



POWER PERSPECTIVES



## State overview: Uttar Pradesh

*Part of Power Perspectives*

An initiative by Prayas (Energy Group), Pune

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## About Power Perspectives

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As part of the initiative, developments in focus states are tracked. In addition to articles, each focus state has a "State Overview" document which provides a brief background of the state and infographics with key statistics. The portal can be accessed here: <https://prayaspune.org/peg/resources/power-perspective-portal.html>

Comments and suggestions are welcome at [powerperspectives@prayaspune.org](mailto:powerperspectives@prayaspune.org)

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## 1. Background and context

The Uttar Pradesh (UP) electricity sector has been riddled with its distinct and complex challenges. It is a sector dominated by a large domestic consumer base, contributing to ~45% of electricity demand. In addition, a substantial part of this consumer base has been very recently electrified. While domestic consumers typically pay low tariffs, cross-subsidising commercial and industrial demand has been only 27% of total sales. Over the years, on an average, quarter of the distribution companies' (DISCOMs') revenues are expected to be catered through government subsidies<sup>1</sup>. The remaining costs are expected to be met through revenue from retail tariffs. UP DISCOMs have had persistent revenue gaps accounting for about 20% of the revenue requirement. Added to this narrow scope of revenue stream, the sector has consistently had high losses, with its present Aggregate Technical and Commercial (AT&C) loss being at 31%. With increasing demand from consumers who have been typically subsidised historically, and piling costs due to inefficiencies, the UP power sector requires keen attention and structural changes over and above bailouts to see a turnaround.

UP DISCOMs have had financial bailouts periodically<sup>2</sup>, the most recent being through the Ujwal Discom Assurance Yojana (UDAY) to curb losses. In spite of this, there is a persistent challenge of rising costs (present average cost of supply being above Rs. 6/kWh) and limited avenues of revenue recovery. The DISCOMs have to meet the commitment of providing reliable and affordable power<sup>3</sup> to its 30 million consumers, 30% of whom are recently electrified households. Rapid electrification in the past few years will possibly translate to increased domestic consumption in the next few years, which will need further tariff support. But the present financial distress makes investment in distribution networks challenging, especially in the absence of political commitment. As a consequence, quality of supply and service might get neglected if DISCOMs decide to forgo necessary capital expenditure as well as operation and maintenance expenses. It is likely that arrears will build up faster in the absence of quality supply of power, which will further affect DISCOM finances.

Setting aside structural issues, the electricity distribution sector has also been lacking accountability processes. For instance, the Uttar Pradesh Electricity Regulatory Commission (UPERC) did not conduct any true-up processes up until 2014. This too was done only after receiving directions from the Appellate Tribunal for Electricity (APTEL) in FY11<sup>4</sup>. As a result, there was a huge build-up of revenue gaps when true-ups were finally done for the first time.<sup>5</sup> Added to this, one of UPERC's regulatory dispensation has diluted accountability of revenue receipts of DISCOMs. Since UP DISCOMs have not had much cross-subsidising sales, the UPERC, has modified the tariff design such that subsidized categories (rural domestic and agriculture) do not receive cross-subsidy support. The difference between the cost of supply and the revenue from subsidy and tariff has since been deemed as an 'additional subsidy' to be recovered from the State Government. As the State Government has not committed to paying this amount, even with

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<sup>1</sup> As per true-up figures for FY18 as approved by UPERC, taking into consideration subsidy promised by GoUP and "additional subsidy" approved by UPERC. The concept of additional subsidy has been explained subsequently.

<sup>2</sup> This has been detailed in Section 6.

<sup>3</sup> The 24x7 Power For All programme was launched by Government of Uttar Pradesh with support from Government of India in 2017 with the objective to connect all unconnected households in a phased manner by 2019 and to ensure 24x7 quality, reliable and affordable power supply to all domestic, commercial and industrial consumers.

<sup>4</sup> The admittance order from UPERC can be accessed here: [http://uperc.org/App\\_File/AdmittanceOrder\\_True-up\\_Discoms-pdf2132013104642AM.pdf](http://uperc.org/App_File/AdmittanceOrder_True-up_Discoms-pdf2132013104642AM.pdf), UPERC true-up order can be accessed here: [http://www.uperc.org/App\\_File/True\\_Up\\_Order\\_PetNo809of2012\\_Issued\\_21052013-docx522201344418PM.docx](http://www.uperc.org/App_File/True_Up_Order_PetNo809of2012_Issued_21052013-docx522201344418PM.docx)

<sup>5</sup> This has been elaborated on in Section 6.

UDAY covering part of the outstanding additional subsidy, it has been exacerbating the losses of the DISCOMs.

Given these challenges, this note delves into key parameters that affect DISCOMs' financial health and supply and service quality, and their recent trends. This section is followed by Section 2 which gives an institutional overview of the sector. Section 3 investigates trends in power procurement planning, and focuses on power purchase costs, which form ~80% expenses of the DISCOMs. Section 4 explores growth trends in electricity demand, the extent of unmetered sale of power and tariff design. Since a large proportion of electricity sales are to domestic consumers and many new consumers have been recently electrified, Section 5 looks at the status of supply and service quality. After reviewing the major parameters determining the sector's functioning, Section 6 discusses the financial position of UP DISCOMs and the regulatory treatment of its strained finances. Since the Electricity Regulatory Commissions (ERC) were conceptualized with the intention of delinking the sector's operations and functions from undue political influence, it is important to trace their institutional capacity and functioning, which is captured in Section 7. The note ends with major observations about the UP electricity sector in Section 8.

