# India's DISCOMs:
## Weak Link in the Power Sector

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Discussion Paper

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Discussion Paper

# India's DISCOMs:
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## ABSTRACT

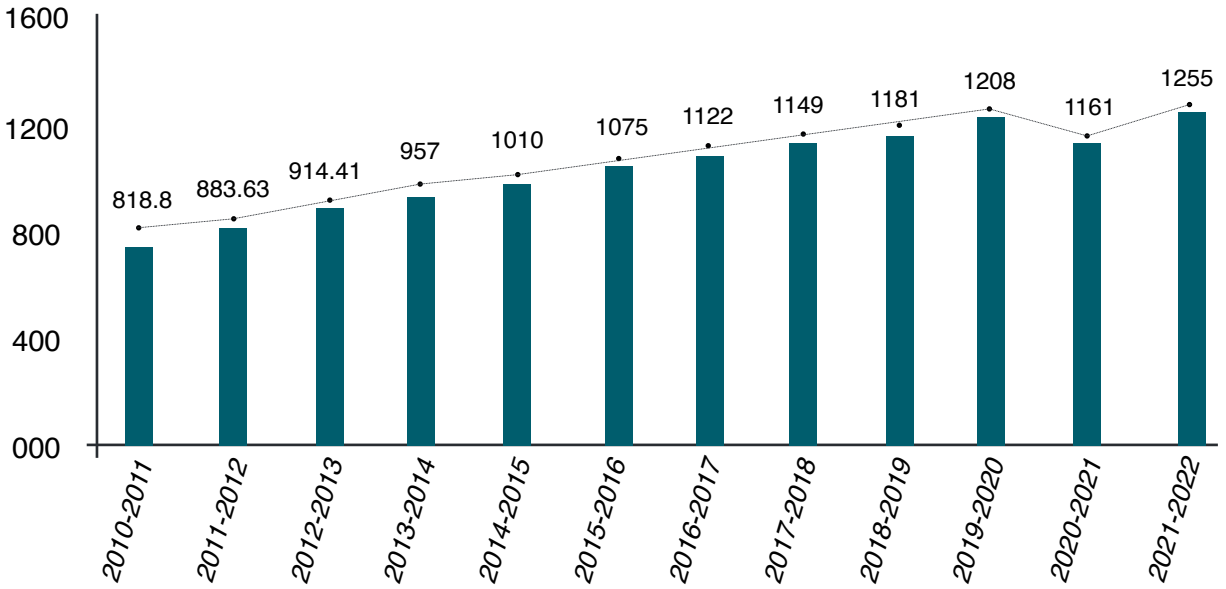
Power is among the most critical components of infrastructure and serves as a crucial metric for assessing the living standard of a country's population. Unfortunately, a variety of problems plague India's power sector. The poor financial health of power distribution companies has often been recognised as a critical issue impacting the power sector's entire value chain. Therefore, this paper aims to highlight the reasons for the poor financial health of power distribution companies and the ways to address those.

**Keywords:** Power, DISCOMs, AT&C Losses, Cross-Subsidies, Electricity Tariff, Bailouts

# OVERVIEW OF INDIA'S POWER SECTOR

According to the Central Electricity Authority (2022), India's per capita electricity consumption was 1,255 kWh in 2021-22. India's per capita electricity consumption consistently rose till 2019-20 (see figure 1). In 2020-21, the per person consumption fell due to the pandemic, but it returned to its growth trajectory in 2021-22. While the improvement in this figure over the years is noteworthy, India's performance remains poor compared to the global per capita consumption, which was estimated to be 3,128 kWh in 2014 (The World Bank, 2014).

***Figure 1: India's per capita electricity consumption***

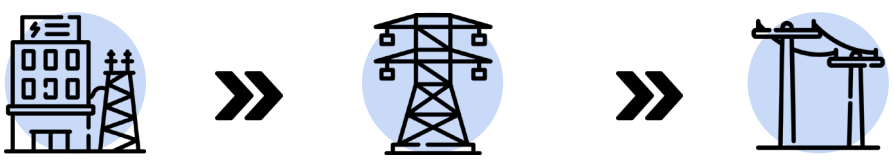



Source: PFC (2016); PFC (2017); PFC (2020a); PFC (2020b); PFC (2021); PFC (2022)

A well-functioning and robust power sector is essential for a nation's development and growth. It is also an important indicator for measuring the quality of life of the country's citizens. India's power sector is riddled with several challenges. Unsustainably high aggregate technical and commercial [AT&C] losses, poor electricity supply and service, a lack of investment in the power infrastructure, and unsustainable debt are a few of these challenges (Garg & Shah, 2020). While several reforms and policies have been implemented to address these challenges, the problems persist.

