

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 187/MP/2016

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A. K. Singhal, Member

Shri A. S. Bakshi, Member

Dr. M. K. Iyer, Member

Date of Order: 31st of July, 2017

IN THE MATTER OF:

Petition under Section 66 of the Electricity Act, 2003 read with Regulation 7 of Central Electricity Regulatory Commission (Power Market) Regulations, 2010 for approval of introduction of the Green Power (Renewable Energy) Contracts at Indian Energy Exchange Ltd.

And in the matter of

Indian Energy Exchange Limited
4th Floor, TDI Centre,
Plot No. 7, Jasola,
New Delhi- 110 025

....Petitioner

Versus

- 1) M/s Power System Operation Corporation
B-9, Qutab Institutional Area, Katwaria Sarai,
New Delhi- 110 016

- 2) M/s Power Exchange Indian Limited
5th Floor, Tower 3,
Equinox Business Park (Peninsula Techno Park)
Off Bandra Kurla Complex, LBS Marg,
Kurla (West),
Mumbai- 400 070

...Respondents

Parties Present:

Ms. Shruti Bhatia, IEX
Shri Rohit Bajaj, IEX
Shri Gaurav Maheswari, IEX
Shri R.K. Mediratta, IEX
Shri S. S. Barpanda, NLDC
Shri Kapil Dev, PXIL

Shri Neeraj Srivastva, TPTCL
Shri Chandan Kumar, TPTCL

ORDER

The Petitioner, The Indian Energy Exchange Ltd. (hereinafter referred to as the "IEX") has sought approval of Commission to introduce Green Power (Renewable Energy) Contracts on its platform to provide avenues to existing and prospective RE Generators for sale of Renewable Energy through Exchange platform and to provide more options to Obligated Entities to fulfill their Renewable Purchase Obligations (RPO).

2. M/s Power System Operation Corporation (POSOCO) was impleaded as Respondent No. 1 as per the directions of the Commission vide its order dated 01.12.2016.

3. M/s Power Exchange Indian Ltd. (PXIL) was impleaded as Respondent No. 2 as per the directions of the Commission vide its order dated 01.12.2016.

Submissions of the Petitioner:

4. The Indian Energy Exchange Limited (the Petitioner) has sought approval of the Commission to introduce Green Power (Renewable Energy) Contracts on its platform to provide avenues to existing and prospective 'Renewable Energy Generators'(RE Generators) for sale of Renewable Energy through IEX platform and to provide more options to Obligated Entities to fulfill their Renewable Purchase Obligations (RPO).

5. IEX has proposed to introduce following new contracts (on similar lines with existing contracts) in Green Power Market Segment on its platform:

i) Green Day Ahead Market (G-DAM) (based on collective transactions):

- a) Solar Day Ahead Contract
- b) Non-Solar Day Ahead Contract

6. Framework of the proposed contracts in Green Day Ahead Market (G-DAM):

(i) The overall framework of the proposed G-DAM is based on the existing framework in Day Ahead Market (DAM) and on the premise that:

- a) RE Sellers/Buyers can participate in G-DAM and subsequently, if the bid in G-DAM is not cleared or cleared partially, they can bid in DAM.
- b) Renewable Energy (RE) Seller (whose bid is not cleared fully or partially) participating in DAM, will be selling Renewable Energy at market determined price. Therefore, as per Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 such RE Seller will get equivalent amount of RECs in lieu of bid cleared in DAM.
- c) Buyers procuring power in G-DAM shall be eligible to fulfill their respective RPO Compliance by participating in Solar/Non-Solar Day Ahead Contracts.

(ii) Eligibility of Participation:

- a) Solar Energy sellers shall be eligible to trade in 'Solar Day Ahead Contract' and Non-Solar RE Seller shall be eligible to trade in 'Non-Solar Day Ahead Contract'.
- b) RE Seller having merchant green power capacity shall be eligible to participate in G-DAM subject to applicable Regulations notified by

Appropriate Commission.

- c) RE sellers who are under the purview of Central Electricity Regulatory Commission (Deviation Settlement Mechanism) Regulations i.e. who are eligible to settle with buyers on scheduled energy (not actual energy) and deviation settlement of RE generators through purchase of RECs, can participate in G-DAM. The RE sellers situated in State where State Electricity Regulatory Commission (SERC) has adopted same framework, shall also be eligible to participate in G-DAM.
 - d) All the entities which are eligible to procure power through Open Access shall be eligible to participate in G-DAM as buyer.
 - e) Buyers will be eligible to participate in the G-DAM based on the same No Objection Certificate issued for DAM/Intra-Day market by State Load Despatch Center (SLDC).
 - f) Eligibility of RE sellers shall be ascertained at the time of registration at the Exchange based on NOC/Standing clearance issued by Regional Load Despatch Center(RLDC)/SLDC, as applicable.
- (iii) Risk Management: As per existing practice of Electricity Day Ahead Market.
- (iv) Bidding mechanism: Double-sided closed bid.
- (v) Price Discovery methodology: Uniform market clearing price for all buyers

and sellers who are cleared.

- (vi) Auction Timing: 08:00 AM to 09:00 AM of previous day (D-1).
- (vii) Scheduling: As per procedure of scheduling of Collective transactions. No revision of schedule will be permissible.
- (viii) Delivery: Next day (T+1) from 0000 Hrs to 2400 Hrs in 96 separate 15 min time blocks.
- (ix) Delivery Point: At Regional Periphery.
- (x) Transmission Congestion management: As per existing practice of market splitting in Electricity Day Ahead Market.
- (xi) Deviation Settlement Mechanism: As per applicable Regulations notified by Appropriate Commission.
- (xii) Allocation of Available Transmission Capability (ATC) by NLDC:
 - a) As per availability of ATC at the time of Request.
 - b) Solar to be given priority followed by Non-Solar or as may be decided by the Commission.
 - c) Pro-rata basis between the two Exchanges.
- (xiii) Interface between G-DAM and DAM: The Exchange has proposed to provide a window to such RE Sellers/buyers to bid unsuccessful bids of G-DAM in DAM. IEX has proposed consequential change in timelines of

Day Ahead Market.

- (xiv) A comparison G-DAM timeline, existing DAM timeline and Proposed new DAM timelines is proposed as follows:-

PROPOSED G-DAM & DAM TIMELINES				
S. No.	SESSIONS	G-DAM	EXISTING DAM	PROPOSED DAM
1.	Bid - Call session	08.00 AM - 09.00 AM	10.00AM-12.00 PM	12.00 PM – 02.00 PM
2.	Determination of MCP/MCV	By 09.30 AM	By 12:20 PM	By 02:30 PM
3.	Publish of Provisional Obligation	By 09.45 AM	By 1.00 PM	By 02:45 PM
4.	Request of ATC to NLDC, Request for confirmation from bank on availability of funds	By 10.00 AM	By 1.00 PM	By 3.00 PM
5.	NLDC Exception for scheduling, Receipt of confirmation from bank on availability of funds	By 10.45 AM	By 2.00 PM	By 4.00 PM
6.	Determination of ACP/ACV	By 11.15 AM	By 2.30 PM	By 4.30 PM
7.	Publish of Final Obligation	By 11.30 AM	By 2.45 PM	By 5.00 PM
8.	Submission of Application for scheduling to NLDC	By 12.00 PM	By 3.00 PM	By 05.30 PM
9.	NLDC sends scheduling request to RLDCs	By 1.00 PM	By 4.00 PM	By 06.30 PM
10.	RLDC acceptance of scheduling to NLDC	By 1.30 PM	By 5.00 PM	By 07.00 PM
11.	NLDC conveys acceptance of scheduling to Exchange	By 2.00 PM	By 5.30 PM	By 07.15 PM
12.	Funds and Margin Pay In	By 5.30 PM	By 3.00 PM	By 05.30 PM

Proposed timelines are indicative and flexible to revision based on the feedback of NLDC and the Commission.

- (xv) Unsuccessful Bid Submission Mechanism: To enable this proposition, the complete process of Opening of trading window till publishing of Final Obligation of G-DAM is proposed to be completed by 11.30 AM. To accommodate unsuccessful bids of G-DAM, it is proposed to shift existing DAM trading window by 2 hour i.e. between 12.00 PM to 2.00

PM so that G-DAM participants can place their unsuccessful bids in DAM.

7. The Petitioner has submitted that the following amendments would be required in Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (hereinafter referred as 'REC Regulations') and Procedure of scheduling of Collective Transactions:

(a) As per Regulation 5(1)(c) of REC Regulations, a RE Generator shall be eligible for issuance of RECs if it sells the electricity through power exchange at market determined price. Therefore, amendment in REC Regulations are required to specify that RE Sellers who are selling power at Power Exchange in Green contracts, to that extent RE Seller shall not be eligible for issuance of RECs and Buyers can fulfil their Solar and Non-Solar RPOs by procuring power in respective Green Contracts.

(b) The procedure of collective transactions issued by NLDC inter-alia specify timelines of various activities related to scheduling of power traded in Day Ahead Market of Power Exchanges. In view of the proposed G-DAM and consequential changes in timelines of existing DAM, the Procedure of Collective Transactions needs to be suitably modified.

(c) Commission may modify/amend any other Procedure/Regulations as it may deem fit to enable introduction of Green Contracts on Exchange platform.

8. In respect of RPO compliance by obligated entities who will participate in the proposed contracts, the Petitioner has submitted that the renewable power bought under these contract shall be made eligible for RPO compliance of obligated entities.

9. The Petitioner has submitted the following as the benefits of proposed green

contracts:-

- (a) Green Power Contracts will enable obligated entities procure renewable power at competitive prices at the power exchanges and help meet RPOs.
- (b) RE generators will get payment based on schedules obviating the need for settlement based on actual injection report.
- (c) RE Sellers and Buyers will get more options to sell/buy renewable power.
- (d) By providing more options to sell RE power, new merchant capacity may come up which will inter-alia help to achieve ambitious renewable capacity addition targets of the Government of India.
- (e) RE Generator need not tie up capacity in advance or depend on PPA with the incumbent Discoms.
- (f) High certainty as liquid DAM is available as fallback option if volume not cleared in G- DAM.
- (g) Discoms preference of buying green power over REC is addressed.
- (h) Small participants (OA/ CPP) can buy green power to meet their RPO.
- (i) Renewable rich States can sell RE power to Renewable deficit States to meet their RPO and therefore lessening burden on Renewable rich State to absorb all RE power generated within the State
- (j) RE generators under preferential tariff in States having excess wind/solar

power are being curtailed due to Discoms inability to pay such generators will now be able to sell power in the market.

