

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

**Coram: Dr. Pramod Deo, Chairperson
Shri S. Jayaraman, Member
Shri V.S.Verma, Member
Shri M. Deena Dayalan, Member**

**Date of Hearing: 27.03.2012
Date of Order : 16.01.2013**

Suo Motu Petition No.: 209/2011

In the matter of

Implementation of the Renewable Regulatory Funds mechanism under Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010

And in the matter of

- 1 U.P. Power Corporation Ltd. Shakti Bhawan, Lucknow,
- 2 SLDC, Virbhadra, Rishikesh, PITCUL, Uttrakhand
- 3 SE (SLDC) Haryana Vidyut Prasaran Nigam Ltd, Panchkula
- 4 Delhi Transco Ltd, New Delhi
- 5 Himachal Pradesh State Electricity Board, Shimla
- 6 Punjab State Load Dispatch Centre, Patiala
- 7 Chief Engineer (S&F) SLDC, Jammu
- 8 Chief Engineer (LD) Electricity Department, UT, Chandigarh, Chandigarh
- 9 SLDC, Madhya Pradesh Power Transmission Company Ltd. Jabalpur,
- 10 SLDC,MSETCL, Mumbai
- 11 SLDC,Gujarat Energy Transmission Corporation .Ltd, Vadodara
- 12 Chhatisgarh State Power Transmission Co. Ltd., SLDC, Raipur
- 13 Goa Electricity Department, Panaji, Goa
- 14 Electricity Department, Daman & Diu, Nani Daman
- 15 Electricity Department, Dadar & Nagar Haveli, Silvassa
- 16 Karnataka Power Transmission Corporation Ltd. SLDC, Bangalore
- 17 SLDC, TANTRASCO, Chennai
- 18 Chief Engineer (System Operation), KSEB, Ernakulam,
- 19 Transmission Corporation of Andhra Pradesh Ltd., SLDC, Hyderabad
- 20 EE(System Control Centre) Electricity Department, Puducherry
- 21 SLDC, Bihar State Electricity Board, Patna
- 22 West Bengal State Transmission Corporation Ltd. Howrah
- 23 SLDC, Orissa Power Transmission Corporation Ltd., Bhubaneswar



- 24 SLDC Jharkhand State Kusai Colony, Ranchi
25 Power Deptt. Govt. of Sikkim, Gangtok
26 SLDC, Damodar Valley Corporation, Dhanbad, Jharkhand
27 SLDC, AEGCL, Guwahati
28 SLDC, Electricity Department, Govt. of Manipur, Imphal
29 SLDC, Power & Electricity Deptt, Govt. of Mizoram, Aizawl
30 SLDC, Electricity Deptt, Govt. of Nagaland, Dimapur
31 CMD, Tripura State Electricity Corporation Limited, Agartala
32 SLDC, Deptt. of Power, Govt. of Arunachal Pradesh, Itanagar
33 S E (SLDC), Director Distribution office, Shillong ...Respondents

Petition No.2/MP/2012

In the matter of:

Petition under clauses (1), (2) and (4) of Part-7 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 and Section 94 (1) (f) of the Electricity Act, 2003 for removal of difficulty in respect of order dated 18.2.2011 for approval of detailed procedure for the implementation of the Mechanism of Renewable Regulatory Fund as per Clause (9) of Annexure-I of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.

And in the matter of:

Indian Wind Energy Association, New Delhi Petitioner
Vs
National Load Despatch Centre, New Delhi Respondent

Parties Present:

Shri Padmanatshan, IWEA
Shri G.Upadhyay, Director, MNRE
Ms Minaxi Garg, NLDC
Shri Shailendra Verma, NLDC
Shri V.K.Agarwal, NLDC
Shr H.K.Chawala, NLDC
Sri K.J.Bhijva, SLDC, GETCO
Shri Anurag Misra, SLDC, MP
Shri K.Amaresaur APTRANSCO