## 2. Institutional overview

The Uttar Pradesh Electricity Regulatory Commission was formed under the U.P. Electricity Reforms Act, 1999. This was one of the first steps taken to reform the state sector. Following this, the Uttar Pradesh State Electricity Board (UPSEB) was unbundled in January 2000 through a transfer scheme. The unbundled companies so formed were:

- a. Uttar Pradesh Power Corporation Limited (UPPCL): was then responsible for transmission and distribution within the state
- b. Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL): responsible for thermal generation within the state
- c. Uttar Pradesh Jal Vidyut Nigam Limited (UPJVNL): responsible for hydro-electric generation within the state

Through a subsequent transfer scheme, assets, liabilities, and personnel were transferred from Kanpur Electricity Supply Authority (KESA), a part of UPSEB, to Kanpur Electricity Supply Company Limited (KESCO). Post enactment of the Electricity Act, 2003, UPPCL was further unbundled through yet another transfer scheme to form four new distribution companies (DISCOMs):

- a. Dakshinanchal Vidyut Vitran Nigam Limited (Agra DISCOM or DVVNL)
- b. Madhyanchal Vidyut Vitran Nigam Limited (Lucknow DISCOM or MVVNL)
- c. Paschimanchal Vidyut Vitran Nigam Limited (Meerut DISCOM or PVVNL)
- d. Purvanchal Vidyut Vitran Nigam Limited (Varanasi DISCOM or PuVVNL)

Along with this, UPPCL was assigned the task of bulk power purchase and transmission. But soon after, the role of transmission was shifted to Uttar Pradesh Power Transmission Corporation Limited (UPPTCL). However, it is interesting to note that transfer of assets and liabilities took place between UPPCL and UPPTCL as per the transfer scheme of 2010, with effect from April 2007. The four DISCOMs were also issued fresh distribution licenses in January 2010. UPPCL presently procures all power for the DISCOMs.<sup>6</sup> It is also the state-owned trading company.

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<sup>6</sup> [http://www.uperc.org/App\\_File/LicencesUPPCL\\_licence-pdf172011115243PM.pdf](http://www.uperc.org/App_File/LicencesUPPCL_licence-pdf172011115243PM.pdf)

Torrent Power was appointed as a distribution franchisee for the Agra circle (of DVVNL) in 2010 for operation and maintenance of wires and network and management of billing and collection, with the goal of bringing down AT&C losses.

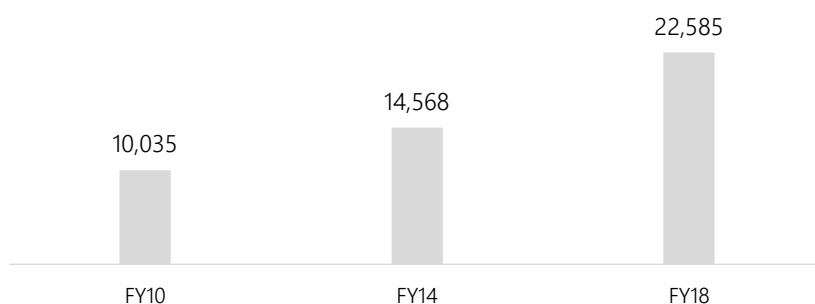
Noida Power Company Limited (NPCL) is a private DISCOM which distributes power in Greater Noida, in Uttar Pradesh. Its consumer base is mostly situated in industrial areas and urban settlements. NPCL obtained its distribution license in 1993. The company is a joint venture between private company RP-Sanjiv Goenka Group and Greater Noida Industrial Development Authority.<sup>7</sup>

### 3. Power procurement planning and capacity addition

#### 3.1. Power procurement capacity and mix

Uttar Pradesh was reeling under severe power shortages of about 22% of the energy required in FY10. With capacity addition, the shortage had fallen to 14% in FY14, and was at 1.5% in FY18.<sup>8</sup> Long-term generation capacity contracted by Uttar Pradesh DISCOMs increased by ~2.3 times between FY10 and FY18, growing at an average rate of 11% per annum. This is illustrated in Figure 3.1.

Figure 3.1: Contracted capacity by Uttar Pradesh DISCOMs over the years in megawatts



Source: Prayas (Energy Group) analysis based on tariff orders for FY10, FY14 and FY18

Power purchase grew from ~56,000 MUs in FY10 to ~84,000 MUs in FY14. Further it grew to ~1,23,000 MUs in FY18. The major source of fuel for power purchase in UP has been coal, with a share of about 70-80%. This is depicted in Figure 3.2. The second highest source of power procurement has been from hydro sources, with 11-14% share. It is interesting to note that UP procures private hydro power as well, which formed 18% of total hydro power purchase in FY18, with costs being ~Rs. 5/kWh. While around 4-7% of power procurement was gas-based in FY10 and FY14, the share shrunk in FY18, possibly due to shortage of gas availability. Purchase from nuclear sources tripled between FY10 and FY18 but overall, it has remained ~2% of total procurement. In Figure 3.2 source of fuel for power purchase from power exchanges, unscheduled interchange, and bilateral transactions have been considered as “markets”.

The UPERC regulations<sup>9</sup> to promote green energy through Renewable Purchase Obligation (RPO) were notified in 2010. While the RPO target for DISCOMs has been 5% and 1% from non-solar and solar sources<sup>10</sup> respectively since FY13, the overall achievement has consistently been lower. Power purchase

<sup>7</sup> PVVNL had appealed for a parallel license in the area but the same was not granted (<http://aptel.gov.in/judgements/6.04.2011appeal%20%207%20of%202010.pdf>)

