

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 228/MP/2020

Coram:

Shri P. K. Pujari, Chairperson

Shri I. S. Jha, Member

Shri Arun Goyal, Member

Shri P. K. Singh, Member

Date of Order: 19th March, 2021

In the matter of

Petition under Section 66 of the Electricity Act, 2003 read with the Regulations 6 and 7 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2010 for approval of introduction of the Green Term-Ahead Market (Renewable Energy) Contracts at Power Exchange India Limited.

And

In the matter of

Power Exchange India Limited
9th Floor, 901, Sumer Plaza,
Marol Maroshi Road, Marol Andheri (East),
Mumbai 400059, India

... Petitioner

Parties present:

1. Shri Sakya Singha Chaudhari, Advocate, PXIL
2. Ms. Nithya Balaji, Advocate, PXIL
3. Shri Prabhajit Kumar, PXIL
4. Shri Shekhar Rao, PXIL
5. Shri Anil V Kale, PXIL

ORDER

The Petitioner, Power Exchange India Limited (hereinafter referred to as "PXIL"), has filed the instant Petition under Regulation 6 and Regulation 7 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2010 (hereinafter referred to as "the 2010 Power Market Regulations") seeking approval

for introduction of Green Term-Ahead Market (Renewable Energy) Contracts (hereinafter referred to as “GTAM Contracts”) on its platform. The Petitioner, in its revised Petition, has made the following prayers:

“(a) Accord approval for introduction of Green Term Ahead (G-TAM) Contracts details whereof are set out in Annexure A-1 at Petitioner’s platform;

(b) Recognize G-TAM products purchased by buyer as Green Energy eligible for meeting Renewable Purchase Obligation (RPO);

(c) Amend Regulations / procedures for introduction of Green Term Ahead Contracts (GTAM) at power exchange platform operated by the Petitioner;

(d) Accord approval to contract specifications provided as Annexure-A1 and to include these contracts in the Business Rules of the Petitioner;

(e) Exempt the Buyers and Sellers from payment of Point of Connection transmission charges and losses at the drawl / injection points respectively as this would help in reducing the cost of transactions in G-TAM at PXIL platform;

(f) Provide a mechanism to settle deviations in schedule from renewable sources without financially burdening the operation of Power exchanges;

(g) Permit RE generators to sell power in power exchange platform when backing down instructions are provided due to grid constraints of the host State where the RE plant is connected;

(h) Devise a mechanism that allows Distribution licensees or the generator having long term PPA with Distribution licensee but facing grid constraints within the state to Sell green power in G-TAM contract and help the counterpart Buyer of such transaction fulfill its Renewable Purchase Obligation target from the purchased green power;

(i) Permit Hybrid project to participate in G-TAM contract as non-Solar selling entities;

(j) Provide a framework specifying duration of the contract as 15-minutes or 1-hour and whether forecasting and scheduling on 15-minute or hourly basis is to be submitted by RE plants to Buyers for transactions concluded in G-TAM; and

(k) Provide the right to revise and launch the Week Ahead and Any Day Contract with transaction parameter as ‘MW’ or ‘MWh’ based on framework to be developed by this Hon’ble Commission for RE based transaction to be executed on power exchange platform.”

Background:

2. Through this Petition, the Petitioner had initially submitted the proposal for introduction of GTAM Contracts on its platform on 24.2.2020. Matter was heard on 12.3.2020 and the Commission had observed that the Petitioner had not obtained feedback from the stakeholders on the proposed GTAM Contracts. Accordingly, vide Record of Proceedings (ROP) of hearing dated 12.3.2020, the Petitioner was directed to file on affidavit the comments/ views of stakeholders, if any, and to incorporate the same by filing the revised Petition.

3. The Petitioner uploaded the copy of the Petition on its website on 2.3.2020 for inviting comments from stakeholders on the proposed GTAM Contracts. In response, comments were received from some stakeholders and in pursuance to the Commission`s direction vide ROP of hearing dated 12.3.2020, the Petitioner filed the revised Petition along with the comments of stakeholders and its views thereon. Case was called out for virtual hearing on 5.3.2021 and after hearing the learned counsel for the Petitioner, the order was reserved in the matter.

Submissions of the Petitioner

4. The Petitioner has proposed to introduce GTAM Contracts on its platform to provide avenues to renewable energy generators (RE generators) for sale of renewable energy through PXIL platform and obligated entities to fulfill their Renewable Purchase Obligations (RPOs). The Petitioner has envisaged the following benefits from introduction of GTAM Contracts:

- (a) National Action Plan for Climate Change (NAPCC) suggested that increasing the share of RE in total electricity consumption in the country is one of the important measures for promotion of Renewable Energy (RE). This increasing share is also important for addressing the problem of climate change.

