

## Inputs of POSOCO on CERC Staff Paper on Transmission Planning, Connectivity, Long Term Access, Medium Term Open Access and other related issues

### 1. General Comments

1.1. Robust and adequate transmission infrastructure is universally recognized as an indivisible, immovable and indispensable common service. The unbundling of the monolith power utilities, introduction of competition among sellers of electrical energy, the mandate to allow open access with multiple transmission licensees and the imperative to facilitate renewable energy sources calls for a radical change in the transmission planning process. The challenge associated with transmission planning in India is unique in view of the decentralized and federal framework of governance. The scope of transmission planning in the open access era needs to be enlarged to encompass the growing aspirations of the market players (with conflicting self-interests) while honouring the classical constraints of grid security and economy of operation. In the open access regime, transmission is viewed as a mechanism to enable the energy market and therefore there is a general expectation that the transmission planning should be proactive rather than reactive.

*“Transmission and generation are both complements and substitutes. As a consequence, poor transmission planning and inefficient transmission expansion could undercut competitive wholesale markets and increase electricity costs..... Transmission is a long-lived (30 to 50 years), immobile investment with very low operating costs. The need for new transmission shows up in real-time congestion prices. It is difficult to accurately forecast the need for a specific transmission investment for several decades.”- Kirby and Hirst [1]*

1.2. Traditional integrated resource planning involved performing generation and transmission expansion planning to meet the forecasted demand growth. Since the cost of generation addition is much more than that of the required transmission, the planning process was typically conducted in a sequential manner starting with

generation planning followed by transmission planning to meet the accepted security criteria.

*“Transmission expansion planning may be formulated formally as an optimization problem with cost minimization as its objective function and reliability as a constraint.”* F.F. Wu et al. [2]

1.3. A robust energy settlement mechanism at interstate level (ABT-UI) was in place in the Indian Grid since 2002. Open Access was mandated by the Electricity Act in 2003. The Regulations for facilitating Short-term Open Access in inter-state transmission were introduced in 2004. Subsequently the guidelines issued by the Hon’ble Commission in 2007 paved way for commencement of Power Exchanges in India. The policy initiatives at the Government level together with the enabling regulatory provisions set up an excellent framework for functioning of a competitive electricity market at the interstate level. Consequently large number of IPPs were attracted to invest in the generation capacity and participate in the electricity market. The CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access to the Interstate Transmission and Related Matters) Regulations, 2009 was instrumental in streamlining the processing of providing access to the grid in long-term / medium term. However as discussed in the CERC staff paper, the open access regime brought forth new challenges for transmission planning as well as transmission cost allocation in India similar to that being experienced in other countries.

1.4. CERC Regulations on Sharing of inter-state Transmission Charges and Losses notified in 2010 brought about a paradigm change by taking a considered decision to switch from the postage stamp (pan caking) to Point of Connection formula in Transmission pricing. This pricing formulation brought in distance, direction and quantum sensitivity in Transmission Pricing as envisaged in the National Electricity Policy.

- 1.5. Para 5.3.2 of the National Electricity Policy states that “the network expansion should be planned and implemented keeping in view the anticipated transmission needs that would be incident on the system in the open access regime. The prior agreement with the beneficiaries would not be a pre-condition for network expansion. CTU/STU should undertake network expansion after identifying the requirements in consultation with stakeholders and taking up with the execution after due regulatory approvals.” Thus as suggested in the CERC Staff paper issues related with transmission planning in the changing environment call for greater focus and attention.

*“The unbundling of generation, transmission and distribution has resulted in multiple parties in business...The presence of new structures and the diversity of the many new players in the electricity markets have fundamentally invalidated some assumptions and relationships of the traditional planning process, bringing new challenges to the transmission planning problem.” F.F. Wu et al. [2]*

- 1.6. POSOCO appreciates the efforts of the CERC Staff in highlighting the complexity of the prevailing challenges associated with “Transmission planning” that emerged in India consequent to unbundling of electric utilities, delicensing of generation and introduction of open access.

*“In the restructured environment, the functions of the transmission system have expanded beyond the historical roles of linking generation to load and enhancing system reliability. Interconnection enables more generators to compete in a large aggregate market to serve the combined load. On the other hand, inadequate transmission capability resulting in transmission bottlenecks enables generators at specific locations in the network to exercise market power in a local market. Transmission system, therefore, can enhance competition and mitigate market power in a restructured market environment.”- F.F. Wu et al. [2]*

- 1.7. Augmentation in transmission infrastructure at the right time and right location is the key to congestion management in long-term. However, policies and regulations dealing with transmission system expansion have to address the lumpiness of transmission investment. In a developing system, addressing the problem of free riders would go a long way in addressing the concerns regarding overinvestment in transmission.