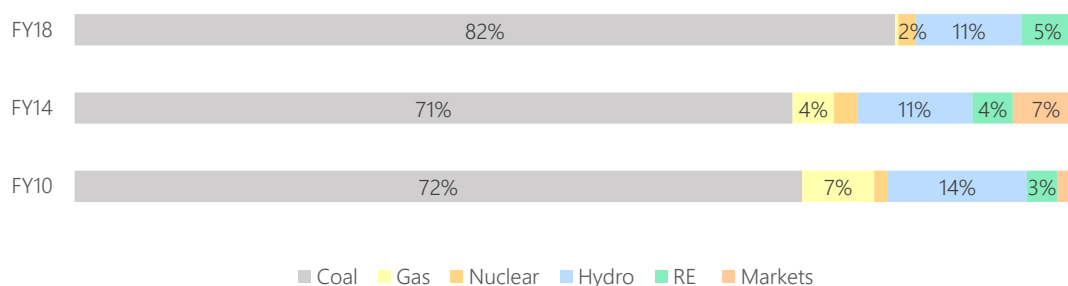
<sup>8</sup> As per Annexure II of CEA Load Generation Balance Reports of FY11, FY15, FY19 accessed from: <http://www.cea.nic.in/annualarchive.html>

<sup>9</sup> [http://uperc.org/App\\_File/NotifiedPromotionofGreenEnergythroughRPORegulations2010-rar21201134418AM.rar](http://uperc.org/App_File/NotifiedPromotionofGreenEnergythroughRPORegulations2010-rar21201134418AM.rar)

<sup>10</sup> The RPO targets do not consider consumption from hydro sources

from renewable sources (solar and non-solar) was around 4-5% in FY14 and FY18<sup>11</sup>. In a more recent order, UPERC has directed the DISCOMs to deposit money in an RPO Regulatory Fund equivalent to the monetary value of the RPO short-fall.<sup>12</sup> Of the renewable energy generating capacity that is installed in the state, majority of it is bagasse based<sup>13</sup>.

Figure 3.2: Power purchase mix by fuel source by Uttar Pradesh DISCOMs across years (% of total annual MU)

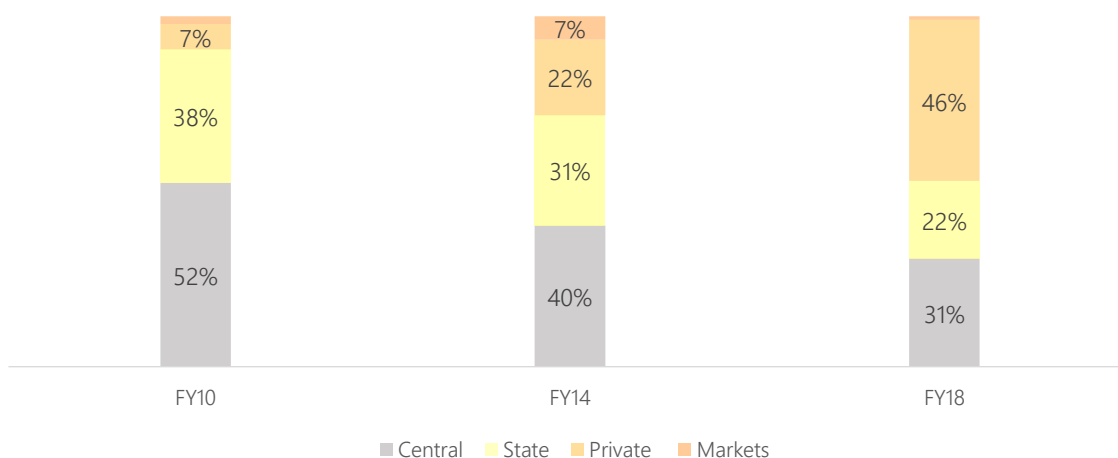


Source: Prayas (Energy Group) analysis based on true-up orders for FY10, FY14, and FY18

Power purchase mix has been shown ownership wise in Figure 3.3. The share of power purchased from central and state generating sources reduced from 90% in FY10 to 53% in FY18.

While absolute procurement from central and state sources grew annually by 4% between FY10 and FY18, purchase from private sources grew phenomenally, i.e. by thirteen times between the same period. Thus, even though power purchase from central and state sources has increased over the years, their share in total power purchase has fallen, mainly because the share from private sources has increased rapidly, resulting in growth of share from private sources from 7% in FY10 to 46% in FY18.

Figure 3.3: Power purchase mix by ownership by Uttar Pradesh DISCOMs across years (% of total annual MU)



Source: Prayas (Energy Group) analysis based on tariff orders for FY10, FY14, and FY18

<sup>11</sup> As per UPERC suo moto order from 25.04.2019: [http://www.uperc.org/App\\_File/OrderSuoMotoRPOTarget-pdf5312019103035PM.pdf](http://www.uperc.org/App_File/OrderSuoMotoRPOTarget-pdf5312019103035PM.pdf)

<sup>12</sup> [http://www.uperc.org/App\\_File/img05703-pdf12312019112958AM.pdf](http://www.uperc.org/App_File/img05703-pdf12312019112958AM.pdf)

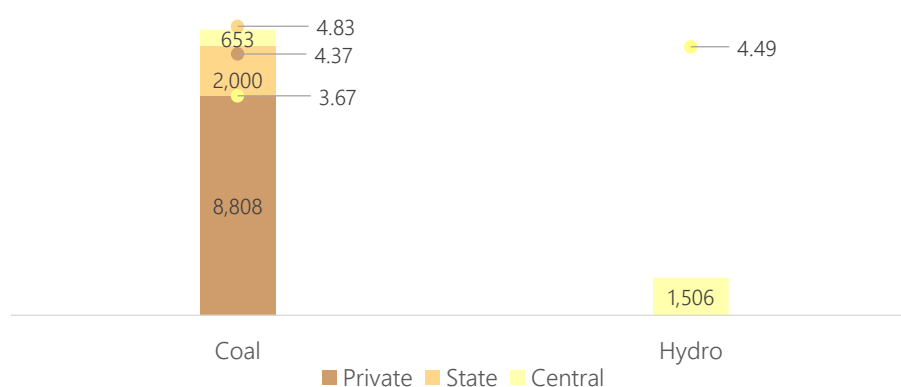
<sup>13</sup> <http://www.prayas-pune.org/peg/re-generation.html>

