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Parallel but Intersecting: Why Duplicate Electricity Distribution Networks Won't Work

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The Electricity Act of 2003 allows multiple power distributors in an area, intended mainly for rural areas. Now private companies are eyeing distribution in urban and industrial areas. Instead of parallel licences, long-term open access could offer more effective competition and consumer choice.

Introduction

For more than three decades, electricity reforms have strived to increase private sector participation. Initially, the focus was limited to attracting investments in generation. After the Electricity Act of 2003, this objective was enhanced to include competition, mainly in electricity generation, and giving consumers a choice of supplier through open access.[1] Attempts were also made to improve the financial health of the loss-making distribution companies (discoms) that supply power to the end consumer.

As a result, more than half of the installed generation capacity is now owned by the private sector. However, so far, most discoms have not been able to achieve the expected turnaround.[2] Despite this, few consumers eligible for open access have chosen to change their supplier. Most continue to remain with the (loss-making) discom and use partial or short-term open access to opportunistically switch between the discom and the markets on the basis of prices. Such short-term open access further hurts discoms' finances and planning, adversely affecting the supply of power to small consumers, who do not have such a choice. Ultimately, all consumers suffer when the discoms incur losses, and the clamour for reform grows.

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The Electricity Act, 2003 also permits multiple discoms to operate in the same area. Since electricity distribution is a licensed business in India, companies interested in becoming a parallel licensee—that is, a new licensee in an area where a discom already exists—must approach the relevant state electricity regulatory commission (SERC) for a licence. While this approach was primarily intended to promote rural electrification, it remained unused for many years. In September 2022, the Ministry of Power issued an amendment to clarify the minimum area of supply for the operation of multiple licensees. Following this, private companies have filed applications for parallel licences in urban and industrial areas, indicating a growing momentum in this direction.

This article examines what this means for the power distribution sector. Given the current legal arrangement, it advocates long-term open access over parallel licences to promote competition and choice for consumers.[3]

1. Distribution Licensees and Parallel Licensees?

Under the Electricity Act, a distribution licensee is an entity with a distribution network that supplies electricity [Section 2 (17)]. Given that electricity distribution has hitherto been a monopoly business, all distribution licensees are obligated to supply electricity to every consumer in their licence area who is willing to pay (known as universal supply obligation or USO) (Section 43). Under the current legal framework, a licensee can only meet their supply obligation through their own network.[4]

When more than one entity is given a licence to distribute electricity in the same area, the new entrant is called a parallel licensee. However, it also must do so through its own network (Proviso 6 of Section 14). Thus, parallel or multiple distribution licensees would mean multiple distribution networks in the same area.

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Network duplication is an inefficient way to introduce more players into electricity distribution. The reason is simple—network building is expensive and requires scarce resources such as land and capital. Such resources should be utilised more effectively in a developing country like India. Duplicating the entire network to connect and supply the same set of consumers is wasteful, mainly because half the

total network will not be used.

Under the current system of cost-plus regulation, distribution licensees are assured of recovery of all the costs approved by the regulatory commission, plus a fixed rate of return (profit) on their capital investment. Once approved, these costs are recovered from electricity consumers through their tariff. This incentivises electricity companies to increase their capital base because that raises their profits as well.

Overinvestment and gold plating are well-known problems in industries operating under cost-plus regulation, and the prudence of these investments is usually hard to evaluate and monitor. This means that while the electricity companies stand to gain from excessive network expenditure, the consumers will be saddled with unnecessary costs. With multiple licensees under a cost-plus model, these problems multiply. All licensees in a given area are, at once, both mandated and incentivised to increase their capital base. Their parallel network costs will be fully recovered and will earn them a handsome post-tax annual return on equity of 16%.

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What is more, the regulators are not empowered to turn down applications for a parallel licence as long as the applicant meets specific predefined criteria.[5] If more companies apply to be licensees for the same area, we may even see three or more parallel networks in the same place. For example, based on our perusal of current licence applications pending with the Maharashtra Electricity Regulatory Commission (MERC), both the Adani group and Torrent Power are applying for licences in Thane Municipal Corporation, currently supplied by Maharashtra State Electricity Distribution Company Limited (MSEDCL). Both the applicants intend to create their own networks in this area.

