

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 006/SM//2015

Coram:

**Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A. S. Bakshi, Member**

Date of Order: 8.4.2015

IN THE MATTER OF

Extended Market Session on Power Exchanges

ORDER

Section 66 of the Electricity Act, 2003 provides for development of market (including trading) in power as under:

"66.Development of market- The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in Section 3 in this regard."

2. The Commission in pursuance of objectives of maintaining grid security and grid discipline as envisaged under the Central Electricity Regulatory Commission (Indian Electricity Grid Code), Regulations, 2010 and subsequent amendments, has further narrowed the operating frequency band. This coupled with deterrent provisions in the regulations on Deviation Settlement Mechanism is aimed at inducing the grid connected entities to increasingly bank on scheduled transactions rather than on Unscheduled Interchanges (UI).
3. In order to provide the grid-connected entities with measures to respond optimally and in pursuance of development of market, the staff of the Commission published a staff paper on Extended Market Session on Power Exchanges. Following options were explored for operating additional contracts on the power exchanges :-
 - i. **24x7 intraday/contingency contracts** - Operating day ahead contingency contracts in remaining hours after gate closure of day ahead market on power exchanges and operating intraday contracts on 24x7 basis;
 - ii. **Evening market** – Operating Day ahead auction based on collective transaction in the evening on power exchanges; and operating intraday contracts on 24x7 basis.

4. The staff paper deliberated on various aspects of the two options and proposed operating additional contracts on power exchange for intraday/contingency market. The paper proposed the details of the contract as:
 - i. The existing products for day ahead contingency and intraday markets would continue to be operated by the exchanges. As a principle, the timeline for these products is being extended so that trading window is open for periods as mentioned below:
 - a. Same day Delivery (upto 2400 hours): The trading window is open round the clock for delivery of power on the same day (minimum delivery period - 3 hours after contract execution subject to corridor availability).
 - b. Next day Delivery (0000- 2400 hours): The trading window opens after declaration of day ahead results and remains open till end of day.
 - ii. Price discovery mechanism remains as is for the respective products.
 - iii. The Power Exchanges should workout the finer aspects of auction window timings, duration of contract availability and rolling contracts structure. They should submit the contract specification to the Commission as a part of the response to the discussion paper.
 - iv. The exchanges may be mandated to run the extended session of contingency and the intraday markets for six months on a pilot basis and provide feedback for any adjustments.
 - v. For the benefit of the market, the exchanges should widely publicize the availability of intraday & day ahead contingency the new products through seminars and workshops with market participants.
 - vi. NLDC should endeavor to provide latest information about available Transmission Margins on inter regional links based on the state of the grid to facilitate any transaction in intra-day market.

5. In this context, staff paper on extended market session on Power Exchanges was published on 08.07.2014 seeking comments/views of the stakeholders. Following stakeholders have submitted their comments:
 - a. Adani Power Limited (APL)
 - b. Indian Energy Exchange (IEX)
 - c. Malana Power Company Ltd (MPCL)
 - d. Open Access Users Association (OAUA)
 - e. Power Exchange India Limited (PXIL)
 - f. Power System Operation Corporation (POSOCO)
 - g. PTC India Ltd (PTC)
 - h. RPG Power Trading Company (RPG)
 - i. Statkraft

j. Shri Sunil Barnwal

6. A public hearing on the staff paper was held on 3.2.2015 during which the following stakeholders submitted their comments:

- a. PXIL
- b. Association of Power Traders
- c. POSOCO
- d. Statkraft
- e. IEX

7. IEX and PXIL have submitted additional comments after the hearing vide letters dated 5.2.15 and 6.2.15 respectively.

8. The written, oral comments of the stakeholders pursuant to the notice of CERC inviting comments, during public hearing and after the hearing are categorized according to issues raised and observations/decisions of the Commission are recorded thereunder:

I. Evening Market with Collective Transactions Vs Intra-day Market

- i. Adani Power Limited - *We see this staff paper as vital step towards matured power market. Principally, we are in agreement with this initiative.*
- ii. Association of Power Traders(During public hearing): *There is requirement to implement 24X7 market along with assessment of conditions for its implementation.*
- iii. Indian Energy Exchange (IEX):
 - a. *At the outset, IEX is pleased to hereby support extension of the present day Intraday/Contingency Market on Round-the-clock (24x7)basis. We would be willing to deploy necessary resources to support this endeavor.*

As another option to extend Market on the Exchanges, the Staff Paper proposes an additional market based on collective transaction in the evening with intraday contracts on 24x7 basis to be operated alongwith. Subsequently, the Paper makes mention of various issues and challenges including but not limited to: transmission congestion, inefficient price discovery,; multiple price signal which may confuse the participants, extensive regulatory modifications, preference to power exchanges over traders and speculative bidding. At IEX, we categorically support these observations in the Staff Paper and are of the view that operating a collective market in the evening would act as potential deterrent to the existing Day-ahead Market. Furthermore, there would

always be limitations as to how many times auction can be run in a day which still restricts us from providing opportunity to trade very close to actual delivery and thereby matching actual with scheduled quantum.

- b. *Additional comments of IEX (during public hearing):* *In context of evening market, IEX submitted that presence of multiple price signals would lead to inefficiencies in price discovery and will lead to speculation. With regard to multiple price signals already present owing to presence of two exchanges, IEX submitted that the auction time is exactly same, price is determined for the same time block at the same time and therefore multiple price signals are not being given to the market.*
- c. *Additional comments of IEX (subsequent to public hearing):*
- 1) *One of the key objectives that the market must deliver to the participants is availability of options to balance demand-supply close to delivery. The evening auction market does not seem to be the best option in achieving this objective as the requirement to balance demand supply close to delivery will not be met. Further, the scalability of operating such auctions is also low.*
 - 2) *Our assessment into products and operations of power exchanges across the globe which have been in operations for more than one and half decade, shows that no Power Exchange offers other than day ahead market that too a single auction in a day. Mostly all global exchanges have continuous intra-day market to facilitate their participants in arranging power to manage their imbalances. These Exchanges offer a wide range of product portfolio to their participants in order to facilitate them in managing power requirement efficiently including futures market and balancing market.*
 - 3) *A comparative analysis encapsulating products offered by the various Exchanges globally is provided. Evidently, all the Power Exchanges globally as listed in the table provide a Day-Ahead (auction market) and Intra Day (continuous trading) market. None of the Exchanges offer an Evening Day-ahead auction. It is a well settled practice globally that multiple contracts for similar delivery period distort the liquidity and can have serious impact on competitiveness of the market place and also dent the trust of market participants.*

S.No	Exchange	Country	SPOT MARKET PRODUCTS AVAILABLE		
			Day-Ahead	Intraday	Evening Auction
1	EEX	Germany	Yes	Yes, 15 min, hour and block Contracts	NO
2	EPEXSPOT	France, Germany, Austria, Switzerland	Yes	Yes, 15 min or block Contracts upto 45 mins in advance	NO
3	KPX	Korea	Yes		NO
4	IMO/AEMO	Australia	Yes	Mandatory Balancing Market for generators >10 MW	NO
5	Nord Pool Spot	Norway, Sweden, Finland, DM, Estonia,	Yes	Yes, continuous market	NO
6	OPCOM	Romania	Yes	Yes, Hourly	NO
7	PJM	USA	Yes	Real Time Market	NO
8	POLPX	Poland	Yes	Yes	NO
9	GME	Italy	Yes,	Yes	NO
10	JEPX	Japan	Yes		NO
11	SAPP	South African countries	Yes	No	NO

iv. Open Access Users Association (OAU):

- a. *We appreciate that Staff of the Commission has taken the forward view for implementing the genuine step for meeting contingency requirement of power on 24*7 basis. Also, our Power market which is at nascent stage needs new products to be launched which can meet the immediate*

requirement of market players. However, the biggest issue is towards the implementation front which needs aggressive coordination among all stakeholders, statutory bodies, SERCs, system operators.

- b. We agree with the staff that extended market session would be a better option than to go for an evening market session.*
- c. It may act on a positive side regarding the scheduling of renewable generation because of its infirm nature. Things can also work for the plants those are having temporary connectivity in Tamil Nadu.*
- d. This market may act as a demand side dominated market and most players will be among those whose power would not have cleared on DAM market. As from the generator's perspective things will not be so frequent to inject in intra-day market. Demand and supply mismatch issue may affect the growth of this market and it should be launched simultaneously with Ancillary market which also incentivizes the generators.*

v. Power Exchange India Limited (PXIL):

- a. PXIL humbly informs the Hon'ble Commission that adequate availability of Transmission corridor would play a crucial role in successful operation of evening market in case this market is also operated in a manner similar to the current Day Ahead market on collective basis. Since the transmission corridor is a scarce resource, most of the Market participants would prefer participating in the morning session and fulfil their next day's requirement, hence the evening market may not have adequate transmission capacity for inviting large number participants, thus in the evening market a few players may exercise market control in this shallow market. In such a scenario two different prices would be discovered on the Exchange with wide variations that would discourage participants to enter the evening market.*

Hence, in the absence of adequate liquidity operation of evening market is less likely when compared to day long intra-day sessions by the Exchanges.

- b. In the proposed 24 x 7 Intra-Day Market all participants would have option to transact power on 24-hr basis and meet their requirements, which would lead to development of robust and competitive Markets in Electricity*
- c. Additional comments of PXIL (Subsequent to public hearing):*

- 1) *With regards to the international practice for evening DAS, we have submitted in our responses that across the globe, options are available to participants for efficient management of their respective portfolios through a mix of concurrent as well as sequential products. The principal objective in case of sequential products is to introduce a time delay between bids while the assumption is that there will be additional information available before the later session which will be built by participants into their decisions on whether to participate and in case yes, what should be the quotes.*
- 2) *As far as participation in the product is concerned, we share the views shared by POSOCO that it should be a market open for all the participants rather than qualifying the participation criteria.*

vi. *Power System Operation Corporation (POSOCO):* *In the Staff paper, Market Design 1 has been proposed to be adopted. In this regard order dated 24.5.2011 issued by the Hon'ble Commission is relevant and quoted below:*

"14. We direct that the proposal for introduction of evening markets be kept in abeyance at present....."

