

OPEN ACCESS TRANSMISSION

By

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Abstract

The Electricity Bill 2001 provides a glimpse of the scenario of ES industry that is likely to emerge after restructuring takes place in India. The provisions related to open access have already been envisaged in the bill. The paper describes the scenario of open access transmission in detail. The salient features of open access, need for open access and pricing mechanism for transmission in the open access era have been discussed in detail in the Indian context.

1.0 Introduction

The Electricity Bill 2001 defines open access as non discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensees or consumers or person engaged in generation in accordance with the regulation specified by the appropriate Commission. Thus, the term “transmission access” refers to the ability of a seller or buyer of power to use the transmission/distribution system owned by one or more utilities enabling purchase or deliver electricity at locations/markets distant from the point of generation. The paper discusses in detail the need for open access, provision on open access transmission and distribution as given in the draft Electricity Bill 2001, pricing of transmission and the role of regulator.

The current trend in the electricity supply industry is towards restructuring and reforms to create focus on each of the activities like generation, transmission, distribution, supply and trading in electricity supply industry to promote competition and to reduce the cost of power to the end consumers. The restructuring process going on in the ES industry is to have a functional segregation of the vertically integrated utilities. The process have already begun in India with significant restructuring already done in Orissa, A.P, Karnataka, U.P, Haryana etc. and the Electricity Bill 2001 is likely to provide fillip to the restructuring process. With the restructuring of ES industry, there would be number of independent entities in generation, distribution, supply and trading. However, the transmission would be under one monopolistic utility (STU) in each State and inter-state transmission system would be under one transmission entity i.e., POWERGRID designated as CTU. Number of generating companies including IPPs, MPPs, captive generating stations, sell electricity to distribution companies, bulk consumers, trading companies, transcending geographical boundaries of States. The cost of electricity, reliability of supply, quality and choice are the motivational factors influencing trading agreements. The Electricity Bill 2001 provides for captive generators to site their generators in one part of the country, inject power in to the grid and use for their own consumption at a different corner of the country. The generators as well as bulk consumers are free to trade with each other even though they do not provide for the transmission lines required for transmission of electricity. This requires unconstrained transfer capacity both in distribution and transmission. Since the

transmission entities are monopolistic, the pricing of their services should be regulated so that they would not charge prices disproportionate to their costs, discriminate between users and create any legal hurdles in trading. Further, the Electricity Bill 2001 also do not allow purchase, sale or trading of electricity by the transmission and distribution entities which is a progressive move. It is imperative to provide non discriminatory open access of the transmission and distribution systems to all licensees, generating companies, bulk consumers and captive generators and trading entities. The relevant provisions of the Electricity Bill 2001 are enclosed at Annexure-I.

The newly formed entities following restructuring can not survive and conduct their business without implementation of open access. As such, open access should precede restructuring. The most important objectives of restructuring and reforms has been to promote competition among generators. This would be possible only when all the generators have access to transmission without any discrimination, constraints and at the same time pricing to be fair. It is in the interest of the nation to optimally utilise the resources by siting of power plants close to the fuel resources. The open access thus allows for displacing costlier generation by cheaper generation.

2.0 Why do we need Open Access?

2.1 Developing competition in all aspects especially generation is the main purpose of reforms in the sector. Effective competition in generation requires several elements:

- *non-discriminatory access, including economically rational pricing, to the transmission grid and provision of ancillary services;*
- *sufficient grid capacity to support trade;*
- *electricity industry law and competition law and policy that effectively prevent anti-competitive conduct;*
- *a sufficient number of generation market players to give rise to competitive rivalry.*

Competition in generation is enhanced by:

- low barriers of entry into generation;
- a non-discriminatory efficient market mechanism for electricity trade;
- a stranded cost recovery mechanism, if necessary, that is non-distortionary and fair;
- greater elasticity of demand with respect to price changes; and
- end-user choice, with competition to supply end-users.

In India, only one generating entity emerged in the states wherever restructuring/unbundling has taken place and that is state-owned. To have true competition and eliminate possible abuse of market power, generation in each state should be owned by several companies and privatised to the extent possible rather than public owned and it is and long way to go for India to reach such a level of competitive environment. True competition among generators is possible only with open access transmission. The state owned generating company may get priority in getting transmission access (from the state owned transmission utility) as compared to private

owned generators. If there is no competition in the “supply”, private generators would be discriminated and state owned generators get all the preferences in despatch and sale.

