

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
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केन्द्रीय कार्यालय : "सौदामिनी" प्लॉट सं-2, सेक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 0124-2571700-719 फैक्स : 0124-2571760, 0124-2571761 तार : 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No-2, Sector-29, Gurgaon - 122 001 Haryana
Tel.: 0124-2571700 - 719 Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

संदर्भ संख्या / Ref. No.

केन्द्रीय कार्यालय / CORPORATE CENTRE

Ref: CC/Regulatory/Staff paper

Date: 29-Nov-2014

To

The Secretary

Central Electricity Regulatory Commission
3rd and 4th Floor Chanderlok Building
36, Janpath, New Delhi-110007

Sub: Staff Paper On Transmission Planning, Connectivity, Long /Medium Term Open Access and Other Related Issues


Dear Madam,

This is in reference to the notice Ref: Engg./DP-Transmission/2014-CERC dated 19.09.2014 seeking comments on the subject matter. CERC has taken a commendable initiative in addressing the various issues faced by stakeholders of Transmission through this paper. The effort put in to bring various aspects of the transmission sector is laudable.

Our comments on the proposed framework are enclosed.

Thanking you

Yours Faithfully,


(Y.K. Sehgal)

ED (Commercial & Reg. Cell)

Encl. : As mentioned above

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पंजीकृत कार्यालय : बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016 दूरभाष : 011-26560121 फैक्स : 011-26560039 तार : 'नेटग्रिड'
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016 Tel.: 011-26560121 Fax : 011-26560039 Gram: 'NATGRID'

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स्वहित एवं राष्ट्रहित में ऊर्जा बचाएं

Save Energy for Benefit of Self and Nation

CIN : L40101DL1989GOI038121

02/12/14

COMMENTS ON STAFF PAPER ON TRANSMISSION PLANNING, CONNECTIVITY, LONG /MEDIUM TERM OPEN ACCESS AND OTHER RELATED ISSUES

1.0 Background

- a. Historically, the planning of transmission system was carried out to meet long term power transfer requirements of Generating projects. Such planning of transmission system was carried out with the prior knowledge of quantum of power, point of injection and point of drawl. The transmission system was firmed up after agreement with beneficiaries who used to share its cost on allocation basis. However, this approach of transmission planning had its pitfalls. Firstly, transmission development in areas where generation didn't come remained at a low level. Secondly, in some of the cases, the approval of the transmission scheme by beneficiaries took a long time, resulting in delay in implementation of transmission schemes like Sasan and Mundra UMPP.

De-licensing of generation and introduction of non-discriminatory open access in transmission in the Electricity Act, 2003 created enabling environment for competition in the power sector. As a result, private sector generation projects (IPPs) came in the country in a big way.

Realizing the challenges before the transmission planners under open access scenario, following provision had been kept in the National Electricity Policy (2005) (NEP):

"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 stakeholders and taking up the execution after due regulatory approvals."

The same was corroborated in the Tariff Policy (2006) also.

In Open Access Regulations, 2004, IPPs had to indicate injection point as well as beneficiaries. However, these IPPs could not tie up long term contracts like earlier ISGS due to very few case-1 bidding. Based on the

above provisions of NEP and Tariff policy, CTU planned various transmission corridors for meeting the requirement of power transfer from IPPs who did not have long-term contracts but had applied for long term open access to ISTS. Since the generation projects were quite uncertain and BPTA signed with the IPPs and BG submitted @ Rs. 5 lakh/ MW only as per CERC Regulations did not provide adequate comfort for investment in these corridors, regulatory approval for implementation of these corridors was sought. While seeking regulatory approval, CTU requested CERC to ensure recovery of the capital investment of the Powergrid by way of evolving alternate methodology. By according regulatory approval, CERC facilitated the implementation of transmission system based on target beneficiaries indicated by the IPPs so that at least transmission backbone network may be developed.

- b. Recently, a large no. of renewable generation capacity has been added in the Indian Grid. The share of renewable generation in the total installed capacity is poised to increase further in the coming years. Considering low gestation period of the renewable generation (about 1 year) as compared to the implementation period of transmission system (3-4 years), need was felt by CTU to take pro-active stance regarding planning of transmission system for renewable generation. Accordingly, Green Energy Corridor was planned on the basis of anticipated renewable generation in various pockets. The same is being implemented after approval from stakeholders.
- c. Though, in the present scenario, uncertainties in the materialization of IPPs/Renewable Generation are very high, however, it is desirable that the planning of transmission system should be done in such a way so as to match generation as well as cater the requirement of states in different scenarios. Therefore, planning of major transmission system constituting backbone network need to be done in advance especially keeping in view that generation is de-licensed and may be located anywhere in the country.
- d. CERC in its staff paper has also recognized this in para 2.2 stating that ideally transmission system must be ahead of generation both in time and capacity.