10. The Petitioner has further submitted that the required amendment in Business Rules and Bye Laws of the Exchange and contract specifications shall be submitted for approval of the Commission in due course of time as may be directed by the Commission or on in principle approval of proposed contracts.

11. The matter was heard by the Commission on 1.12.2016 and the petition was admitted with directions to Petitioner to implead POSOCO and PXIL as parties to the petition and file revised memo of parties by 30.12.2016. Accordingly, memo of parties was revised. IEX also invited comments/suggestions from all the stakeholders on its website until 5.1.2017.

Submissions of Respondent No. 1 (POSOCO):

12. The Respondent No.1 in its reply dated 26.12.2016 has submitted that presently in India, most of RE Generators are connected to ISTS and under the purview of DSM Regulations have the entire capacity tied up in PPA. Hence, there might be very little market participation and liquidity in the proposed Green Power (Renewable Energy) contracts in Day Ahead Market. Even, in the world wide scenario, RE generators participate along with the conventional generators on the same platform of Day Ahead Market.

13. The Respondent No.1 has submitted that the Grid Parity in per unit price of electricity is almost achieved because of competition and advancement in RE technologies.

14. Further, the Part Captive/part Merchant Treatment of Generation from same

plant having part of its capacity tied up and part Merchant needs to be elaborated.

15. As per Amendments to Central Electricity Regulatory Commission (Deviation Settlement Mechanism) Regulations, 2016, the deviation charges payable by wind or solar generators for deviation in generation is linked to the Fixed rate i.e. PPA rate or in case of Multiple PPAs, the weighted average of PPA is taken as fixed rate. Further, in case of RE generators participating in green power contracts at the day ahead platform, the applicable rate would change block wise (average of all contracts including G-DAM cleared), which may further complicate the applicable rate for DSM for RE Generators

Submission of Respondent No. 2 (PXIL):

16. The Respondent No.2 in its reply dated 6.1.2017 has submitted that the petition was not maintainable in its present form and was therefore liable to be rejected. It has placed reliance on the Order of the Commission dated 8.12.2015 in Petition No. 378/MP/2014, in which it was held that 2D-Spot Contract and EVE-DAS contract were deemed un-schedulable under the existing "Procedures for scheduling of collective Transaction" issued by NDLC. The Summary of Order in Petition No. 378/MP/2014 has been reproduced as under:

“Summary of Order

25.(a) Introduction of 2D-SPOT is not approved due to the following reasons:

(i) Presently, collective transaction gets priority over bilateral transactions for scheduling of power within three days from the date of trade. If 2D-SPOT and EVE-DAS are allowed, then the same priority would have to be extended to these new products. This would effectively translate into giving priority in scheduling of transaction through Power Exchanges over bilateral trades on two day ahead basis;

(ii) Poor price discovery and splitting of volumes;

(iii) Uncertainty in assessment and declaration of margins for clearing two day ahead by NLDC/RLDC may result in more frequent curtailment of 2D-SPOT transactions. The issue exacerbates due to difficulty in locating buyers and sellers on whom such curtailment would be applied;

(iv) No economic basis for introducing 2D-SPOT product. There are apprehensions of speculation, Gaming and complexity in surveillance;

(v) Internationally, markets operate closer to real time and not on T+2 basis.

(b) Introduction of evening market shall be kept in abeyance in line with order dated 8.4.2015 in Petition No.6/SM/2015.”

17. The Respondent No.2 has submitted that the proposed change in timelines needs to be evaluated on their own merits considering its individual and collective impact on market design.

18. The Respondent No.2 raised the issues regarding jurisdiction on the basis that in another case 279/RC/2015, it has referred to submissions made by SLDCs, wherein even after the regulations were amended by the Commission, the adoption of the regulations at State level was a challenge. It is further mentioned that the need to file the petition would not have arisen, had there been no differences in implementation/interpretation of the regulations in two jurisdictions. The petitioner, in that case, had pleaded for flexibility in regulatory framework of SLDCs citing operational constraints. Hence, the Petition should not be approved. It was held by the Commission in Petition No. 279/RC/2015 that:

“10.The intent of the regulation is clear that SLDCs are required to grant Exchange neutral NOC /Prior Standing Clearance to State Utility or an intra-State entity intending to participate in trading through Power Exchange(s).Since No Objection Certificate/Prior Standing Clearance is required for trading in the Power Exchanges which are inter-State transactions, the SLDCs are required to comply with the 2008 Open Access Regulations and Detailed Procedure issued by the Commission. As regards the practice of issuing Exchange neutral NOCs with a covering letter specifying trading on a particular Exchange, we are of the view that such practice is in contravention of the 2008 Open Access Regulations and should be discontinued forthwith. SLDCs are statutory bodies discharging statutory

functions vested under the Act and the Regulations issued by the Central Commission and respective State Commission. They should be Impractical, neutral and fair in their dealings. Accordingly, we direct all SLDCs to ensure that Exchange Neutral NOCs are issued for trading in the Power Exchanges in terms of the Regulation 8 (2) of the 2008 Open Access Regulations, and Format PX (1) of the Detailed Procedure in letter and spirit while granting No Objection Certificate or Prior Standing Clearance for participating in the Power Exchange.”

19. The Respondent No. 2 has submitted that the Petitioner has failed to address the following aspects:

(a) Impact on the prices in existing Day Ahead contract.

(b) Impact on the liquidity in existing DA contract and how the liquidity in DA contract will help in building liquidity in the proposed product.

20. Technically, the proposed product being new has no economic history to refer to or to compare. Some of the special provisions extended to RE seller which are regional entities will be available to all the players. Therefore, the eligible sellers may be restricted to the ones defined in the regulations only and not all the entities as proposed in the petition. The framework proposes to change the fundamental premise that RECs will be issued based on actual injection into the grid to bid cleared in day ahead market. On one hand the need to certify the injection, currently handled as per approved procedure by a designated agency (SNA) will be obliterated while on the other hand the certification will be based on schedules and not actual injection.

21. The Respondent No.2 has submitted that in the existing REC framework, it is the price which defines the nature of power. In case of REC mechanism, the pricing range for the certificates has been mandated by the Commission with procedures to verify the actual injection. In the proposed framework, mere participation in a product

would change the attribute of power from green to brown plus REC. The Commission had also placed restrictions, such as generators walking out of a PPA will not be eligible for three years. This was to ensure that participants stick to their choices, and to make the new framework succeed.

22. The Respondent No.2 has submitted that with frequent and unlimited choices, the market will not only get confused and distorted; it will be difficult to regulate the markets as well. With all the existing players being allowed to participate and allowing for toggling of uncleared bids in between products, some of the fundamental tenets of the REC framework will change. Owing to policy and regulatory support to RE generators and ensuring better compliances, the REC market is showing some signs of revival. Any change such as proposed by the petitioner may have contrary and deeper influences on this market segment. In light of the above, only RE generators which are regional entities be allowed in the proposed product.

23. The Respondent No.2 has submitted that proposed inform pricing may need to be reviewed, as in the Current Day Ahead Contract it has led to artificially lowering of prices without a commensurate increase in demand in the system. The prices are proposed to be published prior to closure of the window before existing timelines for DAS. This may have a spillover/ripple effect on Day Ahead prices along with a causality being developed between the two. Even in the proposed timelines, the window for day ahead will open once the prices in G-DAM are declared. While it is true that any repeated auction will have these as equilibrium between timings etc. the likely effect needs to be understood in greater depths to ensure the success of the market.

24. The Respondent No.2 has submitted that the change in the risk management framework of existing day ahead should not be allowed.

Submission of Petitioner through 'Rejoinder'

a) In response to objections raised by Respondent No.1:

25. The Petitioner vide its rejoinder filed on 16.01.2017 has submitted that in addition to the regional Entities, the intra-state Entities will also be eligible to participate in proposed G-DAM subject to notification of appropriate Regulations by State Government.

26. Regarding the international scenario, the Petitioner has submitted that the countries where RE generators participate in same Day Ahead Market (DAM), Government sets a Feed-in-Tariff (FiT) correspond to the technology-specific cost of renewable power generation. Generators through TSO are required to sell power through DAM and in case such full cost is not recovered through the Day Ahead Market, the difference of Day Ahead Price and FiT is paid through market premium through a fund. In case of Germany, even unproduced electricity which has not been produced due to the intervention of system operators is also awarded with the feed-in payment. In absence of any such scheme in India, creation of a separate renewable specific product segment has been proposed so that true price of renewable energy is discovered and paid through market based mechanism. In addition, India's RE market is primarily driven by Renewable Purchase Obligation (RPO). If an Obligated Entity buys power from DAM, it will not be able to fulfill RPO obligation even if it buys power from RE Generator.

27. Regarding grid parity, the Petitioner agrees with Respondent. It is submitted

that G-DAM can continue to exist till RPO mandate is continued. As RE prices will converge to grid parity, price signals of G-DAM market will also converge with DAM prices. Further such market will promote competition in renewable energy sector as has been the case in DAM. However, with government placing enhanced focus on promotion of RE and the basic driving factor of RE market being RPO, need for separate G-DAM market is felt.

28. Further, all RE generators eligible under CERC (DSM) Regulations will qualify as generators under this market. In case of Wind/Solar generators, it is easy to have separate metering arrangements and thus bifurcate capacities under FIT and Merchant. Even if the FIT/Merchant capacities are not separated, we can create mechanism by taking Merchant generator schedule as first charge in Actual Generation and balance is considered under preferential tariff.

29. Further, in case of applicability of Fixed PPA rate, settlement of deviations are done for each 15 min block and presently RLDCs are handling more complex calculation for calculation of Deviation charges based on frequency of each 15 min time block. Therefore, no difficulty in case of deviation settlement of G-DAM participants is envisaged.

30. Schedule of day ahead bilateral is implemented from 0000 Hrs of next-day i.e. a room of around 4.5 hrs would still be available with RLDC for scheduling of Day Ahead Bilateral transaction. However, IEX is open to reconsider the proposed timelines to accommodate scheduling requirements of RLDCs.