2. Tackling Inefficiencies

The current legal system works heavily in favour of network duplication, which does not benefit consumers or the sector as a whole. Some regulatory commissions, including Maharashtra's, intend to use regulations, directions, and orders to deal with network duplication. However, the Maharashtra Electricity Regulatory Commission's experience in Mumbai, where multiple licensees have been operating for around 15 years for legacy and legal reasons, should make it more cautious about such an approach. No regulations, orders, or committees have succeeded in preventing network duplication or the prolonged litigation that now seems almost an integral part of the regulatory process in Mumbai.[6]

> The Maharashtra Commission's new tariff regulations empower it to determine a uniform wheeling charge in an area with multiple distribution licensees. This means that the cost of the new network will have to be borne by not just those consumers who utilise it but all consumers in that area.

In particular, it is difficult to optimise the creation of parallel distribution networks where the licensee simultaneously operates and acquires consumers from the incumbent. Estimating the demand for which the network is to be laid out presents practical problems, which are all the more relevant since these numbers determine the capacity of capital investment and infrastructure on the ground.

Surprisingly, the Maharashtra Electricity Regulatory Commission's new multi-year tariff regulations empower it to determine a uniform wheeling charge in an area with multiple distribution licensees. This means that the cost of the new network(s) will have to be borne by not just those consumers who utilise it but all consumers in that area. The legal validity of this arrangement is unclear or, in other words, yet to be tested through litigation.

Finally, the commission's options for network cost optimisation are limited by that the licensee's network rollout plan must be approved before it begins operations.[7] This provision makes these costs, more or less, fait accompli.

3. Private Sector Interest

A parallel licence arrangement was envisaged under the Electricity Act, 2003 to attract private sector investments to develop and strengthen the network in remote or un-electrified areas. Even today, rural and recently electrified regions in many states need significant investments in distribution network augmentation and development, and duplication might be less severe a challenge in some

of these areas.

State discoms heavily rely on central grants and state support to strengthen and upgrade the distribution network in such places. However, the private sector has not shown much interest in such locations. For instance, there was hardly any competition in the bidding for distribution licences conducted between 2017 and 2019 for the four discoms of Odisha, a largely rural and low-income state that has only recently attained universal household electrification.[8]

Contrary to the original intent of the Electricity Act, the petitions seeking parallel licences before the Maharashtra Electricity Regulatory Commission are for high-revenue generating industrial and urban areas of Maharashtra State Electricity Distribution Company, which are fully electrified, have a reasonably strong network, and mostly reliable supply. Plus, land is expensive and scarce in these locations, making duplicating network infrastructure costly, inefficient, and, in some cases, simply impractical.

> The effectiveness of ceiling tariffs is questionable under the current cross-subsidy regime, and the regulatory certainty of recovering all approved costs.

Further, in contrast to rural areas, the incumbent public discoms also spend a significant amount on maintaining and upgrading the network in high-revenue areas, making additional investments from the private sector unnecessary. For instance, the Maharashtra Electricity Regulatory Commission has already approved capital expenditure (capex for short) of more than Rs. 1,000 crore for the Maharashtra State Electricity Distribution Company for system strengthening and network upgrades in areas where parallel licences are sought.[9]

The network rollout plans submitted by Adani and Torrent estimate an investment of Rs. 4,773 crore and Rs. 5,949 crore, respectively, for the first three years.[10] Thus, the total capex proposed for these areas for just three years is roughly Rs. 11,000 crore. This amount exceeds the total capitalisation of around Rs. 9,500 crore approved for the Maharashtra State Electricity Distribution Company for FY 2023 to FY 2025 for its entire licence area.[11] As highlighted earlier, the current tariff regulations allow the Maharashtra Electricity Regulatory Commission to socialise the costs of duplicate networks by spreading them over the entire consumer base of that area.

Considering this and taking into account the proposed quantum of capex, the potential tariff impact for consumers in these areas will be quite severe. More significantly, many of the Maharashtra State Electricity Distribution Company's proposed capex projects in such areas have stalled for years due to right-of-way issues and delays in securing statutory clearances. These challenges will worsen if multiple companies compete for land and approvals to set up duplicate networks.

