeking directions of the Hon'ble High Court to declare the DSM Regulations as ultra vires to the constitution and hence to quash these Regulations. Few grounds raised in the aforesaid Writ Petition are also raised in present Petition. Thus, the Petitioner has approached multiple forums raising its issues on the same Regulations which is nothing but a forum shopping. However, the Petitioner, at the e-hearing held on 13 October 2020, stated that it was not pursuing the Writ Petition and had already filed an Application before the Hon'ble High Court seeking withdrawal of Petition. This fact has been confirmed

by Secretariat of the Commission through the Advocate on Record of the Commission. The Hon'ble High Court is yet to formally allow withdrawal of the Writ Petition. However, considering the Petitioner's oral submissions during the hearing, the Commission proceeds to decide the Petition on its merits which will be subject to the decision of the Hon'ble High Court on allowing the withdrawal of the Writ Petition.

11. The Petitioner has stated that the Bagasse-based Cogeneration power plants are RE based Generating plants and they must be treated at par with the RE based Generating plants i.e. Wind and Solar Generating Plants and therefore may be exempted from the DSM Regulations. The Commission is of the view that there is no merit in the aforesaid submissions of the Petitioner as the Wind and Solar Generating Units are already covered under DSM Mechanism through a separate Regulations i.e. MERC (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018 (F & S Regulations). All Wind and Solar Generating Units with installed capacity of 5 MW and above, and connected to InSTS are covered under these Regulations wherein these Generators are required to submit their respective injection schedules and in case of deviation in excess of the specified percentage from the schedules, these generators are subjected to deviation charges. These Regulations have been notified on 20 July, 2018 and the commercial implementation of these Regulations have commenced since 6 January, 2020. Hence, the Commission is of the view that the Bagasse-based Cogeneration plants connected to InSTS cannot seek exemption from DSM Regulations on this ground.
12. The Petitioner has further raised the issue regarding difficulty that may be faced by Bagasse-based Cogeneration Plants in scheduling their generation on 15-minute basis. The Petitioner has stated that there is no certainty in supply of sugarcane which results in erratic availability of bagasse for generation of electricity. Further, these plants are required to meet the captive steam and power consumptions for sugar process and distillery/ethanol plants. Hence, the power generation, consumption and exportable surplus to the grid vary on hourly and within hour basis, making it difficult to schedule the injection of power on 15-minute basis.
13. On this issue, the Commission notes the submission of MSLDC that, schedule by Generating Units is necessary for safe and secured grid operations as it enables MSLDC to undertake load generation balance on day ahead basis. Increase in unscheduled injection of power into the grid can give rise to transmission constraints and jeopardize grid security.
14. The Commission also notes that under Final Balancing Settlement Mechanism (FBSM) regime, the Generators were not included in the deviation framework as Generator's deviations were included in the part of Discom deviations. However, to make the Generators responsible for their own deviations in line with principle of "causer pays", the Commission introduced DSM framework similar to mechanism of CERC's DSM Framework.
15. In view of the above, the DSM Regulations have been made applicable to all sellers having installed generating capacity of or more than 25 MW including open access generators, captive generators (excluding in-situ captive generators) connected to

InSTS, RE generators except wind and solar generating stations (covered under F&S Regulations), whereas the provisions of the Scheduling and Dispatch Code under the MERC (State Grid Code) Regulations, 2020 have been made applicable to all Generating stations having installed capacity less than 25 MW connected to InSTS for scheduling purpose.

16. Further, the captive generators connected to InSTS are required to submit their schedules separately for their own captive consumption and schedule for injection of energy into the grid. Additionally, if captive consumption varies, the generators can revise their injection schedule which is helpful to minimize the deviation in real time operation. Further, non-firm RE sources such as Wind and Solar Generators which are weather dependent, are also forecasting and submitting their schedule on 15-minute basis and also revising as and when required as per F&S Regulations. Hence, the Commission does not find any justification for exempting the Bagasse-based Cogeneration Units from requirement of submission of 15-minute basis generation schedule.
17. The Commission notes the submission of Petitioner that, most of the sugar factories are located in rural areas where fluctuations in voltage and frequency is a common phenomenon. Many times, sugar factory cogeneration power plants trip due to these fluctuations in grid voltage, frequency etc. Post tripping of units, the plants somehow manage to synchronize the units with grid, after normalizing the other captive systems, during which substantial time is lost. Hence, it is difficult to manage generation on 15-minutes basis. The Commission notes that, most of these plants seeking exemptions are connected to a voltage level of 33kV and above wherein the voltage and frequency fluctuations are generally very rare compared to the voltage level below 33 kV. Accordingly, there is no merit in the aforesaid ground raised by the Petitioner.
18. Another issue raised by the Petitioner is about exportable capacity of these plants being lower than the installed capacity. The Petitioner has stated that only 60-65% of the electricity generated gets exported to the grid, after meeting the fluctuating captive steam and power demand. Hence, most of these plants will not fall under the applicability clause of DSM Regulations as per which the Generating Plants with 25 MW and above installed capacity are covered under the Regulation. Hence, all these projects must be exempted from DSM Regulations.
19. The DSM Regulations are to address the deviations in the Grid and to ensure that these deviations do not compromise the Grid Security. The Commission notes that (as recorded in the Statement of Reasons for DSM Regulations), 25 MW installed capacity has been selected as threshold capacity for bringing the sellers above this capacity under the ambit of DSM framework in the initial phase. This threshold has been chosen by taking into consideration the factors such as visibility of the Generators to MSLDC and feasibility of system operations by MSLDC. Accordingly, the Commission has specified that, generators having installed capacity more than 25MW connected to InSTS shall be covered under the proposed DSM framework with the enabling provision that this threshold capacity limit shall be revised over the period.

