

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 378/MP/2014**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**

**Shri A.K.Singhal, Member**

**Shri A. S. Bakshi, Member**

**Date of Hearing: 8.01.2015**

**Date of Order: 8.12.2015**

**IN THE MATTER OF**

Permission to introduce Two Day Ahead Spot (2-D Spot) and Extended Evening Day Ahead Spot (EVE-DAS) in Power Exchange India Limited.

**AND**

**IN THE MATTER OF:**

Power Exchange India Limited  
5<sup>th</sup> Floor, Tower-3  
Equinox Business Park (Peninsula Techno Park)  
Off Bandra Kurla Complex, LBS Marg, Kurla (West)  
Mumbai-400 070

**..Petitioner**

**Vs**

1. National Load Despatch Centre  
B-9, Qutab Institutional Area,  
Katwaria Sarai,  
New Delhi-110 016

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

**..Respondents**

**The following were present:**

Shri M G Raoot, PXIL  
Shri S G Tenpe, PXIL  
Shri Kapil Dev, PXIL  
Shri Rajesh Mendiratta, IEX  
Ms. Shruti Bhatia, IEX



**ORDER**

The petitioner, Power Exchange India Limited (PXIL), has filed the present petition seeking permission of the Commission under Regulation 6 read with Regulation 7 of Central Electricity Regulatory Commission (Power Market) Regulations, 2010 (Power Market Regulations) to introduce 2D-SPOT and EVE-DAS on its trading platform.

2. The petitioner has submitted that 2D-SPOT would allow market to open on two day ahead basis and participants would be able to transact today (on day T) for delivery of power day after tomorrow (on day T+2). With regard to EVE-DAS, the petitioner has submitted that the market would open after publishing of result of the existing DAS contract and it would allow participants to transact during later half of the trading day for getting delivery of power on the next day. The submissions of the petitioner are summarised as under:

(a) Power Exchanges are at nascent and shallow stage and it is important to introduce new types of contracts to meet market needs and to enhance liquidity for the development of the Power Market.

(b) Since delivery under Power Exchange based products is limited to 11 days, Exchange based transactions do not help in advance reservation of transmission capacity.

(c) Day Ahead Spot (DAS) operates under collective mechanism unlike other products which operate in bilateral segment. The collective mechanism receives higher priority in comparison to bilateral transaction for meeting day ahead power requirement.

(d) In case of non-clearance of bids submitted in day ahead market, the participants have only intraday and day ahead contingency markets as fall back arrangement.

(e) 2D-SPOT would enhance efficacy of price discovery mechanism by growing the market as the participants would have multiple opportunities to procure power. Also, contingent demand arising out of sudden loss of load/generation would be managed more efficiently resulting in better portfolio management.

(f) With five years of exchange operational experience, the participants are able to project their demands with reasonable accuracy for the next two days. It is proposed to utilize the NOCs issued for Collective transactions for 2D-SPOT.

(g) EVE-DAS market would operate in the latter half of the trading day for delivery of power the next day.

(h) For meeting next day`s requirement, the market participants would have three options viz. 2D-SPOT, DAS and then EVE-DAS.

(i) Major characteristics of 2D-SPOT and EVE-DAS contract(s) are as under:

(a) All contracts shall be in accordance with the provisions of the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008 (Open Access Regulations) or such other regulations as introduced from time to time.

(b) 2D-SPOT and EVE-DAS do not clash with any of the presently available options in the short term open access as approved under Open Access Regulations.

(c) Trades matched shall be delivered physically as per timelines for scheduling.

(d) Contracts shall be subject to Force Majeure conditions of availability of transmission capacity and real time curtailment by National Load Despatch Centre (NLDC), Regional Load Despatch Centre (RLDC) and State Load Despatch Centre (SLDC).

(e) Exchange shall ensure that total purchase or sell quantity does not exceed quantum indicated in the clearance of SLDC.

(f) Membership criteria and member client relationship shall be same as in the case of day ahead market.

(g) Detailed contract operations and proposed specifications of both 2D-SPOT and EVE-DAS have been provided by the petitioner.

(h) There is no revision proposed in existing Rules and Bye Laws of the petitioner.

3. The petition was admitted on 18.11.2014. The petitioner was directed to implead Power System Operation Corporation (POSOCO) and Indian Energy Exchange Ltd. (IEX) as parties to the petition. Notice was issued POSOCO and IEX to file their replies.

4. POSOCO in its reply dated 16.12.2014 has submitted as under:

(a) As per Regulation 6.4.6 of the Central Electricity Regulatory Commission Indian Electricity Grid Code) Regulations, 2010 (Grid Code), Inter-State Generating State (ISGS) is required to declare its ex-power plant MW and MWh capabilities for the next day to the respective RLDCs based on which beneficiaries requisition their shares from ISGS. Accordingly, the beneficiary States plan to sale/purchase power for next day based on demand forecast, own generation capability, entitlement from ISGS and already contracted LTA/MTOA/STOA transactions. As entitlement from ISGS is known only on day ahead basis, the States would not have complete information for proper planning of sale/purchase through 2D-SPOT. Predictability by generators for sale of power would be better one day in advance compared to two days in advance.

