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(भारत सरकार का उद्यम)

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(A Govt. of India Enterprise)



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पोसोको/ के.वि.वि.आ/

दिनांक : 31st August, 2018

सेवा में,

सचिव,
केन्द्रीय विद्युत् विनियामक आयोग,
तृतीय और चतुर्थ तल, चंद्रलोक बिल्डिंग
36, जनपथ
नई दिल्ली-110001

Subject: Views/Suggestions on the discussion Paper on "Re -Designing Real Time Electricity Market in India"

Ref.: 1. CERC Public Notice RA-14026(11)/2/2018-CERC

महोदय,

With reference to the above-mentioned notice of the Honourable Commission, the views/suggestions of RLDCs/NLDC on the discussion Paper on "Re -Designing Real Time Electricity Market in India" are enclosed for your kind perusal.

सादर धन्यवाद,

भवदीय,

एस.आर.नरसिम्हन

संलग्न: यथापरी

(एस.आर.नरसिम्हन)

कार्यकारी निदेशक, रा.भा.प्रे.के.

**Power System Operation Corporation Ltd.
New Delhi**

**Suggestions on Behalf of NLDC/RLDCs on the
CERC Discussion Paper on Re-Designing Real Time Electricity Markets in India**

At the outset, the CERC Discussion Paper on Re-Designing Real Time Electricity Markets in India is a welcome, very timely and forward-looking step by the Hon'ble Commission. Given the ambitious target of 175 GW for large scale grid integration of renewables, this paper suggests introduction of new and multiple market opportunities for the participants to balance their portfolio. This discussion paper seen along with the recent amendments in the CERC Short Term Open Access in Inter-State Transmission Regulations which purports to bring in the 'National Open Access Registry' is expected to take the Indian Electricity Market to the next level.

Suggestions on various aspects brought out in the CERC Discussion Paper are given as follows.

1. Introduction of Gate Closure

There is an urgent need for introduction of 'Gate Closure' in Indian Electricity Market. The following two aspects become important from a market design perspective in reference to 'gate closure'.

- (a) How far ahead of the beginning of the despatch period does the gate need to close? The discussion paper proposes that the gate closes 90 minutes before the beginning of the despatch period.
- (b) How long should the duration of the gate closure be? The discussion paper proposes that the gate should remain closed for 60 minutes duration.

IEGC provides for giving effect to revised schedules from the 4th time block considering the time block in which revision has been requested as the 1st time block. The following aspects are important in this regard:

- (a) The above provision effectively closes the window only for 1-time block of 15-minutes making it difficult for any form of market to work.
- (b) With coordinated multilateral scheduling process, the schedule modifications are being carried out continuously by the concerned RLDC as one or the other participant request keeps pouring in. For example, re-scheduling of un-despatched surplus on the request of one of the beneficiaries, tripping of power system elements, natural variations, revision in schedule of generators due to changes in requisition, revision in the schedule of beneficiaries due to change in DC of generators, transmission corridor availability etc. This also leads to uncertainty in terms of the available reserves for despatch under Ancillary Services (refer NLDC Feedback on Implementation of Ancillary Services).
- (c) There is a need for making the schedules, which are nothing but contracts, financially binding for the participants while at the same time bringing in certainty of despatch.

Hence, there is a need for review of the current provisions with the objective of introducing gate closure.

While the market participants may argue that some degree of flexibility to re-balance portfolio that is available presently is being withdrawn with the introduction of gate closure, there also needs to be an appreciation for the fact that an alternate mechanism is being provided to re-balance their portfolio closer to the time of delivery. The alternate mechanism proposed is the Real Time Market (RTM) through Power Exchanges which provides access to a larger market & participating resources with a competitive price formation mechanism. Bidding of URS by ISGS in RTM would dissolve the existing limitation of URS scheduling only amongst co-beneficiaries of the same station. RTM would create an organized market for ISGS and intrastate generators.

Once the gate closes, the following activities are envisaged to be carried out during the gate closure period for the identified delivery period of one hour:

- (a) RTM Auction period
- (b) RTM Market Clearing & Scheduling
- (c) Assessment of the requirement for despatch of Ancillary Services
- (d) Communication of schedules by the RLDCs to the market participants and adequate time for the generators to ramp-up or ramp-down

From an implementation perspective, the proposed timelines for gate closure allow only 90 minutes ahead of the delivery period which is inadequate for all of the above activities. Further, this concept is being implemented for the first time in the country and there may be unforeseen implementation issues. For example, in the implementation of Ancillary Services, initially it was proposed to send the Ancillary Schedules directly to the participating generators from NLDC so as to obtain fast response. However, immediately after implementation, scheduling and ramping related difficulties were experienced and the schedules for ancillary services had to be routed through the RLDCs. Once we gain experience, the Hon'ble Commission can review the timelines based on the experience gained. In view of above, it is suggested that the gate closure should be 120 minutes ahead of the identified delivery period of one hour. An illustration is given below in Figure-1 for better clarity.

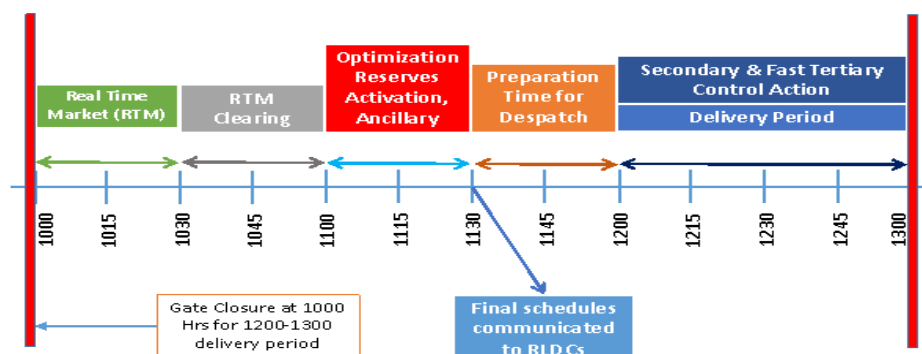


Figure-1: Illustration of Suggested Gate Closure

2. Existing Market Options and the Real Time Market

Various market options are presently available to the market participants through bilateral transactions (advance, first-come-first-serve, day-ahead bilateral and contingency) and collective transactions (day ahead market) through the Power Exchanges. The 'Term Ahead Market (TAM)' falls under the category of bilateral transactions. Under the present mechanism, window for only one product is open at any given point in time so as to facilitate electricity market administration in terms of margin determination and other activities. This is extremely important from an implementation perspective.

