

**BEFORE THE CENTRAL ELECTRICITY REGULATORY
COMMISSION, NEW DELHI**

PETITION NO. /MP/2023

IN THE MATTER OF:

Petition under Section 66 of The Electricity Act, 2003 read with the Regulation 25 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2021 for approval of Renewable Energy Certificates single sided reverse auction contract, Renewable Energy Certificates single sided forward auction contract and continuous matching mechanism for REC trading.

IN THE MATTER OF :

POWER EXCHANGE INDIA LIMITED

...PETITIONER

VERSUS

GRID CONTROLLER OF INDIA LIMITED

...RESPONDENT

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Date: 22.12.2023

Place: NEW DLEHI

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MEMO OF PARTIES

POWER EXCHANGE INDIA LIMITED

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

...PETITIONER

VERSUS

GRID CONTROLLER OF INDIA LIMITED

*(Formerly known as Power System Operation
Corporation Limited)*

B-9 (1st Floor), Qutub Institutional Area,
Katwaria Sarai,
New Delhi – 110016

...RESPONDENT

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Katwaria Sarai,
New Delhi – 110016

...RESPONDENT

MOST RESPECTFULLY SHOWETH:

A. CONSPECTUS OF THE PETITION:

1. The present Petition is being filed by Petitioner - Power Exchange India Limited under Section 66 of the Electricity Act, 2003, and invoking all other enabling powers of the Hon'ble Commission, seeking approval of the Hon'ble Central Electricity Regulatory Commission (hereinafter referred to as "**Hon'ble Commission/CERC**") for approval of Renewable Energy Certificates ("**REC**") single sided reverse auction contract, Renewable Energy Certificates single sided forward auction contract and continuous matching mechanism for REC trading operating under Regulation 5(4) of the Central Electricity Regulatory Commission (Power Market) Regulations, 2021 ("**PMR 2021**") on PXIL's PRATYAY Platform, in accordance with Regulation 25 PMR 2021.
2. Section 66 of the Electricity Act, 2003 enjoins this Hon'ble Commission to promote the development of a market in power in accordance with the National Electricity Policy referred in Section 3 of the Electricity Act, 2003. Regulation 25 (1) of PMR 2021 stipulates that the Hon'ble Commission may permit power exchanges to introduce new contracts as specified in Regulation 4(1) of the said Regulations. Regulation 25 (2) of the PMR 2021 stipulates the details which have to be submitted by an exchange seeking permission from the Hon'ble Commission to introduce such contracts. The Petitioner has provided a complete and detailed

contract specifications along with this Petition. Hence, by way of the present Petition and in furtherance of Regulation 25 of the PMR 2021, the Petitioner beseeches this Hon'ble Commission to accord its approval to the Petitioner to operate Reverse Auction Contract, Forward Auction Contract and Continuous matching Contracts in REC segment at its platform.

B. DESCRIPTION OF PARTIES

2. The Petitioner is a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at Sumer Plaza, 9th floor, Unit no – 901, Marol Maroshi Road, Andheri (East), Mumbai-400 059.
3. The Respondent is Grid Controller of India Limited (formerly known as Power System Operation Corporation Limited) is a division of the Ministry of Power, Government of India, having its registered office at B-9 (1st Floor), Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016. Grid Controller of India is the National Load Despatch Centre and, *inter alia*, is entrusted with ensuring integrated operation of the Indian power system to facilitate transfer of electric power within and across the regions and trans-national exchange of power.
4. The Hon'ble Commission was pleased to grant permission to the Petitioner to set up, operate and commence exchange operations by its orders dated 27.05.2008 in Petition No 21/2008. The Petitioner has been in operation since 22.10.2008.

C. BACKGROUND TO THE PRESENT PETITION

5. It is submitted that the erstwhile Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (“REC Regulations 2010”) as well as the Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022 (“REC Regulations 2022”) aim to provide a market-based approach for migration from usage of conventional power to renewable power helping India in meeting the target of 500 GW renewable energy (“RE”) capacity by 2030 and thereby contribute to the development of India’s green economy.
6. It is submitted that the Hon’ble Commission has in its Order in Petition no 379/MP/2022 dated 08.10.2023 directed that the matter of Reverse and Forward auction Contracts in REC segment can be examined through a separate proceeding.

‘Para 16.

During the hearing held on 15.12.2022 in Petition No. 375/MP/2022 and 07.02.2023 in Petition No. 379/MP/2022, the Commission observed that the proposals for reverse/ forward auction & bilateral trade require more detailed scrutiny. The Respondent in its reply also mentioned that such proposal would need major changes in the REC web portal. Further this will require development of protocol for exchange of information

*between the power exchanges and the Central Registry, timeline of application and approval of trade etc. The Commission notes that the REC Regulations, 2022 have allowed transactions of RECs through traders in addition to the transactions through power exchanges. The traders generally engage in bilateral transactions. Provisions have been made in the Regulations for accounting of such transactions. The experience of this new dispensation of bilateral trade through traders will need be reviewed by the Commission based on the data being received in this regard. Given the small share of REC Market, introduction of new products in the power exchanges is not considered expedient at this stage. **The Commission is in agreement with the Respondent and of the view that the Reverse Auction Contracts and Forward Auction Contracts for RECs can be allowed based on the needs of the stakeholders which can be examined subsequently through a separate proceeding.***

A copy of the Order dated 08.10.2023 is attached herewith and marked as **Annexure A-1**.

7. With climate change emerging as a key risk confronting India and other countries across the globe, the transition to a sustainable energy economy becomes inevitable in the future. India's resolve to achieve a massive transition towards green energy can be evinced from the Government of India's goal to increase RE installed capacities to 175 GW by 2022 and to approximately 500 GW by 2030. To meet these ambitious RE targets as committed during the 26th United Nations Climate Change Conference

(COP26), a market-based approach that allows flexible, transparent, and competitive procurement will usher a new and sustainable energy order. The REC Regulations 2022, allows obligated entities – Distribution Companies (“Discoms”), open access consumers and captive units to procure RE in the form of RECs, which includes all renewable and environmental attributes, to meet their RPO obligations. RECs are positioned as a key market instrument for bolstering the growth of RE sector.

8. Ministry of Power vide its order dated 22.07.2022 has notified the renewable purchase obligation (“RPO”) trajectory from FY 2022-23 till FY 2029-30 as under:

Financial Year	Other RPO	Wind RPO	Hydro RPO	Total RPO
2022-23	23.44 %	0.81 %	0.35 %	24.61 %
2023-24	24.81 %	1.61 %	0.66 %	27.08 %
2024-25	26.37 %	2.46 %	1.08 %	29.91 %
2025-26	28.17 %	3.36 %	1.48 %	33.01 %
2026-27	29.86 %	4.29 %	1.80 %	35.95 %
2027-28	31.43 %	5.23 %	2.15 %	38.81 %
2028-29	32.69 %	6.16 %	2.51 %	41.36 %
2029-30	33.57 %	6.94 %	2.82 %	43.33 %

Similarly, MOP vide Notification dated 20.10.2023 has notified RPO targets applicable from FY 2024-25 onwards to 2029-2030:

Sl.No	Year	Wind renewa	Hydro renewa	Distributed renewable	Other renewa	Total renewa
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	2024-	0.67%	0.38%	1.50%	27.35%	29.91

Sl.No	Year	Wind renewa	Hydro renewa	Distributed renewable	Other renewa	Total renewa
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2.	2025-	1.45%	1.22%	2.10%	28.24%	33.01
3.	2026-	1.97%	1.34%	2.70%	29.94%	35.95
4.	2027-	2.45%	1.42%	3.30%	31.64%	38.81
5.	2028-	2.95%	1.42%	3.90%	33.10%	41.36
6.	2029-	3.48%	1.33%	4.50%	34.02%	43.33

The said notification will come into force on 01.04.2024 and in the meanwhile the trajectory as specified in the order dated 22.07.2022 mentioned in the previous paragraph shall remain in force. A copy of the Notification dated 20.10.2023 is attached herewith and marked as **Annexure A-2**.

9. That Since the introduction of REC contracts in March 2011, the purchase of RECs by obligated entities such as Discoms, open access consumers and captive power plants from different part of the country has enabled such entities to meet their RPO in the most efficient and competitive manner. The exchange platform has been a major player in accelerating renewable energy dispersion in the country's energy mix.
10. It is submitted that as per the present petition the Petitioner is seeking approval of the Hon'ble Commission to approve and introduce the abovementioned contracts on the petitioners PRATYAY platform, specifications of which along with their procedures are highlighted in the following paragraphs in order to

help buyers and sellers to achieve their REC sale and purchase obligations.

11. It is submitted that as per Regulation 4(1)(b) of PMR 2021, RECs come under the purview of the contracts governed under the said regulations. Moreover, Regulation 5(4) of PMR 2021 provides that transactions in RECs shall be in accordance with the procedure issued by the Central Agency pursuant to the extant REC regulations. Regulation 5(4) is extracted hereinbelow:

“5. Contracts transacted on Power exchanges

...

(4) Renewable Energy Certificates: The transactions in Renewable Energy Certificates shall be in accordance with the procedure issued by the Central Agency in pursuance to the REC Regulations”

As per Regulation 11(3) of REC Regulations 2022, power exchanges must seek the Hon’ble Commission’s approval with regards to the Bye laws and Rules of the power exchange for operating RECs on the exchange platform. Regulation 11(3) is extracted hereinbelow, for reference:

“11. Exchange and Redemption of Certificates

...

(3) The Power Exchange(s) shall seek approval of the Commission, as may be required under the Central Electricity Regulatory Commission (Power Market) Regulations, 2021, to the respective

Bylaws and Rules for exchange of Certificates in the Power Exchange(s).”

12. That the Petitioner, therefore, vide the present petition is seeking this Hon’ble Commission’s approval for operation of RECs on its platform vis-à-vis the REC Regulations 2022 notified as on 05.12.2022 and the ‘Procedure for Implementation of REC Mechanism’ issued by POSOCO under the provisions of REC Regulations 2022.

13. At this juncture, it is important to highlight that the Regulation 11(2) of REC Regulations 2022 provides for the bilateral trade of RECs through traders i.e. trading of RECs outside of the power exchange, and the same is allowed on any or all Days of a month.

‘Regulation 11 Exchange and Redemption of Certificates

(2) The Certificate shall be exchanged through power exchange or through electricity traders in such periodicity as may be stipulated by the Central Agency in the Detailed Procedure.’

However, the existing two auction sessions, i.e. on 2nd Wednesday and last Wednesday of the month, for trading of RECs on a power exchange restricts the power exchange to only two sessions on specific days of the month. This denies a level playing field for the power exchanges vis-à-vis the trading licensees, who are dealing with the same products. Moreover, the trading licensee will have the flexibility of pricing and delivery, as per requirement of its customers. That the Petitioner seeks approval from this Hon’ble Commission to introduce different types of contracts as part of the REC mechanism that would be operated on any day of the month

based on market participants requirement.

14. The Petitioner submits that it has received request from one of its Proprietary Member M/s Power Company of Karnataka Limited to operate multiple auction sessions i.e. every week on Wednesday or at least twice a month. The Petitioner submits that operating multiple auction sessions would enable Sellers like PCKL, who hold significant number of RECs, to liquidate inventory against their account. A copy of the PCKL letter ref no PCKL/A12/5/2021-22/V3/3169-75 dated 06.08.2022 is attached as **Annexure A-3**.

15. It is submitted that presently, trading for REC is allowed under the uniform price discovery mechanism which is carried out through a double-sided closed bidding process. Under the uniform price auction, matching is carried out at the intersection of the aggregate buy and aggregate sell volume determined at all price points in the order book through an algorithmic process. All sale volume below and equal to matched price is sold and all buy volume above and equal to matched price is bought. Consequently, any sell volume above the matched price and any buy volume below the matched price remain uncleared. Considering the fact that trading in RECs is allowed only on a specific day under the prevailing procedure, the present mechanism suffers from certain shortcoming namely, (i) for the buyers and sellers of RECs, it is two opportunities to buy / sell RECs, and thus creates scope for speculation; and (ii) uncleared volumes (and consequently, the fund that they represent) remain locked in the inventory of the seller while the buyer is unable to access RECs, even if they want to.

16. The prevailing modalities for operation of the market unless relaxed and unless the Petitioner is able to develop products that address the requirement of its members more effectively, they will move to the trading licensees for disposing of their RECs. This will result in grave prejudice to the Petitioner as no restriction has been imposed on the trading licensees either in terms of the days for REC trading, or in terms of negotiating different transaction structures with their clients. Unless the power exchanges are allowed some level of flexibility, there will be distortion in level playing field between power exchanges and trading licensees, as far as REC trading is concerned.
17. It is submitted that this Hon'ble Commission vide its order dated 07.06.2022 has approved introduction of '*Any Day Single Sided Reverse Auction Contract*' for purchase of power covering delivery duration from 'T+2' to 'T+90' days. Further, the Petitioner vide its circular dated 26.09.2022, has introduced reverse auction based contract for transacting in conventional, solar, wind and other types of renewable power.
18. It is submitted that with the increasing levels of RPO fixed for Discoms and obligated entities, there will be an increasing demand for RECs, and it will be necessary to facilitate more frequent trading sessions for REC to avoid last minute clamour for RECs towards the end of the financial year, which can result in price disruption. The holding of more frequent trading sessions will allow buyers to plan their procurement and allocate their funds in a

more planned and structured manner. On the other hand, sellers will be in a position to offload their RECs more frequently. This will prevent any sudden spike in REC prices. Further, in addition to having more regular trading sessions, Petitioner will be in a position to better serve the client / member requirements if they are allowed to carry out exclusive trading sessions for their clients through *Any Day Single Sided Auction* as discussed in detail below.

19. That in order to develop and offer the following new contracts in RECs, the Petitioner proposes as follows:

- a. **Reverse Auction Contract:** Discoms and obligated entities, who would want to buy RECs can have exclusive one-sided auction sessions initiated by the buyer for purchase of RECs, wherein multiple sellers would submit offers for sale of RECs upto the quantum requisitioned by buyer. The buyer would specify its requirement in terms of quantum (nos.) of REC to be purchased. Sellers will submit their offers providing quantum (nos.) and Price in Rs. / Certificate against the requisition made by Buyer in the auction window. The auction process shall be undertaken as two (2) stage process i.e. the Initial Price Offer (IPO) stage and Reverse Auction. The Reverse Auction will secure the most competitive prices for the buyer. With increased RPO requirements for Discoms and open access industrial and other consumers, the Reverse Auction would facilitate rationalization of REC prices for such buyers. That apart, it will be more conducive for buying Discoms as it will be easier for them to justify reverse auction for procurement of RECs than quoting

arbitrary price under the Uniform Price Mechanism while submitting their bids in an auction session. The Contract Specification of Reverse Auction with details and example along with the NLDC procedure for redemption for redemption of certificate by reverse auction is attached herewith and marked hereto as **Annexure A-4 (Colly)**.

- b. **Forward Auction Contract:** One of the other means to facilitate better reach for RECs is the Forward Auction system. The auction would be initiated by seller for sale of RECs, wherein multiple buyers would submit bids for purchase of RECs upto the quantum requisitioned by seller. Introduction of forward auction in RECs will enable seller to sell their RECs in exclusive auction session on pre-specified days by creating a forward auction event on 'PRATYAY' system. The forward auction contract would be an additional avenue in 'PRATYAY' system for sale of RECs, in addition to the proposed Reverse Auction Contracts and the existing Uniform Price Auctions. The Forward Auction in RECs will provide the necessary impetus for the growth of RE projects. It will provide Discoms in renewable rich states to procure more of renewable energy over and above the RPO levels, as they will be able to recover part of the cost through transaction of RECs at the best realizable prices.
- c. One of the major concerns for Discoms to buy renewable energy is the lock-in of the higher capital cost paid under long term PPAs for Renewable energy projects that they have to continue to bear even as lower cost RE projects get set up on later dates. As a

result, Discoms in renewable source rich states are reluctant to either continue with the older PPAs or promote or procure more of renewable energy. The forward auction process will allow such Discoms to unlock the best values for the RECs issued to them with reference to RE power procured in excess of their RPOs. This will provide them the economic incentive to procure more renewable energy, even beyond the RPO targets. The power sector is seeing increased interest from various utilities and industrial houses to move to a higher dependency on renewable energy for meeting their power requirements. The forward auction route will provide these entities additional economic incentive to procure renewable energy. In this regard, Petitioner would seek to refer to the communication from PCKL, which is procuring renewable energy more than the RPO targets.

- d. It is submitted that even for RE generators, the forward auction would bring in economic incentive to set up projects under the REC route. Under the 2010 Regulations, the RE projects were allowed, inter alia, to sell power to local Discoms at the average pooled power purchase cost (APPPC) to generate RECs. Gradually, majority of the states have done away with the APPPC + REC mechanism. The 2022 Regulations have not provided for such mechanism and has left price discovery of RECs completely on market forces. The forward auction will allow RE generators who want to participate in REC market to unlock the best value for their investments and risk.
- e. A copy of the Contract Specification for Forward Auction with

details and example along with the NLDC Procedure for redemption of certificate by Forward Auction is attached herewith and marked as **Annexure-5 (Colly)**.

- f. **Continuous matching Contract:** In this Contract the principle of 'price-time priority' is applicable as prevalent in existing Day Ahead and Intra Day Contingency Contracts operating under provisions of Regulation 5(2) of CERC (Power Market) Regulations, 2021. Buyers and Sellers will submit their bids to meet their transacting requirements. The Exchange will issue a calendar for conducting continuous auction session for ease of participation. A copy of the Contract Specification of Bilateral REC with details and example, along with NLDC procedure for redemption of certificate by Bilateral REC is attached herewith and marked as **Annexure A-6 (Colly)**.
- g. The Reverse Auction, Forward Auction and Continuous matching Contracts will help in unlocking the market for RECs in a more efficient manner as they seek to address the requirement of clients both on the buy and sell side. Moreover, the flexibility in REC market both in terms of periodicity of trade and different Contracts will add depth to the REC segment. Further, transaction through power exchange will provide the much-needed security of payment as well as prompt clearance.
- h. This Hon'ble Commission in Order dated 07.06.2022 in Petition No. 229/MP/2021, while dealing with the issue of Any Day contracts, was pleased to disallow the forward auction on the

ground that it does not strictly go with the spirit of efficient price discovery. The relevant portion of the order is extracted below:

*“41. We note that the Petitioner’s proposal of Any-day contracts with Reverse Auction on buyer’s requisition is similar to the contracts currently executed at DEEP Portal, wherein multiple sellers compete against each other for matching with the requisition of a buyer. We are of the view that such contract at the Exchange will facilitate discovery of competitive prices, and also provide counterparty risk management by ensuring timely payments on the day close to delivery. **On the other hand, the Petitioner’s proposal of Forward Auction follows the price discovery on the basis of incremental price quotes by the buyers wherein the highest prevailing buy price shall be selected. We feel the proposal of Forward Auction does not strictly go with the spirit of efficient price discovery. Therefore, in the interest of the consumers, we only approve Reverse Auction as price discovery matching methodology for Any-day Contract at Petitioner’s Exchange which as provided in Paragraph 38 of this Order shall be named as Anyday Single Sided Contract.**”*
(emphasis supplied)

- i. It is most respectfully stated that for the reasons stated herein above w.r.t. the REC market and for encouraging further growth of RE projects, the Hon’ble Commission may consider the proposal for Forward Auction for REC sellers under the Any Day segment. The position with regard to buying RECs is different

from procuring electricity – the considerations and the factors driving the market are very different. It may also be noted that as far as trading licensees are concerned, they are at liberty to draw up their own products for dealing with RECs, which can be implemented bilaterally with their clients. Similar right of providing different types of transactional opportunities should be made available to power exchanges as competitors. Further, the ultimate objective to introduce different REC Contracts is to promote renewable energy and provide necessary market for dealing in RECs. This would be best achieved if the markets are allowed to operate based on demand and supply. The 2022 Regulations have done away with the floor and ceiling prices for REC to give a free play to the demand and supply forces in the market. This objective would be better served by allowing the power exchanges to work on new modes of REC transactions.

- j. **Certificate of Purchase to Buyer:** The Petitioner proposes to issue ‘Certificate of Purchase’ to all cleared buyers providing information on type and number of RECs purchased by buyer under the reverse auction, forward auction and continuous matching methods proposed above, in a manner similar to ‘Certificate of Purchase’ prescribed under Part-V Clause 5.2 (e) of ‘Procedure for Implementation of REC Mechanism’. Necessary direction should be issued in this regard to GRID-INDIA as a matter of abundant precaution, once these new methods of auction are approved.

20. That Part-V of the ‘Procedure for Implementation of REC

Mechanism' issued by GRID-INDIA prescribes the procedure for redemption of REC applicable for existing monthly trading session held on 2nd and last Wednesday of the month. For introduction of reverse auction, forward auction and continuous matching contracts, the draft procedure applicable for such auction processes is attached in above-mentioned paragraphs.