2.0 Recent Experience of Congestion

- a. In recent years congestion is being experienced in the transmission network in some pockets inspite of the fact that significant growth in transmission network has taken place in the last 5-6 years. From the analysis of the congestion, it appears that the transmission network planning could not capture in totality the uncertainties associated with de-licensed generation.
- b. The root cause of non-implementation of reliable congestion-free transmission plan emanates from distorted structure of the electricity market in which firm beneficiaries for LTA through Case-I bidding route are not getting finalised. Due to delay in bidding process by various states and also due to various litigations in several cases, the process of finalization of beneficiaries is taking a very long time. The issue needs to be addressed so as to enable congestion-free planning of the transmission system.
- c. It should be imperative for the states / DISCOMs to tie up their base load demand through long term PPAs well in advance and have minimum exposure to short term market. This will automatically facilitate proper end-to-end congestion-free transmission planning.
- d. Another reason for congestion is the uncoordinated planning of generation projects (both Inter and intra-state). Often the generation projects are planned suddenly, thereby off-loading certain high capacity transmission corridors and forcing power to other corridors resulting in congestion. In 11th plan it was envisaged that about 15000 MW of generation capacity shall be added in private sector whereas IPPs of about 55000 MW capacity proposed to set up plants with connection to ISTS alone with original commissioning schedule in 11th Plan. As per existing regulations, if a generator applies for LTA, transmission system has to be planned as per the requirements indicated by the generator. Thus it may so happen that for meeting the same load, transmission system is planned for different generators based on their LTA applications. There is a definite possibility that some of the generators may not materialize or will change the direction of transfer of power. This results in under-utilization of transmission system on one side and congestion in network on the other side.

- e. Further due to de-licensed generation, it is difficult to predict the future generation locations. This may also lead to sub optimal transmission system planning. For example, let us assume that a transmission corridor is planned for an IPP in Chhattisgarh for power transfer to Rajasthan based on target beneficiary indicated by the IPP. It may so happen that by the time the transmission network is implemented, Rajasthan signs PPA with another generation project located in the state. Therefore, the requirement ceases for transfer of power from Chhattisgarh IPP to Rajasthan, thus making the transmission system redundant.
- f. In recent years, congestion is being experienced in the transmission network, especially in power transfer to Southern Region. One of the reasons for the congestion is that adequate transmission corridors between NEW Grid and SR were not planned since the IPPs coming up in Orissa/ Chhattisgarh complex did not indicate Southern Region as target beneficiary while seeking LTA. Since the transmission planning was done on the basis of LTA applied by the generators, corridors only towards WR/ NR were planned with these IPPs. This is one of the basic flaws that has been observed if transmission system is planned on the basis of requirements of generators.
- g. From the above, it is quite evident that transmission system planning based on the LTA sought by generators would result in development of sub optimal transmission system.

3.0 Other Aspects of Transmission Network Development

- a. Transmission is not just infrastructure; it is the enabler of competitive power market. Due to margins available in the transmission network, trade under Short Term Open Access has enhanced from 17 BU in 2004-05 to 87 BU in 2013-14 and it has been seen that the average cost of power supply has come down from Rs 5-8 /unit in August, 2008 to Rs 2-4 /unit in February, 2014.
- b. The cost of transmission is significantly less compared to the cost of generation i.e. only about 10% of the total cost of power supply. Actually, it

has increased by only 2 paise (average POC rate) from July, 2011 to Mar, 2014, whereas transmission System has facilitated enhancement of LTA quantum from 85,000MW to 1,30,000MW in the corresponding period. In fact, it is desirable that transmission system is planned liberally and ahead of generation as it is not going to have much impact on tariff even if it is under-utilized for some time due to mismatch with generation. But, non-availability of transmission system has large impact on power purchase cost e.g. cost of power purchased through exchange in SR is about 2 times the cost of power for other regions due to congestion in transmission network.