The Discussion Paper proposes to introduce a new market segment 'Real Time Market (RTM)' which is envisaged to run on every hour i.e., there shall be 24 market runs. Implementation of the RTM would require some modifications in the timelines of existing market products. While doing so, it may be ensured that window for only one product is open at any given point in time so as to facilitate electricity market administration.

Moreover, in order to process the multiple market transactions, a high degree of automation is required without which, implementation of RTM may be extremely difficult. The Hon'ble Commission has already taken steps to introduce the 'National Open Access Registry (NOAR)' and necessary draft amendments have already been notified.

3. Market Design Issues associated with the Real Time Market (RTM)

The Discussion Paper proposes a closed double-sided auction for the RTM with price formation taking place based on the principles of social welfare maximization. Following market design issues need to be addressed while implementing the RTM.

- (a) Should participation in the RTM be voluntary or mandatory (say for example, is there a need for withdrawal of some existing market product e.g., contingency category transactions)? Should there be a linkage between the participation in the day-ahead market and the RTM? Participation in RTM can be made mandatory for at least some types of the participants such as generators.
- (b) RTM has to be a liquid market so as to facilitate a robust price discovery. The price discovered in the RTM can also be considered for linking to the DSM prices ultimately at a later date.
- (c) Enough liquidity is also necessary to reduce the possibilities of market manipulation
- (d) While the day-ahead market can continue to run as it is, the design of RTM has to be such that it attracts participants from the OTC market, which has higher transaction costs, to the more organized platform, i.e., RTM. The present volumes in the different products in the OTC market as shown in Figure-2 below which shows the kind of potential that exists for the RTM.
- (e) Scheduling and Settlement also need attention and it needs to be clearly specified that all transactions are for physical delivery and financially binding for the participants.
- (f) Presently, the prices are available for the day-ahead market operating in the Power Exchanges (IEX and PXIL). More than one prices are discovered in case of congestion and market splitting in the day-ahead market. With the RTM coming into picture two (2) prices (one for DAM and one for RTM) are going to be discovered. Interplay in the different market segments needs to be considered.

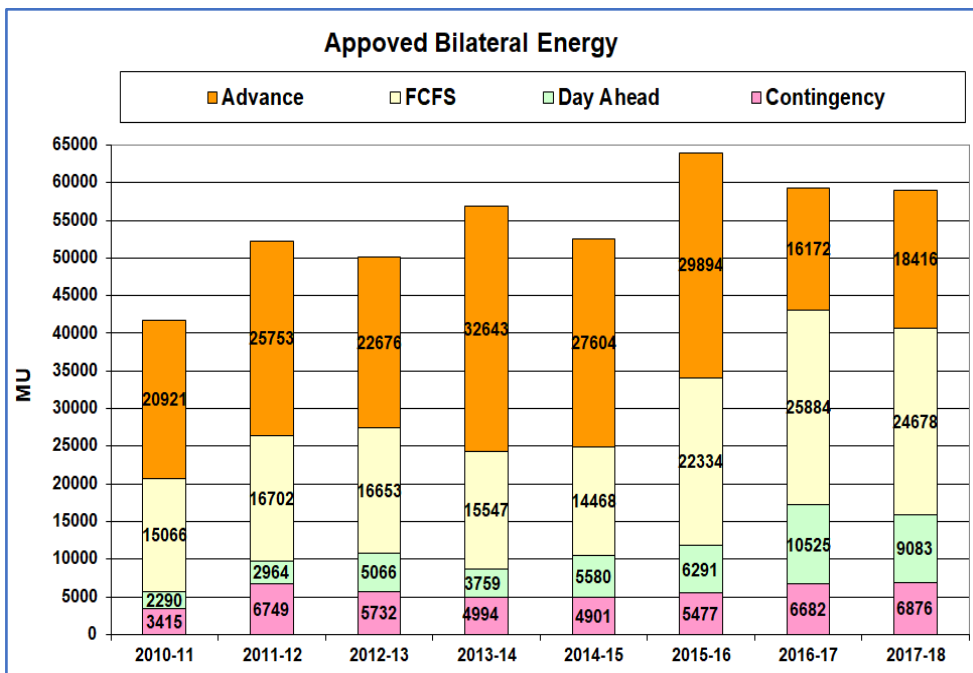
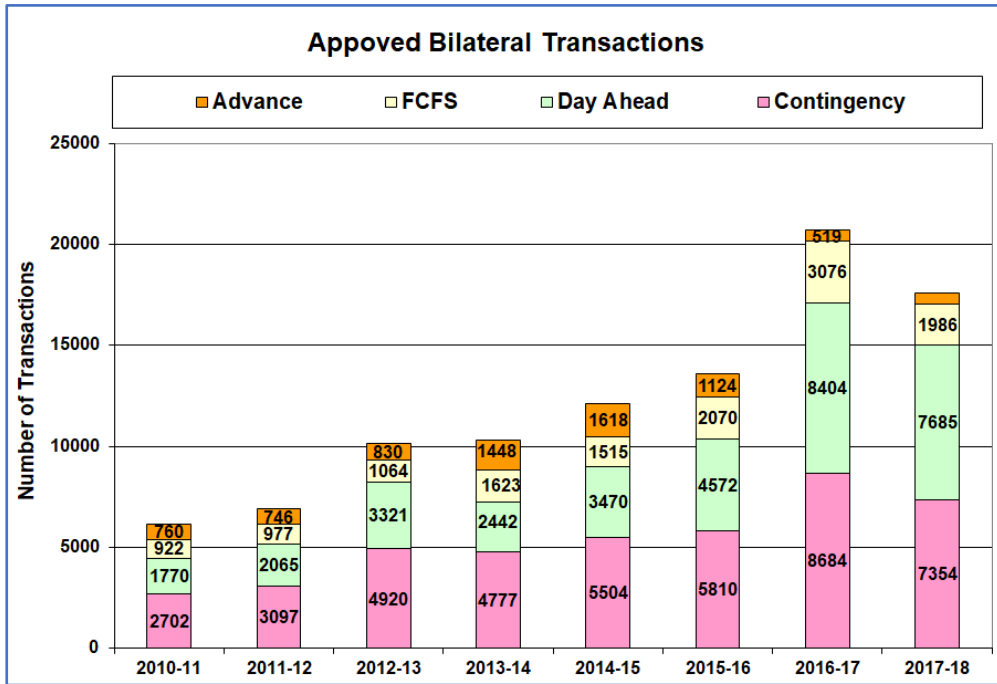


Figure -2: Multi-year trend of trades in different segment, viz. Advance, FCFS, Day-ahead bilateral and contingency categories

(g) Presently, a 15-minute scheduling, metering, accounting and settlement mechanisms are in place. Deliberations have begun for migrating to 5-minute from 15-minute scheduling, metering, accounting and settlement. Switching to 5-minute systems in the future (as also prevalent worldwide) may also be kept in view.