31. Regarding the suggestion that rather than G-DAM, a Bilateral contract exclusively for Renewable Energy may be introduced at the Power Exchange

platform under Term Ahead Market segment (TAM) i.e. G-TAM, the Petitioner has submitted that the possibility of introduction of G-TAM market on the Exchange platform in future is not ruled out. However, to start with, Green Contracts may be introduced on the Power Exchange in Day Ahead market (collective Transactions) due to the following reasons:

- a) RE Generators seek long term PPAs which give certainty of sale of their entire power. The generation from renewable resources such as solar and wind is entirely dependent on nature and thereby the generation is intermittent and variable, the renewable generator thus seeks despatch of energy when his plant is generating power. To enable RE Generators to participate in short term market, such comfort of sale of entire power needs to be given. Such a proposition can be provided only in G-TAM market, where generator would not have any fall back option in case his generation is not sold successfully in the G-TAM market. On the other hand the proposed G-DAM would give comfort of sale of entire energy of RE Generator as there is a fall back option in form of DAM.
- b) Further, probability of scheduling of RE power in DAM will be high since it is expected that the RE Seller will bid only to recover its marginal cost which is zero or very low. However, G-TAM can be introduced concurrently for giving more options to market participants.

b) In response to objections raised by Respondent No.2:

32. The Petitioner vide its rejoinder filed on 16.1.2017 has submitted that the Respondent No. 2 has not made any material submissions on maintainability except

quoting a previous submission of the Petitioner which has no link to the present petition. Such quotation has no standing since the submission is not an order of a statutory authority.

33. The Petitioner agrees that change in the timelines of the existing DAM Market which, needs to be evaluated on its own merits to ascertain that the changes are necessary, sufficient, and do not have any adverse impact and appropriate steps are in place to mitigate such impact, if any.

34. No material submissions have been made by the Respondent on jurisdiction. As, alike present DAM, intra-state entities will participate in the proposed G-DAM market and any jurisdiction issue as such in participation of intra-state entities in the proposed G-DAM is not perceived. It is submitted that petitioner has not highlighted any specific change in State Regulations and also if any such changes would be required, same will be deliberated by the respective State Commission based on the merit. Further, issue of adoption of Regulations by SLDC does not arise as, in the matters concerning inter-state transactions, the SLDCs are bound to follow Regulations of Commission in letter and spirit.

35. The impact on the prices of existing DAM may not be very significant. It is envisaged that only renewable energy would be traded in the G-DAM. The buyers would participate in G-DAM either to meet their RPO or to reduce their carbon footprint. As far as sellers are concerned, only renewable power producers would sell in GDAM market due to lower prices in DAM and skewed REC market. Since, sellers in G-DAM would have access to DAM in case their bids are not successfully cleared in G-DAM, this might lead to some increase in liquidity and marginal impact

on price in DAM, if any.

36. As regards the contention of Respondent regarding 2D SPOT market is concerned, it is submitted that 2-D SPOT market was envisaged for same commodity traded in DAM i.e. Conventional Electricity. However, proposed product i.e. G-DAM is a different commodity i.e. Renewable Electricity. Therefore the arguments advanced in case of 2-D SPOT are not applicable in case of G-DAM.

37. The Petitioner has submitted that eligibility for participation in G-DAM will be subject to relevant Regulations of the appropriate Commission and at no point eligibility criteria would be in excess of the Regulations.

38. On the issue of change required in the procedure of issuance of RECs by SNAs based on actual injection, the Commission has been requested to specify required amendments in the REC Regulations to enable issuance of RECs by Central Agency to sellers selling in the DAM Market based on schedule.

39. On Respondent's view that mere participation in a product would change the attribute of power from green to brown plus REC, petitioner has submitted that the proposed product is based on the premise that generators would be able to sell green power in one market (G-DAM) and brown power in another market (DAM) and REC will be issued based on the schedule of brown power. Commission has already specified renewable specific DSM framework wherein settlements done on the basis of schedule would be possible. As far as the issue of frequent new choices to be given to market it is submitted that after introduction of REC framework in year 2010, this new product segment is proposed after 7 years and thus cannot be termed as frequent. Further, the Petitioner agrees with Respondent that some tenets of the REC framework would need

to undergo change as a new category of RE Sellers which can sell power in both mode i.e. Green power and REC mechanism may be introduced.

40. Respondent has raised apprehension that proposed G-DAM may have contrary and deeper influences on REC market which is now reviving and therefore only Regional Entities be allowed in the proposed product. In this regard, it is submitted that proposed product is envisaged to give more option to buyers to fulfill their RPO Obligations and it is expected that those buyers will be interested in the proposed product and therefore restricting participation only to regional entity may not bring any liquidity in market. Further, Government of India has envisaged large capacity addition taking total RE generation capacity from 40GW to 175GW in next 5 years. Both REC and GDAM markets will have enough scope to expand.

41. As far as issuance of separate NOC is concerned, it is submitted that NOC is issued by SLDC based on the availability of network capacity and it has nothing to do with the type of power to be procured by the buyer and also it would unnecessarily lengthen the process on buyer end as well as SLDC end. Therefore, same NOC as in case of DAM can be utilised in the G-DAM market.

Submissions of the Stakeholders

42. The matter was heard on 01.12.2016 and 24.01.2017. During the hearing, the representative of the Petitioner submitted that the proposed Green-Day Ahead Market (G-DAM) was posted on IEX's website and the same was circulated to all the stakeholders through email. The Commission directed the Petitioner to submit the comments received from the stakeholders by 21.2.2017.

43. Out of 19 comments received from the various stake holders, 17 supported the proposition and 2 opposed the same. The suggestions given by the stakeholders are summarized as below:

1) HERO FUTURES ENERGY PVT. LTD

i. **Suggestion:** There should be three categories of G-DAM, namely Solar Day Ahead Market, Wind Day Ahead Market and Non-Solar-Wind Day Ahead Market.

IEX Response: There are two type of RPOs - Solar and Non-Solar and the REC framework is based on the identified RPOs. Therefore, only two markets in G-DAM i.e. Solar G-DAM and Non-Solar G-DAM have been envisaged.

ii. **Suggestion:** At present, RE projects have to register themselves with state nodal agency as REC/non REC project. A project registered under non REC category can never get REC. Further, as sale of RECs is limited, most RE project developers set up plants as non REC projects. Therefore, getting RECs in DAM is statutorily not permitted and also does not provide any financial incentive to RE generators to participate due to lack of liquidity in REC market. It is requested to drop this requirement. In case power is not cleared in G-DAM market, RE power plants can restrict their generation.

IEX Response: REC issuance to the RE generator selling in DAM Market can be on actual basis and thus no amendment is required in REC Regulation on this count. Commission may consider incorporating amendment in the REC Regulations to incorporate a new category of RE generator which can sell green power as well as be eligible for issuance of RECs when such generators

participate in the conventional DAM market. The bidding of un-cleared quantum of G-DAM in DAM is an option given to RE Generator so that its entire power can be dispatched. Participation in DAM is not a mandatory requirement and RE Generator may take a call to bid or not bid in DAM based on its own evaluation.

- iii. **Suggestion:** Revision in schedules should be provided and that IEX must ask CERC to amend the open access regulation to allow for such revisions. G-DAM is envisaged based on collective transactions.

IEX Response: CERC (IEGC) Regulations restricts revisions in collective transactions in case of RE generators. Further, even implementation of revisions in collective transaction would be very complicated because there is no one to one matching of buyer and seller.

2) HINDALCO INDUSTRIES LIMITED

- i. **Suggestion:** Settlement of deviations is an important aspect of Green power transaction and could be settled as prescribed by CERC (Deviation Settlement Mechanism) Regulation and related matters.

IEX Response: The deviations of RE Sellers who are regional entities would be settled in accordance with the CERC (DSM) Regulations. Further, the Intra-State entities where deviation settlement is on 'scheduled' basis and not on 'actual' basis, would also be eligible to participate in G-DAM and settlement of such entities would be as per the settlement regulations of their respective State Commission.

3) INDIAN WIND ENERGY ASSOCIATION

- i. **Suggestion:** G-DAM should not affect existing off take structures and market arrangements.

IEX Response: It is expected that the proposed product will compliment and supplement the existing products and would provide a competitive and credible opportunity to RE generators who have merchant capacity to sell their power. It is also clarified that RE power generators selling power in the market under any contractual arrangement will also be eligible to sell in the proposed G-DAM Market provided the parties concerned mutually agree to such an arrangement of sale.

- ii. **Suggestion:** Introduction of G-DAM is based on premise that RECs have failed (RECs is also traded product on Power Exchanges).

IEX Response: G-DAM is not based on the premise that REC Market on Power Exchanges has failed. G-DAM is a market completely voluntary in nature. The Market is envisaged to give a competitive avenue option to sellers to sell their green energy and to buyers/obligated entities to fulfill their RPO compliance. G-DAM is not aimed at resolving the challenges related to non-compliance of RPOs by obligated entities nor to resolve limitations and challenges in respect of the REC market. G-DAM is indeed providing a competitive option to obligated entities to fulfill their RPO.

- iii. **Suggestion:** Design and operation of G-DAM inherently leans on RECs.

IEX Response: The design and operation of G-DAM does not lean on the REC market as it is envisaged as an independent market. The option of bidding of un-cleared quantum of G-DAM in DAM has been given to RE generator so that generators are able to despatch all power. Since present REC Regulations provide for issuance of RECs to such RE generators who participates in DAM, this provision has been provided in the framework.

- iv. **Suggestion:** G-DAM seeks to ensure that RE Trading activity is limited to Power Exchanges.

IEX Response: As far as renewable energy trading is concerned, at present there is no restriction on OTC trading in RE. The G-DAM petition by no means seeks to place any kind of restriction in trading the renewable energy. Other comments related to modification in REC market is not covered under the scope of present petition.

- v. **Suggestion:** G-DAM is limited to Merchant RE Generator.

IEX Response: Currently there is hardly any merchant RE capacity existing. However, G-DAM is envisaged to provide more options to the present and future RE generators which in turn will help in addition of new RE capacity as has also been the case of conventional power market. Further, it is also clarified that existing RE generators selling power in the market under any contractual arrangement will also be eligible to sell in the proposed G-DAM provided the parties concerned mutually agree to such an arrangement of sale.

vi. **Suggestion:** The allowance for revision in schedules should be recognized if G-DAM is to work in line with F&S framework and IEGC Grid code requirements.