(b) Ministry of New and Renewable Energy (MNRE) has targeted for RE capacity of 175 GW to be achieved by 2022. MNRE through its report 'Market design for Renewable Energy Grid Integration in India' acknowledged the need for creating newer opportunities for RE and suggested that a market driven mechanism be proposed.

(c) A market-based mechanism would provide certain additional impetus for addition in RE capacity such as: i) market clearing price would encourage development of merchant capacity; ii) during surplus periods, RE rich States refrain from scheduling RE and thus, Power Exchange operated Intra-Day product or Day Ahead contingency product will provide avenues to idle generators to trade their green power with any other State; and iii) Power Exchange based short duration product would encourage commercial and industrial consumers to purchase green power under open access route.

(d) RE target is coupled with the Renewable Purchase Obligation (RPO) to be fulfilled by distribution licensees and open access consumers. Ministry of Power (MoP) vide circular dated 14.6.2018 has already notified the long-term growth trajectory of solar and non-solar RPOs for all States and Union Territories.

(f) The twin objectives of RE target achievement and RPO compliance can be ensured in short span of time if trading of RE through GTAM is permitted at Power Exchange. It will provide an additional platform for generators to sell green power. It will aid in the development of RE capacity and will aid distribution licensees and obligated entities to meet their power demand and compliance with RPO simultaneously. It will further provide impetus for addition in merchant RE capacity.

5. The Petitioner has proposed to introduce GTAM through Green Intra Day Contracts, Green Day Ahead Contingency Contracts, Green Weekly Contracts and Green Any Day Contracts for both solar and non-solar RE segment. The non-solar segment shall comprise of selling entities that generate electricity from wind, small

hydro, biomass (bagasse) co-generation, biomass (non-bagasse) cogeneration and waste to energy. The different types of proposed GTAM Contracts are briefly discussed below:

a) **Green Intra Day Contract:** These contracts shall be traded by buyer/ seller prior to 2 hours 15 minute before delivery in a manner similar to the existing Intra Day contract with the exception that instead of an hourly contract in the case of Term Ahead Market, a 15 minute contract will be introduced for Green Intra Day Contracts. 15-minute contract granularity would help RE sellers to schedule their power more accurately as compared to one-hour duration contracts.

b) **Green Day Ahead Contingency Contracts:** These contracts shall be traded by buyer/ seller on (D-1) basis. The auction window shall operate daily from 15:00 hrs to 23:00 hrs and the Power Exchange shall issue 96 contracts of 15-minute duration each for next day delivery. These contracts will also be on 15-minute granularity for the reasons similar to that in case of Green Intra Day Contract.

c) **Green Weekly Contracts:** These contracts shall provide for delivery from 00:00 hrs of Monday to 24:00 hrs of Sunday of the forthcoming week and shall be traded on Wednesdays/ Thursdays in a manner similar to the existing Weekly product in the physical segment. The buyers and sellers shall submit their bids for energy (in MWh) and delivery shall be subject to downward variation up to 15% of energy traded. The 15% downward variation in energy traded will be applicable on a daily basis and not for the week on net basis. The buyers and sellers shall not have to define the time-blocks in which they would offtake or deliver the power respectively for the entire duration of the contract at the time of trading. However, after each successful trade, the sellers will provide their supply profile on a 15-minute time-block basis for each delivery day of the contract by 07:00 hrs. The supply profile provided by the sellers will be used for the purpose of scheduling the trade on day ahead basis. The flexibility of providing daily scheduling to RE generators is critical since it will not be feasible for them to forecast their block-wise generation in advance for

the contract duration without uncertainty and forecasting errors. The buyers would be informed by 08:00 hrs so that they are able to incorporate the supply profile received from the RE generators in their day ahead operational planning. With this schedule, the time and quantum of delivery for each specific time-block will be finalised on day ahead basis.

d) **Green Any Day contracts:** These contracts shall be traded by buyers/ sellers on daily basis and will allow the buyers/ sellers to trade energy to be scheduled on daily basis or multiples thereof. The buyer/ seller shall submit their bids for energy (in MWh) that they intend to transact in this contract and the delivery shall be subject to downward variation up to 15% of energy trade. The 15% downward variation in energy traded will be applicable on a daily basis and not for the week on net basis. The buyers and sellers shall not have to define the time-blocks in which they would offtake or deliver the power respectively for the entire duration of the contract at the time of trading. However, after each successful trade, the sellers will provide their supply profile on a 15-minute time-block basis for each delivery day of the contract by 07:00 hrs of the preceding day. The supply profile provided by the sellers will be used for the purpose of scheduling the trade on a day ahead basis. The buyers would be informed by 08:00 hrs so that they are able to incorporate the supply profile received from the RE generator in their day ahead operational planning. With this schedule, the time and quantum of delivery for each specific time-block will be finalised on a day ahead basis.

