MIDS WORKING PAPER 249

THE ELECTRICITY SECTOR

A NEW PERSPECTIVE, NEW FACTS AND THE NEED FOR ALARM

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The Electricity Sector

A New Perspective, New Facts and the Need for Alarm

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Abstract

The electricity sector must be viewed from a fresh perspective—that of pricing—both to understand the devastating macroeconomic and development costs it imposes on the economy and to reform it (with a sense of alarm). Electricity pricing egregiously violates numerous simple and important principles. Among them, the most important one is to not tax the production and shrink the economic pie. Violating this principle, in turn, leads to pricing being based on inefficient rather than efficient costs, to prices being below costs (subsidization) for the middle class and rich and, as compensation, to prices being above efficient costs for industrial and commercial users (antiquated and damaging 'cross-subsidization'). We propose six foundational principles for reform. Effecting these changes will require a combination of recognition of the costs of the status quo by the states, action by the center, coordination between the center and states, and deregulation by stealth, including by the judiciary, to facilitate exit.

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I. Introduction

The travails of India's electricity sector are well known: loss-making DISCOMs, perennial inefficiency, compromised state finances and bailouts ad nauseam by the central government. For too long, India has internalized and normalized this state of affairs. This must change.

Just as war is too important to be left to the generals and foreign policy to diplomats, electricity is too important to be shaped by the policymakers of—and interests and analysts in—this sector, as has been the case for the past fifty years and more. A different and broader perspective, highlighting the macroeconomic and development costs of a weak electricity distribution sector, is long overdue.

At the same time, this perspective must be imbued with a sense of alarm and panic because of the yawning gap between how critical the electricity sector is for the immediate and medium-term future and how lagging it is in the present.

It seems likely that China will own the future because it is becoming the world's most successful electro-state, having made the furthest advances in electrifying its economy based increasingly on renewables. The industries and technologies of the future—artificial intelligence (AI), electric vehicles, data centers, etc.—are all guzzlers of electricity: to paraphrase Marc Andreessen, electricity, not software, is going to eat the world.

If losing this future is not enough provocation for reform in India, consider the imperatives of the present. India's economic outlook remains uncertain at best. Potential growth has been slowing on the back of weak private investment, consumption and manufacturing exports. And the short-term Trump shock will reduce manufacturing export growth and kill even the few green shoots of China-Plus-One-related private investment.

To illustrate the drag being exerted by the electricity sector, we adopt a pricing perspective and show how egregious and damaging the departures of pricing are from some simple and unobjectionable principles.

Before we do so, it is worth recalling the brief history of electricity reforms and what the old perspective has given India.

II. Brief History

India's power sector has undergone a remarkable transformation, from a system with chronic shortages and inefficiencies to a system that, while not perfect, is vastly improved. Not long ago, peak power and energy shortages were a persistent drag on economic growth, with deficits frequently hitting double digits (Figure 1). However, over time, a combination of policy reforms, better infrastructure and improved grid management has brought these shortages down to negligible levels. At the same time, AT&C losses—essentially a measure of how much electricity goes missing due to inefficiencies, theft or poor billing—once surged past 30% (Figure 2). Now, they have come down significantly, a sign that distribution companies are getting their act together. This is not just a technical achievement; it is a fundamental shift that has made electricity more reliable, businesses more competitive and the economy stronger.

Another striking dimension of the transformation of India's power sector is the rapid expansion of captive power generation, which refers to electricity produced by a powerplant that is owned and operated by an entity, such as an industry or a group, to meet its energy needs. This is evidenced by the significant growth in captive capacity installed over time (Figure 3). From just 19,058 MW in FY04, captive capacity has soared to 78,508 MW in FY20, reflecting a clear shift in how businesses meet their electricity needs. The Central Electricity Authority (CEA) Electric Power Survey estimates captive power self-consumption at ~12.6% compounded annual growth rate (CAGR) for 2021–27 (10.3% thereafter) versus only 8.5% (6.7%) for overall industrial demand, implying that captive generation is expanded far more rapidly than grid-supplied industry load.[6]

[6] CEA Electric Power Survey.

Figure 1. Shortages in Power Sector
(percent)

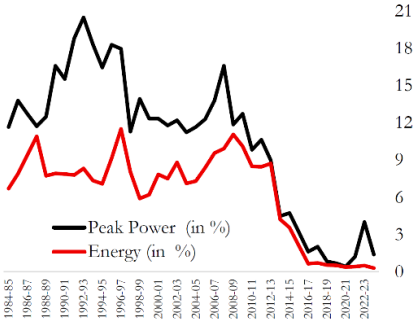
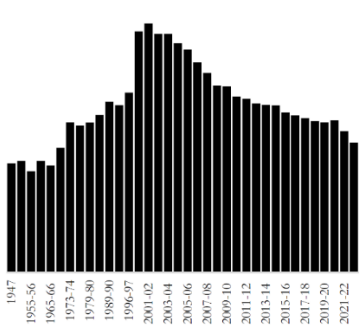
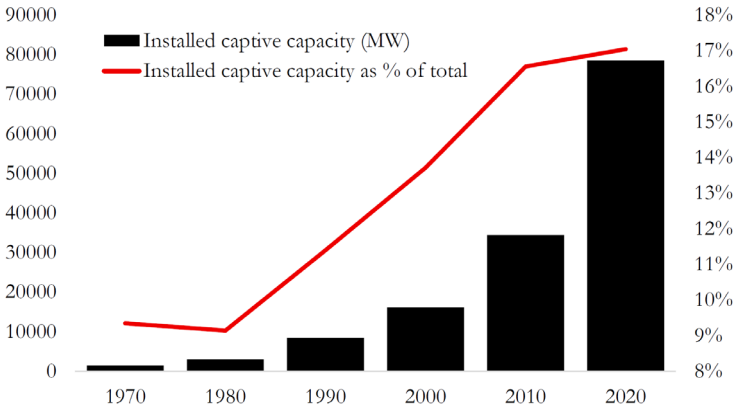


Figure 2. AT&C Losses
(percent)



Source: CEA Growth Book, 2024.

Figure 3. Installed Captive Capacity (MW)



Source: CEA Growth Book, 2024.

This gap underlines CEA's view that industry will increasingly turn to onsite power, driving the uptake of captive power plants (CPP) well ahead of aggregate sector growth. Simply put, private sector players—especially manufacturers, but increasingly commercial enterprises too—are choosing to generate their electricity rather than relying on state-owned DISCOMs. The rise of captive power signals growing concerns over high industrial tariffs and the need for higher energy security. In many cases, firms are leveraging renewable sources such as solar and wind, further accelerating the decentralization of power generation in India.

Similarly, the rapid growth of transactions under open access[7] (the regulatory framework that permits eligible, typically large-scale industrial and commercial, consumers to purchase power directly from competitive suppliers rather than their local distribution company) also supports this trend.

Despite the progress, the power sector is still awaiting its revolution, unlike the telecom sector. Both began as state-controlled monopolies marked by chronic shortages, such as year-long waits for a landline and coping with daily power outages. Then came liberalization. The telecom sector embraced technology, competition and private investment, unleashing a digital revolution that transformed the economy. The power sector? Not so much. Sure, power generation saw some competition, but its distribution remains a public sector stronghold that is riddled with inefficiencies. The result? A sector that should be fueling growth instead acts as a brake on manufacturing, productivity, investments and jobs. The telecom sector got its big break because of the technology shock, while the power sector is still stuck in the past, waiting for its moment of real takeoff, despite experiencing its own technology shock in the form of the renewables revolution.

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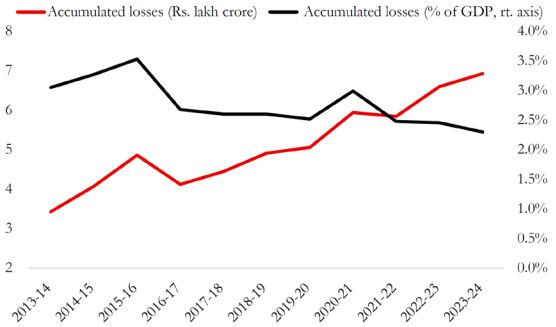
[7] Both captive and open access represent forms of exit from the DISCOM, but are different in that captive power requires significant ownership of generation, while open-access customers are effectively switching purchases from the DISCOM to another generator. Open access still relies on wires of the DISCOM, while captive may or may not (depending on whether the generation is *in situ* with consumption or not).