### 3.2. Cost of power procured and capacity added

The per unit average power procurement cost (APPC) of UP DISCOMs increased by 36% in eight years between FY10 and FY18. While truing up, UPERC approved an APPC of Rs. 3.05/kWh in FY10, and Rs. 4.15/kWh in FY18.<sup>14</sup>

Contracted capacity of UP DISCOMs increased by ~13,000 MW between FY10 and FY18, as can be seen in Figure 3.4. Of this, 88% of the capacity addition was coal based, ~80%, of which were privately owned capacity, with an average cost of Rs. 4.37/kWh in FY18. State owned capacity that was added during this period had the highest per unit cost in FY18.

Figure 3.4: Capacity addition and average power purchase cost in UP between FY10 & FY18



Source: Prayas (Energy Group) analysis based on tariff orders and petitions for FY10, FY14, and FY18

In FY18, 60% of the contracted capacity cost more than Rs. 4/kWh and 12% of the contracted capacity had variable costs higher than Rs. 3.5/kWh. Thus, these plants are increasingly becoming non-competitive as compared to mega-watt scale solar power plants, currently available at less than Rs. 4/kWh.

In fact, the DISCOMs have reported that they are witnessing surplus capacity at certain times of the year. Thus, high cost capacity is backed down or remains unutilised. And even though they are not scheduled, consumers continue to pay fixed costs for this unutilised capacity<sup>15</sup>. Moreover, the fixed cost payments made by consumers in FY20 have been estimated to be Rs. 4,797 Crore<sup>16</sup>. This is bound to grow in coming years with increased capacity addition and slower than anticipated demand growth.

In 2009, UPPCL, as per the State Energy Policy, had invited "Expressions of Interest" from independent power producers to set up power stations in the state to bridge the supply deficit. Subsequently, it signed eighteen Power Purchase Agreements (PPAs) with Independent Power Producers (IPPs). Between FY09 and FY13, about 12,000 MW were contracted through Memorandums of Understanding (MoUs), while competitive bidding was held for 3,300 MW.<sup>17</sup> While many of these projects got delayed and cancelled, those that are supplying power to UP DISCOMs presently are high cost plants. Reliance

<sup>14</sup> Trued-up APPC for FY10 and FY18 approved by UPERC can be found on the following links: [http://www.uperc.org/App\\_File/2\\_DVVNLSuo-motuOrderdated31-05-2013onARRforFY2013-14-docx531201382433PM-docx63201353110PM.docx](http://www.uperc.org/App_File/2_DVVNLSuo-motuOrderdated31-05-2013onARRforFY2013-14-docx531201382433PM-docx63201353110PM.docx) (pg. 154). ([http://www.uperc.org/App\\_File/DISCOMS-pdf93201972728PM.pdf](http://www.uperc.org/App_File/DISCOMS-pdf93201972728PM.pdf)) (pg. 187-188).

<sup>15</sup> This is because of the nature of the contracts signed between DISCOMs and power generators. The two-part payment (fixed costs and energy costs) system ensures that annual fixed cost payments are made by DISCOMs irrespective of how much power they actually purchase from the generators.

<sup>16</sup> [http://www.uperc.org/App\\_File/1478-pdf79201950015PM.pdf](http://www.uperc.org/App_File/1478-pdf79201950015PM.pdf)

<sup>17</sup> [https://cag.gov.in/sites/default/files/audit\\_report\\_files/Uttar\\_Pradesh\\_2\\_2014.pdf](https://cag.gov.in/sites/default/files/audit_report_files/Uttar_Pradesh_2_2014.pdf) (pg. 153)



Power's Rosa power project and Bajaj Hindustan's Lalitpur thermal power station are examples, whose per unit costs were around Rs. 5/kWh in FY18, 35% higher than the APPC for that year. Two projects were chosen on the basis of competitive bidding- the 1980 MW Bara Thermal Power Project and 1,320 MW Karchhana Power Project.<sup>18</sup> The three units of Phase I of the Bara Thermal Power Project were supposed to be commissioned by 2014, but they were finally commissioned in 2015, 2016, and 2017 respectively. Table 3.1 captures details of some high cost capacity that was contracted by UP DISCOMs between FY10 and FY18. It is interesting to note that it was ~30% more expensive to contract capacity from these sources as compared to coal capacity contracted from NTPC during the same period.

Table 3.1: Some high-cost capacity contracted by Uttar Pradesh DISCOMs between FY10 and FY18

Station	Fuel Source	Ownership	Contracted Capacity (MW)	Costs approved by UPERC in FY18		
				FC/unit (Rs. Lakh/MW/year)	VC/unit (Rs./kWh)	TC/unit (Rs./kWh)
Lalitpur Thermal Power Station	Coal	Private	1,980	110	2.97	5.01
Rosa Thermal Power project	Coal	Private	600	105	3.27	4.92
KSK Mahanadi	Coal	Private	1,000	99	2.31	4.38
Bara Thermal Power Station	Coal	Private	1,782	93	2.49	4.17
MB Power (Anuppur Thermal Power Project)	Coal	Private	361	186	1.44	4.10
Harduaganj Thermal Power Station Extension	Coal	State	500	110	3.82	5.79
Parichha Thermal Power Station Extension Stage II	Coal	State	500	101	3.53	5.34
Anpara- D Thermal Power Plant	Coal	State	1,000	129	1.87	4.10
Srinagar Hydro Electric Project	Hydro	Private	290	127	2.59	5.84
Tehri Hydro Power Project Stage-I	Hydro	Central	388	101	2.86	5.77
Bajaj Hindusthan	Bagasse	Private	450	32	4.18	6.52