India's power sector value chain can be broadly segmented into generation, transmission, and distribution sectors (see figure 2).

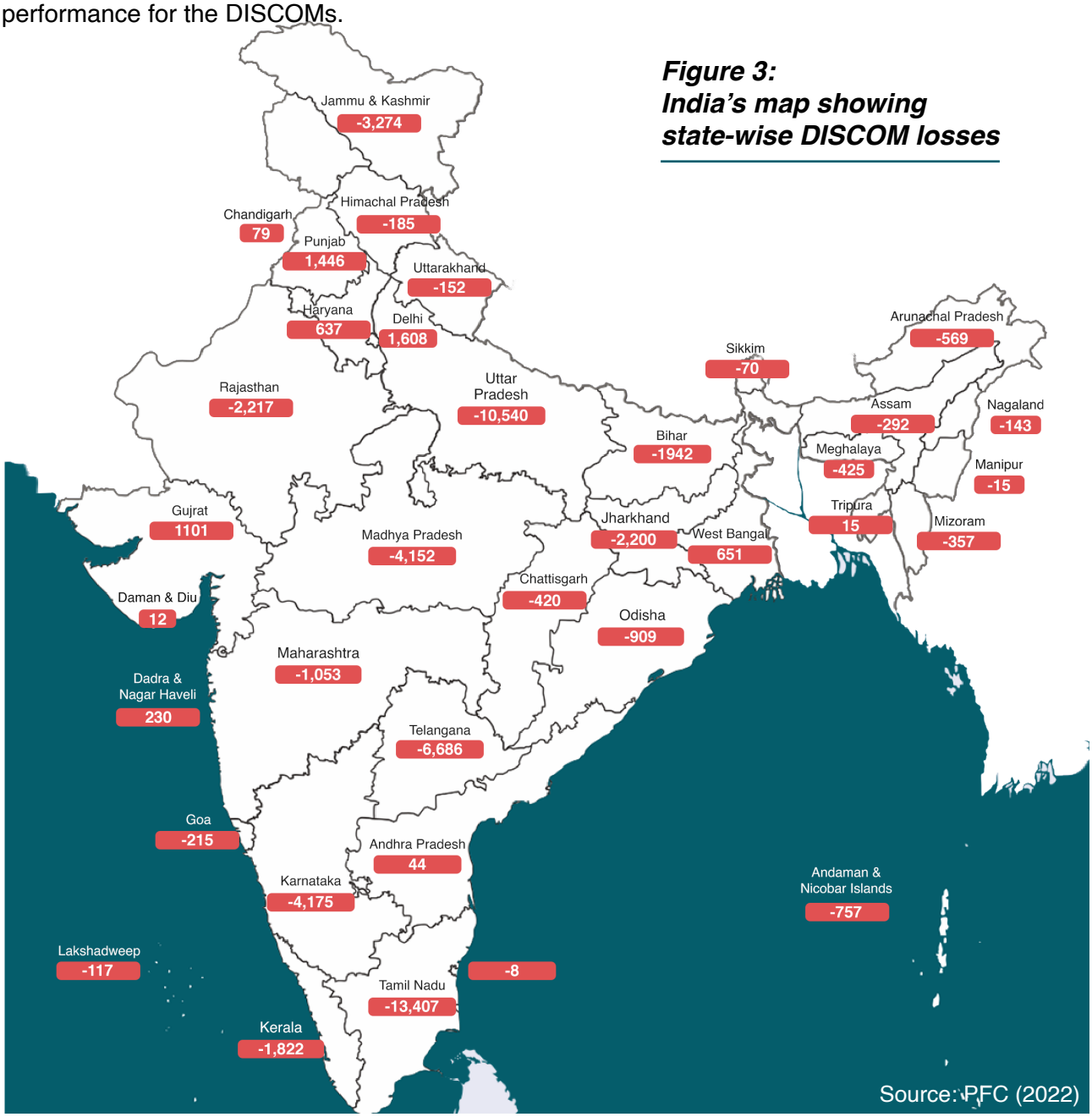
***Figure 2: Power Sector Value Chain***