(b) Based on information available regarding outage of transmission lines, generating units, etc., RLDCs/NLDC re-assess TTC/ATC and margins on inter-regional corridors/region-wise/bid-wise for processing collective transactions. TTC/ATC declared for T+2 day, may undergo further change after one day.

Approval of collective transactions 2 days in advance may lead to curtailment of collective transactions on real-time basis on T+2 day.

(c) The timelines for 2D-SPOT may overlap with current timelines of existing Day Ahead Spot contract as per Procedure for scheduling of collective transactions.

(d) International experience indicates market operation closer to time of delivery and not on T+2 basis and allows utility to balance portfolio accurately, brings more certainty and provides continuous window to procure power. Therefore, 2D-SPOT is not practicable.

(e) In July 2014, the Commission had invited comments on the staff paper on Extended Market Session on which NLDC suggested that both evening market and intraday market on 24x7 basis should be introduced. Evening market is a welcome step and it would have the following advantages:

- (i) Facilitate demand-supply balancing of DISCOMs portfolio for the next day,
- (ii) Better utilization of available margins on unutilized transmission corridors,
- (iii) Shift transaction volumes from DSM to the scheduled market which will improve grid reliability,
- (iv) More choice to consumers as it provides participants a second chance to bid,

(v) More volume will be cleared in the market as this may help uncleared energy of morning session to be cleared in the evening session,

(vi) This will provide market participants with an opportunity for further optimization of their portfolio.

5. IEX in its reply dated 15.12.2014 has submitted as under :

(a) The present petition has not been filed in accordance with provisions of Power Market Regulations, Open Access Regulations and Procedure for Scheduling of Collective Transactions approved by the Commission. Through this petition, the petitioner has not prayed for amendments in the Open Access Regulations.

(b) 2D-SPOT contract is not in conformity with Regulation 6 read with Regulation 4(iii) of Power Market Regulations which apply to delivery based contracts transacted on Exchange, namely (i) Intraday/contingency contracts, (ii) Day Ahead contract, and (iii) Term Ahead contract. Since 2D-SPOT contract does not fall under any of the three types of contracts, therefore, is liable to be rejected.

(c) Regulation 2(i) (jj) of the Power Market Regulations provides that contracts in which delivery of electricity occurs on a date more than one day (T+2 or more) ahead from the date of transaction (T), falls under the category of Term Ahead Contract and cannot be termed as "Spot Contract". Therefore, proposed

2D-SPOT contract is not in conformity with Regulation 2(i)(ii) (Definition of Spot Contract) read with Regulation 2(i)(jj) (Definition of Term Ahead Contract) of Power Market Regulations.

(d) Regulation 11 of the Power Market Regulations provides that the bidding mechanism shall be on day ahead basis. However, proposed 2D-SPOT contract does not qualify to be part of Day Ahead Market and is not in line with the present market design. Present market design in Power Market Regulations was evolved after a thorough public consultation since 2006 including 2 years of operation of Power Exchanges. Any deviation from the established market design would definitely lead to distortion in the market.

(e) The petitioner has relied upon Regulation 12 of the Open Access Regulations to conclude that 'the collective transactions have to be offered within three days of delivery'. The petitioner is trying to mislead the Commission by quoting Regulation 12 and interpreting that scheduling of collective transactions can be done even two days prior to delivery. The petitioner has ignored the heading of Regulation 12 "Procedure for scheduling for day ahead transactions" which categorically states that the procedure is applicable only for day ahead transaction and cannot be applied for two day ahead transaction.

(f) Regulation 8 (2A) of the Open Access Regulations provides that No Objection or Prior Standing Clearance obtained by the State utility or intra-State entity from the State Load Despatch Centre can be used for collective transaction for day



ahead on any Power Exchange(s) and/or for bilateral intra-day transaction/contingency transaction in OTC market or on the Power Exchange market. Therefore, NOC cannot be used in any other market, i.e. 2D-SPOT contract.

(g) As per Regulation 2(o) of the Power Market Regulations, only Intraday/Contingency contract are envisaged after closure of present day ahead market. EVE-DAS does not fall under the definition of Intraday/Contingency contract and is beyond the scope of Power Market Regulations. Therefore, NOC issued for Day Ahead transaction cannot be used for EVE-DAS product.

(h) Regulation 12 of the Open Access Regulations does not permit scheduling of collective transaction for next day after 3:00 pm. The Commission in "Staff Paper on Extended Market Session" dated 8.7.2014 had observed that the operationalization of evening market would require changes in Short -term Open Access Regulations and Procedure for Open Access for both bilateral and Collective transactions.