The Hon'ble Commission had only kept the proposal in abeyance and had not ruled out its introduction at a later date. It is submitted that Collective transaction has advantages like transparent bidding platform, robust price discovery and social welfare maximization. Hence instead of discarding evening market altogether, it is suggested that both evening market as well as intra-day market on 24x7 basis may be introduced. The apprehension expressed and our views on the same are given below:

- a) *Possibility of low transaction volumes: Electricity market functional in the country has provided different market segments and products. Participation is voluntary and the participants have the freedom to exercise choice of market segment and products. The objective of the proposed modification in the design is to provide more avenues/opportunities to access the market.*

The daily average market clearing volume during 2010-11 was of the order of 37 MUs per day, which has gone upto about 75 MUs per day now. With improvement in liquidity, the introduction of the Evening Market would provide another opportunity to market players. Some of the market players may be averse to participate in intra-day contingency market and for them Collective Transaction in evening will provide another opportunity for moving from unscheduled interchange (UI) to

scheduled interchange (SI) which is an important aspect considering the Grid Security and Reliability.

- b) Preference between market segments: The staff paper mentions that contingency market would have to be suspended till the evening market clearing has been completed. In this context, it is important to mention that even the present system is sequential and only one window is open at a time. After the closure of the window for advance bilateral transactions, the window for FCFS transactions opens and the window opens for the DAM on the Power Exchanges after closure of the FCFS window. The window for day-ahead bilateral and contingency contracts opens after the Power Exchange markets have been cleared. This sequence of operations is essential to ensure correct estimation and application of the available transmission margins while processing the applications for bilateral & collective transactions. This process thus does not give any preference to any market segment.*

It is suggested that the window for the contingency contracts may open after the clearing of the evening market. Thus, at all times, one or the other market opportunity is available to the participants for sale/purchase of power.

- c) Speculative or Frivolous Bidding: There is mention of possible Speculative or frivolous bidding in the morning market vis-a-vis the evening market. It is pertinent to mention here that freedom and choice are the hallmark of electricity market in the country and participation is voluntary. Such shifting of preferences of participants and adoption of different price strategies is a continuous phenomenon and such phenomenon is already being observed in the bilateral market and the Power Exchange market. Further, as has also been mentioned in the Staff Paper, trade results from both the morning market and the evening market would be scheduled and the charges and losses are payable.*
- d) Multiplicity of Price Signals: It is mentioned that multiple price signals from the Morning and Evening market would be available and may add to the confusion among the market participants. However, it is pertinent to mention that Multiple Power Exchanges are already Operational in India and there are multiple reference prices discovered on Day Ahead basis.*
- e) Regulatory Changes Required: It has been mentioned in the amendment that changes would be required in the CERC Open Access Regulations 2008 and Procedures for Bilateral and Collective Transactions. Further,*

the IEGC and Power Market Regulations may also need to be reviewed for the scheduling timelines.

These changes are necessary for offering more choice to market players and may be brought in by the Hon'ble Commission.

- f) Procedural Issues: Approval of STOA applications requires coordination between the NLDC/RLDCs with the SLDCs. Within RLDCs, integrated software application is being used. Further automation at SLDCs level and introduction of Open Access Registry proposed by IEX would help.*
- g) Non-availability of margin due to congestion: The country is facing shortages across all the Regions. One of the reasons cited against evening market is that due to congestion, no further margin would be available for the evening market. In this regard it is submitted that, normally congestion is observed seasonally and in certain directions only. Other corridors remain uncongested and the proposal for Evening Market would provide the participants with an opportunity for further optimization of their portfolio.*

Additional comments of POSOCO (during public hearing):

- a) Staff Paper on extended market session on Power Exchange is a welcome step towards further development of power market and POSOCO fully supports this initiative. POSOCO has suggested to operate evening market based on collective transaction in addition to the intraday contracts on 24x7 basis.*
- b) The intraday market is bilateral in nature and price discovery does not take place. The volume in intraday market is very low in comparison to volume in market based on collective transaction.*
- c) This evening market will provide another opportunity to market players especially after implementation of deviation settlement mechanism.*
- d) In context of speculation, POSOCO submitted that with presence of two power exchanges multiple prices are already being discovered. Different participants on exchange have NOC for either purchase or sale and cannot go for squaring of earlier transaction. The Commission suggested that POSOCO may make a model to test if speculation is possible.*
- e) POSOCO is not aware if evening market is implemented anywhere else in the world.*
- f) The effort of the Commission in bringing competition and choice both go together. Even the generator should be given choice to sell in the evening market. In case it is not able to sell then the system operator may come in but the choice should be given to the generator. The efforts so far have resulted*

in decrease of prices, more than 2000 customers competing every 15-minute. Everything should get dispatched and the price discovery should be robust. Our market is voluntary and nobody is forced to go to Exchange. Medium term transactions also had low liquidity but now it has increased. The contingency market may also see increase in volume later. Similarly, even if volume in evening market is low in the initial phases, it may increase later on.

vii. RPG Power Trading Co. Ltd: *Hon'ble Commission may like to examine the reason behind poor liquidity of many of the products already available in the TAM segment on Power Exchanges. This is desired as adequate participation in the new products are to be ensured for a reasonable price discovery.*

viii. Statkraft: *The idea of introducing an Intra-Day and Contingency Market in practice operating 24x7, and not only in the given time windows as today, will enable all market participants to actively balance their position and schedule changes in demand/production which could not be anticipated at 12.00 the day prior to the day of delivery. Statkraft supports this initiative and believes this to be good for system operators as this would lead to less volume to be settled by the UI mechanism.*

Additional comments of Statkraft (during public hearing): *There are concerns regarding evening session in view of liquidity crunch and impact on the price discovery because of splitting of volumes. To enhance the liquidity, certain products with longer term transactions like month ahead or 3 month ahead should be encouraged through exchange, issues relating to transmission corridor determination should be resolved and corridor for short term market should be enhanced.*

Commission's decision: The Commission after perusing the comments of the stakeholders is of the opinion that almost all the stakeholders are in agreement with 24x7 intraday/contingency market. POSOCO has suggested an additional evening market with collective transaction. The staff paper details the pros and cons of both the market designs. The virtues of collective transactions highlighted by POSOCO are appreciated and have already been recognized in the staff paper. The real issue, however, is of liquidity and increase in fixed cost/expenditure of the power exchanges. There are apprehensions that with introduction of such an evening market, the volumes between the morning and evening day ahead market may get split leading to a poor price discovery. Although the volume in day ahead markets have increased to about 75 MUs per day, it only represents 3% of the entire generation in the country. In the absence of adequate liquidity, the

additional cost would have to be borne by the existing market participants without attendant gains.

It appears from the submissions made by the stakeholders that evening market based on collective transaction is not operated elsewhere in the world.

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.

II. Market Design

i. OAU:

a. *Any competition should not be at the cost of the exploitation of market players and it should be implemented considering maximum social welfare. Different Exchanges provide different platform for bidding and knowing the transmission issue, Commission can consider the market coupling for optimal utilization of transmission capacity and meeting the ultimate aim of social welfare criteria. Hon'ble Commission can also refer the studies which it conducted on this front and can issue necessary direction in this regard.*

Commission's decision: The matter of transmission corridor allocation was discussed in 14th Central Advisory Committee Meeting in which the consensus emerged that the pro-rata allocation of transmission corridor was not the optimum solution and there was a need to study the feasibility and appropriateness of adopting market coupling model.

Meanwhile, PXIL had filed a petition 158/MP/2013 with the Commission for removal of difficulty arising due to present method of Transmission Corridor Allocation to Power Exchanges for Collective Transactions. In the petition, IEX as respondent has suggested merging of bids of the Power Exchanges for optimum allocation of transmission corridor and social welfare maximization. The Commission is deliberating on the suggestions and the order is reserved in the matter.

b. *Section 66 of Electricity Act: It envisages about the development of power market which includes the role of all market players including power traders. So, launching of any new product can also be implemented through traders in Bilateral market and traders should be treated in equity with the Exchanges considering the fact that scheduling of Term Ahead Market is same in accordance with Bilateral scheduling. Market players shall be allowed to enjoy more competition as it is about the development of Power market and not just power Exchange market. We can also think to implement the same at system operator level which will also prevent the exploitation of participants from paying margin to all entities involved in the transaction.*

Commission's decision: The Commission recognizes the importance of bilateral trade through the traders and trade through the Power Exchanges. The CERC (Open Access in inter-State Transmission) Regulations, 2008 allow the Power Exchanges as well as the traders for scheduling transactions in times of contingency. The relevant provision is quoted below:-

Procedure for scheduling of transactions in a contingency

"13. In the event of a contingency, the buyer or on its behalf, a trader may locate, and the power exchange may offer its platform to locate, a source of power to meet short-term contingency requirements even after the cut-off time of 1500 hrs of the preceding day and apply to the nodal agency for short-term open access and scheduling and in that event, the nodal agency shall endeavour to accommodate the request as soon as may be and to the extent practically feasible, in accordance with the detailed procedure."

However, if any of the traders also wishes to consummate trade through an electronic platform or to propose any innovative product, they may approach the Commission with the proposal.

ii. *PTC India: In page-12, in market design, it is a practice in developed markets like PJM, ERCOT, NORDPOOL, the system operator (SO) and Market Operator are handled by the same institution because of the 'free flow information and scheduling requirement and therefore market can work round the clock and open all the time. In Indian scenario, system operator is independent body (POSOCO),*

whereas there are two PX (power exchanges) operating without having a seamless flow of system information to both the exchange platforms.

It is pertinent to mention that both the exchanges are privately owned exchange and have very little access to the information available by control centre level of SLDC which is primarily responsible for balancing. Therefore it is essential to look into the market design considering present Indian power system operation and scheduling information available to the exchanges. Other factors like grid congestion and supply to market would also need to be reviewed prior to designing the market in the intraday.

Commission's decision: The Central Commission, with an intent to promote competition to benefit consumers, has provided for multiple power exchanges to exist simultaneously catering to the same physical area in the country. It is seen that in many states of the United States, the system operation and the market operation are handled by the same institution. However, in many countries in Europe the system operator and the market operators are different entities. For example in Nordic countries, Nordpool Spot is the Power Exchange whereas the system operators are Statnett SF(Norway), Svenska Kraftnät (Sweden), Fingrid (Finland), Energinet.dk (Denmark), Elering (Estonia), Litgrid (Lithuania) and AST (Latvia); EPEX Spot is the market operator of day-ahead and intraday power markets for France, Germany, Austria and Switzerland. These countries have their respective system operators or Transmission Service Operators (TSOs) as they are called. For example in Germany, the TSOs are TenneT, Amprion GmbH, 50Hertz Transmission GmbH, TransnetBW; in France, the TSO is RTE. In Italy, the market operator is GME and the TSO is Terna. In UK, the market operators are APX-ENDEX and N2EX and the system operator is National Grid. Hence, we see that there are quite a few other countries apart from India where market and system operations are handled by different entities.

