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Maharashtra Electricity Regulatory Commission

Discussion Paper on operationalzing Parallel Distribution Licensees in the State of Maharashtra

Final Discussion Paper

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1 BACKGROUND

1.1 Background

In the Mumbai region of the Maharashtra state, four distribution licensees hold the licence to distribute electricity within the areas specified in their respective licences and within the ambit of the relevant orders of the Maharashtra Electricity Regulatory Commission ("the Commission" or "MERC") and various judgments of the legal bodies. The licensees are: a) Brihan Mumbai Electricity Supply and Transport Undertaking ("BEST"), b) Reliance Infrastructure Ltd. (Distribution business),("RInfra–D"), c) The Tata Power Company Ltd. (Distribution business) ("TPC-D"), and d) Maharashtra State Electricity Distribution Co. Ltd. ("MSEDCL").

While M/s. BEST, RInfra-D, and MSEDCL operate within specific distribution licence areas allocated to them, distinct from each other, TPC-D, on account of its historical background and the Supreme Court judgment delivered on 8th July, 2008, is licensed to distribute power in the entire Mumbai region excluding the Mira-Bhayander area served by RInfra-D and excluding all the areas served by MSEDCL.

Thus, there are multiple distribution licensees in each area. Each licensee has an obligation to supply electricity to all consumers, who demand electricity supply from them (Universal Service Obligation). In this context, to enable the discharge of the supply obligation by the distribution licensees, pending development of their own infrastructure/network, interventions were made by MERC. MERC directed TPC-D in the Tariff Order dated 15 June, 2009 to explore the possibility of utilizing the distribution network of existing distribution licensees ("R-Infra") so that cost is optimized.

Subsequently, TPC and RInfra entered into discussions to finalize an arrangement to effect the changeover of customers to receive supply from TPC on R-Infra's distribution network. The discussions culminated in TPC filing a petition before MERC (Case 50/2009). Subsequently, discussions were held on 30th September, 2009 and 8th October 2009 in this regard. Pending issuance of the Final Protocol/Regulation in this matter, the Commission issued an interim order on 15th October, 2009 ("Interim Order"), which detailed the operating procedure for changeover.

The Preamble to Electricity Act 2003 talks of promoting competition in electricity sector and the Act in its various provisions gives direction to the Central and State Commission to take necessary steps to promote competition in electricity sector. Also the Supreme Court judgement in case of RInfra-D Vs TPC-D, upholds that promoting competition is core to the Electricity Act, 2003. The operationalisation of parallel distribution license is one of the way to promote competition in electricity sector. . However, before issuing a new regulation dealing with the operationalisation of parallel distribution licensees or amending relevant existing regulations, it was decided to develop a discussion paper to trigger consultation among the relevant stakeholders.

1.2 Objective of the Discussion Paper

The provisions in the Act, stipulations in MERC Rules and Regulations, and various directives issued by MERC together create an enabling environment for the operation of parallel distribution licensees in a common area. While various possible operational problems such as procedures for changeover, billing and metering specifics, customer service, and many others, have been dealt with in the Interim Order on the above-mentioned petition, high-level issues such as tariff ceilings, retail supply margin, and extent of separation of accounts are yet to be addressed.

MERC is keen on providing eligible customers the freedom to choose their preferred supplier of electricity and to promote a competitive retail market in the state of Maharashtra. Further, it wants to ensure that the parallel distribution as envisaged in the Electricity Act, 2003 is introduced in an orderly way and various issues that will have an impact on stakeholders are debated thoroughly.

With the above objective, this discussion paper covers international experience of introduction of competition in retail distribution; relevant provisions in the Electricity Act, 2003; implications of the Supreme Court judgement; and issues such as the separation of wire and retail supply, tariff-related issues and operating procedures for changeover.

It may be noted that this discussion paper neither deals with the process and decision-making criteria for issuance of parallel distribution licenses nor does it deal with the other option of providing consumers a choice of supply, i.e., retail competition through the open access route. Both these issues will be separately addressed by MERC.

The views and opinions expressed in this discussion paper are meant to initiate discussion on the topic and do not necessarily reflect MERC's views or opinions in the matter.

2 INTRODUCTION OF COMPETITION IN RETAIL DISTRIBUTION

2.1 International Experience in Introduction of Retail Competition

Reforms in electricity distribution have taken place in several countries over the years; United Kingdom, Chile, Argentina, and Australia were among the earliest to undertake the same and have therefore become models for reform execution elsewhere. The reforms in the electricity industry have typically included industry restructuring and privatization followed by regulatory changes for developing a competitive market. These countries offer a good case study for understanding the introduction of retail competition in electricity distribution.

Historically, in most countries, utility industries including electricity have been “monopoly industries” in their pre-reform eras. Due to their monopoly nature, these industries have been subject to regulation in terms of price, entry and service quality to ensure that excess profits and inefficiencies are not allowed in the system. On the other hand, competition achieves the very same objectives of minimization of excess profits and maximization of efficiency by permitting consumers a choice. Additionally, competitive pressures can also spur innovation in products/services and production/service delivery methods and encourage radical thinking for cost optimisation. Further, costs and imperfections related to regulation are avoided in a competitive scenario.

International experience suggests that typically competition has first been introduced in the upstream segments of the industry, which in the case of electricity is generation. Typically, there were few state-owned generation companies in the pre-reform era which were first privatized. In such cases, the generation entities were broken down into multiple entities and then privatized, to promote competition. In the case of vertically integrated monopolies, unbundling of the monopolies into separate generation, transmission and distribution entities was carried out before privatization. The distribution and the transmission continued to operate as regulated monopolies. Regulators generally resorted to the creation of an electricity pool for the development of a wholesale market as the next step.

Although the distribution business had been retained as a monopoly to avoid duplication of assets and wasteful expenditure, certain segments of the distribution business were seen to have scope for introducing competition. The distribution business can be broadly segregated into two functions:

1. Supply business – Procurement of wholesale electricity and sale of electricity to retail consumers and providing consumer-related services including metering, billing, collection, and complaint handling
2. Network business – Development, operation and maintenance of the distribution network

Sector reform efforts at the retail end have therefore been largely directed at the separation of the wires business and the supply business, and the introduction of competition in the retail segment. Thus generation and retail supply have evolved as potentially competitive segments and transmission and distribution (wires business) are viewed as natural monopolies. The retail suppliers typically purchase electricity from the wholesale market, and supply to retail consumers. The retail suppliers pay the network operator for the use of wires to reach the consumer. Due to inherent conflicts with the monopolistic nature of the distribution business, regulators in several countries have allowed the introduction of competition in the retail market only after the segregation of the distribution business into the supply and wires businesses.

2.1.1 Experience in various countries

Experiences of some of the countries, which are considered to be developed markets in terms of retail competition in electricity, are discussed in the sections below.

2.1.1.1 Australia

Until the mid-1990s, in some Australian states (Victoria, South Australia and Tasmania), the four functions of generation, transmission, distribution and electricity retailing (also called 'electricity supply' in some countries) were carried out within a single, vertically-integrated, monopoly business. In other states (New South Wales and Queensland), generation and transmission were contained in a single monopoly business, while distribution and retailing were carried out by a number of businesses, each with a monopoly franchise covering a specified geographical area within the state.

The major objective of the electricity industry restructuring in Australia has been to unbundle the four functions into separate businesses:

- Several competing generation businesses have been established in each state.
- A single monopoly transmission business has been established in each state.
- Geographical monopoly franchisees for distribution have been retained in states that already had them and have been created in the other states. In some states, the number of existing franchisees has been reduced.
- A two-tier system has been established for electricity distribution and supply in each state.

'First tier' retailers: These are attached to a distribution business with a monopoly geographical franchise in that state. First-tier retailers can sell electricity to customers throughout the state, whether or not the customers are located within the accompanying distribution franchise. The retail business is "ring-fenced" from the distribution business (i.e., established as a separate accounting entity within one holding company). The first-tier retailer is akin to the widely known concept of "Utility of last resort."

'Second-tier' retailers: These are stand-alone businesses not attached to a distribution business in the relevant state. Second-tier retailers can also sell electricity to customers throughout the state. A second-tier retailer in one state may be a first-tier retailer in another state.

The major Australian wholesale electricity market, the National Electricity Market (NEM), comprises the sale of bulk electricity by generators to electricity retailers and large end-use customers in southern and eastern Australia. The NEM operates in the states of New South Wales, Victoria, Queensland, South Australia and Tasmania and in the Australian Capital Territory.

The retail electricity market comprises the sale of electricity by retailers to end-use customers. Within the area covered by the NEM, the retail market is partly competitive and partly operates on a franchise basis.

In the competitive retail market, electricity retailers compete to supply to the vast majority of large customers who choose not to purchase directly from the wholesale market, and to smaller customers who opt out of purchasing electricity from their first-tier retailer. In most jurisdictions in which the NEM operates, retailers can sell electricity to all end-use customers down to the household level, i.e., all customers are contestable. Where this is the case, customers may continue purchasing electricity from their local first-tier retailer; the tariffs they pay are controlled by the electricity industry regulator. Alternatively, customers can choose to purchase electricity under a competitive retail contract from a first or second-tier retailer in their state. There are no controls on prices under such competitive retail contracts.

Under this structure, for the retail electricity market, retailers actually shield retail customers from the price volatility in the NEM wholesale spot market. In effect, retailers provide price risk insurance for retail customers with the retail price being paid by the customer, including an insurance premium component.

2.1.1.2 New Zealand

The five major generation companies produce more than 90 percent of New Zealand's electricity. New sources of generation can be developed in New Zealand without securing any specific approval from the Commission. The main regulatory requirements are that a new plant conforms to the relevant technical codes and has the necessary resource consents. Generators that are bigger than 30 MW or which are grid-connected compete in the electricity spot market by submitting 'offers' to the System Operator for the right to generate electricity to satisfy demand, subject to transmission capacity.

In addition to retailers, a small number of customers, typically large industrial users, also buy electricity directly from the spot market. These parties will typically also enter into financial contracts (often called 'hedges'), which smooth out some or all of the volatility in spot prices.

In addition to managing the existing transmission system, Transpower plans and builds new grid investments. These grid investments are first reviewed and approved by the Electricity Commission. Transpower is responsible for all transmission development processes; for example, resource consents, access rights and construction. The national grid transports electricity from over 50 power stations, and connects with distribution networks or major industrial users at around 200 grid exit points (GXPs) around New Zealand.

The Electricity Commission is responsible for overseeing New Zealand's wholesale and retail electricity markets, operating the electricity system, promoting the efficient use of electricity and regulating some aspects of electricity transmission. In addition to its role as competition 'watchdog', Commission administers the price control regime for transmission and distribution businesses, and enforces the legislation that requires a level of ownership separation between network activities and generation/retailing.

The distribution business has been segregated into two segments, i.e., the lines business and the supply business. The Electricity Act 1992 introduced contestability in the retail segment by removing the exclusive retailing rights and the obligation to supply. At that time, the separation of the lines business and the supply business within the distribution business had not been carried out. As a result, the network operators who owned the lines business continued to operate in the retail supply segment.

Several measures, including public disclosure of information relating to line charge, and financial separation of the competitive activities (generation and retailing) from the monopolistic activities (lines business) to promote competition, were implemented. However, there was a concern that the electricity companies, being vertically integrated natural monopolies, would use their market power in distribution to exclude competition at the retail level. To address this concern, the Electricity Industry Reform Act was introduced to reform the electricity industry to better ensure that costs and prices in the electricity industry were subject to sustained downward pressure and the benefits of efficient electricity pricing flowed through to all classes of consumers by 1) Effectively separating electricity distribution from generation and retail; and 2) Promoting effective competition in electricity generation and retail.

Common ownership of electricity distribution businesses and of either an electricity retailing or electricity generation businesses (other than minor cross-ownerships) is prohibited.

Presently, around 29 lines companies own the local distribution networks throughout New Zealand and operate as monopolies. The line companies are connected to the national grid at the GXPs. Generally, the line companies sell their distribution or line services to retailers who manage the electricity supply agreements with the end consumers.

The network operators are subject to a targeted price control regime which was introduced in 2004. Under the regime, the line businesses are only potentially subject to control if they cross either of the two thresholds of performance. The regime is referred to as "targeted control" because only those businesses that cross the thresholds, trigger the Commission to identify lines businesses whose performance may warrant further examination, and if necessary, control of prices, revenues and/or quality.