ORDER

Clauses (5) and (7) of Complementary Commercial Mechanism at Annexure-I to the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, as amended from time to time (hereinafter “Grid Code”) provide as under:

“5. The wind generators shall be responsible for forecasting their generation upto an accuracy of 70%. Therefore, if the actual generation is beyond +/- 30% of the schedule, wind generator would have to bear the UI charges. For actual generation within +/- 30% of the schedule, no UI would be payable/receivable by Generator, The host state, shall bear the UI charges for this variation, i.e within +/- 30%. However, the UI charges borne by the host State due to the wind generation, shall be shared among all the States of the country in the ratio of their peak demands in the previous month based on the data published by CEA, in the form of a regulatory charge known as the Renewable Regulatory Charge operated through the Renewable Regulatory Fund (RRF). This provision shall be applicable with effect from 1.1.2011, for new wind farms with collective capacity of 10 MW and above connected at connection point of 33 KV level and above , and who have not signed any PPA with states or others as on the date of coming into force of this IEGC. Illustrative calculations in respect of above mechanism are given in Appendix.

6. A maximum generation of 150% of the schedule only, would be allowed in a time block, for injection by wind, from the grid security point of view. For any generation above 150% of schedule, if grid security is not affected by the generation above 150%,, the only charge payable to the wind energy generator would be the UI charge applicable corresponding to 50- 50.02 HZ .

7. In case of solar generation no UI shall be payable/receivable by Generator. The host state shall bear the UI charges for any deviation in actual generation from the schedule. However, the net UI charges borne by the host State due to the solar generation, shall be shared among all the States of the country in the ratio of their peak demands in the previous month based on the data published by CEA, in the form of regulatory charge known as the Renewable Regulatory Charge operated through the Renewable Regulatory Fund as referred to in clause 5 above.. This provision shall be applicable ,with effect from 1.1.2011, for new solar generating plants with capacity of 5 MW and above connected at connection point of 33 KV level and above and , who have not signed any PPA with states or others as on the date of coming into force of this IEGC. Illustrative calculations in respect of above mechanism are given in Appendix.”



2. As per the above quoted provisions of the Grid Code, the UI charges borne by the host State due to wind generation within certain limits and due to solar generation shall be shared among all the States in the country in the ratio of their peak demands in the previous month based on the data published by the Central Electricity Authority in the form of regulatory charge known as Renewable Regulatory Charge operated through the Renewable Regulatory Fund (RRF) w.e.f. 1.1.2011. The Commission vide Notification No. No. L-1/18/2010-CERC dated 14.1.2011 specified the revised date of implementation of Renewable Regulatory Charge and Renewable Regulatory Funds with effect from 1.1.2012 in order to put in place the procedure and mechanism required for their implementation. The Commission in its order dated 18.2.2011 had accorded approval to the "Procedure for implementation of the mechanism of Renewable Regulatory Fund" submitted by the National Load Despatch Centre and had directed National Load Despatch Centre to arrange for mock exercise as per the Detailed Procedure with effect from 1.7.2011. The Detailed Procedure provides that the wind farms and solar generating plants shall furnish the information regarding their connectivity to the Regional Power Committee, Regional Load Despatch Centres and National Load Despatch Centres through their respective State Load Despatch Centres who shall submit 15 minute block-wise data of scheduled and actual generation from the wind farm/solar generating plants as recorded in the Special Energy Meters to the concerned Regional Load Despatch Centre Centres on weekly basis which



shall be processed and furnished to the respective Regional Power Committee for preparation of energy accounts related to accounting of energy from wind farm and solar generation on a weekly basis.