*“The fact that “time and location matter” is fundamental to operations. There needs to be widespread recognition that the value of energy to an operator can have quite strong locational and temporal components associated with it...An asset that has societal value (in this case the transmission network) will be utilized to the fullest extent by all parties, and any party investing in any improvement to the commons will be at a competitive disadvantage because it will bear the added burden of the cost of investment...It is the role of the regulatory structure to deal effectively with the free rider problem so that otherwise economically desirable transmission system expansion takes place.”-Alvarado [1]*

- 1.8. Transmission system utilization would always be low due to redundancy for reliability, uncertainties associated with the demand growth forecast, the binary nature of line construction and the different dispatch scenarios (associated with the RES, competition among buyers to avail supply from the cheapest source). The transmission expansion plan must be robust to meet all these requirements. Huge investments in the transmission systems is required to meet different dispatch scenarios and low loading throughout the year.

*“Transmission services create an opportunity for free ridership because the nature of power flows over an interconnected transmission system does not permit a public utility transmission provider to withhold service from those who benefit from those services but have not agreed to pay for them.”-FERC Order 1000 [2]*

1.9. Various suggestions received by the Hon'ble Commission from statutory bodies as well as other stakeholders for addressing the above issues have been deliberated in the CERC staff paper. It also proposes few alternatives and has sought response from stakeholders. Considering the importance of the subjects and its long-term implications it is suggested that the subject may be deliberated in greater detail with the help of a series of workshops in all the regions. It would help bringing a wider consensus on the subject as in case of Open Access and Transmission Pricing Regulations. Comments from POSOCO on the CERC staff paper are placed below while POSOCO's response to questionnaire are given in the next section.

## **2. Comments on Transmission Planning Methodology**

2.1. CERC Staff paper has highlighted the universal uncertainties associated with transmission planning arising from uncertainty in electricity demand, location and quantum of despatch, availability of fuel, existing and future equipment application, cost factors and financial parameters, environmental considerations, regulations and political options. Classical deterministic approach (worst credible contingency) may be inadequate for planning in a competitive regime because of the unforeseen power flow patterns (because of IPPs, open access), stochastic nature of system behaviour (component outages, load level changes). Thus POSOCO agrees with the views of the CERC staff paper in para 5.3.2 regarding rigorous analysis of bulk power system reliability using probabilistic techniques.

2.2. International experts opine that transmission planning in the open access regime calls for review of existing planning objectives/principles and developing new models/means to meet these objectives.

*“What criteria should guide transmission expansion decision-making amid parties with diverse interests is a critical issue to be addressed because the paradigm of least-cost expansion planning is no longer viable. Should the criteria be based on benefit? Then there is always the issue of public interests*

*(i.e. social welfare) vs. private interests. How to include reliability whose benefit is hard to quantify in the expansion criteria?*

*Traditional transmission planning starts from a given load forecast and a generation expansion plan, both of which are responsibilities of the same company. In the restructured industry, generation expansion decisions are made by individual generation companies, often not completely known to the authority responsible for transmission planning. Indeed beyond the 5- or 10-year horizon, generation scenarios are largely unknown. Compounding the matter is that generation expansion decisions may be affected by decisions on transmission expansion and vice versa. For instance, a transmission project may take 5 or 10 years, longer than two years or so for building a gas turbine or a combined cycle power plant. A generation project may be initiated after the transmission project has commenced, potentially altering the financial assumptions used to justify the transmission project. There is also the substitution effect of transmission by generation or by load via demand-side management. Such interactions make the transmission expansion planning no longer a simple sequential process.*

*There is no a clear definition or delineation of the responsibilities among various stakeholders involved in transmission expansion planning. For example, who should propose an expansion, who should review and analyze the expansion proposal, and who should take the role to approve the plan? How to reconcile conflicting interests among the stakeholders and with what mechanism to do it?"- F.F. Wu et al. [2]*

- 2.3. Forecasting congestion resulting from the associated uncertainties and augmenting the transmission system to address the same is one of the biggest expectations of the market players in the open access regime [4]. However, there are several conflicting views with regards to transmission planning to alleviate congestion. One school of thought argues that any project for transmission investment should be encouraged because the transmission cost is only a small percentage of the overall cost of delivering electricity to the consumers. There is an equally compelling school of

thought which argues that eliminating congestion with a copper plate transmission system may not be in the best interest of society.

*"Transmission security has historically been the primary focus of transmission planning, while resource adequacy has historically been the primary focus of resource planning—the planning of adequate supplies of generation and demand-side resources.*

*Transmission planning for economic efficiency focuses on building new transmission lines designed primarily to achieve the economic delivery of power rather than ensuring reliability.*

*Reliability projects are proposed because reliability standards are projected to be violated. Economic projects are proposed not because reliability standards are violated, but because there is an economic benefit. In some regions, more comprehensive “multi-benefit” evaluation approaches are being developed to evaluate proposed transmission projects that incorporate standard reliability and economic efficiency measures, but also consider such items as avoided energy and capacity costs due to reduced physical losses and the value provided in limiting costs during times of extreme events and system contingencies."*

2.4. The models used for transmission planning must be capable of testing the transmission plan under various scenarios. Thus in addition to load flows, it is now expected that the transmission planning studies examine the impact of the anticipated behaviour of the market players (driven by buy/sell bids) on the transmission network with the help of advanced software tools to simulate the electricity market model (such as PLEXOS). One such framework-Transmission Economic Assessment Methodology is being deployed in California ISO [6]. Para 5.4.7 of the CERC staff paper further recognizes the need for integrated system planning studies based on electricity market performance. Historical data of the behaviour of market players (available in the form of MMC reports, PX reports, Trader submissions) also needs to be considered as vital input in transmission expansion planning. The applications for General Network Access (GNA) would be

a critical input for economic assessment of the transmission expansion plans. It would enable transmission planners to capture the envisaged utilization of transmission network by market players.