4. Congestion Management in the RTM

Transmission Congestion Management in the RTM is proposed using market splitting and shall be on similar lines as in the day-ahead market in the Power Exchange(s). The time lines

for RTM are short and tight with the bidding window and market clearing window proposed to be 30 minutes each only. The discussion paper (section 5.8) proposes that margins will be provided in advance to the Power Exchanges so as to avoid two step clearing (Provisional Market Solution and Final Market Solution) of the RTM market.

While it is appreciated that the objective is to facilitate faster processing of the RTM transactions, such a step will have a bearing on the price discovery in the RTM market segment. It is pertinent to mention that in the process of providing the transmission corridor margins in advance, we are implicitly declaring transmission as a 'scarce commodity' in economic terms. As soon as such a declaration is made in advance of the trading session, the behavior of market participants changes (even if it is found after clearing that there is no congestion) and aggressive bidding takes place thereby impacting the price discovery.

Implementation of National Open Access Registry (NOAR) is already being carried out and margins will be readily available for passing on to the Power Exchanges as soon the bidding session closes. Thus, the Power Exchanges can still clear the RTM in one iteration ensuring quick market clearing avoiding possible distortion in the price discovery on this account.

5. Revision in Schedules by Generators

Presently, IEGC Clause 6.5.19 provides that generators can revise schedules in case of unit tripping (unit size more than 100 MW). This provision hampers the development and prevents liquidity in organized market segments. In this regard, attention is also drawn to the POSOCO Suggestions on Draft Amendments to the Short Term Open Access Regulations dated 20th March 2009 (enclosed at Annex – I for ready reference), wherein the generic market design issues in allowing revisions have been mentioned. These are very relevant in the present context also. It is once again re-iterated that revisions in scheduled short-term transactions on account of generator unit tripping should be disallowed.

In the context of the above, it is further suggested that the generators may be allowed in the event of unit tripping to purchase power in the RTM to make up for their contractual liability.

6. Deviation Settlement Mechanism

The Hon'ble Commission has already notified the 4th Amendment to the Deviation Settlement Mechanism Regulations which propose linking the DSM rates to the daily average Area Clearing Price (ACP) market rates discovered in the day ahead market (DAM). This is a forward-looking step and needs to be quickly implemented. As we move further on with the implementation of RTM, the DSM rates may be linked to the market clearing price discovered in the RTM. It is pertinent to mention here that the DSM has played an important role in complementing grid security through a commercial mechanism.

7. Market Information and Market Monitoring

With further development of the electricity market in the country and introduction of new market segments, market information dissemination systems and market monitoring mechanisms need to be reviewed and strengthened. Information dissemination by the Power Exchanges needs to be reviewed and provisions for more elaborate information

dissemination are needed e.g., social welfare, consumer surplus, producer surplus, etc. need to be incorporated. Multiplicity of prices and interplay between market segments has already been mentioned as areas which would require close monitoring. In this regard, the provisions under Part – 7 on Market Oversight of the Power Market Regulations 2010 are pertinent and relevant. These may be kept in view while designing the market information system and market monitoring mechanisms for RTM. Market surveillance tools would be required to take care of market power in congested systems, provision of purchase by generators in case of unit tripping and so on.

8. Demand Forecasting to ensure Resource Adequacy

Electricity market design should complement reliability and resource adequacy is key towards ensuring reliability of supply. It is in this context that the provisions of Clauses 5.3 and 5.4 of the IEGC pertaining to demand estimation, forecasting and demand management, need to be reiterated and enforced.

9. Need for Automatic Controls in the Grid

After the gate closes, RTM is cleared and ancillary has been dispatched for the designated delivery period, a contingency can still occur, say, for example a generator unit tripping. It is in this context that automatic controls in the grid such as Primary Response and Secondary Response through Automatic Generation Control (AGC) assume great importance in the interest of secure and reliable grid operation. It is hereby reiterated that Primary Frequency Control may be enforced and secondary control through AGC be rolled out for all ISGS.

10. Reserves and Ancillary Services at the State Level

While Ancillary Services has been successfully implemented at the inter-state level, similar mechanism for maintenance of reserves and ancillary services needs to be implemented at the intra-state level.

11. Implementation of SAMAST at the State Level

An important stepping stone for taking the electricity market to the next level is the implementation of (Scheduling Accounting Metering and Settlement of transaction) SAMAST also and this needs to be pursued.

12. Pilot Project – Running Multiple iterations for Collective Transactions in Power Exchanges

The RTM envisages running of the electricity market in collective mode 24 times per day. Implementation of the RTM is dependent upon the implementation of the National Open Access Registry (NOAR) and the NOAR implementation is still under process. In the meanwhile, in order to gain experience in running multiple iterations of the market in the Power Exchanges, it is proposed that a pilot may be carried out to run multiple iterations on a 6-hourly or 12 hourly basis. In this regard, POSOCO proposal for running an 'Evening Market' dated 18th May 2010 is also enclosed for ready reference (Annex-II). It is pertinent to mention here that by implementing such a pilot, deep insights will be obtained into

- (a) Various market design issues such as liquidity, price discovery, interplay of prices, bidding by participants, etc.

- (b) Implementation related aspects such as ramping up of the infrastructure, market clearing process etc.
- (c) Capacity building requirements for all stakeholders i.e., market participants, system operators (NLDC/RLDCs/SLDCs) and the Power Exchanges

Hence, it is hereby proposed that the Hon'ble Commission may consider implementation of the above mentioned pilot.

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संदर्भ संख्या /Ref. Number

: CSO/

Dated: 20th March, 2009

To,

The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building,
36, Janpath, New Delhi- 110001

**Sub : Suggestions on proposed Amendments to Open Access in Inter-State Transmission
2008**

Dear Sir,

The Hon'ble Commission has proposed Amendments to the Open Access Regulations, 2008. In the proposed amendments, two major issues arise:

- In case the SLDC has not refused concurrence or 'no objection' or standing clearance, as the case may be, within the specified period of 3 or 7 working days, as the case may be, of receipt of the application, concurrence or 'no objection' or standing clearance, as the case may be, shall be deemed to have been granted.
- Allowing revision of the schedules on the day on which the transaction is scheduled or on the day-ahead basis.