21. In view of the above and considering the overall development of renewable energy market, it is submitted that the Hon'ble Commission may accord approval for issuance of 'REC Single Sided Reverse Auction Contract'; 'REC Single Sided Forward Auction Contract' and 'Bilateral REC under Continuous Matching' at the Petitioner's Platform.

PRAYER

In view of the above facts and circumstances, the Petitioner respectfully prays that this Hon'ble Commission may be pleased to:

- A. Accord approval for introduction of Reverse Auction Contracts to meet Buyers RECs purchase requirement;
- B. Accord approval for introduction of Forward Auction Contract to meet Sellers RECs sale requirement;
- C. Accord approval for introduction of Continuous matching Contract to meet market participants REC transaction requirement.

- D. Accord approval for the procedure for sharing of information between power exchange and the Nodal Agency for redemption of RECs under proposed Reverse Auction, Forward Auction Contracts and Continuous matching Contract;
- E. Approve inclusion of (a) to (c) in Business Rules of the Petitioner for transaction in Renewable Energy Certificate;
- F. Pass such order(s) that this Hon'ble Commission may deem fit to remove difficulties and allow implementation of the above; and
- G. Pass such other relief (s) / Order(s) that this Hon'ble Commission may deem fit.

FILED BY:



Anil V. Kale

**POWER EXCHANGE INDIA LIMITED
(PETITIONER)**

FILED THROUGH:

Aryaman Singh.

Neeti Niyaman
(Counsel for the Petitioner)
A-142, Ground Floor, Neeti Bagh
New Delhi – 110 049

Date: 21.12.2023

Place: NEW DELHI

**BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION,
NEW DELHI**

PETITION NO. OF 2023

IN THE MATTER OF:

POWER EXCHANGE INDIA LIMITED

Unit No. 901, 9th Floor, 901, Sumer Plaza,
Marol Maroshi Road, Marol Andheri (East),
Mumbai 400059, India



...PETITIONER

AFFIDAVIT

I, Anil Vitthal Kale S/o Shri V B. Kale aged about 51 years, office at Unit No. 901, 9th Floor, 901, Sumer Plaza, Marol Maroshi Road, Marol Andheri (East), Mumbai 400059, India, being the authorized representative of the Petitioner Company, do hereby solemnly affirm and state as under:

1. That I am the Assistant Vice President and the authorized signatory/ authorized representative of the Petitioner Company. I am fully conversant with the facts and circumstances of the case and I have been duly authorized and am, therefore, competent to affirm this affidavit.
2. That the present Petition has been drafted on my instructions and I affirm that the facts stated therein are true to my knowledge based on the records which I believe to be true and correct. The contents of all paragraphs of the present Petition and parts thereof are true to the personal knowledge of the deponent.



dhil

3. That the annexures filed along with the accompanying Petition are true copies of their respective originals.



Mil. V. Kale

DEPONENT

VERIFICATION

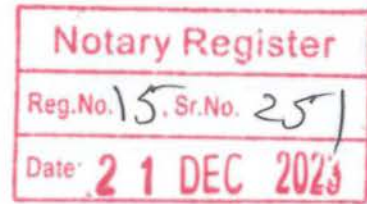
I, the deponent above named do hereby verify that the contents of my above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

Verified at Thane on 21 day of December 2023.



Mil. V. Kale

DEPONENT



IDENTIFIED BY ME



ATTESTED BY ME

S. L. Vispute
21/12/2023

S. L. VISPUTE, B.A., LL.B.
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21 DEC 2023



केन्द्रीय विद्युत विनियामक आयोग
CENTRAL ELECTRICITY REGULATORY COMMISSION
नई दिल्ली
NEW DELHI



याचिका संख्या./ Petition No. 375/MP/2022 and 379/MP/2022

कोरम/ Coram:

श्री जिष्णु बरुआ, अध्यक्ष /Shri Jishnu Barua, Chairperson

श्री आई. एस. झा, सदस्य/ Shri I. S. Jha, Member

श्री अरुण गोयल, सदस्य/ Shri Arun Goyal, Member

श्री पी. के. सिंह, सदस्य / Shri P. K. Singh, Member

आदेश दिनांक/ Date of Order: 08th of October, 2023

Petition No. 375/MP/2022

IN THE MATTER OF:

Petition under Section 66 of The Electricity Act, 2003 read with the Regulation 5(4) and 25 of the CERC (Power Market) Regulations, 2021 for approval of amendments in Renewable Energy Certificate Contracts at Indian Energy Exchange in accordance with the CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022

AND IN THE MATTER OF:

Indian Energy Exchange Limited,

Plot No. C-001/A/1, 9th Floor, Max Towers,

Sector 16 B, Noida, Gautam Buddha Nagar,

Uttar Pradesh- 201301

...Petitioner

Versus

National Load Despatch Centre (NLDC)

Grid Controller of India Limited (Formerly Power System Operation Corporation Limited)

B-9 (1st Floor), Qutab Institutional Area,

Katwaria Sarai, New Delhi 110016

...Respondent



Petition No. 379/MP/2022 along with IA No. 23/IA/2023**IN THE MATTER OF:**

Petition under Section 66 of The Electricity Act, 2003 read with the Regulation 25 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2021 for approval of introduction of the single sided reverse auction and single sided forward auction for renewable energy certificates at Power Exchange India Limited.

And

IN THE MATTER OF:

Interlocutory Application under Regulation 68 and Regulation 114 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 for amendment of pleadings read with Order VI Rule 17 of the Code of Civil Procedure, 1908 for amendment of pleadings.

AND IN THE MATTER OF:**Power Exchange India Limited**

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

...Petitioner

Versus

National Load Despatch Centre (NLDC)

Grid Controller of India Limited (Formerly Power System Operation Corporation Limited)
B-9 (1st Floor), Qutab Institutional Area,
Katwaria Sarai, New Delhi 110016

...Respondent

Parties Present: Shri Jogendra Behera, IEX

Shri Gaurav Maheshwari, IEX

Ms. Nithya Balaji, Advocate, PXIL

Shri Anil V Kale, PXIL

Shri Sakya Singha Chaudhuri, Advocate, PXIL

Ms. Nithya Balaji, Advocate, PXIL

Shri Alok Mishra, GCIL



Shri Kailash Saini, GCIL
 Shri K. Usman, NLDC
 Shri Gajendra Singh Vasava, NLDC

आदेश/ ORDER

The Petitioner, Indian Energy Exchange Limited (IEX) in Petition No. 375/MP/2022 has sought approval for the changes made in its Bye Laws, Rules & Business Rules to align these with the CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022 (hereafter in referred as “REC Regulations, 2022”) in compliance with Regulation 11(3) of the REC Regulations 2022.

2. The Petitioner, Power Exchange India Limited (PXIL) in Petition No. 379/MP/2022, has sought approval to introduce different types of contracts as part of the REC mechanism that would be operated on any day of the month based on market participants requirement.

3. The Petitioners have made the following prayers:

Petition No. 375/MP/2022

- a. Accord approval of proposed amendments in the REC Contract at IEX platform.
- b. Accord approval to do away with the restriction on REC registered projects on participation in Green markets (viz. GDAM, GITD, GDAC & GTAM).
- c. Approve the mechanism of allocation of RECs suggested in the petition or any other suitable methodology uniformly across Power Exchanges keeping in view the requirement of providing origin on REC purchase certificate to the obligated entities and to provide level playing field.
- d. Take up the matter with FOR so that SERCs may converge on this aspect and incorporate it in their regulatory framework for fulfilment of RPOs by obligated entities.
- e. Approve increasing REC auctions on Weekly basis.
- f. Approve Reverse Auction and Continuous matching REC segment.
- g. Consider present Petition under “Regulatory Compliance Application” category and adjust the surplus fee.
- h. Direct Central Agency to make appropriate modifications with regard to eligibility conditions of issuance of RECs and enabling procedure for Reverse auction and continuous transactions in RECs at Power Exchange.
- i. Pass such further order or orders as may be considered necessary in the facts and circumstances of the case.



Petition No. 379/MP/2022

- a. Accord approval for introduction of Reverse Auction Contracts to meet Buyers RECs purchase requirement;
- b. Accord approval for introduction of Forward Auction Contract to meet Sellers RECs sale requirement;
- c. Permit the Petitioner to operate existing 'Double Sided Closed Bid' with uniform price mechanism as approved in Order in Petition No. 215/2010 dated 17.09.2010 with Vintage Non Solar session for transaction in Non Solar RECs issued prior to 01.04.2017.
- d. Permit the Petitioner to operate existing 'Double Sided Closed Bid' auction with uniform price mechanism as approved in Order in Petition no 215/2010 dated 17.09.2010 without identifying the RECs as Solar or Non Solar and by allowing a combined session for transacting in RECs of different technologies by relaxing under provision of Regulation 18;
- e. Accord approval to the Petitioner to run 'Double Sided Closed Bid' with uniform price mechanism at different periodicity as may be notified by the Petitioner in advance in transaction calendar to be issued by Exchange platform, instead of only last Wednesday of the month;
- f. Accord approval for the procedure for sharing of information between power exchange and the Nodal Agency for redemption of RECs under proposed Reverse Auction and Forward Auction Contracts;
- g. Amend existing 'Procedure for redemption of Renewable Energy Certificate' to operate 'Double Sided Closed Bid' with Uniform price mechanism at different periodicity based on trading calendar to be issued by Exchange platform;
- h. Approve inclusion of (b) to (d) in Business Rules of the Petitioner for transaction in Renewable Energy Certificate;

IA No. 23/IA/2023

1. To allow the Petitioner to amend the clearance of eligible sell quantum approved earlier vide this Hon'ble Commission's order dated 26.10.2012 in Petition No. 174/MP/2012 with proposed step-wise methodology as under:
 - (a) **Step-1:** Clear all participants that have quoted a price better than the market clearing price.
 - (b) **Step-2:** Identify source wise residual requirement at the market clearing price after deducting quantum cleared from bids that are better than market clearing price
 - (c) **Step-3:** For bids received at the market clearing price
 - i. When source wise availability is more than preference received from Buyer, pro-rata clearance to be made among all Sellers.
 - ii. When source wise availability is equal to preference received from Buyer, then the same to be fully cleared



- iii. *When source wise availability is less than preference received from Buyer, then pro-rata clearance to be made to match preference received from Buyer, residual quantum if any to be cleared on pro-rata basis from pool of other sources*
 - iv. *When preference for available sources is not provided by any Buyer then pro-rata clearance to be made from pool of all sources.*
2. *Pass such order(s) that this Hon'ble Commission may deem fit to remove difficulties and allow implementation of the above;*

Petition No. 375/MP/2022

Submission by the Petitioner

4. The Petitioner (IEX) has made the following submissions:
- a. Keeping in view the changes brought in the REC Regulations 2022, the proposed framework for the REC Contract is as follows:
 - i. **Type of Contracts:** It is proposed that a single REC will be traded without any categorization as the REC Regulations, 2022 have dispensed with the categorization of RECs and instead the concept of multiplier has been introduced.
 - ii. **Eligibility for Participation in REC Contracts**
 - **Sellers:** Generators/ Discoms /Open Access Consumers having relevant RECs issued by the Central Agency.
 - **Buyers:** All the entities which are Obligated Entities or any entity wanting to purchase RECs on voluntary basis shall be eligible to participate in REC Contract as buyer.
 - **Other Contract details of REC:** All other contract specifications are similar to the ones existing in the REC Contract except the removal of floor and forbearance price.

An approval is needed from the Commission on the required amendment in SCHEDULE C of Business Rules of the IEX and contract specifications of REC Contract.

- (b) In accordance with Regulation 19(2)(c) of the REC Regulations 2022, the existing REC contract for Non-Solar RECs issued prior to 01.04.2017 will remain available for the trading till further directions of the Supreme Court/ Commission.
- (c) It is requested to clarify that the energy sold by RE capacity registered under REC mechanism in the any conventional market (DAM/RTM/TAM) at Power Exchange



will be eligible for issuance of RECs and in case the energy is sold in the Green Markets (viz. GDAM, GITD, GDAC & GTAM) by such RE capacity, no RECs will be issued against such energy sold in the Green markets at Power Exchanges. Accordingly, it is proposed to do away with the restriction on participation of the REC registered projects in Green Markets imposed due to the eligibility conditions provided under the REC Regulations 2010.

(d) In the present REC market, the price discovery and matching methodology is based on double sided closed bid auction where there is no one to one matching. In this case, the origin of the RE source can only be specified on pro-rata basis. Thus, the purchase certificate may be issued indicating the % clearance of each type of RE source of sellers cleared in the market. However, considering that SERCs have specified separate RPO trajectory for different technologies and the trading licensee will be able to provide source specific RECs on a bilateral basis the REC market offered by the Power Exchanges based on simple pro-rata basis will become redundant. In view of the above, the following mechanism is proposed for pro-rata allocation of RECs based on Buyer's Preference:

- (i) Buyers will indicate their preferences i.e., Solar, Non-Solar, Hydro etc. at the time of submitting the bids
- (ii) Price discovery will take place considering the RECs regardless of the buyer's preferences. A single MCP will be computed for the market.
- (iii) Selected sellers/RECs will be allocated to the buyers as per their preferences. Solar RECs will be allocated to the buyers having solar preferences and vice versa. In case number of RECs on buy side is less than the number of RECs selected in a particular category the buyers will get RECs as per their preferences and in case the buy side is more, the RECs will be allocated on a pro-rata basis.
- (iv) In this mechanism the buyers will be able to get RECs as per their preferences and it will be a level playing field with the trading licensees. The allocation of RECs on the basis of buyer's category preference is more suitable than indicating the origin on pro-rata basis based on technology-wise cleared RECs.

(e) The Commission may approve the mechanism to be uniformly applied across Power Exchanges or specify any other suitable methodology as may be deemed appropriate keeping in view the requirement of obligated entities and providing a level playing

field with the trading licensee without which the REC market at the Power exchange will become redundant.

- (f) As the SERCs align their Regulations, RECs can be made fungible or utilized to meet RPOs across different technologies.
- (g) Presently the REC trading session is conducted only once i.e., on last Wednesday of the month. The Petitioner has received requests from stakeholders for increasing the frequency of REC trading sessions. Accordingly, the Petitioner has proposed for consideration of the Commission:
 - (i) **Weekly Auction:** The frequency of such sessions may be increased from once in a month to once in a week so that the buyers will have opportunity to buy from the market at shorter intervals.
 - (ii) **Reverse Auction:** It may be considered to allow the buyers to buy RECs through reverse auction where the price is discovered based on competitive bidding. Buyers requiring RECs beyond a minimum limit may be allowed to buy through reverse auctions. In reverse auction, the buyer may also specify the underlying technology.
 - (iii) **Bilateral Trade:** It may also be considered to allow the buyers to buy RECs through continuous trade available during the day. Small buyers viz. the obligated open access consumers or even voluntary buyers looking forward to reduce their carbon footprint may purchase RECs through this mechanism whenever the need arises.
- (h) The Petitioner has prayed to consider the present petition under Regulatory Compliance category, keeping in view the interest of the market and to expedite the approval process. The present petition is filed under the Miscellaneous Petition category seeking approval on the changes made in the Petitioner's Bye Laws, Rules & Business Rules to align these with the REC Regulations 2022 in compliance with Regulation 11(3) of the REC Regulations 2022.

Hearing dated 15.12.2022

5. The case was called out for hearing on 15.12.2022. After hearing the representatives of the Petitioner and the Respondent, NLDC, the Commission admitted the Petition and



directed the Petitioner to seek public comments on the proposed amendments to the REC contract.

6. The Petitioner prayed for an interim order in view of bidding session which was scheduled on 28.12.2022. The Commission vide RoP directed as under:

“

- (a) *On the issue of enabling REC registered projects for participation in Green Markets (viz. GDAM, GITD, GDAC & GTAM), the Commission noted that the Central Agency has already modified the Detailed Procedure under REC mechanism and as per Clause 7.2 (c) of the said procedure, uncleared bids of RE generating stations in Green Day Ahead Market transferred and cleared in DAM are eligible for issuance of REC subject to eligibility conditions under REC mechanism. This being in line with the REC Regulations, 2022, the energy sold by RE capacity registered under REC mechanism in any conventional market (DAM/RTM/ TAM) at Power Exchange shall be eligible for issuance of RECs and in case the energy is sold in the Green Market by such RE capacity then no such RECs will be issued against such energy sold in the Green Markets at Power Exchanges.*
- (b) *On the issue of increasing the frequency of REC sessions on Power Exchanges from once in a month to once in a week, the Commission directed the Central Agency to examine the issue and to take action based on public consultation in this regard.*
- (c) *On the proposal of allowing Reverse Auction where the price is discovered based on competitive bidding and allowing buyers to buy RECs through continuous trade available during the day, the Commission directed the Power exchanges to submit detailed proposal in this regard after public consultations which can be examined subsequently through separate proceeding.*
- (d) *On the issue of fungibility in RECs and pro-rata allocation of RECs based on source, the Commission noted that categorization of RECs has been dispensed with, on introduction of the concept of multiplier under REC Regulations, 2022. With due regard to the fact that different categories of RPOs still exist for the buyers, the Commission in its Statement of Reasons Order dated 11.06.2022 on REC Regulations, 2022 had stated that the Central Agency will be required to indicate origin of RE source while issuing REC certificates.*
- (e) *Accordingly, the Commission directed that while the price discovery and matching methodology in the REC market on power exchanges will continue to be based on double sided closed bid auction mechanism, pending and subject to final orders in this petition, the mechanism of pro-rata allocation based on buyer's preference as proposed by the Petitioner may be followed by the Power Exchanges to allocate cleared RECs in the Power Exchanges among the buyers of RECs.*
- (f) *A comprehensive report shall be submitted by the Petitioner and NLDC by 15.01.2023 on the above interim mechanism highlighting origin of RE source of RECs, buyer's*



preference RECs based on origin of RE source, pro-rata allocation based on buyer's preference."

Reply by the Respondent dated 30.12.2022

7. The Respondent has submitted the following:
- a. **Enabling participation of Renewable Energy (RE) generators registered under Renewable Energy Certificate (REC) in Green Market Segments and Clarification on eligibility conditions for issuance of REC(s):**
 - i. The REC Regulations 2022 allow registration of the partial capacity of RE Generator under the REC framework. So, it can get registered under the REC framework for part capacity and for the other part capacity, it can participate in the Integrated Day Ahead Market (IDAM) segment of the market.
 - ii. A provision of advance accreditation and advance registration has been added in the detailed REC Procedure so that such REGS, which in normal circumstances is ineligible for accreditation due to the required conditions of the accreditation/registration process as per REC Regulations 2022, in special circumstances may become eligible for issuance of certificates and thus can get themselves accredited/registered.
 - iii. The REC Regulations, 2010 allowed the RE generators registered under the REC Mechanism to participate in the conventional market like Day Ahead Market (DAM) / Real Time Market (RTM) / Term Ahead Market (TAM), and REC(s) were issued against such injection of energy. The REC Regulations, 2022 retain this provision and allow registration of full or part capacity under the REC Mechanism and participation in the conventional market. Similarly, the energy injected under conventional market contracts (DAM/RTM/TAM) will be eligible for issuance of REC(s) provided all other eligibility criteria for issuance of REC(s) as per REC Regulations 2022 are fulfilled.
 - b. **Specifying the origin/source of RE power in the certificate to be issued by power exchange:**
 - i. In the SOR of the REC Regulations 2022, the Commission clarified that the Central Agency shall indicate the origin of RE source while issuing the Certificates. A process in this regard has been developed by the Central Agency



and communicated to the power exchanges, through which the source of origin of the Certificates will be informed to the exchanges/traders.

- ii. The Petitioner has proposed pro-rata allocation of REC(s) based on buyers' preferences. In this regard, the Respondent submitted that the buyers, apart from the REC(s) of choice, will also be allocated REC(s) that they may not require for their RPO fulfilment, as per proposed methodology. REC(s) with the seller have perpetual validity. However, once the REC is purchased by a buyer it is meant for compliance of RPO for the same or previous financial years as allowed by the appropriate commission. So, to avoid this situation, it is proposed that the power exchanges take the choice of buyers. If a buyer doesn't have any specific preference, they can specify "Any" as their choice. Price discovery is to be made irrespective of the buyer's choice considering a single REC with a single market clearing price (MCP) (double-sided closed bid auction). Post discovery of MCP the REC(s) may be allocated as per the choice of buyers on a pro-rata basis (seller side pro-rata).
 - iii. The only drawback of this method is that after this allocation, some of the sellers who were selected based on the price discovery will be eliminated as per the buyers' preference. Further, a buyer selecting "Any" as their choice will have higher chances of getting REC(s) which will be an incentive for opting for this choice. A higher number of buyers opting for "Any" as its choice will lead to a lesser number of sellers being rejected after the price discovery.
 - iv. As the categorization based on different technologies will impact the allocation of REC(s) based on a pro-rata basis, it is important that each exchange uniformly follows the categorization based on which the preference of the buyer(s) is sought.
- c. Increasing the frequency of REC auctions & other contracts:** NLDC submitted that it has been observed that the REC(s) are mostly purchased by the obligated entities in the 3rd and 4th quarter of the financial year, as the RPO Targets are to be met on annual basis. Moreover, the energy injection reports are validated on monthly basis by the respective SLDC or RLDC, based on which REC(s) are issued to the eligible entities and inventory is updated. Further, there is a huge gap between the buyers and the sellers of the REC(s). Therefore, increasing the frequency of the REC

trading sessions will not increase the liquidity in the market. Moreover, the higher number of sessions will result in a higher cost to the participants, power exchanges, and the Central Agency. So, the Central Agency is of the view that there is no need of increasing the frequency of REC trading sessions.