3. National Load Despatch Centre (NLDC) in its letter dated 13.10.2011 brought to the notice of the Commission that despite the communications sent to the SLDCs through the respective RLDCs to furnish details regarding connectivity declaration from Wind farms/Solar generating plants, contract details and processed data i.e. Schedule generation and deviations of generation within different blocks to RLDCs /NLDC, the requisite details were not being received which had seriously affected the schedule of mock exercise. Keeping in view the target date of implementation of RRF with effect from 1.1.2012, we had directed the State Load Despatch Centres to submit the required data to NLDC vide our order dated 30.11.2011 based on which NLDC was required to file compliance position. NLDC vide its letter dated 19.12.2011 submitted the status of the compliance based on the information received from SLDCs. After considering the report, we had expressed our view that the SLDCs and the wind and solar energy generators were not taking suitable and adequate steps required for implementation of the RRF mechanism. Accordingly, Ministry of New and Renewable Sources of Energy was made a party to the proceedings to facilitate implementation of the RRF mechanism. During the hearing of the petition on 7.2.2012, the representative of Indian



Wind Energy Association (IWEA) highlighted certain issues and requested for clarification thereon in order to facilitate implementation of RRF mechanism. After hearing all parties, we directed MNRE to convene a meeting of NLDC, SLDCs and wind and solar power developers and suggest any regulatory requirement or changes in the existing procedure for the successful implementation of the RRF Mechanism.

4. Petition No.2/MP/2012 has been filed by Indian Wind Energy Association with the prayers to remove difficulties in effective implementation of RRF mechanism in addressing following issues:

(a) Clarification regarding applicability of RRF Procedures and scheduling requirement for wind power plants wheeling power through captive open access and third party open access;

(b) Clarification regarding the terms 'Old Wind Project' and 'New Wind Projects' as referred to under Grid Code;

(c) Clarification regarding 'Applicable Reference Date' for operationalising scheduling requirement and RRF Procedures for captive wind wheeling transactions;

(d) Treatment of partial scheduling for some wind projects at existing sub-stations wherein wind farm having a mix of wind power plants commissioned prior to 3.5.2010 and post 3.5.2010;



(e) Demarcation of responsibility between 'wind generator' and 'wind farm developer';

(f) Clarification regarding commercial settlement of wind power generation under illustration for case-3 and case-5 of Annexure-I of the Grid Code;

(g) Clarification regarding multiple contracted rate(s) for collective wind turbine generators connected at a common connection point (i.e wind farm).

5. Both the petitions were taken up for hearing on 27.3.2012. During the hearing, the representative of MNRE submitted that as per the directions of the Commission, it had convened a meeting on 23.03.2012 which was attended by majority of the stake-holders. It was decided to constitute a Task Force under the Chairmanship of CEO, POSOCO with Members from Ministry of Power, MNRE, CERC, CEA, NLDC, NRPC, SRPC, PGCIL, CWET, representatives from SLDCs / STUs of Gujrat, Tamilnadu, Karnataka, Rajasthan, Maharashtra and representatives of States Nodal agencies (SNAs) of Maharashtra, Gujarat and Karnataka to resolve the issues affecting the implementation of RRF mechanism. The terms of reference of the Task Force were as follows: -

(a) Issues regarding metering and definition of connection point.

(b) Scheduling and treatment of multiple commercial /sale arrangement at single connection point.



(c) Treatment of wind energy generators selling power through different options/ contract rates.

(d) Accounting philosophy and roles and responsibilities of various institutions.

(e) Entity accountable for variability.

(f) Institutional arrangements for implementations of RRF.

(g) Any other issue with regard to the implementation of RRF.

6. The Task Force has submitted the report on 4.9.2012. We have examined the report of the Task Force (hereinafter the “report”). The report has done a detailed analysis of the issues. We commend the efforts made in this regard by all concerned. The following issues and suggested solutions and decisions of the Commission thereon are discussed in the succeeding paragraphs.

(A) Point of Scheduling, Coordinating Agency and eligible generators:

7. The Task Force has suggested that the pooling stations should be considered as a basic “building block” in respect of wind/solar generating stations for the purpose of scheduling, metering and energy accounting. It has also suggested that scheduling should be done by one agency called a Renewable Generating Aggregator (RGA) or a Qualified Scheduling Entity



(QSE). It has also suggested that pooling stations that are commissioned on or after 3.5.2010 should be considered for the purpose of RRF mechanism.