The first step in the value chain is the generation process, which involves power production and is carried out by power generation companies [GENCOs]. Next is the transmission process, where the power generated is transported using transmission lines from the generation plants to the distribution substations. The final step in the value chain is the distribution process. Here, the power distribution companies [DISCOMs] deliver electricity from the substations to the final consumers (commercial and industrial consumers, agricultural households, etc.) through a distribution network. The state governments predominantly own these DISCOMs. While privately owned DISCOMs are operational in India, these are very few, serving only 10% of India's population (Regy et al., 2021).

Power distribution is frequently recognised as both the most crucial and weakest link in the entire value chain of the power sector because of its poor financial and operational health (Power Finance Corporation Ltd. [PFC], 2022; Nirula, 2019; Garg & Shah, 2020; Powell et al., 2021). According to the most recent estimates, the DISCOMs' aggregate losses grew from Rs 30,203 crore in 2019–20 to Rs 50,281 crore in 2020–21 (PFC, 2022). Figure 3 shows the latest figures for the state-wise financial performance for the DISCOMs.

***Figure 3: India's map showing state-wise DISCOM losses***




Source: PFC (2022)

Additionally, the gross debt of the DISCOMs has increased from Rs 4.93 lakh crore in 2018-19 to Rs 5.86 lakh crore as on 31 March 2021 (ibid.). Further, their net worth continues to be negative at Rs 44,160 crores as on 31 March 2021 (ibid.).

The ailing DISCOMs have a significant impact on the entire value chain and, therefore, on the state of the power sector in the country. Due to their poor finances, DISCOMs often cannot make timely payments to generators and transmission companies for their purchases. The delay in payments affects the financial and operational efficiency of the generation and transmission companies. The losses suffered by DISCOMs also affect investments to raise the quality of the power supply. Additionally, the poor state of the DISCOMs poses a challenge to the country's goal of increasing the footprint of renewable energy (Regy et al., 2021). DISCOMs' poor financial health also impacts the consumers as they are unable to access good quality power. Furthermore, DISCOMs' shortfalls are often met through borrowings and subsidies, which invariably affects the state finances.

