

Comments for
Working Group on Power for the XIth Five Year Plan
Sub-Group #3 - Legislative & Policy Issues;
Sub-Group #8 - Financial issues

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In the development of XIth five year plan, there is a need to address a number of Technical, Financial and Institutional (Regulatory and Policy Framework) issues for development of Indian power sector. While technical issues are being dealt with other sub-groups, some of the financial and, regulatory and policy issues are highlighted here. In this context, some of the major challenges are related to availability of finance, efficient utilisation of public finances and risk reduction for lenders and equity investors. Financial issues facing the Indian power can be summed up as those related to “sustainable financing for development of the sector”. In this context, there is a need to address two issues (i) encourage private investment through policy and regulatory climate (ii) improve efficiency of use of public finances for the sector. Lack of public finances would require increased role for private investment, it is also important that public finances are also used in an efficient manner. Some of the suggestions provided below highlight these issues as well as few other issues of relevance to the development of the power sector.

1. Reducing Policy and Regulatory Uncertainty:

Investors dislike uncertainty in all forms. Though some form of uncertainty is part of normal business risk, a significant proportion of uncertainty in the power sector could be attributed to policy and regulatory environment. Although fiscal incentives improve investment viability in the sector and make it more attractive for investors, policy and regulatory uncertainty is more detested by investors. A known trajectory of the policy framework and regulatory guidelines provide decision-making comfort for committing financial resources and, enter into commercial agreements for fuel supply and sale of power. In the present context, some prominent issues that foster uncertainty in the sector are,

- Policy regarding fuel availability – allocation of gas and coal
- Pricing framework for allocated coal and gas
- Lack of Roadmap to power market development
- Open Access regime – its operationalisation and

- Politicisation of consumer tariff and strict rules for control of theft
- Uncertain framework for private and NGO participation in rural electrification
- Roadmap for development of transmission pricing regime
- Framework for import of power from projects in neighbouring countries to be developed with investment from public and private sector entities from India.
- Though Multi-year Tariff framework is proposed by the Electricity Act 2003, it is yet to evolve at the state level.

Some of these issues are further discussed below.

2. Rural Electrification Fund:

In order to expand telecom connectivity in un-served areas especially in rural and remote areas, a Universal Service Fund (USF) has been instituted. This fund's financing as well as utilization could be replicated to some extent in the power sector as well. USF in the telecom sector is financed through a levy, which is part of the license fee of telecom operators. Utilisation of this fund is made on a competitive basis leading to cost efficiency and also provides correct signals for technology choice for improving rural connectivity in the country.

A Rural Electrification Fund on the lines of the USF in the telecom sector could help expand rural electrification in a cost effective manner using appropriate technology. Due to central and states' jurisdiction over the matter, it would be suggested to channelise central government's funding through this fund. Financing of this fund may be provided by the REC, programs under Ministry of Non-conventional energy sources, funds under the investment scheme of APDRP and other available resources. Utilisation of the fund could be similar to the competitive practices utilized in the telecom sector. Apart from the private sector, NGOs and panchayats rural bodies could also compete for implementation of such schemes. Scope of funding could include not only grid extension but also for development of stand alone systems for generation, especially using renewable energy sources, and distribution of electricity in rural areas as per the provisions of the Electricity Act 2003. This would give an impetus to sustainable rural electrification drive in the country.

3. 'Lease and Maintenance Contract' for new Distribution Assets:

Distribution utilities, faced with strained cash flows, have a daunting task for undertaking investment in grid extension and up gradation. This increases their reliance on borrowing from financial institutions (FIs). Since distribution utilities are mostly loss making, they are not in a position to take advantage of depreciation shield¹ against investments being undertaken. In such a scenario, leasing would be an appropriate option to finance investment by loss making distribution companies. While leasing institutions would be able to utilize depreciation shield, the distribution

¹ i.e. to reduce taxable income. Though, legally permissible, this may result in the government foregoing tax receipt from institutions leasing the equipment.

companies would benefit on account of lower lease rate upon sharing of benefits from distribution shield.

