POWER PERSPECTIVES

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Lifeline electricity consumption in Uttar Pradesh: what does regulatory data say?

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Manabika Mandal [1], Prayas (Energy Group)[2]

The Uttar Pradesh Electricity Regulatory Commission, like many other state commissions, has a lifeline tariff category to support electricity consumption of low-income households. Unlike in other states, this concessional tariff is provided for much higher consumption – up to 100 units/month. While analysing regulatory data, to understand how newly electrified, poor, and rural life-line category consumers are benefitting from this tariff design, it is seen that DISCOMs are reporting very high consumption figures. This article highlights how in the absence of proper metering reading and billing services, provisional billing, on the basis of consumption norms, might explain the anomaly in the consumption data. In various states, such overstated consumption numbers for agricultural consumers have led to over-allocation of revenue subsidies and underestimation of system losses. This is a practice that needs to be curbed for other consumption categories. With recent metering efforts of most domestic consumers in UP, there need to be stringent regulatory scrutiny to hold DISCOMs accountable for the data they submit in statutory regulatory processes. Much have been said about pending arrears from domestic consumers in UP, but more focus is required to verify information that substantiate such claims.

Background

Over the years, the Uttar Pradesh Electricity Regulatory Commission (UPERC), has prescribed a tariff design to make electricity access affordable for low-income, Below Poverty Line (BPL), domestic consumers in the state. Uttar Pradesh (UP), among a few other states, has a separate lifeline tariff category, the average tariffs for which are significantly lower than the average cost of supply of the electricity distribution companies (DISCOMs). What makes UP's case unique is the inclusivity criterion for this category, which has much higher consumption limits than in other states. The inclusivity criteria have changed over the years in UP, and currently mention that a consumer with connected load of up to 1 kW and monthly consumption up to 100 kWh[3] (or units) qualifies for lifeline tariffs. Table 1 captures how the criteria have changed over time. Given the current criteria, a lifeline category consumer would have to pay half of what any other domestic consumer pays in urban areas in a month[4]. Thus, it can be seen that there is clear regulatory intent to support basic electricity consumption – a crucial measure, especially at a time when about eight million

[1] Author thanks their colleague, Ann Josey, for her valuable comments on the drafts.

[2] This article is part of an ongoing series called Power Perspectives which provides brief commentaries and analysis of important developments in the Indian power sector, in various states and at the national level. The portal with all the articles can be accessed here: https://prayaspune.org/peg/resources/power-perspective-portal.html. Comments and suggestions on the series are welcome, and can be addressed to powerperspectives@prayaspune.org

[3] 100 units of consumption involves usage of common appliances like a TV, refrigerator, mixer-grinder, and multiple light and fans.

[4] Considering consumption of 100 kWh/ month and connected load of 1 kW. Average bills considered without factoring in for subsidies provided by the state government.

consumers in the state have recently been connected to the grid by virtue of various electrification programs.

Given this large-scale investment in electrification, to ascertain retention of connections, it is timely that regulatory scrutiny is conducted to understand major barriers to electricity access. This can be tracked through studying consumption patterns, and metering and billing issues, among other factors. Such studies can be done with greater ease, since the DISCOMs have metered all their domestic consumers. Against this backdrop, we studied the data reported by Uttar Pradesh DISCOMs in their regulatory documents, to understand how lifeline consumption might have changed in the state or what might be major concerns. This article highlights such findings and their implications.