(i) Proposed 2D-SPOT and EVE-DAS contracts cannot be scheduled under Procedure for Scheduling of Collective Transaction. The petitioner is seeking amendments in the Power Market Regulations and Open Access Regulations which is not permissible through filing of the petition.

(j) All over the world, all Exchanges run the auctions only on day ahead basis to pool resources and demand to discover credible and robust prices. All

Exchanges in the world are operating on day ahead market and none of them is operating on two day ahead basis. Running multiple auctions before or after day ahead will fragment the market and lead to division and distortion of existing day ahead market. In another window before Day Ahead market, sellers would try to sell power at prices higher than marginal cost leading to higher prices in the market.

(k) Proposed 2D-SPOT contract will lead to speculative and frivolous bidding as participants have another option to trade in day ahead market. The participants may indulge in gaming as there is scope of arbitrage. Arbitrage was one of the major factors of California crisis in years 2000 and 2001 which led to skyrocketing natural gas and electricity wholesale prices and culminated in massive regional energy shortage.

(l) 2D-SPOT would divide volume of existing day ahead market leading to inefficient price discoveries in multiple sessions. Multiple price signals may confuse the participants. 2D-SPOT contract will lead to higher congestion as it will utilise the available corridor for existing day ahead market and thereby leading to higher prices.

(m) Transmission corridor to Power Exchanges is known after declaration of capacity by generators on day ahead basis. To make transmission capacity available for 2D-SPOT, the present criteria for transmission allocation to power exchanges shall require change.

(n) 2D-SPOT contract would enhance risk (by 24 hours) of generators and consumers on account of unforeseen revision of their generation/demand as after trade is scheduled under collective transaction, there is no provision of rescheduling of such transactions. Therefore, the generators and consumers would have to bear heavy penalties in terms of deviation charges in case of unforeseen events on day T.

(o) EVE-DAS would undermine the present well functioning day ahead market and may lead to speculative and frivolous bidding by sellers who quote on the basis of their marginal price while, the buyers quote on the basis of their marginal utility and the price discovered is a genuine reflection of market dynamics. The Commission in its Staff Paper on Extended Market Session dated 8.7.2014 has discussed the disadvantages of EVE-DAS. Evening market does not seem to be best option in achieving balance of demand-supply close to delivery.

(p) The Commission in its staff paper on “Developing a Common Platform for Electricity Trading” dated 20.7.2006 has stated that in the electricity market, delivery cannot be organized immediately. Therefore, spot markets operate on day-ahead basis and deliveries are scheduled for the next day.

(q) Globally no exchange offers other than day ahead market and that too single auction in a day. Most countries have continuous intra-day market for facilitating arranging power to reduce their likely imbalances. It is a settled global practice that multiple contracts for similar delivery period distort the liquidity and

can have serious impact on the competitiveness of the market place and also dent the trust of market participants. IEX has submitted the following comparative statement showing products offered by the various Power Exchanges in the world:

S. No	Power Exchange	Country	Spot Market Products available		
			Day Ahead (One day prior to delivery)	Intraday	Two-day ahead
1.	EEX	Germany	Yes, Hour and Block Contracts	Yes, 15 min, hour and block contracts	No
2.	EPEX SPOT	France, Germany, Austria, Switzerland	Yes, Hour and Block Contracts	Yes, 15 min or block contracts upto 45 mins in advance	No
3.	KPX	Korea	Yes	-	No
4.	IMO/AEMO	Australia	Yes, STEM (daily forward market)	Mandatory Balancing Market for generators > 10 MW	No
5.	Nord Pool Spot	Norway, Sweden, Finland, DM, Estonia, Latvia, Lithuania	Yes	Yes, continuous market	No
6.	OPCOM	Romania	Yes, hourly	Yes, hourly	No
7.	PJM	USA	Yes	Real Time Market	No
8.	POLPX	Poland	Yes	Yes	No
9.	GME	Italy	Yes, hourly for next day	Yes	No
10.	JEPX	Japan	Yes	-	No
11.	SAPP	South African countries	Yes	No	No

6. The petitioner in its rejoinder dated 29.12.2014 to the reply of POSOCO has submitted as under:

(a) POSOCO has not denied need for product but has expressed apprehensions for prediction of requirement by market participants.

(b) The above apprehension is far-fetched and devoid of any merits as detailed in subsequent paragraphs:

(i) Utility participants meet their short term demands (ranging from week to three months in advance) through tendering process. If demand/supply can be projected for weeks/months, it can also be projected for two days in advance.

(ii) Open access consumers while applying for NOC effectively plan their power procurement at least a month in advance.

(iii) Efficacy of projections is not under question. Planning/prediction are fine-tuned as time gap reduces through a variety of products.

(iv) Clauses (b)-(e),(h) of Regulation 5.3 and clauses 8 and 9 of Regulation 6.4 of the Grid Code acknowledges the demand/supply forecasting methodologies. With the availability of daily, weekly and monthly planning information, the participants and SLDCs/RLDCs would be able to effectively utilize two days ahead scheduling opportunity.