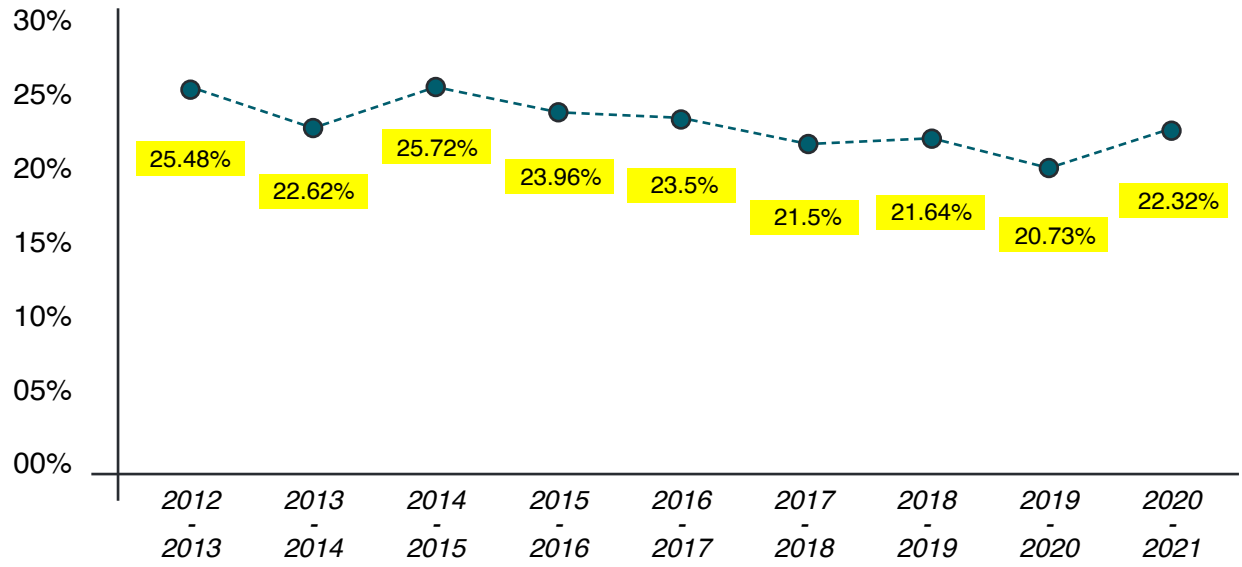
## UNDERSTANDING THE REASONS BEHIND POWER DISCOMS' FINANCIAL STRESS

Several factors cause the poor financial standing of the DISCOMs. This section analyses some of these reasons.

### 1. HIGH AT&C LOSSES

AT&C loss is a measure of DISCOMs' financial performance. AT&C losses are determined by computing the total cost of technical and commercial losses faced by the power distribution companies. It is a combination of energy loss — a sum of the technical loss, theft, and inefficiency in billing — and commercial loss — a sum of default in payment and inefficiency in the collection (National Power Portal, n.d.). Billing efficiency indicates the efficiency of the energy billed to the consumers, and collection efficiency is the efficiency of the amount collected from the consumers (ibid.).

***Figure 4: AT&C losses over the years***




Source: PFC (2016); PFC (2017); PFC (2020a); PFC (2020b); PFC (2021); PFC (2022)

The average AT&C losses for the DISCOMs at the national level rose from 20.73% in 2019-20 to 22.32% in 2020-21 (PFC, 2022). The period between 2019-20 and 2020-21 also coincided with a decline in billing efficiency from 85.41% to 84.07% (ibid.). This drop could be attributed to the pandemic, during which physical billing was suspended. For instance, Adani Electricity in Maharashtra calculated the electricity bills for the lockdown period using the average of the previous 3 months until physical meter reading was permitted by the Maharashtra Electricity Regulatory Commission [MERC] (Madhukalya, 2020). Therefore, the bills received by the consumers for March, April, and May were considerably lower as they had been calculated based on average consumption during winter months (generally lower). The bills spiked in June when the lockdown was lifted and actual meter readings were accounted for (ibid.). As a result, several consumers complained of receiving high cumulative bills when the lockdowns were lifted. The uneven electricity bills deepened consumers' distrust in the billing process. During the same period, the collection efficiency deteriorated from 92.80% in 2019-20 to 92.40% in 2020-21 (PFC, 2022).

In August 2021, Maharashtra State Electricity Distribution Company Limited [MSEDCL], a wholly-owned subsidiary of the state government, reported approximately Rs 74,000 crore in pending dues for non-payment of bills (Malik, 2021). These dues came when the state government debt was estimated to have crossed a whopping Rs 6 lakh crore (Directorate of Economics and Statistics, 2022). Similarly, the Uttar Pradesh Power Corporation Limited [UPPCL] Chairman highlighted that approximately 1.09 crore of a total consumer base of 2.83 crores had never paid their bills since their connection. Another 9 lakh consumers had arrears worth more than Rs 1 lakh as of September 2020 (Chairman Uttar Pradesh Power Corporation Limited, 2020).

## 2. INADEQUATE TARIFF REVISIONS

The central government has frequently recommended raising tariffs, or the price consumers pay for electricity, to cover the financial losses of the DISCOMs. However, the states seldom adhere to this suggestion (Ramakrishan, 2022). Consequently, there has been a buildup of Rs 75,543 crore in regulatory assets of the DISCOMs as of March 2020 (PFC, 2022). Regulatory assets are the previously incurred expenses by the DISCOMs that have been deferred and can be recovered from the consumers in the future through tariff hikes (Aggarwal et al., 2021). These assets are created when the state regulators recognise that the ongoing tariffs cannot cover the costs incurred by the DISCOMs. At the same time, however, these regulators do not raise the tariff rates. An increase in regulatory assets hides the true financial position of the DISCOMs by inflating their assets vis-à-vis the liabilities. However, these assets "create cash-flow problems for DISCOMs, forcing them to borrow funds to cover the revenue deficit. The additional borrowing, coupled with the interest, adds to the burden of DISCOMs" (Regy et al., 2021).