‘Lease and Maintenance Contract’ can help address multiple problems of large investment requirement for grid extension and up gradation as well as poor quality of assets and their maintenance. FIs can help creation of new assets or up gradation / replacement of existing assets for an annual fee to cover leasing charges as well as maintenance charges. Bundling of equipment purchase for lease and its maintenance would provide incentive for purchase of better quality assets². Such outsourcing of maintenance would be cost effective over the lifecycle of the asset. This would also improve quality of supply due to reduced breakdowns. If such a market is allowed to develop, soon a pool of maintenance service providers would fill in.

Design of bundled ‘Lease and Maintenance Contract’ is crucial for meeting the intended objectives cited above. Rules for award of such contracts need to be transparent, competitive and should specify verifiable performance parameters. With an MIS based monitoring of assets, the system could become more accountable and the problem of moral hazard could be minimized.

Higher depreciation on such investments would provide added incentive to private parties and would also help further bring down the cost of lease financing for distribution utilities.

If maintenance contracts can not be bundled in the beginning, pure leasing contracts with direct purchase orders by FIs can help improve financial efficiency of the system while reducing cost of asset financing by the distribution companies.

4. Encouraging Entrepreneurial Model for Rural Electrification:

The Electricity Act 2003 provides for license fee generation and distribution of electricity in rural areas. However, state governments are yet to notify areas where private investors and other bodies can participate for the same. Enhanced role for local bodies like panchayat’s, NGOs etc as highlighted by the Electricity Act 2003 should be encouraged. The supply pushed investment in rural electrification may not be financially sustainable as new consumers being added to the grid bring high cost for the state utilities and while contribute low tariffs thereby further straining the financial health of distribution utilities.

The central government should provide a framework for development of stand alone systems for rural areas and remote areas especially using renewable sources of energy through participation of private investors and local bodies. As a number of such islands of power zone appear on the rural landscape, regulation of such entities could be a challenge for the SERCs. To address this, a ‘regulatory template’ could be developed for its easy implementation across the country. The main issues to be addressed in this case would include financial model for sustainability, consumer tariff and complaint redressal system. Such projects should also be allowed to

² As in the case of a contract for building a road and its maintenance.

benefits from the Clean Development Mechanism of the Kyoto protocol. This would help improve financial viability of projects based on renewable energy sources.

5. Rationalisation of Contracting Practices:

Mismanagement of contracting and subcontracting often leads to delay, poor quality of work and financial inefficiency. Improvement in contracting laws should be undertaken to make these more transparent and competitive. Ministry of Power should work with the Ministry of law and other ministries in designing a “Modal contract” which should incorporate transparency, strict time line along with incentives for early completion and penalty for delay, cost control and quality monitoring, payment disbursement linked to benchmarks for project management, cost control and meeting the schedule and quality. A historical profile of the assets created and their future performance on specified quality and performance parameters and expected life should help encourage efficient contracting in the sector and the country in general.

6. Create space for Energy Service Companies for R & M and Distribution Projects

Energy service companies undertake development of energy efficiency improvement projects, make necessary investment and share benefits derived from efficiency improvement projects. Such companies bear technical and performance risk associated with the project as their returns are linked to verifiable energy savings.

In the Indian context, energy service companies could provide financial resources and develop efficiency improvement projects for power plants, distribution network as well as for equipments utilising electricity at the consumer end. This would require a policy framework enabling their participation and regulatory provision to create space for such kind of techno-economic structures. Market for such investment could potentially be very large as there is large scope for efficiency improvement in the sector. Fiscal incentives could further this cause, however, it would be possible to identify ample investment opportunities even without fiscal sops. Such investments could also benefit from Clean Development Mechanism if additionally of such projects can be established, thus further improving their financial viability.

7. Integrated Energy Policy

Few suggestions related to implementation of the recommendations of the Integrated Energy Policy are as follows

- Stronger performance linked and milestone based disbursement criteria for funding under the APDRP scheme.
- Public funding is utilised in an efficient and transparent manner. Where ever feasible market forces can be brought to the forefront by designing transparent and competitive rule for contracting works under such public funding.