The two thresholds adopted by the Commission for all electricity lines businesses (with the exception of Transpower), are: compliance with a specified price path based on the CPI minus X price methodology, and compliance with specified reliability and consumer engagement criteria.

The operation of the electricity retail market is overseen by the Commission in order to promote strong retail competition and fairness to consumers. Its role includes providing arrangements for the protection of consumers, as well as administering retail market rules such as metering arrangements, customer switching and reconciliation – the process by which the quantity of electricity purchased by each retailer is calculated. The key features are that customers can switch between retailers, and any party can be an electricity retailer provided they meet the minimum requirements.

While the extent of retail competition varies across the country, customers have a choice of retailers. The retail tariffs are not subject to price control. In some parts of New Zealand, there are five or more competing retailers. All of the main generation companies in New Zealand are also electricity retailers. In addition, there are a number of smaller independent electricity retail companies. Furthermore, the switching process has become easier over time, and can now be executed over the phone with the new electricity retailer. Free web-based tools are also available to help residential users to shop around.

2.1.1.3 United Kingdom

The United Kingdom ("UK") electricity industry was one of the first to experience reforms, which became a model for the remaining countries. In the pre-reform era, the Central Electricity Generating Board was responsible for the generation and transmission of electricity, while 12 area electricity boards (AEB) were responsible for distribution and supply to consumers. On 31 March 1990, as part of the privatisation of the electricity system in England and Wales, the area electricity boards were changed into independent regional electricity companies (RECs) and the CEGB was split into four companies -- three generation companies and the National Grid Company, operator of the National Grid. The National Grid Company was placed under the ownership of the RECs. On 11th December 1990, the RECs were privatised. In 2000, as part of further restructuring of the market under the Utilities Act 2000, the public electricity suppliers were required to have separate licenses for their supply business and distribution networks, which were renamed as distribution network operators (DNOs). Presently, there are five types of electricity licences:

a. Generation **-** Allows the licensee to generate electricity for the purpose of giving supply to any premise or enabling a supply to be given.

b. Transmission **-** Allows the licensee to participate in the transmission of electricity for the purpose of enabling a supply to be given.

c. Inter-connector **-** Allows the licensee to participate in the operation of an electricity inter-connector. Participating in the operation as an electricity inter-connector is defined as: co-ordinating and directing the flow of electricity into or through an electricity inter-connector, or making such an inter-connector available for use of conveyance of electricity.

d. Distribution **-** Allows the licensee to distribute electricity for the purpose of enabling a supply to be given. Electricity is distributed from the National Grid Network through a low voltage network of wires to customers.

e. Supply **–** Allows the licensee to supply electricity to different premises.

The regulator Office of Gas and Electricity Markets (OFGEM) has a market monitoring role -- it publishes periodic reports on developments in the domestic retail market and conducts investigations and consultations on the performance of the domestic and the non-domestic markets, when necessary.

Most of UK's electricity is generated by gas, coal and nuclear stations. Thirty large (>1GW) power stations meet the majority of the electricity demand. The generation industry is a competitive market. There are four transmission systems in the UK - one in England and Wales, two in Scotland, and one in Northern Ireland. Each is separately operated and owned. The largest, in terms of line length and share of total transmission, is the National Grid Company (NGC) system, covering England and Wales. NGC also operates electricity 'interconnectors' – overhead lines connecting the transmission networks in England and Wales to Scotland, and an undersea link that connects France and England. Transmission operators also have a role in balancing generation and demand at all times, to ensure the security of the network.

The distribution lines business is considered a natural monopoly and is a licensed activity in UK. There are fourteen licensed areas, based on the former Area Electricity Board boundaries, where the Distribution Network Operators (DNOs) distribute electricity from the transmission grid to consumers. In 1990, the Area Boards were replaced by regional electricity companies (RECs), which were then privatized. The DNOs are the successors of the distribution arms of the RECs. Under the Utilities Act 2000, they are prevented from supplying electricity; this is done by a separate company chosen by the consumer who makes use of the distribution network. DNOs hold regional licences for the provision of distribution network services and are regulated by the OFGEM. DNOs are under a statutory duty to connect any customer requiring electricity within a defined area, and to maintain that connection. Various charges related to DNO operations are as follows:

- Use of system charges: To pay for network reinforcement, maintenance and renewal, paid by generators and suppliers, broadly in proportion to their use of the network. Charges are highest for generators in remote regions, far from demand.

- Connection charges: To cover costs of infrastructure required for new connections, paid by generators and customers wishing to connect.

- Balancing charges: To meet costs of matching supply with demand, and providing reserve generation, paid by large generators and suppliers.

The DNOs are regulated through five-year price control periods, which include curbs on expenditure as well as incentives to be efficient and to innovate technically. The price controls set the maximum amount of revenue which energy network owners can take through charges they levy on users of their networks to cover their costs and earn them a return in line with agreed expectations. Ultimately, charges are passed to electricity consumers. Transmission and distribution costs make up around 4% and 17% of the average domestic bill, respectively.

The retail electricity market in UK was opened up in three phases for large users (> 1 MW) in 1990, for medium users (> 100 KW) in 1994, and for residential consumers in 1999. Full competition was introduced in Great Britain from 1999.

Extant regulation prohibits the distribution network operators from holding supply licenses. Allowing customers to choose the supplier of their choice has kept up the pressure on costs and promotes greater

choice of tariffs and services for customers, such as the fixed price and capped price offers now available to domestic customers. Competition in metering services also helps suppliers to deliver more innovative products to customers. This competitive market in retail supply has developed well.

2.1.2 Some Conclusions from the International Experience

- Post introduction of wholesale competition, supply of electricity is often separated from the operation and ownership of the distribution wires and a number of suppliers or retailers compete to sell electricity to customers, or rather customers choose their suppliers, i.e., retail competition is allowed.

- Choice of supply for large customers is often introduced at the same stage as wholesale competition, and then extended to smaller consumers at a later stage. Suppliers buy their electricity from the wholesale market and then pay the transmission and distribution companies a regulated price to transport their electricity to customers. Customers may also elect to purchase their electricity directly from generators. The UK, New Zealand, Australia and many other countries have moved to retail competition -- first allowing large customers choice and then eventually extending competition to all electricity customers.

- In full retail competition, the regulator generally regulates only the natural monopoly (wires) part of distribution and competitive retail, or selling services are deregulated. However, as a measure to protect consumer interest, in countries such as Australia, there is a default service provider, whose tariff serves as a ceiling. The consumer receives regulated "delivery" services from the local utility and can shop for a supplier of competitive services. Customers who do not or cannot find a competitive supplier are offered "default service" (typically) by their local utility.

Key Discussion Points

- *Are there any markets wherein competition in retail supply was introduced prior to introduction of competition in wholesale market? What issues were faced in such markets and how were these issues dealt with?*
- *Are there markets where retail competition exists with integrated distribution wire and retail supply businesses?*
- *Are there markets wherein distribution wires business is not a monopoly and there exists competition in the wires business also?*

2.2 Provisions in the Electricity Act with respect to Competition in Distribution

The Electricity Act, 2003 defines distribution a licensee as follows:

"…(17) distribution licensee means a licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply…"

Distribution system is defined as:

"…(19) distribution system means the system of wires and associated facilities between the delivery points on the transmission lines or the generating station connection and the point of connection to the installation of the consumers.."

Further, the Act has defined types of licensees that can be issued by the Commission under Section 14, Grant of license, as follows:

"…14. The Appropriate Commission may, on application made to it under section 15, grant any person licence to any person – (a) to transmit electricity as a transmission licensee; or (b) to distribute electricity as a distribution licensee; or (c) to undertake trading in electricity as an electricity trader, in any area which may be specified in the licence:.."

Thus, the distribution licensee is defined to pursue an unified activity comprising owning of wires as well as retail supply. The Act does not envisage separate wire (or wheeling distribution) licensees and retail supply licensees as seen in some other countries. However, the competition in the distribution segment and the consumer choice under the Act is enabled through the open access route and through the parallel distribution licensee route.

In case of open access, the Act has given the State Commission discretion for introduction of open access in phases and subject to conditions as specified by the Commission. The relevant provisions of the Act are as given below:

"….(47) " open access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;…."

".. 42. (2) The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:.."

MERC has already framed open access regulations which allow open access to consumers with contract demand of not less than 1 MVA. However, if required, MERC can allow open access at consumer below such contract demand also in order to give consumers choice or to introduce further competition in the distribution sector.

In case of parallel distribution licensees, the relevant provision of the Act is:

" ..14…..

…..Provided also that the Appropriate Commission may grant a licence to two or more persons for distribution of electricity through their own distribution system within the same area, subject to the conditions that the applicant for grant of licence within the same area shall, without prejudice to the other conditions or requirements under this Act, comply with the additional requirements (including the capital adequacy, credit-worthiness, or code of conduct) as may be prescribed by the Central Government, and no such applicant who complies with all the requirements for grant of licence, shall be refused grant of licence on the ground that there already exists a licensee in the same area for the same purpose:…"

With respect to parallel distribution licensees, during 2003, various players filed applications for grant of distribution licenses, using their own distribution network, for various areas under the provisions of the Electricity Act, 2003. However, due to various reasons including non-submission of network rollout plan and availability of information from the incumbent licensee, the process has not resulted in the issuance of any new parallel distribution license. However, the recent Supreme Court judgement and the commercial arrangement between RInfra-D and TPC-D have helped operationalization of parallel distribution in a unique way, i.e., without duplicating the network.

It is clarified that though the discussion paper, at various places, deals with the operationalisation of parallel distribution, utilizing incumbent distribution licensee's wires, the possibility of parallel distribution licensees using their own distribution network for retail supply, as envisaged in Section 14 of the

Electricity Act, 2003, is not ruled out. Both the modes of retail supply, i.e., using one's own network or utilizing an incumbent distribution licensee's network are expected to co-exist. The issues discussed in this discussion paper are applicable to both the situations.

2.3 Supreme Court's Judgement & Its Implications

The Supreme Court of India, in its judgement dated 8th July 2008, held that TPC-D is entitled to supply electrical energy in retail, directly to all consumers within its area of supply, as stipulated in its licences, thereby confirming TPC-D as a distribution licensee for the entire city of Mumbai. Subsequently, on 20th, August, 2008, the Commission notified the MERC (Specific Conditions of Distribution Licence applicable to The Tata Power Company Limited) Regulations, 2008, effectively confirming TPC-D as a distribution licensee for the entire city of Mumbai, covering the licence areas of both BEST and RInfra-D. TPC-D's distribution licence is valid up to 15th August, 2014. Thus, neither RInfra-D nor BEST have a monopoly distribution licence in their respective licence areas.

Subsequent to Supreme Court order, TPC- D and R Infra-D entered into discussion to effect supply to changeover consumers. The discussions culminated in TPC filing a petition before MERC (Case 50 of 2009) The "Interim Order" of MERC in the said case facilitated the development of parallel distribution, utilizing other licensees' network. This not only gives consumers choice and quickly introduces retail competition, but does so without replicating network infrastructure.

2.4 Conditions for Sustaining Retail Supply Competition

In a deregulated retail supply market, consumers are no longer bound to a particular supplier. They select their suppliers and make their purchase decisions based on the retail prices and terms of service they are offered. To be able to operate in such a dynamic market where consumers switch suppliers frequently, the distribution licensees should have flexibility on the power procurement side which accounts for 80-85% of the total cost of a bundled distribution (wires + supply) entity. However, this can be ensured only in a balanced or supply surplus system without excessive reliance on long-term contracts. Further, a merchant market has not yet evolved to the extent seen in international markets marked by retail competition. With the kind of deficit witnessed in the state of Maharashtra and in the country, the opening of retail distribution to competition without a vibrant wholesale market/merchant market, will pose a number of issues.

In the current scenario, all the distribution licensees are locked into long-term Power Purchase Agreements (PPA) with certain commitments to off-take power, i.e., fixed charges to be paid subject to pre-determined levels of availability of the power stations. The power purchase cost is considered as a completely pass-through element for distribution licensees. Introduction of retail competition may lead to the migration of consumers from one supplier to another. This can have a significant financial impact on the existing licensees. As the power purchase costs including fixed costs are pass-through, the consumers staying with the incumbent distribution licensee are likely to face a significant tariff impact.