IEX Response: G-DAM is envisaged based on collective transactions. CERC (IEGC) Regulations restricts revisions in collective transactions in case of RE generators. Further, even implementation of revisions in collective transaction would be very complicated because there is no one to one matching of buyer and seller.

vii. **Suggestion:** The lack of clarity on issue of deviation accounting would pose a very significant operational challenge and would impact the introduction of G-DAM as a concept.

IEX Response: With the State Commissions gradually adopting 'FOR' "Model Regulations on Forecasting, Scheduling and Deviation Settlement of Wind and Solar Generating Stations at the State Level", it would be possible to gradually build liquidity in the proposed market. The States of Andhra Pradesh and Gujarat in their respective RE Scheduling and DSM regulations have followed the Commission framework of settlement on 'scheduled' and not 'actual'. As far as clarity in State Regulations are concerned, same will need to be taken up with the respective State Commissions.

viii. **Suggestion:** No justification or rationale has been provided in support of discriminatory treatment being proposed for Non-Solar transactions. In fact, as Capacity Utilisation Factor (CUF) of wind generation is far better than CUF for solar generation projects, the transmission capacity utilisation would be better

achieved if wind power projects are accorded higher priority over solar. Besides, solar insolation & solar power generation is spread across all the States in India whereas wind energy resource is concentrated in a few select wind rich States. Hence, wind generation projects would require better access conditions to market and facilitative framework for access to power exchanges. In that sense, favorable dispensation or priority for allocation should be accorded for Wind Generation projects rather than Solar Generation projects.

IEX Response: The Commission may either adopt petitioner's proposition or may direct any other suitable method of allocation of corridor.

- ix. **Suggestion:** As per Petition, only merchant RE generators as Regional Entities (covered under CERC DSM Regulations) or merchant RE sellers situated in States where SERCs have adopted similar framework are eligible to participate in G-DAM scheme. Given these conditions, no RE Generator would be eligible to participate in the scheme at this stage, as there is hardly any Merchant Generators. Further, if it is envisaged that Merchant Capacity of existing Generator can participate, then the rules for energy accounting/scheduling for Merchant and Non- Merchant Capacity of such RE Generators need to be clearly specified. Besides, it needs to be clarified whether REC eligible and REC Non-Eligible RE sellers can participate in such G-DAM scheme.

IEX Response: As far as treatment of generation from the same plant having part of its capacity tied up and part as merchant capacity, it is submitted that in case of wind/solar generators, it is easy to have separate metering arrangements and thus bifurcate capacities under FIT and Merchant. Even if

the FIT/Merchant capacities are not separated, we can create mechanism by taking merchant generator schedule as first charge in actual generation and balance is considered under preferential tariff.

- x. **Suggestion:** Traders/ Aggregators who are allowed to participate in REC mechanism should also be allowed to participate in G-DAM.

IEX Response: Eligibility of issuance of NOC for participation in GDAM shall be as per CERC (Open Access) Regulations and procedure made there under.

- xi. **Suggestion:** It is not clear how difference in 'Schedule' and 'Actual' would be reconciled in terms of RPO compliance. It is necessary that clear rules and procedures be formulated for monitoring, accounting and certification for the purpose of RPO compliance to avoid double counting.

IEX Response: The deviation settlement of RE generators participating in the G-DAM would be as per CERC DSM Regulations which ensured RE generators settlement on schedule basis. As far as RPO compliance of buyer of G-DAM is concerned, Power Exchange will issue report to buyer which will provide information of power bought by buyer in G-DAM which can be placed before appropriate authority for RPO compliance purpose. Buyers with composite buy, can also be allowed and mechanism for buy on 'Schedule' and 'Actual basis' can easily be worked out by considering 'Schedule' as first charge on total buy and remaining portion to be considered on 'Actual' basis. Deviation settlement can also be worked out on that basis.

4) INDO RAMA SYNTHETICS (INDIA) LTD.

- i. **Suggestion:** Cap the minimum and maximum price in G-DAM

IEX Response: Commission may consider the suggestion to cap and/or introduce minimum and maximum rate in G-DAM.

- ii. **Suggestion:** Ratio of the Transmission Corridor Allocation between Solar and Non-Solar corridor allocated may be fixed for G-DAM. Such arrangement will further protect the Available Transmission Capacity (ATC) for DAM, because the bidding timings of G-DAM are proposed prior to that of DAM.

IEX Response: The proposition of priority allocation of corridor to Solar is based on the Government of India push to large solar capacity addition targets. The Commission may kindly consider as appropriate.

5) INOX RENEWABLES LIMITED

- i. **Suggestion:** MERC RPO Regulations 2010 do not qualify obligated entity to purchase power through G-DAM towards RPO fulfillment. It would be pertinent to represent to respective SERCs to treat the power procured under green power contract eligible for the fulfillment of RPO of DISCOMS.

IEX Response: Commission may kindly take up relevant issues at State level through Forum of Regulators (FOR) post finalization of G-DAM framework.

- ii. **Suggestion:** Waive POC Charges and Losses for G-DAM.

IEX Response: Commission is requested to consider suggestion of the Stakeholder.

- iii. **Suggestion:** There are a large number of wind power generators operating under APPC-REC mode where they are not getting payments of APPC. Special dispensation can be considered for those projects for trading at green energy platform if they are willing to come out of APPC-REC model.

IEX Response: The issues in payments to RE generators under APPC-REC mode is out of the purview of the present Petition.

6) KERALA STATE ELECTRICITY BOARD LTD.

- i. **Suggestion:** RECs should be issued in DAM when Area Clearing Price on Power Exchange is less than APPC.

IEX Response: As per CERC (REC) Regulations, an RE generator is eligible for issuance of RECs if he sells power to third party through open access at mutually agreed price. Therefore, sale of renewable energy under Open Access is eligible for RECs and there is no linkage whatsoever with the APPC price. It is not justified to have price linkage for REC issuance.

- ii. **Suggestion:** Under the green energy contracts power, traded shall not be eligible for issuance of RECs, whereas for balancing of deemed RPO compliance of the buyers with respect to schedule, deviations by all wind and solar generators shall be netted off for the entire pool on monthly basis and any remaining shortfall in RE generation must be balanced through RECs by NLDC utilizing funds from the pool account. For positive balance of RE generation, notional RECs is proposed to be credited to the DSM pool and carried forward

for settlement wherein a limit for settlement has to be specified on case to case basis.

IEX Response: The limits of settlement of deviations are governed by CERC (DSM) Regulations.

7) MAHINDRA SUSTEN PVT. LTD.

- i. **Suggestion:** There would be a need to alter the REC Regulations with a clear understanding that eligibility of existing RE Seller under REC shall remain intact for selling part RE capacity in DAM market in case its volume in G-DAM market remains unsold. The necessary changes in NLDC software as well as formats may be provided for in the form of Regulatory changes.

IEX Response: The Commission is requested to consider the suggestions of the stakeholder.

- ii. **Suggestion:** RE Generators selling under Section 61 and 62 of Act should also be allowed in G-DAM

IEX Response: The petitioner agrees that the existing RE generators selling power in the market under any contractual arrangement should also be eligible to sell in the proposed G-DAM provided the parties concerned mutually agree to such an arrangement of sale. Commission is requested to consider suggestion of the Stakeholder.

- iii. **Suggestion:** RE Seller Selling in DAM should be exempted from accreditation and registration under REC framework.

IEX Response: The Commission is requested to consider suggestion of the Stakeholder.

- iv. **Suggestion:** The differentiation between the adoptions of DSM Regulations by SERC should be done away with as the eligible entity has to only comply with CERC (DSM) Regulations while selling power in collective transactions.

IEX Response: Since deviation settlement of intra-state entities is done as per Regulations of State Commission, enabling State DSM Regulations are required for selling power in G-DAM market.

- v. **Suggestion:** The term "Obligated" should be used along with the word "entities". It will broaden the Buyer's base and such entities will automatically enter the Open Access mode.

IEX Response: In addition to obligated entities, it is envisaged that voluntary buyers may also participate in G-DAM to reduce their carbon footprint.

- vi. **Suggestion:** The No Objection Certificate (NOC) issued by SLDC should clearly mark the capacity to be scheduled for both brown and green power. It may happen that Buyer may be scheduling both green and brown power in the same day, at the same time for different capacity. Segregation of capacity will enable SLDC to have separate accounting for brown and green power and accordingly, DSM will be applied.

IEX Response: The petitioner has proposed a single NOC for G-DAM and DAM. Since scheduling will be sequential i.e. first G-DAM and then DAM, therefore against the NOC, first RE power will be considered and then

conventional power will be considered. Further, scheduling will be done based on Exchange reports, and Exchange will put its own mechanism to ensure total schedule (DAM+GDAM) is not more than NOC quantum. Therefore, there is no need to issue separate NOCs for DAM & GDAM.

- vii. **Suggestion:** Once SLDC provides NOC having separate capacities indicated for RE power and Brown power, the eligibility is already ascertained. Therefore, there is no need to have another check. Further, IEX may provide the Obligation sheets separately for RE and non-RE power for both Sellers and Buyers.

IEX Response: The petitioner will issue separate obligation reports for G-DAM and DAM.

- viii. **Suggestion:** The market participants may be initially influenced by DAM prices + green component pricing for Solar and Non-solar. Therefore, the primary aim of the G-DAM market participants would be to align closely with DAM market price movement. The Auction time may be kept as it is for DAM market. Further, REC trading timings may be adjusted by taking into consideration the trading in G-DAM and DAM by RE participants.

IEX Response: The petitioner has proposed to open G-DAM window before DAM market. Therefore, influence of DAM prices may not be envisaged. The two markets are proposed sequentially to allow option to G-DAM participants to participate in DAM in case they are not cleared in G-DAM. Further, the REC trading has no link whatsoever with G-DAM. As per the existing regulatory

framework, REC trading is from 1300 to 1500 Hrs (after G-DAM) only on last Wednesday of the month.

- ix. **Suggestion:** Despatch Priority should be the same as applicable for collective transactions.