4. Providing Choice of Supplier

Some commissions, such as the Maharashtra Electricity Regulatory Commission, see multiple licensees as a way of furthering competition. This they hope to achieve by introducing ceiling tariffs, wherein the commission only sets an upper limit for energy charges (fixed charges are to be recovered from all consumers) for a given category of consumers. Multiple licensees can then compete for consumers by offering tariffs lower than the ceiling.

However, for ceiling tariffs to work effectively, all licensees must be able to supply to all the consumers in that area. As explained earlier, this would require duplicate networks, which are inefficient, wasteful, and expensive.[12] Additionally, the effectiveness of ceiling tariffs is questionable under the current cross-subsidy regime,[13] and the regulatory certainty of recovering all approved costs.

The cherry picking of high tension (HT) consumers by new entrants and its impact on cross-subsidy has been a longstanding concern in the sector. This emerged as a problem in Mumbai because high tension consumers were the first to switch suppliers. The licensee that loses consumers to a parallel licensee will seek compensation for its loss of cross-subsidy revenue. The migrated consumers will be in trouble if surcharges are introduced post-facto to compensate the licensee for the lost cross-subsidy. The economic incentive for choosing a different supplier will be wiped out for the consumer in such a situation.

> Many countries have introduced multiple players in the same licence area by separating the distribution wires (carriage) business from the electricity supply business (content). However, this would require an amendment to the Electricity Act, 2003.

In the case of areas for which new parallel licences are sought, the incumbent licensee's network covers everyone so that it caters for all types of consumers—low tension (LT) and HT. On the other hand, the network rollout plan of the applicants proposes to provide a choice of supplier only to high tension and extra high tension (EHT) consumers from day one. A longer and much slower process (which could take five years or more, considering the likelihood of delays) will bring the duplicate network to the rest of the consumers. This will affect cross-subsidy for the incumbent licensee, and the low tension consumers who wish to switch suppliers may not have that option for many years.

Thus, the current parallel licence provisions cannot effectively further competition or enable consumer choice.

5. Fostering Competition

Almost everywhere in the world, distribution (wires) is a monopoly business because this avoids the wasteful expense of network duplication.[14] Despite this common knowledge, India has chosen to allow multiple distribution networks in the same areas.

In contrast, many countries have introduced multiple players in the same licence area by separating the distribution wires (carriage) business from the electricity supply business (content). This is known as the separation of carriage from content. The wires are owned and maintained by one entity, which is obligated to provide open access to its network. Supply companies, traders and generators use the same wires to provide electricity at competitive prices to consumers.

While carriage and content separation can allow multiple suppliers to compete for consumers without any delay, implementing it would require an amendment to the Electricity Act, 2003. Such an amendment has been proposed and discussed several times since 2014 but has not yet been passed. However, the existing open access provisions can offer a way forward. The good news is that even the parallel licence applicants' stated goal of providing "world-class" reliable service can be quickly and efficiently achieved using these provisions without duplicating networks.

As explained earlier, open access allows consumers to choose a supplier other than their area's discom. Recently, under the Green Open Access rules and the regulations formulated under it, the limit for eligibility has been lowered significantly (to 100 kW) in many states. While mandating the discom to facilitate open access, the Electricity Act also empowers the state electricity regulatory commissions to impose certain charges on migrating consumers to compensate the discom for its loss of cross-subsidy. The unpredictability regarding the quantum and terms and conditions for the surcharges (apart from cross-subsidy, there are a few other surcharges) has been a significant deterrent to long-term open access.

> The entire economics of alternate supply can change for the consumer if the surcharges are tweaked in a particular way by the state electricity regulatory commission. This uncertainty makes long-term open access risky for consumers.

The reason is that the entire economics of alternate supply can change for the consumer if the surcharges are tweaked in a particular way by the state electricity regulatory commission. This uncertainty makes long-term open access risky for consumers. Notably, this risk also exists under the parallel licence framework. Ultimately, whether through open access, parallel licences or carriage-content separation, introducing multiple suppliers in the Indian context will affect cross-subsidy, requiring us to carefully think about providing it in a manner that protects the interests of the small and vulnerable consumers who are most likely to be adversely affected by these changes.

