

File No-CEA-EC-11-19(17)/3/2026-FCA Division/298

भारत सरकार  
विद्युत मंत्रालय  
केन्द्रीय विद्युत प्राधिकरण  
वित्तीय एवं वाणिज्यिक मूल्यांकन प्रभाग  
\*\*\*\*\*

Sewa Bhawan, New Delhi-66

दिनांक: 12.05.2026

**विषय: - निश्चित शुल्कों को युक्तिसंगत बनाने और टैरिफ के पुनर्गठन के लिए एक राष्ट्रीय ढाँचे की आवश्यकता - रेग। (Need for a National Framework for Rationalizing Fixed Charges and Tariff Redesign – reg.)**

The undersigned is directed to state that the Ministry of Power has forwarded a representation received from the All India DISCOMs Association (AIDA) vide letter No. DG-19/2025-AIDA dated 15.12.2025, seeking comments/inputs on the same. In the said letter, AIDA has stated that there is a need for a national framework for rationalisation of fixed charges and redesign of retail tariffs, particularly in the context of recovery of fixed costs by distribution utilities.

2. In this regard, the matter was deliberated in two meetings held under Member (E&C), CEA on 19.01.2026 and 23.03.2026 with stakeholders including AIDA, Prayas and some distribution licensees. Based on discussion in the meetings, a report on rationalising consumer fixed charge to reflect fixed cost of DISCOM has been prepared and the copy of the same is enclosed. The report highlighted graded increase in fixed charge percentage across consumer categories to be decided by the respective regulators.

3. It is suggested that based on above report, the matter may be taken up with Forum of Regulator for implementation purpose.

4. This issues with the approval of Chairperson, CEA.

Encl.: As above.

  
12/05/2026  
(Ankit Goyal)

Assistant Director

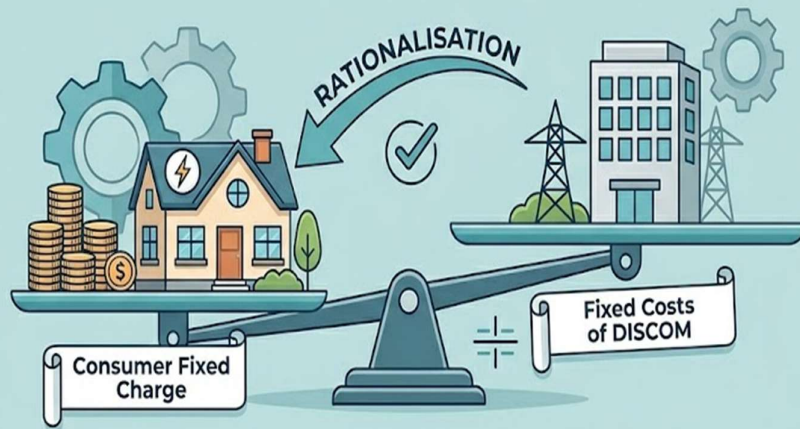
Additional Secretary (R&R), MoP, New Delhi

**Copy to:**

1. Chief Engineer (R&R), MoP, New Delhi

2. Director General, AIDA
3. Coordinator, Prayas (Energy Group), Pune
4. Director (IT), CEA- with a request to upload the same in CEA website.

## Report on rationalising consumer fixed charge to reflect fixed costs of DISCOM



Central Electricity Authority

May 2026

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## Executive Summary

### The Core Issue: Mismatch in Fixed Costs and Charges

The report addresses the significant gap between the fixed costs incurred by DISCOMs and the fixed charges recovered from consumers. While fixed costs—such as thermal generator payments, transmission costs, employee salaries, and infrastructure maintenance—account for 38% to 56% of a DISCOM's total Annual Revenue Requirement (ARR), fixed charges currently contribute only 9% to 20% of their total revenue. This gap highlights a structural divergence between cost incidence and tariff recovery mechanisms.

### Challenges of the Current Low Fixed Charge Model

Relying on energy charges to recover fixed costs creates several structural issues for DISCOMs:

- **Volume Risk:** Because DISCOMs must pay fixed capacity charges regardless of power drawn, recovering these costs through variable energy sales creates liquidity crises during periods of low demand, such as cool summers or economic downturns.
- **Stranded Costs:** When high-paying industrial or residential consumers shift to captive power or open access, they reduce their energy consumption but remain reliant on the grid, leaving DISCOMs with unrecovered "stranded" fixed costs for their infrastructure.
- **Tariff Distortions:** Hiding fixed costs in energy charges prevents cost-to-serve pricing, causing high-consumption users to heavily subsidize the infrastructure costs of consumers who have high contract demands but low actual usage.

### Impacts of Increasing Fixed Charges

A sharp increase in fixed charges can have several unintended consequences. For industrial consumers, especially those with low load factors, higher fixed charges may significantly raise total electricity bills and reduce competitiveness. They may also create a stronger incentive to reduce contract demand by shifting to captive solar and storage systems. For residential consumers, a rise in fixed charges could affect small, low-income, and rural households that use less electricity but would still face high monthly bills,

### International Context

Advanced economies (USA, UK, Europe) predominantly utilize two-part tariff structures. However, regulators deliberately cap fixed cost percentages for residential consumers (typically 10% to 25% of total bills) to protect low-income families, while assigning higher fixed shares (25% to 45%) to industrial consumers to reflect their high-capacity asset demands.

## Key Recommendations

The report recommends a calibrated, phased approach:

- **Targeted Recovery Goals:** Progressively increase fixed cost recovery over the next five years (by 2030) to target 25% for Domestic and Agriculture categories , and 100% for Industry, Commercial, and Institutional categories. Higher target of 50% for Domestic and Agriculture categories by end of 2035.
- **Standardize Tariff Structures:** Shift all states to standardized two-part tariffs, charging LT consumers in Rs/kW/month and HT categories in Rs/kVA/month.
- **Redefine Billing Demand:** Standardize the definition of billing demand across states, linking it with higher of percentage of contract demand, actual peak demand.
- **Adopt kVAH Billing:** Shift to kVAh (apparent energy) billing for consumers above 50 kW to eliminate separate power factor penalties and simplify tariffs.
- **Isolate Net Metering Consumers:** Create separate tariff categories with specific fixed, variable, and ToD rates for net-metering consumers, recognizing their unique grid interactions.
- **Implement Standby Charges:** Introduce a three-tiered standby charge for open access and captive consumers (fixed commitment, planned standby, and unplanned standby) to recover the costs of holding infrastructure for their backup usage.