(c) As per Regulations 6.5.8 and 5.3(h) of the Grid Code, ATC/TTC capabilities are required to be declared by NLDC on three months ahead basis and real time curtailment due to outage of critical transmission lines, generating units, etc. and re-assessment of ATC/TTC is applicable for scheduling of concluded trades under current day ahead spot product. Curtailment on real time basis is applicable for all stakeholders opting for all type of products. Introduction

of the product is neither increasing the incident of congestion nor enhancing its severity but would result in prudent planning and may reduce incidence of congestion.

(d) Timelines for 2D-SPOT are worked out considering timelines of current DAS, banking hours restriction, minimization of requirement of additional resources and avoiding simultaneous load flow analysis by system operator. NLDC reverts with flow margin by 1430 hrs for current DAS and flow request for 2D-SPOT shall be sent at 1500 hrs to avoid overlap. The petitioner is open to new timelines to carry out banking transactions and final confirmation from NLDC can be released by 1800 hrs to settle and conclude the trades.

(e) Evolution of Indian Power sector is completely different from international experience and has been adopted to suit Indian context as under:

(i) Scheduling and system operation functions are decentralized in India whereas most countries follow centralized scheduling of power transactions;

(ii) The geographical variance in generation resources and load profiles increases dependency on inter-State transmission systems;

(iii) Deviation settlement mechanism with no international precedence led to a sudden drop in unscheduled transactions since February 2014;

- (iv) Internationally most Power Exchanges operate day ahead market on hourly basis. However, in India we have graduated to 15 minutes for harmonization of markets and systems;
- (v) Two exchange model adopted in India is self correcting, unique and successful. For self-correction, exchanges have to offer innovative products in the market and it is for stakeholders to allow innovation to happen;
- (vi) More than 3000 participants accessing Power Exchanges whereas, internationally the numbers are few hundreds.
- (f) The Commission in "Staff Paper on Developing a Common platform for Electricity", 2006 acknowledged that Power Exchange may operate on days ahead basis.
- (g) The Commission from time to time has acknowledged need for another option in collective segment for market participants.
- (h) 2D-SPOT and EVE-DAS would complement through prudent planning. Since number of the regular participants in the market are open access consumers with stable RTC requirements, non-availability of options put them at high risk of trades not being cleared in DAS market.

7. The petitioner in its rejoinder dated 29.12.2014 to the reply of IEX has submitted as under:

(a) PXIL would submit application for scheduling the concluded transactions of 2D SPOT contract for delivery starting on two days ahead basis. These transactions would be settled on trading day and the concluded transactions would be scheduled when the schedules for the delivery day are released as per Procedures for Scheduling Collective transactions approved by the Commission under Open Access Regulations. The concerned Load Despatch Centre would prepare drawl schedule in accordance with the procedures and methodologies specified under the Grid Code, Open Access Regulations and Procedure for scheduling. Concluded transactions under 2D-SPOT will be cleared on the trading day itself and subsequently they would be scheduled by concerned Load Despatch Centre.

(b) Delivery of electricity in the proposed 2D-SPOT will happen only on T+2 and therefore, the contract will fall under the category of "Term Ahead Contract" thereby conforming to Regulation 6 read with Regulation 4(iii) of Power Market Regulation. 2D-SPOT falls under the term ahead market as defined under Regulation 2(i)(jj) of Power Market Regulations. Proposed 2D-SPOT will be based on collective transactions like the DAS. PXIL had used the term "2D-SPOT" as the characteristics of the proposed product are same as DAS/Spot Contract with a difference that the delivery would happen on T+2 basis. The Commission may choose a different terminology in this



regard. The Commission in clause 4.4 of "Staff Paper on Developing a Common platform for Electricity", 2006 acknowledged that exchange may operate on days ahead basis.

(c) Regulation 11 of the Power Market Regulations has no applicability on proposed 2D-SPOT as it provides for market design for day ahead market. However, the proposed contract comes under term ahead market. As per Regulation 10 of the Power Market Regulations, one of the objectives of PXIL is to ensure fair, neutral and robust price discovery. Accordingly, PXIL has proposed 2D-SPOT in line with Regulation 11 where price discovery would be done on the basis of double sided closed bid auction with only difference that the bidding would be done on two days prior to the actual delivery.

(d) In 2D-SPOT, the transactions would happen for delivery on two days ahead basis and they would be scheduled as per the procedure for collective transactions approved by the Commission. In terms of Regulation 2(1)(c) and Regulation 12 of Open Access Regulations, the collective transactions would have priority over bilateral transactions and collective transactions would be cleared on daily basis. In context of heading, it is an established principle that headings are merely general indicators but they do not control the meaning of the body of the provision if the meaning is otherwise ascertainable by reading the provision. Regulation 12 should not be read to restrict collective transactions.