With regard to designing of market after review of transmission congestion and supply, it is observed that the staff paper acknowledges that transmission congestion may lead to lower clearance of volume. The staff paper has also cited success of round the clock intraday/contingency market being dependent upon availability of transmission corridor. The paper also acknowledges that the high transaction volume is not envisaged in the intraday market at present. Hence, the paper has already taken the grid congestion and supply into consideration. Further, it is not desirable to wait for these issues to be resolved before initiating introduction of innovative products. The Commission is of the view that intraday/contingency market can be extended to operate in the present scenario of grid congestion.

- iii. PXIL: A deep and healthy Power Market can be recognized from the relative share of various types of contracts [Long term, Medium term, Short term and through a Power Exchange based (Day Ahead, Intra-day and Real Time)]. Currently, many of the contract structures have relatively very poor share in India.

Commission's decision: The electricity market in India is still in a nascent stage. With the development of the market we expect the shares of all the segments to align to achieve market efficiency while maintaining the grid security.

III. URS Power, Counter Trade and disallowance of revision of bilateral trades

- i. Adani Power Limited: Regulation 6.5.19 of IEGC provides for revision of STOA transaction only once, in case of unit tripping. However, most of the times unit does not re-synchronise as anticipated. It gets delayed, but short term schedule gets reinstated. This results in mismatch between schedule and generation, resulting in grid indiscipline.

In light of the above, we propose that in such unforeseen situation of unit outages generators should be allowed to purchase power from the market (Bilateral/Power Exchanges) enabling them to meet their schedule. Schedule and generation, leading to higher grid discipline. This is also followed in all the matured market.

- ii. IEX: As per the scheduling mechanism under the Indian Electricity Grid Code, a generator with long term PPA can revise its schedule from 6th time block and in case of unit tripping from the 4th time block. The Scheduling mechanism under the availability based tariff was finalized during 1998-99 and was subsequently implemented from 2002-03 by the Honorable Commission. At that time, there was no provision of Short-term Power Market in the country. The generators had no option to purchase power from market to make good their deviations. Accordingly, to ensure that generators are not subjected to UI penal charges, in case of unit tripping or operational problems, flexibility for revision of Declared Capacity (DC) by the generators was incorporated.

Such provision has led to frequent revision of DC by generators. There is no compulsion on generators to maintain plant in good conditions to avoid frequent revision of DC. Further, because of the revision of DC by Generators the schedule drawal of Discoms are revised and to comply with this either Discoms resort to load shedding or purchase of costly power from the short term market.

Due to this flexibility in scheduling mechanism, lot of unrequisioned surplus power is remaining unutilized.

During the last 10 years, the Short-term Power Market has developed in the country. There are two power exchanges in operation from the last six years. Therefore, the generators now have option to buy power from the real time market.

To ensure grid discipline by all participants, it is necessary that Declared Capability (DC), Scheduled Generation (SG) and Drawl Schedule (DS) once decided on day-ahead-basis should be fixed and no further revision in the same should be allowed. This has also been in practice in most of the developed countries. The advantages of this suggestion will be:

- Unrequisioned power available with the generators can be sold by them in Intraday/Contingency market.*
- Surplus transmission capacity available after the day-ahead scheduling can be utilised for the Intraday/Contingency market.*
- Deviation from Schedule can be managed by generators and the discoms through Intraday/day-ahead Market.*

In view of the above, we would like to propose following amendments in the CERC Indian Electricity Grid Code Regulations and the Short-term Open Access Regulations:

- i. Allow generators to buy power in short term market to meet their contractual obligations.*
- ii. Disallow flexibility in revision of DC, SG and DS after these are finalized on a day-ahead basis.*
- iii. Facilitate utilization of unrequisioned surplus power in the Intraday/day ahead contingency market. One of the suggestions is that sale proceeds from the unrequisioned surplus power after retaining variable cost by the generators can be shared equally between generators and original beneficiaries.*

Additional comments of IEX (during public hearing): Exchange can facilitate trading of URS.

- iii. Malana Power Company Limited: It is important to note that while closer to real time operation of intra-day and contingency products will significantly schedule power flows that would have flown as unscheduled, however there still remains a constraint, on generators and consumers, of not being able to revise their schedules under Short-term Open Access / Sale on Exchange. For example, if a*

generator has cleared an 'X' schedule for day ahead in the spot market, it can certainly bid for its surplus in the intra-day and contingency products. However, it cannot revise its schedule downward in case of an outage or reduced inflows in case of a hydro power plant. Enabling real time balance and minimizing unscheduled interchange can be achieved by allowing generators to buy back and consumers to sell back in the scheduled markets. This will also greatly benefit in integrating scheduling of RE power into the grid through a market based mechanism. Further it will achieve the objective of generation following the load curve as closely as possible.

iv. POSOCO: A well functioning electricity market is essential for reliable system operation in the Country. With the tighter frequency control and the introduction of Deviation Settlement mechanism Regulations in February, 2014, market players are moving towards scheduled interchange rather than Unscheduled interchange to optimize their portfolio near real time. The following points may also be considered by the Honorable Commission in view of the above:

- *Handling of URS: Enabling provisions may be introduced in the Regulations so that URS could be bid in the market by the ISGS. "Use it or Lose it" in case of URS of Long term entitlements may be adopted, say three hours before the concerned time block.*
- *Besides tight control over deviations, regulations may specify the quantum of reserves to be maintained by control areas.*
- *Degrees of freedom (flexibility) available in various markets products and the consequent interplay between different market products need review. Possibility of permitting counter trade to meet default in commitment due to contingencies or for better optimization may be explored. After counter-trade is permitted, revision of bilateral transactions may be disallowed.*

v. PXIL:

- a. *PXIL humbly informs that the current Intra-day Product operates under the provisions of Procedure for scheduling Bilateral Transaction, with the introduction of 24 x 7 Intra-Day Product there's a possibility of many generating stations actively participating in this Product. In case the generating station defaults from its schedule, then Buyers do not have any alternative to meet their requirements, hence Buyers interests need to be protected under such circumstances.*
- b. *PXIL humbly requests the Hon'ble Commission that adequate Regulatory provisions need to be provided that allows URS power to be bought by deficit entities. Utilisation of the URS power would lead to optimal utilisation of*

resources, hence, Regulatory provisions need to be developed for its usage in Exchange based transaction.

- c. The need to schedule URS, provide an alternate avenue in view of the tightening frequency band to utilities with the objective to enhance the reliability, resilience and robustness of the grid operations, should not be mixed with intra day and evening DAS markets. In this context, the existing provisions in the regulation enshrining the "Call-back" powers to original beneficiary of URS need to be suitably harmonized.*

Additional comments of PXIL (subsequent to public hearing):

- a. The need to schedule URS, provide an alternate avenue in view of the tightening frequency band to utilities with the objective to enhance the reliability, resilience and robustness of the grid operations, should not be mixed with intra day and evening DAS markets. In this context, the existing provisions in the regulation enshrining the "Call-back" powers to original beneficiary of URS need to be suitably harmonized.*
 - b. The scheduling of URS, ancillary services for providing grid security and stability, extended intra-day etc. require further debate in view of the discriminatory pricing and simultaneity of trade may lead to undue gains.*
 - c. Ancillary services & URS market would be prudent to be evoked by system operator to ensure reliability and the security of the grid.*
- vi. Statkraft: Statkraft would also like to highlight that such a balancing mechanism of generation and off-take should be made available also for generators who have sold too much and therefore would need to buy back generation in case of technical availability or other reasons prevents the generator to produce the contracted and scheduled load. It is important to note that while closer to real time operation of intra-day and contingency products will significantly schedule power flows that would have flown as unscheduled, however, there still remains a constraint, on generators and consumers, of not being able to revise their schedules. For example, if a generator has cleared an 'X' schedule for day ahead in the spot market, it can certainly bid for its surplus in the intra-day and contingency products. However, it cannot revise its schedule downward in case of an outage or reduced inflows in case of a hydro power plant. Enabling real time balance and minimizing unscheduled interchange can be achieved by allowing generators to buy back and consumers to sell back in the scheduled markets. This will also greatly benefit in integrating scheduling of RE power into the grid through a market based mechanism. Further it will achieve the objective of generation following the load curve as closely as possible.*

vii. Shri Sunil Barnwal:

- a. *URS power scheduling helps in demand-supply scenario and would work well if information about actual cost of power can be made available readily to the needy utility (which is not available as of now). Original beneficiary in this case, has the option to reschedule its share in case of such requirement. Availability of actual cost will enhance URS power scheduling volume. Hence it is requested from Hon'ble Commission not to allow URS power to be sold through extended market session.*
- b. **Concern:** *Load forecasting of state entity is mostly weather dependent, which itself is not being forecasted correctly on 15-minute slots basis especially due to frequent change in weather conditions. Accuracy of load forecasting of any state utility is inversely linked to frequency of change in weather conditions of its own area as well nearby influencing areas. Any change in weather in the nearby areas/region also affects demand pattern of the state entity. There are cases where utilities have invested adequately in load forecasting even then results were not satisfactory.*

Views / suggestion: *Various types of contract can be provided, which operate very close to real time in maintaining balanced portfolio viz,*

- a) *Already mentioned extended market session on power exchange.*
- b) *Formulation of procedure for Merit order dispatch specially to take care of long term contracts. MOD principal is not being followed properly due to non-availability of correct ECR/VC.*
- c) *URS power scheduling volume can be enhanced, if information about actual cost of power can be provided to the needy utility (which is not available as of now).*

These contracts will help the utilities in balancing demand-availability scenario.

Commission's decision: The Commission has noted the suggestions on bidding of URS by ISGS on the basis of 'Use it or Lose it', dispensation of flexibility of revision of schedules and protecting interests of the buyers in case of default of generation station, The Commission has also noted the stakeholders' views on trading URS power through extended market session and related suggestions. These are beyond the scope of the present discussion contemplated in the staff paper. However, the staff of the Commission is directed to examine these comments.