Source: Prayas (Energy Group) analysis based on tariff orders and petitions for FY10, FY14 and FY18

### 3.3. Status of capacity addition

Uttar Pradesh has ~7,500 MW capacity to be added between FY19 to FY24. 65% of the capacity to be added are from state generating stations, using coal as primary fuel. Some of these stations are Harduaganj thermal power station extension stage II, Jawaharpur thermal project, Obra C, and Panki thermal power station extension. The rest of the capacity addition is from central sources, of which 20% is from hydro stations and the remaining from coal stations. Of the capacity that is expected to be

<sup>18</sup> The original project developer for both projects was M/s Jai Prakash Power Ventures Private Limited. Bara TPP is now owned by Renascent Power, a subsidiary of the Tata Power. Karchhana Power Project was taken over by UPRUVNL and has not been built yet.

commissioned by the end of 2019, the average cost is at Rs. 3.45/kWh. This information is summarised in Table 3.2.

Table 3.2: Capacity expected to come up and be contracted by UP DISCOMs

Source	Fuel	Ownership	Expected share of UP DISCOMs (MW)	Expected date of commercial operation <sup>19</sup>
Kemeng HEP	Hydro	Central	56	Nov-19
Meja(UPRVUNL & NTPC)	Coal	State	916	Mar-20
Tanda-II	Coal	Central	766	Jun-20
Harduaganj Extn. St. II	Coal	State	660	Jul-20
New Nabinagar U-1&2	Coal	Central (Joint Venture)	70	Aug-20
Tapovan Vishnugarh	Hydro	Central	102	Dec-20
Obra C	Coal	State	1,320	Apr-21
Jawaharpur	Coal	State	1,320	Apr-21
Ghatampur TPP	Coal	Central (Joint Venture)	1,275	May-21
Panki TPS Ext	Coal	State	660	Jan-22
Visnugarh Pipal Kothi	Hydro	Central	166	Dec-22
Subansiri Lower (NHPC)	Hydro	Central	182	Mar-24
Lata Tapovan HEP (NTPC)	Hydro	Central	34	Mar-24

Source: Prayas (Energy Group) analysis based on tariff orders and petitions and CEA documents

Capacity addition from renewable sources is estimated to be 2,600 MW between FY18 and FY20.<sup>20</sup> As per tariff petitions filed by UP DISCOMs for FY20, 1,420 MW of capacity is scheduled to be commissioned by May 2019. Majority of this capacity is from solar sources, followed by wind and bagasse. The UP State Solar Policy, 2017<sup>21</sup>, however has targets for achieving 8% of its consumption from solar energy as per the National Tariff Policy. To attain this, there is a target of 10,700 MW of solar capacity by 2022. Much of this target would be met by UP DISCOMs. The Solar Policy states that this will involve installation of utility scale grid connected solar power projects of 6,400 MW.

In response to the capacity addition plans of the UP DISCOMs, the UPERC has issued an order prohibiting the utilities from signing any more long-term power purchase agreements till December 2022.<sup>22</sup> The Commission has observed that sufficient capacity has been contracted from coal sources to meet the demand till FY27. Additionally, DISCOMs have been directed to procure renewable energy solely through competitive bidding routes to meet their renewable purchase obligations.<sup>23</sup>

<sup>19</sup> Source: [http://www.cea.nic.in/reports/monthly/broadstatus/2019/broad\\_status-08.pdf](http://www.cea.nic.in/reports/monthly/broadstatus/2019/broad_status-08.pdf)  
[http://www.cea.nic.in/reports/monthly/hydro/2019/hydro\\_execution\\_status-03.pdf](http://www.cea.nic.in/reports/monthly/hydro/2019/hydro_execution_status-03.pdf)

<sup>20</sup> As per Business plans of UP DISCOMs for FY18-FY20 (pg. 16) [https://upenergy.in/tariff/MVVNL2017-18/MVVNL\\_Business-Plan.pdf](https://upenergy.in/tariff/MVVNL2017-18/MVVNL_Business-Plan.pdf)

<sup>21</sup> [http://upneda.org.in/MediaGallery/Uttar\\_Pradesh\\_Solar\\_Energy\\_Policy-2017\\_English\\_0.pdf](http://upneda.org.in/MediaGallery/Uttar_Pradesh_Solar_Energy_Policy-2017_English_0.pdf)

<sup>22</sup> The order can be accessed here: [http://www.uperc.org/App\\_File/1478-pdf79201950015PM.pdf](http://www.uperc.org/App_File/1478-pdf79201950015PM.pdf)

<sup>23</sup> To read more about the UPERC order, please see: <https://prayaspune.org/peg/resources/power-perspective-portal/181-uperc-orders-discoms-to-stop-signing-new-long-term-ppas.html>

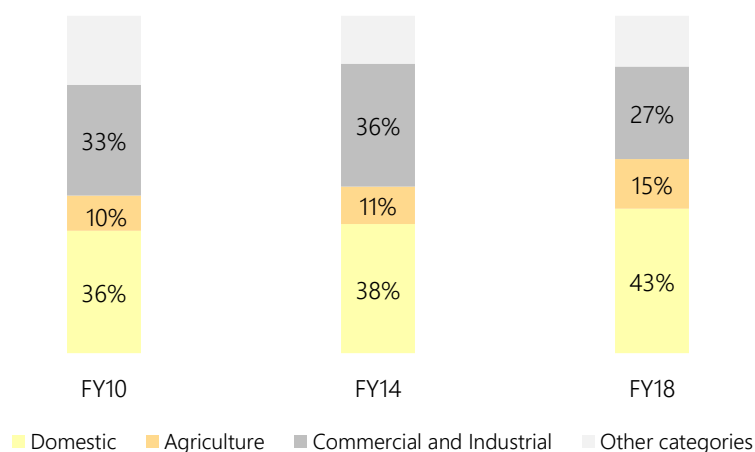
## 4. Demand and sources of revenue

### 4.1. Sales mix and growth rates in UP

The sales to consumers in UP doubled to 88,000 MU in 8 years between FY10 and FY18. A major part of this growth can be explained by intensive household electrification that took place under various schemes. Only 37% of households were electrified in FY11, half of which were in rural areas. Since then, about 15 million rural households were electrified till FY17. Further, in 2019, official records have stated that all willing houses have been provided with electricity connections.<sup>24</sup>