6. The Petitioner had initially proposed that no revision should be allowed for any of the GTAM contracts. Subsequently, the Petitioner has proposed that while no revision should be allowed for the Green Intra-day and Green Day Ahead Contingency Contracts, the Petitioner has proposed to provide flexibility in case of Green Any Day Contracts and Green Weekly Contracts to the sellers to deviate from their initial profile and intimate the final schedule on D-1 basis, where D implies the delivery day. The reason advanced by the Petitioner is that in case of Green Intra-day and Green Day Ahead Contingency Contracts, the matching of bids would be

taking place closer to delivery period and can be accurately forecasted. However, in the case of Green Any Day Contracts and Green Weekly Contracts where the matching of the bids would be taking place 3-10 days in advance, they are prone to forecasting error. Further, while intimating the final schedule at 07:00 hrs on D-1, the seller will be permitted to deviate up to only 15% of the daily contracted quantity in energy terms. It has been stated by the Petitioner that this mechanism will balance the interests of both buyers and sellers.

7. The Petitioner has proposed the following eligibility conditions for the buyers and sellers to participate in the GTAM Contracts:

(a) Solar power plants shall be eligible to participate in solar sessions of Green Intra Day Contract, Green Day Ahead Contingency Contract, Green Weekly Contract and Green Any Day Contract. Non-solar power plants shall be eligible to participate in non-solar sessions of Green Intra Day Contract, Green Day Ahead Contingency Contract, Green Weekly Contract and Green Any Day Contract. The nodal RLDC/SLDC shall issue NoC/ standing clearance mentioning the type (solar or non-solar) of RE plant.

(b) Eligibility of selling entity shall be ascertained at the time of registration at the Power Exchange based on NoC/ standing clearance issued by nodal RLDC/SLDC as applicable.

(c) The buyers comprising of distribution licensees and open access consumers shall be issued obligation report mentioning the quantum of green energy purchased, which shall then be helpful for buyer in meeting their RPO. The buyers shall be eligible to transact in GTAM contracts based on same NoC/ standing clearance issued as per the provisions of the Central Electricity Regulatory Commission (Open access in inter-State transmission) Regulations, 2008 (hereinafter referred to as 'the Open Access Regulations') as amended from time to time.

8. The Petitioner has submitted that risk management, bidding mechanism and price discovery methodology will be in accordance with the existing process followed in the Term Ahead contracts (TAM). The Petitioner has also submitted the detailed draft contract specification of the GTAM contracts, draft revised specifications for Green Any Day Contract and Green Weekly Contract in terms of Regulation 7 of the 2010 Power Market Regulations.

9. The Petitioner has submitted that proposed GTAM Contracts would operate in accordance with the existing regulatory framework; Procedure for implementation of framework on Forecasting, Scheduling and Imbalance handling for Renewable Energy Generating Stations including power parks based on wind and solar at inter-State level; the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010; and the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and other related matters) Regulations, 2014.

Stakeholder's Comments and the Petitioner's Response:

10. In pursuance of the Commissions directions, the Petitioner uploaded the proposal of GTAM Contracts on its website. In response, the Petitioner received comments from 5 stakeholders, namely, (i) Tata Power Company Limited, (ii) JSW Energy Limited, (iii) Renew Power Private Limited, (iv) Tata Power Trading Company Limited, and (v) Azure Power India Private Limited. The important issues raised by the stakeholders, along with Petitioner's comments thereon, are summarized as under:

- a) **Issue of waiver of POC Charges and Losses:** Tata Power Trading Company Limited has submitted that as the buyers would be fulfilling their RPOs by buying solar and non-solar power under GTAM, POC injection and drawal charges and losses are required to be exempted for RE power trades in

line with the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 (hereinafter referred to as 'the Sharing Regulations'). In absence of such waiver, cost of green power for RPO buyers would be very high due to loading of POC charges and losses. In this regard, appropriate amendments would be required in the Sharing Regulations. JSW Energy Limited and Azure Power India Private Limited have supported such waiver.

Response of the Petitioner: Regulation 13(1) of the Sharing Regulations provides for exemption from payment of transmission charges and losses for certain categories of RE projects. However, this does not include RE traded through Power Exchange. Since the GTAM Contracts would operate under provisions providing for 'Procedure for Bilateral Transaction Scheduling', the transaction can materialise under the present framework, when applicable POC charges are deposited with nodal Regional Load Despatch Centre (RLDC). The buyer and seller will have to bear respective POC charges and losses, resulting in increase in transaction costs for the participants when compared to bilateral transaction through Long Term Open Access and banking and wheeling arrangements undertaken by these entities outside the Power Exchange where such charges have been exempted. Further, there is no qualitative difference between RE sold through competitive bidding process and trading of such energy through power market. Therefore, the Commission is requested to develop a framework under the Sharing Regulations to exempt buyers and sellers from payment of POC charges and losses for the transactions in GTAM executed on Power Exchange.

b) **Scheduling/ Revision, Forecasting, Deviation Settlement & Accounting:** Tata Power Trading Company Limited and JSW Energy Limited have submitted that under Green Any Day Contract and Green Weekly Contract, downward revision in schedule up to 15% is allowed. The treatment of deviation beyond 15% is not clear as to whether the same would be dealt with as per State-specific Scheduling, Forecasting Regulations in case of STU connected wind and solar or as per the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters)

Regulations, 2014 (hereinafter referred to as 'the DSM Regulations') in case of CTU connected wind and solar projects.