IV. Ancillary Services Market

- i. Malana Power Company Ltd.: The commission has been making concrete efforts to reduce *Unscheduled Interchange* and ensure grid stability and security, which we appreciate. The introduction of Ancillary Services Market would be a prudent step of optimal utilization of existing power.
- ii. OAU: Prior to this Commission has also proposed a Balancing market 'Ancillary market' which is still pending to be implemented as it requires support from other statutory bodies for taking action on real time basis.
- iii. PTC India: It is clearly mentioned in the paper that advance developed market like PJM, ERCOT, NORDPOOL, European Market and exchanges in east like South Korean exchange have balancing and deviation settlement done through ancillary services. Whereas in this staff paper it is parallelly proposed that till the ancillary services is being introduced, extension of the standard product can be the transit way of replacing UI.

As indicated in clause-3, page-4, "transaction in UI by market participants inter alia may be attributed to poor demand forecasting and planning. Demand Side Management (DSM) and deviation from the schedule is generally responsibility of SLDCs/ State DISCOMs. In technical terms, the area controlled error is to be minimized by monitoring inter link power flow and frequency. The important aspect of balancing is approach to procure ancillary services. The balancing of demand and supply is achieved presently through primary decision of generators achieved through FGMO (free governor mode of operation) and AGC (Automatic Generation Control). However, tertiary response through operating reserve ancillary market and demand response is better way of achieving grid discipline.

The statement in the paper that "DISCOM need not shed load to balance their portfolio and overall security constraint merit order is achieved through market mechanism" is not true in the present situation where State owned DISCOMs are resorting to load shedding because of financial constraints and liquidity position. It is pertinent to mention that the grid discipline can be achieved through accurate generation resources, dispatch, system security and reduction in area controlled error during real time. This responsibility is again of SLDC and State DISCOMs. It is presumed in the staff paper that the area controlled errors between day-ahead schedule and real dispatch of SLDC can be achieved through intra-day market.

As mentioned in page-6, "a intraday market could provide key platform that can be utilized to transact excess or deficit energy within the balancing area closer to the real time dispatch". The staff paper recognizes the fact that Indian market

which has de-centralized dispatch concept, where merit order and scheduling responsibility is with the DISCOM, whereas market operates at national level for the day-ahead market. Therefore, there need to be a clear methodology and balancing / information flow from SLDC to the exchange platform and vice-versa is pre-requisite to achieve objective as mentioned in the staff paper.

- iv. PXIL(Subsequent to public hearing): The introduction of ancillary services, participation of URS etc. may need a detailed deliberation prior to introduction.
- v. Statkraft: The commission has been making concerted efforts to reduce Unscheduled Interchange and ensure grid stability and security, which we commend. The introduction of Ancillary Services Market would be a prudent step in the direction. Statkraft had earlier submitted comments and suggestions to the commission on the staff paper on Ancillary Services Market. We would once again like to take this opportunity to urge the commission to expedite introduction of same.

- vi. Shri Sunil Barnwal:

Concern: Some of the state commission do not allow load shedding to the state utilities and have provision of heavy penalties, which also exaggerate the issues of UI management decisions.

Views / suggestion: Deviation settlement criteria for states having no provision of load shedding should be different from states permissible for load shedding. Deviation settlement criteria should encourage state commission in making provision to reduce load shedding in the state.

Commission's decision: The proposal of extension of the intraday/contingency market timeframe is to bridge the gap between the time of trade and the time of dispatch. The intraday/contingency market cannot be a substitute to ancillary services market in balancing the load and generation in almost real time. In development of the electricity market, ancillary services market is regarded as one of the four pillars of market design; the other three pillars being scheduling and dispatch, congestion management and imbalances. The Commission appreciates the importance of the ancillary services market and is in the process of drafting regulations on the same.

V. Operational Impediments

- i. OAU: Tightening of band may reduce the UI volume in the market but it is happening at the cost of competition as the present Deviation Regulations are not effective for the small consumers where process industries are having little deviation in their drawal pattern. Similarly, any new product may be coming for

promoting competition but it is again associated with the risk bearing capacity. So, perception of UI balancing will not be served considering above points as it has to be managed from both buy & sell front.

Commission's decision: The issue regarding the Deviation Settlement Regulations for small consumers is outside the scope of the present discussion contemplated in the staff paper. However, Commission has taken note of the suggestion and shall deal with it at opportune time.

- ii. *Association Power Traders (During public hearing): Various State Electricity Regulatory Commissions require consumers to give schedule for day ahead in advance by 1000 hrs. This schedule is deemed as final schedule. With such provisions 24x7 intraday market may not be feasible. Power Exchange should take responsibility in getting clearances on behalf of all stakeholders at the State level from SLDC as well as from the nodal agency.*
- iii. *OAUA: Any product or any Regulation of Central Commission needs end level synchronization for in principle implementation. As in the present scenario also, many states regulations are not in synchronization with Hon'ble CERC for implementing day Ahead Market. Consumers are forced to give daily morning schedules for their day ahead requirement from open access. So, without pushing the first gear, second gear will be a difficult task for implementation.*

Commission's decision: The issues raised in the context pertain to the regulatory process defined in the regulations of the State Commissions, and are beyond the jurisdiction of this Commission. The Electricity Act, 2003 recognizes the State and the Central Electricity Regulatory Commissions as separate entities without any hierarchical relationship. These issues could, however, be deliberated in the Forum of Regulators.

- iv. *PTC India: The paper talks about regulatory framework including grid code and Deviation Settlement Mechanism Regulations. However, the regulatory framework may be supportive as proposed in the staff paper but the operational methodology, work and information flow from the system operator to the exchange as well as from exchange to the operator in the exchange and other financial institutions involved in the clearance of the product is not clearly spelt out in the staff paper.*

- v. RPG Power Trading Co.: In view of uncertainty of requirement of power by bidders, it will not be possible to anticipate the fund requirements for that day in order to submit bid successfully during odd hours of the day. Hon'ble Commission may like to examine this aspect to remove any benefit arising out of this uncertainty in fund requirement between a small player with limited financial strength vis a vis a large player.

Commission's decision: The intraday/contingency market is already operational on the power exchange and therefore operational methodology, work and information flow from exchange to the operator in the exchange and other financial institutions involved in the clearance of the product is already in place. However, with round the clock contingency/intraday market, proper risk management practices considering the banking hours have to be formulated by the Power Exchanges before launching the product.

VI. Time for approval of STOA Application and gate closure

- i. IEX: At present, after submission of the bilateral application, there is no timeline specified for the approval to be given by RLDC. Furthermore, RLDCs accept scheduling applications at least 2 hours (gate closure) before the transaction takes place. Therefore, to facilitate adjustments as close to delivery as possible, timeline for approval of application by RLDC within 1 hour and gate closure as 2 hours should be specified. And gradually with introduction of technology and process automation these timelines should be reduced further.
- ii. PXIL: We submit to the Hon'ble Commission that Intra-day contracts have been in operation for more than 2 years now, based on the operational experience gained in this period, we request the Hon'ble Commission to simplify the process and procedures for approval of Intra-Day transaction submitted by PXs to RLDCs this would help in reducing the time lag from trade generation at PXs to start of actual delivery from current 3 - 4 hours to less than 2 hours i.e. the approval by RLDCs and delivery needs to start within 2 hour. Immediately, we can plan to have delivery within 8 time blocks and in the next phase it can be reduced to less than 6 time blocks.

Reduction in such timeline would provide an opportunity to Distribution Utilities to contract power within an hour by accessing the PXs and also help few States that are abundant with Renewable Energy based power to access the PXs for trading excess power available at their disposal.

Commission's decision:

The CERC(Open Access in inter-State Transmission) Regulations, 2008 states the following procedure of scheduling of transactions in a contingency situation

Procedure for scheduling of transactions in a contingency

"13. In the event of a contingency, the buyer or on its behalf, a trader may locate, and the power exchange may offer its platform to locate, a source of power to meet short term contingency requirements even after the cut-off time of 1500 hrs of the preceding day and apply to the nodal agency for short-term open access and scheduling and in that event, the nodal agency shall endeavour to accommodate the request as soon as may be and to the extent practically feasible, in accordance with the detailed procedure."

The Procedure for Scheduling of Bilateral transactions as approved by the Commission allows scheduling of transactions from 6th time block onwards with the first block being the one in which acceptance is accorded.

"9.3 Nodal RLDC shall take steps to incorporate such Bilateral Transactions in Day Ahead schedules/Same -Day schedules, as the case may be. In case of Same Day, the transaction shall be scheduled from the 6th time block, counting the block in which acceptance is accorded as the first time block."

The timeline for according acceptance is not mentioned in the procedure. It appears from the submission of the stakeholders that there is a case for reduction of timelines for approval and subsequent scheduling of transactions. The Commission hereby directs POSOCO to submit Procedure for scheduling of bilateral transactions with timelines mentioned for acceptance as well. It is desired that POSOCO should communicate approval or rejection within one hour of the application made.

VII. Application fee for Intraday/Contingency Scheduling:

- i. IEX: Presently, the Application fee of RLDC for Scheduling of bilateral transaction is Rs.5000 per application. In instance where small quantum of power is to be traded, the levy of application fee may render the transaction as commercially unviable. Therefore to support entities participate in the market and build liquidity and participation in intraday market, the application fee of Rs. 5000 should be waived off. For instance, the contracts of size as small as 1MW and for as small period as 15-minutes may never get concluded if the fee is on per-application basis. All fees and charges must be on per MWh basis. As suggested in the Staff Paper, we should work on enabling LDCs to adopt*

automated web-based systems which will obviate the manual interventions and thereby doing with the requirement of levy of application fee.

- ii. *POSOCO: With tight controls and limits on deviation volume as per the CERC (Deviation Settlement Mechanism) Regulations, 2014, it is essential that market participants are given more opportunities to buy and sell power. Though there is provision of Contingency contracts, entities find it difficult to enter into a bilateral one to one contract and this entails a higher transaction costs. Power Exchanges operate on a Day Ahead basis. In order to facilitate different entities to Sell/ Buy power to balance their portfolio, it is strongly suggested that multiple iterations of Collective Transactions through the Power Exchanges may be permitted by the Commission by way of introduction of Evening Market on the Power Exchanges.*
- iii. *PXIL: PXIL humbly informs that the Hon'ble Commission has issued the draft CERC (Open Access in inter-State Transmission) (Third Amendment) Regulations, 2014 providing for operating charge to be levied on Rs./MWh basis, hence the anomaly as referred above would be rectified on issuance of the final Regulation.*

Commission's decision: The Commission has already issued draft CERC (Open Access in inter-State Transmission) (Third Amendment) Regulations, 2014 in the context. The Commission will take suitable decision in this regard shortly.