In UP, low tension domestic and agricultural consumers have always accounted for a considerable share of consumption, as can be seen in Figure 4.1<sup>25</sup>. The proportion of their consumption increased from 46% in FY10 to 58% in FY18. The tariffs for these two categories have been much lesser than the cost of supply, while the difference amount has been funded largely by state government subsidies. Between FY10 and FY18, domestic and agricultural consumption increased at 12%-15% per annum. With increase in electrification and supply duration, rural demand will further increase in the future.

Figure 4.1: Consumption mix in Uttar Pradesh between FY10 and FY18<sup>26</sup>



Source: Prayas (Energy Group) analysis based on tariff orders and petitions

Industrial and commercial consumers have had a relatively lower share in the consumption mix, as compared to domestic and agricultural consumers. While industrial and commercial consumption formed 33% of the total mix in FY10, it reduced to 27% in FY18. It should also be noted that the average yearly growth rate of consumption for these consumers has slowed down. Where the average annual growth rate for all commercial and industrial consumers was growing at 9% between FY10 and FY14, it slowed down to 7% between FY14 and FY18. In fact, high voltage sales to industrial consumers barely grew at about 2% annually between FY14 and FY18.

### 4.2. Unmetered consumers in UP

UP DISCOMs have significant number of unmetered consumers. In FY10, 44% of all consumers were unmetered, which reduced to 33% in FY18. While a substantial number of agricultural and domestic consumers have unmetered connections, it is curious to note that almost all public lamps, state tube

<sup>24</sup> Source: <https://saubhagya.gov.in/>

<sup>25</sup> Information based on sales approved by UPERC in tariff orders for respective years. Disaggregated tried-up information is not available for earlier years.

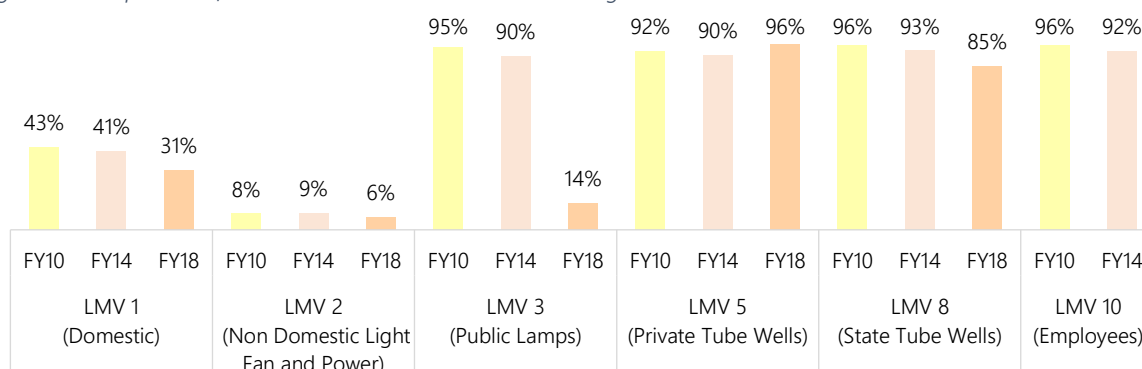
<sup>26</sup> Other categories include public lamps, public waterworks, state tube wells, temporary supply, railway traction and lift irrigation

wells, and DISCOM employees were unmetered in FY14, as can be seen in Figure 4.2. While the proportion of unmetered consumers of public lamps reduced in FY18, 85% of state tube wells are still unmetered<sup>27</sup>. Additionally, it is surprising to see that LMV 2, which caters to commercial demand, has continued to have unmetered consumers.

The UPERC approved consumption norms for unmetered consumption in 2016 for 18 hours of supply.<sup>28</sup> The norms specify 144 kWh/KW/month of consumption for domestic and commercial connections and 183 kWh/KW/month of consumption for agricultural consumers. These norms were approved with limited analysis of consumption patterns for these categories. It is also unclear if they are based on the metered consumption patterns for these categories. Despite extensive electrification in recent years, potential change in consumer usage patterns, agro-climatic shifts, changes in hours of supply with increased capacity addition, these norms have not been revised since.

It should be noted that as per the regulated tariffs, without accounting for the impact of subsidies, a domestic unmetered consumer pays less than a metered consumer on a per unit basis. This will not encourage unmetered consumers to adopt meterisation. While approving the norms, the Commission had noted that thorough studies need to be undertaken to revise these norms, but it seems like no study has been undertaken by the DISCOMs thus far. It is a crucial process as overestimation of consumption parameters can lead to under-estimation of losses, increased power purchase costs passed through to consumers, and thus higher consumer tariffs.

Figure 4.2: Proportion of unmetered consumers in various categories in Uttar Pradesh



Source: Prayas (Energy Group) analysis based on tariff petitions across years

### 4.3. Tariff design and subsidy provision in UP

The average overall tariff (without considering revenue subsidy) in FY18 was Rs. 5.04/kWh, while the average cost of supply was Rs. 6.10/kWh.<sup>29</sup> Considering that majority of sales growth has been of subsidised consumers, with low paying capacity, and that higher paying consumers' growth in demand has been tepid, meeting the increasing cost of supply will only become challenging.