Our detailed views on the above and other minor issues are enclosed herewith for the kind consideration of the Hon'ble Commission.

Thanking you,

Yours faithfully,

(S.K.Soonce)

Executive Director(SO)

Encl: A/a

Comments on the Draft Amendment Regulations on Open Access in inter-State transmission system issued vide public notice dated 27th February, 2009

CERC vide its public notice dated 27th February 2009 has invited comments/ suggestions/ objections on the draft Regulations by 20th March 2009. Most of the changes as proposed are bringing out more clarity on the subject. However, some of the changes as proposed in the draft regulation are against the spirit of CERC (Open Access) Regulations 2008 which evolved over time based on experience after the first set of regulations issued in January 2004 and amended in February 2005 and December 2006.

Comments on the Draft CERC Open Access, (Amendment) Regulations, 2009 are as follows:

1. Clause (4) of the Regulations 8:

As per the proposed draft amendments, the last para of the Clause (4) of Regulation 8, states that:

Quote

“Provided that where the State Load Despatch Centre has not refused concurrence or ‘no objection’ or standing clearance, as the case may be, within the specified period of three (3) working days or seven (7) working days, as the case may be, of receipt of the application, concurrence or ‘no objection’ or standing clearance, as the case may be, shall be deemed to have been granted.”

Unquote

As per the above proposed amendment, if a SLDC has not processed the application for issuance of “Standing clearance” or “No Objection” by an applicant, in the specified time frame the same shall deemed to have been granted. The above amendment may cause dispute in implementation of Open Access Regulations. Proper record of SLDC’s consent is required on account of the following reasons:

- SLDC is the apex body for system operation in the state
- SLDCs are to be empowered and not to be bypassed
- SLDC has to check for availability of adequate transmission margin so that there are no network constraints in real time operation
- Energy transactions have to be accounted for and SLDC has to ensure that necessary infrastructure for energy accounting is available

The issues that arise out of this proposed amendment are outlined below.

(a) Empowerment of SLDC

Regarding whether or not prior consent of SLDC is required was much deliberated during the hearing on draft CERC Open Access Regulations 2008. CERC vide para 8 of the "Statement of Reasons" dated 4th March 2008 on the CERC (Open Access) Regulations, 2008 has expressed its views as follows (emphasis supplied):

Quote

8. In our view SLDC is the apex body to ensure integrated operation of the power system in the State as per the provision of the Act. For the overall benefit of sector, it is necessary that SLDCs act impartially in the matters of system operation and take responsibility for their actions. The scheme proposed in the draft regulations is designed to propel SLDCs in this direction. Therefore, this proposal has been retained in the final regulations.

Unquote

The rapidly changing scenario in the power sector has resulted in changes in the role of LDC at all levels. Further, it is essential that the industry has a confidence on the competence of the System Operator and their conduct is above suspicion. This is all more important especially with the rapidly growing economy, unbundling of State Electricity Boards, increasing participation of Private Sector players, open access in transmission and distribution, power exchange and other market mechanisms. Therefore, the State Load Despatch Centres must be provided with an enabling environment to help them to deliver the desired result while performing their duties for ensuring integrate operation of the power system with in their State, non-discriminatory open access to all and bringing overall economy and efficiency in the State Power Sector.

(b) Network Security

Section 32(1) of the Electricity Act, 2003 provides that State Load Despatch Centre (SLDC) is the apex body to ensure integrated power system operation within that State. While granting "No Objection" or "Standing Clearance" for Open Access, it has to check for the congestion in the State network and carry out studies etc if required. In case an SLDC has not processed the application in time and it is presumed that there is no network constraint it would lead to more serious error.

In case sufficient transfer capability to accommodate the proposed open access transaction is not available and due to some or other reason the respective SLDC has not processed the application and open access has been granted based on deemed consent, it may endanger the security of the grid. In statistical term this shall lead to type II error (false negative).

Statisticians speak of two significant sorts of statistical error. The context is that there is a "null hypothesis" which corresponds to a presumed default "state of nature", e.g., that an individual is free of disease, that an accused is innocent, or that a potential

login candidate is not authorized. Corresponding to the null hypothesis is an "alternative hypothesis" which corresponds to the opposite situation, that is, that the individual has the disease, that the accused is guilty, or that the login candidate is an authorized user. The goal is to determine accurately if the null hypothesis can be discarded in favor of the alternative. A test of some sort is conducted (a blood test, a legal trial, a login attempt), and data is obtained. The result of the test may be negative (that is, it does not indicate disease, guilt, or authorized identity). On the other hand, it may be positive (that is, it may indicate disease, guilt, or identity). If the result of the test does not correspond with the actual state of nature, then an error has occurred, but if the result of the test corresponds with the actual state of nature, then a correct decision has been made. There are two kinds of error, classified as "Type I error" and "Type II error," depending upon which hypothesis has incorrectly been identified as the true state of nature.

In this case the "Null Hypothesis" is that there is there is existense of infrastructue necessary for time block wise energy metering and accounting and availability of surplus transfer capability in the State network. Type -I, error means, that the hypothesis is true but consent is not accorded. Type-II error means, either there does not exist necessary infrastructure and/or surplus transfer capability is not there and approval is granted. In more common parlance, a Type I error can usually be interpreted as a false alarm or insufficient specificity. A Type II error could be similarly interpreted as an oversight, a lapse in attention or inadequate sensitivity. In this case, Type-II error is costlier than the Type-I error and therefore to reduce Type-I error one cannot increase the probability of the Type-II error.

(c) Dispute Free Implementation

Further, if prior consent is not on record, then it may lead to many disputes and it will be very difficult to implement the CERC Open Access Regulation. The Hon'ble Commission vide para 11 (c) of its Order dated 07.03.2007 in Petition No. 24/2007, in the matter of "Refusal No 131 of 25.1.2007 by the Western Regional Load Despatch Centre of the open access application filed by Tata Power Trading Company Limited for transmission of 27 MW power through Eastern Regional Load Despatch Centre and Orissa State Load Despatch Centre from Nava Bharat Ventures Ltd, on the ground of "No consent from OPTCL", has placed its views on record as quoted below:

Quote

11. Before parting, we would like to place on record our observation on certain issues which have come to light during the hearing of this petition.