*“A software tool that can accurately forecast physical flows and nodal prices on the transmission network is critical for computing the economic benefits of the proposed upgrade.” [5]*

- 2.5. CERC Regulations on IEGC contains the ‘Planning Code for Inter-State Transmission’. In October 2013, the Central Electricity Authority had brought out “Draft Procedures for coordinated transmission planning through Regional Standing Committees for Power System Planning”. POSOCO vide its letter dated 24<sup>th</sup> October 2013 had submitted its suggestions and comments on the above draft. Both of these are enclosed as Annexure XVI and Annexure-XVII of the CERC Staff paper. Section 6.5 of CERC staff paper also proposes a methodology for Transmission Planning. It is further suggested that in addition to the technical criteria (published by CEA as Manual for Transmission Planning Criteria), Hon’ble CERC may consider assessment of transmission expansion plans with the help of trajectory of rates of Point of Connection Charges; trajectory of transmission losses; duration and areas of congestion etc.
- 2.6. For the purpose of transmission planning the country may be demarcated into Grids/Bid Areas/zones with identification of generation rich/feasible grids/areas/zones and load grids/areas/zones with potential for future growth. Above demarcation may be done by CTU in consultation with all stakeholders. CTU may publish the transfer capability of the transmission system under various scenarios considered and also suggest zones for siting new generators/augmentation of load.
- 2.7. CERC staff papers has deliberated on several issues associated with transmission planning process. Concerns of Stakeholders are also available in [3]. A framework

for assessment of governance issues in transmission planning is elaborated in [7]. POSOCO would like to reiterate the urgent need for notification of a separate regulation covering the Governance aspects of Transmission Planning viz:

- Objectives, principles and responsibilities of each and every agency involved in the planning process
- Degree and process of Stakeholder involvement
- Information to be exchanged and transparency in decision making
- Planning process and its frequency
- Methodology for execution and revision in plans
- Methodology for reliability and economic evaluation of transmission projects
- Dispute resolution

### 3. Comments on Transmission Cost allocation

3.1. It is virtually impossible to separate transmission planning from transmission cost allocation. The challenges associated with allocating the cost of transmission have become more acute with the growing need for transmission infrastructure in India.

*“The Commission further noted that the risk of the free rider problems associated with new transmission investment is particularly high for projects that affect multiple utilities’ transmission systems and therefore may have multiple beneficiaries. With respect to such projects, any individual beneficiary has an incentive to defer investment in the hopes that other beneficiaries will value the project enough to fund its development. The Commission explained that, on one hand, a cost allocation method that relies exclusively on a participant funding approach, without respect to other beneficiaries of a transmission facility, increases this incentive and, in turn, the likelihood that needed transmission facilities will not be constructed in a timely manner. On the other hand, if costs would be allocated to entities that will receive no benefit from a transmission facility, then those entities are more likely to oppose selection of the facility in a regional transmission plan for purposes*

*of cost allocation or to otherwise impose obstacles that delay or prevent the facility's construction.”-*  
FERC Order 1000 [2]

- 3.2. The CERC (Grant of Connectivity, Long-Term Access and Medium-Term Open Access in Inter-State Transmission and related matters) Regulations, 2009 (hereinafter referred to as Connectivity Regulations) introduced a separate provision for connectivity and Long-term Access. Thus transmission system was planned and built only for facilitating LTA. Approval of Medium Term Open Access (MTOA) or Short Term Open Access (STOA) requests were subject to availability of margins within the system planned and constructed for Long term customers.
- 3.3. POSOCO agrees with the conclusion of the CERC staff paper that the provision of connectivity without any liability to pay transmission charges, requisition of LTA for quantum lower than the installed capacity and non-declaration of drawal requirement are one of the main causes of inadequate transmission and congestion in several areas in the grid. We also agree that there is a need for a comprehensive review of the transmission planning process so as to align it with the provisions of the National Electricity Policy and the mandate of non-discriminatory open access as enshrined in the Electricity Act 2003. The CERC staff paper on Transmission Planning, Connectivity, Long Term Access, Medium Term Open Access and other related issues paves way for informed debate on issues related to transmission planning, Connectivity, LTA, MTOA and other issues.

#### **4. POSOCO's views on the Proposed formulation for Connectivity and Long term Access**

- 4.1. The paper discusses the concept of Shallow and Deep connection, where-in the Shallow connection provides the Connectivity of generator to nearest grid point or pooling point and the Deep Connection requires network upgrades in large grid network to enable power flow from pooling point to load utilities with compliance

of existing Reliability Standards. POSOCO's views on the two alternatives suggested in the CERC staff paper are as below.