India's power distribution sector has faced persistent financial distress for decades (Figure 4), prompting repeated bailouts and (mostly failed) reform attempts (Table 1).[8] For more than 50 years, costs have never really been covered by revenues, and losses in perpetuity have become a feature, not a bug. With rare exceptions (Gujarat), a few state governments have tried to make the sector financially viable. The imitative populism, increasing the subsidy to the domestic category, that has gripped the states has recently made chronic under-recovery a reality going forward too. Offering free electricity to households is increasingly becoming a stock promise in state elections, as the recent experience of Punjab[9], Karnataka[10], Himachal Pradesh[11], Madhya Pradesh[12], Rajasthan[13] and now Bihar[14] has shown.

Figure 4. Accumulated losses of Power Discoms



Source: Power Finance Corporation Utilities reports.

[8] Rasika Athawale, "PowerShock | Discom bailout – here we go again", *Moneycontrol* (June 24, 2022).
[9] Kejriwal's Punjab poll promise: 300 units of free power, dues waiver, *Times of India* (June 30, 2021).
[10] Congress manifesto for Karnataka polls, vows 200 units of free electricity, *Times of India* (May 2, 2023).
[11] 125 free power units in Himachal Pradesh: 14 Lakhs to get no bill, *Times of India* (August 29, 2022).
[12] In Madhya Pradesh manifesto, BJP promises 100 units of power for Rs 100, *NDTV* (November 11, 2023).
[13] Congress announces free electricity in poll-bound Rajasthan, *Mint* (May 7, 2023).
[14] Nitish Kumar promises 125 free power units for every Bihar home, *Economic Times* (March 9, 2025).

Table 1. Bailouts of DISCOMs in the Past 25 Years

Year	Scheme	Size (₹ crore)	What was promised
2001	SEB Dues Settlement	41,473	One-time bond swap; curb losses
2012	Financial Restructuring Plan	1,19,000	Half the debt shifted to states
2015	UDAY	2,01,000	75% debt takeover; AT&C ≤15%; zero gap
2020	Atmanirbhar Liquidity Window	90,000	PFC/REC loans to clear genco dues
2021	Revamped Distribution Sector Scheme	3,00,000	Results-linked CapEx; AT&C ≤12%

Source: Moneycontrol (2022) and TERI (2021).

What should be the response to this reality? One temptation would be to attempt yet another set of ambitious reforms, targeting institutional changes and financial performance. To some extent, the Revamped Distribution Sector Scheme[15] (RDSS) and India Energy Stack[16] are only the latest incarnation of such efforts. But as detailed in an excellent TERI report[17], there have been at least five attempts at support and reform since 2000, which have all failed as the steadily increasing DISCOM losses over the past two decades make clear (Shankar & Avni, 2021). In this light, one can admire the motivation of the latest reform effort. Unlike the Ujwal DISCOM Assurance Yojana (UDAY) scheme, it desirably front-loads the actions that DISCOMs and state governments need to take. Nevertheless, a modicum of skepticism about ambitious reforms is almost forced by experience.

The time has come to try something different. To see why, consider how electricity pricing departs from important basic principles.

[15] https://rdss.powermin.gov.in/dashboard
[16] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2140416
[17] https://www.teriin.org/sites/default/files/2021-08/power-distribution-India-dp.pdf

III. Principles of Pricing and How They Are Violated

1. Not taxing production

A fundamental principle of taxation based on the seminal work of Nobel laureates Peter Diamond and James Mirrlees is not to tax production so that the size of the economic pie is maximized (Diamond & Mirrlees, 1971a, 1971b). To the extent that fiscal policy has to achieve a range of policy objectives, less distortionary taxes such as value-added and income taxes should be relied upon. The history of fiscal reform in India since the late 1990s has indeed been to move away from distortionary indirect taxation, such as trade and excise taxes, toward the Goods and Services Tax (GST) and increasingly toward personal and corporate income taxes.

However, there has been one flagrant violation: electricity pricing. The forthcoming book by Kapur and Subramanian[18] documents the magnitude of this violation for the manufacturing (strictly speaking, the industrial) sector. Electricity is a key input to production. The authors of the book estimate that even today, on average in India, there is nearly a 100% tax on electricity because electricity prices are twice the efficient costs of supply of electricity (Table 2). This used to be higher in the early 2000s.

Table 2. Tax on Manufacturing and Commercial Segments from Electricity Pricing

Category	2003	2021
Industrial	110%	82%
Commercial	187%	113%

Source: Kapur and Subramanian (forthcoming, 2025).

It is difficult to estimate the costs of this tax, but we suspect that these costs lead to a loss of investment and private sector jobs, in hundreds of thousands, especially in labour-intensive, export sectors. This is the own goal that the electricity pricing policy has been inflicting on the competitiveness of Indian manufacturing. In

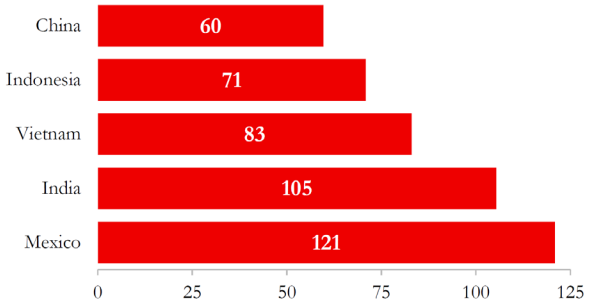
[18] https://harpercollins.co.in/blog/announcements/harpercollins-presents-a-sixth-of-humanity/

today's world of high competition, these costs can be ruinous. If electricity were a tradable commodity, we would be identifying the implicit 100% tariff as a major source of the loss of competitiveness of Indian manufacturing.

A cross-country comparison (which may not be strictly valid as power is a non-tradable good) corroborates the higher electricity prices faced by Indian manufacturing compared with its counterparts (Figure 5).

Why has this happened? As shown in Table 3, this has happened because other pricing principles have been violated, which we discuss in the following.

Figure 5. Average Electricity prices for Industrial users (2023, $ per MWh)



Source: Bloomberg Climatescope.

Table 3. Tax on Industrial and Commercial Segments from Electricity Pricing

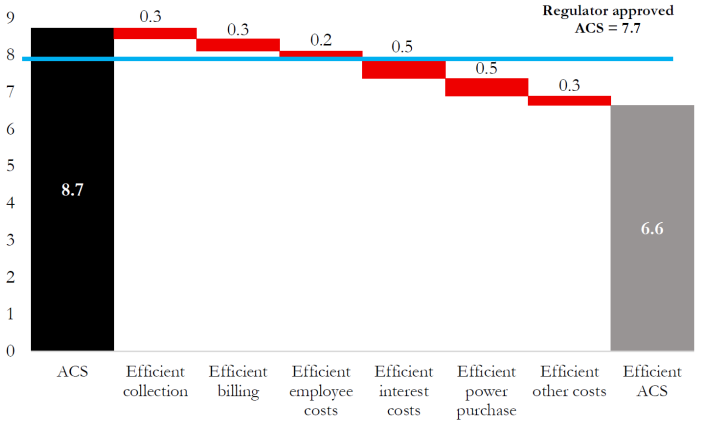
Source	2003	2021	Average
Inefficiencies (AT&C losses plus	52%	35%	44%
Cross-subsidy—industrial	38%	24%	31%
Cross-subsidy—commercial	89%	45%	67%
Electricity duty	-	8.8%	4.4%
Total 'tax'——industrial	110%	82%	96%
Total 'tax'—commercial	187%	113%	150%

Source: Kapur and Subramanian (forthcoming, 2025).