- c. Considering above facts, it is evident that to achieve the objective of Electricity Act, 2003 i.e. development of Electricity Industry, transmission planning must be based on the load demand of a particular State/ Discom so that it shall not face any problem in meeting its requirement to the extent possible even if its designated source of power (generator) changes. This is feasible only if transmission is ahead of generation both in time and capacity. Thus, it has become essential that backbone transmission network is planned based on load requirements rather than linking it to any particular generator.

4.0 Comments on CERC Proposal

A. Proposed Methodology of Transmission Planning (para 6.5)

- a. In para 6.5, CERC has proposed that a validation committee (consisting of CEA, CTU, POSOCO and all STUs) shall be constituted for generating a profile of ISTS injection and drawl for next five years by the end of March every year. Validation committee shall finalise the ISTS requirement profile which shall be published on website of CTU for comments. Final document shall form the basis of Transmission planning in the country.

Comments

This approach is in general acceptable to us as it shall result in enhanced participation of states in ISTS transmission planning. It may be implemented with CTU as the Nodal agency in transmission planning

process who shall convene the validation committee meetings. The proposed transmission plan shall be published on the website of CTU for time-bound comments, if any, by all the stakeholders; else the system shall be deemed to be accepted by them.

- b. Para 6.5.3 (I.) of the staff paper states that for every transmission system planned, 3 possible scenarios of expected load and generation (normal, optimistic, pessimistic) shall be given. For the 3 possible scenarios, the transmission system proposed shall contain details such as benefit identification, present and future requirement to be catered by the proposed system, possible cases of congestion in case of opting for that scenario. In this connection, future generation load growth along with pockets of possible Right of Way (ROW) problem need to be brought out clearly

Comments

It may be mentioned that right of way problem is very uncertain in nature which can be faced anywhere in the country and at any point of time depending on the ownership of the land through which transmission line is routed. Therefore, it is impractical to predict the possible areas of ROW at the planning stage except in the urban areas to some extent. In fact, ROW problems are solved while the transmission system is under construction. If it is made mandatory to specify ROW problems at the time of planning and fresh ROW problems occur at the time of actual construction, this will invite a host of litigations and shall result in delay in implementation of transmission network. The optimisation of the route is part of basic efficiency factor expected from the transmission licensee as it gives the scope to bring in cost reduction. Keeping the above in view, it is suggested that route optimisation based on ROW problems should be left to the transmission licensee, so as to bring efficiency in the sector and to avoid unnecessary litigation.

- c. Para 6.5.3 (m.) of the staff paper states that after firming up of Transmission system, an Environmental Impact Assessment (EIA) shall be brought out and if required rerouting of proposed transmission system must be done. Input from other govt. agencies like status of clearances etc. may be taken at planning stage itself.

Comments

As per present rules, the transmission projects are kept out of the purview of different pollution laws and Environmental (Protection) Act, 1986 except in 3 districts Alwar, Gurgaon & Mewat. Transmission projects are also kept out of the Environmental Impact Assessment (EIA) notification of 1994 and 2006. Hence, EIA at the system planning stage is not a necessary requirement. However, forest clearance needs to be taken for the stretches where transmission line passes through the forest which in turn shall depend upon routing of the line decided by the Transmission licensee. Further it takes more than 1-2 years to get forest clearance and it is not desirable to finalise the transmission plan after forest clearance as it shall delay the commencement of implementation of transmission line. Since time frame of implementation of transmission system is generally 3-4 years, as a practice forest clearance of the stretch which is passing through forest is applied while construction in non-forest area continues. Therefore, the above para should be deleted.

B. Proposed Formulation for Connectivity and Long Term access (para 7)

CERC has proposed two alternatives for seeking connectivity and LTA to ISTS – Alternative-1 in para 7.1 and Alternative – 2 in para 7.2. We agree in general with the framework proposed by CERC in Alternative-1 given in para 7.1. However, it needs to be aligned with the above approach of planning i.e. planning the transmission network based on the requirement of beneficiaries and de-linking it with requirement of generators. Further, the risk of the transmission licensee in case of transmission system being developed through “cost-plus” should be transferred to beneficiaries in the

same manner as proposed by CERC in case of transmission system being developed through "TBCB".

Keeping above aspects in view, our comments on specific provisions which needs to be modified in the proposed framework in Staff paper are as given below. Reply to relevant aspects in the questionnaire as per chapter 11 of the Staff paper are included in the comments.