Table 1: Tariff design for lifeline consumption by UPERC across years

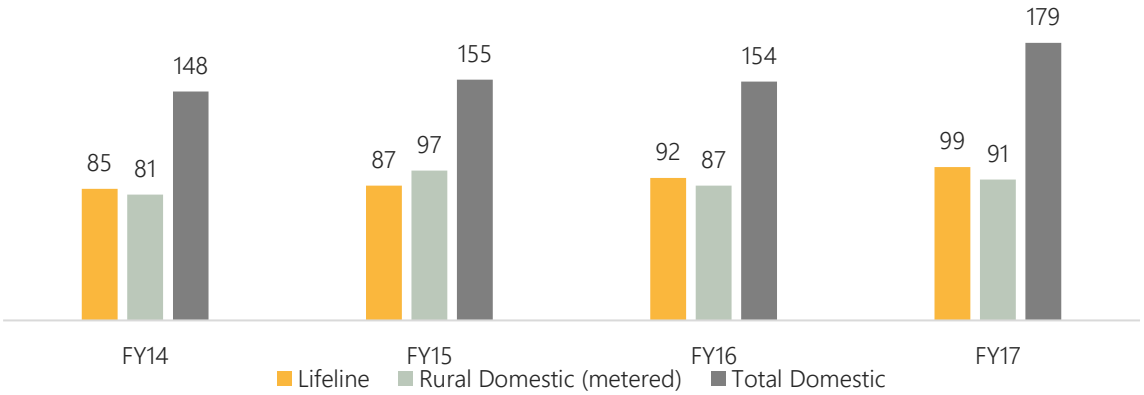
FY	Criteria	Monthly fixed charge	Monthly energy charge
FY18- FY21	First 100 units of consumption; connected load 1 kW	₹ 50/ KW	₹ 3/kWh
FY15-FY17	First 150 units of consumption; connected load 1 kW	₹ 50/ KW	0-50 kWh: ₹ 2/kWh 51-150 kWh: ₹ 3.9/kWh
FY10-FY14	First 150 units of consumption; connected load 1 kW	₹ 50/ KW	0-100 kWh: ₹ 1.9/kWh 101-150 kWh: ₹ 2.5/kWh

Source: Compiled by Prayas (Energy Group) from various UPERC tariff orders

Status of regulatory data reported by Uttar Pradesh DISCOMs

Disaggregated sub-category-wise consumption or revenue data is not reported consistently across years in regulatory tariff petitions or orders. Upon scrutiny of the information that is available, lifeline consumption seems substantially high in UP. This is illustrated in Figure 1, where it can be seen that between FY14 and FY17, lifeline consumption was about 90 units per month, and comparable to consumption by other rural metered domestic consumers. Surprisingly, the average monthly consumption by domestic consumers on an aggregate also seems to be significantly high at about 160 units per month.

Figure 1: Average monthly electricity consumption across domestic consumer categories in UP (kWh)

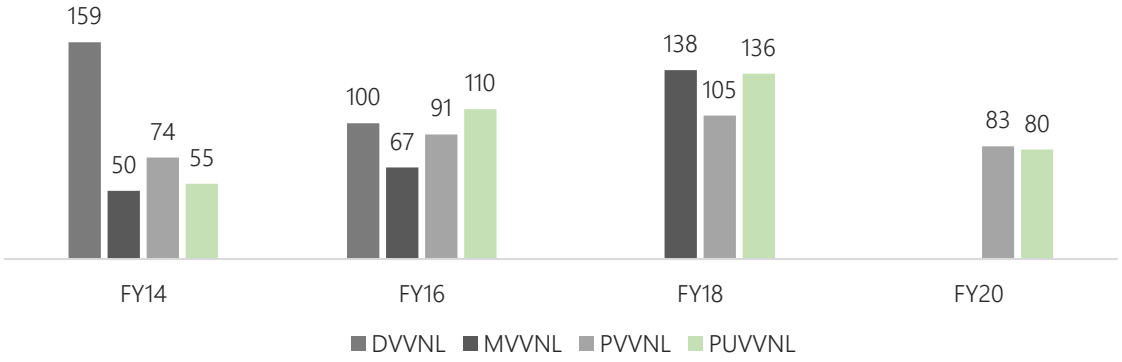


Source: Compiled by Prayas (Energy Group) from business plan petitions filed by UP DISCOMs in FY17

The average monthly lifeline consumption across DISCOMs vary significantly as well, as can be seen in Figure 2. In FY14, it was as high as 159 units in DVVNL's service area. PuVVNL's consumers seem to consume the least in the state, but over the years, this consumption has fluctuated. This fluctuation of consumption across years raises questions regarding appliance usage patterns, change in hours of supply, and demand response to tariff changes. It is unclear how any of these factors might have changed in DVVNL in two years, between FY14 and FY16, to bring down the average monthly consumption by 60 units. Similarly, one

can wonder as to what kind of changes happened in MVVNL between FY16 and FY18 to increase the average consumption from 67 units to 138 units. Added to this, when UP faces much more interruptions than most states[5], it is hard to imagine such high consumption.