8. We agree to the suggested mechanism. We, however, feel that any person could become the coordinating agency, which may be one of the generators or any other mutually agreed agency. In order to ensure that this does not become a cause for holding up the RRF mechanism, we are inclined to specify that this may be mutually agreed to by all concerned. We would refer to this agency as the “Coordinating Agency” for the purpose of scheduling, metering and energy accounting. Since the Grid Code stipulates that the eligible generators for coming under the RRF mechanism would be those that have not signed PPAs as on 3.5.2010, our decision would require amendment of the Grid Code. We direct the staff to initiate the process of amendments to the Grid Code accordingly.

(B) Payment mechanism:

9. Although this was not part of the difficulties pointed out by IWEA or others, the Task Force has recommended that commercial settlement of RE Generators should be similar to the conventional Generators, i.e. Wind and Solar generators should be paid at the contract rate as per the schedule and the UI mechanism would ensue, just like for normal generators, the liability of which would be in accordance with the dispensation for Wind generators in the



Grid Code, i.e. the UI within $\pm 30\%$ to be borne through the RRF and outside these limits by the wind generator itself. The Task Force has also pointed out that in accordance with this mechanism, which presumes that the power scheduled is delivered, RPO compliance may not be ensured accurately, since RPO is to be as per actual generation. The Task Force has also mentioned that the shortfall, if any, for the RPO target, in case this scheduling mechanism for payment based on schedule is used, should be made good by purchase of RECs from the market by the wind generator. This has been opposed by the IWEA.

10. We are of the view that this recommendation of the Task Force would violate the existing contracts, since payments to wind generators are made on the basis of the actual generation. This would also violate the RPO compliance mechanism, which is again based on actual generation and not on the schedule, and would put additional burden on the wind generators by forcing them to purchase RECs for the shortfall in meeting the schedule, if any. We are of the view that RPO will always be with reference to the actual generation without any reference to the schedule. The RRF will be operative in all the cases where there are variations with reference to the given schedule. We note that there is no difficulty in the existing method for payment of energy charges as per actual generation which should continue.



(c) Multiple Contract Rates, captive wind generating plants, other options:

11. The Task Force has recommended “reference rate” at the National level or State level to address the problem of different contract rates in the same pooling station as well as to address the contract rate for power transferred from captive wind generating plants.

12. We agree to this recommendation, since the variability of generation by any wind generator affects the grid in equal measure, irrespective of the contract rate. The issue then is to find out which reference rate should be used. We find that different States have got different contract rates as well as different rates depending on Capacity Utilization Factor (CUF), which vary from ₹ 3.35 per unit to ₹ 6.14 per unit. We are of the view that since the variation of wind generation causes variation of frequency from the normal frequency of operation, the reference rate may be fixed based on the UI rate of the average frequency of the last financial year. For example, the average frequency in the NEW grid for the year 2011-12 was 49.84 Hz. and the corresponding UI rate was ₹ 3.93 per unit. The average frequency in the Southern grid for the year 2011-12 was 49.76 Hz. and the corresponding UI rate was ₹ 5.06 per unit. This rate may be rounded off as ₹ 4.00 per unit for the NEW Grid and ₹ 5.00 per unit for the Southern grid and may be treated as reference rates for the



respective grids, till further order of the Commission. We however, make it clear that the payment to wind generators would be in accordance with actual generation at the respective contract rates or at zero rates for captive wind power plants transferring their power to their plants, as the case may be. The reference rate is for determining the financial implication for the variability of the wind generator, irrespective of whether it is selling to the State through a contract or through open access or transferring power from its captive generation to its own plant, since in all these cases it affects the grid load generation balance to the same extent. The financial implication would be the difference between the reference rate and the UI rate in that particular time block.