- d. In para 7.1 CERC has proposed Alternative-1 for connectivity and LTA in which it is suggested to continue the present methodology of initially attributing transmission expansion to generator and shifting it later to beneficiaries. CERC has offered three types of products to the generating stations depending on the requirement- Type A, B & C.

Comments

In this approach, the transmission planning process has been linked to the submission of BG by the generators and identification of transmission elements based on requirements indicated by generators. It appears that transmission system shall be developed only after the generators provide BG for the same. For the reasons discussed in the earlier paragraphs, there is a need to delink the planning and development of the transmission system, especially the backbone transmission system from the access applied by the generators and submission of BG by them. It is suggested that backbone transmission system should be planned and implemented as Grid strengthening schemes irrespective of access sought by generators and included in PoC mechanism after their commissioning.

As far as connectivity line for a particular generator is concerned, we are of the view that since this line will be utilised only if the generator comes, connectivity lines may preferably be implemented by generators themselves so as to avoid the issue of mismatch and payment of transmission charges in case of delay in generation resulting in any litigation. In case the Commission decides to implement connectivity lines through transmission licensee, it may be linked to submission of Construction BG by generators and the progress of generating plant.

- e. In para 7.1.2 it has been stated that applicant would furnish construction BG equivalent to capital investment to be made in transmission system. In case no transmission system augmentation is required, the BG corresponding to 7 year zonal tr. charges needs to be submitted to avoid unnecessary holding of access.

Comments

It is not clear how the cost of transmission system shall be known before award in case of TBCB. Further, if the cost of transmission system is calculated based on certain norms, there are bound to be variations in the cost of transmission system estimated at the planning stage and the actual awarded cost (one of the factors may be variation in actual line length and estimated line length). It is not clear how such variations shall be addressed. Further, this approach of calculating BG quantum based on cost of transmission system shall lead to substantially different BG amount per MW for different generators which will lead to litigations. Therefore it is proposed that the BG to be submitted by an applicant should be a fixed amount per MW, say Rs 50 lakh per MW. The applicant seeking access to ISTS under Type A and C shall submit an "Access BG" (adjustable as proposed by CERC) of Rs 50 lakh per MW corresponding to MW for which access is required. For generators applying connectivity access under Type B, an access BG (adjustable for NPV of 25% of PoC charges for 12 years) of Rs 20 lakh per MW shall be submitted corresponding to MW proposed to be connected, as a deterrent to non-serious applicants. The amount of BG/MW shall be escalated every two years as per an index as found suitable by the Commission.

The proposed provision of BG corresponding to 7 year zonal tr. charges is not valid any more since augmentation is not specific to generators.

In case it is decided that connectivity lines are to be implemented by transmission licensee, a separate construction BG (non-refundable as proposed by CERC) of Rs 50 lakh per MW for construction of connectivity line shall be submitted by generator corresponding to MW proposed to be connected.

- f. In para 7.1.4 it has been stated that in Type-B, generator shall be given the choice for connectivity access only without any LTA.

Comments

In this product, since the generators shall have a commitment to pay only 25% of transmission charges, most of the generators would tend to resort to connectivity without LTA. This would result in same problems as brought out in Annexure III & V of the staff paper. To encourage Type B generators to apply for LTA it is proposed that the generators opting for Type B access should be charged considerably high (say 3 times) PoC rate for injection in the grid. The excess revenue so generated may be kept in a separate fund which may be used as a grant or as deemed fit by CEA/CERC for part financing of new transmission projects.

Further, for the generators opting for Type B access, an access BG (adjustable) of Rs 20 lakhs per MW shall be submitted corresponding to MW proposed to be connected, as a deterrent to non-serious applicants. After the commissioning of the generator, this BG shall be replaced by an adjustable BG of NPV of 25% of PoC charges for 12 years.

Connectivity line should be implemented by the generators. With the transmission systems being implemented under TBCB with pre-defined schedule, it will be difficult to match the implementation of connectivity line with that of generation which is generally delayed. In such cases, there are very high chances of non-payment of transmission charges by generator which is yet to come/ Discoms which are not utilizing this line, thus putting the transmission licensee in financial trouble and leading to litigation.

In case the Commission decides that connectivity lines are to be implemented by transmission licensee, a separate construction BG (non-refundable as proposed by CERC) of Rs 50 lakhs per MW for construction of connectivity line shall be submitted by generator corresponding to MW proposed to be connected.