(a)

(b)

(c) In case an inter-State open access involves buying/selling power from/to an entity embedded in the State grid, the concerned RLDC must obtain the prior consent of the concerned SLDC, since the open access transaction has to be duly accounted for in

the net drawal schedule of that State. If prior consent is not on record, there could be intractable disputes regarding scheduling, etc. later on.

(d).....

Unquote

From, the observation of the Hon'ble Commission it is abundantly clear that the prior consent should be on record otherwise there could be intractable disputes regarding scheduling etc.

Therefore it is requested that the last para of the proposed modification i.e.; *"Provided that where..... shall be deemed to have been granted"* should be deleted.

2. Clause (1) of Regulation 14

Replace "notice the nodal agency:" with "notice to the nodal agency:" at the end of the first paragraph of the clause (1) of Regulations 14.

3. Clause (2) and Clause (3) of Regulation 14

As per the draft amendment, transmission charges are to be paid for notice period of two (2) days. If an applicant gives notice two days in advance, then as per the proposed amendment he will not have to pay any charges for exercising exit option. In most of the trades/ agreements, exit has some charges, either in the name of cancellation charges or any other name. It is a well settled issue that an exit option must have some charge/cost. How much shall be quantum of this charges would depend on the degree of seriousness required or impact such exit would have on either party. CERC OA Regulations, 2008 had specified minimum 5 days charges and now the intent of the Commission is to reduce these charges from 5 days to 2 days. In order to have clarity on the issue it is proposed that the clause (2) and clause (3) of the Regulation should be replaced with the following (similar to clause 2, 3 and 4 of Regulation 14 of CERC OA Regulations, 2008):

- (2) The applicant shall continue to be liable to pay transmission charges as per the schedules originally approved, if the period of curtailment or cancellation is upto two (2) days.*
- (3) If the period of curtailment or cancellation exceeds two(2) days, transmission charges for the period beyond two (2) days shall be payable in accordance with the curtailed schedule and for the first two (2) days in accordance with the original schedule.*
- (4) In case of cancellation, operating charges shall be payable for two (2) days or the period of cancellation in days, whichever is less.*

4. Regulations 14 (A) – Revision of Daily Schedule

The Draft Amendment of Open Access Regulations provides for a new regulation 14A which will entitle flexibility to cancel/curtail the scheduled bilateral transactions. In this context, it would be seen that long-term contracts have the provision for any number of schedule revisions in a day. The Regulations in respect of medium term access has not yet been released by the Honourable Commission. Revision in schedules on daily basis is a cause for concern.

The proposed amendment will seriously hamper the development of Short-Term Electricity Market in India on account of the following reasons cited below:

i. “Contract” vs “Option”

If cancellation/curtailment of scheduled bilateral transaction is permitted than the bilateral contract shall no longer remain a “Contract” and will virtually convert into “Option” with “ZERO” or negligible premium. Seriousness of contracts or firmness of delivery would be lost. With such easy exit options, volumes might shift to advance bilateral contracts with possibility of inflated requests for transmission capacity and frequent revisions.

ii. Pseudo Congestion : Blocking of Transfer Capability, Easy Exit Option

In the earlier Open Access Regulation (2004), there was a provision for daily scheduling of bilateral transactions. Market Players used to reserve/block the transmission corridors in advance as exit option was very easy. This had resulted in under utilization of the transmission corridors and many a time pseudo congestion was observed. The above anomaly was removed in CERC Open Access Regulations 2008. The issue of providing flexibility to stakeholders to revise the daily schedule was discussed in detail and the Hon’ble Commission in the Statement of Reasons for CERC Open Access Regulations 2008 has stated as quoted below (emphasis supplied):

Quote

Flexibility to revise the schedule and exit option

4. Most of the stakeholders have observed that it is impractical to schedule a transaction too much in advance. Global Energy Limited has observed that the prohibition against revision and cancellation of schedules would put the generating companies to undue hardship, as they would be exposed to uncertain UI charges even on account of shutdown of generating units for genuine and unforeseeable reasons. Some stakeholders have stated that hydro generators should be allowed to revise the schedule as their generation is dependent of uncertain water flows. Similar reason has been advanced for

wind generation by GFL. Some stakeholders have suggested that period of advance scheduling should be reduced further for simplification and certainty.

5. In the draft regulations, the proposal to fix the schedule for the entire period of transaction while approving the application of open access customer was intended to prevent blocking of the transmission capacity. For the same reason, no exit option was provided to the open access customers whose applications have been approved by the nodal agency. This issue has been reconsidered in view of the comments/suggestions of the stakeholders and it has now been decided to grant a limited flexibility of revising or canceling previously approved schedules by giving 5 days notice. If the period of revision/cancellation is up to 5 days, the customer will pay transmission charges as per the originally approved schedule. If the period of revision or cancellation is more than 5 days, the customer will be liable to pay first 5 days transmission charges as per the originally approved schedule and for the remaining period as per the revised schedule. Operating charges shall be payable as per the original number of days during the period of scheduling, if the period of cancellation is up to 5 days. If the cancellation period is longer, operating charges for the period beyond five days shall be refunded. Since, the revised provision will give some flexibility of revision/cancellation in case of contingencies, the provision in the draft proposing powers to the nodal agency to allow revision/cancellation in extraordinary circumstances has been omitted. The regulations provide full freedom to the applicants to apply over a period of three months. Those, who are comfortable only few days before or even a day before the date of actual transaction to commit to the transaction, can choose to do so. When viewed in this manner, there is no need to change regulations further.

6. To recapitulate, one can apply for open access and scheduling three months in advance, two months in advance, one month in advance and one or more days in advance, depending on when he is able to commit to the schedule being applied for. Exit option is also available up to five days ahead of the day for which schedule is proposed to be curtailed or cancelled, but without refund of any transmission charges for first five days of curtailment/cancellation. We believe that the final regulations adequately address the concerns expressed by the stakeholders.

Unquote

From the above mentioned extracts from Statement of Reasons, it is abundantly clear that the Hon'ble Commission has given due thought on the issue and after considering views of all stakeholders and experience gained over the years, the CERC Open Access Regulations 2008 was finalized. Insertion of the proposed new clause will tantamount to revision of own order of CERC without any new material evidence being brought to the notice of the Commission to incorporate such changes. In fact, in the proposed

amendment, the exit option has been relaxed further. The notice period has been reduced from 5 days to 2 days. This sufficiently takes care of the issue.