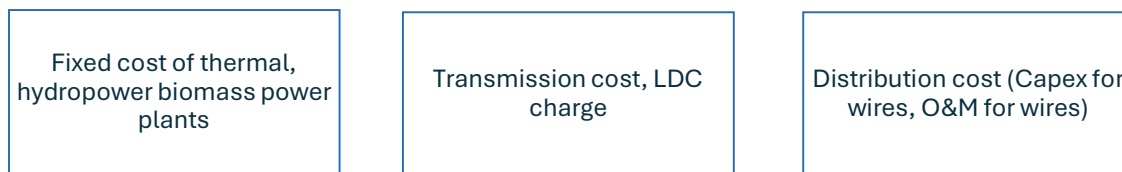
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## 1. Background

A distribution licensee (DISCOM) has to pay two types of expenses. Fixed cost components considered are those components which have to be paid on a lumpsum basis, irrespective of DISCOM energy sales. These include fixed cost to thermal generators, transmission costs as well as employee salaries, administrative expenses, capital expenses and repair/maintenance works for the wires business.

Since solar, wind, nuclear have single part tariffs where payment is made only when there is generation/ supply, no costs from such procurement is considered as fixed for the purpose of this calculation. Further, short-term power purchases also have single part tariffs and have been excluded. Figure 1 details the components in the DISCOMs Annual Revenue Requirement (ARR) considered as fixed costs.

**Figure 1: Components Fixed cost incurred by DISCOMs**



Data for fixed costs (across the components in Figure 1) was compiled for DISCOMs across nine states for FY2025-26. The data (Table 1) shows that fixed costs account for 38% to 56% of the total annual revenue requirement (ARR) to be recovered from consumers.

*Table 1: Component wise contribution of Fixed cost across nine states and fixed cost as a percentage of net ARR*

| State          | Fixed component of power and LDC cost | Transmission cost and LDC cost | Distribution cost (Capex+O&M) | Total cost (Net ARR) | % of fixed cost in total ARR |
|----------------|---------------------------------------|--------------------------------|-------------------------------|----------------------|------------------------------|
|                | Rs. Crore                             | Rs. Crore                      | Rs. Crore                     | Rs. Crore            | %                            |
| Rajasthan      | 10808                                 | 6520                           | 10353                         | 73145                | 38%                          |
| Gujarat        | 15375                                 | 8534                           | 9703                          | 81262                | 41%                          |
| Karnataka      | 10551                                 | 9109                           | 13228                         | 68420                | 48%                          |
| Maharashtra    | 20857                                 | 17721                          | 16727                         | 114346               | 48%                          |
| Punjab         | 7535                                  | 4003                           | 11098                         | 43701                | 52%                          |
| Madhya Pradesh | 12431                                 | 8688                           | 8808                          | 54537                | 55%                          |
| Uttar Pradesh  | 31917                                 | 11691                          | 18676                         | 110993               | 56%                          |
| Bihar          | 8954                                  | 4100                           | 5335                          | 30645                | 60%                          |

|        |      |      |      |       |     |
|--------|------|------|------|-------|-----|
| Odisha | 5656 | 1020 | 5167 | 19352 | 61% |
|--------|------|------|------|-------|-----|

Note: Net ARR= Annual Revenue Requirement net of Non-Tariff Income.

Source: DISCOM Tariff orders and petitions

However, as shown in Table 2, the fixed charge component of tariff approved by the Regulator is much lower than fixed cost. Data from regulatory filings in states for FY2025-26 shows that fixed charges contribute only 9% to 20% of total revenue from retail tariff across categories, while fixed costs constitute 48% to 60% of the total cost of supply in these states.

*Table 2: Contribution of fixed charges to total revenue and fixed cost to total cost in 5 states*

| State          | Fixed charge as % of total revenue | Fixed cost as % of total cost |
|----------------|------------------------------------|-------------------------------|
| Bihar          | 19%                                | 60%                           |
| Madhya Pradesh | 19%                                | 55%                           |
| Maharashtra    | 20%                                | 48%                           |
| Uttar Pradesh  | 17%                                | 56%                           |
| Punjab         | 9%                                 | 52%                           |

Note:

1. Revenue refers to Revenue from retail tariffs. Cost refers to Annual Revenue Requirement net of Non-Tariff Income
2. For the purposes of this analysis, fixed charge revenue includes revenue from unmetered agricultural consumers, who are billed a flat charge per HP per month — a structure that is effectively fixed in nature and accounts for 95% to 100% of revenue from that category.

Source: DISCOM Tariff orders and petitions

Prima facie, the gap between the high incidence of fixed costs in the cost structure and the comparatively low recovery through fixed charges represents a significant departure from cost-reflective tariff principles.

## **2.Challenges associated with lower fixed charge recovery**

While a rebalancing of fixed and energy charges may not alter the overall revenue recovery of the distribution licensee, rationalisation of tariff components assumes importance from the perspective of tariff design and financial stability of the distribution sector. However, following challenges are associated with lower fixed charge recovery model presently followed by Regulators:

### **a. The Volume Risk (Revenue Gap)**

DISCOMs typically have "Take-or-Pay" contracts with generators, meaning they must pay **Capacity Charges** regardless of whether they draw power.

- **The Problem:** If fixed costs are loaded into the energy charge (), the DISCOM's revenue becomes dependent on sales volume.
- **The Impact:** If there is a cool summer, a strike, or an economic downturn, sales volume drops. The DISCOM still owes the full fixed cost to the generator, but its collection from consumers falls short. This creates a **liquidity crisis** between the year-end and the True-up.

#### **b. Cost recovery from grid interactive renewables, open access and captive consumers**

This is the most critical issue in the current energy transition.

- **The Problem:** High-paying industrial or residential consumers install rooftop solar or move to Open Access or captive options. They still remain connected to the grid, depend on the DISCOM for reliability and standby, but their energy consumption from the DISCOM drops significantly.

**The Impact:** Since the DISCOM was relying on those sales to recover the fixed cost of the wires and plants, it now has "stranded" fixed costs. This leads to higher tariffs in the next cycle or build-up of losses affecting DISCOM competitiveness and finances.

#### **c. Distortions in tariff design**

When fixed costs are hidden in the energy charge, it becomes difficult to implement **Cost-to-Serve** based tariffs.

- **The problem:** A consumer with a high contract demand but low energy usage pays very little toward the infrastructure they require.
- **The impact:** High consumption users may end up paying significantly more for fixed components of tariff. This is particularly the case if distribution cost is not recovered from a separate wheeling charge for all consumers.

### **3. Policy initiatives to increase percentage fixed charge recovery**

Multiple policy initiatives have advocated for aligning fixed charge with the fixed cost recovery requirements of electricity distribution companies (DISCOMs) in India.

The issue was first formally deliberated by the Ministry of Power's Committee for Rationalisation of Tariffs (constituted in 2016), and subsequently raised in the Ministry's Consultation Paper on Issues related to Open Access (2017)<sup>1</sup>.