Tariff hikes are politically contentious, and the ruling parties time it per their chances in the impending elections (Dubash et al., 2019). Tariff determination, the process of determining the price of electricity for the consumers, is an important process that has far-reaching consequences for both the consumers and DISCOMs. Electricity tariff is determined by an independent quasi-judicial body known as the State Electricity Regulatory Commission [SERC]. The DISCOMs in a state file a tariff petition, in the requisite format, with the respective SERC. A tariff petition is a comprehensive document that lays out the DISCOMs' operational and financial capabilities. It includes estimates of the DISCOMs' total energy needs, sales projections, sources of electricity to meet those needs, power purchase costs, operating and maintenance costs, and other necessary information (Shakti Sustainable Energy Foundation et al., n.d.). These petitions are made available in the public domain to obtain feedback from the stakeholders. All the responses and comments received are considered

by the SERC before finalising the tariff order. The tariff order is a statement that specifies the precise tariff schedules to be charged from each category of consumers, along with directives for DISCOMs to safeguard consumers' interests (ibid.).

The process of tariff revision in India has been infrequent and inadequate. For instance, the PFC (2022) found that 25 out of 36 states are yet to issue tariff orders in response to the tariff petitions filed by the DISCOMs. The tariff hike approved for domestic consumers in Andhra Pradesh in March 2022 came after a gap of 2 decades (Ramakrishnan, 2022). In Tamil Nadu, the tariff hike in September 2022 came after 8 years (ibid.).

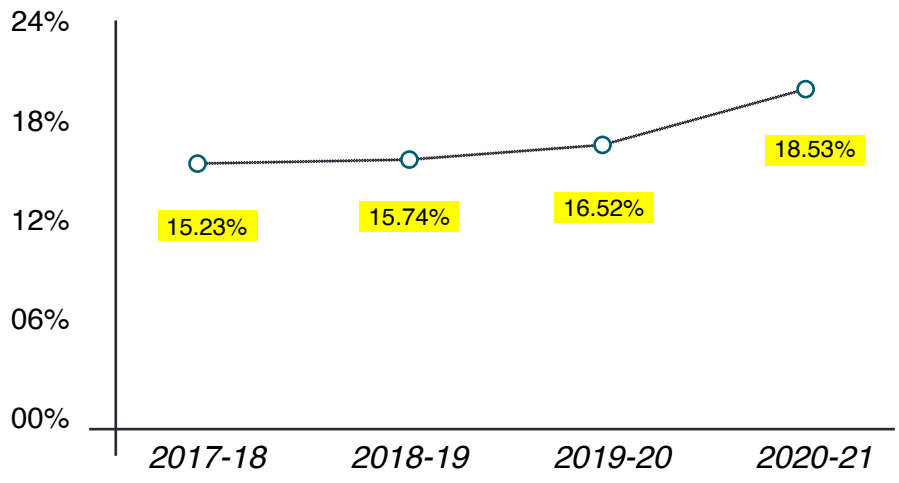
## 3. DELAY IN DISBURSAL OF SUBSIDY

In India, electricity is sold at a subsidised rate to certain consumers, determined by the government. The DISCOMs calculate the tariff subsidy for the power supplied by them to different categories of consumers. In direct tariff subsidies, the state governments then pay the DISCOMs this subsidy amount for selling electricity at a lower price to a specific group of consumers. The tariff subsidy billed by the DISCOMs increased to Rs 1,32,416 crore in 2020-21 from Rs 1,20,828 crore in the previous year (PFC, 2022).

According to the Electricity Act (2003), all subsidies declared by the state governments must be paid to the DISCOMs in advance. However, this is not true in practice. There have been several delays in releasing the amount of subsidies owed by the state government to the DISCOMs. The tariff subsidy released by the state governments as a percentage of tariff subsidy billed had decreased from 95.08% in 2019-20 to 85.54% in 2020-21 (PFC, 2022).