20. In normal course, the conventional Generators can inject electricity into grid close to its installed capacity barring some amount of energy which gets utilized within the plant itself in the form of auxiliary consumption. However, as pointed out by the Petitioner, in case of cogeneration plants (and in case captive generating units with consumption in same premise), significant quantum of generated electricity is utilized for plant processes and plant consumption. Upon examination of the few of the PPAs entered into between these Bagasse-based Cogeneration plants and MSEDCL, it is seen that apart from installed capacity, internal power requirement and the exportable capacity is also mentioned in the PPAs. Thus, substantial quantum of installed capacity is required to meet internal captive consumption and hence the surplus/exportable capacity which is fed into the Grid (for which revenue can be generated under PPA) is much lower compared to the installed capacity.. Further, for cogeneration plants, as far as impact on grid and its security is concerned, only surplus/exportable capacity matters and installed capacity has no relevance unless the cogeneration plant does not consume any electricity within the plant and schedules entire generated electricity for injection into grid.
21. Further MEDA has suggested that installed capacity of Cogeneration projects should be considered after deducting their captive energy i.e. power at interconnection point should be considered for applicability of DSM. MSEDCL has also suggested that the DSM Regulations may be made applicable to the Bagasse-based Cogeneration plants on the basis of the export capacity (season and off-season) of the plant whichever is higher rather than the installed capacity of the plant.
22. Further, as per the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019, Biomass and Co-generation projects are subjected to the scheduling and despatch code. The relevant provision of RE Tariff Regulations, 2019 is as below
- “13.1 The Biomass-based Power Projects and Co-Generation Projects shall be subject to the respective scheduling and despatch code as specified under the State Grid Code, as amended from time to time.”*
23. The Commission is of the view that, as far as grid safety and grid discipline is concerned, all the power injected in the grid must be scheduled as per the appropriate provisions of the Scheduling and Dispatch Code under the MERC (State Grid Code) Regulations, 2020.
24. The Regulation which defines the applicability for DSM Regulations is as under:
- “
- 4. Applicability.—These Regulations shall apply to the transactions of conveyance of electricity through short- term open access or medium-term open access or long-term open access using intra-state transmission system (InSTS) or distribution system of electricity (including inter-state wheeling of power), subject to the following conditions :*
- (A) Deviation Settlement Mechanism under these Regulations shall be applicable for all Seller(s) having installed generating capacity above 25 MW(or such other**

threshold capacity), including renewable energy generators but excluding wind and solar generating stations(s), open access generators, captive generators (excluding in-situ captive generators) connected to intra-state transmission system :

Provided that, the revision in the threshold capacity limit shall be separately notified by the Commission in stages over the period considering implementation aspects and based on report to be submitted by SLDC:

Provided further that, forecasting, scheduling and deviation settlement related matters regarding wind and solar generation shall be governed as per the provisions of “Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018” and its amendments thereof.”

25. Though the Commission is not inclined to modify the requirements and the stipulations mentioned in the Regulations, as observed above, it is clarified that in line with the SOR of the Regulations, for the purpose of applicability of DSM Regulations, the exportable quantum will be the relevant capacity instead of the installed capacity.
26. It is to be noted that the exemption is only till such time the exportable quantum is below 25 MW. The Commission also directs that the applicability of DSM Regulations is to be progressively made applicable to the lower installed capacity plants (and also the lower exportable capacity plants) based on the criteria including visibility and proper metering. Thus, this aspect necessitates that appropriate steps shall be taken by the Cogen plants so as to ensure compliance of the same in future especially since the infirm generation sources of Wind and Solar are also subjected to Deviation settlement Regulations (Separate Regulations). SLDC shall ensure that all the necessary steps are taken in this regard and that the same shall be completed before the next MYT control period.
27. In light of the above, the Commission deems it appropriate to allow a partial exemption to the Bagasse-based cogeneration plants (and also captive generators with consumption of electricity at the same location and other similarly placed cogeneration plants) from the DSM Regulations. Accordingly, the Commission holds that the DSM applicability for the above-mentioned plants shall be based on exportable capacity of the Generating Unit instead of installed capacity. Hence, the time blocks in which the schedule for exportable generation by these Plants is 25 MW or above, the provisions of DSM Regulations shall be made applicable to these plants for those time blocks. For rest of the time block, the provision of DSM Regulations related to applicability of DSM Charges shall not be applicable to them. MSLDC is directed to make necessary changes in the relevant procedures and logic for DSM billing of these Plants.
28. Hence the following Order:

ORDER

- 1. Case No. 110 of 2020 is partly allowed.**

2. The applicability of MERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2019 for the Bagasse-based Cogeneration plants (and also captive generators with consumption of electricity at the same location and other similarly placed cogeneration plants) shall be based on exportable capacity of the Generating Unit instead of installed capacity. Hence, the time blocks in which the schedule for exportable generation by these Plants is 25 MW or above, the provisions of DSM Regulations shall be made applicable to these plants for those time blocks. For rest of the time block, the provision of Deviation Settlement Mechanism Regulations related to applicability of DSM Charges shall not be applicable to them. The Commission however clarifies that, applicability of appropriate provisions of Scheduling and Dispatch Code related to scheduling, curtailment etc. shall be continued in the interest of grid safety and grid discipline. Maharashtra State Load Dispatch Centre is directed to make necessary changes in the relevant procedures and logic for DSM billing of these Plants.

Sd/-
(Mukesh Khullar)
Member

Sd/-
(I. M. Bohari)
Member