- As efficacy of private investment is recognized in meeting the objectives of the policy, there is a need for a conducive environment for investment of private capital, which is expected to be utilized more efficiently. In this respect special emphasis is to be placed on reducing policy and regulatory uncertainty.
- Since private investment would find an interface with the existing public utilities especially as buyer of electricity and other services, it is important the health of such public utilities improves on an autonomous fashion rather than periodical infusion of scarce public funds to buttress the deteriorating financial health of state electric utilities. This is leading to diversion of scarce financial resources for other developmental activities like health and primary education.
- Given the age old management of the public utilities, there is a greater need to impart necessary training to the employees of state utilities to make them a contributor to the process of reform and adoption of efficient practices. Role of training and capacity building
- Coal is expected to remain the mainstay of fuel for the power sector. If one expects development of a competitive power sector in the country, there is a reform the coal sector by providing ample space for the private sector and provide a policy and regulatory framework for competitive development of the sector.

8. Rating Methodology

Rating of the State Power Sector provides useful insight to the overall performance of the power sector in the respective state. However, the methodology needs to be stable and debated with stakeholders. The rating attempts to ‘measure’ incremental steps across a number of objective and subjective measures. The rating methodology does not clearly spell out benchmarks³ against which various characteristic of the state’s power sector are measured. This does not help the state governments, state utilities and the state electricity regulatory commissions to understand shortcomings and undertake steps to improve their rating.

The existing rating methodology would not take into account any improvement in rating if most of the desired steps have already been undertaken in the previous years. For e.g., if a state has already achieved near 100% rural electrification, there is nothing additional that can show up as an ‘achievement’ for such a state. Another issues is related to rating the success in achieving capacity addition or private investment in generation. For states not endowed with resources, like Haryana and Punjab, such new additions could be limited and such states may enter into agreements for setting up pithead plants and import the electricity to the state.

Rating should also include benchmarks in achieving objectives of the Electricity Act 2003. In this regard, rating methodology should put additional emphasis on

³ Except in the case of some parameters like AT & C losses.

- Reduction in cross subsidy
- Tariff rationalization including better tariff design.
- Steps to streamline open access
- Steps undertaken to help improve the investment climate in the state.
- Customer services issues including developments towards complaint handling
- Regulatory Framework – Multi-year tariff regime, incentive based regulation etc.
- Independence of SERCs
- Efficiency of Utilisation of Funds from REC / MNES / APDRP schemes.

9. Efficient Market for Inputs - Coal and Gas

In the context of development of new generating capacity investors would like to address following issues related to Fuel – (i) availability, (ii) price and (iii) transportation. Capacity expansion in the sector hinges on availability of finances and ability of the project developer to manage various risks associated with the project. In this respect, development of competitive market for coal as well as gas would foster in sufficient supply of fuel as well as sound contract management. For the upcoming projects, especially in the private sector, it is not only difficult to enter into reliable fuel supply agreement but also hedge price risk due to lack of a futures market for coal and gas in the country. In case of non-allotment of captive coal mines for the future projects, liberalization of the coal sector to enable greater private participation is inevitable. Competitive basis for allocation of coal mining blocks for prospective project developers may result in hoarding coal blocks and in-effect tilt the balance in their favour while bidding for the power projects.

10. Regulatory Coherence across Power, Coal and Gas Sector

In the above context, it is also important there is regulatory coherence across the power sector as well as the fuel markets. For e.g. a particular regime for gas transmission may provide different signals for location of capacity whereas transmission availability and its pricing framework may suggest the other way. Similarly, price equalisation scheme in the coal sector would benefit certain plants and would also alter economics of upcoming coastal power projects.

11. Independence of Regulatory Commissions:

Regulatory Commissions have been set up by all the states in the country. These institutions are expected to embody following characteristics – independent, transparent as well as participative. Regulatory institutions have embraced transparency and participation to a significant extent. However, lack of independence of such institutions remains a concern for the sector.

Power sector, especially at the state level, remains largely under the public ownership. Continued indirect influence of the respective governments on regulatory institutions has made the sector a prisoner of political objectives which are not always in the long-term interest of consumers.

Independent regulatory institutions are expected to balance the interest of various stakeholders and foster sustainable development of the power sector. These institutions lack financial as well as administrative independence more so in the states. Regulatory commissions do not derive significant revenue from license fees and are dependent on financial support provided by respective governments. In contrast to this, telecom regulator TRAI has achieved financial autonomy as its finances are primarily sourced from fee on the entities it regulates, an accepted principle in many countries.