Rejoinder by the Petitioner dated 09.01.2023

8. The Petitioner has submitted the following:
 - a. **Enabling participation of RE generators registered under REC, in Green Market Segments and Clarification on eligibility conditions for issuance of REC(s):** While the Respondent agrees with the understanding conveyed by the REC Regulations 2022 and the SOR therein, that impose the primary criteria for a generating station to qualify for REC is that the power sold from such a generating station is not accounted for RPO compliance of the obligated entity, the same is not adequately captured in the modified procedure issued on 05.12.2022. As per the Modified Detailed Procedure issued by Central Agency, in Clause 7.2(c), it is provided that the only uncleared bids of REGS in GDAM transferred and cleared in DAM shall be eligible for issuance of REC. Since the procedure contains the relevant provision only for GDAM uncleared quantum, the stated clarity is not available. It is, therefore, requested that clarity be provided by modifying the procedure dated 05.12.2022 to such extent. As provided under the REC Regulations 2022 any REGS having its capacity registered under the REC mechanism and selling power through the conventional segments (not accounted for RPO compliance) in the Power Exchanges should be eligible for issuance of REC.
 - b. **Specifying the origin/source of RE power in the certificate to be issued by power exchange:** It is observed that in the alternate method suggested by the Respondent, the buyers will be able to get the REC types as per their preferences; however, as indicated, there is a chance of sellers getting eliminated even if they are selected in the auction. While the said proposal can also be considered by the Commission, the Petitioner's proposal has been made keeping in view the need to fulfil the trades (buy/sell) that get executed. The Petitioner agrees with the views of the respondent that each Exchange should uniformly follow the categorization based on which the preference of the buyer(s) is sought.

- c. **Increasing the frequency of REC auctions & other contracts:** The Petitioner submitted that since the REC Regulations 2022 have expressly allowed trading of RECs outside of the market and the procedures issued by the Respondent have allowed such trading to be done on any day of the choice of participants, the concern regarding the liquidity in the market are unwarranted. Further since the traders are already allowed to conduct trading sessions on any day, the concern regarding increase in cost due to increase in the frequency of exchange- based trading is also misplaced. Further, CERC vide Order dated 09.12.2022 in Petition No. 15/SM/2022 has also approved the revised charges to be levied by POSOCO for its activities related to registration, REC issuance etc. Increasing the frequency of trading sessions will provide flexibility to the market participants. Instead of waiting till last Wednesday of the month, both buyers and sellers can participate in the market and trade during the month as per their requirements. DISCOMS can purchase RECs based on their RPO requirements and availability of funds whereas RE sellers can sell RECs to meet their immediate working capital requirements. It is submitted by the Petitioner that the frequency of REC trading sessions may be increased to once in a week instead of the existing practice of once in a month.

Written Submission by Petitioner on 17.01.2023 in compliance with directions in RoP

9. The Petitioner has submitted the following:
- a. In accordance with the directions of the Commission, a Public Notice was notified on the proposal for amendments in Renewable Energy Certificate Contracts at Indian Energy Exchange in accordance with the REC Regulations, 2022 seeking comments/ suggestions from the stakeholders.
 - b. The stakeholders have given positive feedback on the proposal of the amendments in REC contract under REC Regulations 2022. They have supported the methodology of allocation of RECs based on the buyer's technology preferences and appreciated the proposal for increasing the frequency of REC sessions from once in a month to once in a week. The stakeholders have affirmed that increase in the frequency of sessions will help the buyers and sellers to utilize the exchange platform to transact in REC in a more flexible manner based on their requirements. DISCOMS can purchase RECs

based on their RPO requirements and availability of funds whereas the RE sellers can sell RECs to meet their immediate working capital requirements.

Hearing dated 19.1.23

10. The Commission directed as under:

- a. Central Agency to inform the outcome of consultation with stakeholders along with its observations on increasing the frequency of REC trading sessions in a month.
- b. Central Agency to conduct a meeting with all Power Exchanges for consensus on the methodology to be followed across Power Exchanges for allocation of RECs among buyers and submit on affidavit by 10.2.2023.
- c. All the Power Exchanges to follow interim mechanism of 'pro-rata allocation based on the buyer's preference' to allocate RECs among the buyers as per the direction in ROP dated 15.12.2022
- d. A detailed report to be submitted by the Petitioner and the Central Agency within two weeks on the interim mechanism highlighting origin of RE source of RECs and pro-rata allocation based on buyer's preference.

Additional Submission by Respondent w.r.t hearing dated 19.01.2023

11. The Respondent has submitted the following:

- a. As per directions of the Commission, the Central Agency sought comments of the stakeholders by 27.1.2023 on increasing REC trading sessions. It is submitted that GRID – INDIA has received comments from 12 stakeholders on the matter of increasing frequency of trading of RECs on the power exchanges. The stakeholders gave mixed response on this matter of increasing frequency of trading.
- b. A meeting with representatives of the power exchanges was held on 02.02.2023 regarding methodology for allocation of RECs among buyers and increasing frequency of trading on the power exchanges. Discussion was held among all the power exchanges on the following methodology suggested by GRID – INDIA:

Step 1: Power exchanges will take choice from the buyers as Solar, Non-Solar and No Specific preference, through their portal at the time of the bid.

Step 2: Price discovery is to be made irrespective of the buyer's choice considering a single type of RECs with a single market clearing price (MCP) (double-sided closed bid auction).

Step 3: Post discovery of MCP, the RECs may be allocated as per the choice of buyers. If the required RECs on the buy side is less than the numbers of RECs cleared on sell side for a particular category, the buyers to be allocated full quantum of RECs as per their preferences and on seller side it will be on pro-rata basis based on number of cleared RECs. For cases where required RECs (buy side) are more than the RECs (cleared on sell side), the RECs are to be allocated on a pro-rata basis.

Step 4: Buyers who give their choice as "No Specific preference" to be allocated RECs on the pro-rata basis of the available RECs cleared on sale side after fulfilling the choice of the buyers.

Step 5: RECs selected after the price discovery but do not have any buyer for those (technology) RECs will be excluded from the final trade.

- c. A buyer selecting "No specific preference" will have higher chances of getting RECs which will be an incentive for opting for this choice if any type of RECs fulfils its RPO compliance requirement. A higher number of buyers opting for "No Specific Preference" will lead to a lesser number of RECs of sellers being rejected after the price discovery.
- d. The only difference between the methodology being followed by the exchanges in the January 2023 trading session and the methodology proposed by the Central Agency is that in the first method, after the allocation of RECs on the basis of choice of the buyers, the cleared RECs on sell side of other category are proportionally distributed among the buyers even if the buyer has not opted for that type of REC to meet its RPO compliance. The main demerit in this case is there is a financial burden to the buyer as it has to pay price for RECs of other category, which are not required for meeting its RPO

obligations. Once the RECs are allocated to the buyer, the RECs get extinguished.

- e. While in the proposed methodology, the unallocated RECs on sale side (after allocating on pro-rata basis to respective buyers of their preferred type and to the buyers with no specific preference) remains un-cleared. These un-cleared RECs can be traded in the next trading cycle and as such there is no financial burden on sale side.
- f. It was discussed that the basis on which the selected bids post discovery of MCP will be rejected in cases where there is no buyer of the technology should solely be on pro rata basis (proportional) irrespective of the price in the bid of the seller.
- g. It was further discussed that in this method, the buyers will get the RECs as per their choice and there will not be a revenue loss to the buyers as compared to the method being followed by the exchanges. RECs with the seller have perpetual validity while the REC once bought by the buyer has to be utilized for fulfilment of RPO in the same FY (with some exceptions). The seller will always have the option to sell its RECs in the subsequent trading sessions. However, the drawback of this method is that some of the RECs of the sellers which were selected based on the price discovery will be eliminated as per the buyer's preference which is not in line with the market principle of price discovery.
- h. GRID– INDIA suggested that the method used by the power exchanges in January 2023 and the method suggested by GRID – INDIA, both are sub optimal solutions to the present problem. The intent of the Regulation and REC framework envisage RECs as a medium to facilitate the RPO compliance of the obligated entities. Therefore, to fulfil this intent the choice of the obligated entity (the buyer) has to be kept paramount.
- i. IEX on 03.02.2023 through mail submitted that they agree with the REC allocation methodology suggested by GRID – INDIA. PXIL stated that they don't have any view as of now as they have already filed a Petition 379/MP/2022 in the CERC and will follow the methodology approved by

CERC. HPX through mail dated 06.02.2023 agreed with the REC allocation methodology suggested by GRID – INDIA

- j. **On the issue of increasing frequency of trading of RECs:** Based on the discussions with the power exchanges on the issue of increasing frequency of trading of RECs on Power Exchanges, it is proposed that the frequency of the trading sessions may be increased to fortnightly for a period of six months. Based on the response of the market during this period, the frequency of trade will be increased to once a week or may be kept the same as fortnightly or may again revert to once a month, under intimation to the Commission.

Hearing dated 22.2.23

12. The representative of the Petitioner submitted that pursuant to the directions of the Commission vide RoP for the hearing dated 19.1.2023, a detailed consultation had been carried out with Respondent No.1 – Central Agency and in so far as frequency of REC trading session in a month is concerned, it has proposed that the trading sessions may be increased to fortnightly for a period of six months and based on the experience gained during this period, further decision may be taken thereafter, which is agreeable to the Petitioner. The representative of the Petitioner further submitted that in so far as the methodology for allocation of RECs among the buyers is concerned, the Central Agency has suggested the allocations strictly as per the buyer's preference. The representative of the Respondent No.1, Central Agency, suggested that the trading sessions of REC in the Power Exchanges be held on the 2nd and the last Wednesdays of each month.

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Submission by the Petitioner PXIL

13. The Petitioner PXIL has made the following submissions:
- a. The Petitioner PXIL has proposed the following new contracts:
- i. **Reverse Auction Contract:** Discoms and the obligated entities which would want to buy RECs can have exclusive one-sided auction sessions initiated by the buyer for purchase of RECs, wherein multiple sellers would submit offers for sale of RECs upto the quantum requisitioned by the buyer. The buyer

would specify its requirement in terms of quantum (nos.) of RECs to be purchased. Sellers will submit their offers providing quantum (nos.) and Price in Rs. / Certificate against the requisition made by the buyer in the auction window. The auction process will be undertaken as two (2) stage process i.e. the Initial Price Offer (IPO) stage and Reverse Auction. The Reverse Auction will secure the most competitive prices for the buyer. With increased RPO requirements for Discoms and open access industrial and other consumers, the Reverse Auction would facilitate rationalization of REC prices for such buyers. That apart, it will be more conducive for the buying discoms as it will be easier for them to justify reverse auction for procurement of RECs than quoting arbitrary price under the Uniform Price Mechanism.

- ii. **Forward Auction Contract:** The auction would be initiated by the seller for sale of RECs, wherein multiple buyers would submit bids for purchase of RECs upto the quantum requisitioned by seller. Introduction of forward auction in RECs will enable seller to sell their RECs in exclusive auction session on pre-specified days by creating a forward auction event on 'PRATYAY' system. The forward auction contract would be an additional avenue in 'PRATYAY' system for sale of RECs, in addition to the proposed Reverse Auction Contracts and the existing Uniform Price Auctions. The Forward Auction in RECs will provide the necessary impetus for the growth of RE projects. It will provide Discoms in renewable rich states to procure more of renewable energy over and above the RPO levels, as they will be able to recover part of the cost through transaction of RECs at the best realizable prices.
- b. The Reverse Auction and Forward Auction mechanism will help in unlocking the market for RECs in a more efficient manner as they seek to address the requirement of clients both on the buy and sell side. Moreover, the flexibility in REC market both in terms of periodicity of trade and products will also facilitate trading licensees to broaden the scope for their clients and add depth to the REC segment. Further, trading through power exchange will provide the much needed security of payment as well as prompt clearance.

- c. It may also be noted that as far as trading licensees are concerned, they are at liberty to draw up their own products for dealing with RECs, which can be implemented bilaterally with their clients. Similar right should be available to power exchanges as competitors. Further, the ultimate objective is to promote renewable energy and provide necessary market for dealing in RECs. This would be best achieved if the markets are allowed to operate based on demand and supply.
- d. **Uniform price auctions at prescribed periodicity:** To be operated by the power exchange based on pre-defined calendar (preferably on weekly basis) to meet market participants trading requirements.
- e. **Certificate of Purchase to Buyer:** The Petitioner proposes to issue 'Certificate of Purchase' to all cleared buyers providing information on type and number of RECs purchased by buyer under the reverse auction and forward auction methods proposed above, in a manner similar to 'Certificate of Purchase' prescribed under Part-V Clause 5.2 (e) of 'Procedure for Implementation of REC Mechanism'. Necessary direction should be issued in this regard to NLDC as a matter of abundant precaution, once these new methods of auction are approved. That Part-V of the 'Procedure for Implementation of REC Mechanism' issued by NLDC prescribes the procedure for redemption of RECs applicable for existing monthly trading session held on last Wednesday of the month
- f. In case multiple sessions of 'uniform price auctions' proposed to be conducted based on trading calendar issued by the power exchange, the process of redemption of RECs would be similar to the redemption process applicable in the existing monthly auction session.
- g. The Petitioner submits that based on the directives provided at Regulation 27 of the REC Regulations 2022, it is proposed to provide at 'PRATYAY' platform two separate segments as under:
- i. Vintage Non-Solar session under directives provided at Regulation 27 (c) for transaction in Non-Solar REC issued prior to 01.04.2017.

- ii. Combined session for transacting in RECs issued under different technologies. This would avoid fragmentation of market and help build liquidity in the monthly auction session
- h. On conclusion of the above two auction sessions, the power exchange will issue 'Certificate of Purchase' to the cleared buyers specifying the number of RECs purchased by the buyers without any renewable energy source information mentioned in the Certificate such that the Buyer may utilize such Certificate to fulfil its RPO requirement across any RPO category. Since keeping any RE source information would over complicate the process of allocation of Certificates considering that RPO categories have been modified in MOP Order ref no 09/12/2021-RCM dated 22.07.2022 and the buyers do not have a choice of stating their RE source requirements while purchasing in a uniform price auction. Furthermore, the process of invoice generation for GST applicable on REC transaction executed by the buyer and the seller does not allow the possibility of any pro-rated allocation of RECs to buyers. The RECs transacted on the 'PRATYAY' platform through uniform price auction should not carry any renewable source information.

Additional Submission by the Petitioner

14. The Petitioner made additional submission as below vide affidavit dt. 16.01.2023 based on the auction session held on 28.12.2022:

- a. The auction session held on 28.12.2022 followed the 'Double Side Closed Bid' with 'Uniform price discovery' matching mechanism. This mechanism does not provide one-to-one matching of the orders submitted by the market participants. In view of the same, the Petitioner proposes two alternate mechanisms for allocation of 'source of origin' of the cleared RECs to buyer(s), namely, equitable allocation and preference-based allocation.
- b. **Equitable Allocation:** The equitable allocation would enable the 'Certificate of Purchase' issued to buyer(s) to reflect the percentage clearance of each type of REC source of sellers cleared during the session.



- c. The Petitioner issued the ‘Certificate of Purchase’ of the RECs to cleared buyer(s) providing information about composition of RE sources for RECs purchased during the session held on 28.12.2022.
- d. **Preference-Based Allocation:** Alternatively, PXIL has proposed to receive allocation preference from buyer at Order entry stage. The allocation preference will be made under two categories:
- i. Solar RPO
 - ii. Non-Solar RPO, enabling compliance to Enabling Buyer to meet compliance under HPO, Wind RPO and Other RPO as prescribed in Ministry of Power Order dated 22.07.2022
- In case the buyer does not submit preference, allocation will be made on random basis.
- e. Allocation is made to each Buyer based on its preference

IA No. 23/IA/2023

15. The Petitioner in Interlocutory Application (Diary No.105/2023) has prayed to amend the petition as under:

- a. The methodology to determine ‘Source of Origin’ information applicable to the cleared buyers is based on clearance methodology approved by the Commission vide order in Petition No. 174/MP/2012 dated 26.10.2012 in the matter of ‘Modification of allocation methodology for successful participants in Power exchange in Renewable Energy Certificate (REC) market’.
- b. With the implementation of REC Regulations, 2022 w.e.f. 05.12.2022, the RECs are now fungible trading instruments.
- c. On implementation of the REC Regulations 2022, during the three auction sessions i.e. sessions held on 27.12.2022, 25.01.2023 and 22.02.2023, the Petitioner has provided ‘Source of Origin’ information in ‘Certificate of Purchase’ to each cleared Buyer. That vide circular dated 27.01.2023, the Petitioner has implemented ‘preference’ for type of Certificates to be allocated while submitting bids in ‘PRATYAY’ system.

- d. While processing 'preference' for type of Certificate submitted at time of bid entry by the buyer, i.e. Solar / Small Hydro / Wind RPO / HPO / any other type of Certificate', the existing pro-rata clearance methodology applicable for bids cleared at MCP, approved vide Order dated 26.10.2012, constraints the 'PRATYAY' system from fulfilling the 'preference' submitted by Buyers, even though, the cleared quantum of sell available at MCP may be sufficient to fulfill the requirement of 'preference' submitted by Buyers.
- e. That since the combined session of different types of Certificates, i.e. Solar / Small Hydro / Wind RPO / HPO / any other type of Certificate is operated, the pro-rata clearance of Certificates for bids placed at the market clearing price does not result in optimal utilisation of different types of Certificates resulting in non-fulfilment of 'preference' provided by Buyers.
- f. Accordingly, the Petitioner seeks to amend the step-wise methodology for clearance of eligible quantum placed at market clearing price that was earlier approved vide Order dated 26.10.2012 in Petition 174/MP/2012.

Hearing dated 7.2.2023

16. After hearing the learned counsel and the representative of the Petitioner, the Commission directed the Petitioner as under:

- a. To implead Central Registry/NLDC as party to the Petition and to file revised memo of parties and to admit and issue notice to the Respondent.
- b. To serve copy of the Petition on the Respondent, Central Registry/NLDC and the Respondent to file its reply/comments, if any.
- c. To give wide publicity to its proposal under the present Petition by uploading the same on its website for inviting comments from the stakeholders and general public and to file an affidavit with detailed study incorporating the comments received from the stakeholders and the response thereon.
- d. To submit detailed proposal for 'Reverse Auction Contracts' and 'Forward Auction Contract' (prayer (a) and (b) of the Petition) subsequently through separate proceeding.

- e. On allocation of certificates among buyer, the Petitioner to follow directions given in ROP dated 19.01.2023 in Petition No. 375/MP/2022, as an interim measure.

Reply by the Respondent

17. NLDC has submitted the following:

- (a) With regard to the request to run 'Double Sided Closed Bid' with uniform price mechanism at different periodicity, it is submitted by NLDC that in the matter of petition no. 375/MP/2022 filed by IEX before the Commission, a meeting of all power exchanges (IEX, PXIL and HPX) to develop consensus, was organized on 02.02.2023 and based on the suggestions and the discussions in the meeting, it was proposed that at first the frequency of the trading sessions may be increased to fortnightly for a period of six months. The commission reserved the order in this matter vide order dated 22.02.2023.
- (b) With regard to the request for approval for introduction of Reverse Auction Contracts and Forward Auction Contract for the exchange of REC(s), it is submitted by NLDC that if such contracts are allowed by the Commission, it will require major changes in the REC Web portal. It will also require development of protocol for exchange of information between the power exchange and the Central Agency, timeline for application and approval of trade. It is requested by NLDC that if the Commission allows Reverse Auction Contracts and Forward Auction Contract for the exchange of REC(s), the Central Agency may be given appropriate time to develop the procedure for this process and execute necessary modifications in REC Web portal.
- (c) In compliance of Regulation 5.1 (vii) of CERC (DSM and Related Matters) Regulations, 2014, NLDC had a requirement for purchase of 2,57,415 nos. of non-solar RECs for FY 2020-21. NLDC had put its purchase bid of equal quantum of 85,805 nos. each in all three Power Exchange. IEX and HPX have allocated 85,805 nos. each of non-solar RECs against the purchase requirement of 85,805 nos. of non-solar RECs. However, PXIL has allocated 2,686 nos. of solar RECs and 83,119 nos. of non-solar RECs against the purchase bid of 85,805 nos. of non-solar RECs.
- (d) As per REC Regulations, 2022, the REC has now become a fungible trading

instrument. The new DSM Regulations 2022, which have come into force from 05th December 2022 have no such provision of balancing of deemed renewable purchase obligation (RPO) by NLDC. There is a requirement of purchase of 8,32,935 nos. of non-solar RECs by NLDC for the period Apr'21 to 04th Dec'22 as per provision of DSM regulation 2014. However, there is a surplus of 6,30,536 nos. of solar RECs for the period Apr'15 to 04th Dec'22. Looking into the fungible nature of RECs, it is submitted by NLDC that it may be allowed to purchase only 2,02,399 nos. of RECs after netting off against the 6,30,536 nos. of excess notional solar RECs available.