- 2.2. Discriminatory access to the transmission grid leads to two types of inefficiencies: 1) higher-cost generators may be used instead of lower-cost generators, and 2) entry by efficient generators may be discouraged. Both of these effects increase costs which could be avoided with non-discriminatory access. However, a vertically integrated utility has strong incentives to discriminate in favour of its own generating assets, providing them with preferential access to its transmission grid. In the Indian context, restructuring has already taken place in some States and most States still have vertically integrated utilities. This kind of discrimination could be likely till restructuring is complete in all the States.
- 2.3 Transmission and ancillary services must be accessible at tariffs that reflect costs that are non-discriminatory, in order to ensure that independent generators can compete with the utilities to supply to liberalised end-users. For liberalised customers and IPPs, efficient pricing of the use of network services is the key to ensuring efficient use and augmentation of the transmission network. While a vertically integrated utility has no need to price transmission separately for its own use, IPPs and liberalised customers use only a part of the services provided by a vertically integrated utility, e.g., the transmission network, making such pricing necessary. Reform in the electricity sector should enhance efficiency through competition in generation and retail supply.
- 2.4 All utilities would need to abide by the concept of open access so that trading opportunities be never lost in the absence of agreement on transmission and wheeling charges. These should be regulated by the central regulator. The owners of wheeling transmission systems should not be allowed to hamper the trading just on account of non-agreement on the issue of pricing of such wheeling.

3.0 The U.S example of Open Access

- 3.1 Developing Countries are moving from government controlled monoliths to corporatisation and unbundling by functional separation of power sector with an independent regulatory framework to commercialize the sector to access for large investments for the sector expansion whereas some of the Developed Countries are moving a step further from regulation to deregulation to promote competition even at retail (distribution) level to facilitate consumers to have access to electricity from any source at competitive rates.

The Energy Policy Act of 1992 (EPAct) required all transmission-owning utilities to grant non-discriminatory access to the transmission grid, empowering the Federal Energy Regulatory Commission (FERC) to order utilities to provide such access. FERC responded by first requiring utilities, on a case-by-case basis, to grant access to third party wholesalers on terms and conditions comparable to those the utility provides for its own wholesale transactions.

3.2 Open Access Final Rule (Order 888 & 889)

Elimination of monopoly power over transmission was the primary objective of the rules enacted in 1992. To achieve this objective, FERC required all public utilities that own, control, or operate facilities used for transmitting electric energy in interstate commerce to:

- File open access nondiscriminatory transmission tariffs containing minimum terms and conditions
- Take transmission service (including ancillary services) for their own new wholesale sales and purchases of electricity under open access tariffs
- Develop and maintain a same-time information system (OASIS) that will give existing and potential users the same access to transmission information that the public utility enjoys.
- Separate the transmission from generating and marketing functions and communications.

4. The present status of transmission business in India

4.1 Ownership

The ownership of transmission assets is held by vertically integrated utilities with interest in generation and distribution not interested in providing their transmission facilities to IPPs, private generators or traders and may not go for augmenting their networks to facilitate trading by these entities. SEBs policy towards wheeling of IPPs and captive generation is generally negative, the reason being that these IPPs/Licensees/Captive generators grabs the most lucrative and paying segments of sector i.e., industrial consumers who actually cross subsidises both agricultural and domestic consumers.

4.2 Transmission constraints

The surplus available in Eastern region could not be fully utilised by other regions due to lack of adequate transmission. About 2500 MW surplus power in ER remains unutilised even though huge deficits of power are experienced in all other regions. Between WR & SR, 1000 MW can be transferred on Bhadravati HDVC back to back and 300 MW on 220kV Kolhapur-Belgaum lines. The power transfer on both these links has been restricted number of times due to low voltage problems especially at Bangalore substations. At times, the power transfer through Bhadravati HVDC link was restricted to 100 MW. The pertinent point here is that even if any of the Southern states are involved in importing of power, the same is restricted due to low voltage problem at Bangalore. This is mainly due to inadequate transmission capacity within the region coupled with critical loadings of lines. Reactive compensation provided is far below the requirement. An interesting question would be if AP or Tamil Nadu intends to import 500 MW (say) from ER & WR constituents and the transaction is restricted to say 100 MW due to low voltage in Karnataka, why Karnataka should make investment in capacitors or other reactive compensation devices. If POWERGRID is asked to invest on such facilities at Bangalore, other States may not agree to share the costs and KPTCL may not be

interested in fully sharing the costs if they do not intend to import power, even though they may gain in reducing losses. The other option could be to augment the transmission network which would be a costlier option.