2. Pricing based on inefficient costs

At the heart of the problem of electricity pricing is the difference between the efficient cost of power supply and the actual cost, which is significantly higher because of all types of inefficiencies and redistributive policies. For the most recent period for which we have data (2023–24), the all-India average cost of supply (ACS) stood at ₹8.7 per unit, whereas the efficient ACS was estimated at ₹6.6 per unit (see Annexure 1). We can identify the source of higher costs (Figure 6). The highest contributor is interest costs, the legacy of cumulative non-performance and cumulative policies of the government and regulators that thrust financial losses upon DISCOMs. Apart from interest payments, overstaffing, technical losses and inefficient procurement are other contributors (Tyagi & Tongia, 2023).

Figure 6. Efficient ACS breakup (2024-25)



Source: PFC and Authors' calculations.

Note: Projection for 2024-25 are based on average growth rate between 2018-19 to 2023-24 for ACS and its components.

Our firm view is that all pricing should be related to efficient costs and that no consumer, not even the richest, should pay for or subsidize inefficiencies anywhere in the system. When consumers feel they are paying for inefficiencies, it vitiates the trust in

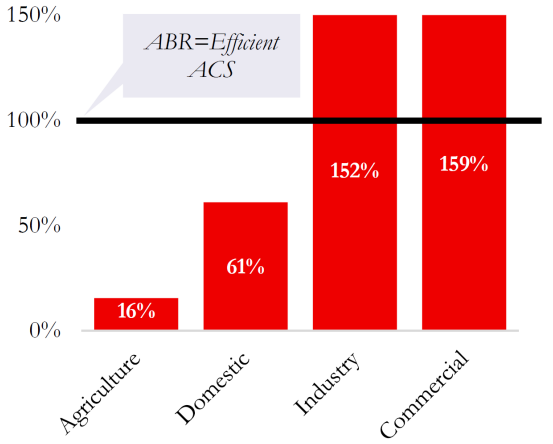
government and engenders cynicism. Consumers feel, rightly, that being overcharged results in their being cheated and that, to some extent, they are financiers of corruption. In addition, the pressure to redress inefficiencies gets alleviated. Evasion ensues, and a vicious cycle of overcharging, underpayment and compensatory overcharging is created.

State electricity regulators in their tariff orders take some of these inefficiencies into account and do not let them to be passed on to consumers. However, they do not compare these costs with an external benchmark, e.g., costs of other states. In addition, the inefficiencies that are taken into account are cyclical in nature. Instead of the regulator being able to stay on the course of holding the DISCOMs accountable for achieving their efficiency trajectory, they usually get reset after a new bailout package is announced by the center or states. In short, tariff pricing ends up being related more to inefficient than to efficient cost of supply.

As shown in Figures 7 and 8, there are at least three groups of consumers who pay for the inefficient costs of supply: commercial, industry and high-income/wealthy households. Industrial and commercial units are burdened with electricity tariffs that are 52% and 59% higher than the efficient cost of supply, respectively. Even among domestic users, wealthier households consuming 500 or more units monthly are overcharged by 7%.

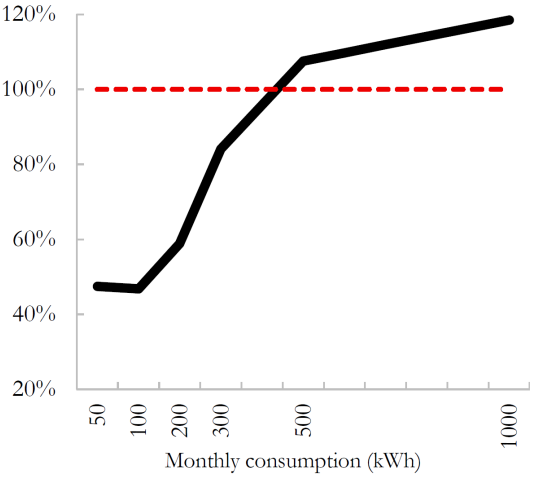
It must be emphasized that paying for inefficiencies is different from the cross-subsidization principle that characterizes pricing across India. Cross-subsidization will arise when consumers pay more than the efficient cost of supply. We discuss this in the following section.

Figure 7. Price Charged Relative to Efficient Cost of Supply (2024-25)



Source: Authors' estimate based on state-wise tariff schedules and MYT filings of DISCOMs.

Figure 8. Price Charged to Households Relative to Efficient ACS (2024-25)



Source: CEA Growth Book, 2024.

3. Pricing below efficient supply: Subsidization

The second reason that electricity pricing taxes production and shrinks the economic pie is subsidization. However, this happens not directly but indirectly and happens not because of subsidization of the poor but that of the middle class and rich.

Beginning in the 1970s and entrenched after the 1990s, providing free or subsidized power has become the defining feature of India's electricity pricing system. As shown in Figure 9A, electricity subsidies have consistently exceeded 1% of national GDP over the past 15 years. This is about two-thirds of the central government's subsidy bill (mainly food, fertilizer and fuel) over this period, which averaged about 1.8% of GDP.

There is some irony here. The Report of the Energy Survey of India Committee (1965)[19] and the Report of the Committee on Power (1980)[20] provide crucial historical evidence that India's electricity pricing distortions have plagued the sector for more than half a century.

The Energy Survey Committee found that industrial tariffs were already 30–40% higher than actual supply costs, warning that this 'Robin Hood' pricing was hampering India's manufacturing competitiveness. Electricity constituted 15–20% of production costs in energy-intensive industries—significantly higher than in competing countries. The Energy Survey Committee recommended bringing industrial rates closer to actual supply costs to boost employment in the manufacturing sector.

By 1980, the situation had deteriorated further. The Committee on Power documented that industrial consumers were paying 40–50% above efficient supply costs, driving large industries to establish captive power plants and creating a vicious cycle of increasing tariffs for the remaining grid consumers.

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[19] https://indianculture.gov.in/reports-proceedings/report-energy-survey-india-committee

[20] https://www.indianculture.gov.in/reports-proceedings/report-committee-power

Both committees identified massive distribution inefficiencies as a core problem. T&D losses were running at 20–23% nationally against a technical benchmark of 10–12%, with some states exceeding 30%. These inefficiencies alone added 15–20% to costs borne by paying consumers, primarily industrial users. The Committee on Power emphasized that AT&C losses must be brought down to international standards before any tariff increases, stating that 'consumers should not be made to pay for the inefficiencies of the system.'

The recommendations of these two committees align remarkably with the principles proposed in this paper: industrial tariffs should not exceed the cost of supply; distribution losses must be reduced to efficient levels; and tariff structures should be radically simplified. The Committee on Power specifically called for phasing out cross-subsidies entirely over a ten-year period.

The persistence of these problems despite clear diagnosis and recommendations made decades ago underscores the political economy challenges of power sector reform. When committees separated by years—and now more than four decades later—identify identical problems and propose similar solutions, it becomes evident that incremental reforms have failed. The time has come for the decisive break with past practices, which this paper advocates.

Two striking features of electricity subsidization are the identity of beneficiary groups and the identity of individuals within them.

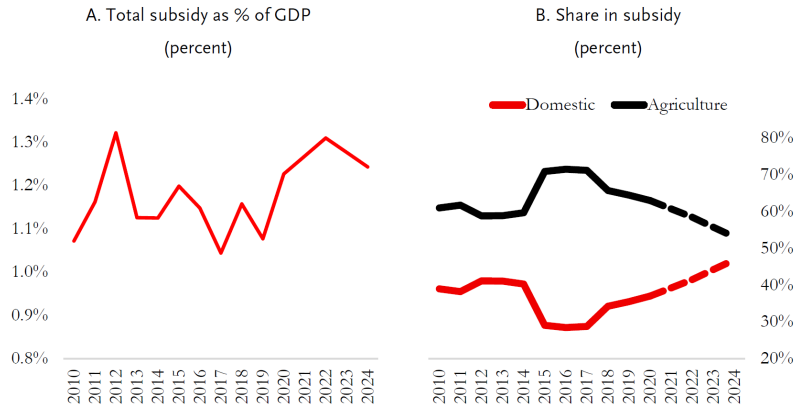
a. Household subsidies close to agriculture subsidies

Once upon a time, farmers were the biggest beneficiaries of subsidies, followed by domestic consumers. As shown in Figure 9B, across the country, agriculture received about 62% of the total subsidy bill of Rs. 38,834 crores in 2011–12, peaking at 72% in 2016–17.[21] However, in the past several years, subsidies to households have been increasing such that in 2024–25, both groups now account for almost an equal proportion of subsidies. However,

[21] Subsidy amount is calculated as the difference between ACS and ABR, multiplied by units of electricity consumed.

it is not that governments have started favoring farmers less but that they have started favoring the hitherto-unfavoured households to a greater extent (~267 million).