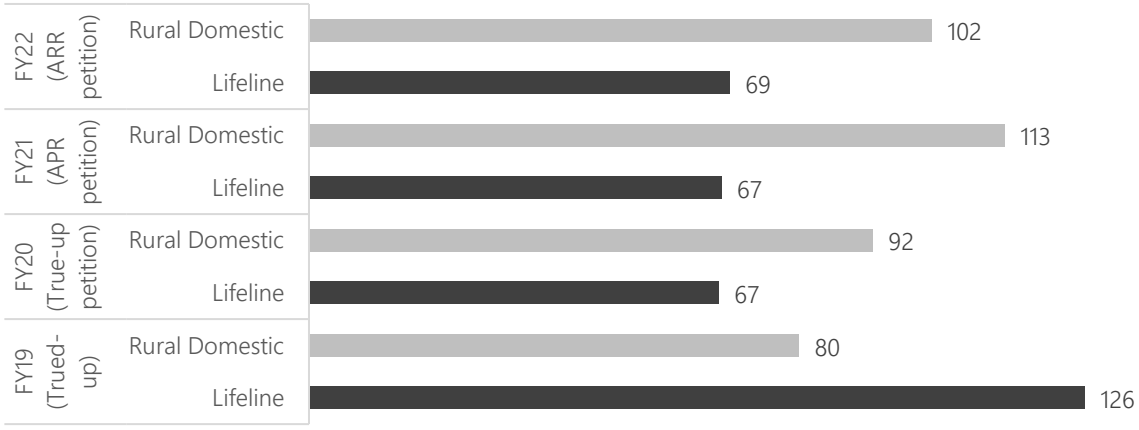
Figure 2: Average monthly lifeline consumption across DISCOMs in UP (kWh)



Source: Compiled by Prayas (Energy Group) from business plan petitions filed by UP DISCOMs in FY17 and tariff petitions filed in FY21. Note: DVVNL: Dakshin Vidyut Vitaran Nigam Limited (Agra), MVVNL: Madhya Vidyut Vitaran Nigam Limited (Lucknow), PVVNL: Paschim Vidyut Vitaran Nigam Limited (Meerut), PUVVNL: Purva Vidyut Vitaran Nigam Limited (Varanasi)

Similar peculiarities can be found in more recent data submitted by the DISCOMs as part of their ARR petitions for FY22, as has been captured in Figure 3. Trued-up data for FY19 shows very high monthly average consumption for lifeline category, at 126 units. This is about 60% greater than the consumption recorded for rural domestic consumers, whose consumption was relatively the same, as seen in Figure 1. The petitioned consumption figures for FY20-FY22 are half of what was recorded in FY19, at about 67-69 units per month.

Figure 3: Average monthly Lifeline and Rural Domestic consumption (kWh) in UP between FY19-FY22



Source: Compiled by Prayas (Energy Group) from true-up, Annual Performance Review (APR), and Aggregate Revenue Requirement (ARR) petitions filed by UP DISCOMs in FY22

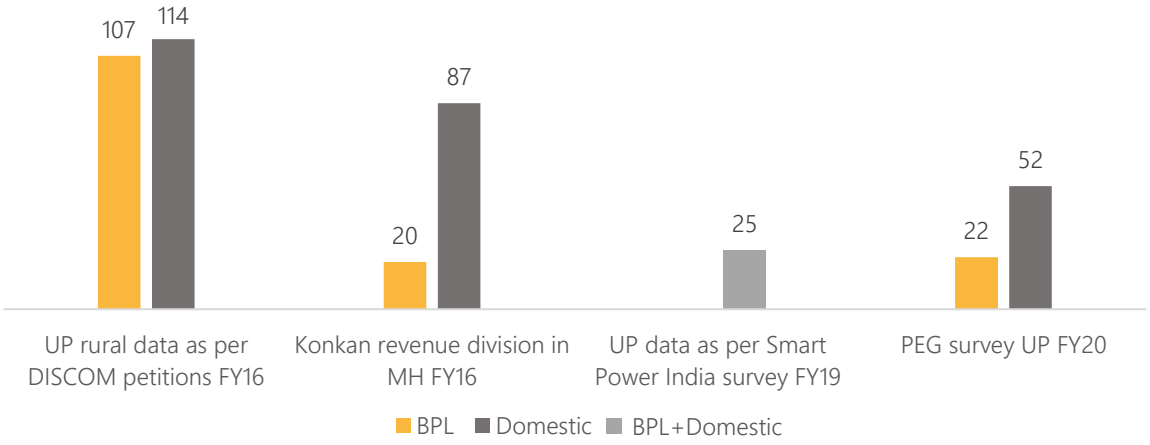
Further, upon comparing these average monthly consumption numbers with other sources, there seems to be a stark difference. This has been illustrated in Figure 4, where monthly average consumption of BPL