Therefore, provision for revision of schedule on daily basis will be a retrograde step knowing in advance the pitfalls involved.

iii. Interplay between bilateral and balancing market

Allowing cancellation/curtailment of schedule on Daily basis shall mean the Day-Ahead schedules are no longer financially binding. There is a possibility of inter-play between the bilateral market and the real-time balancing market. The Paper titled "ELECTRICITY MARKET DESIGN: THE GOOD, THE BAD AND THE UGLY", by Peter Cramton, University of Maryland examines the principles for market design as applied to Electricity Markets. As we move closer to real-time, the system becomes less responsive as options vanish. The supply curve becomes steeper. Hence, the vulnerability to gaming near real time is great, especially if a lot of value is riding on the real time prices. The author has strongly advocated that the day-ahead contracts should be financially binding. As per the Author the one solution to this issue is either forbidding changes, and the other better solution is to make the day-ahead schedule financially binding, as quoted below:

Quote:

One solution to this problem is forbidding changes. This may be effective for bid changes, but outages are often necessary and it is difficult for the regulator to distinguish between legitimate outages and those intended to raise the price. Also, generators often have good reason to change bids in response to export opportunities, revised fuel prices, or other changes.

A better solution is to make the day-ahead schedule financially binding. This is called a multiple settlement system, sincere there are at least two sets of prices and quantities. Those in the day-ahead schedule and those at real time. Having the day-ahead bids financially binding does two things. First, it makes the bids credible, since successful bids involve a financial commitment. This is a general principle of market design. Bids should be financially binding. Second, a multiple settlement system mitigates incentives to manipulate the real-time price. Most of the pricing and allocation is done day-ahead. The real-time market is only to price deviations from the day-ahead plans. Those scheduled day-ahead have no incentive to manipulate the real-time price. Rather their incentive is to make adjustments to bids in response to changes in their economic situation. Unquote

It is important to mention here the fundamental difference in the charges for the long term contracts and bilateral contracts. Long term contracts have a multiple settlement system (separate capacity and energy charges) whereas the

short term bilaterals have a single settlement system (energy charges only). Revisions are allowed for long term contracts and by design there is no incentive for gaming. Allowing revision of bilateral contracts would provide an opportunity for gaming besides bringing bilateral contracts at par with long term contracts by defective market design.

In this context, it is pertinent to quote Power System Economics by Steven Stoft, wherein it is stated that *“All except the real time markets are financial markets in the sense that the delivery of power is optional and the seller’s only real obligation is financial”*.

iv. “No Show” : Past Experience

Based on its operational experience, POWERGRID System Operation vide letter dated 15.07.2006 gave feedback to the Hon’ble Commission that a few of the Short-Term Open Customers are under-utilizing the transmission capacity, resulting in blocking of transmission capacity which could have been utilized by other prospective customers. The Hon’ble Commission examined the issue and subsequently issued an amendment in December 2006 to the Open Access Regulations whereby any transmission capacity available after catering to the requirements of long-term and short-term customers, as advised by the eligible entities by 3:00 PM of the day preceding the day for which schedules are being prepared, may be released for use of other perspective users. The utilization of transmission capacity increased significantly after the amendment of the Regulation. Moving further, the Honourable Commission in the 2008 Regulations further used the term ‘scheduling of transactions’ instead of ‘reservation of transmission capacity’ indicating higher firmness.

v. Congestion Management

Electricity markets can operate only with some level of certainty in respect of transmission capacity. This has been ensured through specifying ‘window closing and opening times’. Thus while the PX window is ‘open’, the bilateral window is ‘closed’ and vice-versa.

While assessing the transfer capability for day-ahead transactions, counter-trades are accounted for optimum utilization of the transmission corridors. Collective Transactions through Power Exchange (PX) are scheduled based on the available margin after considering the net scheduled transaction. Cancellation / curtailment of scheduled bilateral transaction on day of operation or on day ahead basis will be known only after PX transactions are cleared at 1400 hours. This would lead to the following scenarios:

- a) Sub-optimal utilization of transfer capability – more margin could have been allocated to the PX if the revision was known in advance.
- b) Congestion in real time and grid security may get endangered—if the wrong set of transactions gets revised.

vi. Ripple Effect

If the schedule for bilateral transaction is allowed to be cancelled / curtailed on daily basis then the same will create a ripple effect in the whole market. For example, a State Utility has entered into a bilateral agreement for purchase of 'X' MW power from some generator. Because of some or other reason the generator is not able to deliver the contracted power and therefore revised the transaction. The State Utility may now have to revise its requisition from other generating stations from which it has not requisitioned its full entitlement. In case this State Utility has sold power to some other party, then it may like to cancel/curtail its scheduled bilateral transaction.

Accordingly, allowing cancellation/curtailment of scheduled bilateral transaction on daily basis will create a ripple effect.

vii. Transfer of wealth

Any cancellation/curtailment of schedule shall result in a shift of the liability for payment of Unscheduled Interchange (UI) charges from supplier to buyer and is in effect transfer of wealth from one party to other. By allowing cancellation/curtailment of scheduled bilateral transaction, the financial liability of the party who is not able to deliver as per contract is getting obviated.

viii. Risk allocation of unsystematic risk of Private Goods

In Electricity Market, risk mitigation is avoiding risk and bringing in more certainty and Risk Allocation describes who shares the cost of risk in case it actually happens. Presently a number of Short-term open access products are available to market participants and they can utilize the same for risk mitigation. A systematic risk affects the whole group and not individuals, but the Unsystematic risk affects only few. Unsystematic risks may be due to non performance of individuals. Cancellation/Curtailment of schedules shall tantamount to entering into the domain of risk allocation of unsystematic risks

of private goods. Normally this should be responsibility of the parties entering into the contract. In case of two part tariff for ISGS (long-term contracts), the risk is allocated to the party by way of capacity charges payment or reduction but such is not the case in short-term or energy only contracts.

ix. Trading License Regulations,2009

Even after the above aspects are considered and the Commission decides to accept revision in schedules, it would open the doors for innumerable disputes. Chapter IV, 7(i) of the Trading License Regulations 2009 by CERC states as under:

'(i) The licensee shall ensure that appropriate agreement for purchase and sale of electricity are entered into by him with the sellers and the buyers prior to scheduling a transaction, and that the agreement shall specify the following, namely-

(i) the boundaries, that is to say, upper and lower MW limits of electricity to be purchased or sold,

(ii) modalities for scheduling,

(iii) persons authorized to specify the schedule, or to modify it after it has been intimated to the Regional Load Despatch Centre or the State Load Despatch Centre,

(iv) whether the buyer or the seller can unilaterally advise modification of the schedule, or whether the modification can only be advised jointly by the buyer and the seller,

(v) the liabilities of the parties (seller, buyer and licensee) in case the scheduled quantum (MW) and time of scheduling differs from the agreed terms, or in case of modification in schedule, and in the latter case, the party that will bear non-refundable part of short-term open access charges.