In a deregulated retail supply market, the retail prices are governed by the bulk supply market prices. However, when the bulk power market is competitive and the retail market is administered, the risk falls on the retail supplier and the cost of their services rises to compensate for it. In a completely competitive market, when both the bulk power and retail market are competitive, mechanisms exists to allocate the risk among the suppliers and the consumers, based on their risk tolerance and willingness to pay. For instance, a consumer with high tolerance for risk and low willingness to pay for protection could choose to take service at the volatile real-time market rate, while a consumer with the opposite preference could opt for a service provider under a long-term forward contract.

Similarly, when the bulk power market is administered and the retail supply market is fully de-regulated, licensees carry the risk of not being able to recover the fixed costs of establishing long-term contractual arrangements for power purchase, as the number of consumers, to whom they would be supplying

power, would become uncertain. Hence, it is generally preferable that the retail supply market is fully deregulated once the bulk market is also completely deregulated and is competitive. International markets such as Australia and UK have introduced full retail competition only after fully competitive bulk markets came into operation.

Key Discussion Points

- *The Electricity Act, 2003 has not envisaged distribution wires and retail supply as separate licenses, neither is the distribution wires business defined as an area monopoly. To what extent is retail supply competition envisaged in the Electricity Act, 2003?*
- *In the absence of a competitive wholesale market, is there a case for introduction of competition in retail supply? Would competitive retail supply be sustainable?*

2.5 Scope of this Discussion Paper

As discussed in the previous paragraphs, the Electricity Act, 2003 has envisaged competition through open access and parallel distribution network routes.

The issues with respect to open access, including up to what connected load level open access is to be allowed, have already been dealt with through Open Access Regulation. Currently, consumers with contract demand of 1 MVA and above have been allowed sourcing of power utilizing open access. Going forward, based on the review of various issues -- including operational constraints, metering, energy accounting & implementation aspects of Availability Based Tariff (ABT), retail consumers' ability to negotiate retail prices (as under open access only open access charges/wheeling charges are determined by the Commission) -- consumer below 1 MVA contracted demand can also be allowed open access. The issues with respect to open access below 1 MVA would be issues for discussion under the open access regulations.

This discussion paper focuses on consumer choice or retail competition under the other option, i.e., parallel distribution licensees supplying electricity to consumers utilizing their own network or other distribution licensees' network in the same area. The discussion paper covers:

a. High-level issues such as segregation of accounts, tariff, retail supply margin, impact of migration of subsidizing consumers, etc.
b. Operating procedures already dealt with in the Interim Order and also issues not dealt with in the Interim Order

It may be noted that some of the issues covered here are also under discussion in different contexts such as segregation of accounts in the context of open access; tariff caps and performance-based regulation in the multi-year tariff (MYT) regime; alignment of category-wise retail tariffs to the average cost of supply of utility; and distribution margin-based approach vis-à-vis Return on Equity (RoE)-based approach. The outcome of such discussions may influence some of the issues discussed here. However, this discussion paper focuses on these issues in the context of parallel distribution.

3 SEGREGATION OF WIRES & RETAIL SUPPLY

3.1 Need for Wire & Retail Supply Segregation

While the Act does not envisage separate licenses for the distribution wire business and the retail supply business, the Act clearly recognizes these two as distinct and separate functions. Further, for the purpose of calculation of wheeling charges, there is a clear need to segregate wire business-related costs and retail supply-related costs. MERC, in its various tariff orders, has asked all the distribution licensees to maintain separate accounts for the wires and retail supply businesses; however, the same are not yet maintained by the distribution licensees.

Section 62 of the Act requires the State Electricity Regulatory Commission (SERC) to determine the tariff for wheeling and retail supply of electricity.

"….62. (1) The Appropriate Commission shall determine the tariff in accordance with provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure (a) Reasonable prices of electricity;

(b) Transmission of electricity ;
(c) Wheeling of electricity; and
(d) Retail sale of electricity.

Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for promoting competition among distribution licensees, fix only maximum ceiling of tariff for retail sale of electricity…."

Further, Section 42 of the Act requires the SERC to introduce open access in the distribution system in a phased manner and stipulates that the duties of the distribution licensee with respect to such supply shall be of a common carrier providing non-discriminatory open access. Also, under Section 9 of the Act, captive consumers are required to pay wheeling charges for availing of open access, and are exempted from the payment of cross-subsidy surcharge and additional surcharge. Therefore, wheeling charges are to be paid by any person for availing of open access, using the distribution licensee's network.

The MERC, in its various tariff orders for distribution licensees, has directed the distribution licensees to separate the accounting of network-related costs and supply-related costs, which is essential for the determination of wheeling charges and affects open access transactions as mandated under the Act. The need for segregation of network costs in terms of voltage level (HT and LT level) has also been emphasised. The existing MERC Tariff Regulations also stipulate that the distribution licensees should maintain separate records for the Distribution (Wire) business. The relevant provisions of MERC tariff regulations are reproduced below:

"55 Separation of accounts

55.1 Every Distribution Licensee shall make a separate application for determination of tariff for-

(a) Wheeling of electricity;
(b) Retail sale of electricity:

Provided that every Distribution Licensee shall maintain separate records for the Distribution Business and shall prepare an Allocation Statement to enable the Commission determine the tariff pursuant to each such application made by the Distribution Licensee."

However, none of the distribution licensees are maintaining separate records for the wires and retail supply business and for the calculation of wheeling charges, the expenses towards wires and retail supply are separated based on allocation of costs. Further, there is no uniformity of approach in the allocation of expenses between the wires and retail supply businesses amongst various distribution licensees; allocation is mainly based on certain assumptions.

The above issue becomes much more critical in the context of parallel distribution models as envisaged in this discussion paper. There are not only multiple distribution licensees, but also distribution licensees supplying electricity utilizing other distribution licensees' networks. Further, retail tariffs are bundled, viz., the wheeling tariffs and retail supply tariffs are not separately determined. Hence, in order to prevent double charging of the cost of the wires to consumers, the wheeling charges need to be adjusted in the case of supply involving another distribution licensee's network. This issue has been dealt with in the Interim Order. The Interim Order on the petition filed by TPC-D seeking approval of operating procedures for supplying power to consumers in the common area of license of RInfra-D and TPC-D, using each other's existing distribution network, stated following approach for calculating tariff chargeable to changeover consumers:

Calculation methodology for tariff for a Changeover consumer	
	Charges based on tariff of the Supply Distribution Licensee as determined by the Commission
Less:	Wheeling charges of the Supply Distribution Licensee
Add:	Wheeling charges of the Wheeling Distribution Licensee
	Tariff chargeable to the Changeover consumer

Where:

"Supply Distribution Licensee" means the Distribution Licensee who provides electricity supply to the consumer using the distribution system of the Wheeling Distribution Licensee.

"Wheeling Distribution Licensee" means the Distribution Licensee who owns and operates the distribution system in the area where the consumer premises are located and is responsible for providing wheeling services to the Supply Distribution Licensee.

Since the wheeling charges, as currently determined, are based on certain assumptions with respect to allocation of cost, it may lead to incorrect pricing signals to the consumers and there is a scope for cross-subsidization between the wires business and the retail supply business. The cross-subsidization of the retail supply business by the wires business is likely to be a deterrent to the competition. In view of this, there is an urgent need for clear segregation of the costs for wires and retail supply businesses.

It may be noted that while MERC has determined wheeling tariffs for various distribution licensees in Maharashtra, currently, there is no calculation of separate wheeling tariff for the BEST due to the exclusion of local authority for the purpose of introducing open access. However, parallel distribution licensee operation is certainly possible within the license area of the local authority. Hence, going forward, separate wheeling tariff needs to be calculated and approved for the wires business of the BEST also.

3.2 Approach to Wire & Retail Supply Segregation

Segregation of wires and retail supply activities can be in the form of:

a. Separate licenses;
b. Maintenance of separate accounts;
c. Separate management; and
d. Separate legal entities & ownership.

As discussed in the previous paragraphs, the Act does not envisage the separation of the wires and retail supply licenses and hence the same cannot be carried out. Further, the existing distribution licensees are integrated entities and are not obligated to create separate legal entities for each of the value chain activities. For example, despite the provision for separate licenses for transmission and distribution, in the current context, still integrated legal entities, i.e., companies under the Companies Act such as R-infra and TPC do exist. Extreme forms of separation, i.e., that of the ownership of different legal entities in the different electricity value chain activities, as witnessed in some other countries, are unlikely under the prevailing legislation in the country.

In view of the above, the following discussion would take into account only the segregation of accounts. The discussion pre-supposes that the wire and retail supply business would continue to be an unified activity.

3.3 Segregation of Accounts and Reporting Requirements

The segregated cost should help in accurately identifying and carrying out a meaningful analysis of cost to serve both the wire and retail supply separately. Distribution Licensees needs to maintain separate wire and retail supply-related costs.

The segregated accounts shall include financial statements (Profit & Loss Statement, Balance Sheet and Cashflow statement). The segregation needs to be done in such a way that it can be presented under all the cost components of ARR as well as information reporting requirements under MERC (Uniform Recording, Maintenance and Reporting of Information) Regulations, 2009.

All identifiable expenses, revenues, etc. shall be assigned to their particular activities; non-identifiable expenses to the extent not possible to be separated, should be allocated on the basis of some rationale. All the regulatory submissions shall detail out the methodology and the basis of allocation of such expenses. MERC may review the methodology for the allocation and related workings and may suggest suitable modifications to the same.

The network costs need to be further segregated in terms of voltage level (33 kV, 22 kV/ 11 kV, and LT). Further, in the assets register, voltage-wise assets need to be maintained. The same should be clearly identifiable and submitted separately in the regulatory submissions.

Key Discussion Points

- *To what extent should the separation of the wires and retail supply businesses be attempted?*
- *If segregation of accounts is the only option, what are the possible ways to ring-fence wires and retail supply businesses, so as to avoid cross-subsidization between the two businesses?*
- *Should there be a common methodology across distribution licensees to allocate shared costs between the wires and supply businesses or should it be different for each entity?*

4 TARIFF-RELATED ISSUES

4.1 Should the Cost-Plus regulations be continued in the same manner even in case of Multiple Distribution Licensees?

Currently, the distribution tariffs are determined, based on a cost-plus methodology, whereby each distribution licensee's Annual Revenue Requirement (ARR) is estimated and accordingly retail tariffs are fixed. The rationale behind the cost-plus tariff regulation in the infrastructure sectors is that there exists market exclusivity for providing service, which in this case is the distribution of electricity. As the market is exclusive, price discovery is ensured through the regulations put in place to protect the consumer interest. Further, the demand risk is not borne by the utility and the utility is given certain assured returns. In the case of electricity distribution, this is achieved through the ARR mechanism, which indirectly guarantees certain revenue/returns, subject to the achievement of a certain level of efficiency.

In a situation of multiple distribution licensees, the demand risk as well risk on returns need to be borne by the distribution licensees. Further, price discovery through the market mechanism becomes easier. Accordingly, the rationale for cost-plus regulation does not exist.

In addition to the above, issues with respect to the approval of definitive business plans and approval of capital expenditures for various parallel distribution licensees will pose difficulties. These constitute important building blocks of cost-plus tariff determination.

Even in the case of competition through open access, the Commission is only expected to determine the wire business (wheeling) tariff and not the bundled retail sale tariff to the consumer procuring power through open access. This also points to the fact that for competitive elements of the electricity supply chain, there is no reason to continue to apply cost-plus regulations. In the case of parallel distribution, especially using parallel networks, both the retail supply element and distribution wires element become competitive elements in the electricity supply chain.

Key Discussion Point

- *In the case of multiple distribution licensees, should all the licenses be regulated under the cost-plus regime OR only the incumbent licensee should be regulated under the cost-plus regime? OR should none of the distribution licensees be regulated under the cost-plus regime?*

4.2 Should There Be a Tariff Ceiling in case of Multiple Distribution Licensees?

4.2.1 Provisions of the Act with respect to tariff in case of multiple distribution licensees in an area

Section 62 of the Act on Determination of Tariff in its provision 2 has stated that the Commission may fix a maximum ceiling of tariff for retail sale of electricity in the case of multiple licensees. The relevant provision is given below:

"….62. (1) The Appropriate Commission shall determine the tariff in accordance with provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure (a)Reasonable prices of electricity;

(b) Transmission of electricity ;
(c) Wheeling of electricity; and
(d) Retail sale of electricity.

Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for promoting competition among distribution licensees, fix only maximum ceiling of tariff for retail sale of electricity…"

The National Tariff Policy, 2006, in the context of the MYT framework, has given a flexibility to licensees charging lower tariff if competitive conditions so require, but without making claims on additional revenue requirement.

"…8.1 Implementation of Multi-Year Tariff (MYT) framework…

….4) Licensees may have the flexibility of charging lower tariffs than approved by the State Commission if competitive conditions require so without having a claim on additional revenue requirement on this account in accordance with Section 62 of the Act ….

…6) Incumbent licensees should have the option of filing for separate revenue requirements and tariffs for an area where the State Commission has issued multiple distribution licenses, pursuant to the provisions of Section 14 of the Act read with para 5.4.7 of the National Electricity Policy. …"

In view of the above, it is necessary to discuss whether it is feasible to fix a tariff ceiling or not and also an approach for fixing of such a tariff ceiling, if feasible.

It may be noted that a tariff ceiling, in the context of parallel distribution, is considered as a maximum tariff that any of the distribution licensees can charge to the consumers. This is currently the case in some of the markets such as Australia. Tariff ceiling, i.e., tariff that a distribution licensee can charge over a control period is an issue which needs to be dealt with separately, irrespective of the existence of a single distribution licensee or multiple licensees.

Currently, tariffs are determined by the Commission and a licensee cannot charge tariff other than as approved by the Commission through the regulatory process. Providing distribution licensees the flexibility to charge lower tariffs than the one approved by the Commission, in accordance with Section 62 of the Act and as suggested in the National Tariff Policy, 2006, does facilitate retail competition and thus should be examined. It is however pertinent to note that the Act does not allow discrimination within a category of consumers [Sec. 62 (3)] and hence charging lower tariffs (than the one approved by the Commission) shall be resorted to in a non-discriminatory manner.

4.2.2 Approaches to Fixing Tariff Ceilings & their Feasibility

Based on international experience (various methods adopted by different countries in the fixation of tariff are placed at Annexure 1) and with a view to make minimum changes to the existing regulatory regime, any of the following two approaches can be adopted for fixing tariff ceilings. It may be noted that the tariff ceiling discussed below is a combined ceiling for the wire and retail supply businesses.

a. Benchmarking-based approach

In countries such as Australia, where ceiling tariffs exist, there are relatively a large number of utilities. For example, Queensland has around 30 licensed retailers and South Australia has 14 licensed retailers. The presence of a large number of utilities with different consumer mix enables the benchmarking of utilities with relative ease. The same is currently not possible in the context of Maharashtra where there are relatively fewer utilities, i.e., MSEDCL, RInfra – D, BEST, and TPC-D as licensees. The situation is further complicated by the fact that RInfra-D, BEST and TPC-D are urban utilities with different configurations in terms of consumer mix, distribution network, etc. vis-à-vis MSEDCL.

Further, to arrive at a benchmark power purchase cost will also present certain challenges considering the existing arrangements in place, cost of own generation, varying distribution losses, power deficit in the country, etc. In fact, the MYT order, due to the uncertainty on account of the prevailing supply shortages in Maharashtra and respective licence areas, does not stipulate power purchase cost for the entire control period, thereby requiring tariff determination each year. Non-recovery of the power purchase cost can impact licensees significantly as it accounts for as high as 80% of the total cost for a distribution licensee.

Various other factors such as operational and administrative expenses in government-owned licensees vis-à-vis private sector environment; different levels of capital recovery/servicing costs such as depreciation and interest, linked to vintage & condition of the network also make determination of common tariff cap in the state across all distribution licensees, a challenging exercise.

Till such time as there are a large number of retail suppliers available as options to retail consumers and benchmarking becomes feasible, the tariff ceiling fixation using this approach should be avoided. The situation may be reviewed a few years down the line based on the level of competition and feasibility of tariff ceilings using benchmarking. The level of competition can be gauged from the number of active distribution licensees in any particular license area.

b. Default Service Provider Approach

Under this option, tariff ceilings can be fixed at the level of the tariff of the incumbent licensee (all the distribution licensees existing as on current date/date of issues of regulation -- MSEDCL, BEST, Rinfra – D and TPC –D shall be considered as incumbent licensees in their respective license areas as on current date/date of issue of regulation). Thus, only players with the ability and willingness to supply at a tariff below that of an existing supplier will enter the market; the existing/incumbent licensee with an established network in a given area shall become indirectly the default service provider as witnessed in countries such as Australia. Further, such entities are in any case currently the only option for consumers in their areas. Hence, a new entrant has to provide discount to incumbent licensee(s) tariffs to induce consumers to switch over. In areas where more than one incumbent licensee exists, the new entrant (distribution licensee) will have to offer tariffs below the lowest of the tariffs across the incumbent licensees.

The fundamental assumption here is to move away from a cost-plus approach over a period of time. Focus should not be on what licensees are earning but on whether the consumers are getting better tariffs. It may be possible that some of the players with cheaper sources of power available to them may end up earning higher returns compared to a situation when they are under a cost-plus regime. The Act, while suggesting fixing up tariff ceiling, would have recognized the fact that there might be players who earn more or less.

Thus, under this option, existing distribution licensee tariffs shall be determined using the same approach as currently in place but the tariff so determined will serve as a tariff ceiling. The new distribution licensees as well as the existing distribution licensees can charge lower than these ceiling tariffs without a claim for deficit in their ARR.

The rationale behind the continuation of fixing tariff ceilings at the level of the incumbent is that these distribution licensees have certain legacy cost, networks and operating history compared to new players who will not face such issues. Further, these licensees are operating on the basis of cost-plus regulations and will require a certain transition period to switch over to a risk-reward regime, implicit under a competitive scenario of multiple distribution licensees. Fixing tariff ceilings will mean that they are given an existing level of assured returns till such time that competition is not developed. However, in order to allow these incumbent licensees to compete with new entrants, they are allowed to charge below the tariffs fixed by the Commission but without making any claim in their ARR. The fixation of tariff in such a manner, i.e., at the level of the incumbent licensee will be reviewed after three to five years based on the development of competition. As mentioned earlier, the level of competition can be gauged from the existence of multiple and active retail distribution players in various license areas.

Adopting this approach of initially setting tariff ceilings at the levels of the existing distribution licensees in their respective licensee areas, will mean that there would be consumer category-wise ceilings. Once the tariff rationalization is completed, the ceiling may be only on the average cost of supply and individual licensees may have the flexibility to design their tariff structure depending upon the competitive scenario.

The above approach can be adopted for the initial few years, say three-five years, during which time various parallel distribution licensees can come up. Once there are sufficiently large numbers of players and there is sufficient availability of information in terms of costs, revenues and consumer-mix, the benchmarking approach, as discussed above, can be used.

Key Discussion Points

- *Should the fixation of tariff on the cost-plus basis be adopted for all parallel distribution licensees or a tariff ceiling (for incumbent licensee)- based approach be adopted?*
- *If only tariff ceilings are to be fixed, what approach should be adopted?*
- *Do we continue incumbent licensees on a cost-plus basis or simply adopt their tariffs as ceilings as suggested above and allow them an option to charge lower tariffs than the ones approved by the regulator?*

4.3 Should there be Tariff Floors in case of Multiple Distribution Licensees?

With the introduction of competition in electricity distribution, the issues that can be faced are:

(a) Predatory pricing by the new entrants or any one of the existing parallel distribution licensees. This, in the short term, may benefit retail consumers, but in the long run impact the viability of other distribution licensees and hence may not be desirable in the long-term interest of the sector.

(b) In the electricity sector, which is known for its political sensitivity, there may be a possibility that some of the parallel distribution licensees (particularly in the scenario of tariff ceilings, wherein besides other players, the incumbent licensees can also charge lower tariff without recourse to their claim in ARR.) may be asked to reduce tariffs despite the financial non-sustainability of such an action.

It therefore needs to be debated whether there should be tariff floors also. However, at the same time, it may be pertinent to note the following:

(a) There is a recourse to Competition Commission under the provisions of the Competition Act, 2002 in the context of predatory pricing. Section 4 (2) (a) (ii) includes predatory pricing in the abuse of dominant position. The relevant provisions are given below:

"…Abuse of dominant position

4. 3[(1)No enterprise or group] shall abuse its dominant position.] (2) There shall be an abuse of dominant position 4[under sub-section (1), if an enterprise or a group].—-

(a) Directly or indirectly, imposes unfair or discriminatory— (i) condition in purchase or sale of goods or service; or (ii) price in purchase or sale (including predatory price) of goods or service. ….

……"predatory price" means the sale of goods or provision of services, at a. price which is below the cost, as may be determined by regulations, of production of the goods or provision of services, with a view to reduce competition or eliminate the competitors.

Inquiry into certain agreements and dominant position of enterprise

19.(1) The Commission may inquire into any alleged contravention of the provisions contained in subsection (1) of section 3 or sub-section (1) of section 4 either on its own motion or on—

(a) 29[receipt of any information, in such manner and] accompanied by such fee as may be determined by regulations, from any person, consumer or their association or trade association; or

….."

(b) The issue of tariff being lower to that approved by the Commission by the state government is also addressed in Section 65 of the Act, which is stated below:

"….Section 65. (Provision of subsidy by State Government):

If the State Government requires the grant of any subsidy to any consumer or class of consumers in the tariff determined by the State Commission under section 62, the State Government shall, notwithstanding any direction which may be given under section 108, pay, in advance and in such manner as may be specified, the amount to compensate the person affected by the grant of subsidy in the manner the State Commission may direct, as a condition for the licence or any other person concerned to implement the subsidy provided for by the State Government:

Provided that no such direction of the State Government shall be operative if the payment is not made in accordance with the provisions contained in this section and the tariff fixed by State Commission shall be applicable from the date of issue of orders by the Commission in this regard….."

Thus, the issue of reduction of tariff by an incumbent licensee as per the directive of the state government can be dealt with in accordance with Section 65 rather than through tariff floors.

Further, by imposing tariff floors, the benefit of lower retail supply costs might not get fully passed on to the consumers. In view of the above, prima facie, there does not seem to be a case for fixing of floor prices. However, the same can be debated to arrive at a consensus.

Key Discussion Points

- *Is there a case for fixation of tariff floor in the context of multiple distribution licensees?*
- *If yes, at what level should this floor be fixed at?*

4.4 Should We Have A Separate Retail Supply Margin?

The retail supply margin, as discussed in the paragraphs hereunder, is only applicable in the case of continuation of a cost-plus regulation. The tariff ceiling-based approach, as discussed above, does not require a separate retail supply margin.

The retail supply margin discussed above is distinct from the distribution margin concept indicated in the national tariff policy. The national tariff policy talks about the regulation on the basis of Return on Equity vis-à-vis return through providing distribution margins. The distribution margin-based approach is concept related to the determination of tariff in the cost-plus situation irrespective of single or multiple distribution licensees and hence not discussed separately here.

The Retail Supply Margin discussed here refers to the compensating mechanism for a distribution licensee, who is effecting its supply, utilizing the network of the incumbent licensee. In the case of retail supply distribution, the question of a separate retail supply margin does not arise as it is similar to single distribution licensees. The concept is discussed in the context of switch over consumers / distribution of electricity using incumbent licensee's network.

The retail supply margin can be fixed at the gross level or at the net level, depending on the treatment of power purchase cost. In case power purchase cost is considered as a pass-through in the cost-plus regulations, the net retail supply margin shall be fixed; or else, the gross margin can be fixed. In case of fixing up of the net retail supply margin, all the other elements of cost such as power purchase cost, employee cost, and administrative and marketing expenditure shall be approved based on actuals, subject to prudence checks. A margin on Rs./ kwh basis shall be additionally paid to the retail supply business instead of payment of return on equity. It may be noted that such a retail supply margin shall be payable to a distribution licensee based on actual energy sales.