Figure 9. Energy subsidy



Source: Authors' estimates based on PFC reports for various years.

b. The non-poor are the biggest beneficiaries in both groups

Who among farmers and among households get the benefits of subsidized power? Subsidized power is, on the one hand, highly equitable because nearly all those at the lower end of the power consumption distribution among households and farmers pay very little.

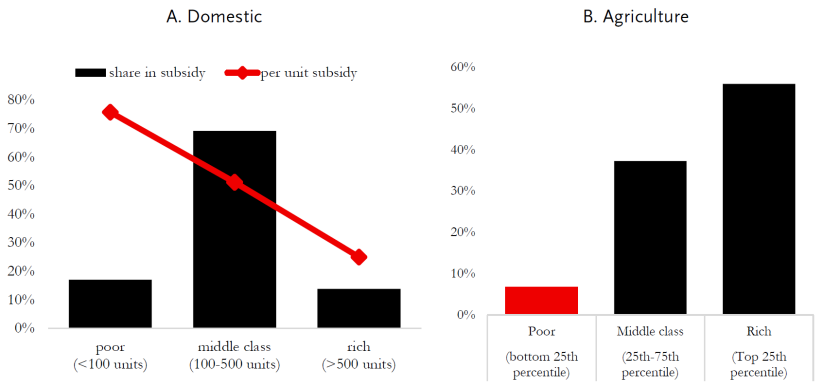
Figure 8 plots the price charged on average to households based on their consumption. Note that this is not the subsidy because this is based on the notional concept of efficient ACS. Since actual costs are higher, subsidies are correspondingly higher. It shows that households only pay for efficient costs beyond a monthly consumption of 500 units.

Figure 10 translates this into the subsidy rate and subsidies by more aggregated consumption categories. For instance, the bottom 25% of households by electricity consumption pay an average of

₹2.9 per unit, which is only 25% of the actual cost and 45% of the efficient cost of supply.

However, here is the rub and one of our most striking findings. This equitable outcome comes at a price. It turns out that only the top 5% of the consumption distribution pay the full efficient cost of supply. This means that the middle 70% of the distribution is subsidized by 30%. In other words, 70–85% of the total subsidy to households and 95% of the total subsidy to farmers comprise 75% of the distribution: in power consumption terms, these are the rich and very rich.

Figure 10. Share of Rich in Electricity Subsidy



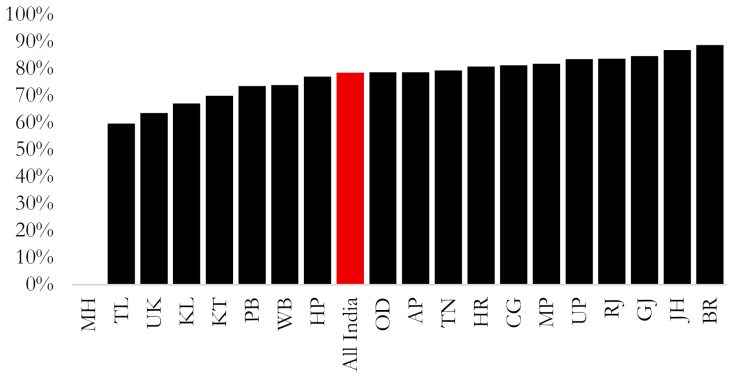
Source: Authors' estimates based on administrative data.

Note: In the domestic sector, households in the bottom 25 percent of the electricity consumption distribution, averaging around 100 units per month, are classified as poor. In the agriculture sector, farmers are ranked based on their MSP income from paddy and wheat, with the bottom 25 percent identified as poor.

At first blush, these might seem like unavoidable inclusion errors of having to subsidize the poor. But that is not true. In power, unlike in many other aspects of subsidies, identifying middle-class and rich consumers is possible because of routine metering. This suggests that these middle-class and rich subsidies are deliberate policies of most state governments in India. Figure 11 shows the

proportion of rich households with respect to energy subsidy. In all poorer states, the rich are proportionately big beneficiaries.

Figure 11. Share of Rich Households in Energy Subsidy



Source: Authors' estimate.

The current pricing system is poorly targeted, diverting public resources to those who need them the least. As the data indicate, wealthier households receive between 70 and 85% of total subsidies, depending on the state and consumption patterns[22]. This is largely because subsidies are tied to electricity usage rather than income, meaning that high-consumption households—many of which are well-off—receive a higher proportion of the benefit. In contrast, households consuming less than 100 units per month, which constitute around 25% of all households and are typically considered poor, receive a much lower proportion of subsidies. Similarly, rich farmers are the biggest beneficiaries of subsidized power, with the poorest 25% of farmers receiving only 6% of the total subsidy.

Historically, the impact of these subsidies was muted because power supply was heavily rationed. However, with nearly universal 24/7 electricity access now being a reality, these subsidies have grown into a significant fiscal and environmental burden. The shift

[22] Estimates are based on administrative data for a sample of rich and poor states.

from rationed access to constant availability has amplified the challenge, highlighting the urgent need for policy reform. The core issue is how India can navigate an 'exit' from these historical subsidies, a process fraught with political and social complexities that make addressing the electricity sector's inefficiencies all the more difficult.

4. Pricing above efficient costs to compensate for pricing below costs: Cross-subsidization

Having discussed subsidization, we will now discuss how this leads to the taxation of production via pricing that seeks to offset subsidization through cross-subsidization: two wrongs that do not make a right but just reinforce inefficiencies.

Indian socialism embedded redistribution into the very design of electricity pricing. While relatively poor households and farmers were subsidized (but also rich households and farmers), pricing sought to recover these subsidies from *within* the electricity system. This indicates cross-subsidization. Three categories of consumers, namely industrial, commercial and wealthy households, were charged above the cost (Devaguptapu & Tongia, 2023). They ended up paying for both the equity objective and the inefficiency of DISCOMs.

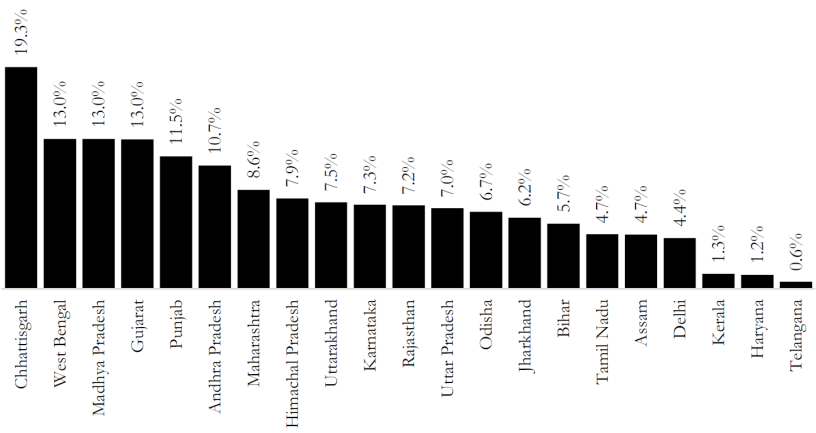
Figure 7 shows that commercial and industrial consumers are charged well above the efficient cost of supply, 52% and 59%, respectively, and Figure 8 shows that wealthy households too were charged above the cost. These groups effectively subsidized households and agriculture, which pay just 61% and 16% of the cost, respectively.