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<sup>1</sup> <https://energy.prayasipune.org/images/pdf/mop-consultation-paper-on-issues-pertaining-to-open-access-4.pdf>

The Draft National Tariff Policy (2018) articulated a specific reform objective in Para 8.3 A (9)<sup>2</sup>:

*"In order to reflect the actual share of fixed cost in the revenue requirement of Distribution licensees, there is need to enhance recovery through fixed charges. The fixed charge shall be so set that it leads to recovery of at least 50% of the fixed costs in case of Domestic and Agriculture categories and at least 75% recovery of fixed costs in case of other categories progressively over next three years. The SERCs and JERCs shall lay down a roadmap to achieve the same."*

This position was reaffirmed by the Parliamentary Standing Committee on Energy in its report on the *Review of Power Tariff Policy – Need for Uniformity across the Country* (August 2022), and in the subsequent Action Taken Report (December 2022)<sup>3</sup>.

Responding to this policy direction, several states have progressively increased fixed charge for consumers. Table 3 presents HT Industry tariffs across 16 states for FY18 and FY26. In 7 of the 16 states, fixed charge has grown at an average rate of 7% to 9% per annum — a significant increase given that overall tariffs in these states rose by only 1% to 4% per annum over the same period. In Rajasthan, fixed charge increased even as the overall tariff for this category saw a marginal decline. These increases have translated into a higher share of fixed charge revenue in total bills across most states. Notable exceptions exist, however, with Andhra Pradesh, Chhattisgarh, Odisha, and Gujarat recording no increase in fixed charge over the eight-year period.

*Table 3: Increase in fixed charge*

| State          | Fixed charge<br>(Rs/kVA/month) |      |      | Average tariff<br>(Rs/unit) |      |      | Fixed cost as<br>percentage of<br>total revenue |      |
|----------------|--------------------------------|------|------|-----------------------------|------|------|-------------------------------------------------|------|
|                | FY18                           | FY26 | CAGR | FY18                        | FY26 | CAGR | FY18                                            | FY26 |
| Tamil Nadu     | 350                            | 608  | 7%   | 7.5                         | 9.4  | 3%   | 15%                                             | 20%  |
| Maharashtra    | 350                            | 600  | 7%   | 8.1                         | 11.1 | 4%   | 12%                                             | 15%  |
| Bihar          | 300                            | 550  | 8%   | 7.0                         | 9.4  | 4%   | 11%                                             | 15%  |
| Telangana      | 390                            | 500  | 3%   | 7.7                         | 9.0  | 2%   | 13%                                             | 15%  |
| Andhra Pradesh | 475                            | 475  | 0%   | 7.6                         | 7.6  | 0%   | 17%                                             | 17%  |
| Kerala         | 300                            | 420  | 4%   | 6.2                         | 7.3  | 2%   | 12%                                             | 14%  |
| Madhya Pradesh | 330                            | 399  | 2%   | 7.6                         | 7.7  | 0%   | 14%                                             | 16%  |
| Rajasthan      | 190                            | 380  | 9%   | 8.8                         | 7.5  | -2%  | 6%                                              | 13%  |

<sup>2</sup> [Proposed amendments in Tariff Policy 0\(2\).pdf](#)

<sup>3</sup> [17\\_Energy\\_32.pdf](#)

|               |     |     |    |     |     |     |     |     |
|---------------|-----|-----|----|-----|-----|-----|-----|-----|
| Chhattisgarh  | 375 | 375 | 0% | 7.7 | 8.6 | 1%  | 13% | 12% |
| Karnataka     | 210 | 345 | 6% | 7.5 | 7.7 | 0%  | 9%  | 14% |
| Uttar Pradesh | 250 | 300 | 2% | 7.4 | 8.0 | 1%  | 10% | 11% |
| Haryana       | 170 | 290 | 7% | 7.1 | 7.7 | 1%  | 6%  | 10% |
| Punjab        | 140 | 280 | 9% | 6.1 | 7.5 | 3%  | 6%  | 10% |
| Assam         | 160 | 280 | 7% | 8.1 | 9.3 | 2%  | 7%  | 10% |
| Odisha        | 250 | 250 | 0% | 6.2 | 5.6 | -1% | 14% | 15% |
| Gujarat       | 475 | 475 | 0% | 7.0 | 8.3 | 2%  | 20% | 17% |

Note:

1. The average tariff represented here is for HT Industrial consumers with 40% load factor and contract demand of 1 MW. The fixed cost as percentage of revenue is also for this representative consumer.
2. In Gujarat, base FPPPA is accounted for in energy charge and in Maharashtra, wheeling charge is accounted in energy charge to standardise across states.

#### 4.Impact of increase in fixed charges to reflect fixed cost

While there has been a progressive increase in most states, making fixed charge reflective of fixed costs would require tripling the fixed charge in many states. This represents a significant shift with multiple operational issues and implementation challenges, and it cannot be viewed in isolation from the overall tariff design framework and its evolution in India.

The impacts of increasing fixed charge will vary across and within tariff categories, as well as across states—making a uniform approach toward fixed charges that reflects fixed costs is both inequitable and likely untenable. The three principal consumer categories in India are Industrial, Residential, and Agricultural, together accounting for 80% of sales. Since the majority of Agricultural consumers are already on flat-rate, fixed tariffs, this note focuses on the impacts on Industrial and Residential consumers, who together account for approximately 61% of electricity sales.

#### **4.1 Industry: Fixed charge determination based on billing demand, with varying definition**

Fixed charges are levied on per kVA basis, not on contract demand but on billing demand. The definition of billing demand varies from state to state as shown in Table 4.

*Table 4: Billing demand definition across 16 states*

| Billing demand Definition                      | State                                   |
|------------------------------------------------|-----------------------------------------|
| Higher of Max demand or 75% of Contract Demand | Bihar, Kerala, Rajasthan, Uttar Pradesh |

|                                                                                                                      |                                           |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Higher of Max demand or 80% of Contract Demand                                                                       | Punjab, Telangana, Andhra Pradesh, Odisha |
| Higher of Max demand or 85% of Contract Demand                                                                       | Gujarat, Chhattisgarh                     |
| Higher of Max demand or 90% of Contract Demand                                                                       | Karnataka, Madhya Pradesh, Tamil Nadu     |
| Higher of max demand or 100% of contract demand                                                                      | Haryana, Assam                            |
| Higher of Max Demand between 06:00 to 22:00 hrs or 75% of highest Billing Demand in 11 months or 70% Contract demand | Maharashtra                               |

Source: Applicable SERC Tariff orders

In 15 of the 16 states studied, billing demand is considered as the higher of the maximum demand in the month or a pre-stipulated percentage of the contract demand. Thus, revenue from fixed charge varies not only with the fixed charge on Rs/kVA basis but also the billable demand in that month.