Another issue is if Tamil Nadu wants to import 200 MW from ER and Kerala wants to import 100 MW from WR with the constituents limiting export to 100 MW only, who would get priority? Would WR get priority to export due to the HVDC link being part of its assets? Can WR & ER share the link in proportion to their exports? If the ER export is short term firm and WR export is infirm, then what is to be done. If WR and ER exports both are infirm, can the link be allocated to the cheapest power in order to optimally utilise the national resources? If the UI prices in ER, WR and SR systems are 84 ps/unit, 168 ps/unit and 264 ps/unit respectively and ATC of the link is only 100 MW and assuming that UI for inter-regional exchanges is priced based on the average of the UI rates in exporting and importing regions (share the savings concept), ER, WR and SR would gain 42 ps/unit, 140 ps/unit and 98 ps/unit in this transaction. This would induce ER & SR to enter into a firm transactions, possibly by one constituent state in each of these regions on a bilateral basis. Ultimately, the difference of UI prices would come down through bilateral transactions. The windfall profit of WR is only for short duration as this infirm transaction is interruptible.

Further, in many of the states, transmission constraints exists and low voltages prevail due to overloading of transmission in the sub transmission and distribution systems. A case in point is that of MP and Goa. The former has low voltage problems while the latter has constraints in distribution system. The transmission planning is coordinated through standing committee meetings so as to ensure that adequate underlying transmission capacity is provided by the states and dovetailed with the Central Transmission planning. However, due to lack of financial resources, transmission capacity within states do not get augmented.

As per Rajadyaksha Committee, the investment required in generation, transmission & distribution should be in the ratio of 1:1 and the present investments in transmission are far from this norm.

Another problem is concerning the incremental losses versus total losses which becomes a contentious issue for wheeling. With the despatch of internal resources and ISGS plants, the total transmission losses could be less than 5% while with the import of say 100 MW from other regions could increase the losses by more than 10 MW which is about 10% of the transaction. The constituent states would insist for compensation for incremental losses. Same is the case of a 100 MW transaction from GRIDCO (Ib power station) to KPTCL with incremental transmission losses in Western region increasing by 10% (10 MW) with around 9 MW losses increased in Chattisgarh alone.

Another difficulty is in defining the contract paths and the problem of parallel paths with the transacted power flowing both in the inter state grid and the state grid. The sufficiency of the central grid to handle the transaction is not convincing to the state and

claims for sharing of transmission charges arise for the parallel paths and at times lead to disputes.

4.3 Administrative & Legal Barriers

The IPPs, licensees and captive power plants within a State can not have flexibility to sell power to other states and are bound by license agreements\PPAs. For instance, Tata Power Company has considerable surplus power ranging from 250-500 MW even during peak hours but can not trade this surplus without getting permission from MSEB. In fact, only SEBs are allowed to distribute power within a state unless authorized to licensees in some areas.

4.4 Lack of framework for trading.

Demarcation of pricing for wheeling transactions for infirm, firm, short term and long term transactions has not been made. If any generating company wants to sell power after getting due clearances from the State, it is not in a position to precisely know the overheads like transmission losses, transmission charges, wheeling charges that goes into the final sale price for the buyers. Non determination and publishing of these transmission related prices would inhibit trading. As an example, CESC, Calcutta exporting power to KPTCL will have the following pancaked on the sale price of CESC power at its generating stations bus bars.

- Wheeling charges and wheeling losses payable to WBSEB.
- Wheeling charges and losses payable to constituents of Eastern region for utilising inter state transmission system of Eastern region.
- Wheeling charges (17.5 paise/unit) and losses for usage of GRIDCO system.
- Wheeling charges and wheeling losses for contract path inter connecting GRIDCO and CSEB.
- Wheeling charges and losses for usages of inter state transmission system of Western region payable to the constituents of W.R

Addition of these components would result in the cost of power to be increased by 50% over the cost of power at the generating stations bus bars. Primarily, the transmission entities wheeling power from CESC are trying to recover proportionate stranded cost. Even though, this may be justifiable in case of long term transactions, the same should not be applicable to exchange of power in short time horizons as infirm transactions, which are in fact termed as “economy transactions”, get discouraged.