#### **4.2. Alternative 1 - Type A: Connectivity plus Full Network Access**

Proposal in the CERC Staff paper: *“Generator to pay advance in form of sufficient(100%) bank guarantee for cost of Transmission system both for Connectivity (Shallow connection) and Network expansion(deep Connection)- These guarantees are to be given in stages and just before the execution is to be started for transmission system. Outcome will be assured evacuation and assured evacuation to both target region and point to point as transmission system shall be planned for anticipated scenario for all regions.”*

**POSOCO's Views:** This product will ensure that the generators take access for its net installed capacity (Installed capacity- Auxiliary consumption) along-with overload capacity, ensuring that the transmission system is planned accordingly. No part LTA should be applicable. However, injecting entities should be responsible for injection access only and drawee entity for withdrawal access. Since power flow will take place based on load/generation disposition, planning of transmission system to facilitate particular transaction may be irrelevant.

#### **4.3. Alternative 1- Type B: Connectivity Access:**

Proposal in the CERC Staff paper: *“Planning of transmission system on the basis of future load generation projection and Generator to pay in advance only for connectivity line(Shallow Connection) and Transmission work for connectivity line will be started only if generator achieves critical milestones like order for main Plant and all important approvals for fuel tie up and environmental clearance.-Outcome will be only assured connectivity to the grid. No assurance of target region or point to point evacuation.”*

**POSOCO's views:**

The shallow connection basically amounts to availing connectivity as per the Connectivity Regulations, 2009. IPPs / merchant plants exercising this option may be granted connectivity, without commensurate transmission system to evacuate full generation. This may lead to a situation where secure operation of the power system may get affected.

#### **4.4. Alternative 1- Type C: Connectivity plus Injection Access**

Proposal in the CERC Staff paper: *“A mix of both wherein Generator to pay in advance for connectivity line and 50% of the cost of Network expansion. Transmission work will be started only if generator achieves all critical milestones like order for main Plant and important approvals for fuel tie-up and environmental clearance. Outcome will be only assured connectivity to the grid. Assured evacuation to target region but no assurance of point to point evacuation. Bank Guarantee for Connectivity portion and Access portion are to be treated separately.”*

#### **POSOCO’s views:**

This amounts to LTA without beneficiaries similar to the existing provision in the Connectivity Regulations, 2009. In the dispensation, it is suggested that injection access and drawl access may be taken separately by generator and drawee entity.

- 4.5. It has been suggested in the Staff paper that in all these cases, capacity corresponding to installed capacity plus overload capacity shall be considered for access i.e. no part LTA concept shall be applicable. This suggestion is welcome, as transmission system would be planned for full capacity. If option is given to the generators, they may take access for less quantum based on commercial consideration.
- 4.6. It is suggested that the concept of target region may be done away with. Since the power flow in the network would be as per laws of physics irrespective of the contracts, the transmission system needs to be planned based on location of

upcoming generators and projected demand. Applicants of transmission access may be asked to furnish information regarding the target region and/or any firm PPA as an additional input.

- 4.7. It is also suggested that Type B access may be seen in light of the fact that the Connectivity without any form of LTA allowed as per the Connectivity Regulations is partly responsible for the present state of affairs. Though intent may be to facilitate connectivity on temporary basis, there is likelihood of misuse. Connectivity may be retained as a separate product only as an in-principle approval by the CTU for facilitating siting of generation project (finalizing the technical specifications) and for financial closure of a generation project. However no injection or drawal of power shall be allowable with only connectivity. Further, it may be mandatory to submit applications for Connectivity as well as Access together.
- 4.8. It is proposed that charges for lines connecting the generators to the identified pooling station may be recovered from the generator. This may be done for existing as well as future power stations. The generator may include cost / charges of the connectivity line in its generation tariff. This will automatically address the issue of disparity as some connectivity lines constructed by CTU/ based on competitive bidding while others are constructed by generators. The generators constructing connectivity lines may approach the Hon'ble Commission later, to get the same converted to ISTS, as has been experienced in the past.
- 4.9. **Bank Gurantee:** As proposed by CTU, Bank Guarantee may be enhanced from present Rs. 5 lakhs/MW to Rs. 50 lakhs/MW. This will cover transmission charges of dedicated portion of line as well as charges for the network. Further this will bring in seriousness amongst the applicants. The present mechanism of seeking LTA by generators, Bank Guarantee for nominal amount of Rs. 5 lakhs/MW and request for relinquishment of LTA on pretext of force majeure is leading to a situation, where risk is transferred to other DICs.