4.4.1 Is there a Case for Separate Retail Supply Margin?

In the current regulatory regime, the Aggregate Revenue Requirement of the distribution licensee's retail supply business includes:

a. Assets-related costs such as return on equity, interest on term loan, depreciation, etc.
b. Operations-related costs including employee cost, repairs & maintenance, administrative expenses, interest on working capital, provisions for bad debt, etc.
c. Power purchase costs including transmission charges

The current regulatory regime does not provide a separate return to the Supply Distribution Licensee for the retail supply-related business it transacts due to the migration of consumers from the incumbent, i.e., existing distribution licensee to the supply distribution licensee. Under such a scenario, a concept of retail supply margin is expected to provide some sort of an incentive/return to the Supply Distribution Licensee to undertake costs/risks involved in the supply of electricity to changeover consumers. Despite the retail supply margin, the end-consumers may still benefit due to the overall competitiveness of the supply by the Supply Distribution Licensee.

As mentioned earlier, in various other countries, the wire business is regulated and the retail suppliers are free to determine their tariffs. Default service providers are typically integrated distribution licensees and there are not many examples of regulatory determination of separate margins for the supply portion of the business. It is only in the Australian retail supply market, wherein the default service provider tariffs despite being bundled, have separate provisions with respect to retail supply margins. Various states in

Australia have net retail supply margins of 2% to 8%. From 2007-08 till 2009-10, the Queensland and other state regulatory authorities elected to apply a 5% margin which was around the mid-point of this range. It is believed that a margin of 5% appropriately accounted for the volume and price risks faced by retailers in the Queensland market.

A parallel to the retail supply business can be seen in the electricity trading regulations in the country. The retail supply part of the distribution is more akin to the electricity trading activity wherein the volume of business has implications for the working capital in the business and not necessarily the asset base of the business. Trading margin is recognized as compensation to the trader for his operational risks (default risk, late payment risk, etc.), market risks (price volatility risk, volume risk), and return on networth. In case of the retail supply business too, there is an exposure to risks such as demand & market risk, buyer's credit worthiness, payment default & late payment risks, etc.

While the above arguments are in favour of compensating retail supply business separately through the retail supply margin, the arguments against providing the same are given below:

- While the retail supply activity of the distribution licensee does carry risks such as demand & market risk, buyer's credit worthiness/payment default and late payment risks, these risks are to some extent mitigated through various mechanisms already in place, e.g., the existence of security deposits, delayed payment charges, etc.
- The risk capital provided by the distribution licensee (which in the current context will necessarily have some asset base as the wires business will continue to be an integral part of the electricity distribution activity) is already getting compensated in the form of Return on Equity (RoE) under the existing regulatory framework and there does not seem to be a reason for providing additional retail supply margins.

It may be noted that since the return on equity, as allowed currently, does take into account risks associated with both the wire and retail supply business, in absolute terms, the RoE should not increase, pursuant to the unbundling of these two activities.

4.4.2 Options for Fixing Retail Supply Margin

It may be noted that in case the tariff ceiling approach, as discussed above, is adopted, the issue of the retail supply margin will not arise. However, in case the cost-plus regulation is expected to be applied to all the distribution licensees, then here are some options to incentivise retail supply in the context of parallel distribution using the incumbent licensee's network.

a. Allowing Liberal Normative Working Capital

Under this approach, to address risks, i.e., demand/market risk, delayed payment risk and payment default risk, some of the cost elements considered in the ARR for distribution licensees such as interest on working capital and provisions for bad debts may be provided at a liberal level in the scenario of multiple distribution licensees as compared to a single distribution licensee. This may provide incentives to parallel distribution with minimal tinkering with the existing regulations.

The MYT framework, currently under discussion, proposes the following as base for calculation of interest on working capital:

Working capital (for wheeling of electricity)

(a) One-twelfth of the amount of Operation and Maintenance expenses for such financial year; plus

(b) One-twelfth of the sum of the book value of stores, materials and supplies including fuel on hand at the end of each month of such financial year; plus
(c) One and half (1½) months equivalent of the expected revenue from wheeling charges at the prevailing tariffs; minus
(d) Amount, if any, held as security deposits from consumers and Distribution System Users.

Working Capital (Retail supply of electricity)

(a) One-twelfth of the amount of Operation and Maintenance expenses for such financial year; plus
(b) One-twelfth of the sum of the book value of stores, materials and supplies including fuel on hand at the end of each month of such financial year; plus
(c) One and half (1½) months equivalent of the expected revenue from sale of electricity at the prevailing tariffs; minus
(d) Amount, if any, held as security deposits from consumers and Distribution System Users; minus
(e) One month equivalent of cost of power purchased, based on the annual power procurement plan.

The change proposed in the working capital is one and a half month's equivalent of revenue against existing norms which considers two months' revenue. The rationale is that due to the increase in the number of payment modes, including electronic billing and payment, the requirement of providing for two months' receivables is also reduced. While the rationale is fine in the single licensee scenario, to incentivize parallel distribution, the interest on working capital should continue to be provided on a two-month equivalent revenue basis in the retail supply of electricity where multiple licensees exist.

b. Risk-Return Profile Based Approach to Fix Margins

Under this approach, based on risk return profiling, retail supply margins are determined. This approach is similar to the approach adopted for fixing a trading margin ceiling in the recent discussion paper by CERC. We have given below the approach adopted for the trading margin which can be adopted with some modification in the case of the retail supply margin.

- Expenses that a trader must be allowed to recover through trading margin were considered as Expenses borne to mitigate operational risks, Expenses borne to mitigate market risks (only in case of non back-to-back contracts), Operations and Maintenance Expenses of trader and Return on Net Worth.

- The data used for the quantification of risks were financial statements of traders, transaction details of bilateral transactions in the past two years, market clearing data of Power Exchange and trading-related data available with the CERC

- Operational risk included quantification of default risk, late payment risk, contract dishonor risk and inflationary risk. These risks were quantified based on historical data. Market risk of back-to-back transaction was based on monte carlo simulation.

- While administrative expenses were based on fixed and variable costs of different categories of licensee holders were expected to incur, return on networth was calculated at 16% on capital adequacy requirement considering 15 days billing duration.

The above approach can be adopted with modification for retail supply to arrive at the retail supply margin. However, there are some challenges due to the fact that at present, the actual costs of retail supply are not available as the distribution licensees do not maintain separate accounts for these two activities.

It may be noted that as mentioned earlier, fixing retail supply margin inclusive of power purchase cost is a challenge in the current scenario and the retail supply margin, as discussed in this option, shall only be

for the purpose of costs other than the power purchase cost. The power purchase cost under this option under the cost-plus regulations shall be pass-through. It's only when there is sufficient competition in the wholesale market that the ceiling, inclusive of power purchase cost, can be introduced.

Key Discussion Points

- *Is there a need to provide retail supply margin for parallel distribution licensees for the retail supply part of their business?*
- *Should the gross retail supply margins be fixed or the net retail supply margins?*
- *What approach should be adopted for fixing the retail supply margins?*
- *At what level shall retail supply margin be fixed?*

4.5 Issues flowing from consumer-mix and subsidizing/subsidized consumer tariffs

4.5.1 Migration of subsidizing consumers and financial implication on the distribution licensees

In the situation of multiple distribution licensees, when the consumers are given a choice, it is normally observed that the commercial and industrial consumers are the first ones to change over from their existing electricity supplier (Existing Distribution Licensee) to alternative electricity supplier (Supply Distribution Licensee), taking into account the tariffs and their financial implications on their business. These categories of consumers are commercially-savvy with their focus on their own internal budgets and savings accruing due to the changeover. These consumers have resources, bargaining power and incentives. However, the domestic category consumers are relatively slow to change over and take time despite apparent savings accruing due to the changeover. This has been witnessed in markets such as UK and US wherein upon the introduction of choice of supplier, domestic consumers showed some inertia and remained with the existing retail electricity supplier for some period of time.

In the context of India and Maharashtra, this creates financial implications for the existing distribution licensee, who has domestic and agriculture category of consumers being subsidized by the commercial and industrial consumers.

While this issue was addressed by cross-subsidy surcharge in the context of open access under the Act, the financial implications of migration of consumers in the context of parallel distribution licensees has not been dealt with. Further, this would have been a non-issue if each category of consumers would be paying cost-to-serve. While the Commission has already initiated the removal of cross-subsidization inherent in current tariffs, it is expected to be accomplished fully over a period of time. So till the time tariffs of each category of consumers align with the cost-to-serve, the financial implications, either on the incumbent distribution licensee or if made to fully pass-through in the ARR on its consumers, continue to remain.

In a competitive market, it is not possible to implement tariff structures which involve deliberate cross-subsidies between consumer types (e.g., commercial/industrial and residential/agriculture). If a tariff structure involves a certain category of consumers charged above cost-to-serve, so that other categories are required to pay below cost-to-serve, other retail suppliers will target the category with a high margin, leaving the incumbent supplier to supply proportionately more to the category with a low or negative margin, leading to decline in the capacity to cross-subsidise.

The above problem will be compounded by the fact that the existing licensees are already locked in long-term power purchase contracts with fixed costs to be paid irrespective of off-take by these licensees. In

view of this, the migration may lead to a situation wherein the average power purchase cost is pushed upward by the fixed costs flowing from the PPAs and thereby further aggravating the situation with respect to the consumer level tariffs of the existing licensees, leading to further migration.

In the case of RInfra-D, the migration of consumers and resultant decrease in power purchase requirement is expected to impact positively to the extent of likely reduction in costly power purchases from the bilateral/imbalance pool. In the tariff order for FY 2009-10, the Commission has approved 2719 MUs from the bilateral/imbalance pool at an average rate of Rs. 7 per unit. It is only migration and demand reduction beyond the point at which marginal cost of power purchase is not much higher than average cost of supply, the cross subsidization is going to significantly impact financials of the utility / consumers.

In the case of MSEDCL, there is a likelihood that the urban areas may witness competition due to parallel distribution licensees as these areas witness relatively less distribution losses and are marked by the non-existence of agriculture consumers and a willingness to pay on the part of their regular consumers. This may create a situation wherein MSEDCL may require some support for rural operation on the lines of Universal Service Obligation Fund witnessed in the Indian Telecom Sector.

Therefore, to establish a fair level playing field for promoting competition in retail supply between parallel distribution licensees, till the time cross-subsidy related issues are addressed, some kind of mechanism needs to be used to address this issue. While designing such a mechanism, it should be kept in mind that this does not create a disincentive to the consumers for changeover or reduce the level of retail supply competition.

4.5.2 Are there examples in other sectors where similar situation exists?

A similar situation exists in the telecom market in many countries and it is typically dealt with by the imposition of charges in one or the other form to mitigate the migration and its impact on the incumbent service provider. In the Indian telecom sector, Bharat Sanchar Nigam Ltd. (BSNL) was the monopoly player till 2003 and when the competition was introduced Access Deficit Charge (ADC) was instituted for a limited purpose of supporting incumbent at the time of transition from monopoly to competitive environment and allow BSNL to rebalance tariff. The ADC requirement arose to compensate the incumbents for below cost wireline tariffs and to promote universal service, i.e., sustain the rural wireline network and expand to rural areas.

ADC was the amount payable by private telecom operators to Bharat Sanchar Nigam Ltd (BSNL). ADC had two components: one, the service providers had to pay 0.75% of their adjusted gross revenue (AGR) to BSNL and second, international long-distance service providers had to pay Re. 1 per minute on international incoming calls to BSNL.

ADC was not much favoured by private sector players; even the Telecom Regulatory Authority of India (TRAI) in its consultation paper has pointed out that prolonged ADC puts avoidable burden on the customers, creates market distortion, gives rise to a grey market for international calls, and is a hurdle to innovation of services.

ADC was meant to be time-limited and was phased out in 2008-09; the resultant responsibility of sustaining the incumbent's rural wire line network was expected to be transferred to the universal service obligation fund (USOF). USFO takes care of only the rural network part rather than both the rural network and below cost wire line tariffs.

The resources for the implementation of the Universal Service Obligation (USO) are raised through a Universal Service Levy (USL) which has presently been fixed at 5% of the Adjusted Gross Revenue (AGR) of all telecom service providers except the pure value-added service providers like Internet, Voice Mail, and E-Mail service providers. In addition, the Central Government may also give grants and loans.