By overburdening businesses with high tariffs while shielding politically favored groups, the system discourages investment, stunts competitiveness and locks in inefficiencies. Unless policymakers rethink these cross-subsidies and push for real power distribution reforms, India's power sector will remain stuck in a cycle of financial distress and misaligned incentives. This can have a chilling effect on low-skill labour manufacturing industries. The high cost of electricity can make them uncompetitive in

international markets and therefore can also impede the structural transformation of the economy.

Electricity duty (ED) adds yet another layer of cost distortion for industrial consumers, further inflating already high tariffs (Figure 12). Initially intended as a substitute for cross-subsidization, ED now coexists with it, exacerbating the financial burden on businesses. This is because a significant proportion of domestic and agricultural consumers—who already pay little or nothing for power—see their ED waived (as it is ad valorem in many states), resulting in ED being collected mostly from industrial and commercial consumers, thus reinforcing the uneven distribution of costs.

Figure 12. Industrial Tariffs – Electricity Duty Markup (FY23)



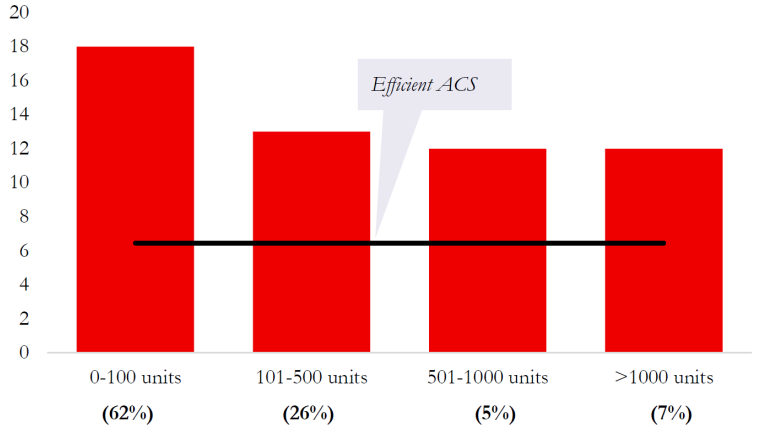
Source: Authors' calculations using CEA tariff data and ARR filings of discoms.

Unlike other taxes, ED is not rebatable, as electricity remains outside the GST framework, making it an unavoidable surcharge on industries. The tax on electricity as input to manufacturing cascades into the price paid by this sector. Cross-subsidization and ED thus contribute to the high cost of manufacturing.

Commercial consumers, especially SMEs, are unfairly and regressively taxed

Given the under-recovery from domestic consumers and in order to recoup the losses, the current tariff structure unfairly taxes commercial consumers (Figure 7). However, it gets more perverse. Figure 13 shows the tariff structure within the commercial sector for one of the states, but this is not uncommon across India.

Figure 13. ABR for Commercial Consumers



Source: Authors' estimate based on administrative data for one state.

Note: Percentages in bracket in x-axis show the share of consumers.

Commercial consumers as a whole are taxed as they have to pay significantly higher than the efficient cost of supply. The reason for such 'taxation' or overcharging is fixed charges. The tariff charged consists of a fixed cost and a variable cost. It turns out that the fixed charge (the same for all categories of consumption for commercial sector consumers) results in very high average costs, and it results in especially higher costs for those who consume less. That is why, not only are commercial consumers taxed on average, the tax is regressive and inequitable, inflicting higher costs on those who consume less. As the Figure 13 shows, commercial consumers who consume less than 100 units per month pay a 300% tax on power

consumption. Now, small commercial customers are either small households or micro- and small and medium enterprises (MSMEs). Those consuming less than 100 units per month account for more than 60% of the commercial sector, and they have to bear the greatest burden. We presume that policymakers are not really aware of this deeply regressive and anti-MSME thrust of power tariffs.

IV. Explaining the Pricing Reform Principles

Given these serious issues with the current tariff structure, which combines overcharging some sectors and undercharging others and is therefore both inequitable and inefficient, we propose the following principles for the future tariff structure.

Principle 1. No taxation of inputs for production.

Principle 2. No consumer should pay for inefficient supply.

Principle 3. No consumer should pay more than the efficient cost of supply (or of wire use), implying no cross-subsidization.

Principle 4. To help sustain principles 1–3, subsidies should be limited to the most vulnerable sections (about 20% of households well above the headcount poverty ratio).

Principle 5. Not just to implement these principles but for the broader integrity of the system, there should be radical simplicity in pricing.

Principle 6. Departures from efficient cost-based pricing should be based on addressing clear externalities.

Why these principles? Principle 1 prioritizes productive efficiency. Pricing and tax policy should not burden production inputs. In the Diamond–Mirrlees tradition, taxing inputs and intermediate goods shrinks the economic pie by distorting the choices of firms; electricity, a core input for industry and commerce, must therefore be priced at the efficient cost, not above it. Therefore, we propose aligning tariffs to the efficient cost for energy and wire use and shifting redistribution to the general budget and targeted transfers, rather than via industrial power bills. Today's

structure—comprising technical and commercial losses, generation inefficiency, cross-subsidy and duty—functions as an implicit tax on producers (Table 2), undermining output, investment and jobs. GST, and indeed most of India's tax system, adheres to this principle. Cross-subsidization along with ED is perhaps the sole exception. Correcting this restores competitiveness and brings electricity pricing in line with India's broader move away from distortionary taxes.

The logic of principle 2 is twofold. Allowing inefficient costs to be passed on to consumers not only perpetuates inefficiency by removing the pressure for reform but also creates a dangerous cycle of moral hazard and soft budget constraints. If utilities know they can recover their inefficiencies through higher tariffs, they have little incentive to improve performance.

From the consumer perspective, this breeds distrust in the government, fosters cynicism and acts as an implicit tax on economic activity, discouraging investment and income generation. The perception that electricity bills are inflated due to mismanagement and corruption further incentivizes evasion and system exit, with businesses and wealthier consumers seeking alternative solutions such as captive power and private generation. While eliminating inefficient costs is the ideal solution, the transition must be carefully managed to ensure a more accountable and financially sustainable electricity sector.

Principles 2 and 3 have to be seen in the historical context. When the state did not have enough fiscal instruments for achieving redistribution, it had to rely on inefficient means for doing so. Power tariffs, as it allowed for some targeting, became an instrument for redistribution. However, now, the state's redistribution objectives are increasingly being met by improved fiscal capacity on both tax and expenditure. With Public Distribution System (PDS), Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), cash transfers and scores of other central and state-level policy instruments for social protection and welfare, power tariffs should be used less for redistribution and focus on efficiency.

Moreover, the fact that rich households and farmers reap so much of the benefits is a travesty. Not only is it regressive, this regressivity leads to the taxation of efficient production: cross-subsidization that leads to the manufacturing sector paying above the cost for electricity. It is a travesty for another reason. In many forms of redistribution involving the price system, inclusion errors are the price of equity. For instance, when there are price controls on medicines, the poor benefit, but so do other consumers. This happens because of the difficulty in targeting: the identity of the buyer who buys medicines cannot be ascertained. In the case of power, targeting is automatic because most customers are metered. Inclusion errors are no longer errors when rich consumers are intentionally subsidized.

This means that both unnecessary and regressive subsidies, as well as inefficient and regressive taxes used to recoup the losses (cross-subsidization) in power tariffs, should be gradually eliminated. The Tinbergen principle of assigning appropriate policy instruments for necessary objectives should be followed. Multiple instruments chasing multiple objectives should be abandoned.

In the context of the renewable energy revolution and decentralization that is taking place, cross-subsidization is, in any case, going to be difficult to sustain because an increasing number of industrial and commercial consumers will exit the system. Embracing principle 3 will be really making a virtue of necessity. And this will also force greater adoption of principle 2.

However, we make an exception to principle 3, in principle 4, for the really poor and vulnerable, and by setting a high enough threshold for zero tariffs, we want to make doubly sure that we err on the side of protecting the poor. This exception also reflects the fact that broader fiscal tools may also be ineffective in protecting the poor and lead to excluding the deserving poor. Power tariffs should not add to the burden. We believe that this principle should also extend to agriculture, namely protecting the poor and vulnerable. However, it would not mean free power for all farmers and could require the richest farmers to pay for the efficient cost of supply.