#### 4.10. Issue of delay in Commissioning

Proposal in the CERC Staff paper: *“To provide equal treatment to generation projects implemented by CPSUs and IPPs, it is proposed that after a grace period of three month during which Generator shall be responsible for IDC liability , staggered payment system for 25% , 50 % and 100% transmission charge shall be applied for deep connection( network expansion) for delay of each quarter. For the connectivity portion no grace period shall be allowed as it may be utilised by generator for drawal of startup power and injection of infirm power of this shall be applicable only in case of transmission projects implemented under cost plus system. For competitively bid projects no relaxation shall be allowed in case of delay in commissioning of generation project.”*

**POSOCO’s views:** POSOCO is in agreement with the CERC staff paper that no relaxation may be allowed in case of delay in commissioning of generation project. After commissioning of the transmission system, the licensee would be entitled to revenue for the same, thus if any relaxation is given to the generator, it may unnecessarily burden other DICS.

#### 4.11. Change in Target Region

Proposal in the CERC staff paper: *“As change of Target region would be applicable for only type C, it would be allowed without any payment but there shall not be any guarantee of access if change of region is informed after commencement of execution of transmission system begins. Also for this a fresh application would require to be submitted and priority shall be considered with new date of application”*

As suggested above, concept of target region may be done away with.

#### 4.12. Relinquishment or Exit

POSOCO is in agreement with the proposal that Exit charges should not be linked to stranded capacity. Further, Exit charges should be sufficiently high, such that it brings seriousness in both entry as well as exit.

## 5. Alternative 2: Transmission plan execution and transmission cost allocation based on GNA concept proposed by CEA and CTU

5.1. Proposal of the CERC staff paper: *“Under Alternative 2, transmission planning execution and transmission cost allocation shall be based on GNA concept as proposed by CEA and CTU. Whenever a Generator or Drawal customer wants connectivity and access to ISTS , it will declare its GNA( General Network Access ) Requirement. For Generator it shall correspond to its Net Installed Capacity ( i.e. Installed capacity – Auxiliary consumption). It shall also consider its overload capacity and that shall be considered as its GNA. Declaration of target region shall be optional and if Generator have no identified beneficiary, CTU shall plan system in accordance with load generation forecast.”*

POSOCO is in agreement with the proposal. Further, it is suggested that Alternative 2, i.e. GNA concept would be more suitable in federal structure of governance in India, as it will capture the envisaged usage of transmission system by the market players. It would also help in assessing the overall transmission requirement. The applications for GNA could serve as an additional input (apart from the basic input w.r.t nodal load forecast) for preparing the master transmission planning by CTU in coordination with STU. It is suggested that the applicants may be allowed to stagger their requirement for transmission in different time frames to align it with the commissioning schedule of transmission/generation projects in its own control area.

5.2. Regarding transmission cost allocation, it has been stated in the staff paper that generators, citing lack of PPA, will shy away from declaring their GNA requirement till last moment. It may be relevant to mention here that entire capacity less auxiliary consumption would have to be considered as GNA and the generator can go for LTA, MTOA or STOA within this quantum. It has also been stated in the staff paper that it would not be proper to saddle the beneficiary either generator or drawee entity with transmission charge liability based on pre-determined contract. It

may be appreciated that, if sanctity of LTA/GNA is not honoured and any entity is allowed to walk out of commitment due to inability to generate/draw power (thus usage will be “NIL”), then other DICs will be saddled with additional charges for no fault of theirs, which again is not desirable. Hence Approved Injection / Approved withdrawal have to be necessarily linked with Access / GNA.

**6. Views / suggestions on Proposed transmission capacity allocation mechanism for power market- collective transactions**

6.1. **Proposal of the CERC Staff paper:** *“It is proposed that to give equal treatment in allocation of transmission corridor and bring "equity" among bilateral and Collective transactions, a new system of participation of buyers and sellers in Power Exchanges in e-bidding of transmission corridor is proposed. This will require amendments in CERC Short Term Open Access Regulations.*

8.3. *A window for collective participants, giving equity with bilateral participants, is proposed for transmission corridor booking under short-term market. Collective participants would be allowed to participate in booking Transmission Capacity in STOA ‘Advance’ and ‘FCFS’ categories, as outlined in Table-1 below. Such collective participants would use the pre-booked transmission capacity of a particular corridor to participate in Power Exchange Day Ahead Market (DAM) and get scheduled based on the corridor already reserved by the participant. “*

.....

*Collective (PX) participants who have successfully participated in pre-booking transmission capacity in STOA Advance or FCFS categories could benefit by being cleared in DAM Auction at prices of Downstream (Buyer) or Upstream (Seller), in spite of congestion in respective corridor. Participants with pre-booked corridor will be treated as ‘Priority Portfolio’ for bidding in Downstream(for Buyer) or Upstream (for Seller), hereafter called Guest Region, w.r.t. the transmission capacity pre-booked, while the same participant will also be allowed to participate as ‘Normal Portfolio’ for bidding in his Home Region. Normal Portfolio is one with no corridor in Advance/FCFS and relying on corridor available on Day-Ahead basis (like the current portfolios in the system). Selected bids of Priority*

*Portfolios in PX DAM would be cleared at prices of Guest Region, thereby avoiding the burden of higher prices of congested Downstream Region. “*

**POSOCO’s view:** Transmission planning is an inherent part of congestion management in long-term. However, it is distinct from congestion alleviation techniques adopted in short-term / real-time in the operating horizon. The proposal to allow Collective Market (PX) participants to bid for the transmission corridor in advance is a major shift/change in the Power Exchange design vis-à-vis the current implementation of Power Exchange market in India. This in effect implies distorting the “implicit auction” implemented presently and the bidding for the corridors would be done in two stages – first in advance and again in the day-ahead PX market.