Aspersions over functional or administrative independence of regulatory institutions are cast primarily due to the influence of governments over selection process for appointment of the members of the regulatory commissions. In general, the process of selection is governed by a selection committee, which in turn is constituted by the respective governments. Apart from this the eligibility criteria for appointment of the members of the commissions often covers limited domain of expertise available in the country.

Power sector presents a clear case of what is called in the economic literature as ‘regulatory capture’, in this case by the political institutions. Private investors would continue to feel higher risk perception especially for distribution segment, as the regulatory institutions exercising jurisdiction over this business activity are influenced by owners of the regulated entities. There is a need to address such agency problems in the Indian power sector as these do not favour healthy and sustainable development of the sector in the country.

12. Development of a Multi-year Tariff (MYT) framework:

Electricity Act 2003 proposed adoption of a Multi-year Tariff (MYT) framework to be developed by the SERCs. Most of the distribution segment remains under the public ownership. However, increased role of private investment in the sector can not be ruled out. In this context, a MYT framework would provide revenue stability during the period of regulatory review. A MYT tariff framework also requires that incentives to be built in the tariff framework so that distribution licensees strive to improve efficiency. SERCs need to identify a common set of ‘controllable’ and ‘uncontrollable’ cost parameters across states so as to provide a transparent regulatory framework.

Development of a common template for MYT would require a reliable and timely data about technical, operational and financial parameters of the distribution utilities. There is a need to address faster development of MIS based data collection exercise based on common data format across the country. This would also help in undertaking benchmarking studies, help develop a MYT regime and strengthen its regulatory review.

13. Credit Enhancement Mechanisms like MIGA for the Domestic Market:

Foreign investors in developing countries often hedge against political risk through risk covers provided by Multilateral Investment Guarantee Agency (MIGA) of the World Bank group as well as private insurance companies. Cost of such cover provided by MIGA is usually lower (about 2-3 % of the investment risk cover provided) than that provided by international insurance companies (costing upto 6 % of the investment risk cover provided). Domestic financial institutions (FIs) especially those which have significant knowledge of the sector like PFC can offer such risk coverage products to domestic as well as international private investors. Due to significant information advantage and leverage derived from prior dealings with the state utilities, such FIs may be able to provide risk cover at a lower premium as compared to international institutions. It would be prudent to explore cooperation with MIGA, which has expertise in project appraisal and due diligence in this context. This may help leverage domestic as well as foreign private investment in power sector as well as other infrastructure sectors by improving bankability of projects with domestic and foreign lenders. This would also help address some of the investors' concern for the Ultra Mega projects as well.

14. Development of Hydro Projects in Neighbouring Countries and Pricing Framework for Imported Electricity:

The neighbouring Himalayan countries of Nepal and Bhutan endowed with significant hydro resources. A number of such projects have been developed on a bilateral basis in the past. However, this has not been open to private investors who could also develop such projects on a bilateral basis and import the electricity in the country. There is a need to provide clear framework for import of power from projects in neighbouring countries to be developed with investment from public and private sector entities from India.

Another related issue is with respect to the pricing for such imported electricity by the identified nodal agency, PTC Ltd. As per present regulations, sale of imported electricity within the country is not subject to 'trading margin', which is limited to 'inter-state' and 'intra-state' trading only. Since such resources have been developed on national resources, the benefits of cheaper power from such projects should be available to state utilities. There is a need to arrive at appropriate pricing framework for sale of such power in the country.

15. Reduction in Import Duty for T & D:

Distribution sector faced tremendous challenges for improving technical performance. This includes a number of initiatives like up gradation of the distribution network, high voltage distribution network, implementation of MIS, remote metering and other such new technologies. A high import duty on import of related equipments discourages innovation and cost minimisation in the domestic sector and deters import of state of the art technology. Lowering of the import duty would help in cost effective implementation of such schemes. This would help strengthening the distribution network thereby leading to improvement in service

quality and reduction in technical losses as well as reducing avenues for non-technical losses.