Rejoinder by Petitioner dated 18.3.2023

1. The Petitioner in its rejoinder has submitted the following:
 - (a) The Petitioner on 28.12.2022, conducted an auction session under the provisions of REC Regulations 2022. As per the direction of the Commission, the Central Agency conducted a meeting with all the power exchanges for consensus on the methodology to be followed across the power exchanges for allocation of RECs among buyers. The Petitioner intimated that it had filed the petition and that it will abide by the directions of the Commission in the matter.
 - (b) The Petitioner has formulated step-wise procedure for redemption of certificates as applicable for Reverse auction and Forward auction, separately for its inclusion in 'Detailed Procedure for Implementation of REC mechanism' under provisions of REC Regulation 2022.
 - (c) Accordingly, the Commission is requested to approve introduction of single sided Reverse auction Contract and single sided Forward auction Contracts on 'PRATYAY' system of the Petitioner, with a direction to the Central Agency to issue 'Procedure for redemption of Certificates.'
 - (d) On implementation of REC Regulations 2022, during the three auction sessions i.e. sessions held on 27.12.2022, 25.01.2023 and 22.02.2023, the Petitioner has provided information about 'Source of Origin' in 'Certificate of Purchase' to each cleared buyer. That vide circular dated 27.01.2023, the Petitioner has implemented 'preference' for type of Certificates to be allocated while submitting bids in 'PRATYAY' system. Based on preference entered in



‘PRATYAY’ system, the Petitioner has allocated RECs to the cleared buyers by undertaking equitable allocation to all the successful participants in compliance to directives provided by the Commission in Order in Petition no 174/MP/2012 dated 26.10.2012.

2. **REC Auction Session dated 22.02.2023:**

- (a) Implementation of preference option to the cleared quantum has led to mismatch between preference submitted at the bid entry and allocation made from cleared set of Certificates during a session. The Petitioner is unable to fulfill/meet the ‘preference’ due to constraints in clearance of RECs directed vide the aforesaid order dated 26.10.2012.
- (b) The ‘PRATYAY’ system identifies the cleared quantum of buy and sell, based on the quantum cleared in a session. The ‘source of origin’ for each REC as provided by Central Agency is later apportioned to cleared buyers.
- (c) It is submitted that, while processing preference for the type of Certificate submitted at the time of bid entry by the buyer, i.e. Solar / Small Hydro / Wind RPO / HPO / any other type of Certificate’, the existing pro-rata clearance methodology applicable for the bids cleared at MCP, approved vide Order dated 26.10.2012, constraints the ‘PRATYAY’ system from fulfilling the ‘preference’ submitted by the buyers, even though, the cleared quantum of sell available at MCP may be sufficient to fulfill the requirement of ‘preference’ submitted by Buyers.
- (d) It is submitted that since the combined session of different types of Certificates, i.e. Solar / Small Hydro / Wind RPO / HPO / any other type of Certificate is operated, the pro-rata clearance of RECs for bids placed at the market clearing price does not result in optimal utilisation of different types of Certificates, resulting in non-fulfilment of ‘preference’ provided by Buyers.

The Petitioner proposes to amend the pro-rating of allocation for bids received at MCP by enabling pro-rating based on ‘preference’ submitted by Buyer.

Hearing dated 21.3.2023

3. The Representative of the Petitioner submitted the following:



- (a) In compliance with the directions of the Commission vide Record of Proceedings for the hearing dated 7.2.2023, the Petitioner had given wide publicity to its proposal under the present Petition by uploading it on its website for inviting the comments from the stakeholders/general public. However, no comment has been received from the stakeholders/ general public.
- (b) The 'Source of Origin' information provided to the buyer is dependent of RECs submitted by the eligible entities that get cleared based on the methodology approved by the Commission vide order dated 26.10.2012 in Petition No. 174/MP/2012 i.e. first clearing all participants who have quoted a price better than market clearing price and thereafter pro-rating the allocation quantity based on the quantity quoted by the participants at the market clearing price.
- (c) Upon implementation of REC Regulations, 2022, during the three auction sessions held by the Petitioner on 27.12.2022, 25.1.2023 and 22.2.2023, the Petitioner provided the 'Source of Origin' information to each cleared buyer. Based on their preference as entered in the system, the Petitioner has allocated the RECs to the cleared buyers by undertaking the equitable allocation to all successful participants in compliance to directives provided by the Commission in the aforesaid order dated 26.10.2012.
4. The representative of the Respondent submitted that the methodology adopted by the Petitioner does not appear to be in line with the discussions held in a joint meeting with all power exchanges on 2.2.2023 wherein it was also deliberated that after the market clearing price is discovered, all the RECs are to be considered at par.
5. After hearing the learned counsel for the Petitioner and the representative of the Respondent, GCIL, the Commission permitted the Respondent to file its submission on the aspects raised by the Petitioner.

Reply by Respondent (NLDC) to Rejoinder dated 5.04.2023

6. The Respondent (NLDC) has submitted the following:



- (a) The method applied by the Petitioner for allocation of RECs in the 25.01.2023 and 22.02.2023 session, as explained in the rejoinder does not adhere to the directions of the Commission as per ROP dated 15.12.2022 and 19.01.2023 in Petition No. 375/MP/2022 for allocating RECs to the buyers based on the mechanism of 'pro-rata allocation based on buyer's preference'.
- (b) The Petitioner proposed a different method for exchange of RECs through 'Double Sided Closed Bid' with uniform price as per Order for Petition 174/MP/2012. The method proposed goes against the principle of uniform price discovery mechanism in a double-sided closed bid auction. As per this principle, once market clearing price is discovered all the bids are treated at par. This mechanism adopts the principle of maximization of economic surplus (sum of buyer surplus and seller surplus), taking into account all the bids. Further, the Petitioner has quoted the Commission's order dated 26.10.2012 in Petition No. 174/MP/2012 filed for 'Modification of allocation methodology for successful participants in Power exchange in Renewable Energy Certificate (REC) market'. The subject order pertains to the allocation of RECs and the same is being used for the discovery of uniform price.
- (c) The methodology agreed in the meeting of all the power exchanges dated 02.02.2023 for the allocation of RECs was submitted to the Commission by the Respondent NLDC vide affidavit dated 09.02.2023 wherein, NLDC had submitted that IEX and HPX had agreed with the method discussed during the meeting. However, PXIL stated that they don't have any view as of now as they have already filed a petition in the CERC and will follow the methodology approved by CERC.

Analysis and Decision

7. We note that the CERC REC Regulations 2022 have brought about changes in the REC framework, which necessitate revision in the bye-laws, rules & business rules of the power exchanges. Regulation 11(3) of the CERC REC Regulations, 2022 provides as under:



“The Power Exchange(s) shall seek approval of the Commission, as may be required under the Central Electricity Regulatory Commission (Power Market) Regulations, 2021, to the respective Bylaws and Rules for exchange of Certificates in the Power Exchange(s).”

8. Regulation 25 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2021 (in short “the PMR 2021”) provides for “Approval or Suspension of Contracts by the Commission”. Regulation 25 is reproduced as under:

“25. Approval or Suspension of Contracts by the Commission

(1) The Commission may, on its own or on an application made in this behalf, permit any Power Exchange to introduce new contracts as specified in clause (1) of Regulation 4 of these regulations:

.....
.....

(2) Any Power Exchange seeking permission to introduce a new contract under clause (1) of this Regulation, shall submit to the Commission complete and detailed contract specifications including the following:

(i) Type of contract;

(ii) Price discovery and matching methodology proposed

(iii) Timelines, including commencement of bidding and duration of bidding session till delivery commences;

(iv) Delivery mechanism and delivery duration i.e. whether delivery is for intraday, daily, weekly, monthly, seasonal, yearly or beyond;

(ii) Risk management mechanism including margining and final price settlement mechanism;

.....”

9. We have heard the Petitioners & the Respondent in the two petitions and have carefully perused the submissions on record. The proposal of the Petitioners on the REC contracts, in view of the above regulations, and the concerning issues have been analysed in the subsequent paragraphs.

(i) Enabling REC registered projects on participation in Green Markets (viz. GDAM, GITD, GDAC & GTAM) and eligibility conditions for issuance of RECs

10. The Petitioner (IEX) requested to clarify that the energy sold by the RE generating station registered under the REC mechanism in any conventional market (DAM/HPDAM/RTM/DAC/TAM/HPTAM) at a power exchange shall be eligible for



issuance of RECs and in case the energy is sold in the Green Markets by such RE generating station, no REC will be issued against such energy sold in the Green markets at Power Exchanges.

11. In this context, the Commission had issued an interim order in the Record of Proceeding for hearing dated 15.12.2022. The Commission noted that the Central Agency has already modified the Detailed Procedure under the REC mechanism and as per Clause 7.2 (c) of the said procedure, the uncleared bids of the RE generating stations in Green Day Ahead Market transferred and cleared in DAM are eligible for issuance of REC subject to eligibility conditions under the REC mechanism. This being in line with the REC Regulations, 2022, the energy sold by the RE generating station registered under the REC mechanism in any conventional market at a power exchange shall be eligible for issuance of RECs and in case the energy is sold in the Green Market by such RE generating station, no REC shall be issued against such energy sold in the Green Markets at the power exchanges.

12. The Respondent (NLDC), submitted that the modified REC detailed procedure allows issuance of REC(s) to the Renewable Energy Generating Station (REGS) participating in IDAM and selling energy in the conventional segment of IDAM in case their bids remain uncleared in the RE segment of IDAM subject to the condition that the REGS fulfils all other eligibility criteria for issuance of REC(s) as per the REC Regulations 2022.

13. On consideration of the submission made by the Central Agency and in the light of the provisions of the REC Regulations 2022, we hold that the energy sold by the RE generating station registered under the REC mechanism in any conventional market contracts shall be eligible for issuance of REC(s) provided all other eligibility criteria for issuance of REC(s) as per the REC Regulations 2022 are fulfilled, and in case the energy is sold in the Green Market by such RE generating station, no REC shall be issued against such energy sold in the Green Markets at the power exchanges.

(ii) Price Discovery & proposal for Reverse Auction and Forward Auction

14. At present, in the REC market the price discovery is based on double sided uniform price auction. The Petitioner IEX, has proposed the same except for the removal of floor and



forbearance price. However, in addition to the above, IEX has also proposed Reverse Auction and Bilateral Trade for consideration. Under the Reverse Auction, the buyers are to be allowed to buy RECs through reverse auction where the price is discovered based on competitive bidding. Under Bilateral Trade, the buyers are to be allowed to buy RECs through continuous trade available during the day.

15. PXIL, in its petition has proposed two new contracts under REC market viz., Reverse Auction and Forward Auction. Reverse Auction is exclusive one-sided auction session initiated by the buyer for purchase of RECs, wherein multiple sellers would submit offers for sale of RECs up to the quantum requisitioned by buyer. Forward Auction would be initiated by the seller for sale of RECs, wherein multiple buyers would submit bids for purchase of RECs up to the quantum requisitioned by seller.

16. During the hearing held on 15.12.2022 in Petition No. 375/MP/2022 and 07.02.2023 in Petition No. 379/MP/2022, the Commission observed that the proposals for reverse/forward auction & bilateral trade require more detailed scrutiny. The Respondent in its reply also mentioned that such proposal would need major changes in the REC web portal. Further this will require development of protocol for exchange of information between the power exchanges and the Central Registry, timeline of application and approval of trade etc. The Commission notes that the REC Regulations, 2022 have allowed transactions of RECs through traders in addition to the transactions through power exchanges. The traders generally engage in bilateral transactions. Provisions have been made in the Regulations for accounting of such transactions. The experience of this new dispensation of bilateral trade through traders will need be reviewed by the Commission based on the data being received in this regard. Given the small share of REC Market, introduction of new products in the power exchanges is not considered expedient at this stage. The Commission is in agreement with the Respondent and of the view that the Reverse Auction Contracts and Forward Auction Contracts for RECs can be allowed based on the needs of the stakeholders which can be examined subsequently through a separate proceeding.

17. Accordingly, we direct the power exchanges to continue the use of the double sided uniform price auction for price discovery of REC Contracts.

(iii) Mechanism for allocation of RECs

18. The REC Regulations 2022 dispensed with the categorization of the RECs as Solar and Non-solar. However, considering the RPO categorisation as Solar/ Non-solar, the Commission directed the Central Agency to indicate the origin of RE source in the certificate. Based on the origin, both the power exchanges, IEX and PXIL, in their respective petitions have proposed the methodology for allocation of RECs to the buyers for RPO compliance. IEX has suggested allocation based on the buyers' preference and, the balance on pro-rata basis. PXIL, however, has suggested two alternatives – either proportionate to the type of REC at sell side or based on buyer's preference.

19. The Respondent has submitted that if allocation is done on the buyer's preference and thereon pro-rata basis, the buyers may be allocated RECs that they may not require for the RPO fulfilment. REC once purchased by a buyer is meant for RPO compliance. The Respondent suggested the allocation should be as per choice of the buyers. In this case, some of the sellers who were selected may be eliminated.

20. As directed by the Commission, the Central Agency held a meeting with the representatives of the power exchanges on 02.02.2023 regarding methodology for allocation of RECs, wherein GRID-India suggested a methodology of pro-rata allocation based on the buyer's preference. Post the meeting both IEX and PXIL, via email, agreed to the methodology suggested by GRID-India, although PXIL submitted that it would await the order in Petition No. 379/MP/2022 filed by it. GRID-India, however, stated in its submission that all the suggested solutions are sub-optimal.

21. In view of the above, the Commission felt the need to take up this matter with the state regulators. The Forum of Regulators in its 84th Meeting held on dated 03.02.2023 deliberated on the issue of 'Fungibility of RPO' and unanimously agreed to allow fungibility of RECs to fulfil any RPO specified by the State ERCs. The relevant extract from the minutes of the FOR meeting is reproduced below:

“ 23. Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022 were notified on 9th May,2022 in which the distinction between Solar and Non- solar

RECs was dispensed with and the concept of multiplier was brought in. Recent RPO trajectory issued by the Ministry of Power also allowed fungibility among different RE technologies to a great extent. However, State RPO framework still has separate RPO structure for different RE technologies. Hence, there is a dichotomy among the obligated entities like Discoms to buy RECs to fulfil technology specific RPO specified in the State RPO Regulations. Making REC fungible to meet RPO across different technologies would resolve this dilemma and hence it was requested the State ERCs may allow procurement of RECs to fulfil RPO across any RE technology source.

.....
 26. *After discussion, the **Forum endorsed the idea and unanimously agreed to allow fungibility of RECs to fulfil any RPO specified by State ERCs. Accordingly, it was decided that the obligated entity can fulfil any category of RPO by procuring REC certificate as per the REC Regulations, 2022.***”

22. The Commission agrees with the decision of the Forum of Regulators and believes that fungibility of RECs to meet the requirement of RPO across any RE technologies would resolve the dichotomy between the Central and the State Regulatory framework. This will further facilitate the process of procurement of RECs by the obligated entities such that shortfall of any technology specific RPO by the obligated entities can be fulfilled with procurement of RECs as per the REC Regulations, 2022. The Commission believes that the obligated entities may approach their respective State Electricity Regulatory Commissions for appropriate approval in this regard in view of the unanimous decision arrived at in the FOR.

23. The Commission is conscious of the counterargument that such an arrangement might be counter-intuitive to the idea of technology specific RPO and would, therefore, urge that such categorization of RPO be phased out. In fact, the Commission notes that even the Government of India has been gradually moving towards fungibility. For instance, the earlier segmentation of solar and non-solar RPO no longer exists in the RPO categorization of the Government of India. The current carve outs are only for hydro, wind and others and it is expected that most of such technology specific RPOs shall be fulfilled through the green PPA route. Under the REC mechanism, the concept of multiplier is a substitute for separate technology specific carve out, and fulfils the same objective of encouraging the emerging and high cost technologies by assigning higher number of RECs for one megawatt hour of electricity generated and injected into the grid.

24. With due regard to the observation of the Respondent (NLDC) that the allocation of RECs based on the buyer's preference or on pro-rata basis are sub-optimal and in view of the unanimous decision of the FOR on fungibility of the RECs in fulfilling RPO across different RE technologies, the Commission notes that interim arrangement of pro-rata allocation of RECs based on the buyer's preference is no longer required. Instead, single technology agnostic RECs should be allowed through the power exchanges. Accordingly, the Commission directs the power exchanges and the Central Agency to implement the above decision from the trading session starting with the month following the month of issuance of this Order. The power exchanges and the Central Registry are directed to issue 'Certificate of Purchase' accordingly. This shall be applicable across all the power exchanges from the trading session starting with the month following the month of issuance of this Order. NLDC is directed to provide feedback on implementation of this method of allocation of RECs along with its views thereon, within six months from this Order.

(iv) Increasing frequency of REC auctions

25. Regulation 11(2) of the REC Regulations, 2022 stipulates that the Certificates shall be exchanged through power exchanges or through electricity traders in such periodicity as may be stipulated by the Central Agency in the Detailed Procedure. As per the timelines specified in the detailed procedure notified by Central Agency, trading on the power exchange shall be on monthly basis, carried out on the last Wednesday of every month, in accordance with the Rules/Byelaws of the power exchange approved by the Commission.

26. The above timelines are being followed by all the power exchanges at present. However, through the instant petitions, both the power exchanges have sought approval for increasing the frequency of auction sessions from monthly to weekly basis. The Petitioners have stated that the REC Regulations 2022 provide for exchange of RECs through trading licensees and the same is allowed on any or all days of a month. Further, the exchanges submitted that they have received requests from the stakeholders for increasing the frequency of sessions.

27. GRID-India submitted that the REC(s) are purchased by the obligated entities mostly in the 3rd and 4th quarter of the financial year, as the RPO Targets are to be met on an annual



basis. Further, there is a huge gap between the buyers and the sellers of the RECs. Therefore, increasing the frequency of the REC trading sessions may not increase the liquidity in the market. Moreover, the higher number of sessions may result in a higher cost to the participants, power exchanges, and Central Agency.

28. In view of the above, the Commission directed the Central Agency to undertake public consultation and inform the Commission about the outcome. As per the direction of Commission, the Central Agency issued a Public Notice inviting comments from the stakeholders for increasing the frequency of REC trading session. The Central Agency informed that the stakeholders gave mixed response on the matter. Further, a discussion was also held among the power exchanges and the Central Agency regarding the same. Based on the discussion, the Central Agency proposed that the frequency of the trading sessions may be increased to fortnightly basis for a period of six months. Based on the response of the market during this period, the frequency of trade will be increased to once a week or may be kept the same as fortnightly or may again revert to once a month, under intimation to the Commission.

29. We note that the Central Agency and the power exchanges have come to a consensus that the frequency of the trading sessions may be increased to fortnightly for a period of six months. Accordingly, we agree that the trading sessions of the REC contracts at the power exchanges shall be held on the 2nd and the last Wednesday of each month, for the next six months from the month of this Order. We direct the Central Agency to submit a review report within six months from the date of this Order, after seeking feedback from the power exchanges and the stakeholders on the experience of increased frequency of auctions.

30. In view of the above, the Central Agency is directed to make suitable provisions in the Detailed Procedure, as may be required. Further, the Petitioners are directed to align their Business Rules, Rules and Bye-Laws according to approvals granted in this Order and as per the detailed procedure and submit the same to the Commission. The Petitioners are also directed to upload the revised Business Rules, Rules and Bye-Laws on their websites before implementing the revised trade modalities for the REC Contracts. The trade specifications should be notified to the market participants well in advance with the help of circulars.

Needless to mention, if any discrepancy is noticed or if it appears that the revised Business Rules, Rules and Bye-Laws do not conform to the Regulations and/or to this Order in any respect, necessary directions may be issued for such compliance.