With regard to the application fees, the Commission would deal with this issue separately.

VIII. Availability of real-time information on Total and Available Transfer Capability (TTC/ATC)

- i. *IEX: IEX supports the point of the Staff Paper that "The success of round the clock Contingency/Intra-day Market depends upon availability of transmission corridors and information about margins on various transmission links to market participants on an active and frequent basis and this information should be conspicuously available on the website of POSOCO/NLDC." Further, it would be ideal to get SLDCs to post TTC and ATC information on their SLDC website, however, extension of Market needn't be delayed in absence of such a practice at SLDC end.*
- ii. *Malana Power Company Ltd.: As stated by the Commission as one of the critical success factors, we completely support and strongly urge for information about margins on various transmission links to market participants on an active and*

frequent basis to be made available by all LDCs (National/Regional/State) on their websites.

iii. *OAUA: Short term power market is still facing a grave issue of transmission constraint which has to be resolved and it also requires real time monitoring of availability. Also, if participants are not able to schedule their power in Day Ahead Market, how they would be able to schedule their power in any extended market and it will act as a market only during those contingency which no one predict.*

iv. *POSOCO: In the Staff paper it has been proposed that the trading of day ahead contingency/intraday contracts be extended round the clock (24 X7) on the power exchange platform. Availability of the latest information pertaining to the available transmission margins has been given as a critical success factor that influences the success of the proposed market design.*

In this regard, it is submitted that NLDC declares the Total transfer capability of various corridors and this information is available transparently for all stakeholder in the public domain as per the CERC (Measures to relieve Congestion in real time) Regulations, 2009. The details of Long term access and Medium term Open access granted by the CTU are displayed at the website of CTU on regular basis. Further, the information of the bilateral transactions accepted by the nodal agency are already displayed by the RLDCs at their website as per the Clause: 27 of CERC (Open access in inter-state transmission) Regulation, 2008 and further amendments thereof

"National Load Despatch Centre and each Regional Load Despatch Centre shall post the following information on their websites in a separate web-page titled "Open access information "; I. These regulations; II. The detailed procedure;

III. A list of bilateral transactions accepted by the nodal agency, to be displayed till the end of the month in which transactions are scheduled, indicating:

- a) Name of customers;*
- b) Period of the open access granted (start date and end date);*
- c) Point or points of injection;*
- d) Point or points of drawl;*
- e) Transmission systems used (in terms of regions and States);*
- f) Accepted schedule (MW) with start time and end time;"*

Further, the TTC is revised on a regular basis by NLDC and for instance, during the month of July 2014, a total of 30 revisions are available on the NLDC website.

- v. PXIL: PXIL informs the Hon'ble Commission that information about TTC/ATC would play a vital role in generating successful transaction in the 24 x 7 Intra-day sessions, hence, this information should be available in public domain so as to benefit all the grid constituents. Further, the Hon'ble Commission vide its Order in petition no 188/SM/2012 dt. 11/12/2013 has acknowledged that process of TTC/ATC computation should be broad based and transparent and had directed for constitution of National Reliability Council that would approve the computation of TTC. Early solution to computation of TTC/ATC would help in optimal utilisation of resources.

PXIL requests the Hon'ble Commission to reserve 20% of ATC to the 24 X 7 Intra Day trade and the information of ATC across the inter-zonal links should be made available 'a priori' for the benefit of Market participants. Availability of information and reservation of transmission corridor would help in building adequate liquidity in the 24 x 7 Intra Day Product.

Additional comments of PXIL (subsequent to public hearing):

It is important to inform the market the availability of corridors. As the window for bidding in evening market will be made available for market participants after 2 DAS and DAS session results are declared, the information on capacity available on corridors will assist market participants to take informed decisions related to participation, period and prices.

- vi. RPG Power Trading Co.: Available transmission capacity as displayed in the NLDCs website is often used by participants to make informed decisions regarding flow of electricity. Now, with such extension of power market, real time data has to be essentially provided round the clock enabling the bidders to take correct decisions.
- vii. Statkraft: As stated by Commission as one of the critical success factors, we completely support and strongly urge for information about margins on various transmission links to market participants on an active and frequent basis to be made available by all LDCs (National/Regional/State).
- viii. Shri Sunil Barnwal:
Concern: Request of state utility for ramping up/down the generation for its share is not implemented in most of the cases even after several follow-ups. Neither reasons for part/no implementation nor, actual implementation of such

request is communicated back to the end discom. Hence state utilities are unable to plan for next time blocks of the day in minimizing UI.

Views / suggestion:

Vital information like latest available Transmission Margins for Ramping down/up the generation and Technical Minimum limit for its share shall be available to the stakeholders for informed decision making. If the same is not available. Information of reasons for non-implementation/part-implementation or Implementation of request from state utilities shall be communicated back so that state utilities can plan for next time block of the day in minimizing UI.

Commission's decision: The stakeholders have endorsed the view mentioned in the staff paper that TTC/ATC information should be available on NLDC/RLDCs websites on a real time basis.

POSOCO has submitted that the information displayed on the website is as per CERC (Measures to relieve Congestion in real time) Regulations, 2009 and CERC (Open access in inter-state transmission) Regulation, 2008.

It may, however, be noted that the Central Advisory Committee of CERC in the meeting held on 12.05.2014 expressed the following:

"There is a need for greater transparency on declaration of TTC/ATC/Margin allocation. TTC assessment should be done more on real time basis."

Commission vide order dated 20.03.2015 in petition no. 92/MP/2015 directed CTU for monthly publication of TTC/ATC.

As regards reservation of corridor for intraday market, the Commission vide order dated 16.02.2015 in petition no. 92/MP/2014 directed the staff of the Commission to examine all issues with regard to reservation of transmission capacity for medium term and short term market in consultation with CEA, CTU, POSOCO and Power Exchanges and submit to the Commission for consideration.

IX. Intra-day contract specification

- i. IEX: Presently, hourly contracts are traded in the Intraday Market at the Power Exchanges. We may need to bring 15-minute contract to allow buyers and sellers to correct their imbalances close to real-time in 15-minute.*

Commission's decision: The flexibility to introduce 15-minute time-block contracts in Intraday/contingency market is already available with PXIL. IEX vide petition no. 95/RC/2014 has sought in principle approval of the Commission for 15-minute contracts. The order of the Commission is reserved in the petition.

X. Consumer-wise power purchase information by SLDCs

- i. *PXIL: PXIL humbly informs the Hon'ble Commission that SLDCs play a critical role on dissemination of information about day-to-day transaction made by Open Access consumers of the State. Currently, this information is not disseminated by the SLDCs for all its Open Access consumers, the provision of consumer wise power purchase information would help PXs to interact and offer services that would help in making informed decisions by such Open Access consumers.*

Commission's decision: Transparency is one of the cornerstones of market efficiency. It is desirable that information about open access consumers and their transactions are publicly available. The Commission believes that the State Commission, the appropriate authority will take note of and enforce, wherever required, the requirement of information dissemination by the SLDCs.

XI. Open Access Registry

- i. *Association of Power Traders (During public hearing): National Energy Registry as proposed by IEX should be implemented to reduce the time lag in scheduling of transactions*
- ii. *IEX: IEX submits that without automation of open access procedure by way of setting up a National Open Access Registry (NOAR), it would be difficult to envisage a well- functioning and a liquid Intraday Market. The NOAR will not only assist NLDC/ RLDC in handling open access applications but would also streamline and automate, the process of NOC issuance by SLDCs which is a time-consuming and manual process as of now.*

The benefits and suggested functional and operational framework of NOAR is as illustrated below:

(1) Benefits of NOAR to the Indian Power Sector:

- a) *With a single NOC for Collective and Bilateral transaction, an Open Access (OA) Customer can avail different options available to buy and sell electricity.*
- b) *Double counting would get eliminated and monitoring will become easier.*
- c) *Logistic and communication challenges w.r.t. OA issuance and processing being the foremost hindrance for SPOT transactions would get resolved.*
- d) *Contracts closer to delivery as well as real time balancing market would be facilitated, as and when introduced. This will reduce dependence on UI, more quantity would be scheduled and grid discipline/reliability would increase.*

- e) *Regulators and LDCs would get uniform and updated information on a regular basis, thereby enhancing in monitoring, transparency, efficiency & economy.*
- f) *Communication and information would increase the scope of transactions in Bilateral and Exchange based markets.*
- g) *Utilization of transmission corridor would become more optimal and transparent.*
- h) *Standardization and mapping of all the entities in India would be realised.*
- i) *Open Access accounting would be simplified.*

(2) Suggested functional framework of NOAR:

- a) *National Open Access Registry will be an automated system which will provide all Open Access stakeholders (including System Operators) transparent, and efficient central clearing of Short-term Transactions. '*
- b) *The Registry will keep information of Open Access granted to all the Customers from respective SLDCs, Inter-state Corridor available for STOA as uploaded by NLDC/RLDCs and availed STOA as per corridor limit in an electronic form.*
- c) *The Registry essentially aims at eliminating the voluminous and cumbersome procedural paper work involved in the whole process (starting from taking Standing Clearance by entities to Approval of STOA application by NLDC/nodal RLDC) and offers scope for efficient; transparent; seamless and paperless trading through state-of-the-art technology.*
- d) *It will be an institution which will maintain an electronic record of all Open Access Transactions.*

(3) Suggested operational framework of NOAR:

- a) *Integrated IT based system, with national reach, to facilitate communication for Short term Open Access among Consumers, Applicants, Load Despatch Centers (LDCs), Traders, Power Exchanges, Regional Power Committees (RPCs) and Electricity Regulatory Commissions (ERCs).*
- b) *Central online clearing for all STOA Applications and Approvals.*
- c) *Depository and repository for OA approvals by State Load dispatch Centers (SLDCs) and Available transmission capacity (ATC) for inter-state transmission.*
- d) *One-click access to all stakeholders.*
- e) *Regulatory Information access to ERCs.*
- f) *Modelled on the concept of depositories in the capital market.*

