Seven Policy Actions which Crimped the Umbilical Cord of Power Sector in India

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There is a Chinese proverb "May you live in interesting times". The expression is used ironically, with the thought that times of peace and tranquillity are 'uninteresting' while chaotic times being counted as 'interesting' ones. We are living in interesting times of highest ever power access disparity in India. Despite galloping installed capacity additions of 54 GW during last five year plan and 88 GW further capacity addition being well on target in 12th plan, the prevailing price of power in southern region stands on an average higher by 150% compared to Northern and Western region of the country. With about 280 GW capacity being put in place, country is able to use only about 140 GW in peak demand, leaving behind a lurking peak deficit at about 9% impacting 0.4% of GDP growth.

Despite resource rich states like Chhattisgarh unable to evacuate about 7000 MW of excess power lying bottled currently, millions of DG sets, having estimated cumulative capacity of about 90000 MW are put to work in power deficit zones in other parts of the country to meet perpetual power deficit. These are reported figures, and even if they vary by few percentage points, still tell a startling story of acute shortage of power in pockets of the country co-existing with highest ever capacity additions and investments in power sector in recent years. One of the key reasons causing this power access disparity is congestion in power conduits, the transmission corridors in National Grid and state level transmission and sub-transmission system.

While transmission as a segment accounts for only about 8% of the total costs of the power value chain, it makes the real Umbilical cord of power, without which all investments in power sector become fruitless. With Open Access now being more important than ever before, transmission is not only an enabler for power but also is the multiplier of a competitive power market as well as basic parameter of power price sensitivity.

The report of CAC sub-committee set up by Central Electricity Regulatory Commission (CERC) on congestion in transmission, has also emphasized that in view of large capacity additions during the last few years, the transfer capability of transmission systems have indeed emerged as a constraint and some of the key transmission inter-regional and other dispatch corridors are in perpetual deficit in inter-state system and more in intra-state transmission networks.

In recent years, investment in transmission networks have lagged the curve vis a vis investments in generation. The accepted thumb rule is that for development of a robust power system, every unit currency invested in generation, shall be followed by an investment of 0.5 unit in transmission. This ration of 1: 0.5 has not been respected in Indian power investment scenario.

In the 11th plan, which saw the real burst of generation investments, the ratio stood at 1: 0.3. While generation grew by 55%, transmission growth was stunted at 27% only, leaving large deficit to be filled in 12th plan. This deficit moves the ratio to 1: 0.6 or even more. The expected fund requirement for meeting 12th plan generation targets of about 88 GW is about INR 4.8 lakh Crores, which means the transmission sector would need an investments of about INR 3 lakh Crores. Against this, government has kept transmission investment target at INR 2.09 lakh Crores only, thus compounding the existing investment gap in transmission.

During 11th plan, 55% of the investments in power generation came from private sector and in 12th plan, private sector is expected to contribute 65% of the total investments in power generation. In sharp contrast, power transmission, despite being promoted for private participation, has not been able to do too well. In 11th plan only 3% of total investment came from private sector and in 12th plan it is expected to range from 10% to 12%, which is too meagre. Result is that only 2% of transmission sector assets in the country are owned by private players, which is certainly not keeping in line with competitive spirit underlined in the Electricity Act of 2003 and National Tariff Policy.

Key answer to be sought is what are the reasons, which have kept the transmission sector devoid of full blown competition and private participation leading to current situation of transmission becoming the major constraint in flow of power and impediment in growth of sector and economy to the extent that 3 billion units of electricity remained unsold in 2014-15 due to lack of transmission corridors. Chronological analysis of flow of events in the sector would indicate that there have been at least 7 policy mistakes which have gradually but clinically ensured that private participation in transmission is either crimped or is stunted. They are enumerated below.

1. Transmission Planning Approach

As transmission has not been a bottleneck historically, it was presumed that it can never be a constraint irrespective of the quantum of generation that may come up. This complacency did not allow any urgency to raise the transmission assets commensurate with generation. The country followed reactive planning policy which depended on the quantum of Long Term Access (LTA) being sought by injection and withdrawal customers. It was made mandatory that any strengthening of the transmission system would be

carried only to meet the long term access customers and option of customers availing short term access or medium term access was subjected to availability of redundant margins in the existing transmission lines.

When power price dynamics changed and power supply started exceeding the demands, prices plummeted. Short term prices at times quoted below the long term PPA prices and most of the customers started shifting to short term and medium term access to avail the benefit of changing power market dynamics. This new situation strained the transmission margins available for short term and medium term. With two black outs in July 2012, power system operator become extremely cautious in allowing usage of margins and thus the power market which thrived on short term and medium term access got crimped and starved of the corridor.