4.5 Siting of Power Stations

Without open access transmission, optimal siting of power plants close to cheap sources power is not possible. The States with rich resources of fossil fuels like Eastern region and hydro resources like NER may not have adequate load unlike Western and Northern regions. It is required to optimise utilisation of these resources by siting the power plants

close to these resources and transfer power to the load centres located far away in the country. The lack of open access transmission at present forced states in the Western region to go in for high cost naphtha and gas based power plants.

5.0. Development towards open access in India

- 5.1 The first step taken towards open access in India has been removing transmission bottlenecks through grid strengthening schemes. These schemes are supposed to come up in very short time and eliminate transmission constraints.
- 5.2 Upcoming Central projects at Nabi Nagar, Barh and North Karanpura in Eastern region have entitlements sought by States in Western, Southern and Northern regions. Some of the hydro projects of NHPC and gas based power station of NEEPCO in NER are seeking beneficiaries from all over the country. MPPs have also been planned at Hirma in Orissa. All these major projects will have transmission systems connecting load centres in several regions. Talcher-II project transmission would be in place by the end of 2002. The generating station is located in Orissa while the beneficiaries are located in Southern region.
- 5.3 Augmentation of inter-state/inter-regional links and formation of National Grid is a major step in this direction to create open access.

6.0 Transmission pricing options.

6.1 The Challenge of Network Pricing in a Competitive Market

The emergence of a more competitive generation market means that more and more generators will seek access to the network. This might cause dramatic increase in demands on the transmission network and its coordinators.

Expanding competition is thus in tension with the need for cooperative efforts to coordinate for network effects and fairly compensate for them. In today's world, containing network interactions has been accomplished simply by allowing fewer trades, but that result is not acceptable as market participants will demand the ability to make trades. In the past, informal working arrangements between neighboring utilities might have been sufficient, but today and in the future more formalized rules affecting not just utilities but all network users will be necessary to ensure that competitors who cause network effects fairly compensate (or collect from) those competitors who are adversely or beneficially affected.

An *open competitive market* with efficient pricing signals should also eliminate the need for one of the most difficult aspects of utility regulation: the requirement to regulate the cost of, need for and choice of new utility power plants. In a competitive market, the rationale for this well-intentioned but difficult, highly contested and, so far, still unsuccessful effort, could be completely eliminated. But its elimination depends on the

creation of a fair and efficient competitive market in which all potential suppliers -- utility and non-utility alike -- have open, non-discriminatory access to the transmission facilities and ancillary services essential to conducting operations and, equally important, open access to the consumer market. Equally crucial, consumers must have open access to all potential suppliers. No such market existed in the United States about 5 years back, but now a reality.

Liberating consumer choice in generation supplies is only half the task. To allow consumer choice to realize the benefits of individually tailored services, it is necessary to pull apart the current bundle of utility-provided services, separating those that can be provided by competition from those that must remain the responsibility of regulated monopolies.

6.2 Pricing Priorities.

At present, the regional transmission charges are recovered from the constituent states within a region based on the Central Sector drawls in that month. However, with the formation of national grid transcending regional boundaries such pricing mechanism may not be adequate and the new pricing mechanism has to be evolved based on the concept of usage. Presently, the transmission tariff is based on sharing of cost-plus annual charges proportionate to drawals and in post-ABT to entitlements irrespective of usage of costlier or cheaper parts of transmission systems. The new addition of inter-regional lines linked to generation would need to be shared on the usage basis since not all states within the region would indent allocations from those stations.

Further, wheeling and transmission agencies may consider differential pricing based on 'time of the day' and 'degree of congestion'. With the introduction of ABT, the power plant owned by licensees, captive power plants would also be able to inject their surpluses into the grid or they can also draw under deficit conditions and make or receive payments based on U.I prices. The ABT promotes interchanges from these resources. Transmission pricing should give clear signals for augmenting the corridors where degree of congestion is very high and provide cheap prices during off peak hours to facilitate usage of power by pumped storage plant etc. The provision for including cost of ancillary services incurred in maintaining voltages in the transmission charges can also be considered.

The utilities connected to inter-state / inter-regional lines should also be charged for connection charges depending on the type of interconnection, number of points of connection, peak drawal, and rated voltage at connection points. As per CEA's plans, the constituents are given in-feeds at different voltages and cost of transformation is also pooled which could have been marked to single constituent. Similarly, constituents drawing power at more number of feed points are entitled to pay more of network charges even when they draw less energy.

The trading utilities should have apriori knowledge of the transmission pricing preferably based on price Rs/MW-Km. Even though redundancy in transmission occur initially, the market forces would optimise the transmission prices as well as the size of the network.