- iii. Malana Power Company: In addition, automation and streamlining open access application processing and approval needs to be taken up actively to reduce time taken and closer to real time scheduling of power. This further calls for streamlining transmission and open access regulations to provide for more conducive corridor availability for market access.
- iv. OAU: Power Exchange has also proposed the suggestion towards the integrated and real time operation of all system operators (SLDC, RLDC & NLDC) involved in the transaction. This has to be accomplished at the earliest for achieving the objective of staff paper.
- v. POSOCO: Approval of STOA applications requires coordination between the NLDC/RLDCs with the SLDCs. Within RLDCs, integrated software application is being used. Further automation at SLDCs level and introduction of Open Access Registry proposed by IEX would help.
- vi. PXIL (submissions subsequent to public hearing):
- a. Hon'ble commission via notification dated 11.09.2013 amended the Open Access regulations clauses which quote as:

"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".
 - b. The amendment was a positive step towards reducing time for scheduling under contingency products offered on exchanges but due to non-availability of NOC automation facilities at RLDC/SLDC level are restricting the implementation of the clause.
 - c. Therefore, PXIL submits that the automation of NOC tracking and utilization is a key success factor for intraday markets. Scheduling of these transactions closer to delivery will make these contingent transactions and intraday transactions as the preferred sessions by participants on exchanges. Currently the gap between gate closure and actual delivery is around 12 time slots due to different level of consents and procedures involved.
 - d. Utilization of same NOC for contingency transactions would further reduce the time for scheduling and therefore, contribute towards making it easier for the participant and facilitate transactions closer to delivery.
 - e. While mandating URS to participate in the intra-day sessions has its own advantages in terms of utilizing the capacity available for grid security, providing opportunity for generating plants to get dispatched, mandatory

participation will be a shift from the current voluntary participation. If the objective is to strengthen and support the grid and at the same time provide choice to generators, the market design needs to be carefully designed. In case extended intraday sessions are to be treated as contingency settlement options, voluntary participation may be the best option as the beneficiaries while deciding their demand have already decided not to schedule some plants which has resulted in URS.

- f. PXIL submits that RLDC/SLDCs should have the real time issuance, updation and monitoring of NOCs to track capacity exposure to market participants and actual utilization of capacities. This will further result into real time NOC management system wherein participants shall be able to submit applications for renewal, issuance of "Exchange Neutral NOC" for their transactions and will not be limited to Registry maintenance. PXIL also submits that the technology used for the implementation shall be provided by third party approved by Hon'ble Commission with access to all the stakeholders to utilize the platform considering the past experiences of discriminatory implementation of regulation by the SLDCs.*
- vii. RPG Power Trading Co.: While submitting bids for intraday contingency during odd hours of the day, obtaining the consent of the respective SLDC could prove to be tedious task. Moreover in cases of emergency, when power may be required urgently, time taken by SLDC to provide consent could pose an issue. It is proposed that all submitted applications for the various consents should be handled by a nodal coordinating agency so that bidders are not stuck with arrangement of consents for different agencies involved. For this, automation of SLDC activities will be of prime importance.*
- viii. Statkraft: In addition, automation and streamlining open access application processing and approval needs to be taken up actively to reduce time taken and closer to real time scheduling of power. This further calls for streamlining transmission and open access regulations to provide for more conducive corridor availability for market access.*
- ix. Shri Sunil Barnwal:*
 - a. **Concern:** Generators are allowed to revise their schedule in case of forced outage, revival or any other reason, leaving the state entities to face the implications of deviation charge. Even information regarding change of schedules either not communicated or reaches to the end discom very late. There is no direct correspondence in respect of scheduling between generator and state utility.*

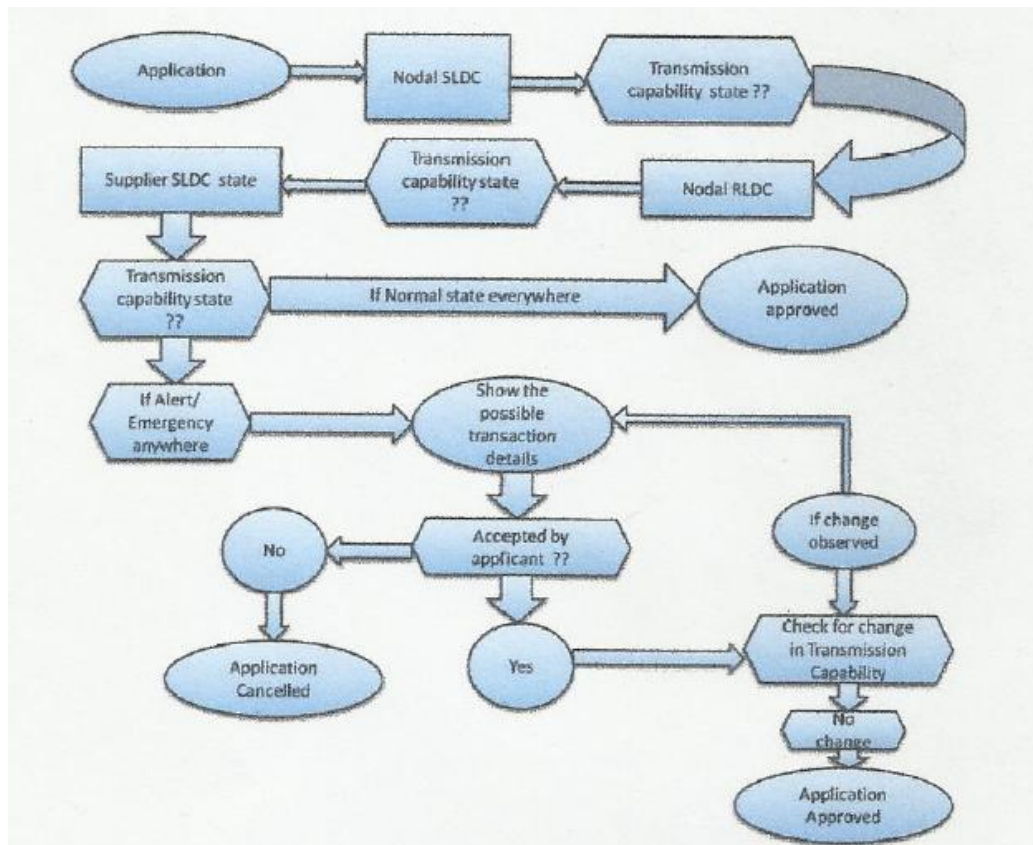
Views/Suggestion: IT infrastructure for integration of End-user (i.e., Sellers/Buyers) with LDCs (NLDC/RLDCs/SLDCs/ALDCs) shall be created for automatic flow of information in real-time, which may intimate the discoms well in advance about expected revision in generator schedule for better management.

- b. **Concern:** Almost 90% transactions (Reference: CERC Annual Report 2012-13) by state utilities are done through Long/Medium Term contract from no. of generators. These stations are either connected to
- i) Central Transmission Utility (CTU) of same region as of state utility or other region or
 - ii) State Transmission Utility (STU) of own state or other state {In same region or other region) or
 - iii) Directly to the network of the discom.

In absence of IT integration of LDCs (NLDC/RLDC/SLDC/ALDC), implementation of request of discom for increasing/decreasing its schedule is a big challenge especially if the generator is not connected to its own state network due to lengthy communication process. Even discoms are required to derive its schedule manually all the time due to frequent changes in generation schedule. There is no IT automation at discom end which can automatically revise its drawal schedule.

Views / suggestion: IT Integration of user interface can be created between buyers and sellers with LDCs acting as approving and accounting authority. Any requisition by a buyer will directly go to the seller for implementation of agreement in pre-specified scenario/criteria and all the LDCs in between shall approve it based on ATC

- c. Regarding complex concurrence procedure for open access from RLDCs/SLDCs, it is requested from Hon'ble Commission to issue necessary guidelines for working on development of intelligent IT system to integrate the entire load dispatchers (NLDC/RLDC/SLDC/ALDC etc) and end-users (sellers/buyers) so that vital operating variables such as generation, consumption, grid frequency, bus voltages and transmission line loading, are available at all coordinating centres including the end user for real time operation with fully automated exchange of information. Based on information retrieved from this intelligent system about TTC and ATC, online concurrence can be given to the applicants, if the transfer capability state of the transmission system is in the normal state. Open Access concurrence process shown below can be adopted for saving time in compare to manual concurrence system presently being used:



Commission's decision: The paper by the staff of the Commission recognizes the need of automated and a common web based application that can be used by stakeholders for electronic processing of applications for open access. IEX had earlier submitted a concept paper on National Energy Registry based on the depository system to the Commission. The staff of the Commission is in the process of preparing a paper on the centralized registry on which views of the stakeholders would be elicited.

XII. Priority of Transmission corridor allocation

- i. *RPG Power Trading Co.:* In view of the proposal, trading of day ahead contingency/intraday contracts being extended round the clock, Hon'ble Commission may like to explain corridor allocation priority of applications submitted in different times for the same period, e.g. if a Bidder A submits bid at say 1800 hrs for a quantum Q1 for a period, and a Bidder B submits bid at 1805 hrs for a quantum Q2, both for the same delivery period, whose bid shall be given preference over the other needs to be clarified. Whether the processing of applications will be done on first cum first serve basis, or will there be time based slots within which all the submitted bids will be processed in lots. Transparency of

processing of applications submitted in different times for the same delivery period needs to be shown to all the bidders.

Commission's decision: The staff of the Commission is hereby directed to examine the issue separately.

XIII. *Non-declaration of Technical Minimum limit by Long Term Generators*

i. Shri Sunil Barnwal:

*a. **Concern:** Long Term Generators (Under Merit-order) have not yet declared their Technical Minimum limit, to which state utilities can plan to back down their schedule in case of such requirement.*

***Views / suggestion:** All the generating stations shall be mandated to declare their Technical Minimum generation. Tariff Regulation notified by Regulatory Commission may be amended suitably to direct the generators to bill the Energy (or Variable) Charge of current year based on evaluated actual ECR of previous year (s) so that ECR of the stations does not vary frequently to become a hurdle in implementation of MOD principle.*

*b. **Concern:** Rate of energy exchange usually follows the trend of UI/DSM rate. This is because utilities bids in exchange after considering reference UI/DSM rate of transacted period to avoid objection in audit. Some parts of uncleared exchange volume also get transacted in UI/DSM.*

***Views / suggestion:** Usually 85-90% of overall transactions by state utilities are done through Long/Medium term transactions under Two-part tariff. If Hon'ble Commission could amend Tariff Regulation to direct the generators to bill the Energy (or Variable) Charge of current year based on evaluated actual ECR of previous year (s), same can be used by state utilities as reference while bidding in exchange to avoid audit objection. Any uncleared volume out of energy exchange, will have the option to get managed through Merit order scheduling to some extent. Complying merit order principal as directed under National Tariff Policy is difficult in the present scenario due to non-availability of correct ECR (Energy Charge Rate) and Technical Minimum of thermal stations.*

Commission's decision: The matter of non-declaration of Technical Minimum Limit by long term generators is outside the present scope of discussion. The staff of the Commission is directed to examine this issue separately.