- g. In para 7.1.13, CERC has proposed that after the transmission system has been put in operation, Construction BG for Network Access is substituted with BG equivalent to pro-rata 12 years NPV of Transmission charges for the part of capacity which doesn't have firm PPA. The BG equivalent to the 12 years NPV of Transmission charges shall be allowed to be reduced annually on pro-rata basis.

Comments

In case of non-firm PPA, the proposal of CERC is agreed to.

However, in case of firm PPA, it has been suggested that BG is required to be returned after commissioning of both transmission and generation. There is no security mechanism if PPA goes into dispute midway wherein neither of the DIC's (generator or beneficiary) makes the payment for transmission charges. Since such disputes come in light only after about 3-4 months, it is proposed to have a BG equivalent to 6 months Transmission charges valid till the life of the transmission assets as a security mechanism, even in case of firm PPA. This BG shall be en-cashed in case of non-payment of transmission charges by beneficiary/ generator. After 6 months of non-payment of transmission charges, LTA shall be cancelled and relinquishment charges as per regulation shall be applicable. Further injection of power in the grid (whether on STOA or MTOA) shall be allowed only after clearing the dues towards relinquishment charges/ balance transmission charges, if any.

- h. In para 7.2 it has been stated that in case of 'Cost Plus' construction of Transmission system, a staggered incremental payment of 25%, 50% & 100% of Transmission charges pertaining to only network expansion (i.e. excluding connectivity) will be paid by generator for each quarter after the grace period of 3 months. The generator would be liable for adjusting the increase in IDC for the grace 3 month period. No relaxation shall be allowed in case of transmission system constructed under Competitive bidding.

Comments

The proposed methodology of incremental payment of IDC and staggered quarterly payment of 25%, 50% & 100% of transmission charges for transmission assets constructed through 'Cost Plus' is a discriminatory approach. How the balance part of transmission charges shall be recovered is not clear, hence the above proposal is not acceptable.

- i. As per Para 7.2.3, in case of delay in commissioning of generating station, transmission charges for all the assets developed shall be payable by the generator. These assets shall form part of pool only after commissioning of generator.

Comments

Connectivity line may preferably be implemented by generators as provided in 2004 regulations. If the line is implemented by transmission licensee, the above proposal of assigning transmission charges to generator till its COD shall put transmission licensee at a very high risk. With the transmission systems being implemented under TBCB with pre-defined schedule, it will be difficult to match the implementation of connectivity line with that of generation which is generally delayed. Construction BG submitted by the generator may not offset full risk of the transmission licensee.

In case it is decided that the connectivity line shall be implemented by transmission licensee, it is proposed that this line should also be part of pool after its commissioning irrespective of commissioning of generator. If the generator delays its commissioning beyond a specified period, say 1 year, after the commissioning of transmission system and does not pay transmission charges, construction BG may be encashed and the amount may be distributed among the DICs after adjusting due transmission charges.

- j. In the LTA timeline given in Annexure XIX, it has been shown that after a generator applies for LTA by 31st Jan of a year, the system study and network requirement shall be finalized by 31st March i.e within 60 days.

Comments

The time line for planning should be made rational, with more time. Minimum 120 days should be given for planning the system considering the co-ordination work involved with CEA, POSOCO and STUs.

- k. In Para 7.3.1.2, it has been stated that before starting the competitive bidding process or tendering activity for planned transmission system, confirmation from generators and demand customers shall be sought again and if required transmission plan shall be modified.

Comments

As per above proposal, the generator can exit from any of the above product before placement of award in 'Cost Plus' or before bid opening in case of 'TBCB' without any charge. However, provision of reimbursement of the expenditure incurred by the Transmission Licensee under 'Cost Plus' or by the Bid Process Coordinator in case of TBCB for pre-award activities of the project including survey should be included.

Further, as per time line of LTA specified in Annexure-XIX, the transmission plan can be modified only next year which may lead to delay in transmission system for other generators also. Therefore, it is suggested that choice of withdrawing the access should be limited to 180 days of seeking access. The transmission plan for that year shall be finalised by then and its implementation activities shall be initiated.

C. Security Mechanism for recovery of Transmission Charges

For the required transmission growth in the country, it is imperative that transmission charges are recovered in time. Therefore, suitable payment security mechanism for transmission charges should be evolved. It is proposed that the transmission charges shall be paid prior to using the transmission system, say one month in advance. Secondly, for ensuring regular payment of transmission charges, all DICs shall submit bank guarantee equivalent to minimum 6 months PoC transmission charges.