**Besides, the definition of billing demand itself has not been changed in many states over the years and there is significant scope for updation and uniformity across states.**

#### **4.2 Tariff already skewed towards fixed charges for consumers with low load factor**

Table 5 is a compilation of fixed charges for HT industrial consumers levied across 16 states in India for FY26. The current fixed charge applicable on an industrial consumer connected at 11 kV varies from Rs. 250/kVA/month in Odisha to Rs. 608/kVA/month in Tamil Nadu. It is pertinent to note that based on the load factor of the consumer, and the billing demand definition, the share of the consumer bill attributable to fixed charges can vary significantly. For load factors ranging from 70% to 20%, in Assam it ranges from 6% to 19% and in Tamil Nadu from 13% to 34%.

*Table 5: Fixed charge and % of consumer bill from fixed charge based on load factor*

| State       | Billing demand as % contract demand | Energy charge | Fixed charge (Rs/kV A/month) | % of consumer bill from fixed charges (FY26) |     |     |     |
|-------------|-------------------------------------|---------------|------------------------------|----------------------------------------------|-----|-----|-----|
|             |                                     |               |                              | % Load Factor                                |     |     |     |
|             |                                     |               |                              | 70%                                          | 50% | 35% | 20% |
| Tamil Nadu  | 90%                                 | 7.5           | 608                          | 13%                                          | 17% | 22% | 34% |
| Maharashtra | 70%                                 | 9.4           | 600                          | 8%                                           | 11% | 15% | 24% |
| Bihar       | 75%                                 | 8.0           | 550                          | 9%                                           | 13% | 17% | 26% |
| Telangana   | 80%                                 | 7.7           | 500                          | 9%                                           | 13% | 17% | 27% |

|                |      |     |     |     |     |     |     |
|----------------|------|-----|-----|-----|-----|-----|-----|
| Gujarat        | 85%  | 6.9 | 475 | 10% | 14% | 19% | 29% |
| Andhra Pradesh | 80%  | 6.3 | 475 | 11% | 14% | 19% | 30% |
| Kerala         | 75%  | 6.3 | 420 | 9%  | 12% | 17% | 26% |
| Madhya Pradesh | 90%  | 6.5 | 399 | 10% | 13% | 18% | 28% |
| Rajasthan      | 75%  | 6.5 | 380 | 8%  | 11% | 15% | 23% |
| Chhattisgarh   | 85%  | 7.6 | 375 | 8%  | 10% | 14% | 23% |
| Karnataka      | 90%  | 6.6 | 345 | 9%  | 12% | 16% | 25% |
| Uttar Pradesh  | 75%  | 7.1 | 300 | 6%  | 8%  | 11% | 18% |
| Haryana        | 100% | 7.0 | 290 | 8%  | 10% | 14% | 22% |
| Punjab         | 80%  | 6.7 | 280 | 6%  | 8%  | 12% | 19% |
| Assam          | 100% | 8.3 | 280 | 6%  | 9%  | 12% | 19% |
| Odisha         | 80%  | 4.8 | 250 | 8%  | 10% | 14% | 23% |

Note:

1. Energy charges in Gujarat includes base FPPPA and energy charges in Maharashtra includes per unit wheeling charge levied on all consumers to standardise methodology across states.
2. Total fixed cost is calculated based on billing demand limitation for contract demand (Assumed Max demand is always lower than CD limit)

Source: Tariff orders for FY26 across states

This points to the heterogeneity in fixed charge contribution even within a consumer category. Such variations will be notable across other consumer categories as well.

To illustrate, consider a scenario where fixed charges are increased such that they recover at least 50% of total revenue on average. For a consumer with a 40% load factor — broadly representative of the state average — fixed charges would constitute approximately 50% of the total bill if fixed charges increase by 2.5 times to 3 times. However, for a consumer with a 20% load factor, such an increase in fixed charges would mean that fixed charges would constitute 67% of the total bill.

**Therefore, increasing the fixed charge component — even while holding the average tariff constant — may raise the total bill for consumers with low load factors.**

#### **4.3 Industry: Increase in fixed charge may not reduce captive sales migration**

One of the principal arguments in favour of increasing the fixed charge component of tariffs is that it would, for a given average tariff level, proportionately reduce the energy charge component. Since the arbitrage between market price and energy charges

drives migration to open access or captive consumption, a higher fixed charge structure would erode the competitiveness of captive options — which represent the predominant mode of consumer migration away from DISCOM supply.

To illustrate, consider a scenario in which current fixed charges across states for industrial consumers are doubled to bring them in line with fixed cost recovery requirements. For an industrial consumer with a 40% load factor, fixed charges would then account for 20% to 40% of the total bill. Holding the average tariff constant, this would correspondingly reduce energy charges by 10% to 25% from current levels, with resultant energy charges ranging from Rs. 4.1/unit in Odisha to Rs. 8/unit in Maharashtra.

Assuming a landed cost of captive power — inclusive of wheeling and applicable transmission charges — of Rs. 5/unit, savings of more than 10% relative to DISCOM supply would remain feasible in only 9 of the 16 states after the fixed charges have been doubled. See Table 6 for more details.

*Table 6: Reduction in energy charges due to doubling of fixed charge along with its impact on tariff competitiveness*

| State          | Average tariff<br>Rs/unit | Fixed charge applicable<br>(Rs/kVA) |            | Fixed charge %<br>as of revenue |            | Energy charge<br>(Rs/unit) |                                 | Savings in energy charge with sales migration if landed cost of captive @ Rs 5/unit (%) |
|----------------|---------------------------|-------------------------------------|------------|---------------------------------|------------|----------------------------|---------------------------------|-----------------------------------------------------------------------------------------|
|                |                           | FY26                                | 2x of FY26 | FY26                            | 2x of FY26 | For Fixed charge of FY26   | When Fixed charge is 2x of FY26 |                                                                                         |
| Tamil Nadu     | 9.4                       | 608                                 | 1216       | 20%                             | 40%        | 7.5                        | 5.6                             | 11%                                                                                     |
| Maharashtra    | 10.9                      | 600                                 | 1200       | 13%                             | 27%        | 9.4                        | 8.0                             | 37%                                                                                     |
| Bihar          | 9.4                       | 550                                 | 1100       | 15%                             | 30%        | 8.0                        | 6.5                             | 24%                                                                                     |
| Telangana      | 9.0                       | 500                                 | 1000       | 15%                             | 31%        | 7.7                        | 6.3                             | 20%                                                                                     |
| Gujarat        | 7.5                       | 475                                 | 950        | 17%                             | 34%        | 6.9                        | 5.5                             | 9%                                                                                      |
| Andhra Pradesh | 7.6                       | 475                                 | 950        | 17%                             | 35%        | 6.3                        | 5.0                             | 0%                                                                                      |
| Kerala         | 7.3                       | 420                                 | 840        | 15%                             | 30%        | 6.3                        | 5.2                             | 3%                                                                                      |
| Madhya Pradesh | 7.7                       | 399                                 | 798        | 16%                             | 32%        | 6.5                        | 5.3                             | 5%                                                                                      |
| Rajasthan      | 7.8                       | 380                                 | 760        | 13%                             | 26%        | 6.5                        | 5.5                             | 9%                                                                                      |