Instead of a reactive and restrictive planning, the basis of planning could be the total transmission capacity required by all customers irrespective of long, medium and short term demands, and risk taking capacity of the transmission developers to construct the assets based on market demand, allowing plug and play of connectivity. Economic sense would dictate that in all situations, transmission carrying capacities shall be significantly higher than generation capacities as not only the cost of bottled power and stranded generation assets exceeds far more than cost of transmission assets, also, robust evacuation system would always require healthy redundancies in the system.

2. Role of Empowered Committee and Cherry Picking of Projects

Guidelines for encouraging competition in transmission projects issued in April 2006 required Ministry of Power to constitute an Empowered Committee for identification of projects to be developed under competitive bidding scheme. The committee's role was relevant in view of the fact that only selected few projects were to be routed for private competition. From 6th Jan 2011, when pursuant to National Tariff Policy, the competitive bidding was mandated in all inter-state transmission projects with certain exemptions, there was practically no role for an empowered committee to select the projects. But the empowered committee still retained to filter the projects for execution of projects through cost plus route in the name of urgency.

Constitution of empowered committee requires inclusion of the CTU and two experts from power sector. While PGCIL as CTU enjoys the influencing power in all decisions of the Empowered Committee in current situation, no membership from private sector has ever been allowed. The anomaly continues in recently reconstituted empowered committee which still has no representation from private sector.

The comparison of previous Empowered Committee and reconstituted Committee is shown in figure below -

Before Reconstitution	After Reconstitution
Member CERC	Member (PS) CEA
Member (PS) CEA	Member (E&C) CEA
Member (E&C) CEA	Joint Sec (MoP)
Joint Sec (MoP)	Director (Proj) PGCIL
Director (Proj) PGCIL	Advisor (Energy), NITI Ayog
Former Chairman, CEA	Former Chairman, CEA
Former Chief Sec, Mah	Ex-Member(PS), CEA
Director (Trans) MoP	Chief Eng (Plan & SP&PA), CEA
Secretary, CERC	

The result of the anomaly is that many large projects have been recommended for execution on cost plus route ignoring competitive prices being achieved in competition route leading also to cherry picking of projects for cost plus execution.

Recently, 14 projects for about Rs 38,000 Crores (including HVDC projects), initially identified for Tariff Based Competitive Bidding (TBCB), have been shifted to cost plus route under 33rd and 34th Empowered Committee meetings. The whole scheme of routing projects to cost plus route has impacted credibility of competitive bidding process in transmission not inducing any confidence in the private sector players.

Solution clearly lies in excluding PGCIL from the committee and taking all measures to build trust among private bidders about credibility of whole process.

3. Exemptions from Competitive Bidding under National Tariff Policy

Amendment in National Tariff Policy issued on 8th July 2011, introduced competitive bidding in all Central Sector transmission projects with exemption in case of urgency of execution. Large numbers of projects were moved to cost plus route under these exemptions. Recently, Ministry of Power has proposed further amendments, widening the scope of exemptions, some of which are listed in figure below.

Previous Exemptions	Proposed Exemptions
• First two Experimental works for 1200 kV HVDC • Works required to be done cater to an urgent situation required under compressed time schedule. • Intrastate transmission projects up to 6th Jan 2013	• First two 1200 kV AC substation • Up-gradations of existing lines of CTU/STU/PGCIL • Some more up-gradations of lines • Augmentation of existing/under construction substations of CTU/STU/PGCIL • Evacuation from Nuclear Power Plants • Projects under compressed time schedule. • Projects where no bidders comes forward.

The table when read with all the components (not listed here for brevity of presentation) leaves practically nothing outside the scope of exemptions which means that it shall be discretion of the Empowered Committee in all cases to recommend or not recommend the competitive routing of projects. This is certainly against the true spirit of competitive bidding and leaves lots of uncertainty on policy of competitive bidding.

The right solution can be to put all projects to competitive bidding in true sense and cost plus shall be either the route of last resort or the only resort in case of projects involving the security of the country or application of rare technologies being experimented for the first time.

4. PGCIL as CTU and Level Playing Field

When de-licensing and competition in generation was introduced, NTPC as incumbent had certain advantages, but it was never privy to planning process or never had significant access to commercially sensitive information while competing with private players. In addition to conflict of interest in PGCIL being part of Empowered Committee entrusted with selection of projects for competitive bidding, CTU has been given the role of planning of network in transmission. By virtue of being planner, all commercial and technical information about the project's cost sensitivity, pricing information, availability of corridors for construction etc is available to PGCIL far ahead of time, thereby providing them additional advantage in making a considered bid vis-a-vis the other players.