IEX Response: The proposition of priority allocation of corridor to Solar is based on the Government of India push to large solar capacity addition targets. Commission may kindly consider as appropriate. However, priority of G-DAM over DAM has to be given since they are sequentially cleared and transmission allocation for G-DAM will need to happen before that DAM so as to get final cleared volume for G-DAM.

- x. **Suggestion:** Amendment is required but it will complicate the transaction as RECs are not recognized to the extent of selling power at G-DAM. It shall mean that a merchant seller/buyer shall have to forego its entire REC capacity as it has been granted REC status on entire capacity. Further, it has to give an undertaking that it shall not sell power RE power for fulfillment of RPO. Therefore, the issues pertaining to eligibility will arise at State as well as NLDC level. Providing specific exemptions to REC status holders will be very difficult to implement.

IEX Response: We agree with the suggestion and such amendment will be required to enable generators to keep both options. CERC is requested to consider the suggestions of the stakeholder.

- xi. **Suggestion:** Allow Existing Entities to Participate in the G-DAM.

IEX Response: The petitioner agrees that the existing RE generators selling power in the market under any contractual arrangement should also be eligible to sell in G-DAM provided the parties concerned mutually agree to such an arrangement of sale. CERC is requested to consider suggestion of the Stakeholder.

8) MINISTRY OF NEW AND RENEWABLE ENERGY

- i. **Suggestion:** Conceptually, the proposed idea is promising and deserves further examination and work. However, before introducing such mechanism, a comprehensive analysis of the possible issues involved and also structuring of the market would need to be undertaken. In doing so, the global experience and future prospects would also need to be factored in.

IEX Response: The support is welcome.

9) MYTRAH ENERGY (INDIA) PVT. LTD.

- i. **Suggestion:** More clarity is sought on how the deviation charges will be levied on RE generators when the G-DAM bid is unsuccessful and RE Generators are forced to sell their power through DAM.

IEX Response: Deviation settlement of RE Sellers participating in G-DAM shall be in accordance with the CERC /SERC DSM Regulations which provide special dispensation to deviation settlement in respect of RE Generators. It is possible to workout deviations in GDAM, DAM schedules. The proposal for the same can be submitted, by the Petitioner.

- ii. **Suggestion:** Clarity is required whether any revisions will be allowed or not for RE generators in D-1 or at the day of delivery of scheduled generation.

IEX Response: As per CERC (IEGC) Regulations, revisions in collective transactions are not allowed. Since G-DAM is based on collective transactions principle revision in schedule is not being allowed.

- iii. **Suggestion:** Both Solar and Wind Generator should be given equal preference as they both have similar inherent properties of unpredictability. However in Non-Solar day ahead contract, wind should be given preference over the other sources which fall under the ambit of Renewable Energy by MNRE, can be controlled by the generator such as Small Hydro Power, biomass.

IEX Response: The proposition of priority allocation of corridor to Solar is based on the Government push to the large solar capacity addition targets. CERC may kindly consider as appropriate.

- iv. **Suggestion:** RE generators connected to STU should also be allowed to bid in GDAM as most of the projects have STU connectivity. Moreover, it will further give opportunity to such projects with whom utility have not signed PPA but are commissioned to sell their power in G-DAM.

IEX Response: Intra-State entities shall be eligible to participate in G-DAM subject to appropriate regulations by their respective SERCs.

- v. **Suggestion:** As per the current provision for trading conventional power in the DAM, the minimum allowable quantity is 0.1 MW. No such minimum bid quantum is mentioned in the petition. Petition does not mention whether single

or block bids will be applicable in G-DAM. No Minimum tick size for bid is mentioned in the petition. Separate business rules for G-DAM should be included in the petition.

IEX Response: The proposed petition seeks consent from CERC at conceptual level. The detailed Rules and Bye laws including contract specifications would be submitted for approval of Commission post in-principle approval of the proposed product.

vi. **Suggestion:** Waiver of Inter-State Transmission charges and Losses.

IEX Response: This is presently out of scope of the present Petition. However, we request Commission to consider suggestion of the Stakeholder.

vii. **Suggestion:** In case of forced outage of a generating unit or generating station, there should not be any additional deviation charges or hidden penalties applicable to the Generating Station. Such outages are not intentional & beyond the control of the generator. Therefore, forced outages should be exempted from additional deviation charges or hidden penalties

IEX Response: Deviation settlement of RE Sellers participating in G-DAM shall be in accordance with the CERC /SERC DSM Regulations which provides special dispensation to deviation settlement of RE generators.

viii. **Suggestion:** Introduction of Intraday RE market will increase the flexibility.

IEX Response: Renewable generation from sources such as solar and wind is entirely dependent on nature. The generation being intermittent and variable

has therefore been accorded the 'must-run' status under the present regulatory framework. In the Green Term-Ahead Market (G-TAM), the generator will not be able to follow 'must-run' status and dispatch the energy so generated in case his bid is not successful. Thus G-TAM alone is not a feasible proposition for RE generators. On the other hand, the proposed G-DAM would give comfort for sale of entire energy of RE Generator as there is a fall back option in the form of DAM. Further, probability of scheduling of RE power in DAM will be high since it is expected that the RE Seller will bid only to recover its marginal cost which is zero or very low.

10) NATIONAL SOLAR ENERGY FEDERATION OF INDIA

- i. **Suggestion:** Due to huge inventory of unsold RECs in market, it is difficult for the existing RE investors to get the clearance of RECs generated. The Petition is exploring additional investment in the field of Wind/Solar Power Projects, which may not be able to achieve as the market mechanism is link with the REC market. This is so because in case of non-clearing of RE Power in Green Day ahead Market (G-DAM) market, power will be sold in Day ahead Market (DAM) and equivalent REC proposed to be issued to generators. In current scenario, REC based projects are not economical viable. It is not a right time to introduce of market mechanism to sale of Green Power in Power Exchanges.

IEX Response: The proposed product is envisaged considering the Government of India (GoI) target of 175GW of installed capacity of Renewable Energy ('RE') by 2022 comprising major share of Solar (100GW) and Wind (60GW). The Exchange platform will provide a competitive avenue to buyers and sellers both. Further, the proposed G-DAM is not dependent on REC

market as it would be optional for G-DAM participant to sell its un-cleared quantum in DAM.

- ii. **Suggestion:** If the G-DAM is introduced, DISCOMs will go in for procurement of power through exchange only and will not sign Power Purchase Agreements (PPAs) with Renewable Energy developers. Without long term PPA, no Financial Institutions (FIs) and Banks would be ready to finance the projects. It may derail the ambitious plan of Central Government for setting up of RE Power Project for the capacity of 175 GW by 2022.

IEX Response: The proposed G-DAM is envisaged to compliment the ambitious RE capacity addition targets of Gol by giving a competitive option to the buyers and sellers. The petitioner also envisages that G-DAM would address the issue of non-off take of power by Discoms to some extent subject to mutual agreement between the parties and notification of appropriate regulatory framework allowing such un-requisitioned power to be sold in the proposed G-DAM market.

- iii. **Suggestion:** It is suggested that Renewable Rich States which have signed PPAs and not able to absorb Solar/Wind Power fully may allow to sell such excess in G-DAM market.

IEX Response: Agree with the proposal and request the Commission to consider the same favorably.

- iv. **Suggestion:** Floor/fixed rate of sale of Green Power in G-DAM& DAM is necessary without linking it to the REC mechanism. The minimum fixed Price/Floor price will provide an assured cash flow to RE developer.

IEX Response: The Commission is requested to consider the suggestion.

- v. **Suggestion:** There are enough chances of gaming under such mechanism without detail scrutiny. Therefore, G-DAM should not be allowed.

IEX Response: CERC (DSM) Regulations addresses the issues raised by the Stakeholder regarding gaming. Since DSM charges are very reasonably linked to contract price, in order to curb such gaming possibilities, therefore, gaming is not envisaged. Further, the Commission shall intervene at any point of time if such challenges come before the Commission.

- vi. **Suggestion:** There should be no artificial compartmentalization and Solar and Non-Solar RPO should be merged. Only Renewable Purchase obligation should be notified and DISCOMs may be allowed to procure any cheap renewable energy for fulfillment of their RPO.

IEX Response: This issue is beyond the scope of the present Petition.

- vii. **Suggestion:** Solar REC's current Floor price is at Rs.3500/MWh which is not matching with the current FiT rates and rates discovered through Competitive Bidding. Floor price of Solar REC would be even lower than non-solar REC i.e. @ Rs.1000/MWh. Therefore without correcting such anomaly, no market mechanism like G-DAM should be introduced. In view of above consideration, it is not the right time for doing any experiment in RE Market as it is a growing

market. REC market was a total failure in receiving the investment in Renewable Energy Projects. The experiment may possible after achieving at least 90% of target of GoI, i.e. 175 GW till 2022.

IEX Response: G-DAM is a separate market and should not be compared to REC market as each market segment has its own distinct characteristics. We reiterate that the proposed product is envisaged considering the GOI target of 175GW of installed RE capacity by 2022 comprising major share of Solar (100GW) and Wind (60GW) and to provide a competitive option to RE buyers and sellers.

11) NLC INDIA LIMITED

- i. **Suggestion:** If the G-DAM Final Obligation Report proposed to be published by 11-30 am is received after three and a half hours, the possibility of bidding the uncleared portion of G DAM in DAM may not be possible. Communicating to beneficiaries in time for ABT planning also may not be possible. It may be ensured that the final obligation details are communicated to NLCIL (the client) directly from IEX itself viz: by 11-30 am in respect of G-DAM so that NLCIL as a client would be able to trade the uncleared G-DAM in DAM. In the proposed G-DAM & DAM timelines table against the row "Funds & Margin Pay In" (S.No.12. in the table) the timelines for G-DAM, Existing DAM & Proposed DAM are stated as 5-30 pm, 3-00 pm & by 5-30 pm respectively which needs to be clarified.

IEX Response: The obligation report will be provided 0.5 hrs before opening of DAM market to enable G-DAM participants take a decision of bidding in DAM.

As far as timelines of funds pay-in is concerned, same has been decided based on the risk management perspective.