[5] UP faced maximum interruptions, a total of 57 in the month of September 2019 (https://www.watchyourpower.org/download_uploaded_reports.php?f=ESMI%20Report%20-%20Sptember%202019.pdf), among other states where the electricity supply monitors are deployed as part of Prayas (Energy Group)'s Electricity Supply Monitoring Initiative.

and domestic consumers is captured. The first comparison can be drawn between rural domestic consumption in UP in FY16 (as per DISCOMs' regulatory submissions) and domestic consumption in the Konkan revenue division in Maharashtra[6] – a region where household income levels are higher than most rural areas in the country. It can be seen that not only were the BPL consumption numbers starkly lesser in the Konkan area in FY16, but overall domestic consumption also seemed to be much lesser.

The second comparison can be done with independent surveys that have been conducted in UP. In case of the survey conducted by Smart Power India[7] in FY19, the average monthly household consumption was found to be as low as 25 units per month – almost 90 units lesser than what was reported to be the consumption of domestic consumers by UP DISCOMs three years ago in FY16. Further, according to a survey conducted by Prayas (Energy Group)[8] in FY20, average consumption by domestic consumers was 52 units, which is half of what was reported by the DISCOMS in FY16.

Figure 4: Monthly average consumption levels (kWh) of BPL and domestic consumers across various sources



Source: Compiled by Prayas (Energy Group) from various sources

So, what does this data mean?

Having compared the average consumption numbers to other sources, it is clear that statistics provided by DISCOMs are on the higher side. Could this be explained by inadequate metering, and irregular meter reading and bill generation? 41% of domestic consumers in UP were unmetered as recently as in FY14, which reduced to 31% in FY18, and in FY21 most of the DISCOMs have claimed to have metered all their residential consumers[9]. Given the large share of consumers who were unmetered in the recent past, and

[6] Konkan revenue division considered, comprising of service zones of Kalyan, Kokan (Ratnagiri) and excluding more urbanised areas in Mumbai, Thane, and Vashi.

[7] Survey based on 39 villages in Uttar Pradesh, can be found in report titled: Rural Electrification in India: Customer Behaviour and Demand (https://smartpowerindia.org/media/1230/report_rural-electrification-in-india_customer-behaviour-and-demand.pdf)

[8] Survey based on 1500 semi-urban and rural households in Uttar Pradesh, can be found in report titled: Energy Consumption Patterns in Indian Households: Insights from Uttar Pradesh and Maharashtra (https://www.prayaspune.org/peg/publications/item/445-energy-consumption-patterns-in-indian-households-insights-from-uttar-pradesh-and-maharashtra.html)

[9] Based on Prayas (Energy Group)'s analysis of information during the annual tariff approval process for FY21 (https://www.prayaspune.org/peg/publications/item/467-comments-and-suggestions-on-determination-of-arr-and-tariff-for-fy-21-annual-performance-review-for-fy-20-and-true-up-of-fy-19-for-uttar-pradesh-discoms.html).

the problem of irregular meter reading and bill generation, as has been indicated by various surveys, such as that by CEEW[10], it is likely that provisional average billing might have been the practice in the state.

Regulation 6.2 in the UPERC's Electricity Supply Code, 2005[11] states that consumers need to be provisionally billed on the basis of average consumption of three billing cycles prior to the last reading. Later on, the bills are to be adjusted as per the actual reading. Going by this, and if the readings for the past three months are also not available, then it is likely that consumers are perhaps billed on a normative basis of 144 units/ kW/ month, based on UPERC's order[12].

Such practices, of relying on consumption norms, and thus overs-stating consumption can lead to underestimation of losses, a practice that has been widely observed with unmetered agricultural consumers in various states. To add to it, this can lead to overestimation of government revenue subsidy as well. Also, if provisional bills are consistently generated based on such high norms, consumers might be discouraged from paying inflated bills, and might even resort to disconnecting their supply.