Allowing collective market participants to book corridor in advance would be prone to market manipulation and gaming.. Any mechanism to allow the market participants to utilize the balance available corridor would also lead to an iterative process.

When Collective participants are allowed to pre-book the corridor on 3 month ahead basis, the issues of how to deal with the subsequent reduction of the ATC and the priority of curtailment among pre-booked and later booked transactions may have to be addressed.

## **7. Views/suggestions on Utilization of transmission charges collected through e-bidding and congestion revenue**

7.1. Proposal of the CERC Staff paper: *“It is proposed that any amount received through e-bidding and congestion revenue be adjusted towards transmission charges to be paid by all DICs on quarterly basis. The market participants may raise the issue that it should be returned to them on one to one basis, but if it is done, it will distort the signal which is intended to be captured through*

*congestion. As all DICs who are long term customers of the transmission system will get back some money, the acceptance for future transmission projects will be easier.”*

**POSOCO’s views:** The amount lying in the Power System Development Fund accrued on account of Congestion revenue account together with interest earned thereon may be utilised for development of transmission corridors necessary for alleviating congestion.

8. Increasing the STOA for 1 year as proposed in para 8.6 may be reviewed. In fact the maximum period of booking in advance was brought down from 1 year (as in 2004 OA regulations) down to 3 months to align with the seasonal procurement and operational planning by the load serving utilities. strategies .

9. In para 5.10.5 of the CERC staff paper it has been stated that non-transmission based solutions like Demand side management , Special Protection Schemes etc also need to be taken into consideration.

**POSOCO’s views:** SPS is a defense mechanism deployed in the operating horizon. SPS cannot be a substitute for transmission. Permitting SPS to be factored in the planning horizon would lead to inadequate transmission system.

10. In para 7.1.7. of the CERC Staff paper it has been stated that “*Under category C, while deciding priority for Short Term Open Access generator would be given preference over other short term customers in case margins are existing or found in the target region”*

As suggested in earlier paragraphs, the concept of target region may be done away with. If the above suggestion is accepted, need of priority to the option C generators would not be required.

## 11. POSOCO's response on Questionnaire regarding stakeholders comments

### 1. Whether Connectivity should be retained as a separate product?

**Response:** Yes

Connectivity may be retained as a separate product only as an in-principle approval by the CTU for facilitating siting of generation project (finalizing the technical specifications) and for financial closure of a generation project. However no injection or drawal of power shall be allowable with only connectivity.

### 2.

- (a) If Yes, what are in your opinion are the advantages of Connectivity as a separate product?
- (b) If connectivity is retained as a separate product, then whether it should be free or transmission charges should be borne by generator or drawee entity which is applying for connectivity ?
- (c) Whether for connectivity, only transmission charges corresponding to connectivity transmission system should be charged or some part of Grid transmission charges( 25% as proposed) should also be charged

**Response:**

Connectivity may be retained as a separate product only as an in-principle approval by the CTU for facilitating siting of generation project (finalizing the technical specifications) and for financial closure of a generation project. It would also help the planners in identifying the prospective injection nodes in the grid. However no injection or drawal of power shall be allowable with only connectivity.

Connectivity without any liability to share transmission charges is prone to exploitation by market players as elaborated in the CERC staff paper. It would encourage free riders and

hence unfair to those who had committed to share the costs of the network expansion plans. A large number of IPPs / merchant plants have been / are being granted connectivity without commensurate transmission system to evacuate full generation. This has led to a situation where secure operation of the power system is compromised. NLDC vide petition no. 225/MP/2012 had submitted that all transactions by an entity, including Long Term with identified beneficiary, Medium Term Open Access and Short Term Open Access should be limited to the quantum of LTA availed. Hence, Users intending to draw or inject power may be mandated to apply for GNA.

3. If no, what is in your opinion are the dis- advantages of Connectivity as a separate product?

**Response:**

The dis-advantages of Connectivity as a separate product are as follows:

- i. Connectivity as a separate product would only capture the envisaged site of generation capacity addition without any information regarding the quantum of injection in the planning time horizon. Thus it adds to the uncertainty for the transmission planner.
- ii. Transmission is a lumpy asset that requires sufficient a lead time for execution. In the absence of firm commitment regarding the envisaged quantum of injection (whether through long-term/medium term or short-term transactions), the transmission planner would find it difficult to design of the evacuation scheme; the transmission utility would find it difficult to schedule the execution of the transmission projects identified for evacuation of the intended generation or the grid strengthening/economy upgrades required due to the change in the powerflow pattern in the grid due to the despatch of generation at that location.
- iii. Congestion would be experienced due to inadequate transmission system planned and executed and increasing volumes of STOA/MTOA transactions

#### 4. Bank Guarantee

What should be amount of sufficient construction bank guarantee to safe guard against the risk of stranded asset in case generating project fails to get commissioned?