(e) Consequential changes should be made by the Commission if 2D-SPOT is allowed for usage of NOCs currently issued for collective transactions for the proposed 2D-SPOT also.

(f) PXIL has proposed timelines for submitting an application for scheduling the transactions concluded under EVE-DAS. The concerned Load Despatch Centre will prepare the drawal schedule to the procedures for scheduling of collective transactions. EVE-DAS has not been proposed under intraday/contingency contract, as defined under Regulation 2(i)(o) of Power Market Regulations, rather it is a new product under day ahead contract, as defined under Regulation 2(i)(k) of Power Market Regulations.

(g) Clause 2(A) of Regulation 8 of the Open Access Regulations permits for usage of NOC for collective and bilateral transactions which should be extended for EVE-DAS proposed to be operated on collective transaction mechanism. Consequential changes should be made by the Commission in Open Access Regulations and/or Procedure for scheduling if EVE-DAS is allowed. Open Access Regulations do not provide that collective transactions are available/applicable only in day ahead market.

(h) Proposed 2D-SPOT and EVE-DAS contract are under the purview of the Power Market Regulations. No provision of the Open Access Regulations or Procedure for scheduling restricts the petitioner to approach the Commission for introduction of a new product under Power Market Regulations.

(i) In consulting paper on "Modification in Power Market Design: Evening Market, 15 minute Bidding time block and Ancillary market on Power Exchange" issued on August 2013, staff paper on "Extended Market Session on Power Exchanges" issued on July 2014 and order dated 24.5.2011 in Suo Motu Petition No. 127/2011 had already been discussed regarding (a) Modification of time block for bidding from one hour to fifteen minutes; and (b) Introduction of Evening Market. The Commission had merely kept the proposal for evening market at abeyance but not rule out the possibility of its introduction at a later date.

(j) The Commission decided the timelines and products in the Power Market Regulations based on responses of the stakeholders. Considering the developments in the sector, participants require more options to efficiently manage their requirements. World over, Power Exchanges provide array of products like futures and forwards and in Indian context, it is limited to maximum delivery period of 11 days.

(k) Market participants decide their bidding strategy and may not necessarily bid at their marginal cost. Power Exchange operates under regulated framework and price caps are analyzed and modified by the Commission from time to time. It cannot be assumed that 2D-SPOT would lead to higher prices.

(l) Currently, the Power Exchanges in India offers single product in day ahead segment and different set of products under term ahead category (bilateral contracts) wherein power can be traded upto 11 days. The power scheduled in term ahead products (bilateral contracts) can also be traded in contingency situations. The Commission through Power Market Regulations have put stringent provisions for market surveillance to monitor and penalize any gaming and frivolous bidding patterns.

(m) In context of California crisis, Federal Energy Regulatory Commission (FERC) submitted report to US Congress which lists factors contributing to the crisis of 2000 and 2001 as under:

*"Staff Report to the Federal Energy Regulatory Commission on Western Markets which concluded that a number of factors contributed to the California electricity crisis of 2000 and 2001. These included: flawed market rules; inadequate addition of generating facilities in the preceding years; a drop in available hydropower due to drought conditions; a rupture of a major pipeline supplying natural gas into California; strong growth in the economy and in electricity demand; unusually high temperatures; an increase in unplanned outages of extremely old generating facilities; and market manipulation by some sellers."*

Arbitrage was the result and not the reason for the crisis.

(n) Owing to multiple Power Exchanges operational in India, multiple prices are discovered on day ahead basis in DAS, intraday and contingency market and price signal is reflective of market dynamics. IEX's contention that 'the addition of the opportunities would confuse the market participants' is misleading as price dynamics are dependent on different parameters analysed by market participants.

(o) Proposed 2D-SPOT would not lead to higher congestion in day ahead market since the existing and proposed contracts are meant for efficient and maximum utilization of transmission corridors for benefit of market participants. Contracts on the Power Exchanges shall be considered as an opportunity.

(p) Scheduling of 2D-SPOT can be done within the existing set of regulations while considering all application in collective segments made before 1500 hrs. The Commission may make consequential changes to the Regulations after the approval of the proposed products.

(q) Grid Code allows ISGS to reschedule its generation or drawls till 2200 hrs and rescheduling or curtailment may happen in force majeure conditions for existing DAS scheduled transactions. Therefore, the proposed 2D-SPOT will not enhance risk of participants. In current scenario, real time curtailments are communicated to exchanges which in turn communicate to the participants.

(r) Staff paper on "Extended Market Session" dated 8.7.2014 lists advantages and does not conclude not to have evening market. The staff paper merely invited comments for future course of action.

(s) Concepts of balancing market is yet to be conceived in India. Evening market would benefit system operators and market participants.

(t) Historical background of Indian Power sector is completely different from international experiences.