Therefore, under the current legal framework, the critical regulatory and policy intervention needed to foster genuine competition and a choice of suppliers to consumers is to make long-term open access viable, predictable, and sustainable. The central government has amended the Electricity Rules to facilitate this process. The state electricity regulatory commissions need to appropriately incorporate these guidelines to suit the realities of their state while balancing the interests of consumers.

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This will not only avoid the wasteful and unnecessary expenditure on duplicate networks but also provide consumers with a real choice of suppliers and foster genuine competition in generation, as is envisaged under the Electricity Act, 2003. In addition to clear and predictable regulations facilitating long-term open access, we also need reliable and transparent market mechanisms to achieve this goal.

To summarise, it will be a travesty of competition and consumer interest if policymakers and regulators allow an inefficient and sub-optimal solution, such as parallel licences, to proliferate instead of focusing on furthering viable and sustainable long-term open access and developing robust electricity markets.

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Footnotes:

1 The Electricity Act, 2003 mandates distribution and transmission companies to provide non-discriminatory access to their wires network to all eligible consumers, fulfilling the regulatory requirements for open access. It was initially limited to consumers with a connected load of 1 megawatt or more.

2 As per the Report on Performance Of Power Utilities, 2022-23, the aggregate losses for distribution utilities in FY 2021-22 stood at Rs. 31,026 crore, while the accumulated losses (as per the balance sheet) were Rs. 552,507 crore.

3 Other scholars have also long argued for this. See Singh, Daljit (2017): “Newer Challenges for Open Access in Electricity”, Centre for Social and Economic Progress, New Delhi; Josey, Ann et al. (2018): “Electricity Distribution Companies in India: Preparing for an Uncertain Future”, Discussion Paper by Prayas (Energy Group), Pune.

4 In Mumbai, an exception was carved out for Tata Power based on a Supreme Court judgment, but the arrangement of changeover is unique to Mumbai and not applicable elsewhere. For an analysis of Mumbai’s power sector, see Chitnis, Ashwini and Vaishnava, Saumya (2017): “In the Name of Competition”, Prayas (Energy Group), Pune.

5 The proviso to Section 14 of the Electricity Act, 2003 states that “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”.

6 Judgments have provided the basis for the protocols governing changeover and switchover of consumers from one network to the other in the city, and it is unclear if these can be used elsewhere without similar legal decisions. Even then, the regulatory commission had to adjust consumer tariffs so that only certain consumers choose to move from one licensee to the other. A regulatory commission committee recently found that both Tata Power and Adani Electricity Mumbai are not adhering to the protocol for switching consumers from one network to the other (see Maharashtra Electricity Regulatory Commission order in case nos. 82 & 135 of 2021). The sale of Tata Power Mumbai, the parallel licensee in Mumbai, on its own network was 2,554 MUs in FY 2010 and 3,864 MUs in FY 2023.

7 Maharashtra Electricity Regulatory Commission Distribution Licence Conditions Regulations, 2004, require the entity applying for a distribution licence to submit a network rollout plan detailing the distribution system’s year-wise and area-wise rollout for the next five years.

8 Only two bidders reached the final selection stage for three of the discoms, and a sole bidder qualified for the last one. Ultimately, Tata Power Company won all four licences.

9 Although a detailed break-up of circle-wise capital expenditure data is not available in the public domain, the data submitted by the Maharashtra State Electricity Distribution Company in its mid-term review petition provides scheme-wise capex details.

10 The network rollout plan is provided under Annexure 11 of Adani’s petition and Annexure 8 of Torrent’s.

11 Maharashtra Electricity Regulatory Commission Order in case No. 226 of 2022, pp. 297 and 390.

12 We had in a 2018 report recommended ceiling tariffs in Mumbai. However, in Mumbai, the provision of changeover allows consumers to move between electricity suppliers while remaining on the same network. This option is not available to consumers elsewhere.

13 Under the electricity tariff framework, large high-tension and industrial consumers typically pay more than the average cost of supply, whereas small low-tension residential and agricultural consumers pay less than that. This indirect subsidy is called cross-subsidy.

14 The US, where multiple networks existed due to legacy reasons, moved to make distribution a monopoly business to avoid such wasteful expenditure. See Singh, Daljit (2016): "Competition and Choice in Electricity Distribution in India", Working Paper, Centre for Policy Research, New Delhi.