- (a) Is existing construction bank guarantee amount (Rs 5 lakh per MW) sufficient when transmission cost is about Rs 1 cr per MW.?
- (b) Is proposed bank guarantees equivalent to cost of transmission line is sufficient?
- (c) Is proposed bank guarantees are very high?

**Response:** The existing Bank Guarantee is not sufficient and in line with proposal of CTU, the Bank Guarantee may be raised.

#### 5. Bank Guarantee

What should be amount of sufficient construction bank guarantee to safe guard against the risk of stranded asset or transfer of liability to other consumer in case generating project wants to exit/ downscale LTA after commissioning (Please give justification for your views)

- (a) NPV equivalent to 12 year transmission charges
- (b) NPV equivalent to 7 year transmission charges
- (c) X Rs per MW of installed capacity –One time charge
- (d) Five years Average Injection and withdrawal charges
- (e) Five years Average injection charges only

**Response:** The Bank Guarantee amount should be sufficient to bring in seriousness regarding entry as well as exit.

#### 6. Delay in Commissioning

In case of delay in generating unit(s) /project:

- (a) Date of LTA should be firm and no relaxation should be provided

(b) If information of delay is provided sufficiently in advance some staggered relief can be granted

(c) Issue should be decided mutually between generating company and transmission licensee subject to condition that no burden is transferred to other users

**Response:**

a) Date of LTA should be firm and no relaxation should be provided.

b) & c) Burden should not be transferred to other users.

**7. Shallow Connection vs. Deep Connection:**

(a) What is your view on shallow connection vs deep connection

(b) Shallow connection should be permitted to only Renewable generation or to both Renewable and conventional generators.

(c) Under shallow connection system how transmission planning will be done and who shall bear the Grid level transmission charges

**Response:**

**i.** Shallow connection implies connectivity and Deep connection implies Connectivity with LTA in the context of present CERC Regulations. The issues related with connectivity are already highlighted in the response of Question No.3. POSOCO supports the concept of deep connection wherein the producers will pay for the costs of the equipment needed to connect their plant physically to the nearest point of the electricity distribution grid, plus all the cost of any network reinforcement necessary to connect their plant.

**ii.** Shallow connection should-not be permitted for conventional generators

**iii.** Shallow connection philosophy is not desirable in Indian context as transmission charges would have to be borne by other users.

**8. Whether you are a injecting entity or Drawee entity or both?**

**Response:** System Operator

9.

- a. What is your opinion on General Network Access (GNA) proposed by CEA ?
- b. Whether it should be adopted for transmission access and transmission charges ?
- c. What should be bank guarantees and Exit Charges under GNA mechanism?
- d. Whether it would be possible to plan transmission system to give assured access in all directions?

**Response:**

GNA is envisaged to bring forth the latent requirement for transmission. GNA concept puts forth that generators may be granted General Network Access based on their net installed capacity and overload capacity. This will ensure that the new transmission corridors are planned based on GNA requirement, helping in alleviating congestion. Generators shall have the flexibility for point of drawal subject to conditions laid down at the time of grant of GNA. Also, the drawee utilities shall have access to the ISTS to the extent of their GNA and get the system created for power transfer over ISTS from anywhere in the grid. POSOCO is of the firm view that it should be adopted forthwith.

Though assured access in all directions may not be possible even under GNA mechanism, it would facilitate capturing the intended use of transmission by the market players.

10. Question No. 10: Transmission Planning:

- a. How Transmission planning in the country needs to be reviewed under present condition to take care of future need of robust transmission system?
- b. Whether there is need for a separate Regulation for transmission planning to make it more participative?
- c. Whether transmission planning should mandatorily make margins available for short term power market?

- d. Whether transmission system planned by CEA /CTU need to be adequately explained from cost benefit point of view?
- e. Is there requirement of making submission of information related to transmission planning legally binding?

**Response:**

- a) Planning of Transmission System shall be done in following time horizons
  - i. CEA may formulate perspective transmission plan for inter-State transmission system as well as intra-State transmission system for 20 years'time horizon.
  - ii. CTU may formulate "Master Transmission Plan" for inter-state transmission system of 5 year time horizon on rolling basis.
- b) Yes, there is need for a separate Regulation for transmission planning to make it more participative. POSOCO vide communication dated 24th October, 2013 has given comments on draft procedure by CEA for coordinated transmission planning through the Regional standing committees for Power System Planning.
- c) Yes, transmission planning should mandatorily make margins available for short term power market
- d) Yes, cost benefit analysis of new transmission system planned should be made public. Trajectory of average charges for last 3 years is annexed.

**11. Utilization of Congestion charges**

- a) Whether proposal of using congestion charges to reduce the long term ISTS transmission charges acceptable? Or
- b) Whether Congestion charges are to be utilized for creation of specific transmission assets for relieving the congestion? How should this be treated- as equity, loan or grant?