|               |     |     |       |     |     |     |     |      |
|---------------|-----|-----|-------|-----|-----|-----|-----|------|
| Chhattisgarh  | 8.7 | 375 | 750   | 13% | 25% | 7.6 | 6.5 | 23%  |
| Karnataka     | 7.7 | 345 | 690   | 14% | 28% | 6.6 | 5.5 | 9%   |
| Uttar Pradesh | 7.9 | 300 | 600   | 10% | 20% | 7.1 | 6.3 | 21%  |
| Haryana       | 8.0 | 290 | 580   | 13% | 25% | 7.0 | 5.9 | 16%  |
| Punjab        | 7.5 | 280 | 560   | 10% | 21% | 6.7 | 5.9 | 16%  |
| Assam         | 9.3 | 280 | 560   | 10% | 21% | 8.3 | 7.4 | 32%  |
| Odisha        | 5.6 | 250 | 500.5 | 13% | 26% | 4.8 | 4.1 | -23% |

Note:

1. Energy charges in Gujarat includes base FPPPA and energy charges in Maharashtra includes per unit wheeling charge levied on all consumers to standardise methodology across states.
2. Total fixed cost is calculated based on billing demand limitation for contract demand (Assumed Max demand is always lower than CD limit)
3. Average tariff is representative for Industrial consumer connected at 11 kV with 40% load factor.

Source: Tariff orders across states

While the erosion of energy charge arbitrage with increase in fixed charges may appear to strengthen the case for aggressively increasing fixed charges, this view does not account for a countervailing risk: large fixed charge liabilities may incentivise consumers to reduce their contract demand through investments in solar and storage, accelerating a different form of migration.

Under existing fixed charge levels (FY2026), annual fixed charge payments for a 1 MW industrial consumer range from Rs. 24 lakh/MW/year in Odisha to Rs. 66 lakh/MW/year in Tamil Nadu. At these payment levels, a consumer redirecting their fixed charge liability towards solar investment would face a payback period of 4 to 9 years for solar alone<sup>4</sup>, and 10 to 17 years for solar with six hours of storage<sup>5</sup> (Table 7). These payback periods are generally unattractive, and the incentive to reduce contract demand remains limited. If fixed charges are increased to ensure they constitute at least 50% of total DISCOM revenue energy charges would fall from a current range of Rs. 4.8 to Rs. 9.4/unit to just Rs. 4.1 to Rs. 5.4/unit. While this would largely eliminate energy charge arbitrage as a motive for sales migration, it would create powerful new incentives for consumers to reduce contract demand.

At these revised fixed charge levels, the annual fixed charge liability per MW would range from Rs. 94 lakhs in Odisha to Rs. 1.88 crore in Maharashtra. A consumer

<sup>4</sup> Assuming solar capital investment requirement of Rs. 3.5 cr per MW and weighted average cost of capital at 10.5%.

<sup>5</sup> Assuming solar cost is Rs. 3.5 crore per MW and storage is available at Rs. 1.2 crore/MWh. Thus, for six hours of storage, the investment requirement for solar+storage would be about 10.7 crores per MW.

redirecting this liability towards solar investment would achieve payback in just 2 to 3 years<sup>6</sup> — and in 4 to 5 years for solar with four hours of storage<sup>7</sup>. These are highly attractive returns that would create strong economic pressure on consumers to reduce their contracted capacity with the DISCOM, shrinking the DISCOM revenue base. This is summarised in **Table-7**.

*Table 7: Increase in annual fixed charge payment and incentive to reduce contract demand using solar + storage*

| State       | Fixed charge (FC) (Rs. /kVA/month) |                                       | Annual fixed charge payments (Rs Lakh/MW/Year) |                                       | Energy charges (Rs/unit) |                                       | Payback period for per MW solar investment if fixed charge payment per MW considered as annual payback |                                       | Payback period for per MW solar+6 hours storage if fixed charge payment per MW as annual payment |                                       |
|-------------|------------------------------------|---------------------------------------|------------------------------------------------|---------------------------------------|--------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------|
|             | FY 26                              | Increased FC for 50% revenue recovery | FY 26                                          | Increased FC for 50% revenue recovery | FY 26                    | Increased FC for 50% revenue recovery | FY 26                                                                                                  | Increased FC for 50% revenue recovery | FY 26                                                                                            | Increased FC for 50% revenue recovery |
| Tamil Nadu  | 608                                | 1504                                  | 66                                             | 162                                   | 7.5                      | 4.7                                   | 4                                                                                                      | 2                                     | 8                                                                                                | 4                                     |
| Maharashtra | 600                                | 2238                                  | 50                                             | 188                                   | 9.4                      | 5.4                                   | 5                                                                                                      | 2                                     | 10                                                                                               | 4                                     |
| Bihar       | 550                                | 1807                                  | 50                                             | 163                                   | 8.0                      | 4.7                                   | 6                                                                                                      | 2                                     | 10                                                                                               | 4                                     |
| Telangana   | 500                                | 1627                                  | 48                                             | 156                                   | 7.7                      | 4.5                                   | 6                                                                                                      | 2                                     | 10                                                                                               | 4                                     |
| Gujarat     | 475                                | 1405                                  | 48                                             | 143                                   | 6.9                      | 4.1                                   | 6                                                                                                      | 2                                     | 10                                                                                               | 5                                     |

<sup>6</sup> Same as Footnote 4

<sup>7</sup> Same as Footnote 5.

|                |         |      |    |     |     |     |   |   |    |   |
|----------------|---------|------|----|-----|-----|-----|---|---|----|---|
| Andhra Pradesh | 47<br>5 | 1372 | 46 | 132 | 6.3 | 3.8 | 6 | 2 | 11 | 5 |
| Kerala         | 42<br>0 | 1410 | 38 | 127 | 6.3 | 3.7 | 7 | 3 | 12 | 5 |
| Madhya Pradesh | 39<br>9 | 1240 | 43 | 134 | 6.5 | 3.9 | 6 | 2 | 11 | 5 |
| Rajasthan      | 38<br>0 | 1438 | 34 | 129 | 6.5 | 3.7 | 7 | 3 | 13 | 5 |
| Chhattisgarh   | 37<br>5 | 1475 | 38 | 150 | 7.6 | 4.4 | 7 | 2 | 12 | 5 |
| Karnataka      | 34<br>5 | 1229 | 37 | 133 | 6.6 | 3.8 | 7 | 2 | 12 | 5 |
| Uttar Pradesh  | 30<br>0 | 1513 | 27 | 136 | 7.1 | 3.9 | 9 | 2 | 14 | 5 |
| Haryana        | 29<br>0 | 1146 | 35 | 137 | 7.0 | 4.0 | 7 | 2 | 13 | 5 |
| Punjab         | 28<br>0 | 1346 | 27 | 129 | 6.7 | 3.7 | 9 | 3 | 14 | 5 |
| Assam          | 28<br>0 | 1341 | 34 | 161 | 8.3 | 4.7 | 7 | 2 | 13 | 4 |
| Odisha         | 25<br>0 | 980  | 24 | 94  | 4.8 | 2.7 | 9 | 3 | 15 | 7 |