Further, domestic consumers are often attributed[13] to be the largest contributors to DISCOM arrears. While that is untrue and 54% of arrears are from government institutions[14], it is unclear as to how the regulator can hold the DISCOMs accountable for addressing the problem of arrears when they have been providing such unreliable data for years.

What should UPERC do?

Due to the practice of average billing, it is possible that the quantum of outstanding arrears from domestic consumers, that are recorded, might be much higher than actual consumption that has taken place.

Now that almost all domestic consumers have been metered in UP, relevant provisions in the UPERC's Electricity Supply Code, 2005[15], can be implemented more effectively. Some provisions include submission of self-assessed bills and trust bills[16] by consumers whose meters are functional. Both concepts are based on self- reporting one's consumption, if a bill is not received by the consumer. Further, the trust billing system takes advantage of online billing facilities. These measures could reduce instances of average billing. However, given that the problem of provisional billing has sustained even with the existence of these provisions for some time now, the UPERC should direct the DISCOMs to invest in consumer awareness.

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[10] https://www.ceew.in/publications/electricity-consumers-and-compliance

[11] https://www.uperc.org/App_File/SupplyCode2005-18-02-2005-zip99201151657PM.zip

[12] Normative consumption norms for unmetered consumer categories were issued by UPERC in 2016. While 144 units/kW/month is the consumption norm for areas having 18 hours of supply, 126 units/kW/month is the norm for areas with 14 hours of supply (https://www.uperc.org/App_File/OrderDated9-12-16fnl-pdf129201661325PM.pdf).

[13]https://energy.economictimes.indiatimes.com/news/power/over-1-crore-consumers-never-paid-their-power-bills-in-up/78819911

[14] As per UPPCL's "Statistics at a Glance-2018-19" 54% of arrears are pending from government institutions such as public lighting, public waterworks, govt. tube well (https://drive.google.com/file/d/1rAyGUlxotAxXl0Y8jZHokfP9u0MFCvPK/view)

[15] https://www.uperc.org/App_File/SupplyCode2005-18-02-2005-zip99201151657PM.zip

[16] Regulation 6.6 of UPERC's Electricity Supply Code, 2005 details provisions for self-assessed bills. Regulation 6.6 (ii), which details provisions for trust bills was introduced to the Supply Code in 2016 as part of the 7th amendment (https://www.uperc.org/App_File/SupplyCode7thAmendment-pdf118201745013PM.pdf).

Further, the recently notified Electricity (Rights of Consumers) Rules, 2020[17], by the Ministry of Power, emphasize on meters being mandatorily read once every billing cycle in both urban and rural areas. The Rules also encourage the option for consumers to send pictures of their meters, indicating the consumption units and date of meter reading, through their registered mobile or through e-mail. Added to this, the rules mention that provisional bills cannot be extended beyond two billing cycles at a stretch. The UPERC could issue directions to DISCOMs to implement these rules.

Going forward, UPERC can amend the Supply Code to say that all provisional bills generated must state in writing the reason for average billing. Along with this, it is high time to stop using consumption norms for unmetered consumption, that were set in 2016. Instead, provisional bills can be generated based on average consumption of the consumer in the last three months.

While universal meterisation of domestic consumers should not warrant the use of norms any more, to have a better understanding of what indeed has been the consumption of lifeline and domestic consumers, the UPERC should commission studies to get a clear picture of the status of metering and how well they meters are functioning. Not only will such exercises hold DISCOMs accountable for the capital expenditure they have undertaken, but also will give a true picture of status of the eight million newly electrified consumers, most of whom are lifeline consumers.

Large scale electrification processes, tariff subsidies, concessional tariff designs are all well intentioned mechanisms by governments and regulators to protect marginalized consumers of electricity. However, without checks and balances, such intent might not translate to actual benefits. State electricity regulators are well equipped to hold the DISCOMs accountable, and immediate effort is required to focus attention on lifeline consumers to ensure sustained access to electricity.

Contact us:

Prayas (Energy Group)
Unit III A & B, Devgiri,
Kothrud Industrial Area,
Joshi Railway Museum
Lane, Kothrud,
Pune 411 038 Maharashtra

020 – 2542 0720
energy@prayaspune.org
http://www.prayaspune.org/peg

[17] https://powermin.gov.in/sites/default/files/webform/notices/Consumers_Rules_2020.pdf