The subsidy billed amount as a percentage of the total revenue of the DISCOMs increased from 16.52% in 2019-20 to 18.53% in 2020-21 (PFC, 2022). Figure 5 shows the increasing trend of subsidy billed amount as a percentage of the total revenue of the DISCOMs over the last 4 years.

***Figure 5: Subsidy Billed as a Percentage of Total Revenue***




Source: PFC (2021); PFC (2022)

Consequently, the delays in disbursing subsidies stretch DISCOMs' short-term working capital requirements, and they often end up borrowing money to continue their operations.

## 4. DECLINE IN REVENUE FROM COMMERCIAL AND INDUSTRIAL USERS

The pandemic-induced lockdowns led to a decline in industrial and commercial activity in the country during the year. As a result, revenue shares of DISCOMs from commercial and industrial consumers fell to 11.82% and 31.3% as a percentage of total revenues in 2020-21 from 14.07% and 33.7% in 2019-20, respectively (PFC, 2022). The reduction in inflow from these consumers also impacts DISCOMs' ability to meet the cross-subsidy target. The additional revenue generated by charging commercial and industrial consumers a higher tariff compensates for the lower tariff charged to other consumers (PricewaterhouseCoopers Private Limited, 2015).
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## WAY FORWARD

Several measures have been taken to address the challenges in the power sector. Across the value chain, the DISCOMs, majorly run by the state governments, have been identified as the primary source of the power sector crisis. Over the years, several bailout plans have been announced and implemented for the DISCOMs. These bailouts are granted to help DISCOMs free up resources to invest in improving their operational efficiency. However, these bailouts fail to address the underlying issues and structural bottlenecks. Hence, DISCOMs' losses and dues mount again. For instance, in 2015, the government launched the Ujjwal DISCOM Assurance Yojana [UDAY] to facilitate the turn-around of the indebted DISCOMs. Under the scheme, the state governments were required to take over 75% of the debt of the DISCOMs, and the DISCOMs were supposed to reduce the AT&C loss to 15% by 2018-19, amongst other targets (Ministry of Power, n.d.). However, as discussed earlier, AT&C losses stood at 22.32% in 2020-21, surpassing the envisaged target even after the proposed terminal year of the scheme (PFC, 2022). Therefore, instead of providing temporary relief through bailouts, investment in the distribution network to reduce losses and improve billing and collection efficiency becomes more critical.

Competitive populism among the states has still resisted any significant structural reforms in the power sector. Unchecked cross-subsidisation of electricity has led to the DISCOMs charging unremunerative tariffs from low-paying consumers, predominantly agricultural and domestic households, at the cost of commercial and industrial consumers. The cross-subsidies impact the competitiveness of industries and commercial enterprises by raising input costs. Therefore, restructuring the power sector is hard to imagine without substantive subsidy reforms. There is a need for better targeting of subsidies[1] and minimising the system's leakages, which will help prevent inefficient use of electricity and improve the quality of the power supply (Aggarwal et al., 2020). Keeping this in mind, the Electricity (Amendment) Bill 2022 aims to address unchecked cross-subsidisation by proposing a graded revision in tariffs by the SERCs to reduce the cross-subsidies progressively.

To increase efficiency and reduce leakages, the Government of India, in recent years, has suggested to states that subsidies be transferred through a Direct Benefit Transfer [DBT] model (Aggarwal et al., 2020). Such a model will alter the transfer mechanism of subsidy payment, allowing the DISCOMs to charge the consumers tariffs based on the actual supply cost. The subsidy amount will then be

1 - Subsidy targeting refers to the practice of ensuring that the benefits of subsidies accrue to only the intended sub-group, which in this case are the vulnerable, lower income consumers.

transferred to either the consumer's bank account or the account maintained by the DISCOMs post the purchase of electricity. This model can promote the efficient use of electricity by sending correct price signals to the end consumers (Regy et al., 2021). However, the success of DBT depends on several conditions being met, like the state government depositing the subsidy on time. Otherwise, it would transfer the financial burden from the DISCOMs to the consumers. Other implementation challenges exist, such as the identification and validation of beneficiaries. Additionally, even the DBT model of subsidy transfer does not address the delay in subsidy disbursal from the government to the DISCOMs. Therefore, states should pay close attention to the ongoing pilots and exercise caution before implementing DBT across the state.