Notes:

1. Solar investment assumed at Rs. 3.5 crore/MW with a weighted average cost of capital of 10.5%.
2. Storage assumed at Rs. 1.2 crore/MWh; four hours of storage brings the total solar-plus-storage investment to approximately Rs. 8.3 crore/MW.
3. Annual fixed charge payments per MW are used as the proxy for annual debt payment in payback calculations.
4. Billing demand estimated using state-specific definitions, assuming maximum demand does not exceed contract demand.

**Therefore, large increase in fixed charge liabilities, may incentivise consumers to reduce their contract demand through investments in solar and storage, accelerating a different form of migration.**

## **5.Fixed charges for residential and other small consumers**

### **5.1 Higher fixed cost burden on smaller consumers**

Small consumers with relatively lower appliance use and motive loads will have lower consumption and also tend to contribute more to fixed cost. A **move to make fixed charge reflective of fixed cost will disproportionately impact such consumers as well. Small consumers in rural areas with poor supply, service and network**

**quality will have to continue to pay significant amounts as bills even if there are continued interruptions. This is inequitable.**

In Rajasthan a BPL consumer using 30 units per month pays 51% of their bill as fixed charge at an average rate of Rs. 9.75 per unit. However, a domestic consumer using 300 units currently only contributes 18% of their bill as fixed charge with average per unit bill at Rs. 7.29/unit.

Similarly, in Maharashtra, a consumer using 100 units contributes 18% of their bills to fixed charge but a 300 unit consumer only contributes 3%.

Such inequity in tariffs can be addressed to some extent with measures such as per kW based connection charge, but these considerations also need to be factored in by the regulatory commission while considering tariff design rather than just a blanket reflection of fixed cost in fixed charge. This challenge also persists between large and small low tension commercial and industrial consumers. Some states such as Madhya Pradesh, Tamil Nadu, Rajasthan, Andhra Pradesh and Gujarat have differentiated tariff for small and larger consumers and such measures should be adopted in other states.

## **5.2 Wide variation across States**

The fixed charge structure for residential consumers varies considerably across states. At one end of the spectrum, Telangana, Haryana, and Tamil Nadu levy no fixed charges on residential consumers. At the other, states such as Kerala, Assam, Punjab, Rajasthan, Karnataka, Madhya Pradesh, and Uttar Pradesh have a significant fixed charge component in their residential tariffs. Within states, further variation arises from urban-rural distinctions in tariff design, which affect the share of fixed charges in total revenue recovery.

Table 8 illustrates this variation through two representative residential consumer profiles: a low household using 150 units per month with a 3 kW sanctioned load, and another household using 300 units per month with a 5 kW sanctioned load.

*Table 8: Fixed charge contribution of representative residential consumers*

| State     | Domestic Fixed charge as Rs/kW/month | % of Revenue from fixed charges |                 |
|-----------|--------------------------------------|---------------------------------|-----------------|
|           |                                      | 150 units, 3 kW                 | 300 units, 5 kW |
| Karnataka | No                                   | 33%                             | 26%             |
| Rajasthan | No                                   | 15%                             | 18%             |
| Punjab    | Yes                                  | 21%                             | 12%             |
| Assam     | Yes                                  | 16%                             | 10%             |

|                |     |        |        |        |        |
|----------------|-----|--------|--------|--------|--------|
| Kerala         | No  | 14%    |        | 8%     |        |
| Odisha         | Yes | 9%     |        | 7%     |        |
| Chhattisgarh   | Yes | 9%     |        | 6%     |        |
| Maharashtra    | No  | 10%    |        | 3%     |        |
| Andhra Pradesh | Yes | 5%     |        | 2%     |        |
| Telangana      | No  | 2%     |        | 0%     |        |
| Haryana        | Yes | 0%     |        | 0%     |        |
| Tamil Nadu     | Yes | 0%     |        | 0%     |        |
| State          |     | Rural  | Urban  | Rural  | Urban  |
| Madhya Pradesh | No  | 9.30%  | 11.09% | 22.65% | 23.97% |
| Uttar Pradesh  | Yes | 24.31% | 21.14% | 18.66% | 15.92% |
| Bihar          | Yes | 9.73%  | 16.79% | 7.15%  | 11.84% |
| Gujarat        | Yes | 7.88%  | 7.40%  | 8.98%  | 8.53%  |

### **5.3 Switching to per kW/month-based levy of fixed charge for residential consumers**

In addition, as highlighted in Table 8, 6 of the 16 states continue to levy fixed charge for residential consumers on a per connection/month basis rather than a per kW/month basis. With smart metering, measuring consumer demand is administratively a less onerous process and therefore it is crucial that all states shift to a per kW-based system. This will increase fixed cost recovery.

### **5.4 Separate tariff design for net metering consumers towards cost-reflective tariffs**

Both of these consumer types in Table 8, may opt for net metering. In Maharashtra, Andhra Pradesh, Telangana and Haryana, there is negligible revenue recovery from fixed charge which means that even the cost of wheeling is not recovered from consumers under net metering. In such a case, increase in fixed charges is required in these states.

Further evolving separate tariff structures for net metering consumers based on size of consumer, metering infrastructure present is also required. In such a case, separate fixed, variable and time of day tariffs need to be considered for net metering consumers as well.

## 6. Other issues associated with increase in fixed charge

While a progressive increase in fixed charges is warranted in select states, increasing fixed charges to reflect fixed costs — without a broader overhaul of tariff design — risks undermining the effectiveness of other cost-reflective tariff instruments.

**Change in Time of Day (ToD) Tariff Design:** As noted earlier, increasing fixed charges to reflect fixed costs would necessitate a corresponding reduction in energy charges. Under Rule 8(A) of the Electricity (Rights of Consumers) Rules, the tariff during "Solar Hours" (as defined by the State Commission) must be at least **20% lower** than the normal tariff for that category. This encourages consumption when cheap solar power is abundant. Where states currently apply a 20% surcharge or rebate on energy charges, this translates to an incentive or penalty of Rs. 1 to Rs. 1.9 per unit. However, if the same percentage is applied to the reduced energy charges, the ToD tariff would range from Rs.0.5/unit to Rs. 1.1/unit.

