

BY FAX/E-Mail



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CIN: U40109OR1995SGC003960

No. Sr.GM-PP-105/2013/

To

7728 (6) Dt. 07/11/14

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

Sub: Staff Paper on Transmission Planning, Connectivity, Long Term Access, Medium Term Open Access and other related issues.

Ref: Your office Public Notice No. Engg./DP-Transmission/2014-CERC Dt.19.09.2014
& Engg./DP-Transmission/2014-CERC Dt. 24.10.2014

Sir,

With reference to your above mentioned Public Notice, we are submitting herewith GRIDCO's Comments/Views on the above Staff Paper on Transmission Planning, Connectivity, Long Term Access, Medium Term Open Access and other related issues.

This is for favour of your information and necessary consideration.

Encl.: Views of GRIDCO in 46 (Forty six Pages)

Yours faithfully


Director (Commercial)

- CC to:
- i) Principal Secretary, Dept. of Energy Govt. of Odisha, Bhubaneswar
 - ii) Director (F&CA), GRIDCO
 - ii) E.A. to CMD, GRIDCO for kind appraisal of CMD

VIEWS OF GRIDCO ON CERC STAFF PAPER (SEPTEMBER, 2014)
TOWARDS TRANSMISSION PLANNING,CONNECTIVITY, LONG/
MEDIUM TERM OPEN ACCESS AND OTHER RELATED ISSUES

It is a welcome step that a concept paper on Transmission Planning, Connectivity, Long/Medium Term Open Access and other related issues has been brought out by Staff of Central Electricity Regulatory Commission during September, 2014. The concept paper has been developed, basing mainly on issues, raised by CTU, NLDC and CEA.

CTU,NLDC and CEA have attributed the inadequacy of Inter State Transmission and congestion thereof to Generators and Drawing Entities, as mentioned in the following paragraphs of the Staff Paper:-

- (a). As per Para 2.16 of the Staff Paper, "It is noted that most of the concerns expressed by central planning agencies and system operator stem from following three issues i.e. **connectivity without any liability to pay transmission charges, lesser requisition of LTA and non-declaration of drawl requirement.** Transmission congestion is only a by-product of these. It needs to be examined as to how these issues are affecting transmission planning and whether design of transmission cost allocation is affecting the planning adversely."
- (b). As per Para 3.3.1 of the Staff Paper, "The real challenge for integrated transmission planning started to surface with the emergence of Independent Power Producers (IPPs) and Open Access customers. Realizing the benefits of Open Access in Inter-State transmission system introduced since 2004, generating stations were set up in different parts of the country with no identified long-term buyers. The uncertainties about location and commissioning schedule of such generating stations and possibilities of customers being in any part of the country, created a situation where

traditional transmission planning process which was based on firm source ó sink relationship, found it difficult to cope with this new situation.ö

- (c). As per Para-3.3.1 (2) of the Staff Paper, öPowergrid has also pointed out that private developers are under-stating their requirement for power evacuation with a view to reducing their liability of sharing transmission charges. After getting grid connectivity and access to the market in this manner, they may apply for additional evacuation of power under short-term open access regulations where the transmission charges are quite nominal. We cannot allow them to game for exploiting the differential between normal transmission tariffs and short-term transmission tariffs to their advantage at the cost of optimum and planned development of transmission.ö
- (d). As per Para 3.8.6 of the Staff Paper, öMany IPPs were coming in fuel rich areas like Eastern Region and Central India and also in coastal areas based on imported fuels. Most of these generating stations did not have identified beneficiary and sought Long Term Access through Inter-State Transmission System. In accordance with the concept of "Target Region" based on Load Generation balance scenario and Electric Power Survey of Central Electricity Authority, CTU formulated transmission system for these generating stations. All these transmission schemes were discussed and concurred in Standing Committee for Transmission System planning. However, in the absence of identified beneficiaries, it is difficult to get Bulk Power Transmission Agreement (BPTA) signed and till these are signed, it is difficult to take investment decision as recovery of transmission charges through tariff needs to be ensured.ö
- (e). As per Para 4.8.10 of the Staff Paper, öThe congestion at least on the injection side may be outcome of short-sightedness on the part of Generators either in declaring the quantum of LTA or scheduling of their

requirement of LTA in a conservative manner i.e. to avoid seeking LTA till last moment waiting for PPA to be finalised.ö

- (f). As per Para-4.8.13 of the Staff Paper, öOn generation side it is proposed to include all type of transactions in transmission planning and on drawal side it is the responsibility of state power utilities that they participate in proposed transmission planning in a more pro-active manner. Hence by shifting from LTA based transmission system to installed capacity including over-load capacity based transmission planning, consumers may be saved from congestion.ö

Finally, CTU, NLDC and CEA at Para- 1.1,2.5,2.7,3.2.4 and 5.10.7 of the Staff Paper have recommended the need of a **robust (Bulk)** Inter State Transmission Network to take care of smooth flow of electricity across the ISTS in all directions of the Country:-

ANALYSIS BY GRIDCO :-

Let us first discuss provisions in the Electricity Act-2003 and Prescribed Policy Frameworks, relevant to Transmission of electricity:-

(1) ON REQUIREMENT OF ROBUST (BULK) TRANSMISSION SYSTEM

- (a). As per Section 25 (Inter-State, regional and inter-regional transmission), öFor the purposes of this part, the Central Government may, make region-wise demarcation of the country, and, from time to time, make such modifications therein as it may consider necessary for the **efficient, economical** and integrated transmission and supply of electricity, and in particular to facilitate voluntary inter-connections and co-ordination of facilities for the inter-state, regional and inter-regional generation and transmission of electricity.ö

- (b). As per Section-38 (2) (c), "To ensure development of an **efficient, coordinated and economical** system of inter-state transmission lines for **smooth flow of electricity from generating stations to the load centres.**"
- (c). As per Section-40 (a), "to build, maintain and operate an **efficient, coordinated and economical** inter-state transmission system or intra-State transmission system, as the case may be."

COMMENTS- From the above, it is clear that EA-2003 has mandated for an **efficient and economical** Transmission System, whereas in the concept paper, it has been mentioned to have a **robust (Bulk)** Transmission System, thereby giving free hand to Transmission Companies to go for over building the Transmission System without consideration of real aim of EA-2003 in terms of **efficiency and economy** of the Transmission System and for smooth flow of electricity from generating stations to the load centres.

(2) Which is the APEX Body to ensure development of an efficient, coordinated and economical ISTS?

COMMENTS-As per Section-38 (2) (c) of EA-2003, the functions of the Central Transmission Utility "To ensure development of an **efficient, coordinated and economical** system of inter-state transmission lines for **smooth flow of electricity from generating stations to the load centres.**"

(3) PRESENT EFFICIENCY OF ISTS-

- (a). NLDC during its presentation in CAC Sub-Committee Meeting has stated that the inter-regional transfer of power for the country as a whole is limited to the maximum extent of 36%;
- (b). The inability of CTU to determine the stranded assets of Transmission System, as mentioned in the Staff Paper.

COMMENTS- From the above, it is clear that the efficiency in terms of real time operation of the Inter-Regional Transmission Facility is limited to 36% and simultaneously, CTU is unable to quantify the stranded assets in the

ISTS. From the said facts, there is a question mark on the efficiency and economy of the ISTS, which needs compliance to justify the spirit of the EA-2003 in terms of efficiency and economy of the ISTS.

(4) Which is the APEX Body to discharge all functions of planning and co-ordination relating to Inter-State Transmission System ?