Azure Power India Private limited and Tata Power Trading Company Limited requested to allow intra-day revision as per the provisions of the DSM Regulations.

Renew Power Private Limited has submitted that State-specific DSM Regulations for solar and wind based projects stipulate that all transactions are to be paid as per actual generation and any deviation whether positive or negative attracts penalty. Therefore, if a wind or solar plant connected to State grid injects more than the approved schedule, it will be at loss as it will not be recovering any consideration for such surplus generation and instead will end up paying penalties. To safeguard solar and wind-based generators from such scenario, for any RE power transaction through Power Exchange, wind and solar based generators should be governed by the provisions of the DSM Regulations irrespective of their point of connection i.e. whether Intra-State Grid or Inter-State Grid.

Response of the Petitioner: "Procedure for implementation of the Framework on Forecasting, Scheduling and Imbalance handling for Renewable Energy (RE) generating stations including power parks based on Wind and Solar at inter-State level" issued by the Commission allows wind and solar plants to revise their schedule by giving advance notice to the concerned RLDC. Such revisions are effective from the 4th time block. There may be one revision for each time slot of one and half hours starting from 00:00 hrs of a particular day subject to maximum of 16 revisions during the day. The deviations from schedule are handled as per commercial mechanism for deviation settlement of such RE plants. In a similar manner, some of the States have also issued Regulations on Forecasting, Scheduling and Imbalance handling for RE generating stations applicable for plants undertaking intra-State sale of power. CERC framework is applicable for projects connected at regional level. For the projects connected to State transmission network but supplying power outside the States or where the drawing entity is outside the State, such projects are operated under the

purview of SLDC and their scheduling is handled by concerned SLDC where the power is injected.

In the specifications for GTAM Contracts, it is proposed that the deviations from schedule would be dealt under the provisions of the Open Access Regulations. The Open Access Regulations to the extent they do not allow the selling entity to revise its obligation once a schedule has been issued by RLDC/SLDC, needs to be reconciled with the process of rescheduling allowed for renewable projects. Unless this is done, renewable projects will be discouraged from participating in GTAM, due to the risk of imposition of DSM charges.

For the RE projects connected to State transmission network and participating in GTAM, a framework is required to handle the deviations from schedule. Further, Power Exchange does not track or verify the energy injection made by seller from its RE plants. In view of above, the Commission is requested to provide a framework under the Open Access Regulations or the DSM Regulations to address the issues related to information regarding any revision in schedule in contracts executed through GTAM.

c) **RE based plants are subject to backing down owing to reasons pertaining to grid security:** ReNew Power Private Limited has submitted that RE based plants are bestowed with must run status keeping them out of the purview of merit order despatch. However, almost in all RE-rich States, RE developers are subjected to backing down owing to reasons pertaining to grid security. Backing down also happens due to low demand in the State. Therefore, the RE developer should be allowed to schedule and sell its power under Green Intra Day Contracts. Such an arrangement will provide opportunity to RE developers to mitigate its losses due to backing down and at same time will ensure liquidity in the market. Tata Power Company Limited has also added that during surplus periods, RE-rich States refrain from scheduling RE. In the case of curtailment, trading on Power Exchange will provide an option to RE developers.

Response of the Petitioner: The above issues are outside the purview of the Petition. However, the concerns raised by the entities being genuine, the Commission is requested to address the matter by providing a regulatory framework to help RE generators to sell their power when backing down instructions are provided due to grid constraints of the host State. This would help RE plants to generate revenue from sale of power and mitigate its losses due to backing down instructions.

d) **Distribution companies (Discoms) to be recognised as Green sellers:** Renew Power Private Limited has submitted that due to must-run status associated with RE, Discoms are bound to procure generation from such plants upto the extent possible. Such an obligation puts a lot of financial stress on Discoms as they are forced to back down conventional generators while continuing to pay the capacity charges. At present, Discoms sell RE power in conventional market which makes no specific distinction for green attributes and realizations made through such contracts are lower than the average power procurement cost of RE power. Therefore, Discoms should be allowed to participate in GTAM as same will solve the twin purpose by increase in liquidity in the market and will safeguard the Discoms and RE generators from the potential losses. Tata Power Company Limited has supported the above plea.