- ii. **Suggestion:** Presently, market has been opened for sale of URS power of conventional power and the same analogy can be extended to RE power also. Taking into consideration that URS power is dynamic and also the RE power is non-firm, No Objection Certificate (NOC) may be issued by RLDC to sell any RE power that may be surrendered by the beneficiary in power exchange even without a consent letter from the beneficiary. RE power cleared in the power exchange flows from one region to any region. Transmission congestion is being experienced in DAM leading to split market. RE power being non-firm in nature, the transmission constraint and congestion will be still higher which has to be addressed.

IEX Response: The Commission may kindly favorably consider suggestion on sale of URS RE power on Exchange. As far as splitting in G-DAM due to congestion in transmission system is concerned, the Commission may kindly advice measures to alleviate congestion in market.

- iii. **Suggestion:** IEX has suggested the order of priority for ATC as Solar first followed by non-Solar. In the Southern Region, Wind Energy will be at its maximum during the South West Monsoon Season. The priority for Solar and Non Solar may be made depending on the higher quantum of availability between the two and the one which is available more may be given higher priority.

IEX Response: The proposition of priority allocation of corridor to Solar is based on the GoI push to the large solar capacity addition targets. The CERC may kindly consider as appropriate.

12) RELIANCE INDUSTRIES LTD.

- i. **Suggestion:** There should be an option for seller/buyer to choose with an option of selling/ buying renewable power with or without green attributes in the proposed G-DAM as there may be companies which might voluntarily be interested in either buying only renewable power or renewable attributes in an endeavor towards sustainable development.

IEX Response: One of the basic characteristics of the proposed G-DAM is to give the obligated entity a competitive avenue to buy bundled RE Power (energy + green attribute) to fulfill RPO. For other modes i.e. buy/sell only green attributes, REC market is already in operation on the power exchanges.

- ii. **Suggestion:** Under current proposal, unsuccessful bid for RE seller have the option to sell renewable power in DAM and get Area Clearing Price (ACP) of DAM + equivalent amount of RECs. However, certain buyers who would like to buy renewable power without green attributes (no REC) cannot do so in the current proposal. Also, other benefits as stated above may not get captured if it is clubbed with DAM. Hence, a separate trading for renewable power without green attributes should also be done.

IEX Response: The buyers who want conventional power, can buy the same from DAM market and buy RECs for renewable attributes.

- iii. **Suggestion:** Uniform market clearing price methodology should be considered through two separate curves for green power with and without green attributes based on option chosen by buyer or seller.

IEX Response: The basic characteristics of proposed G-DAM does not support proposition of stakeholder.

13) RENEW POWER VENTURES PRIVATE LIMITED

- i. **Suggestion:** As the suggested G-DAM product will facilitate open access sale of power generated through renewable energy sources along with its green attribute, the same should be used for RPO compliance by the buying entities. It is noteworthy that rate of deviation charges will be determined as under :

a) Fixed rate of PPA as determined by appropriate commission under section 62 and section 63 of the Electricity Act, 2003. In case of multiple PPA, weighted Average rate shall be considered.

b) National level Average Power Purchase Cost (APPC) as determined by CERC in case of participant selling power under open access which is not accounted for RPO compliance.

There is a lacuna in relation to the rate at which the deviation settlement charges will be calculated for such generators. As such, sale will neither be covered under item (a) nor in item (b) as mentioned above. Such lacuna in determination of applicable DSM charges will affect the affinity for the product and will act as deterrent in its implementation. To deal with the problem, the Market Clearing Price (MCP) of the specific day may be considered for purpose

of calculation of Deviation settlement charges in case of G-DAM transactions. It is pertinent to mention that the prevailing DSM regulations the Deviations with respect to each block is determined based on the available capacity for that specific time block. Under the Suggested product G-DAM, there is fair probability of partial clearing of Bid, under which the volume of power cleared will be less than the bid volume. Under such a situation, it should be specifically mentioned in the CERC (Deviation Settlement Regulation) that under such a situation the cleared quantum should not be construed as Available capacity. In view of above, it is requested to include the above mentioned point under Para 17 of the petition and the Commission may make necessary amendment in this regard as it deems fit.

IEX Response: The suggestion is put forth for kind consideration of the Commission. Issue of using 'Available Capacity' is out of scope of this petition. Commission may consider suggestion of stakeholder regarding available capacity in the formula of calculation of deviation percentage in DSM Regulations.

- ii. **Suggestion:** It is requested not to give preference to any of the sub product under GDAM category and in the event of constraint in transmission capacity, allocation shall be on prorata basis considering the buy and sell bids received.

IEX Response The petitioner's proposition of priority allocation of corridor to Solar is based on the GoI push to the large solar capacity addition targets. The CERC may kindly consider as appropriate.

iii. **Suggestion:** The issues which need to be addressed in relations to No objection Certificate issued by respective SLDC/RLDC are as under:

- a) Both the buyer and seller are allowed to participate under both the products i.e G-DAM and Conventional DAM, which will take place one after another. To deal with same, a proper NoC reconciliation system needs to be in place capable of calculating the Time block wise residual capacity available subsequent to G-DAM auction result.
- b) SLDC should not be a Product specific and/or power exchanges specific. The NoC issued shall be eligible to be used for all the Products available at various power exchanges.
- c) There should be a robust communication system between various power exchanges and load Despatch Centers at all level. This would facilitate real time NoC reconciliation and help in establishing available margins to participate in bidding process.

IEX Response: The petitioner agrees with the suggestion of the Stakeholder and shall take up the same during implementation of G-DAM. Further, it is submitted that with the introduction of the proposed National Open Access Registry by the Commission, the reconciliation of NOCs on a real time basis will be feasible.

iv. **Suggestion:** Introduce Floor and Ceiling Price for Solar and Non-Solar Contracts in G-DAM.

IEX Response: The Commission may kindly consider the suggestion.

- v. **Suggestion:** Discoms should be made eligible in the G-DAM market as a seller.

IEX Response: The Commission may favorably consider the suggestion from the stakeholders regarding allowing Discoms to sell their surplus RE power in G-DAM market.

- vi. **Suggestion:** Renewable Energy Generator shall be allowed to schedule their banked energy available with Distribution companies.

IEX Response: The Commission may consider suggestion from the stakeholder to allow RE seller to sell its banked power with the Discom.

- vii. **Suggestion:** A new category of seller can be introduced as State level aggregator. Aggregator will be responsible for aggregation of renewable energy available in the State under solar and non-solar category and same can be sold on exchanges under G – DAM and DAM market. The obligation will be generated in the name of aggregator only and bifurcation of same will be done among various renewable generators. This concept is same as the Concept of Qualified Coordinating Agency (QCA) as stipulated in the CERC DSM regulation.

IEX Response: The petitioner is of considered view that Qualified Coordinating Agency (QCA) should be allowed as eligible seller in G-DAM.

14) SAURABH PANDEY (INDIVIDUAL)

- i. **Suggestion:** It is implicit that MCP of the current DAM market is approx. INR 2.3-2.4 per unit. The realization sought for feasible solar plant is INR 4-5 per

unit. On the basis of PPA signed on this rate, bank provides the requisite loan for setting the renewables. On the inclusion of green power in normal DAM market, the average rate of normal DAM market will increase. With the increase in open access charges year on year this will further hamper the growth of short term market. Instead of including the green power in normal DAM market, we can devise a separate single window for clearing the green power which will be Green Power + REC benefits.

IEX Response: It is expected that RE Seller will bid un-cleared quantum of G-DAM in DAM only to recover marginal cost which is zero or very low. Therefore G-DAM is not envisaged to have any major impact on prices of DAM.

- ii. **Suggestion:** Clarification is sought about the documents to be required during registering for power exchange. The documents (MOU, Member-client registration) required for trading the power (for buyer) should be same for both G-DAM as well as the DAM market.

IEX Response: The petitioner will file all the documents and other requirements as a part of the detailed Rules and Bye Laws to seek consent / approval of the proposed contracts from the Honorable Commission

- iii. **Suggestion:** Though, many States are in the process of developing the forecasting and scheduling mechanism, this has not evolved in true sense as of now. The recent order by KERC has deferred the Forecasting and scheduling Regulation mechanism by other six months. In this scenario, the exact scheduling figure of the Renewable is not possible. Even if the procedure is implemented, the variability of +- 30% is included in the mechanism. What is

the step incorporated to include the variation in the production? There should be some relaxation provided on the basis of the variable nature of the RE sources. The billing should be done on the amount of power delivered at regional periphery, considering some fluctuation from the scheduled quantum of power.

IEX Response: G-DAM market is envisaged based on collective transactions and CERC in IEGC restricted revisions in collective transactions in case of RE generators. Further, implementation of revisions in collective transaction would be very complicated because there is no one to one matching of buyer and seller.

15) **STATKRAFT MARKETS PVT LTD**

- i. **Suggestion:** The renewable energy generators may find it as a deterrent to schedule energy on exchange given the risk of high penalty exposure. The same provision can be gradually strengthened based on technological improvement and industry best practices.

IEX Response: The G-DAM is based on the principle of collective transactions. CERC (IEGC Regulations) have restricted revisions in collective transactions in case of RE generators. Further, even implementation of revisions in collective transaction would be very complicated because there is no one to one matching of buyer and seller.

- ii. **Suggestion:** Settlement of deviation from scheduled generation.

IEX Response: Considering the green attribute of the energy scheduled, any deviation from the scheduled energy should be settled through RECs as well. The DSM Regulations of the Commission provide for mechanism to settle deviations through RECs.

- iii. **Suggestion:** Considering the intermittent nature of renewable energy, there should be an exclusive corridor allocation for G-DAM. If both G-DAM and DAM are operating on short term margin, DAM may be adversely affected as the corridor will be further constrained due to Green energy market. An exclusive corridor allocation will ensure DAM is operational without any further corridor constraints.

IEX Response: The Commission may like to consider suggestion regarding reservation of corridor for G-DAM.

- iv. **Suggestion:** The generators selling on G-Dam should have an option to sell the un-cleared volume on DAM or not. The generator should have the option to take the economic decision in case of unsold green energy.

IEX Response: The option of bidding of un cleared volume of G-DAM in DAM is voluntary and entirely based on the decision of the participant.

- v. **Suggestion:** In order to make G-DAM more attractive, the revised RPO trajectory and Forecasting Scheduling Regulations should be strictly enforced and sincerely complied. The launch of G-DAM market should be timed perfectly to make sure that the regulations are conducive towards ensuring maximum participation by buyers and sellers.