6.3 The Four time periods

Due to the slow pace of reforms in India, transmission pricing issues would have to be addressed for the following four time periods.

- i) With vertically integrated utilities owning transmission – even though restructuring began and completed in some states, the pricing methodology and arrangements for transmission access are yet to be determined.
- ii) With vertically integrated utilities in some states owning transmission and some states carried out the restructuring but only one state owned generating company emerging.
- iii) All states carried out restructuring but some states still have only one state owned generating company operating.
- iv) All states carried out restructuring and number of generating companies both state owned and private owned operating with the state owned generating company not in a position to exert market power.

The problems that are expected as the ES industry in India slowly passes through the first three period before entering the final period of competitive environment are discussed in the ensuing paragraphs.

6.4 The pace of reforms towards open access

Several problems crop up in the intervening period when some of the states have already carried out restructuring and in some states restructuring is yet to begin. In such a scenario, some vertically integrated utilities owning generation, transmission, distribution would exist and barriers could be created by these utilities to generating companies, IPPs, CPPs, bulk consumers in the restructured states. The vertically integrated utilities may not provide open access to the IPPs, CPPs in other states and might seriously impair their business and this might slow down the pace of generation additions by IPPs and CPPs. The vertically integrated utility may constrain cheaper generators to pay high prices for wheeling power and the transactions may not be lucrative to the buyers. The vertically integrated utilities may also involve in buying cheaper power by exerting their market power and re sell to the bulk consumers in their control area or outside at higher cost and earn profit for themselves. In some cases, the vertically integrated utilities may not be interested in trading activities as they are complacent due to the cost plus approach followed in tariff making in their states. These utilities may also not invest adequately to remove the transmission constraints, low voltage problems etc., which may come in the way of availing the services of these utilities by generators and bulk consumers outside the state boundaries. Even in the restructured states, with one state owned generating company, it may get priority in transmission access as compared to other private generators within the state or outside the state. Such discrimination might cripple the business interests of the private generators and it is also possible that inefficient and costly generation may be despatched or traded. The regulatory commission have a complex and

enormous role to play to remove these barriers and nurture competition in the generation and supply area.

6.5 Short Term Firm Transactions;

After the formation of National grid (synchronous) in the country, same U.I rates prevail in the country and generators may like to sell some power (based on the assessment of grid conditions) based on U.I pricing (spot/real time) to earn profits. This creates problems like wide fluctuations in the cost of electricity to consumers. Such a tendency should be discouraged while short term firm economy transactions based on incremental cost of generation should be promoted. Short term firm transactions are primarily economy transactions and generators would be competing with each other to sell power close to the incremental cost. Such transactions need to be encouraged as this would achieve overall optimisation in cost. For such cases, regulator should provide published data on per KWH charges based on MW mile method for the defined contract path for transactions between various utilities. This should ideally be capped at 5% of the incremental cost or U.I cost in the region corresponding to frequency 50 Hz. In the present context, the capping would correspond to 5% of 140 paise per unit i.e., 7 paise per unit. However, it should be ensured that the transmission operators recover operating costs. Additionally, congestion charges would be levied above this for such lines/paths.

6.6 Pricing of Open Access Transmission

The Electricity Bill 2001 envisages complete restructuring of the ES industry in India in all the states with one transmission operator managing ISTS and one transmission operator managing the state transmission grid for each state. The competition for transmission access shall be provided by these transmission entities to generating companies, IPPS, captive generators, bulk consumers and traders without any discrimination. Due to large-scale wheeling transactions taking place, the present scenario of transmission pricing would undergo significant changes. The MW mile method for pricing transmission may not be adequate as this method considers all lines with the same priority and do not give a weightage to transmission corridors with congestion and to those transmission corridors that affect security of the grid in the event of planned or forced outages. The new methodology of pricing should essentially allow the transmission operators and other service providers to recover their costs. The first is recovery of operating cost by the transmission agencies for losses and for incurring O&M charges of their systems. The transmission agencies may also have to be paid for the reactive support at critical nodes for ensuring reliability of transactions and security of the grid. The transmission operators may hire the services of ancillary service provider for reactive support at several nodes. Some of the generating companies may have to keep reserve margins or invest for providing black start capabilities to ensure reliability of transactions and security of the grid. They may also have to reschedule their generation to keep the losses at minimum and transmission corridors at optimum levels of loading. This entails at times running of some costlier generators or depleted hydro resources. These costs have to be compensated for. The above costs are operating costs and should