Another case is the introduction of competition in the domestic air transport industry. In the civil aviation sector, Indian airlines was monopoly player till 1994. The domestic air transport services were liberalised in 1994 and private operators were permitted to provide scheduled air transport services across India. As per the policy guidelines, any one who operates scheduled air transport services on one or more of the routes under Category -I, shall be required to provide such services in Category – II and III as listed below:

- Atleast 10% of the capacity deployed on routes in Category – I to be deployed in Category – II routes. Out of the capacity deployed in Category – II, atleast 10% would be deployed on service or segments thereof operated exclusively within the North - Eastern region, J&K,Andaman & Nikobar and Lakshadweep.
- Atleast 50% of the capacity deployed on routes in Category –I to be deployed in Category – III routes.

4.5.3 Interim measures to deal with the issues of migration of consumers

In case the outcome of the previous discussion is to compensate incumbent distribution licensees, then the following approaches could be considered to deal with the situation.

a. Parallel distribution surcharges using a formula similar to the formula for calculating surcharge in open access

The National Tariff Policy, 2006 has specified a formula which is applicable in the case of open access, but aims to achieve a similar objective of mitigating financial impact on distribution licensees due to the migration of subsidizing consumers. The same formula can be applied with some modification to address the issue in the context of parallel distribution networks. The formula suggested for cross-subsidy surcharge is as given below:

$$S = T - [C (1+ L / 100) + D]$$

Where;
S is the surcharge
T is the Tariff payable by the relevant category of consumers;
C is the Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel-based generation and renewable power
D is the Wheeling charge
L is the system losses for the applicable voltage level, expressed as a percentage

In the case of open access, the formula assumed that while the tariff realized from the consumer migration is lost, there is a saving in terms of power purchase (including adjustment for losses and wheeling charges). The same is true for migration in the case of parallel distribution also.

Applying the above concept in the case of parallel licensees,[X] % (which was assumed as 5% in the case of open access) needs to be fixed at a level which reflects correctly the reduction in supply that may be experienced by incumbent distribution licensees due to the changeover. Since estimating what percentage will migrate will depend on not only the tariffs of the incumbent licensees but also on the new distribution licensee, fixing this percentage is a difficult exercise.

The parallel distribution surcharge needs to be phased out over a period of time.

b. Parallel distribution surcharge using approach similar to ADC/USOF in the telecom sector

The calculation of access deficit charges in the telecom sector was as follows: the actual cost for providing lower cost services were estimated using cost allocation and the difference between the realization from those services or rentals were subtracted to arrive at access deficit. Per unit difference was multiplied with existing below cost lines to arrive at quantum of deficit which was subsequently recovered through long-distance calls and international incoming calls. The market share of the private sector was estimated to arrive at the percentage revenue to be recovered for meeting the aggregate quantum of access deficit.

It can be seen that the difference was in the method of recovery: while in the method mentioned in point a above each category wise difference is calculated and recovered through surcharge on per unit basis, the telecom sector used the percentage of revenue to be paid by private sector operator to BSNL for meeting the aggregate quantum of access deficit.

In case we want to use this method, the approach, merits and considerations in the context of competition introduced through parallel distribution licensees need to be discussed.

Key Discussion Points

- *Is there a need to compensate incumbent distribution licensees for financial implications due to the migration of subsidising consumers till the time tariff rationalization is not complete?*
- *What should be the method of compensating the incumbent licensees?*

5 OPERATING PROCEDURES FOR CHANGEOVER

5.1 Issues dealt with in the MERC's Interim Order

As mentioned earlier, in the Interim Order on the petition filed by TPC-D seeking approval of operating procedures for supplying power to consumers in the common area of license of RInfra-D, using each other's existing distribution network, MERC has dealt with various issues pertaining to operating procedures for the changeover. The same are presented here in case, subsequent to the Interim Order, a need is felt to revisit some of the procedures based on the ground level experience since the Order. While the detailed operating procedures can be referred to from the Interim order, a summary of the operating procedures is given below.

5.1.1 Metering and Meter reading, Billing and Collection

In the case of changeover in a parallel distribution situation, all retail suppliers are actually distribution licensees with integrated function, they are entitled to install own meters in the consumer's premises. However, for a given set of consumers, to address the issue of changeover, if all the licensees invested in meters, there would be duplication of assets which would eventually lead to higher tariffs for consumers as the meter costs are finally recovered through the consumer tariffs. In the Interim Order, it has been proposed that the changeover consumer will have a choice to opt for a meter provided by the existing distribution licensee or supply distribution licensee or his/her own meter.

Further, in the case of a changeover, there is a need to identify the responsibility of meter reading, billing, and maintenance of meters with one licensee (either wheeling licensee or retail supply licensee) to provide clarity to the consumers and to facilitate co-ordination in billing and redressal of complaints related with meters and billing. In view of the fact that the supply distribution licensee is taking care of the retail supply part of distribution and is the interface with the consumer, retail suppliers should be responsible for the meter reading and billing and not the wheeling licensee.

However, energy consumption by the consumers impacts the wheeling licensee through the distribution losses and energy purchase cost in the imbalance pool wherein a wheeling licensee will be required to pay the marginal cost for energy. In view of this, the supply licensee should provide meter reading to the wheeling licensee to cross-verify such readings for the purpose of computing distribution losses.

To address the issue with respect to cross-verification of meter reading data by a wheeling distribution licensee, it is suggested that the meters used by changeover consumers should have data transfer/download capability.

Since the supply licensee is undertaking activities relating to sale of energy, the bills for changed-over consumers should be raised by the supply distribution licensee. Such bills should include the wheeling charges and clearly state the name of the wheeling distribution licensee. The supply distribution licensee shall be responsible for collection of bills from the changed-over consumers.

5.1.2 Energy Accounting

In the context of parallel distribution licensees, some of the consumers of a licensee are likely to be connected through the network of other distribution licensees, thereby drawals of parallel supply distribution licensee will get embedded within the drawal of the wheeling distribution licensee. Since utility-wise sharing is required under the Interim Balancing and Settlement Mechanism (IBSM) /FBSM, in

the absence of data at the interface meters, it is not possible to ascertain the drawals of each distribution licensee separately. To address this issue, it is proposed that the meter readings taken for the purpose of billing be grossed up to comply with the IBSM. The following method is proposed for energy accounting:

a. Energy sales to changed-over consumers, as per meter readings of the supply distribution licensee taken for the purpose of billing, shall be shared by the supply distribution licensee with the wheeling distribution licensee and the State Load Dispatch Center (SLDC).

b. Such energy shall be grossed up for distribution losses for the wheeling distribution licensee approved by the Commission and then subtracted from total T<>D recorded energy of the wheeling distribution licensee.

c. Such adjusted energy shall be further grossed up for intra-state transmission losses to determine the wheeling distribution licensee's G<>T requirement for Intra-State Pool balancing and accounting.

d. The same energy as worked out for wheeling distribution licensee at the T<>D level will be added to the T<>D recorded energy of supply distribution licensee.

e. Such adjusted energy for the supply distribution licensee shall then be grossed up for intra-state transmission losses to determine the supply distribution licensee's G<>T requirement for Intra-state Pool balancing and accounting.

5.1.3 Wheeling Charges

As mentioned earlier, the billing responsibility lies with the supply distribution licensee. Hence, supply distribution licensee needs to pay wheeling charges to the wheeling distribution licensee within 21 days from the date of bills raised on changed-over consumers. Such payment has to consider the meter readings and wheeling charges included in the bills raised on changed-over consumers. Such payment needs to be made irrespective of receipt of payment from changed-over consumers. Any delay in payment to attract an interest at the same rate as applied to the Wheeling Distribution Licensee's consumers.

5.1.4 Disconnection for non-payment and reconnection

The rationale behind disconnection for non-payment and reconnection is the same as mentioned in other parameters -- the supply is by the supply distribution licensee and hence the supply distribution licensee shall have the right of disconnection for payment default in respect of its bills raised on changed-over consumers. However, as the wheeling licensee controls the fuse/cut off as being part of network infrastructure, the supply distribution licensee has to exercise such a right through the wheeling distribution licensee after giving prior notice to the consumers as per Section 56 of the Act. Upon receipt of advice from the supply distribution licensee, the wheeling distribution licensee shall undertake disconnection provided that notice as per Section 56 of the Act is issued to the consumer. The supply distribution licensee shall raise the final bill on consumers after disconnection.

5.1.5 Customer service and interface

The supply distribution licensee would be the sole interface for the consumer and hence shall deal with all consumer service requirements and complaints including those relating to billing, meter accuracy, supply quality, network, etc. The supply distribution licensee shall inform the wheeling distribution licensee of all complaints relating to metering accuracy including action to be taken, including meter testing at site, at the supply distribution licensee's test laboratory, at the wheeling distribution licensee's test laboratory or at the independent laboratory, as the case may be.

The supply distribution licensee shall also inform the wheeling distribution licensee of all complaints relating to supply quality and network. The wheeling distribution licensee shall keep the supply distribution licensee informed about the status of redressal/closure of the complaint.

Both supply distribution licensee and wheeling distribution licensee need to develop an efficient process of sharing information and ensuring that consumer service standards as per the Standards of Performance (SoP) are not compromised due to the changeover.

Any changed-over consumer who proposes to change name, purpose, category shall continue to abide by the conditions of the changeover even after a change of name/purpose/category. The Supply Distribution Licensee shall inform the Wheeling Distribution Licensee of such changes.

5.1.6 Thefts and Inspection

Since the sale of electricity is carried out by the supply distribution licensee, it needs to have the right to inspect customer premises including meters to detect tampering of meters and also to establish misuse and unauthorized consumption, if any. In case of misuse, the supply distribution licensee has to initiate appropriate proceedings against the consumer and advise the Wheeling Distribution Licensee to carry out disconnection in accordance with the Act.

As the distribution losses and energy purchase cost in the imbalance pool is by wheeling licensees, it shall have the right to inspect meter and cut-out seals from time to time and take meter readings for all changed-over consumers. Wheeling distribution licensee can use meter reading data provided by the supply distribution licensee and compare the same with its own meter reading data to establish any prima-facie case of theft/meter tampering.

The assessment energy, in cases where theft by meter tampering / bypassing meter is established, shall be considered as default supply by the wheeling distribution licensee and will be computed and recovered from consumers as per the provisions of Section 126 of the Act. The wheeling distribution licensee, as per Section 126 (e) of the Act, shall use its rate, equal to one-and-a half times the tariff rates applicable for the relevant category for computation of charges for such assessed energy. The wheeling distribution licensee shall provide such information to supply the distribution licensee. The supply distribution licensee shall bill and recover such charges from the consumer and make payments to the wheeling distribution licensee.

5.1.7 Standards of Performance (SoP)

The supply distribution licensee shall be the sole interface to the consumer and therefore responsible for adherence to SoP relating to the period of giving supply, quality of supply (voltage, harmonics), system of supply, restoration of supply, restoration in burnt meter cases, reconnection on payment of amounts due, etc. Except for occurrences beyond the control of the wheeling distribution licensee, it shall honour its obligations to adhere to SoP.

In order to provide non-discriminatory access to the wires, the wheeling distribution licensee should not discriminate between changed-over consumers and its own consumers for provision of wheeling services.

Since the supply distribution licensee shall be the sole interface to the consumer, for non-adherence to SoP, the supply distribution licensee shall have the right to demand from the wheeling distribution licensee, reimbursement of compensation paid to affected consumers.

5.1.8 Changeover Procedure

a. Application for changeover

Some of the salient points of change over application are as given below:

- No consumer who has been disconnected for payment default will be allowed a changeover without clearing the dues of the existing distribution licensee. The consumer shall attach a copy of the last bill served by the existing distribution licensee, proof of its payment, and other relevant documents as required under the Electricity Supply Code (ESC).

- The Consumer shall not be required to obtain the No-objection certificate (NOC) from the existing distribution licensee.

- Application for changeover shall be submitted by the consumer to the new distribution licensee. The consumer shall pay application processing fees as per the Schedule of Charges approved by the Commission as per the ESC.