This impedes cost effective development of the distribution network and increases cost of access for unserved consumers. Further, this can also help bring down technical loss in the T & D segment through import of new technology and efficient equipment. Given the significant investment potential in T & D segment, there is ample space for domestic as well as foreign manufacturers. Domestic manufacturers would also gain from spillover of advanced technology. Benefits of such technological leapfrogging would be available to those customers who would be connected the grid in the coming years.

16. Simple solutions to Reduce Distribution Loss:

Many states continue to have very high level of T & D losses. Distribution utilities should publish a list of feeders in the ascending order of distribution loss along with the concerned official in-charge of the feeder. This may provide ample ethical pressure for not being the 'topper' of the list. Apart from this, distribution utilities should provide incentives to official in-charge where non-technical losses are reduced. Such carrot and stick policy should help reduction in distribution loss. State Electricity Regulatory Commissions (SERCs) should take a lead in this respect.

17. Data Warehouse:

Indian power sector suffers from poor data collection, compilation, storage and dissemination. Timely and reliable data on key operational and financial parameters brings transparency, helps performance monitoring by the utilities themselves and thereby helps identification of areas for improvement.

Introduction of Multi-year Tariff (as stipulated in the Electricity Act 2003) and benchmarking is dependent on availability of appropriate data related to regulated entities. This would help adoption of efficient practices among various utilities and would also help regulators set performance parameters with sufficient knowledge of the peers. Standardised set of parameters and formats along with its IT implementation would help speedy and cost effective compilation of data on generation, transmission, distribution and trading activities in the country. Adequate funding may be provided for development of a coordinated MIS system for the power sector.

18. Power Market Development:

In line with the objective of the Electricity Act 2003 towards development of a competitive power market in the country, CERC has recently issued a staff paper on development of power market in the country. Few suggestions in this regard are outlined below,

- (i) **Status of Existing Long-term PPAs** - While increased competition in power sector is welcome, the structure of a competitive power market including a

power exchange should evolve gradually over a period of time. In this context, existing long-term bilateral contracts as well as those under long-term open access should continue on a bilateral basis. Though the National Electricity Policy suggests that 15 % of the power purchase under the existing long-term PPAs be contracted in a competitive manner, it would not be favourable to the state distribution licensees who have borne the historical fixed cost of existing assets and are not tuned to work immediately in competitive market conditions. In case, part of existing power is offloaded through a power exchange, distribution utilities with higher capacity to pay would be able to garner this power while consumers in the original beneficiary states would face power shortages. Existing beneficiary distribution utilities of the PPAs could gain financially if these utilities are able to garner the premium on sale of such power due to shortage conditions and SERCs allow these entities to retain such profits.

- (ii) **Develop Spot as well as Futures Market** - Markets are not complete unless an array of products for spot as well as futures market is put in place. This not only provides an instrument for hedging, but also provides economic signals for investment in new capacity. Fears about speculation in the futures market can be addressed through design of market monitoring for which CERC/SERCs are already empowered. The spot market would include delivery based day ahead or hour ahead basis.
- (iii) **Change in Transmission Pricing Regime** – The prevailing regime for pricing for inter-state and intra-state transmission is not conducive to development of competitive power market. Although National Electricity Policy suggests direction sensitive pricing regime, existing transmission pricing regime is yet to evolve in this direction.
- (iv) **Market for Green Electricity** – The Electricity Act 2003 stipulates that SERCs identify purchase of certain percentage of electricity from cogeneration and renewable sources. In order to develop a cost competitive renewable energy sector, and to ensure competitive procurement of ‘green electricity’, a market platform should also include appropriate products for the same. This could also be possible through development of a market for certificates for green electricity, which could help meet renewable portfolio obligation of distribution licensees.
- (v) **Resolve Ambiguity of Jurisdiction** - The Forwards Market Commission has issued a notification for permitting futures contract for electricity. Hence, commodity exchanges in the country would be keen to develop this segment of power markets. Since electricity is different from other commodities, developing a power market would require coordination with transmission utilities, system operators as well as the regulators. Any ambiguity of jurisdiction should be sorted before spot and futures contracts are introduced in the country.