UPERC's present tariff design has limited inter-category cross-subsidy. However, intra-category cross-subsidy does exist, especially between urban and rural consumers.<sup>30</sup> Previously, around FY10, categories such as LT commercial and industrial consumers were paying slightly lesser than cost of supply, but

<sup>27</sup> There is no information regarding metering status of departmental employees in latest regulatory petitions and orders.

<sup>28</sup> [http://www.uperc.org/app\\_file/orderdated9-12-16fnl-pdf129201661325pm.pdf](http://www.uperc.org/app_file/orderdated9-12-16fnl-pdf129201661325pm.pdf)

<sup>29</sup> This is as per information in true-up order by UPERC for all UP DISCOMs

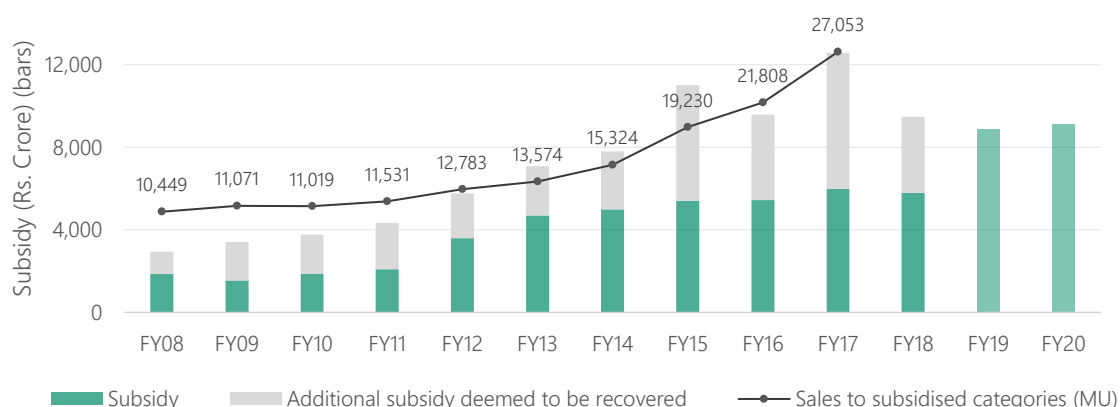
<sup>30</sup> UPERC Tariff order for FY 20, pg. 432 [http://www.uperc.org/App\\_File/DISCOMS-pdf93201972728PM.pdf](http://www.uperc.org/App_File/DISCOMS-pdf93201972728PM.pdf)

presently, all categories' tariffs are greater than the ACoS, with the exception of LT rural domestic and agricultural consumers. Even so, given the relative contribution in the sales mix, the cross-subsidy revenue accrued is limited to 9% of the total revenue requirement.

Rural domestic and agricultural consumers are always subsidised through government revenue subsidy. About 13% of DISCOMs' revenue requirements are met through these subsidies. Figure 4.3 shows the trend in subsidy from FY08 to FY20<sup>31</sup>. Even with increase in domestic and agricultural sales, while there was little growth in subsidy provision between FY14 to FY18, the provision was increased by more than 50% for the years FY19 and FY20.

While truing-up for FY08, UPERC was of the opinion that the cost of supply to the two subsidised categories should completely be met through tariffs and state government subsidy alone, thus leaving no room for cross-subsidy. The UPERC termed the difference in amount between ACoS and ABR (including subsidy promised and paid by the state government) as "additional subsidy requirement". However, till date, there has been no record of payment of additional subsidy to the DISCOMs from the state government. Since the additional subsidy (which is almost as high as the subsidy already being paid) cannot be recovered through consumer tariffs or cross-subsidy, it ends up as DISCOM losses. The cumulative outstanding additional subsidy from FY08 to FY18 would be ~Rs. 35,000 Crores and with carrying cost (assuming interest rate of 10.85%) ~Rs 53,000 Crores in FY18. Thus, in FY18, the outstanding additional subsidy with carrying cost would actually be equivalent to 76% of the entire year's revenue requirement.

Figure 4.3: Subsidy and additional subsidy in UP across the years



Source: Prayas (Energy Group) analysis based on true-up orders for FY08-FY18 and tariff orders for FY19 & FY20<sup>32</sup>

Tariffs for rural domestic and agriculture consumers have barely grown in the past, while the ACoS has increased rapidly. The tariff actually paid by these consumers in FY17 was only Rs 2.34/kWh and Rs 1.23/kWh respectively<sup>33</sup>. The consumption share on the other hand has been growing rapidly, so much so, that the DISCOMs will face a revenue deficit even with all other consumers paying more than their cost of supply. This indicates a heavy dependence on revenue subsidy in the future, or a tariff shock for rural and agricultural consumers.

<sup>31</sup> Subsidy information provided is trued-up data till FY18, while data for FY19 and FY20 is as approved by UPERC

<sup>32</sup> Information for FY19 & FY20 are as per approved figures by UPERC since true-up for these years have not taken place yet.

<sup>33</sup> This is as per "thru rates" calculated by UPERC

As of FY20, while tariffs payable by rural domestic and agricultural consumers have not grown enough, that payable by commercial and industrial consumers have grown significantly, with commercial tariffs being considerably higher than industrial tariffs. Both high-tension and low-tension (urban) commercial consumers pay Rs. 10/kWh, their tariffs growing at about 9% per annum.