**Response:** The CERC staff paper on utilization of Congestion charges to reduce the long term ISTS transmission charges

*“It is proposed that any amount received through e-bidding and congestion revenue be adjusted towards transmission charges to be paid by all DICs on quarterly basis. The market participants may raise the issue that it should be returned to them on one to one basis, but if it is done, it will distort the signal which is intended to be captured through congestion. As all DICs who are long term customers of the transmission system will get back some money, the acceptance for future transmission projects will be easier.”*

The amount lying in the Power System Development Fund accrued on account of Congestion revenue account together with interest earned thereon may be utilized for development of transmission corridors necessary for alleviating congestion.

## 12. Transmission corridor allocation for Power market:

- a) Whether participants of Power exchanges should be allowed to participate in e-bidding for transmission corridor? or
- b) For power market development, certain quantum of corridor may be reserved for power market with all participant of Power Exchange sharing the transmission charges of reserved corridor

### **Response:**

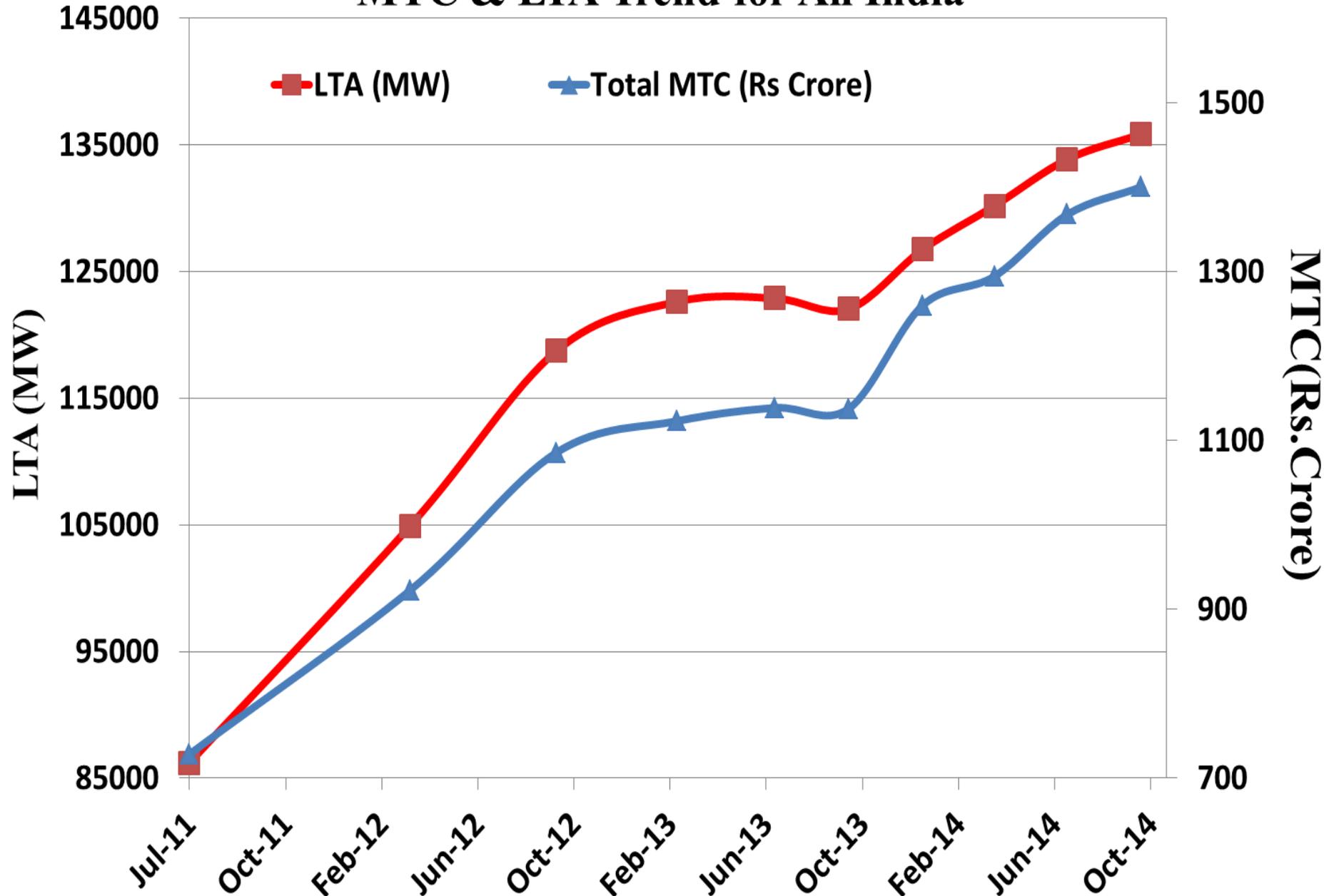
The proposed capacity allocation mechanism for Power Exchange participants may be prone to market manipulation and gaming.

In case of under-utilization of corridor capacity, the under-utilized capacity may have to be redistributed amongst the Power Exchanges. This would lead to a process involving multiple iterations.

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# MTC & LTA Trend for All India



# Average Rate (Rs/MW/Month)