31. The Petition No. 375/MP/2022 and the Petition No. 379/MP/2022 are disposed of in terms of the above.

Sd/-
पी. के. सिंह
सदस्य

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अरुण गोयल
सदस्य

Sd/-
आई. एस. झा
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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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विद्युत मंत्रालय

अधिसूचना

नई दिल्ली, 20 अक्टूबर, 2023

का.आ. 4617(अ).—केन्द्रीय सरकार, ऊर्जा संरक्षण अधिनियम, 2001 (2001 का 52) की धारा 14 के खंड (ढ) और (भ) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए ऊर्जा दक्षता ब्यूरो के परामर्श से, ऊर्जा या फीडस्टॉक के रूप में अभिहित उपभोक्ताओं द्वारा गैर-जीवाश्म स्रोतों (नवीकरणीय ऊर्जा) के उपभोग का न्यूनतम हिस्सा तथा अनुज्ञप्तिधारी विद्युत वितरण के संबंध में विभिन्न अभिहित उपभोक्ताओं के लिए गैर-जीवाश्म स्रोतों के विभिन्न प्रकारों के उपभोग का भिन्न हिस्सा और अन्य अभिहित उपभोक्ता जैसे निर्बाध पहुंच वाले उपभोक्ता या आबद्ध उपयोगकर्ता जो उसके विस्तार तक अनुज्ञप्तिधारी वितरण से भिन्न अन्य स्रोतों से बिजली का उपभोग करते हैं, निम्न सारणी उनकी कुल इंगित ऊर्जा उपभोग के हिस्से के प्रतिशत को, विनिर्दिष्ट करती है

सारणी

क्र.सं.	वर्ष	पवन नवीकरणीय ऊर्जा	जल नवीकरणीय ऊर्जा	वितरित नवीकरणीय ऊर्जा*	अन्य नवीकरणीय ऊर्जा	कुल नवीकरणीय ऊर्जा
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	2024-25	0.67%	0.38%	1.50%	27.35%	29.91%
2.	2025-26	1.45%	1.22%	2.10%	28.24%	33.01%
3.	2026-27	1.97%	1.34%	2.70%	29.94%	35.95%

4.	2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
5.	2028-29	2.95%	1.42%	3.90%	33.10%	41.36%
6.	2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

टिप्पण 1: * पहाड़ी और पूर्वोत्तर राज्यों/संघ राज्य क्षेत्रों, अर्थात् अरुणाचल प्रदेश, असम, मणिपुर, मेघालय, मिजोरम, नागालैंड, सिक्किम, त्रिपुरा, जम्मू-कश्मीर, लद्दाख, हिमाचल प्रदेश और उत्तराखंड के लिए, वितरित नवीकरणीय ऊर्जा घटक सारणी में दिए गए का आधा होगा और इन राज्यों का शेष घटक अन्य नवीकरणीय ऊर्जा स्रोतों में सम्मिलित किया जाएगा।

टिप्पण 2: पवन नवीकरणीय ऊर्जा घटक की पूर्ति 31 मार्च, 2024 के पश्चात् आरंभ की गई पवन ऊर्जा परियोजनाओं (डब्ल्यूपीपी) से उत्पन्न ऊर्जा से की जाएगी।

टिप्पण 3: जल नवीकरणीय ऊर्जा घटक की पूर्ति 31 मार्च, 2024 के पश्चात् आरंभ की गई जल विद्युत परियोजनाएं [जिसके अंतर्गत पंप भंडारण परियोजनाएं (पीएसपी) और लघु जल विद्युत परियोजनाएं (एसएचपी) भी हैं] से उत्पन्न ऊर्जा से की जाएगी:

परंतु, यह कि, जल नवीकरणीय ऊर्जा घटक की पूर्ति 31 मार्च, 2024 के पश्चात् आरंभ की गई जल विद्युत परियोजनाओं से राज्य/डिस्कॉम को प्रदान की जा रही निःशुल्क बिजली से भी पूरी की जा सकती है:

परंतु, यह और कि, जल नवीकरणीय ऊर्जा घटक की पूर्ति भारत से बाहर स्थित जल विद्युत परियोजनाओं से भी पूरी की जा सकती है, जैसा कि केन्द्रीय सरकार द्वारा अलगअलग मामले के - आधार पर अनुमोदित किया जाए।

टिप्पण 4: वितरित नवीकरणीय ऊर्जा घटक की पूर्ति केवल 10 मेगावाट से कम आकार की नवीकरणीय ऊर्जा परियोजनाओं से उत्पादित ऊर्जा से पूरी की जाएगी और इसमें केन्द्रीय सरकार द्वारा अधिसूचित सौर संस्थापना के अधीन सभी कॉन्फ़िगरेशन (नेट मीटरिंग, ग्रॉस मीटरिंग, वर्चुअल नेट मीटरिंग, ग्रुप नेट मीटरिंग, मीटर स्थापना और किसी अन्य कॉन्फ़िगरेशन के पीछे) सम्मिलित होंगी।

परंतु, यह कि वितरित नवीकरणीय ऊर्जा के संबंध में अनुपालन को सामान्यतः ऊर्जा (किलोवाट घंटा इकाइयों) के निबंधनों के अनुसार माना जाएगा:

परंतु, यह और कि अभिहित उपभोक्ता की दशा में वितरित नवीकरणीय ऊर्जा संस्थापनों के संबंध में उत्पादन डाटा प्रदान करने में असमर्थ है, तो रिपोर्ट की गई क्षमता को, प्रति दिन 3.5 यूनिट प्रति किलोवाट (किलोवाट घंटा/किलोवाट/) के गुणक द्वारा ऊर्जा के निबंधनों अनुसार वितरित नवीकरणीय ऊर्जा उत्पादन में परिवर्तित किया जाएगा।

टिप्पण 5: अन्य नवीकरणीय ऊर्जा घटक की पूर्ति टिप्पण 2, 3 और 4 में विनिर्दिष्ट से भिन्न किसी भी नवीकरणीय ऊर्जा विद्युत परियोजना से उत्पन्न ऊर्जा से पूरी की जा सकती है और 1 अप्रैल, 2024 से पूर्व आरंभ हुई सभी डब्ल्यूपीपी और जल विद्युत परियोजनाएं [जिसके अंतर्गत पंप भंडारण परियोजनाएं (पीएसपी) और लघु जल विद्युत परियोजनाएं (एसएचपी) हैं] ऊर्जा समाविष्ट करेगा, जिनमें निःशुल्क बिजली भी शामिल है।

2. किसी विशिष्ट वर्ष में अनुबद्ध पवन नवीकरणीय ऊर्जा उपभोग की उपलब्धि में किसी भी कमी को जल नवीकरणीय ऊर्जा से पूरा किया जा सकता है, जो उस वर्ष के लिए और विपर्ययेन उस ऊर्जा घटक से अधिक है।

3. उस वर्ष में पवन नवीकरणीय ऊर्जा या जल नवीकरणीय ऊर्जा घटक के अधीन अतिशेष अधिक ऊर्जा उपभोग को अन्य नवीकरणीय ऊर्जा घटक का हिस्सा माना जा सकता है।

4. किसी विशिष्ट वर्ष में अन्य नवीकरणीय ऊर्जा घटक के अधीन किसी भी अधिक ऊर्जा उपभोग का उपयोग, अनुबद्ध पवन नवीकरणीय ऊर्जा या जल नवीकरणीय ऊर्जा उपभोग की उपलब्धि में कमी को पूरा करने के लिए किया जा सकता है।

5. अभिहित उपभोक्ता, जो निर्बाध या आबद्ध विद्युत संयंत्र वाले उपभोक्ता हैं, गैर-जीवाश्म ईंधन स्रोत के बावजूद विनिर्दिष्ट कुल नवीकरणीय ऊर्जा लक्ष्य के अनुसार उनकी बाध्यताओं को पूरा करेंगे।

6. विनिर्दिष्ट नवीकरणीय ऊर्जा उपभोग लक्ष्यों को भारत के राजपत्र, असाधारण, भाग 3, खण्ड 4, तारीख 24 मई, 2022: में प्रकाशित, केंद्रीय विद्युत नियामक आयोग (नवीकरणीय ऊर्जा उत्पादन के लिए नवीकरणीय ऊर्जा प्रमाणपत्रों के लिए निबंधन और शर्तें) विनियम, 2022 के अनुसार सीधे या प्रमाणपत्र के माध्यम से पूरा किया जाएगा।

परंतु, यह कि विनिर्दिष्ट नवीकरणीय ऊर्जा उपभोग लक्ष्यों में किसी भी कमी को अननुपालन माना जाएगा और उक्त अधिनियम की धारा 26 की उपधारा (3) के अधीन विनिर्दिष्ट ऐसी दर पर शास्ति अधिरोपित की जाएगी।

7. ब्यूरो अभिहित उपभोक्ताओं द्वारा नवीकरणीय ऊर्जा उपयोग के अनुपालन से संबंधित डाटा अनुरक्षित करेगा और केन्द्रीय सरकार को रिपोर्ट प्रस्तुत करेगा।

8. यह अधिसूचना 1 अप्रैल, 2024 को प्रवृत्त होगी और उस समय तक, विद्युत मंत्रालय के तारीख 19 सितम्बर, 2022 के शुद्धिपत्र के साथ पठित, आदेश संख्या 9/13/2021-आरसीएम, तारीख 22 जुलाई, 2022, के पैरा 5 से 14 में विनिर्दिष्ट आरपीओ प्रक्षेपवक्र लागू रहेगा।

[फा. सं. 9/13/2021-आरसीएम]

अजय तिवारी, अपर सचिव

MINISTRY OF POWER

NOTIFICATION

New Delhi, the 20th October, 2023

S.O. 4617(E).—In exercise of the powers conferred by clauses (n) and (x) of section 14 of the Energy Conservation Act, 2001 (52 of 2001), the Central Government in consultation with the Bureau of Energy Efficiency, hereby specifies the minimum share of consumption of non-fossil sources (renewable energy) by designated consumers as energy or feedstock and different share of consumption for different types of non-fossil sources for different designated consumers in respect of electricity distribution licensee and other designated consumers who are open access consumers or captive users to the extent of consumption of electricity from sources other than distribution licensee as a percentage of their total share of energy consumption indicated in the Table below:

TABLE

Sl.No	Year	Wind renewable energy	Hydro renewable energy	Distributed renewable energy*	Other renewable energy	Total renewable energy
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	2024-25	0.67%	0.38%	1.50%	27.35%	29.91%
2.	2025-26	1.45%	1.22%	2.10%	28.24%	33.01%
3.	2026-27	1.97%	1.34%	2.70%	29.94%	35.95%
4.	2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
5.	2028-29	2.95%	1.42%	3.90%	33.10%	41.36%
6.	2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

Note 1: *For hilly and North-Eastern States/Union Territories, namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Jammu & Kashmir, Ladakh, Himachal Pradesh and Uttarakhand, the distributed renewable energy component shall be half

of that given in the Table and the remaining component for these States shall be included in the other renewable energy sources.

Note 2: The wind renewable energy component shall be met by energy produced from Wind Power Projects (WPPs) commissioned after the 31st March, 2024.

Note 3: The hydro renewable energy component shall be met only by energy produced from Hydro Power Projects [including Pump Storage Projects (PSPs) and Small Hydro Projects (SHPs)], commissioned after the 31st March, 2024:

Provided that the hydro renewable energy component may also be met out of the free power being provided to the State/DISCOM from the Hydro Power Projects commissioned after the 31st March, 2024:

Provided further that the hydro renewable energy component may also be met from Hydro Power Projects located outside India as approved by the Central Government on a case-to-case basis.

Note 4: The distributed renewable energy component shall be met only from the energy generated from renewable energy projects that are less than 10 MW in size and shall include solar installations under all configurations (net metering, gross metering, virtual net metering, group net metering, behind the meter installations and any other configuration) notified by the Central Government:

Provided that the compliance against distributed renewable energy shall ordinarily be considered in terms of energy (Kilowatt hour units):

Provided further that in case the designated consumer is unable to provide generation data against distributed renewable energy installations, the reported capacity shall be transformed into distributed renewable energy generation in terms of energy by a multiplier of 3.5 units per kilowatt per day (kWh/kW/day).

Note 5: The other renewable energy component may be met by energy produced from any renewable energy power project other than specified in Note 2, 3 and 4 and shall comprise energy from all WPPs and Hydro Power Projects [including Pump Storage Projects (PSPs) and Small Hydro Projects (SHPs)], including free power, commissioned before the 1st April, 2024.

2. Any shortfall in achievement of stipulated wind renewable energy consumption in a particular year may be met with hydro renewable energy which is in excess of that energy component for that year and vice-versa.

3. The balance excess energy consumption under wind renewable energy or hydro renewable energy component in that year, may be considered as part of other renewable energy component.

4. Any excess energy consumption under Other renewable energy component in a particular year, may be utilised to meet the shortfall in achievement of stipulated Wind renewable energy or Hydro renewable energy consumption.

5. The designated consumers who are open access consumers or consumers with Captive Power Plants shall fulfil their obligation as per the specified total renewable energy target irrespective of the non-fossil fuel source.

6. The specified renewable energy consumption targets shall be met either directly or through Certificate in accordance with the Central Electricity Regulatory Commission (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022, published in the Gazette of India, Extraordinary, Part III, Section 4, dated the 24th May, 2022:

Provided that any shortfall in specified renewable energy consumption targets shall be treated as non-compliance and penalty shall be imposed as such rate specified under sub-section (3) of section 26 of the said Act.

7. The Bureau shall maintain data related to compliance of renewable energy utilisation by the designated consumer(s) and submit report to the Central Government.
8. This notification shall come into force on the 1st day of April, 2024 and till such time, the RPO trajectory specified in paragraphs 5 to 14 *vide* the Ministry of Power Order No. 9/13/2021-RCM, dated 22nd July, 2022 read with Corrigendum, dated the 19th September, 2022, shall remain in force.

[F.No. 9/13/2021-RCM]

AJAY TEWARI, Addl. Secy.

**Sri. Krishnappa V.
Managing Director**

D.O. No: PCKL/A12/5/2021-22/V3 / 3169-75

- 6 AUG 2022

Dear *Sri prashant Kumar Sarkar,*

**Sub: Trading of Renewable Energy Certificates by Distribution
Companies**

Karnataka State is having an installed capacity of 31,109 MW, out of which share of Renewable Energy Sources is 15199 MW, which contributes more than 50% of the installed capacity of the State (Wind-4969MW, Solar-7457MW, Co-generation 1731MW, Mini Hydel 903MW and Bio-mass 139MW).

As result of 50% in the RE capacity, ESCOMs of Karnataka has overachieved the Renewable purchase Obligation, the required RE purchase was 10502 MUs, while in reality, compliance was nearly double at 20160 MUs. Thus the share of RE is already over 38% in Karnataka. Hence, the ESCOMs of Karnataka are entitled for Renewable Energy Certificate as per CERC Regulation 2010/2020.

The trading of RE certificate was stopped from June 2020 to Nov 2021 in view of the reason that order of CERC was challenged in APTEL by various RE generators. APTEL in the order dated 09.11.2021 remanded the matter to CERC for re-determination of the REC price as well as validity of certificate. The resumption of the Trading of REC started after the CERC order dated 18.11.2021.

After the issual of the order, ESCOMs of Karnataka approached Hon'ble KERC requesting recommendation in the prescribed format to enable obtaining REC for the quantum of excess renewable energy over and above the RPO target. The recommendations of the Commission for RE certificates have been placed before NLDC for issuance of certificates. Now, BESCO has received the RE certificates to an extent

of 54 lakhs solar and 11.56 lakhs non-solar certificates. Only, 6.62 lakhs RE certificates have been traded in power exchanges during the month of June 2022 & July 2022. Hubli Electricity Company has also obtained RE certificate to an extent of 31.47 Lakhs RE certificate for the FY 2019-20. Similarly, other three ESCOMs have also approached NLDC for issuance of REC for FY 2019-20 to an extent of 37.53 Lakhs.

The ESCOMs of Karnataka are still to obtain RE certificates for the FY 21 & 22 which is almost 63.91 lakhs for FY 21 & 77 Lakhs for FY 22 which are under process.

Presently, Renewable Energy Certificates are being traded once a month viz. on last Wednesday of every month.

In this backdrop, it is requested to your kindnesses to take up the matter before Hon'ble CERC to conduct the REC trading session every week on Wednesday or at least twice a month. This will facilitate ESCOMs to earn additional revenue to overcome the financial hardship.

With *Regards*

Yours *Sincerely*
[Signature]

Sri. Prabhajit Kumar Sarkar
Managing Director & Chief Executive Officer,
Power Exchange of India Limited (PXIL),
9th Floor, # 901, Sumer Plaza,
Marol Maroshi Road,
Andheri East, Mumbai
Maharashtra-400059.

PXIL REC Single Sided Reverse Auction Contract

1. Basic Contract Specification

a. REC Single Sided Reverse Auction Contract

Type of Market	Renewable Energy Certificate Single Sided Reverse Auction Contract
Trading System	PRATYAY
Type of Contract (Optional)	a. Solar Certificate b. Hydro Certificate c. Non Solar Certificate
Bidding and Auction process	<u>Reverse Auction:</u> Buyer to specify its requirement in terms of quantum (nos.) of REC to be purchased. Seller to submit their Offers providing quantum (nos.) and Price in Rs. / Certificate against the requisition made by Buyer in the Auction window. The auction process shall be undertaken as two (2) stage process i.e. the Initial Price Offer (IPO) stage and Reverse Auction
Price discovery and Trading methodology	Reverse Auction procedure for Buyer's requisition as per Annexure V of Business Rules
Auction Timings*	As notified by Exchange from time to time for single or multiple days in one or more days in advance
Ceiling Price (Optional)	Price in Rs. / Certificate above which no Offer can be submitted by a Seller
Minimum Bid quantum*	1 Certificate (Equivalent to 1 MWh of Energy injected) for each type of Contract
Minimum quantum Quotation Step*	1 Certificate (equivalent to 1MWh) or as decided by Exchange to meet Buyers requirement
Minimum Value Quotation Step*	Rs. 1 per Certificate or as decided by Exchange to meet Buyers requirement
Settlement Price(s)	Traded Price * Quantity accepted by Buyer The traded price shall be the prices discovered during the Reverse auction session applicable for Seller's offered quantum
Pay-in*	All Pay-in will be done to the Exchange by 11:00 hrs
Pay-out*	After 11:00 hrs - All pay-outs will be done on next day of conclusion of transaction
Transaction fees*	Transaction fee payable to the Exchange by the Buyer and Seller shall be informed through Circular

*The Exchange reserves the right to amend these parameters by issuing a Circular from time to time

2. Procedure for conducting Reverse Auction session

2.1. Expression of Interest (EOI)

Buyer to create requisition for conducting Reverse Auction wherein it has to provide following information – Quantum (Nos) of REC , Minimum quantum (Nos of REC) & Types of Certificate to be Offered by Seller and Ceiling price (Rs/certificate) above which no Sellers are eligible to participate in Reverse Auction

The Seller will submit their competitive Offers providing Quantum and Offer price

Reverse Auction event parameter	Particulars
Quantum requisitioned	_____ Nos of REC.
Type of Certificate (Optional)	Solar / Non Solar / any other type as approved by Commission from time to time
Ceiling Price (Optional)	Rs. _____ / Certificate (1 Certificate is equivalent to 1 MWh of Energy)
Minimum quantum to be offered by Seller for participation	_____ Nos of REC.
Opening date and time of Offer submission	Start date and time for Offer submission
Gate closure (i.e. Closing date and time of Offer submission)	Last date and time for Offer submission
Reverse Auction timeline	Start date and time

2.2. Initial Price Offer

The Sellers will submit their Offers (Quantum (Nos of REC) and Price) against the requisition created by Buyer with in the time lines applicable for each event.

Reverse Auction event parameter	Particulars
Opening date and time of submitted Offers	Start date and time for Offer submission
Gate closure (i.e. Closing date and time of submitted Offer)	Last date and time for Offer submission
Reverse Auction timeline	Start date and time

The 'PRATYAY' system will analyse the prices Offered by different Seller and rank them. When two or more Offers are received at same price, the 'PRATYAY' system will

rank the Offer based on time priority i.e. date and time of submitted Offers. The least cost Offer would be designated 'L-1', followed by 'L-2' and so on till all the Offers are listed.

All Offers received above Ceiling price will be rejected and they will not be allowed to participate in Reverse Auction event.

2.3. Reverse Auction

During the auction session only the prevailing lowest quoted price (L1) will be displayed to the market. The Reverse Auction shall continue for period of 2 hours (120 min) or as may be specified by the Exchange from time to time. The Exchange shall also from time to time specify the duration before the scheduled closure of Reverse Auction during which if there is a change in the lowest quoted price (L1) the Reverse Auction would get auto extended by prescribed duration, e.g., if during the last 10 (ten) minutes before the scheduled close time of Reverse Auction, if an Offer is modified which is lower than the prevalent L1, the close time of Reverse Auction will be automatically extended by 10(ten) minutes from the time of the last price Offer modified. This process of auto extension will continue till there is a period of 10 (ten) minutes during which no price Offer is modified which is lower than then prevailing L1.