- The consumer shall indicate her/his choice in terms of meters, i.e., meter provided by the Existing Distribution Licensee to be continued or meter to be provided by the New Distribution Licensee or consumer to purchase own meter

- The consumer shall not be permitted to change his/her name or the purpose or the classification category at the time of the changeover.

b. Pre-Changeover Activities

- New distribution licensee shall inform the existing distribution licensee on a daily basis (in the agreed format) regarding completed application forms received. The existing distribution licensee shall share with the new distribution licensee information relating to any arrears/disputes/court cases, etc. for consumers proposing to change over within three days of receipt of information from the New Distribution Licensee.

- New distribution licensee shall inspect the consumer premises to confirm classification, connected load, technical issues, if any, etc. within the timeframe stipulated under SoP. The new distribution licensee shall estimate the security deposit to be provided by the consumer as per ESC and intimate the same to the consumer. The consumer shall pay such a security deposit amount to the new distribution licensee.

- In case of sanctioned load equal to or higher than 50 KW, the Consumer shall have to enter into an agreement with the New Distribution Licensee at the time of the changeover.

c. Changeover

- The changeover shall coincide with the next scheduled meter reading date of the existing distribution licensee subject to minimum seven working days from receipt of intimation from the new distribution licensee.

- In any case, the changeover cannot take more than 30 days from the receipt of the completed changeover application by the new distribution licensee. The wheeling distribution licensee and the new distribution licensee will agree on a suitable date for changeover within a 30-day period, if the next meter reading date falls beyond such a period.

- In case a consumer opts for a new distribution licensee's meter or own meter, the same shall be tested by the new distribution licensee at its laboratory and installed at the consumer's premises. The existing distribution licensee will remain present at the time of such testing.

- In case of meters provided by existing distribution licensees, such meters will be tested jointly on-site as per an agreed schedule between the existing distribution licensee and the new distribution licensee, ideally at the time of the changeover.

- In case metering involves CT/PT, then there shall be a joint schedule for verification of CT/PT ratios.

- All meters and cutouts for changeover consumers shall be safeguarded against unauthorized access by way of sealing. For the meters provided by the new distribution licensee and consumer, sealing shall be done by the new distribution licensee and for meters provided by the existing distribution licensee, sealing shall be done by the existing distribution licensee. The cut-out in all cases shall be sealed by the existing distribution licensee.

- The meter reading on changeover date shall be taken jointly. The consumer may remain present at the time of a joint meter reading, if so desired by the consumer and if it is practicable. Such meter reading shall be the final meter reading of the Existing Distribution Licensee and opening meter reading of the New Distribution Licensee, irrespective of the choice of meter by the consumer. Such meter reading shall be counter-signed by the Existing Distribution Licensee, New Distribution Licensee and the consumer, if present at the time of the joint meter reading.

- The existing distribution licensee shall raise the final bill based on the final meter reading. The consumer shall pay the existing distribution licensee's final bill on or before the due date.

- The existing distribution licensee may adjust the security deposit (with the existing distribution licensee) in the event of payment default, if any, and refund the balance security deposit within seven working days from the due date for final bill.

- In case of any non-payment or partial payment of the final bill of the existing distribution licensee (after adjusting security deposit, if any) by the changed-over consumer, provisions of Section 56 (Disconnection of supply in default of payment) of the Act shall apply.

5.2 Issues not dealt with in the Interim Order

5.2.1 Universal Service Obligations

As discussed in previous paragraphs, despite multiple distribution licensees in the same area, all are bound by the terms of the distribution licenses, which include provisions related to Universal Service Obligation. Such an obligation is in accordance with the duty to supply on request under Section 43 of the Act.

In fact, in the case of multiple distribution licensees in an area, the National Electricity Policy, 2006 clearly states that the second and subsequent licensee for distribution in the same area shall have the obligation to supply to all consumers in accordance with the provisions of Section 43 of the Act. Further, it also suggests regulating connection charges to avoid cherry-picking by incumbent or subsequent distribution licensees.

"……5.4.7 One of the key provisions of the Act on competition in distribution is the concept of multiple licensees in the same area of supply through their independent distribution systems. State Governments have full flexibility in carving out distribution zones while restructuring the Government utilities. For grant of second and subsequent distribution licence within the area of an incumbent distribution licensee, a

revenue district, a Municipal Council for a smaller urban area or a Municipal Corporation for a larger urban area as defined in the Article 243(Q) of Constitution of India (74th Amendment) may be considered as the minimum area. The Government of India would notify within three months, the requirements for compliance by applicant for second and subsequent distribution licence as envisaged in Section 14 of the Act. With a view to provide benefits of competition to all section of consumers, the second and subsequent licensee for distribution in the same area shall have obligation to supply to all consumers in accordance with provisions of section 43 of the Act. The SERCs are required to regulate the tariff including connection charges to be recovered by a distribution licensee under the provisions of the Act. This will ensure that second distribution licensee does not resort to cherry picking by demanding unreasonable connection charges from consumers. …."

"8.4 Definition of tariff components and their applicability…..

….The SERCs may also suitably regulate connection charges to be recovered by the distribution licensee to ensure that second distribution licensee does not resort to cherry picking by demanding unreasonable connection charges. The connection charges of the second licensee should not be more than those payable to the incumbent licensee….."

In fact, subsequent to the Supreme Court order on 20th August, 2008, the Commission notified the MERC (Specific Conditions of Distribution Licence applicable to The Tata Power Company Limited) Regulations, 2008, effectively confirming TPC-D as a distribution licensee in the entire city of Mumbai covering the licence areas of both BEST and RInfra-D. Thus, neither RInfra-D nor BEST have a monopoly distribution licence in their respective licence areas, but all have the obligation to supply to all the consumers either through their own wires or by utilizing wires of other licensees.

In view of this, each distribution licensee in an area with parallel distribution licensees, shall be clearly responsible for the supply of electricity. Since all distribution licensees are expected to supply to all consumers in their area of supply, there is no need for default service providers or providers of last resort as envisaged in some other countries.

5.2.2 Responsibility with respect to network augmentation & expansion

The responsibility with respect to network augmentation and expansion is closely linked with the approach adopted for fixation of tariff. It is also linked to parallel distribution through one's own network or compulsory utilization of an incumbent licensee's network. We have discussed all these situations below:

a. Case I – All the distribution licensees are regulated on a cost-plus basis and using their own network.

In case all the parallel distribution licensees are regulated on a cost-plus basis and are supplying electricity using their own network, the issue becomes complicated as duplication of network may burden the consumer due to cost-plus regulations. Further, the entire administrative procedure for the approval of capital expenditure becomes much more difficult as a definitive business plan need to be finalized before granting approval for network roll-out.

The distribution margin-based approach mentioned in the National Tariff Policy, 2006 may be a useful in such a situation as under such an approach, returns are not linked to equity invested in the business. Thus, there is no incentive for distribution licensees to incur additional capital expenditure, irrespective of the need for the same. The distribution margin is expected to compensate on the basis of sales. Whether additional capital expenditure needs to be incurred or not to increase the sales is a business call that the licensee has to take.

b. Case II – Tariff Ceiling-based approach and no stipulation of using incumbent's network

In a situation wherein tariff ceilings are fixed and all the other distribution licensees can supply either through their own network or using an incumbent licensee's network , the network roll-out/augmentation becomes a business call as in the absence of cost recovery through ARR/cost-plus basis, the distribution licensees has to conduct his own assessment of risk – returns.

c. Case III – All licensees on a cost-plus based approach and stipulation of using incumbent's network

It is only in the situation of retail supply utilizing another licensee's network, business regulated on a cost-plus basis and Universal Service Obligation on all the distribution licensees, there is a need to define responsibility with respect to approach on network augmentation and expansion. In the case of the city of Mumbai, there is a possibility that in the vicinity of a consumer who is intending to change over, a network of both the RInfra-D and TPC-D exists.

While wherever a consumer is connected with the network, the same wires need to be necessarily used to avoid inefficient network and cost, it is only when the network extension is required to connect a consumer, that there emerges a need to arrive at guiding principles in the context of multiple distribution licensees. The options for such an expansion can be based on either the least cost or the shortest distance from the existing network or consumer can also be given option to decide. It may be noted that the network augmentation need to be done by the respective licensee whose network is facing capacity constraint.

In case of shortest distance from the existing network, it is likely that the distribution system may require in addition to service lines, augmentation of the distribution system and hence the same may not be a least cost option. From this perspective, the least cost option is preferable. However, the least cost option requires that each time a consumer approaches for changeover, both the licensees need to arrive at a consensus on the least cost option. Estimation of expansion or augmentation cost can also be a subject of dispute. In view of this, the suggested approach is to adopt the least distance approach.

Under this approach, the radial distance from the consumer to the relevant and nearest distribution system components shall be considered. Further, in case the distance is within a certain radius, then the existing wire licensee shall have the responsibility for extension of network; otherwise, the relevant supplier will have the responsibility for last mile connectivity to the consumer.

In third approach wherein consumer is given an option to decide with respect to network extension, the following principle can be adopted for network expansion:

For Load less than 1000 KW: If all the Licensees are within 500 meters then the choice of customer would prevail. If all the Licensees are above 500 meters, the shortest distance approach will be applicable. If only one Licensee is below 500 meters then the nearest Licensee will expand or augment the network.

For Load greater than or equal to 1000 KW: For load greater than or equal to 1 MW a substation will have to be installed. Hence for distances below 2 Km the choice of the customer of the Licensee would prevail. For distances greater than 2 Km, the nearest Licensee may extend the supply subject to availability of capacity. In case of non availability of capacity, the customer choice would prevail.

However, in the third approach above, consumer is making a choice based on his own assessment, which requires that the information with respect to cost pertaining to network augmentation and other such related aspects need to be made available to the retail consumers in a transparent manner. The information should also be widely available so that consumer can make a rational decision.

Key Discussion Points

- *What should be the approach for network augmentation and expansion?*
- *In the cost-plus regime, how to determine the optimum method of network augmentation and expansion? Should it be on the least cost basis or least distance basis?*
- *Should there be a stipulation to use the incumbent's network for retail supply or the choice needs to be left to the licensee?*
- *Is there a legal basis for stipulating compulsory use of incumbent's network since the Act defines parallel distribution as using own network?*

5.2.3 Recovery of Regulatory Assets and Past Revenue Gaps

In case of existing licensee, there have been regulatory assets and past revenue gaps which need to be recovered subsequently. This issue is only applicable to licensees operating in cost plus regime. In a regulatory regime wherein consumers switch over from one licensee to another, the recovery through tariff of a particular licensee can only be possible through the balance consumer of that particularly licensee. However, these costs actually pertain to the period wherein there were other consumers also who were connected with the network but subsequently switched-over to other / parallel distribution licensee. Recvoery of these charges from the balance consumers may not be appropriate and there is need to devise a mechanism of recovery of these charges from the relevant consumers.

One of the options to short out such an issue is to identify consumers who were incumbent's consumers during the period when these regulatory assets / revenue gaps were created and entrust responsibility on parallel / other licensee to recover and pass on these charges to the incumbent licensee.

ANNEXURE 1 – INTERNATIONAL EXPERIENCE ON TARIFF UNDER RETAIL COMPETITION

Price Regulation – New Zealand

The distribution business has been segregated broadly into two distinct activities, i.e., retail supply (competitive activity) and network operation (monopolistic activity). The retail supply market is a competitive market with no price control on retail tariff. The distribution businesses are regulated monopolies, and are not permitted to participate in the competitive activities of generation and retailing. All electricity lines businesses are subject to targeted control regime for tariffs which was introduced through Para 4A of the Commerce Act. The regime is referred to as "targeted control" because only those businesses that cross the thresholds, trigger the Commission to identify lines businesses whose performance may warrant further examination, and if necessary, control of prices, revenues and/or quality. The overall purpose of the targeted control regime is to promote the efficiencies in the operation of the network for the long-term benefit of the consumers. The three key objectives of the targeted control regime are to:

- Set performance thresholds for electricity lines businesses,
- Identify businesses that breach thresholds, and
- Determine whether or not to control in case of a breach.

The two thresholds adopted by the Commission for all electricity lines businesses (with the exception of Transpower), are Price threshold and Quality threshold.

The Price threshold requires compliance with a specified price path, based on the CPI minus X price methodology. The threshold allows the lines businesses to increase their average distribution prices each year, by the consumer price index less an X-factor. X-factors have been determined on the basis of the industry-wide productivity found using total factor productivity analysis as well as on the basis of the relative efficiency and relative profitability of the businesses. X factors have ranged from -2% to 1% in the past.