In addition of enjoying the benefit of more economic cost of capital by getting sovereign backing of government, PGCIL avails certain custom duty benefits and project import duty benefits not available to private players.

Further, clearance processes are different for private players. For instance, in case of forest clearance, the private players are required to acquire the compensatory afforestation land and hand over to forest authorities while PGCIL is required to just pay double the forest compensation without acquiring land, thereby making the process shorter and easier for PGCIL.

Solution to the problem which shall remove the conflict of interest of PGCIL being a planner, recommendatory authority and a competitor, is to separate CTU from PGCIL and also take PGCIL out of Empowered Committee to make empowered committee an independent, unbiased and uninfluenced decision making body.

5. Risk Sharing Structure

Key success parameter of any PPP project is the optimal and efficient risk sharing structure. For optimal risk sharing, it shall be shared by partner who can manage it the best. In transmission PPP, almost all risks are placed with the project developer and public partner is entrusted with mere facilitation, which is not defined in any agreement. This leaves the private partner with all regulatory risks of seeking transmission license, Tariff approval and other enabling clearances which are in the realm of either regulator or Ministry of Power. Further to compound the matter, any delay in achieving these approvals within given time frame, the developer is penalized with additional Contract Performance Guarantee.

There is no consideration to delay attributability aspect, even in cases which are completely beyond control of developer. Development of any transmission project from taking over to commissioning involves about 45 different types of clearances/approvals including forest, wild life clearances. Not only that there is no single window available, but also for all clearances/approvals irrespective of reasoning of delays, the developer is either penalized with additional Guarantees and/or Liquidated Damages.

The risk sharing structure need be made more optimal and public partner need to shoulder certain regulatory, statutory risks and commodity risks beyond a range. The Special Purpose Vehicle (SPV) of the project when handed over to the developer shall have pre-received basic approvals like approvals under section 68 and section 164 of Electricity Act, 2003, transmission license etc, which shall ensure faster project execution as well as risk shall get better shared between public and private partners.

6. Bidding Framework and Standard Bid Documents

Bidding framework requires tariff quoting by bidders for 35 years, which means complete risk to be undertaken by developer for 38 years (3 years of construction and 35 tariff

years). There are no financial instruments available in country to underwrite projects for such a long period. Bond market also is very shallow and finances at the best are available for a stretch of 10 to 12 years. With a financial set up available in the country which only can underwrite for 10 to 12 years, it is very difficult on the part of developer to commit a tariff profile which upfront seals the cash flow stream for 38 years without any scope of variability under any circumstances.

Further there are no considerations for commodity price variations over the construction period. Commodities can be volatile and a stretch of 36 to 48 months in terms of construction period is too long to undertake commodity risk, particularly in the wake of the fact that there are no developed long term commodity hedging markets in the country.

Solution need be worked out where tariff profile shall be either for only first years with escalation range over further years of project cycle to be regulated by Central Electricity Regulator (CERC) or tariff profile shall be for 5 years of commissioning period which can be revisited and regulated as in case of regulated tariff structure. Further commodity variations beyond a band shall be trued up on either side of variation.

7. Exemption to State Transmission Sector from Competitive Bidding

National Tariff Policy 2006 exempted the state transmission sector for 5 years from moving to competitive bidding for all transmission projects. The exemption was further extended by 2 more years, which means that all transmission projects in state sector shall have to move to competitive bidding from Jan 2013. However, state sector has not been able to come out with any significant quantum of transmission projects on competitive bidding. This exemption period has only delayed the transition. This delay has ensured that state transmission and sub-transmission has stayed brittle and short of requirements. CERC in their congestion report clearly highlighted that even if the power is made to reach the state and regional interface, the state transmission is not in position to absorb it. With this weak state transmission and sub-transmission network the actual users can not draw the benefit of either enhanced generation capacities or improved interstate transmission network.

The nation needs to work more on state sector transmission sector along with main transmission for the reason that the paying customer in terms of Discoms cannot access power in absence of sufficiently strengthened inner ring of transmission.

India being on brink of explosive growth path cannot achieve it without robust power sector growth, which cannot happen without having sufficient emphasis on inter-state and intra-state power transmission networks. Exponential growth in power generation has already proved that a healthy private sector participation is must to achieve significant

improvements in capacities. For private sector to draw confidence for participation in the process of competitive transmission, these key policy shifts are required to be made to make the whole process more investor friendly, empathetic and credible.

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