COMMENTS- As per Section 38 (2) (b) of Electricity Act-2003, the functions of the Central Transmission Utility shall be-

To discharge all functions of planning and co-ordination relating to inter-State transmission system with-

- (i) State Transmission Utilities;
- (ii) Central Government;
- (iii) State Governments;
- (iv) Generating Companies;
- (v) Regional Power Committees;
- (vi) Authority;
- (vii) Licensees;
- (viii) Any other person notified by the Central Government in this behalf

(5) WHAT ARE GUIDING PRINCIPLES FOR DETERMINATION OF TRANSMISSION TARIFF ?

As per Section-61(Tariff regulations) of Electricity Act-2003, the Appropriate Commission shall be guided by the following, namely:-

- (a). The generation, transmission, distribution and supply of electricity are conducted on **commercial** principles;
- (b). The factors which would encourage competition, **efficiency, economical use of the resources, good performance and optimum investments;**

(c). Safeguarding of **consumers' interest** and at the same time, **recovery of the cost of electricity in a reasonable manner.**

(6) What is the mandate of 'National Electricity Policy' & 'National Tariff Policy' on cost-effective Transmission?

As per Para-5.3.5 of National Electricity Policy, "To facilitate **cost effective** transmission of power across the region, a national transmission tariff framework needs to be implemented by CERC."

As per Para-7.1 (3) of National Tariff Policy, "The overall tariff framework should be such as not to inhibit planned development/augmentation of the transmission system, but should discourage **non-optimal transmission investment.**"

(7) Who pay the Transmission Cost ?

COMMENTS- The Designated Customers of ISTS pay the transmission cost, which is ultimately passed on to the consumers. Hence, by over-building the ISTS, yielding in a robust (bulk) Transmission System may result in burdening the consumers financially and may go against the spirit of EA-2003, NEP and NTP in terms of commercial principles, efficiency, economy, performance and optimum investments.

(8) (i) What should be the basis for Transmission Planning as per National Electricity Policy?

National Electricity Policy clearly stipulates, "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. 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 the stakeholders and taking up the execution after due regulatory approvals."

(ii)What is the process for development of Transmission System?

As per Para 3.5.1 of Staff Paper, when an application for use of inter-State transmission system is received, the sequence of activities which take place is given below:

- (i) Assessing adequacy of existing network for evacuation of power from Generator.
- (ii) Planning of additional network, if required, through a consultative process.
- (iii) Approval of the proposed transmission system from beneficiary for assuring payment of transmission charges. **If no beneficiary is identifiable, Regulatory approval is needed. While granting approval, the Commission needs to see cost-benefit and seek an assurance for servicing the cost of transmission.**
- (iv) Execution of transmission scheme **needs to be matching with generation project(s)** so as to avoid bottling up of generation and non-utilisation of transmission asset.
- (v) Allocation of transmission cost in a fair manner.

FOLLOW-UP ACTION TO THE ABOVE MANDATE OF NEP AND THE PROCESS FOR DEVELOPMENT OF TRANSMISSION SYSTEM FOR SMOOTH FLOW OF ELECTRICITY WITHOUT CONGESTION :

- (i) As per Para-3.3.2 (2) of the staff paper, Powergrid, the CTU, has indicated that they have approved **26 cases** of associated transmission systems for new generating stations adding to about **22,698 MW** for long-term usage under **CERC Open Access Regulations, 2004**. Another **27 applications** aggregating **11,187 MW** generating capacity are under finalization and **48 cases** amounting to **48,324 MW** are under processing for creating of associated transmission systems. It is indeed a heartening

development óa tangible outcome of various reform and market development initiatives óthat beckons us to quickly build the associated transmission system for delivery of power to the intended destinations. Whatever be the commercial arrangements for sale of power, it is necessary to embrace all new generating stations in the transmission planning process so as to ensure timely evacuation of power matching with the generation addition program, through smooth coordination and practical commercial arrangements.

- (ii) As per Para4.6.1of the Staff Paper, Commission granted two major regulatory approvals:
 - (a) In Petition No. 233/2009 in March, 2010: Nine High Capacity Power Transmission Corridors- (HCPTC);
 - (b) In Petition No. 154/2011 in August, 2011: Two High Capacity Power Transmission Corridors and two Connectivity related projects.

COMMENTS-

- (a) From the above, it is clear that there is already a provision for regulatory approval, when no beneficiary is available and Execution of transmission scheme needs to be matching with generation project(s);
- (b) Basing on the said provisions, CERC has accorded regulatory approval for 11 High Capacity Power Transmission Corridors;
- (c) As seen in Annexure-VII to the Staff Paper, the up-to-date status of above Transmission corridors has not been enumerated, while the anticipated commissioning schedule has been mentioned. From the above, it is clear that the said Transmission Corridors are still under some stages of execution;
- (d) From Annexure-VIII (Status of IPPs), it is seen that the commissioning of the IPPs have been re-scheduled, in very few cases, there is uncertainty in commissioning;
- (e) As the said Transmission Corridors are yet to be commissioned, we can

not term those as ~~Stranded Assets~~ of ISTS;

- (f) While, the % of granted LTA quantum to the installed capacity is 91.88 % for HCPTC-II, 100% for HCPTC-III, 72.90% for HCPTC-IV, 89.16% for HCPTC-V, 72.09% for HCPTC-VI, 79.37% for HCPTC-VII, 96.97% for HCPTC-VIII, 95.37% for HCPTC-X and 82.27% for HCPTC-XI, while that for HCPTC-I for IPPs in Odisha is 60.20%.
- (g) The lower % of LTA to Installed Capacity for IPPs in Odisha may be due to some IPPs as state-embedded Generators and the Generators can inject power to the Intra-State Transmission System of STU, besides they have to deliver the State share.
- (h) From the above, it is clear that for most of the Generators, the approved LTA is commensurate to the installed capacity. Even, the Transmission Corridors, designed for such approved LTA can take care of over-loading capacity of Generating Station, as the auxiliary consumption by the Generating Stations has not been taken into account for such % calculation;
- (i) One of the issues, that has been raised in the Staff Paper that few of these IPPs, which earlier indicated their target region as NR/WR are now seeking power transfer to SR. In this regard, it has been stated in the Annexure-VIII to Staff Paper that "Due to changed load generation scenario, IPPs in SR revised their beneficiaries to SR. The scheme now being implemented as system strengthening scheme between WR and NR";
- (j) Transmission Planning is on the basis of Peak scenarios, as envisaged in CEA Transmission Planning Criteria;
- (k) As per Para-4.6.5 of Staff Paper, "However, in view of the fact that not many IPPs are opting out, degree of utilisation of transmission corridors may improve with passage of time";
- (l) As per Para-5.2.7 of Staff Paper, "The problem on account of LTA being

less than installed capacity is not as acute because most of the generators are seeking LTA corresponding to 70-80% of their installed capacity.ö

(9) Who is responsible for development of ‘Dedicated Transmission Line’ for Connectivity to ISTS?

As per Staff Paper-

- (a) As per Para 3.7.2, öThe Connectivity Regulations provide for Connectivity and Long Term and Medium Term Access to ISTS. On the basis of this, CTU formulates the transmission system required to be developed either as evacuation plan or as system strengthening of Regional Grid.ö;
- (b) As per Para 3.7.3 öConnectivity Regulations incorporated some of the suggestions of staff paper of 2008 like grant of LTA to target region in the event of generator not being able to identify beneficiaries at initial stage.ö;
- (c) As per Para 3.7.5, öIn the Connectivity Regulations, Connectivity and grant of LTA were segregated (although applicant was at liberty to seek both simultaneously). Connectivity was provided as a separate product to enable generating stations to know in advance, the connection point up to which they need to build their dedicated line.ö
- (d) As per Para 3.7.7 öA provision was also made that dedicated line upto CTU point shall be made by generator. Thermal generators having capacity of 500 MW and above and Hydro generators of 250 MW and above, shall not be required to construct dedicated line:

Regulation 8(8):

An applicant may be required by the Central Transmission Utility to construct a dedicated line to the point of connection to enable connectivity to the grid:

Provided that a thermal generating station of 500 MW and above and a hydro generating station of 250 MW and above, other than a captive generating plant, shall not be required to construct dedicated line to the

point of connection and such stations shall be taken into account for coordinated transmission planning by the Central Transmission Utility and Central Electricity Authority.ö

What is provision in Electricity Act-2003 on ‘Dedicated Transmission Line’?