8. During the next hearing on 8.1.2015, the representative of the petitioner submitted that 2D-SPOT has been conceptualized based on 5 years of experience in the market in view of the fact that there is skewed market or desperate price bidding on the Exchanges. He further submitted that the participants bid desperately in terms of prices on day ahead market as it is the last resort for trading. In UI, the price discovery is based on real time demand and supply of power whereas on Power Exchange price discovery is based on profile, number and desperation of the participants and therefore, is not a true price discovery. The representative of the petitioner submitted that in case of non-fulfilment of requirement, the participants either back down their generation or resort to load shedding. The representative of the petitioner also submitted that workshop was conducted in Delhi and feedback was taken from participants across the country including all important utilities. About 80-90% of the participants felt that the 2D-SPOT would give them a lot of respite and comfort and they would be able to take advantage of multiple exchanges in India.

9. The representative of POSOCO submitted that POSOCO supports proposal of evening market. He further submitted that in context of two day ahead market, modifications are required in the Grid Code, Power Market Regulations and Open Access Regulations. In Grid Code, modifications would be required in terms of day ahead scheduling. However, in Power Market Regulations, Term Ahead Market and Day Ahead Market are defined separately and therefore, changes would be required.

The representative of POSOCO submitted that as per Open Access Regulations, application for bilateral open access under FCFS is required to be submitted 4 days in advance and RLDC has to approve the same 3 days in advance. Therefore, open access approvals are known one day in advance. Introduction of two day ahead market would require shifting of timelines for approval for T+2 trade as FCFS approvals are given before day ahead transactions. He submitted that ISGS declare its availability only one day in advance and market participants including utilities would be better informed on day ahead basis rather than two day ahead basis.

10. The representative of IEX submitted that it does not support introduction of both the products. The petitioner's submissions are centered around market design and changes to regulations. The representative of IEX submitted the following reasons against introduction of 2D-SPOT:

(a) Liquidity is an important factor for discovery of prices and therefore, products are standardized. By spreading the timing too often it would be difficult to get a real price discovery. There may also be a proposal for three day ahead and therefore, criteria for selecting the best timeline for doing an auction should be defined. The issue of addressing the best timeline has been with the Commission since 2006.

(b) All Power Exchanges in the world are operating on day ahead market and none of them is operating on two day ahead basis. IEX has studied 30 Power Exchanges across the world of which most of them are spot exchanges and few of them are future exchanges. UK has two Power

Exchanges but operates only one day ahead auction. Similarly, other exchanges across the world like APX, EPEX SPOT (largest PX in Europe), South African Power Pool and exchanges in countries like Korea, Australia, PJM, Italy, Japan, etc do not conduct two day ahead auction. Except few exchanges all other trade more volume than traded on Indian Power Exchanges.

(c) 2D-SPOT would divide the liquidity and would lead to poor price discovery. The participants trade on day ahead market in distress situation. Generators bid at marginal cost and buyers bid at marginal price in day ahead market. By operating a 2D-SPOT market, the price discovery on day ahead market would not be a correct one thereby giving distorted price signals to the participants. If 2D-SPOT is allowed, then the participants may shift to 2D-SPOT depending on the prices discovered which would not be a correct one.

(d) Arbitrage opportunity is also available in bilateral segment.

(e) The representative of IEX also cited the following reasons against introduction of Evening Market product:

(i) Auctions are conducted to discover price and for doing transactions. In Europe almost all the contracts after day ahead market are executed based on continuous matching. The underlying concept is that the facility should be provided to participants so that demand is



matched in a continuous trading at the time of requirement. The demand may not be there at the time of running an auction.

(ii) European Commission through their directive 714/2009 or third energy package mandated that the day ahead market should be followed by intraday market which is continuous trade market.

(iii) Since 90-95% of the trade happens on day ahead market and only small volume is traded in other markets, price discovery would be a challenge in evening market.

(iv) Presently only 3% of volume transacted is transacted on Power Exchanges. It would not be a good time to fragment the market.

11. The representative of IEX further raised apprehension that from the regulatory perspective, allowing such products may result in circular trading or arbitrage. He further submitted as under:

(a) No benefit may accrue to market participants on account of introduction of such products. In case of severe transmission congestion, the capacity earmarked for day ahead market is also made available for use of long term transmission customer. In case of no congestion, better price would be discovered on day ahead market.

(b) Changes as suggested by the petitioner in the market design is a serious matter and an independent international consultant should be involved to study the impact of such changes.

12. Per contra , the representative of the petitioner submitted as under:

(a) All across the world, there is no UI mechanism or ABT framework. However, India has adopted such things. Internationally, there is not a single market but there is a single exchange. India we have adopted one market and multiple exchange.

(b) The Commission, being an expert body, can take a call on such changes in the design and an external consultant may not be required. The exchange is willing to extend its help, if required.

(c) Liquidity would get split and it does not matter whether transmission corridor is utilized one day or two day before. As per Grid Code, planning should happen 8 days ahead. Also, open access customers have a flat requirement.