XIV. Usage of SEM data instead of real-time operating variables

i. Shri Sunil Barnwal:

Concern: *There is always some error in vital operating variables such as frequency and actual drawal data available on real-time basis from SEM data. Real-time data is used for decision making while managing UI and supporting grid in terms of security. Hence sometimes discoms unknowingly get trapped into heavy penalty due to technical error in data. There is no established mechanism to check/enquire accuracy of real-time data from that of SEM data/Implemented schedule of LDCs.*

Views / suggestion: *Real-time vital operating variables instead of SEM data, shall be used for final deviation settlement in the following manner:*

- a. *All the End-users (Sellers/Buyers) of the inter-connected grids/networks should use same source of frequency on real-time for informed decision making*
- b. *Real-time drawal data of state utilities available with RLDC can be used for final deviation settlement of state utilities whereas Real-time drawal data available with SLDC can be used for checking purpose in case of major error.*
- c. *Real-time drawal data of discoms/other entities available with SLDC can be used for final deviation settlement of discoms/other entities whereas Real-time drawal data available with discoms/other entities can be used for checking purpose in case of major error.*
- d. *Necessary measures shall be taken to minimize the error of real time data from SEM data.*

Commission's decision: The issue raised by Shri Sunil Barnwal is outside the scope of the present discussion. However, the staff of the Commission is hereby directed to examine the issue separately.

XV. Submission of affidavit for sale and purchase of power

i. RPG Power Trading Co.: *As per the latest proposed amendments in Open Access in Inter-State Regulations, a bidder has to submit an affidavit declaring that the transaction for the said quantum is according to a valid contract, and that no other contract exists for the sale/purchase of the same power. The proposed continuous product could be challenging at odd hours of the day, for submitting such affidavits. Hon'ble Commission may like to simplify/change the process for ease of implementation.*

Commission's decision: The Commission is in the process of issuing the amendments to CERC (Open Access in inter-State Transmission) Regulations, 2008 for which inputs have been received and a public hearing has also been

conducted. The amendment has clauses relating to submission of the affidavit for sale/purchase. This issue would be dealt with in that context.

XVI. Introduction of 2D-SPOT market

a. PXIL comments during public hearing

- i. PXIL has filed petition for introduction of Two Day Ahead Spot (2D SPOT) and same day evening market which are extension of logic for extended markets.*
- ii. Internationally, market participants are offered multiple options for delivery on the same day. While there is overlap amongst products (order book opening) they are also offered sequentially. If the options proposed by PXIL are accepted, then a typical day would have day ahead market followed by 2D SPOT which in turn is followed by evening market with intraday session operating on round the clock basis. These options are expected to bring depth and liquidity in the market.*

b. PXIL comments subsequent to public hearing:

- i. As has been mentioned in our petition (383/MP/2014), filed with this Hon'ble Commission for granting the permission to introduce 2 Day Ahead Spot and Evening Das contracts, responses to the observations and additional replies, there is no denying fact that there is a need for additional contracts in the market for overall development of the market. POSOCO, in their submissions, brought it out very rightly that competition and choices go hand in hand and are not mutually exclusive. The wisdom to adopt a multi exchange model, voluntary participation, introducing exchanges in an overall deficit scenario, introduction of 15 minute scheduling etc. have been very significant achievements during last six years. Further, contrary to widespread perception that deficit markets should lead to higher prices, the prices in the market have come down in last few years. While the development is a result of multiple reasons, one of the significant contributors is the information dissemination by exchanges and transparency in price discovery. In order to take the growth story forward, it is important to introduce more and more products. In the available ecosystem, wherein no major changes are required to introduce 2 D Spot and Eve Das, NLDC very rightly submitted that from a regulatory view point, products have been introduced in the past (Day ahead contingency, intra-day, medium term in the OTC segment) out of which some took time to develop whereas some need improvisation to cater to the need of the market participants. Therefore, introduction of new products should be encouraged by the Hon'ble Commission, as it will provide opportunities for market participants with fallback options in collective segments Further, It is submitted that introduction of new products and availability of options is the sign of healthy*

market and the success or failure of such options shall be left to market participants to decide.

- ii. The apprehension regarding the frivolous and speculative bids, for the purpose of gaming, has been dealt in detail in our additional responses to our petition 383/MP/2014, as per the directions issued by the Hon'ble Commission, We would like to highlight that in collective transactions as a result of uniform price discovery, the participant is not aware of the price which will be discovered and therefore, will place the bid in line with their risk appetite. It is only under continuous matching, where price discovery is based on Price - Time priority (as is the case in financial and some commodity markets), simultaneity is introduced and available quotes are known, which could potentially generate opportunities for gains. In true sense of the word, as the two positions are not squared off, there is no arbitrage.*
- iii. The NOC issued for existing DAS market shall be accepted for evening markets and all other collective transactions markets in future, including 2 D Spot. Further, participants may not be comfortable with paying application charges again in the evening DAS. Therefore, implementation of a postage stamp methodology, as proposed in the staff paper and our original proposal in petition 124/MP/2013, will definitely contribute to the success of the product. These costs also contribute in enhancing the purchase cost or reducing the realized price.*
- iv. Market participants shall have freedom to select the product and the method of transaction for scheduling the contingent requirements. Therefore, the proposed options in collective segments viz 2 D Spot and Evening DAS may immediately be allowed on Power Exchange for current participants on voluntary basis, as is the case with current DAS.*
- v. 2D Spot and Evening DAS are the additional options which have been proposed considering that currently market participants have only one option for scheduling in collective segment which offers features like uniform prices and anonymous bidding without affecting existing application criteria for scheduling of transactions on Day Ahead Basis. Hon'ble Commission may please expedite the approval of the proposed markets in collective segments which will provide more options for market participants to manage their requirements with added precision and will lead to overall development of markets with efficient price discovery.*

Commission's decision: The submission of PXIL in relation to 2D spot market is beyond the scope of present discussion and the same shall be taken up while dealing with the petition no. 383/MP/2014.

XVII. Arbitrage, speculation and circular trading

- i. IEX (comments subsequent to public hearing): Introduction of the proposed Evening Market will provide a possibility of circular trading between the present 'Day Ahead Market' and the proposed 'Evening Market' since both will be under collective segment, to the market participants. This will potentially manipulate and distort the present day well-established 'Day Ahead Market'. The proposed 'Evening Market' will also undermine the present well-functioning day-ahead market and may lead to speculative and frivolous bidding by the 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.
- ii. PXIL (comments subsequent to public hearing):The concern of arbitrage was highlighted in the public hearing. It is humbly requested that the simultaneous availability of options of extended intraday, ancillary services and URS in near future in bilateral segment may lead to arbitrage as by virtue of the feature of the products in bilateral segment, information related to generator stacks and counterpart bids will be available with market participants which is not the case with the uniform pricing, anonymous bidding mechanism as is the case for Day Ahead Spot and proposed for 2D Spot and Evening DAS products (Extended market options in Collective segment).

Commission's decision: IEX has raised concerns about speculation and circular trading with the introduction of evening market. PXIL has raised concerns that arbitrage may emerge on simultaneous introduction of extended intraday session, ancillary services and URS. The Commission recognizes the apprehensions around introduction of new products in the market. In order to avoid market manipulation, the Commission has also provided for various checks and balances; for instance:-

- i. In context of the transactions through power exchanges, NOC is given for either buy or sell but not both. Only utilities can place bids for simultaneous buy and sell but on different platforms.
- ii. Owing to firm delivery, the transactions would have to be scheduled and cannot be financially netted off for buy and sell.
- iii. Transaction costs and losses are levied on both buy and sell. These additional costs/losses also act as a deterrent against gaming.
- iv. The DSM regulations impose heavy penalty on deviation beyond 12% or 150MW whichever is lower from the scheduled quantity.

- v. Transmission congestion also makes it difficult for the participants to engage in any arbitrage, speculation or circular trading.
- vi. Trades closer to schedule reduce the possibility of arbitrage, speculation or circular trading to a large extent due to time constraint for another trade.

Further, to keep the possibilities of arbitrage, circular trading and speculation in check, regulations have also been built in the Power Market Regulations. Regulation 58(v)(f) of the PMR provides for market surveillance including circular trading monitoring by Exchanges. The regulation is extracted as under:

"58 (v) (f) Circular Trading monitoring

Explanation - A fraudulent transaction to buy and sell the same quantity of a contract, at the same price and at the same time, without actual change of ownership."

For tracking large transactions in the short term market, the regulations provide that transactions of 100 MW or more are reported by the market participants to the Commission. The relevant regulation is extracted as under:

"59 (ix) Power transacted directly between buyers and sellers for interstate transactions above 100 MW in the short term market shall be reported by them to the Commission within 10 days of execution."

The Commission expects that any possibility or instance on these counts would be reported by the power exchanges or market participants for suitable action by the Commission.