In the Statement of Reasons dated 16th February 2009, the Honourable Commission in response to POWERGRID's suggestion had remarked as under:

"31. PGCIL has pointed out that though modification of schedule for long-term (and medium-term) transactions are allowed, such freedom to allow scheduling advice by either or both would lead to confusion and should be avoided. Hence it has suggested that a provision may be made that only the applicant can advise modification of schedule to RLDCs, if required, after taking consent from the parties involved. We do not think that any modification on the lines suggested by PGCIL is necessary, since the clause is only to ensure that the party which can advise a schedule change is duly identified in the contract, and there is no dispute on this account later on."

The Hon'ble Commission has ordered that SLDCs should only check whether the necessary infrastructure for metering and accounting is in place and there is surplus transfer capability to accommodate the transaction. If the above is to be accepted, it would involve subjectivity of SLDCs/RLDCs and every application has to be judged on merit. All this has the potential to create disputes, particularly when there could be 40-50 bilateral transactions on any

given day. More so since in any schedule revision there are three parties involved viz. the buyer, seller and the trader and each would have different objectives which are contradictory.

In view of the above facts, RLDCs would earnestly request the Commission not to accept any request for schedule revision.

x. Un Requisitioned Surplus (URS) of Inter State Generating Stations (ISGS)

In the background note for the meeting of the Central Advisory Committee (CAC) on 18th March 2009, the issue of revision in schedules for Open Access transactions has been mentioned. One of the main drivers appears to be the URS from ISGS as evident from the extracts below.

“Flexibility of revision is also desirable to remove difficulties faced by the central generating companies with regard to un-requisitioned surplus capacity. When a beneficiary which is entitled to a capacity does not give requisition, such un-requisitioned capacity can be sold through open access. However, when original beneficiary wants it back, difficulty is faced because of not-so-flexible provision for revision of schedule for open access transaction.”

In this connection it is stated that the issue of Un Requisitioned Surplus (URS) is essentially a concept from the pre-Open Access era. After the introduction of Inter State Open Access in May 2004, any URS of ISGS has a status similar to any other latent generation capacity in the grid (captive or otherwise). The provisions of ‘non-discriminatory’ open access apply to all such latent embedded generators and a vividness bias caused on account of ISGS URS should not distort the Electricity Market Design. In order to overcome the problem caused by recall of URS by original beneficiary, the ISGS may obtain prior consent and enter into a no-recall understanding with the original beneficiary before selling the URS through Open Access.

ISGS need to take some amount of risk while scheduling their URS through Open Access and through their trading arms, if any. Change in Open Access rules sought on account of ISGS status might therefore not strictly be in order.

xi. Impact on Power Exchange:

The development of Electricity Market in India has received a major impetus with the introduction of Power Exchange(s) in the Country in 2008. Two Power Exchanges are functioning presently. Collective transactions through

Power Exchange are processed before Day Ahead transactions and they are accommodated in the margins available after approving Advance and First Come First Serve category bilateral transactions. Collective Transactions once approved by NLDC are '**deemed delivered**' subject to any real-time curtailment by the NLDC on account of transmission constraints.

a) Revision of Collective Transactions through Power Exchange:

As per the Procedure for Scheduling of Collective Transactions, the Power Exchanges send an unconstrained solution (provisional trade result) to NLDC at 1300 Hrs and NLDC, after checking for congestion (if any), reverts back by 1400 Hrs. The final trade results along with the Application for scheduling of Collective Transactions is submitted by the Power Exchanges at 1500 Hrs. The Power Exchange simultaneously checks for availability of funds in the member's accounts commensurate to the provisional trade result. In order to cover business risk, the rules of Power Exchange provide for rejection of bids in case of inadequate funds available in the member's account. Even this provision which inadvertently provides an easy exit option to the members of the Power Exchange and has been strongly opposed by NLDC (vide NLDC Comments on 'Application of Setting up Power Exchange by IEX' dated 21-April-2008).

As per the Procedure for Scheduling of Collective Transactions, the provisional trade results may be revised by the Power Exchange only in case of transmission congestion on the advice of NLDC. No revision is thus possible in the case of Collective Transactions through Power Exchange. In this context, it may be clarified here that **the Collective Transactions have never been revised till date.**

b) Level Playing Field for Power Exchange vis-à-vis other Market Segments:

Short Term Open Access Transactions provide for two categories namely, Bilateral and Collective (through Power Exchange). It has already been explained above that Collective Transactions cannot be revised. Allowing revision of bilateral transactions would clearly discriminate against the Collective Transactions through Power Exchange and level playing field would no longer exist. With an easy exit option available in the Bilateral Market at zero or a nominal cost, the volumes in short term market may shift out from the Power Exchanges to the Bilateral Market. The institution of Power Exchange which has only recently been added to the Indian Electricity Market may become unviable.

xii. Promotion of Renewable Source of Energy Generation

In the draft amendment, different treatment has been proposed if source of power is from Wind Generation Power Plants. Nodal RLDC while approving open access transactions, checks only for the following two things:

- Concurrence of respective SLDCs : To ensure proper recording of transaction for metering and accounting and available surplus transfer capability in the intra-State System
- Availability of Surplus transfer capability in the inter-State transmission system to accommodate the transaction

Nodal RLDCs does not go on merit of the case and is practically not possible for nodal RLDC to verify the same. Therefore, different treatment for different type of source of energy may result difficulties in implementation of the open access regulations.

One of the objectives of the Electricity Act, 2003 is promotion of efficient and environmentally benign policies and to meet this objective, harnessing of generation from renewable sources has to be attached top priority. Renewable energy sources in the country are non-uniformly distributed and some states are more endowed than others. The generation from the renewable energy source at one location is small when compared to the conventional energy sources. Further the output from these sources is inherently intermittent and hence non-firm. These characteristics make them difficult to dispatch. There are a number of other issues involved in promotion of Renewable Source of Energy Generation and Hon'ble Commission has taken a lot of initiatives to promote the Renewable Sources of Energy Generation. **Therefore, it is proposed this issue may be covered separately.**

In view of the above, it is strongly suggested that the proposed new Regulation 14(A) should not be inserted in the CERC Open Access in inter-State Transmission System (Amendment) Regulation, 2009.