The Sellers will be able to reduce their Offered price by Rs. 1/Certificate or multiples thereof and increase their Offered quantum by 1 Certificate or multiples thereof as may be specified by Exchange from time to time.

On closure of the Reverse auction process, all Offers will be ranked in ascending order of Offered prices.

Reverse Auction event parameter	Particulars
Minimum Value Quotation step	Rs. 1 per Certificate, or as decided by Exchange
Minimum Volume Quotation Step	1 Certificate
Reverse auction duration	2 Hours or as defined by the Exchange

Reverse Auction event parameter	Particulars
Deadline period prior to close of Reverse auction duration	10 minutes or as defined by the Exchange (In case Offered price is modified by any Seller during the deadline period resulting in change in lowest selling price, then the Reverse auction would be extended for another duration of 10 minutes from the time of modification)
Buyer acceptance of Offer (s)	The cut-off date and time prior to which the Buyer has to submit acceptance of Offer. Non submission of acceptance of Offer prior to cut-off period will result in cancellation of the Reverse Auction event

2.4. Trade acceptance

Buyers shall communicate its acceptance / partial acceptance / rejection of the Offers in 'PRATYAY' software system within the cut-off period specified by Exchange applicable to such Reverse auction event.

Reverse Auction event parameter	Particulars
Buyer acceptance of Offer (s)	The cut-off date and time prior to which the Buyer has to submit acceptance of Offer(s)

The Buyer shall accept and procure Certificates from Seller in the order of their ranking, such Offers not accepted by Buyer will stand rejected.

Non submission of acceptance of Offer prior to cut-off period will result in cancellation of the Reverse Auction event

3. Application for Redemption of Certificates

The Exchange shall submit application for redemption only for such Offers that have been accepted by Buyer. Application for redemption shall be submitted to the REC Registry as per the 'Procedure for Redemption of Renewable Energy Certificate' or any other applicable procedure subject to receipt of adequate margins by Exchange. The application shall be submitted on best effort on the first available date. The quantum approved by REC Registry shall be deemed to have been accepted by Buyer and Seller including variation between traded quantity and quantity as approved by Registry.

4. Matching Rules for conducting Reverse auction

The matching Rules for conducting Reverse auction shall be as under. PXIL shall reserve the right to amend the matching rules and inform the same to market participants by issuance of Circular from time to time.

4.1. Reverse Auction

The auction step is initiated by creation of requisition by Buyer in 'PRATYAY' software system, an 'Expression of Interest' stage, after receipt of Offers in Initial Price Offer (IPO) stage, Reverse Auction stage is initiated. The principles of conduction Reverse Auction process are:

- a. For every Member/Client placing an Offer, the quoted price-volume combination would be held constant till the next quoted price-volume combination, if provided. Thus, a Sell quantity shall be assumed to remain constant between consecutive price points.
- b. Stacking of Offers would have price-time priority. In case of bids with same Offer price, stack would be prepared based on time priority i.e. allocation will be made to the Member/Client who has submitted earliest Offer. (Please refer Illustration 1 as provided later for better understanding on the matching priority)
- c. Trade acceptance: On conclusion of Reverse auction, the Buyer will have right to accept all or any Offer(s) based on ranking. Such Offer(s) not accepted by Buyer will stand rejected
- d. Application for redemption: The Exchange shall submit application for redemption only for such Offers that have been accepted by Buyer

4.2. Rules for stacking of Offers in IPO and Reverse Auction stage

The Rules for stacking of Offers would go through the following steps:

- a. Rule-1: On announcement of 'Gate closure', all such Offers which have price less than or equal to Ceiling price are included for Reverse auction process. The submitted Offers are summed up at each price tick to arrive at aggregate quantum per price tick.

Further, no Seller shall be allowed to place their bids at a quantum less than the minimum bid quantum during the IPO stage itself and in case any Seller submits an Offer which is less than the prescribed minimum bid quantum, then such Offer shall not be accepted by 'PRATYAY' system.

- b. Rule-2: The stack of Offers based on Price quoted by Sellers would be prepared. Least cost Seller would be designated L-1, followed by L-2, and so on till all the Sell offers are rated thus, ranking shall be in increasing order of their Offered price. If two Sellers submit Offers

at same price, the Offer of such Seller who had submitted the earliest Offer would be ranked near to the lowest priced Offer and the Offer of such Seller who has submitted Offer later would be ranked further from the lowest priced Offer

- c. Rule-3: At the start of the auction process, the Offer stack from 'L-1' to 'L-n' would be prepared and price of 'L-1' would be displayed for all to view. If two Sellers submit same price, then time of Offer submission would be considered i.e. entity submitting offer early shall be ranked near to 'L-1'. if at the lowest Offered price there are multiple Sellers, then the Seller that had submitted the Offer earliest during the IPO stage will be ranked as 'L-1', the Seller that has submitted Offer at price ranked as 'L-1' but time of submission is later than 'L-1' then such Seller would be ranked 'L-2', as provided at Rule-2 to above, time based criteria shall be applicable to all Offers that are submitted at same price.
- d. Rule-4: Reverse auction process commences for 2-hour period, or as defined by the Exchange for the event, wherein all Sellers are allowed to revise their Offer price, with every modification in price the new stack of Offers would be prepared and revised price of 'L-1' would be displayed for all to view. The Sellers will not be allowed to increase their Offered quantum with-out simultaneous reduction in Offer price. The reduction in Offer price during reverse auction period or the extended session will enable Sellers to increase their Offered quantum. When no revision in displayed price of 'L-1' is visible within 10-minutes prior to scheduled close of auction window no extension in auction session will be made. On completion of 2-hour window the auction results will be declared capturing the last modified price entered by each Seller.
- e. Rule-5: 10-minute prior to scheduled close of auction window, when a revised Offer is submitted which is lower than the lowest prevailing price Offer i.e. 'L-1' at that instant, the close time of auction window will be automatically extended by 10-minute or a period as defined by Exchange, from the time the new 'L-1' Offer was submitted by any Seller
- f. Rule-6: The process of auto extension will continue till there is a period of 10 (ten) minutes during which no price is received which is lower than the prevailing lowest price Offer.
 - i. Any revision in price within 10-minutes prior to scheduled close of auction window but if the revised price is not lesser than the prevailing lowest price then no extension would be provided
 - ii. The auto extension shall be based on number of extensions prescribed by Buyer at the time of creation of reverse auction event. The 'PRATYAY' system shall enable auto extension up to the prescribed number if there are revisions in 'L-1' price. In case no revision in 'L-1' price occurs in any extended session then 'PRATYAY' system shall conclude the auction session.

Rule-7: If any Seller increases the Offered quantum as per Rule-4 above, then the revised quantum would be considered as final Offered quantum for the auction event.

4.3. Trade allocation on completion of auction process

- a. Rule-8: The selection of Seller shall be on bucket filling basis as per their ranking i.e., capacity quoted by 'L-1' Seller at 'L-1' price shall be allocated first, then capacity quoted by next lowest bidder (called the 'L-2' bidder) at price quoted by 'L-2' Seller shall be allocated and so on, till the purchase quantum provided in the Reverse auction event is exhausted.
- b. Rule-9: The result shall declare the price and quantum (Nos of certificate) cleared in the auction process. After declaration of auction result, the Buyer will have the following options:
- i. Accept All Offers identified under bucket filling process upto the quantum specified for purchase
 - ii. Accept any number of Offers whose cumulative quantum may be lesser than quantum specified for purchase based on ranking provided in 'PRATYAY' software system
 - iii. Reject all the Offers and not purchase any quantum from the auction event
 - iv. Buyer shall communicate the above in the 'PRATYAY' software system within the timeline (after declaration of auction rankings for the current event) or as per timeline specified by the Exchange applicable to such Reverse auction event from time to time

Illustration of matching in Reverse Auction

1. The Buyer will initiate a Reverse auction by entering the following information in 'PRATYAY' trading system:

Reverse Auction event parameter	Particulars
Quantum (in nos.)	400
Type of Certificate	Solar
Ceiling Price (above which Seller's Offer will be rejected in IPO stage)	Rs. 4,000 / Certificate
Minimum quantum to be Offered by Seller for participation	50 nos.
Opening date and time of Offer submission	Start date: 01-October-2022 at 10:00 Hours
Gate closure	Last date: 10-October-2022 at 12:00 Hours

Reverse Auction event parameter	Particulars
(i.e. Closing date and time of Offer submission)	
Reverse Auction timeline	10-October-2022 at 13:00 Hours (the auction period shall be decided by Buyer while initiating the Reverse auction event)
Minimum Volume Quotation step	1 Certificate
Minimum Value Quotation step	Rs. 1 per Certificate

2. Offer entry session:

Sellers will submit Offers against the above auction event initiated by Buyer. At this stage at the time of Offer submission, as and when Offers are entered, the market watch window shall display the quantity information against each auction event, however, the identity of the Seller and price at which such Offers are received shall not be displayed to any other participants. Prior to 'Gate closure' the Seller shall have right to modify offered quantum or price or withdraw its Offer.

After 'Gate closure' no new Offer will be allowed to be submitted in 'PRATYAY' system.

Offer assimilation is undertaken by 'PRATYAY' system for Offers received for the auction event.

3. Illustration – 1: Ranking of Offers prior to start of auction

Consider the below Offers are submitted by different sellers during the bidding window allowed for the event

Table-1

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Date of Offer submission	Time of Offer submission (in Hours)
Seller 1	3,250	50	01.10.2022	12:10
Seller 2	2,750	100	02.10.2022	14:50
Seller 3	2,900	120	04.10.2022	16:00
Seller 4	2,500	75	05.10.2022	13:59
Seller 5	3,750	100	07.10.2022	11:10
Seller 6	3,000	180	09.10.2022	12:50
Seller 7	2,900	60	03.10.2022	10:00
Seller 8	3,000	100	06.10.2022	11:30
Seller 9	3,000	50	08.10.2022	10:00
Total		835		

It is observed that two Sellers have offered quantity at price of Rs. 2,900 per Certificate and three Sellers have offered quantity at price of Rs. 3,000 per Certificate.

Ranking prior to start of Auction session

After 'Gate closure' as per Rule-2 and Rule-3 the stack of Offer received in the auction event is prepared and all the nine Offers are stacked based on price submitted by Sellers. The 'PRATYAY' system shall display only the price of 'L-1' during the auction process and on completion of auction process, the ranked stack will be displayed.

Table-2

Participant	Price (Rs. / Certificate)	Quantity (nos.)
Seller 4	2,500	75
Seller 2	2,750	100
Seller 7	2,900	60
Seller 3	2,900	120
Seller 8	3,000	100
Seller 9	3,000	50
Seller 6	3,000	180
Seller 1	3,250	50
Seller 5	3,750	100
Total		835

According to Rule-3, the multiple Offers received at price Rs. 2,900 / Certificate are ranked based on date and time of their entry. Similarly, multiple Offers received at price Rs. 3,000 / Certificate are also ranked based on date and time of their entry.

Table-3

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
S-4	2,500	75	L-1
S-2	2,750	100	L-2
S-7	2,900	60	L-3
S-3	2,900	120	L-4
S-8	3,000	100	L-5
S-9	3,000	50	L-6
S-6	3,000	180	L-7
S-1	3,250	50	L-8
S-5	3,750	100	L-9
Total		835	

Based on Offer submission information received as Table-1 above, at price Rs. 2,900 / Certificate, the Seller S-7 is ranked as L-3 and Seller S-3 is ranked as L-4 since Seller S-7 had submitted Offer on 03.10.2022 and Seller S-3 has submitted on 04.10.2022. Similarly, the ranking for multiple Offers received at same price of Rs. 3,000 / Certificate is made based on date and time of Offer submission recorded in 'PRATYAY' software system. Thus, in the above Offer set:

Lowest priced Offer: Rs. 2,500 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Sellers S-4, S-2, S-7, S-3 and part quantum of S-8 are sufficient to meet the purchase quantum requested by Buyer.

4. Illustration-2: Revised price lesser than prevailing lowest price before start of last 10-minute deadline

After the start of Reverse auction process, when during the 30-minute auction process, modifications in price are made by Seller within 20 minutes period from start of auction session and even if the revised price submitted by the Seller is lesser than the prevailing lowest price then auction session would not be extended.

Revision initiated by Sellers:

If two Sellers S-2 and S-3 revise their Offer price, then the system will verify two parameters:

- (i) Price revision: Whether the revised price is lesser than the earlier lowest Offer price of Rs. 2,500 / Certificate to determine change in Ranking
- (ii) Time of revision: Whether the revision is made during the scheduled deadline of last 10-minute period prior to scheduled close of auction to determine if auction process is to be extended

Table-4

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Whether revised Price is lesser than earlier lowest Offer price
S-4	2,500	No Change	Not Applicable
S-2	2,750	2,450	Yes
S-3	2,900	2,800	No
S-7	2,900	No Change	Not Applicable
S-8	3,000	No Change	Not Applicable
S-9	3,000	No Change	Not Applicable
S-6	3,000	No Change	Not Applicable
S-1	3,250	No Change	Not Applicable
S-5	3,750	No Change	Not Applicable

The Trading system will capture the time at which revision in Offer price has been made by the Seller and check if any revision in Offer price is made within the last 10-minute deadline of close of auction process.

Table-5

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
Seller S-2	2,750	2,450	10 th minute	No
Seller S-4	2,500	No Change	Not Applicable	Not Applicable
Seller S-3	2,900	2,800	16 th minute	No
Seller S-7	2,900	No Change	Not Applicable	Not Applicable
Seller S-8	3,000	No Change	Not Applicable	Not Applicable
Seller S-9	3,000	No Change	Not Applicable	Not Applicable
Seller S-6	3,000	No Change	Not Applicable	Not Applicable
Seller S-1	3,250	No Change	Not Applicable	Not Applicable
Seller S-5	3,750	No Change	Not Applicable	Not Applicable

From the above table it can be observed that Seller S-2 has entered revised price at 10th minute and Seller S-3 has entered revised price at 16th minute and no other Sellers have entered revised prices. The system will then re-compute the revised ranking as under:

Table-6

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Seller S-2	2,450	100	L-1
Seller S-4	2,500	75	L-2
Seller S-3	2,800	120	L-3
Seller S-7	2,900	60	L-4
Seller S-8	3,000	100	L-5
Seller S-9	3,000	50	L-6
Seller S-6	3,000	180	L-7
Seller S-1	3,250	50	L-8
Seller S-5	3,750	100	L-9
Total		835	

Thus, the revised configuration would be as under:

Lowest priced Offer: Rs. 2,450 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Sellers S-2, S-4, S-3, S-7 and part quantity of S-8 are sufficient to meet the purchase quantum requested by Buyer. Further, from the above table, it can be observed that revision in price made by Sellers S-2 and S-3 has improved their ranking.

Since no price revisions are made during the 10-minute deadline of close of auction session, the above ranking would be frozen and results would be informed to the Buyer as per Rule-4. The Buyer would convey acceptance/rejection of Offer as per Rule-9 in 'PRATYAY' system, based on response received from Buyer in 'PRATYAY' system, the Exchange will proceed with submission of application for Offer(s) accepted by the Buyer. In case the Buyer rejects all the Offers, the same would be informed to the Sellers.

5. Illustration-3: Revised price lesser than prevailing lowest price made within last 10-minute deadline

After the start of Reverse auction process, when during the 30-minute auction process, modifications in price are made by Seller during the last 10-minute period prior to scheduled close of auction and the revised price is lesser than the prevailing lowest price then as per Rule-5 auction session would be extended by 10-minutes.

Consider a case where the same Seller S-2 revises the price in 24th minute which is within the 10-minute period prior to scheduled close of auction as under:

Table-7

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
Seller S-2	2,750	2,450	24 th minute	Yes
Seller S-4	2,500	No Change	Not Applicable	Not Applicable
Seller S-3	2,900	2,800	16 th minute	No
Seller S-7	2,900	No Change	Not Applicable	Not Applicable
Seller S-8	3,000	No Change	Not Applicable	Not Applicable
Seller S-9	3,000	No Change	Not Applicable	Not Applicable
Seller S-6	3,000	No Change	Not Applicable	Not Applicable
Seller S-1	3,250	No Change	Not Applicable	Not Applicable
Seller S-5	3,750	No Change	Not Applicable	Not Applicable

From the above table it can be observed that Seller S-2 has entered revised price at 24th minute and Seller S-3 has entered revised price at 16th minute and no other Sellers have entered revised prices. The system will then re-compute the revised ranking as under:

Table-8

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Seller S-2	2,450	100	L-1
Seller S-4	2,500	75	L-2
Seller S-3	2,800	120	L-3
Seller S-7	2,900	60	L-4
Seller S-8	3,000	100	L-5
Seller S-9	3,000	50	L-6
Seller S-6	3,000	180	L-7
Seller S-1	3,250	50	L-8
Seller S-5	3,750	100	L-9
Total		835	

Thus, the revised configuration would be as under:

Lowest priced Offer: Rs. 2,450 / Certificate

As per Rule-5, the auction session will be extended for another 10-minute session, allowing Sellers to revise their prices. In case during the first extended session Seller S-4 revised the price in 3rd minute and in the 4th minute of the new period and no other Seller revise their Offered price as under:

Table-9

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
Seller S-2	2,450	No Change	Not Applicable	Not Applicable
Seller S-4	2,500	2,450	20 th minute	No
Seller S-3	2,800	2,400	10 th minute	No
Seller S-7	2,900	No Change	Not Applicable	Not Applicable
Seller S-8	3,000	No Change	Not Applicable	Not Applicable
Seller S-9	3,000	No Change	Not Applicable	Not Applicable
Seller S-6	3,000	No Change	Not Applicable	Not Applicable
Seller S-1	3,250	No Change	Not Applicable	Not Applicable
Seller S-5	3,750	No Change	Not Applicable	Not Applicable

The system will then re-compute the revised ranking as under:

Table-10

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
S-3	2,400	120	L-1
S-2	2,450	100	L-2
S-4	2,450	75	L-3
S-7	2,900	60	L-4
S-8	3,000	100	L-5
S-9	3,000	50	L-6
S-6	3,000	180	L-7
S-1	3,250	50	L-8
S-5	3,750	100	L-9
Total		835	

Then, the revised configuration would be as under:

Lowest priced Offer: Rs. 2,400 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Sellers S-3, S-2, S-4, S-7 and part quantity of S-8 are sufficient to meet the purchase quantum requested by Buyer.

Since no price revision were made during the 10-minute deadline of close of auction session, the above ranking would be frozen and results would be informed to the Buyer as per Rule 4. The Buyer would convey acceptance/rejection of Offers as per Rule-9 in the 'PRATYAY' system, based on response received from Buyer in 'PRATYAY' system, the Exchange will proceed with submission of application for Offer(s) accepted by the Buyer.

In case the Buyer rejects all the Offer(s), the same would be informed to the Seller and auction event will be closed.

6. Illustration-4: Revised quantum during the reverse auction

After the start of Reverse auction process, when during the 30-minute auction process, modifications in Offered quantum is made by any Seller then the same would be considered as final Offered quantum as per RULE-4 during the auction event.

Consider the case where the Offered quantum by different Sellers at the start of Reverse auction is as under:

Table-11

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Seller S-4	2,500	75	L-1
Seller S-2	2,750	100	L-2
Seller S-7	2,900	60	L-3
Seller S-3	2,900	120	L-4
Seller S-8	3,000	100	L-5
Seller S-9	3,000	50	L-6
Seller S-6	3,000	180	L-7
Seller S-1	3,250	50	L-8
Seller S-5	3,750	100	L-9
Total		835	

In the above table the lowest priced Offer is: Rs. 2,500 / Certificate

During the auction process Sellers S-4, S-2, S-7, S-3, S-8 and S-6 propose to increase their Offered quantum, then as per Rule-4 the system will verify whether simultaneous reduction in Offered price has been made by Seller, in case no reduction in Offered price is made by such Sellers then 'PRATYAY' system will not allow increase in Offer quantum to such Seller

Table-12

Participant	Price (Rs. / Certificate)	Earlier Offered quantum (Nos of REC)	Revised quantum (Nos of REC)	Whether Sellers have revised Offer price (Yes/No)	Quantum to be considered for auction session
S-4	2,500	75	80	No	75
S-2	2,750	100	105	No	100
S-7	2,900	60	75	No	60
S-3	2,900	120	125	No	120
S-8	3,000	100	101	No	100
S-6	3,000	180	181	No	180
S-9	3,000	50	50 (i.e., no revision)	Not Applicable	50
S-1	3,250	50	50 (i.e., no revision)	Not Applicable	50

Participant	Price (Rs. / Certificate)	Earlier Offered quantum (Nos of REC)	Revised quantum (Nos of REC)	Whether Sellers have revised Offer price (Yes/No)	Quantum to be considered for auction session
S-5	3,750	100	100 (i.e., no revision)	Not Applicable	100
Total		835	635		835

Since in the above case the Sellers did not reduce their Offer price, the 'PRATYAY' has not allowed Sellers to revise their Offer quantum. However, when reduction in Offered price is made by such Sellers then 'PRATYAY' system will allow increase in Offered quantum.