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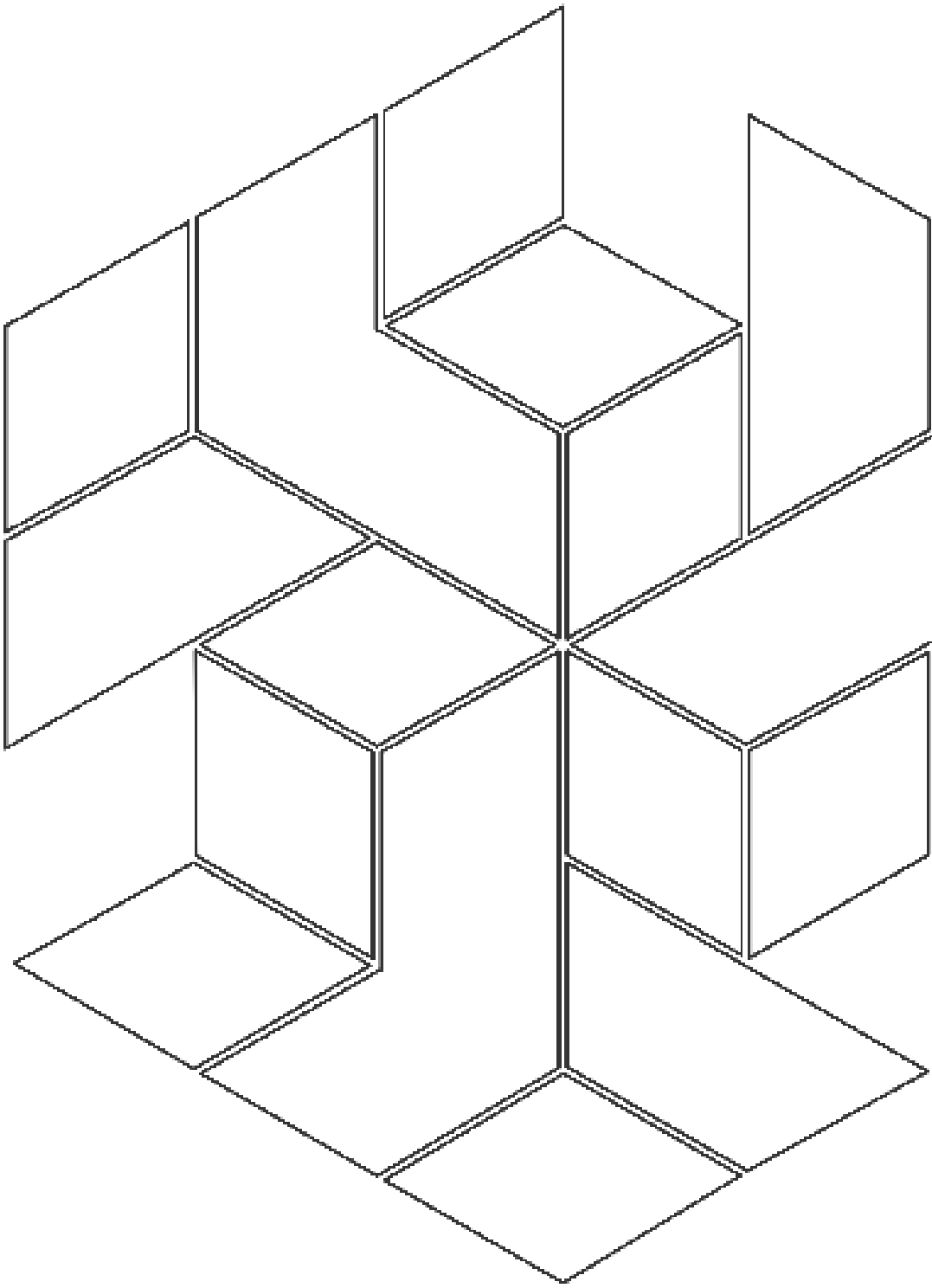

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