As per Section-10 (1) (Duties of Generating Companies) of Electricity Act-2003, öSubject to the provisions of this Act, the duties of a generating company shall be to establish, operate and maintain generating stations, **tie-lines**, sub-stations and **dedicated transmission lines** connected therewith in accordance with the provisions of this Act or the rules or regulations made thereunder.ö

COMMENTS-

- (1) While EA-2003 stipulates for construction of dedicated transmission line by the Generator, Regulation 8(8) is in conflict with the Act by specifying that a thermal generating station of 500 MW and above and a hydro generating station of 250 MW and above, other than a captive generating plant, shall not be required to construct dedicated line to the point of connection and such stations shall be taken into account for coordinated transmission planning by the Central Transmission Utility and Central Electricity Authority;
- (2) If the cost of construction of ‘Dedicated Transmission Line’ for the cases, as cited above would have been the responsibility of the Generators as per Electricity Act-2003, the Generators would have thought twice before applying for connectivity and LTA and few cases of exit and delay would have been reduced further;
- (3) One of the major factors to offer lower LTA by Generators and Drawing Entities is that the Transmission Charge is calculated, basing on the offered LTA by Generators and Drawing Entities instead of calculating the same as per actual usage by them, which violates the real intent of EA-

2003 and National Tariff Policy for sharing of Transmission cost in proportion to respective utilisation of the transmission system.

(10) Should a benchmark be guaranteed by CTU for maximum allowable congestion during real time operation ?

As per Para 4.6.9 of the Staff Paper, "A balanced view needs to be taken in regard to liability of generators, avoidance of building underutilized assets and protecting consumer interest for the period during which asset is underutilized. For this there is need to formulate commitment mechanism for both generator and drawee entity."

COMMENTS-

A commercial activity between two parties can be said to be balanced, if there are commitments from both the sides, entering into mutually agreed terms and conditions. While, there would be commitment from the Generators and Drawing Entities in terms of injection/drawl of electricity, there should be simultaneous commitment from the Planning Agencies like CTU/CEA and System Operator for required efficiency, economy, reliability of the ISTS along with maximum allowable congestion. While, the Generators and Drawing Entities are paying the Transmission cost on behalf of consumers, they must expect equivalent return from CTU/CEA and System Operator in the interest of consumers, as repeatedly mandated by EA-2003.

(11) Are CTU and CEA taking remedial measures to relieve congestion in ISTS?

COMMENTS-

Para-4.8.3 of the Staff Paper is very clear on this, which has undelined, "CTU was instructed to take action to mitigate congestion. It is understood that CTU and CEA are taking into consideration this operational feedback in the planning of Inter-State Transmission System. **However specific actions taken in this regard are not clear**

as the Draft National Electricity Plan (Draft) prepared by CEA in February, 2012 does not specifically identify schemes for mitigating congestion. Over emphasis on generation evacuation plan may be one of the reasons for congestion. In some cases the congestion may be due to slippage of major generation projects and in such cases congestion may diminish not before long.ö

(12) Is congestion in Power Exchanges an alarming issue?

As per Para-4.8.4 of the Staff Paper, the volume of electricity that could not be cleared as % to Unconstrained Cleared Volume is to the extent of 15.70 %.

COMMENTS-

This is not an alarming issue, as it is very minimal with respect to huge quantum of power flow across the ISTS, which could have been avoided by taking suitable remedial measures to avoid congestion. In this regard, a notable fact is that the Inter-Regional Transfer of electricity has been maximised to the extent of only **36%**, as stated by NLDC in its presentation to CAC Sub-Committee on congestion.

(13) What is the feasible solution to convince local population in regard to ‘Right of Way’ problem in construction of Inter-Regional Transmission System?

As per Para-4.9 of the Staff Paper, öConservation of Right of Way being an important objective, comprehensive transmission system can be evolved keeping in view the future need of network instead of piecemeal transmission projects for generator. Consumer engagement is necessary from initial stage, to avoid hindrance and litigations at later stage. The support of state government is necessary in explaining the importance of transmission lines to local population to avail power supply from cheapest source to mitigate power shortage.ö

COMMENTS-

The State Government can effectively explain the local people on the issue of right of way problem, if a certain capacity of Transmission Corridor is reserved for the host State, where the IPP(s)/ISGS is/are located from which the power is evacuated through ISTS corridor(s) to other State(s). Such reserved capacity in ISTS Corridor(s) will facilitate generation hub States like Odisha to trade surplus power for which retail supply tariff will be reduced and the local population can be convinced on the long term financial benefit to them in lieu of sacrificing their land and settlement.

Let us discuss on the Transmission related issues and solutions suggested by CTU/CEA and POSOCO as per Para-5 of the Staff Paper:-

(1) ISSUE NO.1-LTA less than Connectivity-

CTU, CEA and POSOCO have stated that the Generators are seeking for less LTA in comparison to connectivity quantum and the Drawing Entities are asking for less LTA, but drawing much more.

COMMENTS-

(a) The reason is very simple because everybody has a tendency to reduce the cost towards availing a facility/goods. They availed the opportunity, when the Regulation was framed for sharing of Transmission charges, basing on LTA quantum instead of on the basis of actual usage, as envisaged in EA-2003 and as mandated in NEP and NTP. The above provision of calculating the Transmission cost as per LTA was incorporated for sake of inconvenience of few Generators, as stated in the Staff Paper. The Generators and some of the Drawing Entities availed this opportunity of lowering their Transmission Charges, whereas the States of Eastern Region suffered the most by paying higher Transmission Charges. The above fact has been clearly brought out in the Staff Paper.

(b) However, the above problem is not so acute as per up-to-date status, given

in the Staff Paper at Para-5.2.1. While, the No. of LTA Applicants is 15, 34, 39, 21 for the year, 2009, 2010, 2011, 2012 respectively, the No. of LTA Applicants is only 5 (Five) during 2013. Further, the applied LTA quantum is 94.4% of the Installed Capacity for the year, 2013. **The above fact has been highlighted at Para-5.2.7 of the Staff Paper as “Problem on account of LTA being less than installed capacity is not as acute because most of the generators are seeking LTA corresponding to 70-80% of their installed capacity.”**

(2) ISSUE NO.2-LTA without Beneficiary-

On change of beneficiary and change in region as per Para-5.3.1 of the Staff Paper, CTU response is that Transmission System cannot be built on 360° basis. This situation may possibly result in some under utilization for some period till new generation / demand does not come up.

COMMENTS-

The above problem is also inevitable in case of GNA mechanism, as suggested by CTU/CEA and Flexible Access, as proposed in the Staff Paper.

(3) ISSUE NO.2-Projection of Drawl Requirement from ISTS-

As per Para-5.4.1 of the Staff Paper, “At present States are not giving their drawl requirement from ISTS and drawing power from ISTS more than their entitlement. From the data of Drawal of electricity by State utilities from ISTS as compared to LTA, it is clear that majority of states are drawing power more than their LTA. xxxxxxxx”

COMMENTS-

(1) Some of the States availed the opportunity, when the Regulation was framed for sharing of Transmission charges, basing on LTA quantum instead of on the basis of actual usage, as envisaged in EA-2003 and as mandated in NEP and NTP.

(2) Lot of information is available with CEA, CTU & POSOCO on

requirement of power/energy by Drawing Entities. While the actual load drawal data is available with System Operator (NLDC), the EPS data, prepared by CEA is available. With such available data, load projections can be carried out.