Response of the Petitioner: Presently, the traded surplus power by Discoms on Power Exchanges is a mix of conventional and green power. The green component cannot be verified by Power Exchange at the time of order placement or during the real time supply. An option for Discoms to trade surplus RE on GTAM will not only incentivize procurement of greater RE by the Discoms, but such power can also be procured by other consumers/ entities having RPO requirements. In view of above, the Commission is requested to provide a regulatory framework that identifies and permits Discoms to trade green power as seller as this will help in meeting the RPO requirement of the buyer.

e) **Inclusion of hybrid projects in non-Solar segment:** Tata Power Company Limited has submitted that the projects having surplus power should

be eligible to trade in GTAM. Hybrid projects may be added in the eligible non-solar segment.

Response of the Petitioner: The Commission is requested to permit hybrid project to participate in GTAM as non-solar selling entity.

f) **Duration of Contracts:** Tata Power Company Limited has submitted that instead of an hourly contract, a 15-minute contract should be introduced for Green Intra Day Contracts. This will provide flexibility and accuracy in procuring power on intra-day basis. The 15 minutes contract is also proposed for Green Day Ahead Contingency Contract which will help in meeting the contingency requirements after Day Ahead Market is closed. Azure power India Private Limited has proposed hourly contracts keeping in view the difficulty of accurately forecast and schedule power in a 15 minutes time block.

Response of the Petitioner: 'The Procedure for forecasting and scheduling' requires RE generating stations to submit their forecast on 15 minute basis. Since a mechanism is already in place for RE generating stations selling power on bilateral basis, implementing the 15 minute contract would be convenient to both buyer and seller. In this regard, the Commission may provide a framework to address issue related to contract duration, forecasting and scheduling to be submitted by RE generating stations for GTAM transactions.

g) **Bid to be submitted in 'MW' that they intend to transact:** Tata Power Company Limited has submitted that under Green Weekly Contract and Green Any Day Contract, the trade is proposed by the Petitioner on energy terms (MWh basis) and not on capacity terms (MW basis). This approach will create uncertainty regarding block-wise quantum. Therefore, the trading should be done on MW basis where quantum of the power to be supplied under a contract is pre-defined and fixed. Deviation Settlement Mechanism is also based on MW wherein utilities submit their schedules in MW and in case of any deviation, penalties are levied based on MW.

Response of the Petitioner: In the Petition, the Petitioner has specified that Green Weekly Contract and Green Any Day Contract would be transacted on

energy terms (in MWh) to be supplied on the day according to generation schedule provided by seller on D-1 basis. However, in its revised Petition, the Petitioner has modified the transaction parameter to MW. Further, it is submitted that the Petitioner reserves the right to launch the Green Weekly Contract and Green Any Day Contract based on framework to be developed by the Commission.

h) **Contract Specifications Trading methodology – continuous price matching:** Tata Power Company Limited has submitted that there is no price discovery in any of the instruments being envisaged for trading of RE power and the trade is going to be executed on the basis of continuous price matching. The same may result into gaming on part of the sellers based on the real time scenario and thereby exposing the buyer towards unwarranted price increase at times of need. Therefore, it is suggested that the whole trading mechanism should be executed based on a double-sided closed auction price discovery through a structured algorithm rather than price matching so as to ensure that price quoted by the sellers are market based and reflect the marginal cost of the power being traded.

Response of the Petitioner: The Petitioner has submitted that it reserves the right to introduce continuous trade matching methodology, collective uniform pricing, discriminatory price mechanism or any combination thereof for any contract based on requirements received from market participants. The auction type could also be 'Double Sided Closed' or 'Open Auction'. The Petitioner has proposed continuous matching mechanism for all the products. However, based on inputs received from members of Power Exchange, the matching rules may be revised by issuance of circular before launch of GTAM contracts.

Analysis and Decision:

11. The Petitioner has proposed to introduce GTAM Contracts on its platform for exclusive trading of renewable energy. The Petitioner has submitted that the proposed contracts will provide additional avenues to the RE generators for sale of renewable energy and obligated entities to fulfill their RPOs.

12. The Petitioner has highlighted that the proposed contracts will provide a market-based mechanism where RE surplus and RE deficit States can trade RE and balance their RPO targets. The twin objectives of RE target and RPO compliance can be ensured in short span of time if trading of RE through GTAM is permitted at Power Exchange platform. GTAM would provide an additional platform for RE generators to sell green power and will aid distribution licensees and obligated entities to meet their demand and RPO simultaneously. It is submitted by the Petitioner that GTAM as a market based mechanism would provide additional impetus for addition in RE capacity and would encourage commercial and industrial consumers to purchase green power under open access route.

13. We have examined the submissions of the Petitioner, and the comments/suggestions of various stakeholders along with the reply thereupon by the Petitioner. *Prima facie*, we are of the view that the introduction of GTAM Contracts on the Power Exchange will provide an additional avenue for short term trading of RE. Sellers of RE can use this for sale of renewable energy whereas the obligated entities can procure green power to meet their RPO requirements. Initially there may be issues related to liquidity in the market. However, with availability of the trading platform, it may attract participation from buyers and sellers and in longer term may also promote RE merchant capacity.