5. Clause (1) Regulation 16

It is proposed that in the first sentence after "*In case of the bilateral transactions*", "*for use of the inter-State transmission system,*" is to be inserted.

6. Clause (2) Regulation 16

It is proposed that in the first sentence after "*In case of the collective transactions*", "*for use of the inter-State transmission system,*" is to be inserted.

7. Clause (5) and Clause (6) of the Regulation 17

These clauses shall become ineffective if our proposal for deleting the Regulation 14(A) is accepted.

8. Clause 6 of Regulation 20

In order to have clarity on the issue it is proposed that the para may be modified as quoted below:

“(6) Charges, other than those specified under regulation 16 and regulation 17 (such as standby charges, grid support charges, parallel operation charges) shall not be imposed by the State Utilities on the customers of inter-State open access.”

9. Regulation 27/27A:

The title might read only ‘Information System’ and the term Regional Load Despatch Centre and State Load Despatch Centre may be removed.

XXXXXXXXXXXXXXXX

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संदर्भ संख्या / Ref. No.

CSO/CERC/

केन्द्रीय कार्यालय / CORPORATE CENTRE

Dated: 18th May 2010

The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chandralok Building
36, Janpath,
New Delhi - 110 001

Subject: Unmatched and Uncleared volume in Power Exchanges - Suggestion for Evening Market

Sir,

The opportunity lost due to Uncleared and Un-matched volume in the Power Exchanges is nearly four times the volume lost due transmission congestion.

Normally, congestion has been occurring seasonally, that too, only in few corridors in a particular direction and the available margins remain unutilized in the many other corridors.

The option of reservation of corridors for the Power Exchange trades would have many associated contentious issues like Transmission Rights besides issues like where, how much to reserve and in what direction, in which corridor etc besides subsequent under-utilization due to fragmentation.

Considering the above, a subsequent round of trading in the Power Exchange Market may be considered say, in the late evening to provide another opportunity for players to optimise their portfolio and take a more informed position in the market. This in all likelihood would lead to more cleared volume, better utilization of the other un-congested and under-utilized corridors, more social welfare maximization and consumer satisfaction.

The evening market should be totally independent of morning market and all the rules could continue to be same for the evening market too. There would be a change in the strategy of the players and the overall satisfaction is expected to improve. Though this may require realignment of the present timelines etc. and would increase the work volume at NLDC and Power Exchanges, the same is being proposed to cause more economy & efficiency, better utilization of the available infrastructure and take the market to the next trajectory.

The proposal could be implemented in a relatively short time frame and the details could be discussed with the Power Exchanges and experts. Hon'ble CERC may consider the proposal for further directions, please.

Thanking you,

Yours faithfully,

(S. K. Soonee)

Executive Director (SO & NLDC)

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)
POWER SYSTEM OPERATION CORPORATION LIMITED
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संदर्भ संख्या/Ref No.

Dated: 26th July 2010

POSOCO/CERC/123

To
Chief, Engineering
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chandralok Building
36, Janpath
NEW DELHI – 110 001

Subject: Proposal for Evening Market in Power Exchanges

Reference:

1. Minutes of Meeting on Evening Markets in Power Exchanges vide CERC letter dated 9th July, 2010
2. Letter to CERC on suggestion for Evening Market dated 18th May, 2010

Dear Sir,

Further to meeting held in CERC on 28th June, 2010 to discuss the feasibility of introduction of Evening Market in Power Exchanges, it transpired that Evening Market may in all likelihood lead to an increase in volumes and thus the model can be tried out on a pilot basis. As desired, the proposed timelines for Evening Market in Power Exchanges is enclosed at Annex – 1. The timelines for Morning Session in the Power Exchanges continue to be the same as per existing detailed procedure for Scheduling of Collective Transactions.

Further, the need for introducing bidding at 15 – minute interval in the Power Exchanges was proposed vide letter dated 26th March 2010 may also be considered for overall economy and efficiency.

Thanking you,

Yours faithfully,


28/7/2010

(S. S. Barpanda)
Dy. General Manager

Enclosure: as above

CC: Secretary, CERC
MD, IEX / CEO, PXI

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स्वहित एवं राष्ट्रहित में ऊर्जा बचाएं
Save Energy for Benefit of Self and Nation

**PROPOSED TIMELINE FOR THE MORNING AND EVEING MARKETS
IN POWER EXCHANGES**

S.No.	Morning/ Evening Session	Processing of Application	Timeline
1	Morning session	Market participant to place bids at Power Exchange platform	10:00-12:00 Hrs
2	Morning session	NLDC to indicate Power Exchanges the list of interfaces/control areas/regional Transmission system <i>(Common for Morning & Evening Session)</i>	11:00 Hrs
3	Morning session	Power Exchange to send provisional unconstrained solution to NLDC and flow on TS as informed by NLDC	13:00 Hrs
4	Morning session	NLDC to check for congestion. In case of congestion shall intimate PX regarding the period for congestion and available margins	14:00 Hrs
5	Morning session	PX to send Scheduling Request to NLDC based on margin specified by NLDC/SLDCs	15:00 Hrs
6	Morning session	NLDC to send details to RLDCs for scheduling	16:00 Hrs
7	Morning session	RLDC to confirm its acceptance to NLDC	17:00 Hrs
8	Morning session	NLDC to confirm acceptance. PX to send files to SLDCs for scheduling	17:30 Hrs
9	Morning session	RLDCs/SLDCs to incorporate Collective Transactions in the Daily Schedule	18:00 Hrs
10	Evening Session	Trading Session: Market participant to place bids in Power Exchange	16:00-17:00 Hrs
11	Evening Session	Power Exchange to send provisional unconstrained solution to NLDC	17:30 Hrs
12	Evening Session	NLDC to check for congestion. In case of congestion shall intimate PX regarding the period of congestion and available margins	18:00 Hrs
13	Evening Session	PX to send Scheduling Request to NLDC based on margin specified by NLDC/SLDCs	18:30 Hrs
14	Evening Session	NLDC to send details to RLDCs for scheduling	19:30 Hrs
15	Evening Session	NLDC to confirm acceptance for Scheduling of Collective Transactions PX to send files to SLDCs for scheduling	21:00 Hrs
16	Evening Session	RLDCs/SLDCs to incorporate Collective Transactions in the Daily Schedule (Revision 1)	23:00 Hrs