- (3) In CAC Sub-Committee meeting, held on D.22.08.2014, Director (Projects), POWERGRID stated that "Planning is done for import of power by States considering States' load, State own Generation, State Transmission losses + **30% for taking care of variation in estimate.** Aggregate of such import requirement of states in a region gives inter-regional power transfer requirement."

SOLUTION PROPOSED BY CTU/CEA/POSOCO -

CTU, CEA & POSOCO have suggested for GNA Mechanism for ISTS Planning as per which The Generators and the States/Consumers could be given General Network Access (GNA) to ISTS for the agreed quantum of power (MW) with commitment to pay for the transmission charges. While granting GNA the generation and load scenarios and other assumptions would be declared by the CTU. For grant of GNA, Generator will not have to specify drawal points and Drawee entity will not have to specify injection points.

COMMENTS-

Followings are the demerits of GNA Mechanism as per views of the Staff of the Commission at Para-5.9 & 5.10 of the Staff Paper:-

5.9.1 GNA concept put forward by CEA has distinct merits so far as the transmission planning and congestion mitigation is concerned. However few suggestions do not seem to be in line with **non-discriminatory open access principle prescribed in Electricity Act, 2003 and transmission cost allocation principles given in National Electricity Policy and Tariff Policy.** Also there are few issues which are not addressed by GNA. A modified approach is therefore proposed in the staff paper.

5.9.2 The State Utilities are not in agreement with the same. Such a proposition

may lead to either of the following:

- a. **The asset remains underutilized with respect to intended use**
- b. **liability to pay falls on other users in case generator is not able to find beneficiary**

5.9.3 It is not clear as to what will be done in case injection (Generation) GNA is more than Demand GNA Whether the transmission system will be developed as per injection GNA or it will be downsized to match with demand GNA. If it is developed for injection GNA and the demand is not commensurate to the same, the Generator should pay for both the side. In accordance with Electricity Act, 2003 open access requested by Generator needs to be granted and no restriction needs to be imposed because it has no identified beneficiary.

5.9.4 It has been proposed that the Generators shall not have to declare target beneficiaries

5.9.5 The proposition is not clear in so far as implementation is concerned. **CEA and CTU were earlier stressing that it is not possible to plan for 360 degree dispersal of power. How the planning will be done under proposed system?** Whether CEA and CTU are ready to do perspective planning taking anticipated requirement of power? They along with POSOCO had underlined many times that projections or assumptions which were made at the planning stage did not materialise in the operational time frame. Power transfer between ER-NR and SR-WR anticipated at the planning stage did not come true subsequently. While power transfer between ER and NR did not materialise, power flow between SR and WR happened in the reverse direction. Participation of drawee entities in transmission planning is critical and proper transmission planning cannot be ensured just by commercial mechanism. The State Utilities are also not willing to commit GNA 4 to 5 years in advance and the status cannot be forced for this. **This may result in**

affirmation by Drawee entities that they would only pay for the transmission system when flows on transmission system are same as considered under planning stage. The past experience and development in power sector clearly indicates that it is not feasible to achieve this.

- 5.9.9 It has been proposed that the Generators shall have access to ISTS grid with flexibility for point of drawal subject to conditions laid down at the time of grant of GNA.
- 5.9.10 This issue is already posing critical problem and the generators, after getting the transmission system developed for power transfer to WR and NR, are seeking access to SR which may lead to stranded assets.
- 5.9.11 In real option economic theory each flexibility has a price and whether generators are ready to pay that price for the flexibility or the cost of flexibility falls on other consumers. This issue needs to be addressed.
- 5.9.12 Problem cannot be addressed till the transmission system is being planned on requisition of the generator and attributed to particular generator this can be achieved. Through perspective planning where advance transmission planning is done on resource and demand projection basis.
- 5.9.13 It has been proposed that the drawing Utilities shall also have access to ISTS to the extent of their GNA and get the transmission system created for power transfer over ISTS from anywhere in the grid.
- 5.9.14 **The concept of limiting the access to the ISTS based on GNA does not appear to be in order from the consideration of optimum utilization of ISTS.** The projected GNA may differ from actual drawal requirement due to better economic growth or even in case of outage of state's own generating unit(s) , drawing entity may want to draw more than its GNA. The same needs to be permitted if margin is available in the tie-lines between the ISTS and the drawee entity.

5.9.15 **Major difference:**

5.9.15.1 It is not clear under GNA concept whether billing of PoC Charge shall be done on fixed quantum of GNA or it will be based on actual usage. With the adoption of GNA concept, the transmission rates (POC Charges) **may have to be calculated considering capacity under GNA including existing LTA.** However user pattern in actual system operation may be different from GNA.

5.9.15.2 The pricing mechanism for payment of transmission charges is proposed to be based on GNA . The transmission pricing based on contract or allocation is an old concept which is to be replaced with actual usage in accordance with the guidelines specified in the National Electricity Policy and Tariff Policy. Relevant extracts from the Tariff Policy are reproduced hereunder:

7.1.3 Transmission charges, under this framework, can be determined on MW per circuit kilometre basis, zonal postage stamp basis, or some other pragmatic variant, the ultimate objective being to get the transmission system users to share the total transmission cost in **proportion to their respective utilization of the transmission system.**

The overall tariff framework should be such as not to inhibit planned development/augmentation of the transmission system, but should discourage non-optimal transmission investment

5.9.15.3 The principle of allocation of transmission charge based on usage was adopted in CERC Regulation for Sharing of transmission charges and losses, 2010. **The usage based concept is adopted in other advanced countries as well. During last few years, it was found that contract based transmission pricing in the country results in under-declaration of transmission requirement which in turn results in a situation that transmission system which is developed is less than**

actual requirement and generators have to face congestion in real-time operation. From the data given by CEA and POSOCO, it is observed that the usage of the transmission system by the drawee entities is 50-100% more than their LTA. This is a crucial learning from the past experience which needs to be considered in formulating transmission pricing.

5.10 **ISSUES WHICH REMAIN UNADDRESSED IN GNA**

5.10.1 **Relinquishment charges:** CTU has over the last one year been expressing concern about stranded assets as many generators for whom the transmission system has already been developed or it is under execution, are either downsizing, rescheduling or simply quitting and seeking relinquishment of their LTA. . Although existing Regulations provide for payment of 12 years transmission charges for stranded capacity, **CTU is taking a stand that it is difficult for them to determine stranded capacity in a meshed network, it is not clear how the concept of GNA would take care of this.**

5.10.2 **Planning input from Drawee entities:** The mismatch in transmission planning is due to the fact that generators want transmission system to be developed without identifying customers and customers which will ultimately draw power from ISTS are not coming with their future requirement. GNA is trying to force a commitment from drawee entity based on a fixed figure to be given four years in advance. **With unbundling and open access it may practically be very difficult for state agencies to firm up their transmission requirement.** This issue remains unanswered in GNA and it is presumed that as liability is pre-decided and power drawal more than GNA would not be allowed; it expects that correct input would come from state utilities. This may not come true and it may only increase the tendency to under-declare transmission requirement. Infrastructure planning in this manner may not

prove to be successful. The integrated resource planning with collaborative efforts in forecasting demand and supply scenario in which cost of power is going to play a major role in deciding to opt for importing power from outside against costly generation inside the generation will ultimately decide real time system operation. The system should therefore be flexible to accommodate all type of access. Experience shows drawee entities are ready to bear for slightly higher transmission charges to avail the benefit of flexibility.

5.10.3 **Connectivity as a separate product:** The GNA does not propose connectivity as a separate product. The existing provision of Connectivity is an important product for generator for its financial closure and for this either investment is to be made by generator or if CTU is to invest, there are certain lock-ins like availability of land or issue of EPC contract (which is 10% of project value) which provide sufficient safety. The connectivity provides an entry point to the generator as well as and grid are benefited through improved reliability.