14. Considering the above, we are of the view that approval needs to be accorded to the Petitioner to introduce GTAM Contracts on its platform. However, it is observed that the Petitioner has made prayers to enable trading of GTAM contracts over its exchange and requested for amendment to the provisions of various regulations/ procedures. The different aspects of the proposed GTAM contracts have

been dealt with in the succeeding paragraphs keeping in view the submissions made by the Petitioner and comments/ suggestions given by the stakeholders.

RPO fulfillment through GTAM:

15. The Petitioner has submitted the proposal for introducing GTAM Contracts on its platform for trading of RE on short term basis. The Petitioner has also proposed that the procurement of green power by the obligated entities through this platform be considered towards their fulfillment of RPO requirements.

16. We agree with the proposal of the Petitioner that the obligated entities procuring renewable power through GTAM shall be eligible for fulfillment of RPO in view of the fact that unlike in REC mechanism, the green and brown attributes are not proposed to be separated through such sale of RE in GTAM. GTAM will provide an alternate route for the obligated entities to meet their RPO compliance and will also promote trading of RE in the market. Further, as the transactions through GTAM will be bilateral in nature with clear identification of corresponding buyers and sellers, there will not be any difficulty in accounting for RPO.

Solar and Non-Solar sub-segment:

17. The Petitioner has proposed to have two sub-segments, namely, solar and non-solar sub-segments, under GTAM Contracts. In the solar sub-segment, only electricity generated from solar energy sources shall be traded while in the non-solar segment the electricity generated from wind, small hydro, biomass (bagasse) (co-generation), biomass (non-bagasse) co-generation and waste to energy shall be traded. The Petitioner has also prayed to permit hybrid projects to participate in non-solar GTAM segment.

18. As presently, RPO is categorized into solar and non-solar RPOs, we allow the Petitioner to have two sub-segments i.e. solar and non-solar sub-segments. Further, as per the Central Electricity Regulatory Commission (Tariff determination from Renewable Energy Sources) Regulations, 2020 (hereinafter referred to as “the Renewable Tariff Regulations 2020”), ‘RE Hybrid energy project’ means the project which produces electricity from a combination of RE sources, connected at the same inter-connection point. Therefore, a RE Hybrid energy project is permitted in non-solar segment of GTAM. This will not only increase liquidity in the market and will also promote the hybrid RE projects.

Type of Contracts:

19. The Petitioner has proposed the GTAM Contracts under the categories of Green Intra Day Contract, Green Day Ahead Contingency Contract, Green Any Day Contract and Green Weekly Contract. Green Intraday contract will allow trading for delivery of electricity on the same day, Green Day Ahead Contingency for delivery in the next day, Green Any Day for delivery on daily basis or multiples thereof and Green Weekly Contract for delivery during the forthcoming week from Monday to Sunday.

20. As regards timelines of contracts, since the proposed contracts are on the same lines as the existing contracts under TAM, we allow the Petitioner to introduce the proposed contracts in GTAM. We are also in agreement with the proposal of 15-minute contracts as this will provide more granularity to the RE generators for managing their intermittent generation. However, the delivery of power under Green Intra Day Contracts and Green Contingency Contracts shall be subject to the condition that their delivery period does not overlap with the specified period of

delivery of the 'Real Time Market' as stipulated in Regulation 2(i)(o) of the 2010 Power Market Regulations which is extracted as under:

“(o)“Intraday Contract /Contingency Contract” means the contract where the transaction (not being a collective transaction)occurs on day (T) after the closure of day ahead transaction window and the delivery of power is on the same day (T) except for the duration of the specified period of delivery of the real-time market, or next day (T+1) and which is scheduled by Regional Load Despatch Centre or National Load Despatch Centre.”

Price Discovery Methodology and Matching Rules:

21. The Petitioner has proposed that for Green Intra Day Contract and Green Day Ahead Contingency Contract, the bidding will take place based on 15 minute quotation of quantity (MW) and price (Rs/MWh) and the price discovery and matching of the bids will take place on the basis of 'Continuous Matching'. For Green Any Day Contract and Green Weekly Contract, the Petitioner initially proposed that matching of bids will take place on energy terms in MWh basis. However, in the revised Petition, the matching of bids was proposed in MW basis. The Petitioner has proposed that price discovery and matching of bids will be carried out through 'Continuous Matching' (presently in use for TAM).

22. We agree with the Petitioner's proposal for price discovery methodology and matching rules for the contracts under GTAM. The methodology proposed by the Petitioner for Green Intra Day Contract and Green Day Ahead Contingency Contract is the same as that of the methodology followed in existing TAM for intra-day contract and contingency contract. For Green Any Day Contracts and Green Weekly Contracts, the matching on the basis of MWh will take care of variation in the supply profile of RE generators which is dependent on their locations and associated weather conditions.