A corollary of principles 3 and 4 is that the distinction between household and commercial users will also disappear (except for the fact that households consuming less than 100 units per month will get free power, whereas it will not apply to commercial users). Above this threshold, with all paying the average cost of supply, distinctions between household and commercial users become less relevant. As a consequence, tariff setting can also be simplified.

Another corollary is that all consumers should pay only for efficient costs. However, this could pertain both to the cost of supply for those who buy power and, for those who do not buy power, to the cost of the wire service provided by DISCOMs. This suggests that other components or parts of the tariff schedule, fixed charges, transmission and distribution charges, etc., should also be based on the efficiency cost.

Principle 5 focuses on simplicity and transparency to ensure that consumers, businesses and regulators can navigate it with ease. Actual tariff schedules are fiendishly complex (see Annexure 2A). Often, policymakers themselves are not aware of such complexity (Subramanian, 2018). Complexity might seem a minor issue, but actually, it can impose serious costs over the long run. It can become a source of lobbying and rent-seeking and, above all, create serious difficulties in implementation. A rational structure—such as a straightforward classification based on load demand and usage type—would eliminate these distortions while still allowing for necessary technical variations, like time-of-day (TOD) pricing and seasonal adjustments (see Annexure 2B).

By reducing unnecessary complexity, a simple yet flexible tariff system would reduce discretion and arbitrary implementation, enhance efficiency, improve compliance and create a more predictable investment environment for the power sector.

Finally, principle 6 is necessary to guide departures from principles 1–5, i.e., from efficient cost-based pricing where there are significant social externalities. The imperative to facilitate the greater adoption of renewables, which has social benefits (domestically and internationally), should lead to TOD pricing as part of demand management tools. However, we would caution

against over-complexifying the tariff structure and urge that TOD pricing be kept simple initially—with tariffs being higher than the efficient cost of supply for one- or two-time windows (when there is excess demand) and tariffs being below the cost of supply to exploit renewables capacity.

There is another subtler externality that arises related to renewables. As industrial (and commercial) users exit from the system via open access, the instability of the grid can increase, requiring DISCOM investments to stabilize the grid. Thus, the renewables exit imposes an externality on both the finances and the power system. A natural policy response would be to impose a 'price'[23] for such an exit. The magnitudes will be difficult to estimate, but it may be justifiable to add a surcharge to the wheeling charge based on the estimated cost of this externality.

One way to think about this is the following. Nearly all open-access customers retain the option of using the grid if and when their own generation falls short or is unavailable because of intermittency. Essentially, they are taking an option value on the grid. This must be charged by the grid operator, who has to grapple with the uncertainty of this demand stemming from open-access customers. One could think of a charge—possibly fixed—imposed by DISCOMs for this option value, which is related to the load of customers.

Thus, open-access customers would pay a variable cost for the use of the wire (wheeling charge) and a charge for the option value they obtain from being connected to and able to draw from the grid. The regulator will, over time, have to estimate this option value, which is both simple and easy to impose.

[23] Open-access externalities are priced via: (a) additional surcharge for stranded fixed power purchase agreement (PPA) costs that now become unrecoverable due to exit and (b) cross-subsidy surcharge to compensate DISCOMs for potential loss that they incur from subsidizing customers (commercial and industrial) leaving their network. Wheeling charges are usage fees to pay for the use of DISCOMs' wires (required for open access as well) and hence are not exit costs.

Several states already levy exit costs, but there is a huge variation between them, and it is not clear whether the principles used to assess such charges are consistent across states (Table 4).

Table 4. Comparison of Exit Costs (Industrial) Per Unit, 2024

State	Exit Costs
Maharashtra	3.0
Gujarat	2.5
Tamil Nadu	1.9
Karnataka	3.5
Uttar Pradesh	1.6
Madhya Pradesh	2.6
Odisha	0.5
Jharkhand	1.7

Source: Tariff Orders of DISCOMs.

In addition, renewable purchase obligations (RPOs) mandated by the government require utilities to procure a proportion of their power from renewable sources, influencing pricing. Managing renewable energy variability also comes with integration costs that are often spread across all consumers. Finally, feed-in tariffs and other incentives are used to promote specific technologies, further shaping cost structures. A well-designed pricing system should transparently reflect these factors while ensuring fairness and efficiency in cost allocation.

V. Implementation

The implementation of the suggested principles is not going to be without transitional fiscal costs. We estimate that significant costs would be incurred in two stages: first, in eliminating the cross-subsidy and second, in ensuring that pricing is based on efficient costs (Table 5). Detailed estimates are provided in Annexure 3.

Table 5. Estimated Costs of Transition—INR lakh Cr

Sources	FY24	Stage 1	Stage 2	Notes
C&I customers	3.9	3.0	2.7	Reduction in revenue from C&I customers due to the removal of cross-subsidy (stage 1) and reduction of ACS (stage 2)
Other customers	3.1	3.6	3.1	Increase in revenue from rich domestic users (75% of consumption) and rich farmers (25% of consumption)
Government tariff subsidy	2.1	2.5	2.2	Compensatory movement of government tariff subsidy to offset the net impact of customer billing
Government loss funding	1.1	0.5	1.6	Change in government loss funding given the unrecognized costs. It varies depending on the kind of inefficiencies that are being addressed in ACS

Source: Authors' estimate.

A clear and phased glide path is essential to manage this transition effectively. The first stage is to retain the current regulator-allowed tariffs (which are at about INR 7.7 per unit sold, Figure 6), to reduce the cross-subsidy burden on commercial and industrial consumers, who currently pay well above the cost. It is important to note that more than 50% of these costs of removing cross-subsidies (to the utility) can be recouped by charging efficient ACS (less than current ACS) from rich domestic consumers (top 50% of consumption) and rich farmers (top 25% of consumption). The rest of the savings can come from driving improvements in billing and collection efficiencies, which are largely under the control of DISCOMs (with minimal incremental investment).

The second stage of the transition will be to reduce the ACS through deeper interventions on power purchase, employee costs, O&M and interest costs to ensure that the costs are at the benchmark levels of efficiency. This will likely involve significant investments (lines, distribution infrastructure strengthening, asset replacements), time (employee costs) and creating

takeout/refinancing mechanisms (interest costs). Achieving this will require close coordination between DISCOMs, state governments and the central government and fast-paced implementation of schemes such as RDSS.

It should be noted that the burden of transition will not be evenly distributed—financially weaker utilities will bear a disproportionate proportion of these costs, making targeted support mechanisms necessary. A well-structured transition strategy will be crucial to ensuring that reforms enhance efficiency without triggering new financial distress in the sector.

The broadly equitable nature of our reform needs to be emphasized:

- Tariffs for employment-generating enterprises will come down, and very substantially for small and micro-enterprises.
- Tariffs for the poorest 25% of households will remain unchanged.
- Tariffs will increase only for middle-class and rich households and rich farmers (top 25% of landholders).

We estimate that in phase 1, financial losses of the sector can potentially come down by about 50%. The revenue from commercial and industrial consumers is estimated to decrease by ~ 30 and 19%, respectively. By simultaneously moving billing and collection efficiencies to benchmark levels, this transition can be cost-neutral for state governments. Over a five-year period, the reduction of ACS through other components (power purchase, O&M, wages and interest costs) can gradually bring down the billing rates further.

Finally, our proposals will have a major impact in eliminating complexity. The tariff structure will consist of 15–20 tariff lines, not hundreds of them. We illustrate with an example of an actual tariff schedule from one of the states and what any new tariff structure can look like for a DISCOM (see Annexure 3).

As a final observation on the political packaging of tariff reforms, the status quo can be presented as inequitable, favoring middle-class and rich households and penalizing small and medium

enterprises, but disproportionately the very small among them. Reform can then genuinely be presented as equitable: subsidies for the middle class and rich will come down, and taxes of ~100% on MSMEs will be eliminated. And all this will be done, ensuring that the bottom 25% of households are fully protected; that nobody's power payments will exceed 10% of household income; and that the revenues and financial position of DISCOMs will improve.