*Table 9: Implications on ToD tariffs of fixed charges being reflective of fixed cost*

| State          | Fixed charge (FC) (Rs/kVA/month) |                                                 | Energy charge (EC) (Rs/unit) |                                               | ToD rebate/ surcharge with existing and revised charges |                             |                                                                         |
|----------------|----------------------------------|-------------------------------------------------|------------------------------|-----------------------------------------------|---------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------|
|                | Existing (FY26)                  | Increased FC for 50% revenue from fixed charges | Existing (FY26)              | Revised energy charge for 50% revenue from FC | 20% of existing EC (Rs/unit)                            | 20% of revised EC (Rs/unit) | ToD charges as % of revised EC if existing Rs/unit ToD charge is levied |
| Tamil Nadu     | 608                              | 1504                                            | 7.5                          | 4.7                                           | 1.5                                                     | 0.9                         | 32%                                                                     |
| Maharashtra    | 600                              | 2238                                            | 9.4                          | 5.4                                           | 1.9                                                     | 1.1                         | 35%                                                                     |
| Bihar          | 550                              | 1807                                            | 8.0                          | 4.7                                           | 1.6                                                     | 0.9                         | 34%                                                                     |
| Telangana      | 500                              | 1627                                            | 7.7                          | 4.5                                           | 1.5                                                     | 0.9                         | 34%                                                                     |
| Gujarat        | 475                              | 1405                                            | 6.9                          | 4.1                                           | 1.4                                                     | 0.8                         | 33%                                                                     |
| Andhra Pradesh | 475                              | 1372                                            | 6.3                          | 3.8                                           | 1.3                                                     | 0.8                         | 33%                                                                     |
| Kerala         | 420                              | 1410                                            | 6.3                          | 3.7                                           | 1.3                                                     | 0.7                         | 34%                                                                     |
| Madhya Pradesh | 399                              | 1240                                            | 6.5                          | 3.9                                           | 1.3                                                     | 0.8                         | 34%                                                                     |
| Rajasthan      | 380                              | 1438                                            | 6.5                          | 3.7                                           | 1.3                                                     | 0.7                         | 35%                                                                     |

|               |     |      |     |     |     |     |     |
|---------------|-----|------|-----|-----|-----|-----|-----|
| Chhattisgarh  | 375 | 1475 | 7.6 | 4.4 | 1.5 | 0.9 | 35% |
| Karnataka     | 345 | 1229 | 6.6 | 3.8 | 1.3 | 0.8 | 34% |
| Uttar Pradesh | 300 | 1513 | 7.1 | 3.9 | 1.4 | 0.8 | 36% |
| Haryana       | 290 | 1146 | 7.0 | 4.0 | 1.4 | 0.8 | 35% |
| Punjab        | 280 | 1346 | 6.7 | 3.7 | 1.3 | 0.7 | 36% |
| Assam         | 280 | 1341 | 8.3 | 4.7 | 1.7 | 0.9 | 36% |
| Odisha        | 250 | 980  | 4.8 | 2.7 | 1.0 | 0.5 | 35% |

To avoid this, time of day tariffs have to increase from 20% of energy charge to 30% to 36% of energy charge (Table 8). The larger point is that, increasing share of fixed charges would also imply that the ToD tariff framework would need to be revisited.

**Fuel and Power Purchase Adjustment Surcharges (FPPAS):** A similar concern applies to Fuel and Power Purchase Adjustment Surcharges (FPPAS), which are also levied on a per unit basis. Under Schedule II of Rule 14 of the Electricity (Amendment) Rules, 2022, a variation of 5% serves as the trigger for automatic pass-through. At current average tariff levels, this translates to Rs. 0.28 to Rs. 0.54 per unit — representing 5% to 6% of present energy charges (Table 10). However, when fixed charges are set at cost-reflective levels and energy charges decline correspondingly, the same absolute adjustment would represent 9% to 10% of the revised energy charge. Thus, FPPAS would be a major component in tariff and variation in FPPAS will be of concern of consumers making automatic passthrough of even relatively smaller amounts challenging.

*Table 10: Impact of increase in fixed charges to reflect fixed cost on FPPAS*

| State          | Energy charge (Rs/unit) |                                              | FPPAS at 5% of ABR |
|----------------|-------------------------|----------------------------------------------|--------------------|
|                | Existing (FY26)         | With increase in FC for 50% revenue recovery | FPPAS in Rs/unit   |
| Tamil Nadu     | 7.5                     | 4.7                                          | 0.47               |
| Maharashtra    | 9.4                     | 5.4                                          | 0.54               |
| Bihar          | 8.0                     | 4.7                                          | 0.47               |
| Telangana      | 7.7                     | 4.5                                          | 0.45               |
| Gujarat        | 6.9                     | 4.1                                          | 0.37               |
| Andhra Pradesh | 6.3                     | 3.8                                          | 0.38               |
| Kerala         | 6.3                     | 3.7                                          | 0.37               |
| Madhya Pradesh | 6.5                     | 3.9                                          | 0.39               |
| Rajasthan      | 6.5                     | 3.7                                          | 0.39               |
| Chhattisgarh   | 7.6                     | 4.4                                          | 0.44               |

|               |     |     |      |
|---------------|-----|-----|------|
| Karnataka     | 6.6 | 3.8 | 0.38 |
| Uttar Pradesh | 7.1 | 3.9 | 0.39 |
| Haryana       | 7.0 | 4.0 | 0.40 |
| Punjab        | 6.7 | 3.7 | 0.37 |
| Assam         | 8.3 | 4.7 | 0.47 |
| Odisha        | 4.8 | 2.7 | 0.28 |

With increase in fixed charge components, either the percentage of ToD rebates and penalties have to be recalibrated or fixed component of ToD tariffs (varying seasonally) and FPPAS can also be considered. Such changes in overall tariff design would be necessary with progressive increase in fixed charges.

## 7. International Experience

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Advanced economies like the USA, UK, and Europe predominantly use two-part retail electricity tariff structures—combining fixed (standing/customer) charges and variable (per-kWh) charges—for both households and industrial consumers, with some time-of-use variations.

### i. USA Tariff Structures

Residential tariffs typically include a fixed customer charge (covering metering and billing) plus volumetric energy charges, often with tiered or time-of-use rates by state utilities. Industrial tariffs add demand charges (peak kW), forming three-part structures to reflect grid capacity costs.

### ii. UK Tariff Structures

Households face standing charges (daily fixed fee, e.g., ~£180-200/year) plus unit rates (~24-28p/kWh), regulated by the energy price cap. Industrial users pay similar two-part tariffs with demand elements for larger loads.

### iii. Europe Tariff Structures

EU households generally use two-part tariffs with fixed connection fees and variable kWh rates, varying by country (e.g., higher fixed shares in Netherlands/Spain). Non-household/industrial tariffs include capacity/demand charges alongside fixed and energy components for efficiency.