Revision in the Schedule:

23. The Petitioner has submitted that wind and solar based power Plants may revise their schedule by giving advance notice to the concerned RLDC. Such revisions are effective from 4th time block, the first being the time block in which notice was given. It has been submitted by the Petitioner that there may be one revision for each time slot of one and half hours starting from 00:00 hrs of a particular day subject to maximum of 16 revisions during the day. The Petitioner has proposed that in the case of Green Any Day Contracts and Green Weekly Contracts, the RE generator be given flexibility to intimate its final schedule on a D-1 basis at 0700 hrs which will help in addressing the forecasting error. The supply profile provided by the sellers will be used for the purpose of scheduling the trade on a day ahead basis. The buyers would be informed by 0800 hrs so that they are able to incorporate the supply profile received from the RE generators in their day ahead operational planning. With this schedule, the time and quantum of delivery for each specific time block will be finalized on a day ahead basis.

24. We are conscious of the intermittency of the RE generation and the issues associated with its forecasting and are of the view that instead of making revision in the schedule, the buyers and sellers can take advantage of other products viz. Intra-day, Day Ahead Contingency, etc. to manage their variations in generation. As regard to the proposal of the Petitioner to intimate the schedule on a D-1 basis, this would imply a departure from the existing practice and regulatory requirement of scheduling under Open Access Regulations. We are of the view that any such dispensation without analyzing its impact on other transactions of similar nature would not be appropriate. Accordingly, we do not agree with the proposal to allow revisions to RE generators during the day as suggested by the stakeholders or

intimate the schedule on D-1 basis as proposed by the Petitioner. Revisions in scheduling as well as intimation of schedule have to be done in accordance with the provisions of the Open Access Regulations as is being followed in case of existing TAM.

Deviation Settlement Mechanism:

25. The stakeholders have sought clarity regarding treatment of deviation particularly, in the context of RPO fulfillment for obligated entities. It has been submitted by the stakeholders that under proposed Green Any Day Contracts and Green Weekly contracts, downward revision in schedule up to 15% is allowed. The treatment of deviation beyond 15% is not clear as whether the same would be dealt with as per State specific Scheduling, Forecasting Regulations in case of STU connected wind and solar projects or as per this Commission`s DSM Regulations in case of CTU connected wind and solar projects. In response, the Petitioner has contended that the deviations from schedule are handled as per commercial mechanism for deviation settlement of such RE plants. In a similar manner, certain States have also issued procedures by notifying Regulations on Forecasting, Scheduling and Imbalance handling for RE generating stations applicable for plants undertaking intra-State sale of power.

26. We agree with the observations made by the Petitioner. The deviation settlement mechanism for regional solar and wind power in the context of deemed RPO is provided in the DSM Regulations. The relevant clause of the DSM Regulations is extracted below:

“5. Charge of Deviation

...

Provided that

...

(vii) ..., for balancing of deemed renewable purchase obligation (RPO) compliance of buyers with respect to schedule, deviations by all wind and solar generators which are regional entities shall first be netted off for the entire pool on a monthly basis and any remaining shortfall in renewable energy generation must be balanced through purchase of equivalent solar and non-solar Renewable Energy Certificates (RECs), as the case may be, by NLDC by utilizing funds from the Pool Account. For positive balance of renewable energy generation, equivalent notional RECs shall be credited to the DSM Pool and carried forward for settlement in future.”

As per the above provision, the deviation settlement in case of deemed RPO shall be carried out by NLDC through RE DSM Pool. In case of intra-State entities, the deviation settlement is required to be done in accordance with the provisions of the Regulations and Orders of the respective State Commission.

Risk Management System and Margin Requirements:

27. The Petitioner has submitted that it shall undertake risk management measures according to the existing practices followed in TAM. The Petitioner has proposed that it shall be seeking margins in the form of Initial Margins, Additional Margins and Variation Margins from the Member/ Client to cover the risks during the tenure of the contract.

28. The nature of contract in GTAM being similar to the TAM, we agree to the proposal of the Petitioner to carry out risk management as per the existing procedure followed in TAM.

DISCOMs as green sellers:

29. The Petitioner has submitted that presently the traded surplus power by Discoms on Power Exchanges is a mix of conventional and green power. The green component cannot be verified by Power Exchange at the time of order placement or during the real time supply. An option for the Discoms to trade surplus RE on GTAM

will not only incentivize procurement of greater RE by the Discoms, but such power can also be procured by other consumers/ entities having RPO requirements.

30. We have noted that the Discoms are selling their surplus power on Power Exchanges under different available contracts. Also, since there is no restrictive clause which does not permit Discoms to sell their green power on GTAM, Discoms can act as green sellers to trade their surplus RE power on GTAM.