In undertaking tariff reforms, there is a temptation that must be avoided. Cutting tariffs is popular, whereas raising them is not. Thus, reforms should not be selective in choosing only the former and ignoring the latter because this would further damage the already vulnerable financial situation of DISCOMs and eventually impose macroeconomic costs on the state.

How will reforms be implemented? The problem is that electricity prices are set by state regulators, often influenced by state governments, or more often by state governments with regulators behaving as rubber-stampers. In principle, individual states should see the costs of their actions and reform their policies. In practice, populism, especially competitive populism, across states leads to a race to the bottom, whereby all states embrace policies that create problems for themselves and end up imposing an externality on the country as a whole. In practice too, states tend to reconcile the objectives of populism and investor-friendliness by cutting deals with individual investors and offering lower power costs as part of their industrial policy packages (Das *et al.*, 2019). Hence, the race to the bottom manifests itself as costly revenue losses to all governments (and the associated cronyism of investor-by-investor bargaining).

We propose five ways in which the implementation can be taken forward:

a. Recognition of the costs of the status quo by states

Industrial and commercial power pricing is, in effect, a tax on production, with the burden falling most heavily on MSMEs that lack captive options or bargaining power with states. As electrification deepens across the economy, this handicap will bind

not just manufacturing but tomorrow's services. The result is an exit loop: productive users depart or bargain out, the burden on those who remain increases, and further exit follows. Reform is thus not distributional tinkering but an employment- and investment-imperative. Therefore, states should themselves accelerate reforms to gain from this instead of losing out.

b. Action by the center and the courts

Because state-level pricing imposes a national externality, the center must condition support—schemes and forbearance alike—on aligning tariffs to *efficient* costs and dismantling cross-subsidies. Recent central government initiatives (UDAY, RDDS) link funds to AT&C and pricing reforms; future packages should go further: require regulators to set tariffs off efficient ACS (not inflated actual ACS); target absolute levels of tariff (ABR) and cost (ACS), not merely the ABR–ACS gap; and enforce hard budget constraints by embedding DISCOM losses in state borrowing limits. Many governments and regulators use charges (cross-subsidy, additional surcharge and wheeling charges) that weaponize against open access and captive supply. Jurisprudence and central rules should continue to limit and curb such charges and facilitate exit.

c. Cooperative federalism

A cooperative, rule-based bargain can share transitional costs while preserving incentives. Since the gains—higher investment, jobs, exports—are national, the center should co-finance a glide path where fiscally weaker DISCOMs would otherwise bear disproportionate strain, while states make subsidies explicit and on-budget. Bringing electricity into a simple, creditable GST framework would reduce cascading and end the practice of taxing producers via power bills; paired with explicit state-budget support for any remaining social objectives, this would restore pricing to first principles.

d. Exit through stealth

De facto competition is already emerging as large users expand captive renewables and, aided by regulatory and legal developments, begin to build parallel supply arrangements. This

'reform by stealth' weakens the public monopoly without frontal confrontation: first self-supply, then suppliers, then suppliers' suppliers. Policy should facilitate an orderly transition—nondiscriminatory open access, transparent wheeling and an explicit fee for grid backup—so that the public network is paid for the standby it provides even as the demand migrates to cheaper, cleaner alternatives.

e. Injecting competition in distribution

Where politics permits, states should expand consumer choice in electricity supply. Where capable private operators exist, this can be done by awarding retail-supply franchises—i.e., transferring the customer-facing supply function for a defined area to a private firm under tariff and service regulations. Where franchising is not feasible, states should separate the monopoly network from competitive supply ('carriage–content separation'): the state utility continues to own and operate the wires as a common carrier, while multiple licensed suppliers sell electricity over the same network and pay a regulator-set, cost-reflective network tariff (a fee designed to match efficient network costs). A pragmatic first step is to offer choice to large consumers with smart meters, for whom switching and settlement are straightforward. Once users can choose their supplier, incumbents face credible competition and must improve their price and services.

VI. Conclusion

Electricity pricing in India in 2025 bears all the imprints of—and seems suited for—the bygone dirigiste era of the 1950s–1980s. It is complex, irrational, inequitable and inefficient and renders India completely unfit to usher in the renewables revolution and uncompetitive in the new era of tariff shocks. We have shed new empirical light on some of these anomalies. Fixing them will require the combination of sticks and carrots from the center, realization by the states themselves of the costs of the status quo and the benefits of proactive reform, and a display of spine by regulators.

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Annexure 1

Methodology for Calculating Efficient Average Cost of Supply

Overview

This annexure presents the detailed methodology for calculating the 'Efficient Average Cost of Supply (ACS)' — a critical benchmark used throughout this paper to distinguish between actual costs incurred by distribution companies (DISCOMs) and what these costs should be under efficient operations. Understanding this distinction is fundamental to implementing the pricing principles proposed in the main paper.

Methodology Framework

Sample and Approach

Our analysis covers 67 Indian DISCOMs, representing the vast majority of electricity distribution in India. For each DISCOM, we decompose the Average Cost of Supply into five core components:

1. Power Purchase Cost - The cost of procuring electricity from generators
2. Employee Cost - Salaries, wages, and benefits for DISCOM staff
3. Interest Cost - Financing costs on debt
4. Depreciation and Other Costs - Capital depreciation and miscellaneous expenses
5. Commercial Losses - Revenue losses from billing and collection inefficiencies

Establishing Efficiency Benchmarks

To determine what constitutes 'efficient' performance, we employ a percentile-based benchmarking approach:

- *For cost components:* We use the 25th percentile as the benchmark (i.e., the cost level achieved by the 17th best-performing DISCOM out of 67)

- *For efficiency metrics:* We use the 75th percentile as the benchmark (i.e., the efficiency level achieved by the 17th best-performing DISCOM)

This approach ensures our benchmarks are achievable—they represent performance levels already being attained by real DISCOMs in India, not theoretical ideals. It also excludes outliers that might have unique advantages (such as access to exceptionally cheap hydropower) that cannot be replicated elsewhere.

Calculating the Efficient ACS

The process involves three steps:

Step 1: Calculate Cost Inefficiencies for each cost component, we calculate the excess over benchmark:

- If actual cost > benchmark cost: Inefficiency = Actual – Benchmark
- If actual cost ≤ benchmark cost: Inefficiency = 0

Step 2: Calculate Commercial Inefficiencies We quantify revenue losses from poor billing and collection:

- Billing inefficiency = (Benchmark billing % – Actual billing %) × Power purchase cost
- Collection inefficiency = (Benchmark collection % – Actual collection %) × Actual ACS

Step 3: Determine Efficient ACS Efficient ACS = Actual ACS – Total inefficiencies

All-India Efficient ACS Calculation

To arrive at state and national figures:

1. *State-level Efficient ACS:* Weighted average of all DISCOMs in the state (weighted by net energy sold)
2. *All-India Efficient ACS:* Weighted average across all DISCOMs nationally (weighted by net energy sold)

Annexure 2

Annexure 2A: Complexity of Tariff Schedules

Tariff Schedule for Retail Sale of Electricity in Andhra Pradesh (2025-26)