5.10.4 Also Regulation prohibits any injection in absence of any type of access even if connectivity is granted. So generator is taking the risk of bottling up his power if he did not seek full LTA. The process of payment based on LTA further discourages him declaring his actual requirement because till he find the customer payment of transmission charge is his responsibility. Such type of generator can inject only under STOA and STOA is given based on available margins. This type of product is available in US power market also. However as discussed in the Central advisory committee meeting, this connectivity may be given **with a charge like upfront payment of capital cost of connectivity line or an exclusive liability to pay for the tariff of connectivity line.**

5.10.5 The GNA based planning is capital intensive where for each generator request equivalent transmission investment need to be made, optimum

planning take advantage of seasonal and diurnal diversity of demand and some margins available in transmission system are utilised for short term transactions. **It should be kept in mind that with CTU in its dual role of planner and executer of transmission projects should not overbuild the system , so there is need of check and balance in transmission planning process where all stakeholders participates and it is done, not only on a fix figure of GNA but it is to be done on options and scenario based analysis where all alternative including non-transmission based solutions like Demand side management , Special Protection Schemes etc also need to be taken into consideration.**

5.10.6 It is important to note that the both existing system and GNA system are not very conducive for development of transmission system for Renewable Generation which is a public policy investment.

Due to their location away from load centre , low utilization factor and lack of identified beneficiary in the regime of different RPO and REC mechanism, if either of the system is applied as it is then it will hamper growth of Renewables.

PROPOSED SOLUTION BY STAFF OF THE COMMISSION-

The proposed solution framework by the Staff of the Commission is more or less same as GNA Mechanism except on Sharing of Transmission Charges. While the sharing of Transmission Charges under GNA Mechanism appears to be based on contracted GNA quantum of power, the Flexible Access Mechanism, as suggested by the Staff of the Commission is in favour of usage-based sharing of Transmission Charges in spirit of EA-2003 and as mandated by NEP & NTP. Further, three options i.e. a) Connectivity plus Full Network Access b) Connectivity Access c) Connectivity plus Injection Access have been mooted by the Staff of the Commission.

OVERALL COMPREHENSIVE VIEWS OF GRIDCO-

(A) TRANSMISSION PLANNING-

- (1) CTU shall ensure development of an efficient and economical Inter-State Transmission System as per Section-38 (2) (c) and 40 (a) of Electricity Act-2003 for smooth flow of electricity from Generating Stations to the load centres in contrast to a robust (bulk) one, as mooted through GNA/Flexible Access Mechanism in the Staff Paper, which will burden the end-consumers financially;
- (2) NEP has mandated cost-effective transmission of power and NTP for discouraging non-optimal transmission investment;
- (3) The present ISTS can not be claimed as an efficient, economical system nor as cost-effective, as the inter-regional power transfer is limited to 36% and the stranded assets in ISTS have not yet been determined;
- (4) It is not desirable to go for a bulk power system, unless the following enactments as per Section-61 (Tariff Regulations) of EA-2003 are foreseen in the context of Tariff shock on the consumers towards development of a Bulk Power System :-
 - (a) Commercial Principles
 - (b) Efficiency
 - (c) Economical use of the resources
 - (d) Good Performance
 - (e) Optimum Investments
 - (f) Consumers Interest

(g) Recovery of the cost of electricity in a reasonable manner

Without a convincing reasoning on such an abnormally low % of Inter-Regional Transfer of Power to the extent of 36% only and without any record of stranded assets with the System Planner and System Operator, it is not prudent to go for a robust(bulk) Transmission System, which may also suffer the same fate as the present one;

(5) As per National Electricity Policy, 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. 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 the stakeholders and taking up the execution after due regulatory approvals.

From the above, it is very much clear that even if the beneficiary (ies) are not available, CTU can go for Network Expansion, basing on the transmission needs to handle the energy due to any reason including open access after due regulatory approval;

(7) Basing on the Regulatory Approval, CTU had undertaken the execution of 11 High Capacity Transmission Corridors, the status of the same has not been reflected in the Staff Paper;

(8) From Annex-VIII of the Status Paper, it is seen that for many of the IPPs, the approved LTA is commensurate to the Installed Capacity;

(9) In an isolated case of change in target region from NR/WR to SR by few IPPs, as repeatedly pointed out in the Staff Paper and Congestion Sub-Committee Meeting, it has been clearly mentioned at Annex-VIII to

Staff Paper that "Due to changed load generation scenario, IPPs in SR revised their beneficiaries to SR. The Scheme now being implemented as System Strengthening Scheme between WR and NR."

- (10) Transmission Planning is carried out on the basis of Peak Scenarios as per CEA Planning Criteria;
- (11) On the issue of less LTA quantum of power to that of installed capacity of Generators, affecting Transmission Planning, the staff Paper at Para-5.2.7 has clarified, "The problem on account of LTA being less than installed capacity is not as acute because most of the Generators are seeking LTA, corresponding to 70-80% of their installed capacity."
- (12) One of the major factors to offer lower LTA by Generators and Drawing Entities is that the Transmission Charge is calculated, basing on the offered LTA by Generators and Drawing Entities in stead of calculating the same as per actual usage by them, which violates the real intent of EA-2003 and National Tariff Policy for sharing of Transmission cost in proportion to respective utilisation of the transmission system.
- (13) On connectivity issue, while EA-2003 stipulates for construction of dedicated transmission line by the Generator, Regulation 8(8) is in conflict with the Act by specifying that a thermal generating station of 500 MW and above and a hydro generating station of 250 MW and above, other than a captive generating plant, shall not be required to construct dedicated line to the point of connection and such stations shall be taken into account for coordinated transmission planning by the Central Transmission Utility and Central Electricity Authority;
- (14) If the cost of construction of "Dedicated Transmission Line" for the cases, as cited above would have been the responsibility of the Generators as per Electricity Act-2003, the Generators would have

thought twice before applying for connectivity and LTA and few cases of exit and delay would have been reduced further;

- (15) A commercial balancing mechanism should be prescribed between CTU and generators, Drawing Entities, in stead of one-sided mechanism, as mentioned at para-4.6.9 of the Staff Paper. While, there would be commitment from the Generators and Drawing Entities in terms of injection/drawl of electricity, there should be simultaneous commitment from the Planning Agencies like CTU/CEA and System Operator for required efficiency, economy, reliability of the ISTS along with maximum permissible congestion. While, the Generators and Drawing Entities are paying the Transmission cost on behalf of consumers, they must expect equivalent return from CTU/CEA and System Operator in the interest of consumers, as repeatedly mandated by EA-2003.
- (16) As mentioned at Para-4.8.3 of the Staff Paper, CEA has not identified specific Schemes for mitigating congestion;
- (17) The congestion in Power Exchanges to the tune of 15% as per Para-4.8.4 of the Staff Paper is not an alarming issue, which can be eliminated by taking suitable remedial measures to relieve congestion in ISTS, which has only 36% efficiency in terms of Inter-regional transfer of electricity and by identifying the stranded capacity/ assets in the ISTS;
- (18) Regarding the issue of LTA without beneficiary and change in the region, the same problem will be encountered in case of GNA and Flexible Access Mechanism, as CTU and CEA have expressed their inability to build a Transmission System on 360 degree basis;
- (19) Regarding the issue of projection of Drawl requirement, as highlighted at Para-5.4.1 of the Staff Paper, followings are our comments-