(d) The Commission took a conscious decision to have multiple exchanges for healthy competition with the impact that the total liquidity would get split among exchanges. So split of liquidity between one day ahead and two day ahead should be a minor issue.

(e) Circular trading may be prevalent today as well. Also, the pricing in today's day ahead market is highly volatile whenever there is presence of a dominant

player. Thorough analysis may be carried out to find relationship between pricing and type of buyers further, speculation is already happening in day ahead market.

(f) 11 day ahead trading is already allowed in bilateral segment and the petitioner is only desiring to change the mechanism to collective which is more transparent.

13. The Commission directed the petitioner to submit justification for arbitrage and operational and implementation differences between T+2 and T+4 markets. The Commission directed IEX to submit copy of European Commission's directive. POSOCO was directed to submit number of T+2 contracts executed in FCFS market in bilateral segment.

14. The petitioner vide its affidavit dated 29.1.2015 has submitted operational differences between 2D-SPOT and FCFS markets and suggested that NLDC may process FCFS applications by T+2 day for availability of scheduling for 2D-SPOT. The petitioner has also suggested to shift timeline for submission of FCFS application from 4 days to 5 days.

15. IEX vide its affidavit dated 2.2.2015 has placed on record a copy of *Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross border exchanges in electricity and repealing regulation no, 1228/2003*. IEX has also raised its concerns towards regulatory

amendments required for facilitation of contracts. IEX has submitted that proposed contracts in the petition are not feasible for introduction.

16. POSOCO vide its affidavit dated 2.2.2015 has submitted that T+2 contracts may be possible on day ahead basis and not in case of FCFS.

17. The petitioner vide its letter dated 18.2.2015 has placed on records the letters informing the Commission regarding presentations given to Regional Power Committees on the proposed products. As per summary of seminar submitted by the petitioner, the petitioner conducted an open forum on 2D-SPOT which was attended by traders, State utilities and private generators. Most of the participants agreed that (i) 2D-SPOT would provide an alternative for effective load management by State utilities, (ii) 2D spot should run before DAS, (iii) volatility in price of the Power Exchanges are introduced due to overly competitive bids in DAS as the last option to procure, (iv) NOC for DAS may be extended to 2D-SPOT and (v) SLDCs would have information on purchase of power by OA consumers two days in advance.

18. PXIL vide its letters dated 21.9.2015 and 23.9.2015 has submitted responses of Jindal Power Ltd, Manikaran Power Ltd., Madhya Pradesh Power Management Company Limited, Vandana Vidyut Limited, WBSEDCL, JSWPTC, GUVNL, Idam Infrastructure Advisory (P) Ltd (IIAPL), Global Energy Ltd. and Mittal Processors Ltd. All the above parties except JSWPTC are agreed for introduction of 2D-SPOT product. Manikaran Power Limited has submitted that success of the product would be contingent on pricing and allocation of transmission corridor on the same day. JSWPTC has stated that since paradigm shift would be required in planning process of utilities,

2D-SPOT may be exploited. However, bidding in Day Ahead market follows marginal price bidding and this market can be useful if open access consumers can finalize their requirement in 2D-SPOT. Market participants, namely IIAPL, Mittal Processors Ltd. have advocated part allocation of corridor for 2D-SPOT. IIAPL has suggested the need to devise stringent checks and balances to address concerns of gaming.

**Analysis and Decision:**

19. We have considered the submissions of the petitioner, IEX and POSOCO. The present petition has been filed for introduction of 2D-SPOT and EVE-DAS products. According to the petitioner, in 2D-SPOT market, transactions are proposed to take place on Day T for delivery of power on T+2 and in EVE-DAS, transactions are proposed to take place in the evening after day ahead market for delivery of power on T+1. IEX has contended that the present petition is not maintainable as the introduction of 2D-SPOT and EVE-DAS products is not covered under the Commission`s Regulations.

20. Regulation 2(i)(k) of the Power Market Regulations defines “Day Ahead contract” as under:

‘(k) Day ahead contract’ means contracts where transaction occurs on day (T) and delivery of power on the next day (T+1) and which are scheduled by Regional Load Despatch Centre or National Load Despatch Centre’

Regulation 2(i)(jj) of the Power Market Regulations defines ‘Term Ahead market’ as under:

‘(jj) ‘Term Ahead market’ means a market where physical delivery of electricity occurs on a date more than one day (T+2 or more) ahead from the date of transaction (T) and the contracts in such market can be transacted weekly/monthly/yearly or more in advance and have a defined delivery period on expiry of contract and is scheduled by Regional Load Despatch Centre or National Load Despatch Centre.’

Perusal of the above two provisions reveals that EVE-DAS and 2D-SPOT are covered under the definitions of Day Ahead Market and Term Ahead Market respectively. Therefore, the petition is maintainable before the Commission.