Household fixed charges average 15-25% of bills (e.g., UK: ~20% from standing charges on medium use). Industrial fixed/demand shares reach 25-40%, higher in UK/EU than USA due to policy emphasis on cost recovery.

| Region | Households (Fixed %) | Industrial (Fixed %) |
|--------|----------------------|----------------------|
| USA    | 10-20%               | 20-35%               |
| UK     | 15-25%               | 25-40%               |
| Europe | 10-30%               | 25-45%               |

Fixed cost percentages in electricity tariffs are lower for residential (household) consumers (typically 10-25% of total bills) than for industrial consumers (25-45%) in advanced economies like the USA, UK, and Europe due to differences in infrastructure demands and policy priorities.

Households require minimal fixed infrastructure—basic metering and shared low-voltage lines—resulting in low absolute fixed charges, with most costs tied to variable kWh usage. Industries demand dedicated high-capacity assets (transformers, substations) for peak kW loads, recovered via substantial demand charges alongside fixed fees. Besides, Regulators limit household fixed shares to protect low-usage/low-income families from regressive bills, cross-subsidizing via industrial payments and volumetric residential rates. Industries, with predictable high volumes, face higher fixed % to incentivize peak management.

### **Recent trends**

Fixed charges are rising for households (e.g., US monthly fees up 20-50% since 2022; UK standing charges +10-15% yearly) to offset declining sales from efficiency/solar, stabilizing utility revenue without flipping the gap—industrial shares remain higher.

## **8.Summary and recommendations**

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A cost-reflective tariff should recover fixed costs through fixed or demand charges and variable costs through energy charges. Currently, fixed costs account for 38% to 56% of a DISCOM's total Annual Revenue Requirement (ARR) , while fixed charges currently contribute only 9% to 20% of their total revenue. If a utility recovers most fixed costs through energy sales instead, its revenue becomes volatile and can fall short in low-consumption months, while high-use consumers end up subsidising infrastructure costs for others. Recovering fixed costs through fixed charges is essential for financial viability of discoms and making tariffs more equitable, as each consumer pays for the grid capacity they require.

The impacts of increasing fixed charge will vary across and within tariff categories, as well as across states—making a uniform approach toward fixed charges that reflects fixed costs is both inequitable and likely untenable.

Most states have been progressively increasing fixed charges, and the contribution of fixed charges in total revenue has increased even alongside overall tariff increases. This progressive approach is commendable, as incremental increase fits within existing tariff design frameworks and avoids disruptive changes to the sector. However, making fixed charges fully reflective of fixed costs—while consistent with the principle of cost reflectivity—faces significant implementation challenges. Notwithstanding these concerns, there is a case for a calibrated, progressive increase in the share of fixed charges in select states.

## **Recommendations:**

### **1) Fixed Cost components:**

A uniform framework for fixed cost calculation should be adopted across states to ensure consistency, transparency, and cost reflectivity in tariff design. The fixed cost component should include power purchase cost, transmission charges, load despatch centre charges, and distribution costs comprising return on equity, interest on loan, depreciation, O&M expenses, and interest on working capital.

### **2) Target Fixed Cost Recovery Levels by Category**

The fixed charge component of the retail tariff can be progressively increased up to target level in **next 5 years (by 2030)**, so that the financial viability of the utility can be strengthened, ensuring more predictable and stable revenue streams. This needs to be done in a phased manner that takes cognizance of existing tariff design frameworks, regulatory decisions and improvements in metering infrastructure to provide clarity and certainty to consumers.

- **Domestic & Agriculture:** A target fixed cost recovery of **25%** by 2030, followed by higher target of **50%** by end of 2035.
- **Industry, Commercial, & Institutional:** A target fixed cost recovery of **100%**.

### **3) Standardize two-part tariff for all types of consumers**

In many States, fixed charge component of electricity for residential consumers is flat and does not depend on demand of the consumers. It is recommended that fixed charge should be standardized for different types of consumers as under:

- **LT Residential/Consumer:** Charges should be in **Rs/kW/month**.
- **HT Categories (Industry/Commercial/Institutional):** Charges should be in **Rs/kVA/month**

#### 4) Standardization of billing demand:

Billing demand (maximum demand in kVA/kW) is crucial in electricity tariffs, especially for commercial/industrial consumers, as it drives 25-50% of total bills by reflecting peak capacity usage rather than just energy consumption. However, as explained earlier, there is substantial difference in definition of billing demand across States. It is recommended that billing demand may be defined based on higher of the following:-

- i. Percentage of contract demand
- ii. Actual monthly peak demand
- iii. Percentage of actual billing demand in preceding 11 months (for industrial and commercial)

#### 5) KVAH based billing:

Replacing power factor (PF) incentives/penalties with kVA (apparent power) fixed/demand charges and kVAh (apparent energy) billing for consumers above 50 kW (or state-specific thresholds) simplifies tariffs while addressing reactive power costs more directly. This shift eliminates separate PF adjustments in kWh billing, as inefficiencies are inherently reflected in higher kVAh consumption.

#### 6) Separate tariff categories for net metering consumers:

As explained earlier, part of fixed cost incurred by distribution licensee is recovered through energy charges and net metering disrupts recovery of revenue, **as these consumers offsets their import from grid during non-solar hours** via export during solar hours at full retail rates. In such a case, increase in fixed charges is required in these states.

Defining separate tariff categories for net metering consumers—with differentiated fixed charges and time-of-day (ToD) tariffs—recognizes their unique grid interaction (injection vs. drawal) while aligning incentives with system needs. This is gaining traction in states like Maharashtra, Delhi, and Tamil Nadu for rooftop solar users. Accordingly, separate fixed, variable and time of day tariffs need to be considered for net metering consumers as well.

#### 7) Separate standby charges for open access/captive consumers

Open access/captive consumers (using IPP/solar CPPs) reduce DISCOM sales but retain grid connection for outages, maintenance, or peaks. Without standby charges:

- **Stranded Capacity:** DISCOMs procure/hold power (PPAs fixed costs ₹2-3/kWh) and infrastructure for rare usage.
- **Revenue Loss:** Cross-subsidy gap widens (C&I fund 40-60% residential losses); AT&C losses hit 20%+.

- **Unequal Service:** Normal consumers pay full fixed/demand; OA/captive get "free optionality."

Separate standby charges for open access/captive consumers recover DISCOM revenue lost when these user source 70-90% power externally but retain grid access for backups. Punjab and Maharashtra use three-tiered structures: fixed commitment (₹35-140/kVA-month), planned standby (normal rates), and unplanned (150-200% premium).

Accordingly, it is recommended that Separate standby charges for full open access and captive consumers may be considered such that it is three tiered based on service provided. It should consist of a fixed commitment charge per kW of contracted capacity per month with separate charges for planned and unplanned standby.

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