- (a). Some of the States availed the opportunity, when the Regulation was framed for sharing of Transmission charges, basing on LTA quantum in stead of on the basis of actual usage, as envisaged in EA-2003 and as mandated in NEP and NTP.
 - (b). Lot of information are available with CEA, CTU & POSOCO on requirement of power/energy by Drawing Entities. While the actual load drawal data is available with System Operator (NLDC), the EPS data, prepared by CEA is available. With such available data, load projections can be carried out.
 - (c). As per CEA Planning Criteria, the Transmission Planning is carried out on Peak requirements
 - (d). In CAC Sub-Committee meeting, held on D.22.08.2014, Director (Projects), POWERGRID stated that "Planning is done for import of power by States considering States' load, State own Generation, State Transmission losses + **30% for taking care of variation in estimate.** Aggregate of such import requirement of states in a region gives inter-regional power transfer requirement."
- (20) GNA Mechanism, as proposed by CEA/CTU suffers from following deficits/deviations :-
- (a). Issue to handle Non-discriminatory Open Access;
 - (b). Sharing of Transmission Charges on the basis of contracted power instead of actual usage, as envisaged in EA-2003, NEP and NTP;
 - (c). Issue of under-utilisation of Assets with respect to intended use;
 - (d). Payment liability, falling on other users, in case Generator is not able to find beneficiary;
 - (e). Not possible to plan for 360 degree dispersal of power;

- (f). Limiting the access up to GNA quantum will distort the mandate of optimum utilisation of ISTS;
 - (g). It is a well-known fact that contract-based Transmission Pricing, still under vogue (applicable to GNA Mechanism also) has resulted in under-declaration of LTA, which will have same impact on Transmission Planning, as presently encountered;
 - (h). The issue of Relinquishment Charges has not been addressed under GNA Mechanism;
 - (i). As per Para-5.10.5 of the Staff Paper, CTU in its dual role of planner and executor of Transmission Projects should not overbuild the system, so there is need of check and balance in transmission planning process, where all stakeholders participate and it is done not only on a fix figure of GNA, but it is to be done on options and scenario based analysis, where all alternatives including non-transmission based solutions like Demand Side Management, Special protection Schemes etc also need to be taken into consideration;
- (21) The Flexible Access Mechanism, as proposed by the staff of the Commission is more or less same as GNA Mechanism except on Sharing of Transmission Charges on the basis of actual usage in compliance to EA-2003, NEP and NTP and ensuring some financial security in shape of Bank Guarantees, in case of default by DICs.
- (22) The Transmission System, where, there is congestion in the ISTS due to inadequate generation, Generating Stations need to be encouraged in those places as a pro-active approach, even by incentivising those Generators.
- (23) Although, CERC as per its Order No.5/6/2014-Reg.Aff./CAC (19)/CERC dated 11th July, 2014 constituted a CAC Sub-Committee on

Power Congestion to examine issues, connected with Transmission Congestion and facilitate Central Advisory Committee with recommendations on measures to ease transmission congestion, but the above fact has not been brought out in the said Staff Paper nor the issues and resolutions, deliberated/passed in the CAC Sub-Committee. However, the same are brought out here for more clarity on the congestion issues and remedial measures, suggested by the members of the CAC Sub-Committee:-

Congestion Sub-Committee in its meeting, held on D.22.08.2014 has asked following specific action from CTU and NLDC-

- (a) POWERGRID and POSOCO may determine the following :
 - (i) How much Transmission Capacity has been created and how much of it has become partly or completely redundant/idle contributing to the gap. Reasons for same may be categorised under major heads like non-availability of state network, non-availability of expected generation, dynamic generation etc.
 - (ii) Short Term Solutions, covering strategic shift in operation of generating units like backing down or two shifting of units, installation of hardware/software be suggested so that larger flows become permissible.
 - (iii) Measures/safeguards be suggested under following heads-
 - 1. Short Term : less than 3 months
 - 2. Medium Term : 3-6 months
 - 3. Long Term : more than 6 months
 - (iv) A mechanism like an audit to check working of the requisite systems as per requirements may be institutionalised.
 - (v) APP to get data from Generators regarding issues in despatch of power plants.

- (b) It has been stated in the meeting that Shri Mata Prasad has, in his letter, indicated one of the major causes of the gap between Transmission Capacity (TC) and Available Transfer Capability (ATC) to be **lack of adequate reactive power compensation**.
- (c) It was suggested that ATC may be declared more frequently and ATC declaration philosophy may have to be revisited so that more power could be transferred. We may install few controllable devices like **FACTS Controller** so that power flow be controlled.
- (d) There were queries in regard to any international benchmarks for calculation of ATC, whether consumers should pay for ATC or TC, **optimum use of Transmission System, transparency in calculation of ATC and revision of ATC as per dynamic conditions**.
- (e) CERC mentioned its concern on the matter that Situational awareness about congestion becomes available to stakeholder very late. While system is being planned five years in advance and till one year before it is stated that new transmission line will result in increase of integrated power transfer, but just before commissioning of transmission assets, it is declared that Transfer Capability would not increase as expected. In such a situation, generation and drawee customers have no time to react to the situation. CEA, CTU & POSOCO have access to better data & simulation facilities. They should therefore make stakeholders aware about emerging situation well in advance so that contracts of power transfer do not get affected at the last moment.
- (f) CEA, CTU & POSOCO in consultation with stakeholders should come out with a consistent approach to consider **SPS in ATC/TTC computation** XXXX

- (g) Sri Shai mentioned that gestation period of transmission being shorter than generation, transmission planning needs to be sensitive to **dynamic conditions** unfolding in regard to generation. Gap between TC & ATC attributable to States may be found and the same needs to be communicated to them. It needs to be found out that how much of the gap has occurred due to dynamic situation. States need to be called for discussion and mechanism should be institutionalised, may be by involving consultants to provide first hand information about realistic data and gaps in execution so that one could navigate and replan.
- (h) Prof. Soman of IIT, Mumbai gave a presentation on methodology of managing congestion. He gave an example where **TTC was raised from 1800MW to 3000MW by use of phase shift transformers and congestion in Mumbai System was mitigated.**
- (i) POWERGRID representative mentioned that the problem of congestion has been witnessed during last 3-4 years and having known them, **11 High Capacity Power Transmission Corridors are being developed based on target region only** to cater to requirements of market. Green Energy Corridors are also being developed for evacuation of power from Renewable Energy Sources. However, in order **to improve TTC/ATC declaration, more real time studies are required and the tools for the same are presently not available.**
- (j) CEO, POSOCO stated that (1) ð>Loading of Transmission Lines decreases with increase in quantum of power to be transferred. Even in **advanced countries, the loading is of the order of 21%.**(2) ATC issue is entirely due to market. Every Generator wants to sell power where he can get higher rate and customer wants to buy power from cheaper sources. Thus cost of generation impacts transmission

planning. (3) The transmission system should be planned on the basis of ATC. (4) In the last 4 years, many generators have come up with only connectivity and no planned evacuation system and they are **desirous of evacuation in 360 degrees.**

- (k) Director (Projects), POWERGRID stated that (1) Transmission Planning is not able to capture location of generation properly. The inter-regional transmission capacity therefore becomes **grossly underutilised.** (2) **Planning is done for import of power by states considering States' load, State own Generation, State transmission losses +30% for taking care of variation in estimate.** Aggregate of such import requirement of states in a region gives inter-regional power transfer requirement. However, in actual conditions, flow varies. For example, Raichur-Solapur was built for exporting power from SR to WR, but there has been a complete reversal in load-generation scenario of SR & WR.
- (l) Whether, advance measurement techniques like Phasor Measuring Units (PMUs) have become available to the NLDC and RLDCs for real-time field measurements and whether the inference from these measurements are being used for assessment of Total Transfer Capability by NLDC/RLDCs [**Ref- Para-4 of Clause No.3(3) of 'Measures to relieve congestion in real time operation) Regulations, 2009'**]

COMMENTS-Without ascertaining the present related issues regarding congestion in ISTS and without conclusive views of CAC Sub-Committee, the suggestions, put forth in the Staff Paper may not be sufficient enough to address the concerned issues fully and correctly. Without knowing the reason of an abnormally low overall IR Power Transfer Capability of the ISTS to the extent of maximum 36% (It has been resolved in the CAC Sub-Committee Meeting, held on D.12.05.2014,öThe contention of POSOCO that

inter-regional transfer capacity can not be allowed more than 36% of the total of such capacity, needs to be debated further. If need be, external experts may be hired to examine the issue) and as per above Staff Paper, when CTU has expressed its inability to quantify the stranded assets in the ISTS, it is not understood, how the Stakeholders and the Academic Institutions can offer their views, when the above core issues are yet to be settled.