Quality threshold requires compliance with specified reliability and consumer engagement criteria. The operators are required to demonstrate annually that there has been no material deterioration in reliability, measured against average SAIDI and SAIFI performance for the previous control period.

The thresholds are applicable for a five-year control period at the end of which the methodology and the prices are reviewed. The price path is a weighted average price-cap which is based on notional revenue conveyed. This form of average price-cap limits price increases, but does not constrain prices for individual services, classes of services or for different customer groups. The approach provides flexibility to the network operators to reflect changing consumer demands as part of their price structures is calculated on the prices charged and the associated quantity of electricity being wheeled. Certain costs which are either unforeseen or uncontrollable are treated as pass-through. Costs which are recognized as pass-through include local authority rates, statutory levies and transmission charges.

Retail Price Regulation – Queensland

The Queensland retail electricity market is a competitive market with 27 licensed retailers. A notable feature of the market is that customers who do not accept a market contract for the supply of electricity from a retailer are able to remain on regulated tariffs.

In the competitive market, electricity retailers are able to offer supply of electricity to all consumers, including those on regulated prices. Consumers taking up such an offer transfer from the regulated price to the market contract price they have accepted from the retailer. However, regulated electricity prices remain an important feature of the Queensland electricity market. In particular, customers who are not offered a market contract, or who choose not to accept an offer, remain on a regulated price. In addition, small consumers who accept a market contract may revert to a non-market contract at the regulated price in the future, subject to any contractual conditions that may apply to their market contract.

In effect, the regulated price sets a ceiling on the basic price that consumers are required to pay. As such, it is important that regulated prices adequately reflect the costs and risks assumed by electricity retailers. For small consumers in the majority of the states (those outside the southeast corner, where there is little or no active competition) the regulated prices are the prices they will be required to pay. There are currently 20 scheduled tariffs for which regulated prices are set.

At present, regulated prices are set annually by the Authority under a delegation from the Minister for Mines and Energy and in accordance with the BRCI process outlined in the Electricity Act 1994 (the Electricity Act) and the Electricity Regulation 2006 (the Electricity Regulation).

The BRCI process does not involve an assessment by the Authority of the efficient cost of supplying electricity. Rather, it requires the Authority to escalate the regulated tariffs in existence at the commencement of retail competition by the change in the cost of supplying electricity to Queensland customers as defined under the Electricity Act and the Electricity Regulations. In determining the change in the cost of supplying electricity, the Authority is required to use the methodology prescribed in the legislation to calculate what is termed the Benchmark Retail Cost of supplying electricity by reference to the following cost components:

(a) Cost of energy;
(b) Network costs;
(c) Retailers' costs (including an appropriate retail margin); and
(d) Other relevant costs.

Cost of Energy

To assess the cost of purchasing energy faced by retailers, a weighted average of the following is applied:

(a) An estimate of the long run marginal cost (LRMC) of electricity generation; and

(b) An estimate of the cost of purchasing electricity in the market to meet the required load for the relevant (future) tariff year.

The LRMC of energy is estimated based on a 'greenfields approach' which assumes that the entire generation system is built anew using the most efficient combination of new plant to meet the nominated load. The approach recognizes the interconnection of the Queensland electricity network with the rest of the National Electricity Market (NEM) and includes projected changes in the LRMC of energy over time. The estimate of the change in LRMC is arrived at by basing the input costs on a regression analysis of costs over time.

The purchase cost of energy is estimated based on a combination of contract and spot market energy prices that an efficient retailer could be expected to purchase over a two-year period in order to meet the nominated load. In establishing the cost of energy component of the BRCI, the Electricity Act also requires the Authority to consider the impact of the 13% gas scheme and the Mandatory Renewable Energy Target (MRET) scheme (under the Renewable Energy (Electricity) Act 2000).

Network Costs

Retailers recover the charges levied on them by transmission and distribution network service providers by incorporating these charges in the retail tariffs charged to customers. Transmission costs are the amount that Queensland's transmission entity (Powerlink) charges Queensland's two electricity distributors (Energex and Ergon Energy) for using its transmission network. While Powerlink's Transmission Use of System (TUOS) charges are by far the largest component of transmission costs, a number of other transmission-related costs are incurred by distributors, including avoided TUOS payments made to embedded generators and payments to other distribution network service providers for (transmission like) network services. Distribution costs are based on the aggregate annual revenue requirements for both Energex and Ergon Energy set by the economic regulator (currently the local authority, but from 1 July 2010 the Australian Energy Regulator (AER)). While the charges levied by Energex and Ergon (and the rate of change in these) will differ, the BRCI approach applies an average of these in determining annual price increases.

Retail Costs

Retail costs include the cost to retailers of providing a range of services to their customers – these include retail operating costs, customer acquisition costs and a retail margin. The Authority has estimated retail operating costs by escalating a benchmark cost established in 2006-07 (including costs relating to the introduction of retail competition accounted for in 2007-08) to account for inflation and wages growth in the intervening period.

In calculating customer acquisition costs, the estimation of the cost incurred by a retailer to achieve customer transfers and switches, recognising that it costs a retailer more to acquire a new customer than it does to convince an existing customer to transfer to a market contract.

The retail margin has been set at 5% and is the increment above a retailer's total costs that is needed to provide an appropriate return to the retailer given the commercial risks that it faces. The gross retail margin can be defined as the retailer's revenue minus the cost of energy and network costs while the (smaller) net margin is what remains after the retailer's operating costs are subtracted from the gross margin. References in the Queensland legislation to the retail margin refer to the net margin. The Authority has also been required to ensure that retail headroom in the tariffs remains relatively stable over time. Headroom is not defined in either the Electricity Act or the Electricity Regulations. To date, the Authority has taken the view that, as it is not calculating efficient tariffs but rather indexing existing tariffs, whatever headroom was in the previously existing tariffs must have been maintained if the increase of all other sources of cost have been accounted for.

Price Regulation – United Kingdom

The distribution industry in UK comprises two business segments, i.e., distribution network operators and the retail suppliers. Presently, the retail supplier market for electricity in UK is a competitive market; and the retail prices are not regulated. The network business being a monopoly is however subject to price control, wherein the regulator determines the maximum allowable revenue based on cost estimates for a pre-determined control period. The cost assessment is done by efficiency level benchmarking using a top-down approach or a bottom-up approach or both to establish the efficient level of costs for a given distribution area. Costs may be segregated into operating costs and capital costs for determining the efficiency level of costs. A two-strand approach considering the efficiency levels implied by both top-down

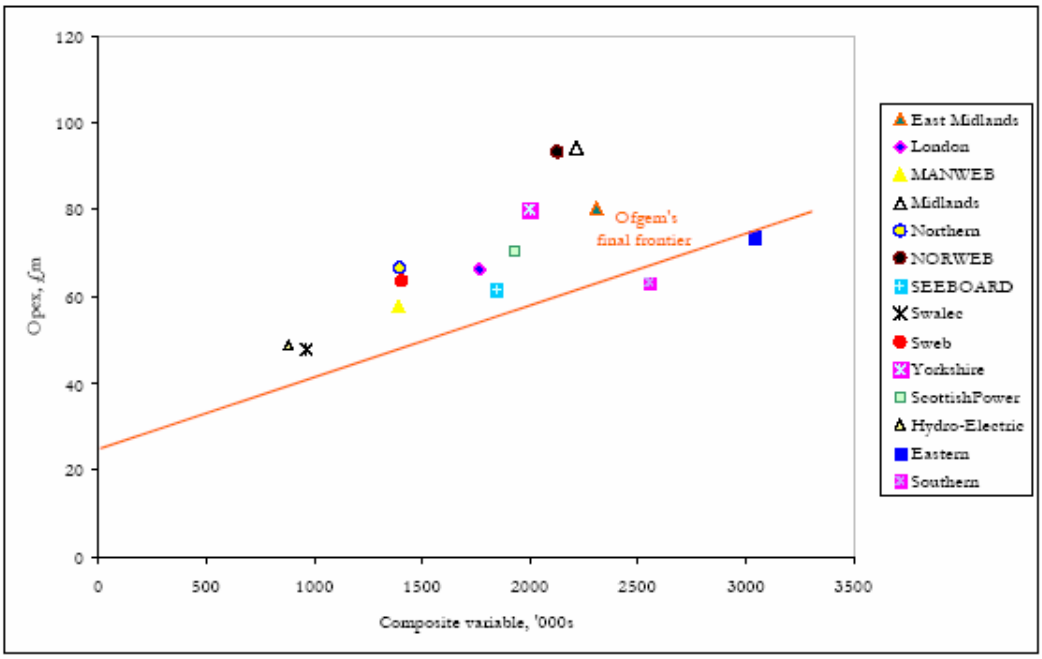
and bottom-up analysis is applied. The capex is benchmarked essentially on the basis of a bottom-up analysis of the efficient level of costs. This section reviews the approach taken to assess the efficient level of opex for the distribution businesses.

Top-down approach

This involves a regression analysis of the cost drivers of opex to determine the efficiency frontier. The analysis essentially determines a relationship between base opex (as defined below) and a measure of network scale. The base opex is adjusted for uncontrollable costs such as network depreciation and is adjusted for different accounting policies and other factors to make them more comparable across different utilities.

Total Reported Opex	
Subtract:	▪ Network Deprecation ▪ Network Rates ▪ NGC Exit Charges ▪ Profit / loss for sale of fixed assets
=Controllable Opex	
Adjust for :	▪ Capitalization policy ▪ Allocation and attribution policy
= Adjusted Controllable Opex	
Adjust for	▪ Data Management Services (DMS) ▪ Non-Trading Rechargeable (NTR) ▪ Other one-off costs ▪ Other services ▪ Other factors
= standardized controllable opex	
Adjust for :	▪ Regional labour cost ▪ 132 kv network in Scotland
Base Opex	

In order to establish the frontier, the slope of the plot is then adjusted so that the line passed through the second lowest data point, i.e., the second-most cost-efficient firm whilst maintaining the value of the intercept. The distance of each data point from the frontier then determines each firm's potential for efficiency improvement. The measure of scale consists of a composite variable reflecting customer numbers; the number of kWh distributed and network length. The weights assigned to the components of the composite variable are 50%, 25% and 25% and no constraint is imposed on the intercept. Given the bottom-up analysis that basically confirms the level of the calculated intercept as being an appropriate level of fixed costs, the regression line is then pivoted to pass through both the intercept and the second lowest observation to establish the frontier. The frontier is therefore based on the position of this firm.



Source: Ofgem data, CEPA calculations

Bottom-up approach

A bottom-up study to assess the potential for the distribution businesses to reduce costs is performed OFGEM also commissions consultants to conduct a bottom-up study to assess the efficient level of base year opex theoretically achievable by each distribution business based on the application of the best practice. The analysis is then used to identify potential opex savings in each case. Data is collected primarily through the business plan questionnaire, with follow-up meetings arranged with the distributors to clarify particular issues. An examination of the past cost reductions and the methods used to achieve these for the four best performing distributors is undertaken. In one of the tariff reviews, the benchmarking of costs associated with the main distribution activities was done as follows --

- Engineering costs: These form the majority and include network repairs and maintenance, system control and non-capitalised planning and construction. Various benchmarks were established based on best practice and the costs of the best performing companies. For instance, cost/network km is benchmarked at £575/km. The engineering costs for each distributor were also calculated based on the profile of network assets and using the best practice cost/asset.
- Meter operation (including repair and maintenance, meter recertification and meter changes): A distributor-specific benchmark has been set for metering following feedback from the consultation process. The approach was to set a benchmark of £2.30/customer/annum was determined on the basis of the average costs of the better performing distributors.
- Corporate and administrative functions: A benchmark of £7m/annum was determined, again on the basis of the average costs of the better performing distributors.
- Customer service: Initially, no benchmark was calculated for customer service opex as the costs allocated to the distribution business were small. However, following consultation, OFGEM introduced a customer service and billing benchmark of £1.50/customer/annum.
- Each component of the analysis resulted in an estimated range of the efficiency savings achievable by each distributor. These were then combined to give an overall level of opex savings per company.