XVIII. Specific questions for which answers were elicited through the staff paper

- a. ***"Will the intraday 24x7 trading session genuinely address the concerns of grid-connected entities and help respond to contingencies unanticipated like load crash or generator failure etc. and act as a useful risk mitigation mechanism?"***
 - i. ***IEX: IEX submits that an organised market with proper enabling instruments would definitely address the concerns of the grid-connected entities and help, them to respond to unanticipated contingencies like load crash or generator failure etc. and act as a useful risk mitigation mechanism.***
 - ii. ***PXIL: PXIL humbly informs the Hon'ble Commission that Intraday 24 x 7 trading session would provide an opportunity to Market participants to mitigate contingencies like load crash / generator failure and achieve desired measures in the shortest possible time. With simplification in processes and procedures the***

current delivery time of 6 time blocks could be reduced to less than 4 time blocks (i.e. less than 1 hour)

b. "Should the market be kept open 24x7 or should the trading session extension be undertaken in a calibrated manner by extending the trading session by only a few hours before opening it 24x7?"

i. IEX: IEX reiterates its willingness to support a round-the-clock 24x7 Intraday Market.

ii. PXIL: PXIL humbly informs the Hon'ble Commission that calibrated approach would be the right approach and to start with the intra-day sessions could start by 8:00 hrs daily and run till 21:00 hrs from the current practice of 10:00 hrs to 19:00 hrs. This can run for 6-month period to be followed by 24 x 7 operation from the 7th month onward. By having a graded approach, the Market participants would acclimatise themselves with new avenues available for transacting power and indirectly generate adequate liquidity in the Intra-day Product in the shortest possible time. In addition to this the decision makers of related entities need to tune to this modification as there has been very limited participation during the last session vis. in the 18:00 to 19:00 hrs.

PXIL informs the Hon'ble Commission that information about TTC/ATC would play a vital role in generating successful transaction in the 24 x 7 Intra-day sessions, hence, this information should be available in public domain so as to benefit all the grid constituents. Further, the Hon'ble Commission vide its Order in petition no 188/SM/2012 dt. 11/12/2013 has acknowledged that process of TTC/ATC computation should be broad based and transparent and had directed for constitution of National Reliability Council that would approve the computation of TTC. Early solution to computation of TTC/ATC would help in optimal utilisation of resources.

PXIL requests the Hon'ble Commission to reserve 20% of ATC to the 24 X 7 Intra Day trade and the information of ATC across the inter-zonal links should be made available 'a priori' for the benefit of Market participants. Availability of information and reservation of transmission corridor would help in building adequate liquidity in the 24 x 7 Intra-Day Product.

c. "Are there any apprehensions by market participants of possible gaming and market abuse with introduction of extended trading sessions?"

i. IEX: IEX is not apprehensive of any possible gaming and market abuse as we perceive that an extended and Round-the-clock Intraday Market will indeed strengthen the Short-term Power Market and assist in its further growth. The present-day regulatory framework is strong enough with hardly any scope of gaming and market abuse.

- ii. *PXIL: PXIL humbly informs the Hon'ble Commission that additional avenues of transaction would encourage more number of Market participants to avail benefits under this option thus eliminating any concentration of market power towards a specific participant. PXIL apprehends that certain generators can take undue advantage and can engage in gaming by under declaring. From Power exchange perspective this will affect prices and volumes on established DAS market. Hence Hon'ble commission may please enforce suitable restrictions through adequate measures.*
- iii. *RPG Power Trading Co.: A generator or a consumer is permitted to deviate by lower of 12% of the schedule or 150 MW, as per Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014. In view of the 24X7 contracts, Hon'ble Commission may like to detail procedures to restrict possible gaming in such products wherein approvals are to be arranged quickly.*

Commission's decision: It is observed that the stakeholders are in support of the extension of 24x7 intraday/contingency market. The Power Exchanges have also requested for reduction in time between the trade and the dispatch for which the Commission has provided the necessary directions above.

With regard to the implementation, IEX has suggested that the trading hours can be extended on round the clock basis whereas PXIL has suggested for a calibrated approach. IEX is already operating the Intra-day market from 1000 - 1700 hrs and PXIL is implementing the market from 1000 to 1900 hrs. PXIL has indicated that the very limited participation takes place during 1800-1900 hrs. With extension of trading hours in contingency and intraday products, the participants may face issue in arranging NOCs from LDCs, funds for trading. It is expected that with the introduction of round the clock contingency/intraday contracts, the process of issuance of NOCs by LDCs may get streamlined over a period of time. Since the power exchanges are also acting as clearing corporations, they are expected to devise proper risk management frameworks to facilitate round the clock contingency/intraday markets.

Some of the stakeholders have expressed concerns over gaming owing to the extended market sessions. PXIL has expressed that certain generators can take undue advantage and can engage in gaming by under declaring and RPG Power trading has concerns over gaming in products wherein approvals are to be arranged quickly. The Power Exchanges act as a surveillance layer in the electricity market. The Power Exchanges vide CERC (Power Market) Regulations, 2010 have been mandated to conduct market surveillance and to this effect a committee is also constituted the function of which is overseen by an independent director. The exchanges, as per the Power Market

Regulations, submit the market surveillance report to the Commission on a quarterly basis. The report includes the following among other things:

- a. Daily, weekly, monthly Volatility analysis of prices (day ahead and term ahead contract prices);
- b. Price setter analysis of buyer and seller;
- c. Dominant participants and Market concentration
- d. Circular Trading monitoring

Since the exchanges are already operating contingency/intraday contracts, they are hereby directed to submit any instance of gaming that has been observed since the introduction of contingency/intraday products.

The directions for approvals in contingency situation have already been provided in section 8.XII of this order.

XIX. Time of Implementation of the proposal

- i. IEX: *IEX submits that in order to make necessary changes and deploy resources to support a Round-the-clock 24x7 Intra-day Market, we will require at least 6 months from the date of issuance of directions by the Honourable Commission.*

Additional comments of IEX (during public hearing): *The platform for launching of round the clock intraday market is ready. However, some minor changes would be required.*

- ii. PTC India: *The present day-ahead market is a pan-India power market with a collective scheduling being centrally organized in close coordination with NLDC and SLDC only once in a day and revision thereafter if required. Whereas for 24 x 7, intraday market will be throughout the day with transaction continuously taking place throughout the day with discovery of price and quantum at least 24 times in a day. Present set up in exchanges in India does not have the capacity and capability to handle this. The regulator may ensure readiness of software as well as infrastructure to handle such type of intraday contingency contracts.*
- iii. PXIL: *PXIL humbly informs the Hon'ble Commission that in case operation of evening markets on PXs is permitted, then it would require following additional set of activities to be performed by PXs*
 - a) *Undertake suitable modification in the Trading system to accommodate the new requirements*
 - b) *Deployment of operating staff for managing trading sessions*
 - c) *Deployment of IT personnel to manage the IT-based trading system of the*

Exchange

- d) *Co-ordination with Banks for Clearing and Settlement of transaction undertaken by Market participants*

The above four activities would entail expenditure by the Exchange that can be recovered only if adequate liquidity is generated by the new Product. PXIL apprehends that the 24 x 7 Intra-day operation may not result in substantial increase in transaction made at the Exchanges instead the current daily volume would be distributed between Day Ahead and Intra Day Product. Since, PXIL will be augmenting its infrastructure to meet the 24 x 7 operational requirements it may revisit the transaction fee to be charged from Market participants.

Commission's decision: It appears from the comments of the stakeholders that the major concerns in extending the intraday/contingency contracts are deployment and readiness of the software, deployment of staff and co-ordination with banks for clearing and settlement of transactions. In the staff paper also, it was mooted that the Power Exchanges would be provided with reasonable amount of time to upgrade their infrastructure and human resources before commencement of operations of the propositions.

In light of the above facts, we direct Power Exchanges to commence operation of round the clock intraday/contingency market within three (3) months from the date of issue of this order after undertaking all requisite modifications, formulation of appropriate risk management practices considering banking hours and testing and validations of the software application of the trading system, clearing and settlement system and any other applications needed.

Power Exchanges are directed to submit for approval of the Commission the proposed amendments, if any, to Rules, Bye-laws or Business Rules along with views of the stakeholders on the modifications and responses of the Power Exchanges on each of the views within one (1) month from the date of issue of this order.

The Commission may review the functioning of round the clock intraday/contingency market after six (6) months from the date of operation of the market.

The Power Market Regulations, as of now, do not impose any cap on the transaction fees levied by the Power Exchanges. The Power Exchanges are allowed to levy transaction fees as prescribed by the respective Exchanges as per

their Business Rules approved by the Commission. For PXIL, the relevant portion of Business Rules states that

Transaction Fee for Intra Day Contract will be prescribed by Exchange from time to time. Transaction fee will be collected as per the Settlement Cycle applicable to this product. Exchange reserves its right to revise the same as required from time to time.

For IEX, the Business Rules also give them flexibility to specify the transaction charges

Transaction Fees - Fees payable by buyer and seller to Exchange for the quantity approved by nodal RLDC at delivery point as specified by the exchange from time to time.

Summary of directions in respect of operation of 24x7 intraday/contingency market

9. The Commission directs the following:
 - a. Power Exchanges should commence operation of round the clock intraday/contingency market within three (3) months from the date of issue of this order after undertaking all requisite modifications, formulation of appropriate risk management practices considering banking hours and testing and validations of the software application of the trading system, clearing and settlement system and any other applications needed. The features of the intraday/contingency market shall be as under:-
 - i. The existing products for day ahead contingency and intraday markets would continue to be operated by the exchanges. As a principle, the timeline for these products is being extended so that trading window is open for periods as mentioned below:
 1. Same day Delivery (upto 2400 hours): The trading window is open round the clock for delivery of power on the same day (minimum delivery period - 3 hours after contract execution subject to corridor availability).
 2. Next day Delivery (0000- 2400 hours): The trading window opens after declaration of day ahead results and remains open till end of day.
 - ii. Price discovery mechanism remains as is for the respective products.
 - b. Power Exchanges are directed to submit for approval of the Commission the proposed amendments, if any, to Rules, Bye-laws or Business Rules along with views of the stakeholders on the modifications and responses of the Power

Exchanges on each of the views within one (1) month from the date of issue of this order.

- c. The Commission may review the functioning of round the clock intraday/contingency market after six (6) months from the date of operation of the market.
- d. POSOCO shall communicate approval/rejection of scheduling of bilateral transactions for intraday/contingency contracts and inform the Power Exchanges and the applicant within one (1) hour of receipt of such application.
- e. The staff paper mentioned that creation of open access registry, information of TTC/ATC and reduction of time between intraday trading and delivery are critical success factors for this market. The Commission is of the view that with tightening of the frequency band and deviation settlement mechanism coming into force, the market participants need other avenues to meet their contingency requirement of purchasing/selling the power at short notice. The resolution of the issues mentioned shall be taken up simultaneously with the introduction of 24x7 intraday/contingency market.
- f. The evening market based on collective transactions is kept in abeyance at present for reasons mentioned above.

Sd/-
(A. S. Bakshi)
Member

Sd/-
(A.K. Singhal)
Member

Sd/-
(Gireesh B. Pradhan)
Chairperson