STAKEHOLDERS COMMENTS ON QUESTIONARIES, AS ASKED IN THE STAFF PAPER-

Question No. 1:

Whether Connectivity should be retained as a separate product :

(A) Yes, but with the condition of up-front payment of the cost of the Dedicated Transmission Line by the Generator, if the said dedicated line is built by the CTU and in shape of BG, if the dedicated line is to be built by the Generator itself.

Question No. 2(a)

If Yes, what are in your opinion are the advantages of Connectivity as a separate product?

(A) (i) It is the responsibility of the Generator to build the Dedicated Transmission line by itself or through CTU irrespective of Generation Capacity, which complies the Section-10 (1) of the Electricity Act-2003;

(ii) Connectivity enables Generating Stations to know in advance, the connection point up to which they need to build their dedicated line;

(iii) If the cost of dedicated Transmission Lines are to be included in the total cost of ISTS, such cost is also proportionately shared by other DIC(s), who is/are not availing power from the said Generator(s), whereas if the cost of Dedicated transmission Line is borne by the Generator as per Section- of EA-2003, the cost of such line will be reflected in the generation Cost, which will be reimbursed in the form of Generation Tariff from such Entities, availing power from such Generator.

(iv) It will also comply National Electricity Policy, which stipulates 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. 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 the stakeholders and taking up the execution after due regulatory approvals.

Question No. 2(b)-

If connectivity is retained as a separate product, then what whether it should be free or transmission charges should be borne by generator or drawee entity which is applying for connectivity?

(A)- Connectivity should not be on free of cost. In case, CTU will build up the dedicated Transmission Line, the Generator should make up-front payment towards the cost of such dedicated line and if the Generator will build the same by itself, the Generator should furnish the Bank guarantee, equivalent to the cost of the dedicated line, as a security mechanism.

Question No. 2(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?

(A) Connectivity charge should be mandatory. However, up-front payment of the GRID Transmission charges towards expansion/up-gradation of the ISTS should be mutually agreed by the CTU and generator(s), as National Electricity Policy stipulates that "CTU/STU should undertake network expansion after identifying the requirements in consultation with the stakeholders and taking up the execution after due regulatory approvals."

Question No. 3

If no, what is in your opinion are the disadvantages of Connectivity as a separate product ?

(A) Not Applicable

Question No. 4

What should be amount of sufficient construction bank guarantee to safeguard 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.? -NO

- b. Is proposed bank guarantees equivalent to cost of transmission line is sufficient? \neq YES \emptyset
- c. Is proposed bank guarantees are very high? \neq NO \emptyset

Question No. 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)

1. NPV equivalent to 12 year transmission charges
2. NPV equivalent to 7 year transmission charges
3. X Rs per MW of installed capacity δ One time charge
4. Five years Average Injection and withdrawal charges
5. Five years Average injection charges only

(A) Option-2 appears to be reasonable, taking into account the construction period of generating Station, commissioning thereof and not to burden the consumers with higher tariff as well as the period will be sufficient enough to find out an alternative Generator, even by incentivizing such Generator(s), depending on the condition(s) for which the previous Generator had backed out.

Question No. 6: Delay in Commissioning

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

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

Question No. 7: Shallow Connection Vs Deep Connection:

1. What is your view on shallow connection vs deep connection

(A) Full shallow connection and partial deep connection are applicable in Indian Condition in terms of Transmission charges.

2. Shallow connection should be permitted to only Renewable generation or to both Renewable and conventional generators.

(A) Shallow Connection should be free of cost for renewable generator up to an installed capacity of 5MW. For other Generators including renewable, it should be on chargeable basis.

3. Under shallow connection system how transmission planning will be done and who shall bear the Grid level transmission charges

(A) On Transmission Planning, the mandate by NEP is clear, which stipulates "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. 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 the stakeholders and taking up the execution after due regulatory approvals."

The Generator will bear the transmission charge till it gets beneficiary(ies). After the beneficiary will be identified, it is the responsibility of the Beneficiary to pay the transmission charges.

Question No. 8:

Whether you are an injecting entity or Drawee entity or both?

(A) Both. GRIDCO is a State-Designated Entity to procure power from State Generators and from Central Allocation and supply the same to State DISCOMs. As an intra-state Trader, it is also trading its surplus power.

Question No. 9: GNA

- 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?

(A) In this connection, deficits/deviations for proposed GNA Mechanism have been clearly mentioned at para-19 of our views in this write-up.

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?**

(A) Let the present status/condition of ISTS be furnished by CTU and POSOCO, as asked in the CAC Sub-Committee Meeting, held on D.22.08.2014 and after identifying the root cause of low efficiency in terms of congestion and stranded assets, the solution for a future efficient and economic system can be conceived.

b. Whether there is need for a separate Regulation for transmission planning to make it more participative?

(A) Let the benchmark for performance parameters for ISTS be fixed and the same should be carried out on mock exercise basis.

c. Whether transmission planning should mandatorily make margins available for short term power market?

(A) Let the present status/condition of ISTS be furnished by CTU and POSOCO, as asked in the CAC Sub-Committee Meeting, held on D.22.08.2014 and to ascertain whether margins can be made available by taking suitable remedial measures to relieve congestion and also taking into account the 11 nos. of High Capacity Transmission Corridors, under execution by CTU.

d. Whether transmission system planned by CEA /CTU need to be adequately explained from cost benefit point of view?

(A) It is highly necessary to explain the consumers on compliance of EA-2003 in terms of efficiency and economy of the ISTS and to safeguard the interest of consumers and to recover the cost in a reasonable manner.

e. Is there requirement of making submission of information related to transmission planning legally binding?

(A) Let the present status of ISTS be assessed by CAC Sub-Committee on -Congestion and the stranded assets be determined, so as to take remedial measures to improve the efficiency of the ISTS. In the said process, it can be made clear on requirement of

further informations and whether the submission of the same can be made legally binding.

Question No. 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?

(A) If CTU will be agreed to take remedial measures to relieve congestion at their own cost, as to be suggested by the CAC Sub-Committee, then only the congestion charges should be used to reduce the long term ISTS transmission charges. Otherwise, the same can be used for relieving congestion by employing external consultants for higher modern technology-based solution with strict supervision of a CERC appointed high power committee.

Question No.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.

(A) (i) Let the report of Congestion Sub-Committee come out and made publicly available and ascertained whether the Transmission margin can be improved by taking remedial measures to relieve congestion, keeping

in view the maximum Inter-regional power transfer capability of the present system as only 36% and taking into account the 11Nos. of High Capacity Power Transmission Corridors, which are still under execution by CTU. There is no clear picture in the Staff Paper on the improvement of Inter-regional power transfer capability of the ISTS, once the above high capacity transmission corridors will come into full operation and use.

- (ii) The State Government can effectively explain the local people on the issue of right of way problem, if a certain capacity of Transmission Corridor is reserved for the host State, where the IPP(s)/ISGS is/are located from which the power is evacuated through ISTS corridor (s) to other State(s).Such reserved capacity in ISTS Corridor (s) will facilitate generation hub States like Odisha to trade surplus power for which retail supply tariff will be reduced and the local population can be convinced on the long term financial benefit to them in lieu of sacrificing their land and settlement.