(D) De-pooling arrangement:

13. The Task Force has recommended that the broad guidelines for de-pooling arrangements i.e. procedures for sharing of UI charges among the wind generators connected to a pooling station, may be laid out. The IWEA has stated that this should be laid out to prevent disputes.

14. We are not inclined to specify a particular mechanism by the coordinating agency for sharing of UI charges by the wind generators connected to the pooling stations on account of the variations with reference to the schedule, which could be mutually agreed between them. However, in



order to ensure that this does not become a cause for holding up the RRF mechanism, we are inclined to specify that this may be mutually agreed and in case of disagreement, the UI charges should be shared based on actual generation on weekly basis during the same time-frame as the weekly UI accounts, since the UI accrues out of the generation during that week.

(E) Over generation above 50% of schedule:

15. Although this was not part of the difficulties pointed out by IWEA or others, the Task Force has recommended that the UI cap rate for over generation above 50% of the schedule may be reviewed to prevent volatility in the revenues of the wind generator. We are of the view that this provision has been made in the Grid Code to prevent gaming by wind generators. We are, therefore, not inclined to accept this recommendation.

(F) Miscellaneous

16. While forwarding the report, MNRE has made the following recommendations on the RRF mechanism:

“(a) Institution of RRF mechanism including fixing of associated bench marks such as reference rate should be based on the outcome of mock exercise of around a year. This would facilitate understanding of problems and issues that could crop up at the field level. The mock exercise should also take into consideration accounting up to generators level to look into pooling and de-pooling related issues; and

(b) In case of short fall in meeting the originally envisaged RPO levels, due to scheduling, the gap could be met through purchase of REC's. In case carry forward is permitted, same should be limited to a certain minimum limit. “



17. Thus MNRE has made two recommendations, namely, having a mock exercise for around a year and to fix the reference rate based on outcome of this mock exercise; and secondly, meeting the gap in originally envisaged RPO levels through purchase of RECs. With reference to the first recommendation, we feel that implementation of the RRF mechanism has been inordinately delayed, and further postponement would only delay investment in the wind energy sector. We are therefore inclined to allow 3-6 months for the mock exercise. With respect to the second recommendation, we have already decided that payment to wind generators will not be in accordance with the schedule but with reference to the actual generation. Therefore, this issue has become infructuous.

18. We are of the view that in the light of our decisions hereinabove, the operational difficulties have been addressed and the RRF mechanism is ready for implementation. The Grid Code already has provisions for Metering and Data Acquisition and the metering and data communication from the generators to the SLDC/RLDC be arranged in accordance with the said provisions. We direct that the RRF mechanism shall come into effect from **1.7.2013** and all wind generators, STUs, DISCOMs and SLDCs shall take immediate necessary action in this regard. In accordance with our decisions, the ABT meters are required to be installed only in the pooling stations which



should be done expeditiously. In case the ABT meters are not installed by the respective State Transmission Utility or Distribution Utility by 31.3.2013, the same may be installed by CTU at the cost of the concerned State Transmission Utility/Distribution Utility. We further direct all concerned to ensure that mock exercises for forecasting and scheduling start w.e.f. **1.2.2013** with the meters presently installed.

19. We direct the staff of the Commission to initiate the process for necessary amendments to the Grid Code in the light our decisions given in this order. We direct NLDC to align the “Procedures for implementation of the mechanism of Renewable Regulatory Fund” in accordance with our above directions and put up the revised Procedures for approval of the Commission expeditiously. All concerned agencies are directed to gear up for implementation of the RRF mechanism w.e.f. **1.7.2013**.

20. Suo Motu Petition No. 209/2011 and Petition No. 2/MP/2012 are disposed of in terms of our directions above.

sd/-
(M.Deena Dayalan)
Member

sd/-
(V.S.Verma)
Member

sd/-
(S.Jayaraman)
Member

sd/-
(Dr. Pramod Deo)
Chairperson