Cat	Consumer Category	LT SUPPLY		↔	HT SUPPLY				
		Fixed / Demand Charges per month (Rs/HP or Rs. /kW)	Energy Charges (Rs./Unit)	Billing Unit	Fixed / Demand Charges per month (Rs./kVA)	Energy Charges (Rs./Unit)			
						11 kV	33 kV	132 kV	220 kV
I	**DOMESTIC**								
	(A) : Domestic (Telescopic)								
	0-30	10	1.90	kWh	-	-	-	-	-
	31-75	10	3.00	kWh	-	-	-	-	-
	76-125	10	4.50	kWh	-	-	-	-	-
	126-225	10	6.00	kWh	-	-	-	-	-
	226-400	10	8.75	kWh	-	-	-	-	-
	>400	10	9.75	kWh	-	-	-	-	-
	(B): Townships, Colonies, Gated Communities and Villas	-	-	kVAh	75	7.00	7.00	7.00	7.00
II	**COMMERCIAL & OTHERS**								
	A (i) : Commercial								
	0-50	75/kW	5.40	kWh/kVAh	475	7.65	6.95	6.70	6.65
	51-100		7.65	kWh/kVAh					
	101-300		9.05	kWh/kVAh					
	301-500		9.60	kWh/kVAh					
	Above 500 units		10.15	kWh/kVAh					
	*Time of Day tariff (TOD)- Peak (6 PM to 10 PM)	-	-	kWh/kVAh		8.65	7.95	7.70	7.65
	(ii) Advertising Hoardings	100	12.25	kWh/kVAh	-	-	-	-	-
	(iii): Function halls / Auditoriums	-	12.25	kWh/kVAh	-	12.25	12.25	12.25	12.25
	(B):Startup power	-	12.25	kWh/kVAh	-	12.25	12.25	12.25	12.25
	(C):Electric Vehicles/ Charging Stations	-	6.70	kWh/kVAh	-	6.70	6.70	6.70	6.70
	(D) : Green Power	-	12.25	kWh/kVAh	-	12.25	12.25	12.25	12.25
	* Note: ToD tariffs for II(A)-LT consumers as shown in the Terms & Conditions of Supply mentioned above								
III	**INDUSTRY**								
	(A) : Industry (General)	75/kW	6.70	kWh/kVAh	475	-	-	-	-
	#Time of Day tariff (TOD) (High Grid Demand)								

Cat	Consumer Category	LT SUPPLY		↔	HT SUPPLY				
		Fixed / Demand Charges per month (Rs/HP or Rs. /kW)	Energy Charges (Rs./Unit)	Billing Unit	Fixed / Demand Charges per month (Rs./kVA)	Energy Charges (Rs./Unit)			
						11 kV	33 kV	132 kV	220 kV
	(Feb'26, Mar'26), (Apr'25- May'25) & (Sep'25-Oct'25)								
	Peak (06-10) & (18-22) Hrs	-	-			7.80	7.35	6.90	6.85
	Off-Peak (10 -15) & (00-06) Hrs	-	-			5.55	5.10	4.65	4.60
	Normal (15-18) & (22-24) Hrs	-	-			6.30	5.85	5.40	5.35
	#Time of Day tariff (TOD) (Low Grid Demand) (Jun'25-Aug'25)&(Nov'25-Jan'26)								
	Peak (06-10) & (18-22) Hrs	-	-			7.30	6.85	6.40	6.35
	Off-Peak (10 -15) & (00-06) Hrs	-	-			5.55	5.10	4.65	4.60
	Normal (15-18) & (22-24) Hrs	-	-			6.30	5.85	5.40	5.35
	Industrial Colonies	-	-	kWh/kVAh	-	7.00	7.00	7.00	7.00
	(B) : Seasonal Industries (off-season)	75/kW	7.45	kWh/kVAh	475	7.65	6.95	6.70	6.65
	(C) : Energy Intensive Industries	-	-	kWh/kVAh	475	5.80	5.35	4.95	4.90
	(D): Cottage Industries up to 10HP *	20/kW	3.75	kWh	-	-	-	-	-
	* - Dhobighats shall be extended free power supply as per G.O.Rt.No.75, dt. 27-06-2018								
	# Note: ToD tariffs for III(A)-LT consumers as shown in the Terms & Conditions of Supply								
IV	**INSTITUTIONAL**								
	(A) : Utilities (Street Lighting, NTR Sujala Pathakam, CPWS and PWS)	75/kW	7.00	kWh/kVAh	475	7.65	6.95	6.70	6.65
	(B) : General Purpose	75/kW	7.00	kWh/kVAh	475	7.95	7.25	7.00	6.95
	(C) : Religious Places	30/kW	5.00	kWh/kVAh	30	5.00	5.00	5.00	5.00
	(D) : Railway Traction	-	-	kVAh	350	6.50	6.50	6.50	6.50
V	**AGRICULTURE & RELATED**								
	(A) : Agriculture								
	(i) Corporate farmers	-	3.50	kWh	-	-	-	-	-
	(ii) Non-Corporate farmers	-	-	-	-	-	-	-	-
	(iii) Salt farming units up to 15 HP	-	2.50	kWh	-	-	-	-	-
	(iv) Sugarcane crushing	-	-	-	-	-	-	--	-
	(v) Rural Horticulture Nurseries	-	-	-	-	-	-	--	-
	(vi) Floriculture in Green House	75/kW	4.50	kWh/kVAh	-	-	-	-	-
	(B) : Aquaculture and Animal Husbandry	30/kW	3.85	kWh/kVAh	30	3.85	3.85	3.85	3.85

Category	Consumer Category	LT SUPPLY		↔	HT SUPPLY				
		Fixed / Demand Charges per month (Rs/HP or Rs. /kW)	Energy Charges (Rs./Unit)	Billing Unit	Fixed / Demand Charges per month (Rs./kVA)	Energy Charges (Rs./Unit)			
						11 kV	33 kV	132 kV	220 kV
	(D) : Agro Based Cottage Industries up to 10 HP	20/kW	3.75	kWh	-	-	-	-	-
	(E) : Government / Private Lift Irrigation Schemes	-	6.40	kVAh	-	7.15	7.15	7.15	7.15
Note:	(i) Temporary Supply: There is no separate category for temporary supply. However, Temporary supply can be released against each category with respective terms and conditions applicable and it shall be billed at the rate and other conditions specified in this order.								
	(ii) Categories not defined in either HT-Supply or LT-Supply shall be billed at the rates specified in Category - II (A) (i) Commercial								

Annexure 2B: Illustrative Simple Tariff Schedule

Category & Load Slabs
HIGH TENSION (HT)
HT-I: Industrial
I1: Up to 2 MVA
I2: 2-5 MVA
I3: Above 5 MVA...
HT-C: Commercial
C1: Up to 2 MVA
C2: 2-5 MVA
C3: Above 5 MVA...
LOW TENSION (LT)
LT-R: Residential and Commercial
RC1: 0-50 kW
RC2: 50-100 kW
RC3: >100 kW...
LT-I: Industrial
I1: 0-50 kW
I2: 50-100 kW
I3: >100 kW...
LT-S: Special
S1: Agriculture
S2: EV Charging
S3: Temporary

Annexure 3

Calculation of Costs of Transition

To assess transition costs, we look at the effect of five shifts (cross subsidy reduction for C&I, subsidy reduction for domestic and agricultural customers, movement to efficient ACS and realization of warranted RoE) on different stakeholder groups (utility, customers and State finances). We propose the transition in two stages:

- Stage 1 involves everyone in the system (except 25% of domestic consumers and 75% of agricultural consumers) moving to current regulator approved ACS (8.7). Stage 2 involves the system moving to efficient ACS (6.6)
- We estimate category wise consumption shares and revenue shares for FY24 based on the shares of FY21. This is the last year for which segment wise consumption and revenue numbers are available from PFC reports.
- We then assume that the cross subsidy is eliminated, with C&I moving to current regulator approved ACS (Stage 1) and efficient ACS (Stage 2)
- Similarly, for rich domestic (estimated at 75% of consumption) and rich farmers (estimated at 25% of consumption), we assume they move to regulator approved ACS (Stage 1) and efficient ACS (Stage 2)
- The difference between allowed ACS (8.7 in Stage 1 and 6.6 in Stage 2) and total customer contributions then becomes the Govt. Subsidy
- The difference between actual ACS and allowed ACS becomes the loss funding
- In stage 1, we assume that low hanging subsets of the loss funding (the billing and commercial losses) can be targeted for reduction, effectively bringing down govt. loss funding with relatively low levels of incremental investment
- In stage 2, the harder parts of loss funding (interest costs, employee costs, power purchase, technical losses etc) are to be targeted

- This shift will require incremental investments by the utilities which would have to be supported by GoI and State Governments. Such support could be conditional on (1) cross subsidy and tariff reforms, (2) achievement of billing and collection efficiencies and (3) initiation of reforms on employee costs, Power Purchase etc.

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