RE based plants are subject to backing down owing to reasons pertaining to grid security:

31. The stakeholders have contended that almost in all RE rich States, RE developers are subject to backing down owing to reasons pertaining to grid security and low demand. Under such a scenario, the RE developer should be allowed to schedule and sell its RE power under Green Intra Day Contracts to provide an opportunity to mitigate their losses due to backing down which will also ensure liquidity in the market. The Petitioner in this regard has requested the Commission to provide a regulatory framework.

32. We are of the view that for ensuring grid security, all the power plants including RE power plants are required to follow the instructions (including backing down) of respective Load Despatch Center. In case of low demand, the RE power plants can sell their surplus power in GTAM subject to obtaining NOC from respective Load Despatch Center and consent from the Discoms (if RE power Plant is having Power Purchase Agreement with the Discoms).

Regulatory Amendments:

33. The Petitioner has also prayed for amendments to various regulations/procedures to enable introduction of GTAM on Power Exchange platform operated by the Petitioner. We deal with the same in subsequent paragraphs.

(i) RPO Compliance through Power Exchanges

34. In terms of Regulation 5(1)(d) of the 2010 REC Regulations, RE generator selling power through Power Exchanges to an obligated entity shall not be eligible for grant of REC, if the obligated entity intends to meet its RPO obligations through purchase of such power. Regulation 5(1)(d) of the 2010 REC Regulations states as under:

“5. Eligibility and Registration for Certificates:

(1) A generating company engaged in generation of electricity from renewable energy sources shall be eligible to apply for registration for issuance of and dealing in Certificates if it fulfills the following conditions:

.....

(d) It does not sell electricity generated from the plant, either directly or through trader, to an obligated entity for compliance of the renewable purchase obligation by such entity.”

35. Thus, Regulation 5(1)(d) of the 2010 REC Regulations clearly recognizes that RE generator can sell power through Power Exchanges to an obligated entity for meeting RPO compliance by not claiming REC for such power. In the instant Petition, the Petitioner has proposed that sale of power by an RE generator under GTAM will not qualify such generator to claim REC while enabling the obligated entity to meet its RPO compliance. Therefore, we do not find any statutory prohibition in the 2010 REC Regulations to consider the proposal of the Petitioner to introduce GTAM products.

(ii) Reference price for Deviation Settlement

36. Paragraph 3 of proviso (v) and (vi) to Regulation 5 of the DSM Regulations provides as under:

“Fixed Rate for Open Access participants selling power which is not accounted for RPO compliance of the buyer, and the captive wind or solar plants shall be the Average Power Purchase Cost (APPC) rate at the National level, as may be determined by the Commission from time to time through a separate order. A copy of the order shall be endorsed to all RPCs.”

37. Thus, the DSM Regulations do not specify for the reference price i.e. fixed rate to be considered for settlement of deviation on account of sale of power through open access by an RE generator to an obligated entity for meeting its RPO compliance. Regulation 13 of the DSM Regulations empowers the Commission to issue directions in case of any difficulty arises in giving effect to the regulations.

Regulation 13 of DSM Regulations provides as under:

“13. Power to issue directions: If any difficulty arises in giving effect to these regulations, the Commission may on its own motion or on an application filed by any affected party, issue such directions as may be considered necessary in furtherance of the objective and purpose of these regulations.”

38. Therefore, considering the necessity of the reference price/ Fixed Rate for settlement of deviation on account of sale of power through open access by a RE generator to an obligated entity for meeting its RPO compliance, in exercise of the power conferred under Regulation 13 of the DSM Regulations, it is directed that the Fixed Rate for settlement of deviation on account of sale of power through open access by an RE generator to an obligated entity for meeting its RPO compliance shall be Average Power Purchase Cost (APPC) rate at the National level, as notified by the Commission in terms of proviso (v) and (vi) of Regulation 5 of the DSM Regulations.

(iii) Waiver of ISTS charges and losses

39. Some stakeholders have requested to waive off transmission charges and losses for the transactions under GTAM. It is clarified that waiver of inter-State transmission charges and losses for RE generation is in accordance with provisions of the Sharing Regulations. Any such waiver shall be admissible to the entities which fulfill the conditions specified under Sharing Regulations.

40. In the light of the analysis and decision on the various issues arising out of the proposal for introduction of GTAM Contracts at PXIL, the Commission approves the proposal of the Petitioner to introduce GTAM subject to compliance of the directions given in this order.

41. The Petitioner is further directed to incorporate appropriate provisions in its Bye laws, Rules and Business Rules with respect to introduction of GTAM Contracts and submit to the Commission for records within 2 (two) weeks from the date of issuance of the order.

42. Petition No. 228/MP/2020 is disposed of in terms of the above.

Sd/-
(P.K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I.S. Jha)
Member

sd/-
(P.K. Pujari)
Chairperson