Table-13

Participant	Price (Rs. / Certificate)	Earlier Offer quantum (Nos of REC)	Revised price (Rs. / certificate)	Whether revised price is lesser than earlier price of Seller	Price to be considered for auction process (Rs. / certificate)
S-4	2,500	75	2495	Yes	2,495
S-2	2,750	100	2,695	Yes	2,695
S-7	2,900	60	2,899	Yes	2,899
S-3	2,900	120	2,899	Yes	2,899
S-8	3,000	100	2,999	Yes	2,999
S-6	3,000	180	2,999	Yes	2,999
S-9	3,000	50	No change	Not Applicable	3,000
S-1	3,250	50	No change	Not Applicable	3,250
S-5	3,750	100	No change	Not Applicable	3,750
Total		835			

Such entities that have reduced their Offer price will be allowed by 'PRATYAY' system to increase their Offer quantum and the increased quantum will then be considered for auction process, thus Sellers S-4, S-2, S-7, S-3, S-8 and S-6 are allowed to increase their Offer quantum.

Table-14

Participant	Price (Rs. / Certificate)	Earlier Offered quantum (Nos of REC)	Revised Quantum (Nos of REC)
S-4	2,495	75	80
S-2	2,695	100	105
S-7	2,899	60	75
S-3	2,899	120	125
S-8	2,999	100	101
S-6	2,999	180	181
S-9	3,000	50	50 (i.e., no change)
S-1	3,250	50	50 (i.e., no change)
S-5	3,750	100	100 (i.e., no change)
Total		835	

The above revised Offer price and quantum (Nos of REC) of different Sellers would be considered for auction process.

As per Rule-7 the revised Offer quantum would be considered by 'PRATYAY' system to prepare new ranking as under:

Table-15

Participant	Price (Rs. / certificate)	Revised quantum (Nos of REC)	Ranking
S-4	2,495	80	L-1
S-2	2,695	105	L-2
S-7	2,899	75	L-3
S-3	2,899	125	L-4
S-8	2,999	101	L-5
S-6	2,999	181	L-6
S-9	3,000	50	L-7
S-1	3,250	50	L-8
S-5	3,750	100	L-9
Total		867	

It is observed that with revision in Offered quantum made by few Sellers, the cumulative quantum available in auction process has increased from earlier quantum of 835 Nos of REC to 867 Nos of REC. The above revised cumulative quantum of 867 Nos of REC offered by different Sellers would be considered for auction process.

The increased quantum shall be considered as final quantum, and such Seller shall have the opportunity to further increase its Offered quantum prior to completion of the auction process.

Procedure for redemption of Certificates Reverse Auction

STEP 1: The Power Exchange will register itself with the Central Agency on REC web portal. Already registered Power exchange shall deem to be registered.

STEP 2: The Eligible Entity shall place for dealing of renewable energy certificates, on any Power Exchange authorized to deal in renewable energy certificates as per REC Regulations & amendment thereof. The total quantity of Certificates placed for dealing on the Power Exchange(s) by the eligible entity shall be less than or equal to the total quantity of valid Certificates held by the eligible entity as per the records of the Central Agency.

Step 3: After getting Buyer requisition for Reverse auction. Power Exchanges(s) will issue circular on their sites for detail information to sellers.

Step 4: During IPO stage exchange received bids from seller side for reverse auction. After completion of IPO stage Exchange will send verification of the quantity of valid RECs available with concerned entity to Central agency.

Step 5: The Central Agency shall send a report to Power Exchange(s) confirming the availability of the valid RECs with the eligible entity. In case the maximum bid volume placed for dealing in the Power Exchange(s) exceeds the quantity of valid RECs held by the eligible entity as per the records of the Central Agency then exchange will not allow that seller to participate in further auction process. In case the bid volume placed for dealing in the power exchange lower the quantity of valid RECs held by eligible entity as per the records of the central agency then exchange will consider only offered quantity by seller.

Step 6: Before start of the auction session Central agency will provide report to Exchange confirming the valid RECs with the Seller. Accordingly, exchange will consider bids and qualify the Seller to participate in the auction session. Same seller should be not allowed to sell RECs to other exchange or Trader in the same time period to avoid mismatch situation for Registry.

Step 7: After completion of auction session bids accordingly sent to Buyer for acceptance. Once buyer provides their acceptance or rejection accordingly exchange will share information with central agency.

Step 8: The Power Exchange(s) will submit monthly trading report, regarding the exchange of REC(s) to the Commission with a copy to the Central Agency before 15th of next month

PXIL REC Single Sided Forward Auction Contract

a. REC Single Sided Forward Auction Contract

Type of Market	Renewable Energy Certificate Single Sided Forward Auction Contract
Trading System	PRATYAY
Type of Contract (Optional)	a. Solar Certificate b. Hydro Certificate c. Non-Solar Certificate
Bidding and Auction process	Forward Auction: Seller to specify its requirement in terms of quantum (nos.) of REC to be sold. Buyer to submit their Offers providing quantum (nos.) and Price in Rs. / REC against the requisition made by Seller in the Auction window. The auction process shall be undertaken as two (2) stage process i.e., the Initial Price Offer (IPO) stage and Forward Auction
Price discovery and Trading methodology	Forward Auction procedure for Seller's requisition as per Annexure V of Business Rules
Auction Timings*	As notified by Exchange from time to time for single or multiple days in one or more days in advance
Floor Price (Optional)	Price in Rs. / REC above which no Offer can be submitted by a Buyer
Minimum Bid Volume*	1 Certificate (Equivalent to 1 MWh of Energy injected) for each type of Contract
Minimum Volume Quotation Step*	1 Certificate (equivalent to 1MWh) or as decided by Exchange to meet Seller's requirement
Minimum Value Quotation Step*	Rs. 1 per Certificate
Settlement Price(s)	Traded Price * Quantity accepted by Seller The traded price shall be the prices discovered during the Forward auction session applicable for Buyer's bid quantum
Pay-in*	All Pay-in will be done to the Exchange by 11:00 hrs
Pay-out*	After 11:00 hrs. - all pay-outs will be done on next day of conclusion of transaction
Transaction fees*	Transaction fee payable to the Exchange by the Buyer and Seller shall be informed through Circular

*The Exchange reserves the right to amend these parameters by issuing a Circular from time to time

2.Procedure for conducting Forward Auction session

2.1. Expression of Interest (EOI)

Seller to create requisition for conducting forward Auction wherein it has to provide following information – Quantum (Nos) of REC, Minimum quantum (Nos of REC) & Types of Certificates to be Offered by Buyer and Floor price (Rs/certificate) (Optional) above which no Buyer are eligible to participate in forward Auction.

The buyer will submit their competitive Offers providing Quantum and Offer price

Forward Auction event parameter	Particulars
Quantum requisitioned	_____ Nos of REC.
Type of Certificate (Optional)	Solar / Non-Solar / any other type as approved by Commission from time to time
Forward Price (Optional)	Rs. _____ / Certificate (1 Certificate is equivalent to 1 MWh of Energy)
Minimum quantum to be offered by buyer for participation	_____ Nos of REC.
Opening date and time of Offer submission	Start date and time for Offer submission
Gate closure (i.e., Closing date and time of Offer submission)	Last date and time for Offer submission
forward Auction timeline	Start date and time

2.2. Initial Price Offer

The buyer will submit their Offers (Quantum (Nos of REC) and Price) against the requisition created by seller within the timelines applicable for each event.

Forward Auction event parameter	Particulars
Opening date and time of submitted Offers	Start date and time for Offer submission
Gate closure (i.e., Closing date and time of submitted Offer)	Last date and time for Offer submission
Forward Auction timeline	Start date and time

The 'PRATYAY' system will analyze the prices Offered by different Buyer and rank them. When two or more Offers are received at same price, the 'PRATYAY' system will rank the Offer based on time priority i.e., date and time of submitted Offers. The highest cost Offer would be designated 'H-1', followed by 'H-2' and so on till all the Offers are listed.

All Offers received below floor price will be rejected and they will not be allowed to participate in forward Auction event.

2.3. Forward Auction

During the auction session only prevailing highest quoted price (H1) will be displayed to the market. The Forward Auction shall continue for period of 2 hours (120 min) or as may be specified by the Exchange from time to time. The Exchange shall also from time to time specify the duration before the scheduled closure of Forward Auction during which if there is a change in the Highest quoted price (H1) the Forward Auction would get auto extended by prescribed duration, e.g., if during the last 10 (ten) minutes before the scheduled close time of forward Auction, if an Offer is modified which is Higher than the prevalent H1, the close time of Forward Auction will be automatically extended by 10(ten) minutes from the time of the last price Offer modified. This process of auto extension will continue till there is a period of 10 (ten) minutes during which no price Offer is modified which is Higher than then prevailing H1.

The buyer will be able to increase their Offered price by Rs. 1/Certificate or multiples thereof and increase their Offered quantum by 1 Certificate or multiples thereof as may be specified by Exchange from time to time.

On closure of the forward auction process, all Offers will be ranked in descending order of Offered prices.

Forward Auction event parameter	Particulars
Minimum Value Quotation step	Rs. 1 per Certificate, or as decided by Exchange
Minimum Volume Quotation Step	1 Certificate

Forward Auction event parameter	Particulars
Forward auction duration	2 Hours or as defined by the Exchange
Deadline period prior to close of Forward auction duration	10 minutes or as defined by the Exchange (In case Offered price is modified by any buyer during the deadline period resulting in change in Highest buying price, then the Forward auction would be extended for another duration of 10 minutes from the time of modification)
seller acceptance of Offer (s)	The cut-off date and time prior to which the Seller has to submit acceptance of Offer. Non submission of acceptance of Offer prior to cut-off period will result in cancellation of the Forward Auction event

2.4. Trade acceptance

Seller shall communicate its acceptance / partial acceptance / rejection of the Offers in 'PRATYAY' software system within the cut-off period specified by Exchange applicable to such Forward auction event.

Forward Auction event parameter	Particulars
Seller acceptance of Offer (s)	The cut-off date and time prior to which the seller has to submit acceptance of Offer(s)

The seller shall accept and procure Certificates from buyer in the order of their ranking, such Offers not accepted by seller will stand rejected.

Non submission of acceptance of Offer prior to cut-off period will result in cancellation of the Forward Auction event

2. Application for Redemption of Certificates

The Exchange shall submit application for redemption only for such Offers that have been accepted by seller. Application for redemption shall be submitted to the REC Registry as per the 'Procedure for Redemption of Renewable Energy Certificate' or any other applicable procedure subject to receipt of adequate margins by Exchange. The application shall be submitted on best effort on the first available date. The quantum approved by REC Registry

shall be deemed to have been accepted by Buyer and Seller including variation between traded quantity and quantity as approved by Registry.

3. Matching Rules for conducting Forward auction

The matching Rules for conducting Forward auction shall be as under. PXIL shall reserve the right to amend the matching rules and inform the same to market participants by issuance of Circular from time to time.

3.1. Forward Auction

The auction step is initiated by creation of requisition by Seller in 'PRATYAY' software system, an 'Expression of Interest' stage, after receipt of Offers in Initial Price Offer (IPO) stage, Forward Auction stage is initiated. The principles of conduction Forward Auction process are:

- a. For every Member/Client placing an Offer, the quoted price-volume combination would be held constant till the next quoted price-volume combination, if provided. Thus, a Buy quantity shall be assumed to remain constant between consecutive price points.
- b. Stacking of Offers would have price-time priority. In case of bids with same Offer price, stack would be prepared based on time priority i.e. allocation will be made to the Member/Client who has submitted earliest Offer. (Please refer Illustration 1 as provided later for better understanding on the matching priority)
- c. Trade acceptance: On conclusion of Forward auction, the seller will have right to accept all, or any Offer(s) based on ranking. Such Offer(s) not accepted by seller will stand rejected
- d. Application for redemption: The Exchange shall submit application for redemption only for such Offers that have been accepted by Seller

3.2. Rules for stacking of Offers in IPO and Forward Auction stage

The Rules for stacking of Offers would go through the following steps:

- a. Rule-1: On announcement of 'Gate closure', all such Offers which have price higher than or equal to floor price are included for Forward auction process. The submitted Offers are summed up at each price tick to arrive at aggregate quantum per price tick.

Further, no Buyer shall be allowed to place their bids at a quantum less than the minimum bid quantum during the IPO stage itself and in case any Buyer submits an Offer which is less than the prescribed minimum bid quantum, then such Offer shall not be accepted by 'PRATYAY' system.

- b. Rule-2: The stack of Offers based on Price quoted by Buyer would be prepared. Highest cost buyer would be designated H-1, followed by H-2, and so on till all the Buy offers are rated thus, ranking shall be in decreasing order of their Offered price. If two Buyer submit Offers at same price, the Offer of such Buyer who had submitted the earliest Offer would be ranked near to the Highest priced Offer and the Offer of such Buyer who has submitted Offer later would be ranked further from the Higher priced Offer
- c. Rule-3: At the start of the auction process, the Offer stack from 'H-1' to 'H-n' would be prepared and price of 'H-1' would be displayed for all to view. If two Buyer submit same price, then time of Offer submission would be considered i.e. entity submitting offer early shall be ranked near to 'H-1'. if at the Highest Offered price there are multiple Buyer, then the Buyer that had submitted the Offer earliest during the IPO stage will be ranked as 'H-1', the Buyer that has submitted Offer at price ranked as 'H-1' but time of submission is later than 'H-1' then such Seller would be ranked 'H-2', as provided at Rule-2 to above, time based criteria shall be applicable to all Offers that are submitted at same price.
- d. Rule-4: Forward auction process commences for 2-hour period, or as defined by the Exchange for the event, wherein all Buyer are allowed to revise their Offer price, with every modification in price the new stack of Offers would be prepared and revised price of 'H-1' would be displayed for all to view. The Buyer will not be allowed to increase their Offered quantum with-out simultaneous increase in Offer price. The increment in Offer price during Forward auction period or the extended session will enable Buyer to increase their Offered quantum. When no revision in displayed price of 'H-1' is visible within 10-minutes prior to scheduled close of auction window no extension in auction session will be made. On completion of 2-hour window the auction results will be declared capturing the last modified price entered by each Buyer.
- e. Rule-5: 10-minute prior to scheduled close of auction window, when a revised Offer is submitted which is Higher than the Highest prevailing price Offer i.e. 'H-1' at that instant, the close time of auction window will be automatically extended by 10-minute or a period as defined by Exchange, from the time the new 'H-1' Offer was submitted by any Buyer.

- f. Rule-6: The process of auto extension will continue till there is a period of 10 (ten) minutes during which no price is received which is Higher than the prevailing Highest price Offer.
 - i. Any revision in price within 10-minutes prior to scheduled close of auction window but if the revised price is not Higher than the prevailing Highest price then no extension would be provided.
 - ii. The auto extension shall be based on number of extensions prescribed by Seller at the time of creation of Forward auction event. The 'PRATYAY' system shall enable auto extension up to the prescribed number if there are revisions in 'H-1' price. In case no revision in 'H-1' price occurs in any extended session then 'PRATYAY' system shall conclude the auction session.

- g. Rule-7: If any Buyer increase the Offered quantum as per Rule-4 above, then the revised quantum would be considered as final Offered quantum for the auction event.

3.3. Trade allocation on completion of auction process

- a. Rule-8: The selection of Buyer shall be on bucket filling basis as per their ranking i.e., capacity quoted by 'H-1' Seller at 'H-1' price shall be allocated first, then capacity quoted by next Highest bidder (called the 'H-2' bidder) at price quoted by 'H-2' Buyer shall be allocated and so on, till the purchase quantum provided in the Forward auction event is exhausted.

- b. Rule-9: The result shall declare the price and quantum (Nos of certificate) cleared in the auction process. After declaration of auction result, the Seller will have the following options:
 - i. Accept All Offers identified under bucket filling process upto the quantum specified for purchase

 - ii. Accept any number of Offers whose cumulative quantum may be lesser than quantum specified for purchase based on ranking provided in 'PRATYAY' software system

 - iii. Reject all the Offers and not purchase any quantum from the auction event

 - iv. Seller shall communicate the above in the 'PRATYAY' software system within the timeline (after declaration of auction rankings for the current event) or as per

timeline specified by the Exchange applicable to such Forward auction event from time to time

Illustration of matching in Forward Auction

1. The Seller will initiate a Forward auction by entering the following information in 'PRATYAY' trading system:

Forward Auction event parameter	Particulars
Quantum (in nos.)	400
Type of Certificate	Solar
Floor Price (Below which Buyer's Offer will be rejected in IPO stage)	Rs. 4,000 / Certificate
Minimum quantum to be Offered by Seller for participation	50 nos.
Opening date and time of Offer submission	Start date: 01-October-2022 at 10:00 Hours
Gate closure (i.e. Closing date and time of Offer submission)	Last date: 10-October-2022 at 12:00 Hours
Forward Auction timeline	10-October-2022 at 13:00 Hours (the auction period shall be decided by seller while initiating the Forward auction event)
Minimum Volume Quotation step	1 Certificate
Minimum Value Quotation step	Rs. 1 per Certificate

2. Offer entry session:

Buyer will submit Offers against the above auction event initiated by Seller. At this stage at the time of Offer submission, as and when offers are entered, the market watch window shall display the quantity information against each auction event, however, the identity of the Buyer and price at which such Offers are received shall not be displayed to any other participants. Prior to 'Gate closure' the Buyer shall have right to modify offered quantum or price or withdraw its Offer.

After 'Gate closure' no new Offer will be allowed to be submitted in 'PRATYAY' system.

Offer assimilation is undertaken by 'PRATYAY' system for Offers received for the auction event.

3. Illustration – 1: Ranking of Offers prior to start of auction

Consider the below Offers are submitted by different Buyer during the bidding window allowed for the event

Table-1

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Date of Offer submission	Time of Offer submission (in Hours)
Buyer 1	5,250	50	01.10.2022	12:10
Buyer 2	4,750	100	02.10.2022	14:50
Buyer 3	4,900	120	04.10.2022	16:00
Buyer 4	4,500	75	05.10.2022	13:59
Buyer 5	5,750	100	07.10.2022	11:10
Buyer 6	5,000	180	09.10.2022	12:50
Buyer 7	4,900	60	03.10.2022	10:00
Buyer 8	5,000	100	06.10.2022	11:30
Buyer 9	5,000	50	08.10.2022	10:00
Total		835		

It is observed that two Buyer have offered quantity at price of Rs. 4,900 per Certificate and three Buyer have offered quantity at price of Rs. 5,000 per Certificate.

Ranking prior to start of Auction session

After 'Gate closure' as per Rule-2 and Rule-3 the stack of Offer received in the auction event is prepared and all the nine Offers are stacked based on price submitted by Buyer. The 'PRATYAY' system shall display only the price of 'H-1' during the auction process and on completion of auction process, the ranked stack will be displayed.

Table-2

Participant	Price (Rs. / Certificate)	Quantity (nos.)
Buyer 5	5750	100
Buyer 1	5250	50
Buyer 8	5000	100
Buyer 9	5000	50
Buyer 6	5,000	180
Buyer 7	4900	60
Buyer 3	4900	120
Buyer 2	4750	100
Buyer 4	4500	75
Total		835

According to Rule-3, the multiple Offers received at price Rs. 4,900 / Certificate are ranked based on date and time of their entry. Similarly, multiple Offers received at price Rs. 5,000 / Certificate are also ranked based on date and time of their entry.

Table-3

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
B-5	5750	100	H-1
B-1	5250	50	H-2
B-8	5000	100	H-3
B-9	5000	50	H-4
B-6	5,000	180	H-5
B-7	4900	60	H-6
B-3	4900	120	H-7
B-2	4750	100	H-8
B-4	4500	75	H-9
Total		835	

Based on Offer submission information received as Table-1 above, at price Rs. 4,900 / Certificate, the Buyer B-7 is ranked as H-6 and Seller B-3 is ranked as H-7 since Buyer B-7 had submitted Offer on 03.10.2022 and Buyer B-3 has submitted on 04.10.2022. Similarly, the ranking for multiple Offers received at same price of Rs. 4900 / Certificate is made based on date and time of Offer submission recorded in 'PRATYAY' software system. Thus, in the above Offer set:

Highest priced Offer: Rs. 5750 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Buyer B-5, B-1, B-8, B-9 and part quantum of B-6 are sufficient to meet the purchase quantum requested by Seller.