21. The Commission has allowed multiple Power Exchanges to operate in the country. The Power Exchanges are presently dealing with products which are in the nature of ready delivery contract which provides for delivery goods and payment of price therefore, either immediately or within such period not exceeding eleven days after the date of the contract. Therefore, the options available with the Power Exchanges to introduce any new product is very limited. A very popular classification among markets is known as 4Ps - denoting product, price, place and promotion. Product mix is an integral part of a business. We, therefore, see the introduction of new products as an important factor in fostering competition.

22. While the Commission espouses principle of competition in Power Exchange space, the Commission at the same time has a responsibility to ensure that market design of the electricity market is based on sound economic principles. Flaws in market design can have a significant impact as was the case of California crisis of 2000 and 2001. Therefore, it is critical that competition is fostered within the ambit of market design. The following considerations bear importance for arriving at a decision:

**(a) Scheduling priority and transmission corridor allocation:** Presently, collective transactions 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.

**(b) Speculation, gaming, etc.:** There exists no economic basis for introducing a market which is based on collective transaction on two day ahead basis. Introduction of such products also bears apprehension of speculation, gaming, etc. Presence of multiple products for spot trading which is essentially residual in nature may also bring complexities in surveillance.

**(c) Poor price discovery and introduction of products on days ahead basis:** Introduction of 2D-SPOT and evening market may lead to splitting of volumes between the different products and may therefore, lead to inefficient price discovery. The day ahead market is essentially residual in nature. Such introduction of product may prompt the other exchange to launch a similar product or a three day ahead spot thereby introducing a spree of new products in the market on multiple day ahead basis. Such a kind of market design has no precedence elsewhere nor it is supported by any economic analysis.

**(d) Curtailment of transactions:** According to POSOCO, TTC/ATC declared for 2D-SPOT for delivery on T+2 day may undergo further change after one day. Therefore, the probability of curtailment for 2D-SPOT is higher. The issue of curtailment in real time exacerbates for collective transactions since it is

difficult to locate buyers and sellers on whom such curtailment would be applied.

**(e) International experience:** The petitioner and the respondents have submitted that there is no precedence of operation of 2D-SPOT across the globe. According to the petitioner, Nordpool Spot vide its paper dated 21.1.2015 has proposed for a second auction. We have analysed the paper of Nordpool Spot. We are of the view that the second auction is proposed to be run in situations where the 1st round of price calculation is not able to match the demand and supply. The relevant portion of the said paper is extracted as under:

"The Nordic TSOs and Nord Pool Spot (NPS) are considering the possibility of introducing 2nd auction at NPS day ahead spot market. 2nd auction is proposed as a new procedure in situations where the 1st round of price calculation is unable to match demand and supply. Currently, such situations leads to either the minimum price of -500€/MWh, or the maximum price of +3.000€/MWh and application of non-matching procedures as described in NPS Market Regulation.

2nd auction is to be understood as a situation where a submission of orders is re-opened and market participants are allowed to provide new bids and update existing bids within a timeframe of approximately 10 minutes. The assumption is that this will allow for more orders entering into the market, thus replacing a curtailment situation, with an equilibrium market price. "

Perusal of paper of Nordpool Spot reveals that second auction in Nordpool doesn't refer to a market similar to 2D-SPOT as proposed by the petitioner. Therefore, the petitioner's prayer to introduce 2D-SPOT market in India is rejected.

23. As regards introduction of evening market, the staff of the Commission had dealt with the issue of introduction of evening market in detail in "Staff Paper on Extended



Market Session on Power Exchanges" and views and suggestions were invited from the stakeholders. In this regard, public hearing was held on 3.2.2015. After considering the views and suggestions of the stakeholders, the Commission vide order dated 8.4.2015 in Petition No. 6/SM/2015 had observed that based on the experience gained, introduction of evening market with collective transaction or 24x7 intraday with collective transaction could be considered in future and the Commission kept evening market in abeyance. The relevant portion of said order dated 8.4.2015 is extracted as under:

"The Commission recognizes the virtues of collective transaction but at the moment it would like to take a calibrated approach by first introducing round the clock intraday/contingency market. The introduction of 24x7 intraday/contingency market(with bilateral transactions) would be a test case for liquidity in the market and based on the experience gained, introduction of evening market with collective transaction or 24x7 intraday with collective transaction could be considered in future."

24. The transactions in 24x7 intraday market is yet to achieve sufficient liquidity. The transactions in day ahead contingency contracts and intraday contracts is about 90MUs and 28 MUs in August 2015 and July 2015 respectively. We are of the view that it is not appropriate to introduce evening market at this stage.

### **Summary of Order**

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

26. The petition No. 378/MP/2014 is disposed of with the above.

**Sd/-**  
**(A.S. Bakshi)**  
**Member**

**sd/-**  
**(A.K. Singhal)**  
**Member**

**sd/-**  
**(Gireesh B. Pradhan)**  
**Chairperson**