IEX Response: The Commission may consider suggestion of the Stakeholder.

16) TATA POWER TRADING COMPANY LTD.

- i. **Suggestion:** Nowhere in the world there is a separate Day Ahead Market for exclusive sale and purchase of Green Power through Exchanges. All over the World, both conventional and Wind, Solar Power etc. are traded simultaneously on a common Exchange in the same Day Ahead Market.

IEX Response: The countries where RE generators participate in same Day Ahead Market, set a feed-in tariff corresponding to the technology-specific cost of renewable power generation. The generators, through TSO, sell power through DAM and in case such full cost is not recovered, the difference of Day Ahead Price and FIT is paid through market premium through a fund. In case of Germany, even unproduced electricity which has not been produced due to the intervention of system operators is also awarded with the feed-in payment. This mechanism is like per unit subsidy to RE Generators from the fund. In absence of any such scheme in India, creation of a separate renewable specific product segment has been proposed so that true price of renewable energy is discovered and paid through market based mechanism. In addition to above, India's RE market is primarily driven by Renewable Purchase Obligation (RPO). If an Obligated Entity buys power from DAM, it will not be able to fulfill RPO obligation even if it buys power from RE Generator.

- ii. **Suggestion:** No real demand exists for purchase of green power. Except few States, all other States/obligated entities have failed to comply with their RPOs by means of REC. The REC market could not develop as expected due to

consistent low demand in terms of meeting RPOs by obligated entities. This has resulted in a large number of RECs unredeemed with RE Generators. Though, supply has never been a constraint in REC market, market clearing ratio remains considerably low due to which the discovered price is always at fixed floor price. Apart from this, many States are just creating records by floating RE purchase tender and not issuing LOI for purchase of RE power. Most of the power requirement by DISCOMs today is being met through short term tender by purchasing conventional power, under competitive bidding guideline.

IEX Response: The proposed product is envisaged considering the GoI target of 175GW of installed capacity of RE by 2022 comprising major share of Solar (100GW) and Wind (60GW) and to provide option to RE seller for off take its power. Considering huge capacity addition envisaged within a span of next 5 year, the time is appropriate to provide a competitive avenue to RE buyers and sellers. G-DAM is a separate product and should not be compared to REC market as each of the market has their own distinct characteristics.

- iii. **Suggestion:** RE generator/developer would like to tie up their infirm power (especially Wind & Solar) firmly with any buyer, preferably on a Medium to long term basis to ensure the return on their investments. Such RE Generators/Developers would not prefer a day ahead market to decide the off take and price cannot be guaranteed in such kind of a market. In fact, RE generators/developers would continue to prefer having a firm buyer with a known tariff either under FIT/competitive bid or under APPC. As buyer for a green energy will be available intermittently and not on all days, further buyer

may be available only during the peak hours. Thus the remaining power i.e. full power on RTC basis or off peak power will be sold in conventional DAM at prevailing market prices. It may be noted that the prevailing DAM prices are far less than APPC price being paid to the generators under REC mechanism. In case power is available during night hours, realization would be further reduced.

- iv. **Suggestion:** Also, in a scenario where demand for green power is not a reality and RE generators are unwilling to keep their capacity untied, proposal for introducing such market would serve no purpose for the development of RE segment, which has already experienced failure in REC market as well as failure in buying green power through bilateral tenders.

IEX Response to iii and iv: The stakeholder is assuming negative behavior from the market participants. The petitioner is of the view that the market behavior of the participants can be better ascertained based on the product offering. With introduction of G-DAM, petitioner has proposed availability of a competitive platform for RE sellers and buyers. The actual behavior of market can be analysed better following introduction of the product in the market.

- v. **Suggestion:** As per proposal, it might be a case that a RE Generator gets part clearing under G-DAM and balance clearing under DAM. In most of the States, cross subsidy surcharge for purchase of renewable power is either fully exempted or given some rebate. This issue needs to be addressed.

IEX Response: In case of partial clearing in DAM, GDAM markets, CSS will be partially/fully payable depending on schedule issued in each segment.

vi. **Suggestion:** Sufficient redundancy in Transmission needs to be in place. For the G-DAM market to be launched, separate Corridor may be made available. CERC framework allows revisions in RE power but IEX has proposed that the power scheduled under G-DAM would not be revised. As the schedule is being fixed on Day ahead basis, having sufficient capacity available for balancing the huge expected deviations arising due to Grid connected Solar and Wind Generation is be a pre requisite. Adequate mechanism should be in place to take care of the deviation during the day.

IEX Response: With subdued growth in demand of power the transmission system availability is unlikely to be affected adversely. Instead, the huge RE capacity addition may reverse the flows on transmission corridors. As far as balancing of deviation of RE Capacity is concerned, the Commission has introduced many tools such as spinning reserves, ancillary services, intra-day market etc. which are available for balancing of RE capacity.

vii. **Suggestion:** Though CERC has issued the framework for scheduling and deviation settlement for wind and Solar, the same has not yet started. Forecasting of wind/Solar generation with 16 no. of revisions needs to be tested in respect of % deviation of forecast power from actual generation. Deviation settlement with respect to RE power schedule in G-DAM and brown power schedule in DAM is an issue. Only those RE sellers situated in States would be allowed to participate in GDAM where SERC has adopted CERC DSM mechanism. As all the SERCs have not adopted the CERC framework, this would lead to lesser number of sellers in the market leading to inefficient price discovery. In case of scheduling of Green Power under G-DAM and Scheduling

of power under DAM, if curtailment occurs in real time, which schedule to be curtailed first or both the schedules to be curtailed on pro-rata basis, is an issue. Also, accounting of Green power and Brown power with REC would be an issue.

IEX Response: We expect that the RE capacity under construction may come up shortly and DSM mechanism shall be operationalized accordingly. Proposed revision of schedule is not envisaged in G-DAM market. There is no issue in deviation settlement of RE seller participating in G-DAM and DAM as provisions are mentioned for both in the CERC DSM Regulations. The petitioner is of the considered view that with the State Commissions adopting “Model FOR Regulations on Forecasting, Scheduling and Deviation Settlement of Wind and Solar Generating Stations at the State Level”, it would be possible to gradually build good liquidity in G-DAM. As regards curtailment, it is proposed that DAM should be curtailed first followed by G-DAM considering must run status of RE Capacity. There is no issue envisaged in accounting as Power Exchange will send separate schedule for both the markets to NLDC.

- viii. **Suggestion:** As per Power Market Regulations (PMR), there should be minimum two CERC approved Exchanges for developing the market so as to avoid monopoly. Readiness of PXIL needs to be assessed. Also, A RE Generator may produce a false declaration in DAM/G-DAM market in order to maximize the revenue, on the basis of price differential. Few RE Generators whose capital cost is almost recovered, may wish to bid at low price. Also few RE generators who have not 100% tied up their RE power under FIT/APPC, may also bid on low prices, for the balance untied capacity. Such scenario may

distort the development of RE segment with a negative price signal. As per the proposed shift in timeline of existing DAM market, issue time of final obligation of existing DAM time has to be delayed by more than two hours i.e. at around 5:30 PM. This delay would impact the planning/finalization of schedule by DISCOMs and further impact the production planning of Industrial consumers. Thus the delay in declaration of result would adversely affect the already established DAM market.

IEX Response: As per PMR, there is no requirement of same product to be offered by all Power Exchanges. Bids and cleared volumes have to be within total available generation capacity. DSM charges are reasonably linked to contract prices. Therefore, gaming possibilities are minimal. In addition to scenario stated by Stakeholder, there may be many more scenarios which is nothing but market dynamics and these dynamics shall only be examined once such product is offered in the market. As far as change in timelines are concerned, we are of the considered view that for providing a new product which creates some value addition to market, changes in timelines should be considered. Commission recently proposed significant changes in timelines in IEGC to enable sale of URS Power in the market.

- ix. **Suggestion:** IEX is proposing new product, whereas it has not been able to correct its software for existing TAM market. The anomaly in software is causing disruption in flow of market information, which is leading to erratic flow of information to market participant. CERC should ensure that the software for the proposed new product would be free from anomaly and would ensure

smooth change over from DAM to G-DAM, in terms of schedules and margin money.

IEX Response: The issue raised seems to be without any basis. Trading Software of the petitioner has undergone rigorous testing and after consent of Commission, such software has been offered for trading. In future the same practice shall be followed.

x. **Suggestion:** Today, IEX DAM is an established market and it has acquired sufficient liquidity. Key enablers or success factors are given below:

- Trading activity was already in place
- Regulatory framework was available for Inter-State Open Access transaction
- Procedure for scheduling of power, corridor allocation for STOA and deviation settlement for balancing the market were existing.
- Large chunk of captive power producers along with merchant IPPs were available for sale of power in the market.
- Industries were keen to have reliable power and optimize the cost of power purchase.
- DISCOMs were in need to bridge the demand on day ahead basis
- Provision of Open Access for consumers of 1 MVA and above were put in place by SERCs.
- Focus on bringing competition in the Market
So, enablers for the introduction and development of Day Ahead Market were in place.

What are the key enablers for the proposed G-DAM?

IEX Response: Few key enablers for proposed G-DAM are as below:

- Liquid DAM market
- Huge RE capacity additional target of Gol by 2022.
- Improvement in RPO enforcement.
- CERC framework of Forecasting and Scheduling of RE Power.
- SERC framework of Forecasting and Scheduling of RE Power.
So, enablers for the introduction and development of Green Day Ahead Market are in place.

xi. **Suggestion:** It appears that the proposed G-DAM would not add any value to RE generator and buyer. As per the prevailing trend, the proposed market, during the first three quarters of FY, is expected to clear with very low clearing ratio due to non-seriousness of buyer to fulfill their RPO in this period. Further, the buy bid is expected to increase in last quarter during which availability of RE power is very low. This would not increase any liquidity. In view of non-existence of a separate G-DAM market globally, issue and challenges in India as explained above and disruption it would cause in terms of timeline in the currently running DAM market, we therefore do not agree with the proposal of IEX to start a new G-DAM market. However, it is suggested that the existing Day Ahead market may be used for trading of Green Power (including Wind and Solar) with a provision of scheduling of Green Power, as per IEGC and DSM Regulations.