4. Illustration-2: Revised price Higher than prevailing Highest price before start of last 10-minute deadline

After the start of Forward auction process, when during the 30-minute auction process, modifications in price are made by Buyer within 20 minutes period from start of auction session and even if the revised price submitted by the Buyer is Higher than the prevailing Highest price then auction session would not be extended.

Revision initiated by Buyer:

If two Buyer B-1 and B-8 revise their Offer price, then the system will verify two parameters:

- (i) Price revision: Whether the revised price is Higher than the earlier Highest Offer price of Rs. 5750/ Certificate to determine change in Ranking
- (ii) Time of revision: Whether the revision is made during the scheduled deadline of last 10-minute period prior to scheduled close of auction to determine if auction process is to be extended

Table-4

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Whether revised Price is Higher than earlier Highest Offer price
B-5	5750	No Change	Not Applicable
B-1	5250	5850	Yes
B-8	5000	5300	No
B-9	5000	No Change	Not Applicable
B-6	5,000	No Change	Not Applicable
B-7	4900	No Change	Not Applicable
B-3	4900	No Change	Not Applicable
B-2	4750	No Change	Not Applicable
B-4	4500	No Change	Not Applicable

The Trading system will capture the time at which revision in Offer price has been made by the Buyer and check if any revision in Offer price is made within the last 10-minute deadline of close of auction process.

Table-5

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
B-1	5250	5850	10 th minute	No
B-5	5750	No Change	Not Applicable	Not Applicable
B-8	5000	5300	16 th minute	No
B-9	5000	No Change	Not Applicable	Not Applicable
B-6	5,000	No Change	Not Applicable	Not Applicable
B-7	4900	No Change	Not Applicable	Not Applicable
B-3	4900	No Change	Not Applicable	Not Applicable
B-2	4750	No Change	Not Applicable	Not Applicable
B-4	4500	No Change	Not Applicable	Not Applicable

From the above table it can be observed that Buyer B-1 has entered revised price at 10th minute and Buyer B-8 has entered revised price at 16th minute and no other Buyer have entered revised prices. The system will then re-compute the revised ranking as under:

Table-6

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
B-1	5850	50	H-1
B-5	5750	100	H-2
B-8	5000	100	H-3
B-9	5000	50	H-4

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
B-6	5,000	180	H-5
B-7	4900	60	H-6
B-3	4900	120	H-7
B-2	4750	100	H-8
B-4	4500	75	H-9
Total		835	

Thus, the revised configuration would be as under:

Highest priced Offer: Rs. 5850 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Buyer B-1, B-5, B-8, B-9 and part quantity of B-6 are sufficient to meet the purchase quantum requested by Seller. Further, from the above table, it can be observed that revision in price made by Buyer B-1 and B-8 has improved their ranking.

Since no price revisions are made during the 10-minute deadline of close of auction session, the above ranking would be freezed and results would be informed to the Seller as per Rule-4. The Seller would convey acceptance/rejection of Offer as per Rule-9 in 'PRATYAY' system, based on response received from Seller in 'PRATYAY' system, the Exchange will proceed with submission of application for Offer(s) accepted by the Seller. In case the Seller rejects all the Offers, the same would be informed to the Buyer.

5. Illustration-3: Revised price higher than prevailing Highest price made within last 10-minute deadline

After the start of Forward auction process, when during the 30-minute auction process, modifications in price are made by buyer during the last 10-minute period prior to scheduled close of auction and the revised price is higher than the prevailing highest price then as per Rule-5 auction session would be extended by 10-minutes.

Consider a case where the same Buyer B-1 revises the price in 24th minute which is within the 10-minute period prior to scheduled close of auction as under:

Table-7

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
B-1	5250	5850	24 th minute	Yes
B-5	5750	No Change	Not Applicable	Not Applicable
B-8	5000	5300	16 th minute	No
B-9	5000	No Change	Not Applicable	Not Applicable
B-6	5,000	No Change	Not Applicable	Not Applicable
B-7	4900	No Change	Not Applicable	Not Applicable
B-3	4900	No Change	Not Applicable	Not Applicable
B-2	4750	No Change	Not Applicable	Not Applicable
B-4	4500	No Change	Not Applicable	Not Applicable

From the above table it can be observed that Buyer B-1 has entered revised price at 24th minute and Buyer B-8 has entered revised price at 16th minute and no other Buyers have entered revised prices. The system will then re-compute the revised ranking as under:

Table-8

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
B-1	5850	50	H-1
B-5	5750	100	H-2
B-8	5000	100	H-3
B-9	5000	50	H-4
B-6	5,000	180	H-5
B-7	4900	60	H-6
B-3	4900	120	H-7
B-2	4750	100	H-8
B-4	4500	75	H-9
Total		835	

Thus, the revised configuration would be as under:

Highest priced Offer: Rs. 5,850 / Certificate

As per Rule-5, the auction session will be extended for another 10-minute session, allowing Buyer to revise their prices. In case during the first extended session Buyer B-5 revised the price in 3rd minute and B-6 revised in the 4th minute of the new period and no other Buyer revise their Offered price as under:

Table-9

Participant	Earlier Price (Rs. / Certificate)	Revised Price if any (Rs. / Certificate)	Time at which revision is made after commencement of auction process	Whether the revision is made within the 10-minute deadline of close of auction
B-1	5850	No change	Not Applicable	Not Applicable
B-5	5750	5875	3 rd minute	Yes
B-8	5000	No Change	Not Applicable	Not Applicable
B-9	5000	No Change	Not Applicable	Not Applicable
B-6	5,000	5200	4 th minute	Yes
B-7	4900	No Change	Not Applicable	Not Applicable
B-3	4900	No Change	Not Applicable	Not Applicable
B-2	4750	No Change	Not Applicable	Not Applicable
B-4	4500	No Change	Not Applicable	Not Applicable

The system will then re-compute the revised ranking as under:

Table-10

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Buyer B-5	5875	100	H-1
Buyer B-1	5850	50	H-2
Buyer B-6	5200	180	H-3
Buyer B-8	5000	100	H-4
Buyer B-9	5000	50	H-5
Buyer B-7	4900	60	H-6
Buyer B-3	4900	120	H-7
Buyer B-2	4750	100	H-8
Buyer B-4	4500	75	H-9
Total		835	

Then, the revised configuration would be as under:

Highest priced Offer: Rs. 5875 / Certificate

Quantum fulfillment: Based on the ranking of Offers, the quantum offered by Buyer B-5, B-1, B-6, and part quantity of B-8 are sufficient to meet the purchase quantum requested by Seller.

Since no price revision were made during the 10-minute deadline of close of auction session, the above ranking would be frozen and results would be informed to the Seller as per Rule 4. The Seller would convey acceptance/rejection of Offers as per Rule-9 in the 'PRATYAY' system, based on response received from Seller in 'PRATYAY' system, the Exchange will proceed with submission of application for Offer(s) accepted by the Seller. In case the Seller rejects all the Offer(s), the same would be informed to the Buyer and auction event will be closed.

6. Illustration-4: Revision in the quantum offered by Buyer during forward auction

After the start of Forward auction process, when during the 30-minute auction process, modifications in Offered quantum is made by any Buyer then the same would be considered as final Offered quantum as per RULE-4 during the auction event.

Consider the case where the Offered quantum by different Buyer at the start of Forward auction is as under:

Table-11

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Buyer B-5	5750	100	H-1
Buyer B-1	5250	50	H-2
Buyer B-8	5000	100	H-3
Buyer B-9	5000	50	H-4
Buyer B-6	5,000	180	H-5
Buyer B-7	4900	60	H-6

Participant	Price (Rs. / Certificate)	Quantity (nos.)	Ranking
Buyer B-3	4900	120	H-7
Buyer B-2	4750	100	H-8
Buyer B-4	4500	75	H-9
Total		835	

In the above table the Highest priced Offer is: Rs. 5750 / Certificate

During the auction process Buyer B-5, B-1, B-8, B-9, B-6 and B-7 propose to increase their Offered quantum, then as per Rule-4 the system will verify whether simultaneous increment in Offered price has been made by Buyer, in case no increment in Offered price is made by such Buyer then 'PRATYAY' system will not allow increase in Offer quantum to such Buyer.

Table-12

Participant	Price (Rs. / Certificate)	Earlier Offered quantum (Nos of REC)	Revised quantum (Nos of REC)	Whether Buyer have revised Offer price (Yes/No)	Quantum (Nos) to be considered for auction session
B-5	5750	100	101	No	100
B-1	5250	50	60	No	50
B-8	5000	100	105	No	100
B-9	5000	50	55	No	50
B-6	5,000	180	185	No	180
B-7	4900	60	67	No	60
B-3	4900	120	120 (i.e., no revision)	Not Applicable	120
B-2	4750	100	100 (i.e., no revision)	Not Applicable	100
B-4	4500	75	75 (i.e., no revision)	Not Applicable	75
Total		835	868		835

Since in the above case the Buyer did not increase their Offer price, the 'PRATYAY' has not allowed Buyer to revise their Offer quantum. However, when revision in Offered price is made by such Buyer then 'PRATYAY' system will allow increase in Offered quantum.

Table-13

Participant	Price (Rs. / Certificate)	Earlier Offer quantum (Nos of REC)	Revised price (Rs. / certificate)	Whether revised price is Higher than earlier price of Buyer	Price to be considered for auction process (Rs. / certificate)
B-5	5750	100	5850	Yes	5850
B-1	5250	50	5450	Yes	5450
B-8	5000	100	5200	Yes	5200
B-9	5000	50	5150	Yes	5150
B-6	5,000	180	5050	Yes	5050
B-7	4900	60	5075	Yes	5075
B-3	4900	120	No change	Not Applicable	4900
B-2	4750	100	No change	Not Applicable	4750

B-4	4500	75	No change	Not Applicable	4500
Total		835			

Such entities that have increased their Offer price will be allowed by 'PRATYAY' system to increase their Offer quantum and the increased quantum will then be considered for auction process, thus Buyer B-5, B-1, B-8, B-9, B-6 and B-7 are allowed to increase their Offer quantum.

Table-14

Participant	Price (Rs. / Certificate)	Earlier Offered quantum (Nos of REC)	Revised Quantum (Nos of REC)
B-5	5850	100	101
B-1	5450	50	60
B-8	5200	100	105
B-9	5150	50	55
B-6	5050	180	185
B-7	5075	60	67
B-3	4900	120	120 (i.e., no change)
B-2	4750	100	100 (i.e., no change)
B-4	4500	75	75 (i.e., no change)
Total		835	

The above revised Offer price and quantum (Nos of REC) of different Buyer would be considered for auction process.

As per Rule-7 the revised Offer quantum would be considered by 'PRATAY' system to prepare new ranking as under:

Table-15

Participant	Price (Rs. / certificate)	Revised quantum (Nos of REC)	Ranking
B-5	5850	101	H-1
B-1	5450	60	H-2
B-8	5200	105	H-3
B-9	5150	55	H-4
B-6	5050	185	H-5
B-7	5075	67	H-6
B-3	4900	120	H-7
B-2	4750	100	H-8
B-4	4500	75	H-9
Total		868	

It is observed that with revision in Offered quantum made by few Buyers, the cumulative quantum available in auction process has increased from earlier quantum of 835 Nos of REC to 868 Nos of REC. The above revised cumulative quantum of 868 Nos of REC offered by different Buyer would be considered for auction process.

The increased quantum shall be considered as final quantum, and such Buyer shall have the opportunity to further increase its Offered quantum prior to completion of the auction process.

Procedure for redemption of Certificates Forward Auction

STEP 1: The Power Exchange will register itself with the Central Agency on REC web portal. Already registered Power exchange shall deem to be registered.

STEP 2: The Eligible Entity shall place for dealing of renewable energy certificates, on any Power Exchange authorized to deal in renewable energy certificates as per REC Regulations & amendment thereof. The total quantity of Certificates placed for dealing on the Power Exchange(s) by the eligible entity shall be less than or equal to the total quantity of valid Certificates held by the eligible entity as per the records of the Central Agency.

Step 3: After getting Seller requisition for Forward auction Power Exchanges(s) will issue circular on their sites for detail information to Buyer. Power exchange will inform to Central agency that they should block the same number of RECs requested for trading from seller side till auction session completed.

Step 4: During IPO stage exchange received bids from Buyer side for Forward auction. Exchange will validate bids with seller's requirement and qualify the buyers for forward auction process.

Step 5: Before start of the Forward auction Exchange should request The Central Agency for a report to confirming the availability of the valid RECs with the Seller. In case the maximum bid volume placed for dealing in the Power Exchange(s) lower or equal to the quantity of valid RECs held by the Seller as per the records of the Central Agency then exchange will go ahead with auction process. In case the maximum bid volume placed for dealing in the Power Exchange(s) exceeds the quantity of valid RECs held by the Seller as per the records of the Central Agency then exchange will penalise the seller.

Step 6: Once received report from the central agency power exchange will run the Forward auction for buyers and at the end of auction will declare the results.

Step 7: After completion of auction session Results will be sent to Seller for acceptance or rejection. Once received acceptance from the seller exchange will share the same information with the Central agency.

Step 8 : The Power Exchange(s) will submit monthly trading report, regarding the exchange of REC(s) to the Commission with a copy to the Central Agency before 15th of next month.

Bilateral REC under Continuous Matching Mechanism

- In REC trading session of products with Continuous Matching methodology, the participants shall submit Orders on a continuous basis during the trading period. The Order will be matched on a continuous basis with price-time priority.
- Without prejudice to the generality of the above, in the Continuous Trading sessions, Buyers and Sellers will enter their Orders and the Orders will be matched as per the Price, Quantity and Time of Order.

Type of Market	Renewable Energy Certificate Bilateral Trading
Trading System	PRATYAY
Type of Contract (Optional)	a. Solar Certificate b. Hydro Certificate c. Non-Solar Certificate
Bidding and Auction Timing	Continuous Bids placement ----- Timing of this Product should be 12 Pm to 2 Pm.
Price discovery and Trading methodology	Continuous matching as per Annexure V of Business Rules
Auction Timings*	As notified by Exchange from time to time for single or multiple days in one or more days in advance
Minimum Bid Volume*	1 Certificate (Equivalent to 1 MWh of Energy injected) for each type of Contract
Minimum Volume Quotation Step*	1 Certificate (equivalent to 1MWh) or as decided by Exchange to meet Seller's requirement
Minimum Value Quotation Step*	Rs. 1 per Certificate
Settlement Price(s)	Traded Price * Quantity Cleared
Pay-in*	All Pay-in will be done to the Exchange by 11:00 hrs
Pay-out*	After 11:00 hrs. - all pay-outs will be done on next day of conclusion of transaction
Transaction fees*	Transaction fee payable to the Exchange by the Buyer and Seller shall be informed through Circular

Procedure for Continuous REC trading

STEP 1: The Exchanges register itself with the Central Agency on REC web portal.

STEP 2: The eligible entity (seller) will inform, in advance, to the Central Agency about the number of Certificates intended to be sold through Exchange Between 10 Am to 12 Pm. The eligible entities may apply online on any day of every month and mention the quantity of RECs which they want to sell through Exchange.

- **12:00 to 12:30:** Exchange will submit quantity received from Seller for verification and blocking.

STEP 3: 12:30 to 13:00

The Central Agency will check the trade applications. The cumulative quantity of Certificates placed for dealing by the Exchange of an eligible entity should be less than or equal to the total quantity of valid Certificates blocked by the eligible entity as per the records of the Central Agency, otherwise the application(s) will be rejected by the Central Agency.

STEP 4: The Central Agency will block such a number of Certificates in the Registry as informed by the eligible entities. Blocked Certificates will be on 'First-in' basis.

STEP 5: The above blocked Certificates will not be allowed to be exchanged through other Exchange or Electricity Traders until it's deblocked by the central agency on the basis of request by the eligible entity. For deblocking of certificates, the eligible entity shall place request through REC web portal only after completion of trading session irrespective of its participation or not in the session. The eligible entity can check the status of its blocked certificates on the REC web portal.

- **13:00 to 16:00:** Continuous trading session

STEP 6: 16:00 to 16:30

The Exchange will place a request to the Central Agency for a trade, specifying the quantity of the certificates that have been exchanged. The Exchange will take the seller code and the buyer code from the Central Agency.

Between **16:30 to 17:00** On successful processing of the application, the Central Agency will be extinguishing the Certificates, exchanged through Exchange, in its record. The certificates will be extinguished by the Central Agency in the 'First-in-First-out' order.

CERTIFIED TRUE COPY OF THE BOARD RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF POWER EXCHANGE INDIA LIMITED HELD ON TUESDAY, 8TH AUGUST, 2023 AT 5:15 PM THROUGH VIDEO CONFERENCING

APPROVAL OF CHANGES IN THE LIST AUTHORIZED PERSONS FOR MAKING APPLICATIONS, FILING PETITION(S), SIGNING AGREEMENT ETC. UNDER VARIOUS STATUTES AND TO HANDLE RELATED ADMINISTRATIVE MATTERS

“RESOLVED THAT in supersession of the resolution(s) passed at the earlier Board Meeting(s)

- A. Mr. Yatrik Vin- Director, Mr. Atul Roongta- Director, Mr. Satyajit Ganguly- Managing Director & CEO severally or
- B. Mr. Shekhar Rao- Chief Financial Officer, Mr. Mukti Marchino - Vice President, Mr. Sunil Hingwani- Company Secretary, PXIL, Mr. Ambrish Khare- Vice President Business Development, Mr. Anil V Kale- Asst. Vice President Strategy and Regulatory, Mr. Ketan Chawda-Asst Vice President- Information Technology and Mr. Sarang Godbole- Asst Vice President- Head HR & Administration be and is/are hereby authorized by the Board individually and / or jointly, as the case may be, to sign various documents like challans, petitions, affidavits, forms and applications, letters, agreements, etc and to appear and represent the company before all government, semi government departments/authorities, regulatory bodies including but not limited to Income Tax authorities, Ministry of Corporate Affairs, Registrar of Companies, Central Excise & Service Tax, Sales Tax & Professional Tax, Provident Fund, Central Electricity Regulatory Commission (CERC), Appellate Tribunal For Electricity (APTEL), Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), Competition Commission of India (CCI), various State Electricity Regulatory Commission (SERC), High Court(s), Supreme Court, District Courts, any other Court, Labour Welfare Department, various Local Municipal Corporations and other governing bodies etc and to do such acts, deeds and things which may be considered necessary and deemed fit in this regard.”

RESOLVED FURTHER THAT the officials as mentioned above in (a) be and are also hereby authorized to sub-delegate the authority to any other officials of the company for signing of any documents, deeds or to do such other acts and things that may be considered necessary in this regard.”

CERTIFIED TRUE COPY

For Power Exchange India Limited


Sunil Hingwani
Company Secretary
ACS 27116





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253 P-41
103

VAKALATNAMA
BEFORE THE HON'BLE CENTRAL ELECTRICITY
REGULATORY COMMISSION
AT NEW DELHI

PETITION NO. 2023



IN THE MATTER OF:

POWER EXCHANGE INDIA LIMITED

...PETITIONER

Versus

RID CONTROLLER OF INDIA LIMITED

...RESPONDENT

ANIL VITTHAL KALE, S/o Shri V B. Kale authorized officer of the
petitioner Power Exchange of India Limited, in the above Petition do hereby
joint and retain:

Sakya Singha Chaudhuri, Avijeet Lala, Astha Sharma, Shreya Dubey,
Nameeta Singh, Karan Jaiswal, Aparna Tiwari, Ravish Kumar, Aryaman
Singh and Shriya Gambhir Advocates of Neeti Niyaman, to appear, plead
and act for me/us in the above Petition and to conduct and prosecute all
proceedings that may be taken in respect thereof and applications for return

dhil

of documents, enter into compromise and to draw any moneys payable to me/us in the said proceeding.

Date: 21.12.2023

Place: Thane



Anil V. Kale

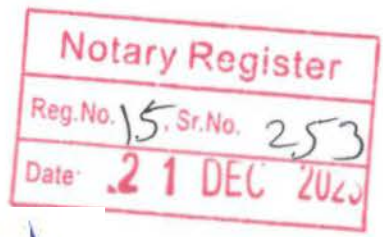
Executed in my presence:
"Accepted"

Singh

Signature of the Party
"Accepted"

Chauthani

Chaitanya L.



Neeti Niyaman

Advocate for the Petitioner
A-142, Ground floor, Neeti Bagh,
New Delhi - 110049
PH: 011-46594466

Ayazman Singh

Aliwan

Abhe Sharma

Shrije

[Signature]

ATTESTED BY ME
Shripati
21/12/2023

Shreyas

S. L. VISPUTE, B.A., LL.B.
ADVOCATE AND NOTARY GOVT. OF INDIA
Room No 126, Bk No 5/6, Near School No 1,
Mundwaga, Uthasagar Thane 421004
Mob 9320918757

21 DEC 2023