be paid for all types of transactions – spot (real time), short-term, infirm and firm and long term transactions. The recovery of embedded cost (sunk cost) by the transmission operators is the main priority of the transmission operators. In case of the existing transmission, the cost can be recovered based on usage for spot and short term infirm transactions. However, regulators should put a sealing of 5-10 paise per unit to encourage these transactions. In the case of firm power transactions both in short and long term, the transmission operators should be allowed to recover the embedded cost based on contract path and based on the proportionate power flow in relation to SIL loading. In case of the new transmission lines, the transmission operators should be able to recover the embedded cost to approximately 75% of the annual charges from the short and long term firm transactions as these lines are built in response to these. The remaining 25% of the annual charges can be recovered from the other utilities for relieving congestion in the parallel corridors, enhancing of security and reliability. However, on the existing and new lines charges for congestion should be applied with differential rates – more on the sport and unscheduled transactions to generate signals for the need of expansion. However, this is a complex issue and the regulatory commission (CERC/SERC) can determine the portion to be recovered from each utility based on system studies submitted by the respective RLDCs.

6.7 Transmission Expansion

The signals for transmission expansion under open access should be clearly visible to the transmission operators as well as to all grid users. The spot prices should be increased based on the degree of congestion so that the buyer and seller would be interested in making long term transactions. With the ABT coming in all the regions, the inter regional transmission would grow enormously as the U.I rates in different regions would provide signals for short-term transactions. However, with the formation of National Grid, the differential U.I rates cease to exist. The long term transactions on certain corridors should induce adequate signals for transmission expansion. Some transactions may shift from one corridor to the other corridor due to the choice exerted by the consumers and distributing companies in seeking the generators. Transmission expansion planning should also provide for margins to eliminate the possibility of congestion. Need for augmentation of the existing corridors and FACTS devices like Series Capacitors, SVCs, STATCOM etc., would be increasingly felt to optimally utilize the transmission. Reliability and security issues need to be addressed in the planning and only RLDCs are in the best place to judge in such matters with their expertise in congestion/constraint control and management. It is also worthwhile to impose short term and long term firm transactions with a surcharge of suitable amount which could be utilised for constructing new corridors and choice of corridors could be decided by the RLDCs. The Electricity Bill has appropriately gave the grid planning and expansion activity to RLDCs under “functions of Regional Load Despatch Centre – 27(3)(b)”

6.8 Role of RLDCs and NLDC

The RLDCs and NLDC will play vital role in scheduling various transactions (may be in thousands) and despatching transmission spanning the length and breadth of the country crossing boundaries of the regions. These control centres would determine and communicate to all grid users information on ATC and control congestion. They have to be equipped with the state of the art EMS functions to minimise the losses for a set of transactions through reactive power control at several nodes or determine the losses accurately for any transaction (using real time data). This can be effectively done by OPF. RLDCs have to find real time solutions for managing the constraints and may have to redespach generation. They may also certify the services provided by the various ancillary service providers. Above all, RLDCs and NLDC would take all actions required to ensure grid security and it is in the interest of all the grid users to obey the directives of the control centres as one grid collapse may take long time for restoration due to the size and complex matrix of transactions.

7.0 Conclusions

The restructuring and reforms have already been taking place in the ES industry in India. Several states had already carried out restructuring and it is expected that all the States in India would carry out restructuring of ES industry in their states. The vertically integrated utilities would be dissolved and generation, transmission, distribution and supply activities would be separated and handled by independent agencies with one transmission utility in the state and one transmission utility for inter state transmission. The pace of reforms is likely to increase with the passing of Electricity Bill. In order to consolidate the reforms and to achieve the objective of competition, efficiency and least cost to the consumers, open access transmission as envisaged in the Bill would be a reality in the near future. The restructuring would not succeed without the introduction of open access much in advance. The open access transmission also brings in optimisation of resources in the country by suitable siting of power plants close to the locations of fuel resources and enable drawing of power at different load centres elsewhere in the country far located from the generating plants. This would also benefit IPPs and CPPs to survive and provide fillip for generation additions required by the country in the next few years to achieve faster economic growth. Without open access, there can not be any competition among the generators and the real objectives of restructuring and reforms i.e., least cost power to the consumers would not be fulfilled. Pricing of transmission, non discriminatory access, dispute resolution are some of the important activities that the regulatory commissions in the country have to resolve. The paper discusses the above issues in detail with recommendations on pricing.