(B) SHARING OF TRANSMISSION CHARGES-

The above Staff Paper has linked the issue of Sharing of Transmission Charges, which has been clearly presented to Honøble CERC by GRIDCO during Public Hearing of the same during June, 2014 with the prayer to Honøble Commission that the Third Amendment to the said Regulation should be clear and transparent, conforming to the Electricity Act-2003 and National Electricity Policy & National tariff Policy on sharing of Transmission Charges with no dilution such as in terms of tariff shock, as already happened in the principal regulations along with its Amendments.

However, the above Staff paper has rightly highlighted the real facts on anomaly, pertaining to the Transmission Cost Allocation for which the Eastern States like Odisha are financially burdened with high Transmission

Charges at the cost of other DICs. Followings are the excerpts from the above Staff Paper-

- (1) **Para-4.5.1-** Few beneficiaries have raised the issue of high transmission charges and their grievances are mainly due to :
- (a) 50% Uniform Charges applied for transmission charges
 - (b) Slab System in Transmission Sharing Regulations
 - (c) Levy of transmission charges on the basis of LTA or deemed LTA
 - (d) Truncation of Basic Network in load flow studies at 400kV level
 - (e) Payment of transmission charges for Non-ISTS lines being used for carrying ISGS power.

COMMENTS-

The following core issues, pertaining to Transmission Charges have not been reflected in the Staff Paper:-

- (a) Injection charges be allocated to Withdrawal DICs in accordance with participation factors, which reflect the usage. But the said proposal has not been reflected in the Draft Amendment.

By incorporating the above recommendation in the Third Amendment, through amendment of Clause No. 8(6) of the principal regulation will represent the **actual usage by the DICs** in spirit of the stipulation in NEP and NTP and also will conform to Electricity Act-2003 in terms of fairness, reasonability of rates, charges and terms and conditions, pertaining to sharing of Transmission charges as well as determination of Transmission tariff in commercial manner.

- (b) Refraining from controlled/forced flow through HVDC line so as not to burden the Electricity Consumers of the host State with higher Transmission Charges since such forced flow is not benefiting the said state in any manner.

(c) **FERC DECISION:** Regional cost allocation principle 1: The cost of transmission facilities must be allocated to those within the transmission planning region that benefit from those facilities in a manner **that is at least roughly commensurate with estimated benefits.**

Interregional cost allocation principle 1: The costs of a new interregional transmission facility must be allocated to each transmission planning region in which that transmission facility is located in a manner that is at least roughly commensurate with the estimated benefits of that transmission facility in each of the transmission planning regions.

As New Transmission Systems are being set up from Generation or fuel hubs of some States like Odisha for transmission of power to other States, it should be ensured in the Third Amendment that Odisha and like States should not be burdened with Transmission Charges due to any power flow in those Transmission Systems (meant for specific states/regions), attributing the same to the account of such States like Odisha, which may be arrived on the basis of load flow analysis through software, as Odisha or like States are in no way benefited by those Transmission Systems and hence no commensurate Transmission Charge should be imposed on such states like Odisha.

(2) Para-5.4.1 of the Staff Paper-

At present States are not giving their drawl requirement from ISTS and drawing power from ISTS more than their entitlement . From the data of Drawal of electricity by State utilities from ISTS as compared to LTA , it is clear that majority of states are drawing power more than their LTA . xxxxxxxx However, this data provides very good input and is validating the anticipated drawal in NR and WR, which was anticipated while granting LTA based on target region . **At present transmission cost allocation system which is modulated through uniform charges and**

slabs is going to the benefit of such States only. Therefore, there is a need to review implementation of present mechanism of sharing of transmission charges.”

(3) Para-5.4.2 of the Staff Paper- “However, any fresh investment should be supported by commitment to pay for it, otherwise the burden will be passed on to other states. Punjab, Tamil Nadu, Gujarat, UP etc. availing more import capacity through ISTS than their LTA capacity should bear the PoC charges at the point of drawl accordingly. In the present regime, States active in Electricity market have got additional system strengthening done to draw power much more than their LTA without any liability to pay. **As a result, there is hidden cross-subsidy and Eastern States ,who seldom import more than their LTA have to pay more.”**

(4) Para-3.13.1of the Staff Paper-

“The above description clarifies that the concept behind Sharing Regulations was **sharing of transmission charges based on usage**. The role to be played by “Contract” was for the forecasting-drawal the next of application period by the Designated Inter-State Customers (DIC) to project its usage of ISTS. The billing of transmission charges was to be based on approved injection and withdrawal, it was not intended to be equal to LTA. During implementation, to resolve the issue of computation for few generating stations having LTA with target region and without identified beneficiaries, LTA was taken as approved injection.”

(5) Para-3.13.2of the Staff Paper-

The basic principle of usage based cost allocation was formulated under these Regulations. While implementing Regulations, certain amendment / orders were issued changing the methodology more towards billing on contracted amount of transmission service i.e. LTA. Although Point of

Connection (PoC) rates were computed using actual usage, billing was done on the basis of LTA. Certain changes were also made to reduce the initial tariff shock on the beneficiaries. It was a period of transition and during this process while Generating stations not being sure that how the billing of transmission charges will be done, made request to the CTU for connectivity but as they were not sure about their beneficiary, they might have sought LTA which was less than the connectivity xxxxxxxx.ö

VIEWS OF GRIDCO ON SHARING OF TRANSMISSION CHARGES-

- (1) Although, several issues have been raised on dilution of the PoC Regulation through slab system, uniform charges, truncated network, but the core issue i.e Sharing of Transmission Charges should be based on **actual usage** has not been incorporated at Para-4.5.1 of the Staff Paper, which has been raised several times by GRIDCO including its presentation to Honøble CERC during Public Hearing on D.12.06.2014;
- (2) Both Injection Rates and Withdrawl Rates & transmission charges should be calculated on actual usage of the ISTS Network instead of calculating the same as per contract, which goes against the mandate of NEP & NTP and also violating the enactment at Section-36(2) of EA-2003, which envisages,ö The rates, charges and terms and conditions referred to in sub-section (1) shall be fair and reasonable, and **may be allocated in proportion to the use of such facilities.**ö
- (3) In case of a State like Odisha, which has the ISGS and IPPs, located in Odisha, having allocations/contracts/shares for other States is meeting all its central allocations from the said IPPs and ISGSs, located in it irrespective of its allocation from other ISGSs,

situated in other States. In real time operation, Odisha is not actually availing the power from the ISGSs, located in other States, from which Odisha has the allocated central share. As per 'actual usage concept', as enshrined in EA-2003, NEP and NTP, the injection rates and charges should be calculated, basing on those Generators, from which Odisha is availing its central allocation in real time scenario and the actual usage of ISTS for drawl of power from those inside State Generators. If PoC charges of the Generators from which GRIDCO is not drawing power is to be paid by GRIDCO, just because, Odisha has contracted power allocation with those Generators, the above sharing method of Transmission Charges shall go against the real intent of EA-2003, NEP & NTP, as depicted above.

- (4) Just because some States and Generators got tariff shock due to new regulation, the real intent of such Regulation has not only been diluted, the Eastern States have cross-subsidised to other States, as stated clearly in the above Staff Paper.

Considering the above facts, as clearly presented to Hon,ble CERC, which has also been reflected in the Staff Paper and the cross-subsidisation still in continuance in absence of Third Amendment, it is humbly submitted that the Third Amendment to Regulation on Sharing of Transmission Charges may kindly be brought out at the earliest, taking account above views in accordance with the mandate in NEP, NTP and EA-2003.


DIRECTOR (Comm.)
GRIDCO