IEX Response: The petitioner is of considered view that the proposed product will definitely add value to the existing RE market. For buyers and sellers, G-DAM proposes to provide a competitive opportunity. The Stakeholder is envisaging trend in G-DAM based on the REC market which is not a fair comparison. All issues regarding non-existence of G-DAM globally, timelines etc. have already been responded to. Need for separate G-DAM market has also been illustrated. Despite challenges in RE market, petitioner feels that possibility of creating a liquid market is fair and worth exploring.

ANALYSIS AND DECISIONS BASED ON MERIT OF THE CASE

44. The Petitioner has approached the Commission by way of present petition for approval to introduce Green Power (Renewable Energy) contracts in its platform to

provide avenues to RE generators for sale renewable energy component and to provide options to obligated entities to fulfil renewable purchase obligations. The Petitioner has proposed Green Day Ahead Market by introducing Solar Day Ahead Contracts and Non-Solar Day Ahead Contracts in green power. The proposed framework involves the following steps (a) RE Sellers and Buyers can participate in G-DAM; (b) If the bids are cleared, buyers procuring green power shall be eligible to fulfil their respective RPO compliance of Solar and non-Solar targets; (c) If the bid for green power is not cleared or cleared partially they can bid in the DAM; and (d) If the power is sold in the DAM at market determined price, the seller will get equivalent of RECs in lieu of the bid cleared in DAM.

45. The Petitioner has highlighted that the proposed product of Solar Day Ahead Contract and Non-Solar Day Ahead Contract to be traded at the Green Day Ahead Market (G-DAM) has several benefits. Firstly, the proposed product will provide RE Generators an additional option to sell its green power and to the buyers an additional avenue to fulfil their renewable purchase obligations. Secondly, this product may eventually result in encouragement for new merchant capacity to come up. Thirdly, the introduction of Green Day Ahead Market will address the uncertainties around signing of long term PPAs and associated issue of recovery of cost of RE generation. In other words, the RE generators may not feel the need for long term tie-up of capacities in advance or depend on the conclusion of PPAs for the purpose of project viability. Fourthly, the proposed product will encourage small participants like Open Access Consumers and CPP Consumers to buy green power to meet their RPO. Fifthly, there are curtailments of RE generators in several States

and such generators having surplus wind or solar power at their disposal will be able to sell the said surplus power in the market.

46. Responses have been received from many stakeholders to the proposal of the Petitioner which have been discussed in the earlier part of this order. While some stakeholders have supported the proposal as a good initiative, some stakeholders have suggested changes in the proposal and some stakeholders have opposed the introduction of such a product. The Petitioner in its rejoinder has attempted to clarify the concerns of the stakeholders and has pleaded that this product will encourage generation and sale of RE power in the country. Based on the submissions of the Petitioner and the stakeholders, the following issues arise for our consideration and decision:

- (a) Issue relating to liquidity in the proposed product
- (b) Requirement of flexibility of schedule revision for RE generation
- (c) Dynamic Registration under REC Mechanism and Feed in Tariff (FIT) Route/ Contract for sale for Renewable Purchase Obligation (RPO) Compliance
- (d) Impact of FIT/Auction based contracting on REC Market
- (e) Requirement of amendment in the timelines for scheduling of RE power
- (f) Issues relating to Market Design

These issues have been dealt with hereinafter.

(A) Issue relating to liquidity in the proposed product:

47. The Petitioner's main plank of argument is that the proposed Green Day Ahead Market (G-DAM) if introduced shall bring in merchant generators, generators having surplus power and the generators whose output has been curtailed by the distribution companies to participate in this segment of the market. At present merchant capacity in renewable is very low, as RE sector has thrived so far based

on the various forms of policy and regulatory supports introduced like subsidies, fiscal incentives, preferential tariff and requirement of RPO by the obligated entities. The Commission is of the view that merchant generation of renewable generation is unlikely to be available in large scale for trading of Green Power Contract in the Green Day Ahead Market. As regards the availability of surplus of RE power for trading in Green Day Ahead Market, the RE capacities contracted so far in the country are mostly tied up in long term PPAs and therefore, the Commission is of the view that in the absence empirical data regarding availability of surplus power, it will not be advisable to introduce this instrument in the power exchange for trading. As regards the trading of power by RE generators whose schedules are curtailed by the distribution companies, this aspect needs to be examined in the context of the PPAs between the RE Generators and distribution companies and may require necessary changes in the PPAs to provide for sale in the Power Exchange. Further, going by the past experience, it is unlikely that introduction of such a product in the Power Exchange would result in addition of new generation capacity in renewable energy. From the point of view of buyers also, introduction of this product will not be helpful as the RPO compliance on the basis of purchase of renewable energy on a day to day basis does not seem very promising. The Commission is of the view that in the absence of clarity and certainty in terms of liquidity in this segment of the market, it will be premature to introduce Green Day Ahead Market in the Power Exchange.

(B) Requirement of flexibility of schedule revision for RE generation

48. As per the proposal of the Petitioner, the auction timing in G-DAM market shall be 8 AM to 9 AM of previous day (D-1) and the delivery shall take place on next day (T+1) from 0000 hrs to 2400 hrs in 96 separate 15 minute time blocks. The

Petitioner has proposed the same procedure of scheduling as applicable for collective transactions in case of G-DAM market and no revision of schedule shall be allowed. In other words, the proposal presupposes that the forecasting and scheduling for RE generators should be firm and robust so as to obviate the need for flexibility of revision during the day.

49. RE generation is infirm and uncertain in nature. In recognition of the nature of RE generation, the Commission has provided for flexibility of 16 revisions during the day in respect of wind and solar power generators, though the stakeholders had pleaded for greater flexibility and higher number of revisions to match the variability of RE generation. The proposal of the Petitioner for “no revision” for RE generators goes against the fundamental premise that RE generation being infirm in nature requires flexibility in scheduling through revision of schedules. However, international experience reveals that there is co-existence of “special dispensation” and “market mode” operation of RE generators. In case of special dispensation, the RE generator chooses FIT/ Centralised forecasting mode and entire responsibility for off-take is taken by the system operator. In case of market mode of operation, the RE generators compete with other generators and is subject to same set of market rules including deviation/imbalance as applicable to conventional generators. The proposal of the petitioner for no revision of schedule is akin to market mode of operation. If the RE generators are in a position to forecast and schedule on a firm basis, they could very well participate in the market say Day Ahead Market or OTC market like any other generator. In that case, a separate window of Green Day Ahead market might not be necessary. However, considering that the forecasting is not so robust and firm in India, RE generators require windows for revision of schedules

and the proposed Green Day Ahead Market which is premised on no revision of schedule will not be suitable at this stage of RE development in India.

(C) Dynamic Registration under REC Mechanism and Feed in Tariff (FIT) Route/ Contract for sale for Renewable Purchase Obligation (RPO) Compliance

50. The Petitioner has proposed that RE Sellers and Buyers can participate in G-DAM market and if the bids in G-DAM are not cleared or cleared partially, they can bid in DAM. Since, in such cases the RE Seller shall be selling renewable energy at market determined price, the RE seller shall be eligible for grant of RECs equivalent to the bid cleared in the DAM. The Commission has considered the proposal of the Petitioner. At present, FIT and REC operate exclusive of each other as both are based on separate policy and regulatory principles. If the RE Seller is allowed to participate in G-DAM as well in DAM, this will lead to a situation of dynamic registration of RE Seller for FIT route as well as REC mechanism. For example, a RE Generator having FIT contract might sell part capacity to an obligated entity under FIT route, part capacity through G-DAM and part capacity in DAM and claim REC for such generation. This would require an elaborate system of accreditation, registration, accounting of RE generation, and settlement mechanism. Such an elaborate mechanism does not seem justified in the absence of the prospects of large scale capacity addition of RE generation through the proposed product.

(D) Impact of FIT/Auction based contracting on REC Market

51. Choice of product is an essential element for competition. However, it is equally important that the various products offered at the exchange are designed in such a way that they do not result in overlaps, conflicts, complexities and confusion. G-DAM as proposed by the Petitioner is a new product. However, introduction of this

product will come in conflict with the existing products such as FIT and REC. The proposal for selling unsold green power in G-DAM in the DAM market for grant of RECs will result in dynamic registration and switchover between FIT route and REC mechanism which will adversely impact both these segments of the existing market structure. Even in the short to medium run, G-DAM market may dissuade the buyers from long term contracts which provide comfort to the investors in RE. G-DAM will also affect REC segment of the market which is already reeling under huge unsold inventory on account of the non-compliance of the RPOs by the obligated entities. The Commission is of the view that considering the existing market structure of RE power, introduction of a new product in the form of G-DAM will not be in the interest of the market for RE power at this stage.

(E) Requirement of amendment in the timelines for scheduling of RE power

52. The Petitioner has submitted that for introduction of proposed G-DAM, there will be a need to amend the timelines relating to scheduling of power traded in the DAM at the Power Exchange. This will require amendment of the procedure for collective transactions and also amendment to the various provisions of REC Regulations. The Commission is of the view that time is not appropriate to introduce G-DAM in the Power Exchange, and therefore, it will not be worthwhile to go for amendment of the applicable provisions of REC Regulations and Procedure relating to collective transactions.

(F) Issues relating to Market Design

53. Introduction of a new product in the market needs to be assessed in terms of its impact on the overall market design. The introduction of new products such as Solar Day Ahead Contract and Non-Solar Day Ahead Contract as suggested by the

Petitioner presupposes that trading of green power in the G-DAM shall follow the same scheduling procedure as the conventional power without any scope for revision of schedule which means that green power has to be traded at par with conventional power. That being the case, there is no requirement to introduce a new market segment in the form of G-DAM as the green power can be traded in the same manner as conventional power in Day Ahead Market.

54. In view of the examination of the various issues arising out of the proposal for introduction of Solar Day Ahead Contract and Non-Solar Day Ahead Contract to be traded at G-DAM at the Power Exchange, the Commission is of the view that the market condition at present is not conducive for introduction of this product and accordingly, the proposal of the Petitioner is not approved.

55. Petition No.187/MP/2016 is disposed of in terms of the above.

sd/-
(M. K. IYER)
MEMBER

sd/-
(A. S. BAKSHI)
MEMBER

sd/-
(A. K. SINGHAL)
MEMBER

sd/-
(GIREESH B. PRADHAN)
CHAIRPERSON