Additionally, the fixed charges for industrial and commercial consumers are substantial at 21%-26% of their tariffs. With such high annual fixed charges, consumers with connected load greater than 1 MW can consider migrating to alternative sources of procuring power (from markets or by setting up their own renewable generation unit) and become open access consumers of the DISCOMs. Presently, migrating HT commercial and industrial consumers in UP have to only pay a wheeling charge of Rs. 1.23/kWh<sup>34</sup>, and no additional surcharge, cross-subsidy surcharge or grid support charges, standby charges or parallel operation charges. Captive consumption in UP has been significant at 17%-21% of total consumer sales over the years.<sup>35</sup> Thus, given the high average tariffs and fixed charge components, it might not be long before sales migration takes place. Migration of these high paying consumers would mean drastic reduction of revenue for the DISCOMs.

Given the present tariff design and likelihood of migration of cross-subsidising consumers, the DISCOMs are left with very less options to sustain their business. It essentially entails curtailing the growth in its costs, or significant increase in tariff for domestic consumers, or alternatively increasing the dependence on revenue subsidy.

## 5. Quality of supply and service & distribution business

### 5.1. Quality of supply and service (QoS) in UP

The quality of supply and service can play a significant role in determining consumers' trust in the DISCOMs. Higher levels of quality can lead to better revenue generation for the companies. Some indicators of quality of supply include hours of supply, frequency and duration of outages, and voltage fluctuations. Added to this, quality of service includes, accurate meter readings and bill generation on time. There are avenues of registering complaints if supply and service quality standards are not adhered to. Even though consumer awareness for such mechanisms are low, number of registered complaints can be a proxy indicator for supply and service quality. For instance, between FY18 and FY19, the Meerut DISCOM (PVVNL) registered a sharp increase in the number of complaints received from consumers. While complaints for interruption of supply went up four times, those related to metering<sup>36</sup> and billing went up shockingly by 7 times! Distribution Transformer (DT) failure rates have been quite high in UP as well, with failure rates even touching 40%.<sup>37</sup> This could be one of the main causes of long duration of outages.

Added to this, of all the electrical accidents that had been registered in UP in 2018, more than half had led to deaths. It should also be noted that the DISCOM added 11 lakh new domestic consumers (21% increase in consumer base) during this period.

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<sup>34</sup> As per rates decided in the FY20 Tariff Order by UPERC [http://www.uperc.org/App\\_File/DISCOMS-pdf93201972728PM.pdf](http://www.uperc.org/App_File/DISCOMS-pdf93201972728PM.pdf)

<sup>35</sup> As per CEA All India Electricity Statistics, General Review, 2011-2018.

<sup>36</sup> The UPPCL has recently come up with a smart meter rollout plan. With regular meters attracting so many complaints, there is definitely a need to look at the rollout plan more keenly. More has been discussed in <https://prayaspune.org/peg/resources/power-perspective-portal/194-regulatory-accountability-of-smart-meter-rollout-plan-in-uttar-pradesh.html>

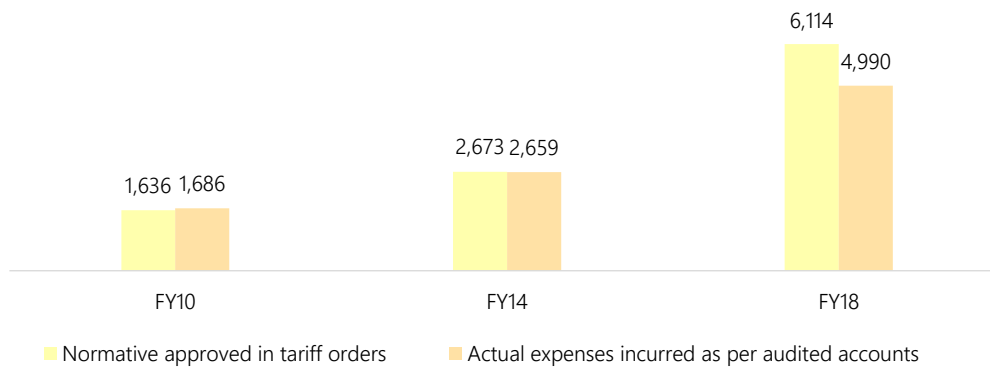
<sup>37</sup> As per submissions made by DISCOMs in their FY20 tariff petitions

## 5.2. Status of distribution costs in UP

One of the reasons for poor supply and service quality is low investment in maintenance of the wires network. Supply quality can be improved with timely investment in enhancement of distribution networks and on operation and maintenance (O&M) of the same. Distribution losses in UP have been significantly high at 21% in FY18. In fact, in certain districts such as Mainpuri and Etawah, losses in FY18 were as high as 40% and 47% respectively.

Figure 5.1 captures expenditure on O&M across years in UP. It can be seen that in previous years, actual expenses were close to what had been approved. But in FY18, there has been underutilization of allowed expenditure to support repair and maintenance, administrative costs and employee expenses. While cost optimization should be encouraged, it is possible that necessary expenditures to ensure good supply and service quality to the growing number of consumers in the state might get ignored if actual expenditure is lesser than that approved.

Figure 5.1: Net expenditure on O&M by UP DISCOMs across years (in Rs. Crore)



Source: Prayas (Energy Group) analysis based on true-up orders

Along with focus on O&M, to improve supply and service quality, there is a need to track the investment that goes into strengthening the present distribution network. But there is less clarity on the value of gross fixed assets of the DISCOMs in UP. Regulatory practices, till recently, have assumed 23% capitalisation of fixed assets every year, instead of evaluating the actual investment that has taken place to improve the distribution network. It was only while approving tariffs for FY20 that the regulator has taken note of this practice and has considered capitalisation actually done in the year. This is important to keep track of capital works projects in the state (most of which are through central government schemes such as RGGVY-11<sup>th</sup> plan, DDUGJY, RAPDRP, and IPDS), to estimate interest on long term loans and the value of gross fixed assets. Transparency and accountability in distribution network strengthening will not only ensure better QoS, but also financial accountability.

## 5.3. Franchisees- an alternate form of distribution management

For more efficient management of distribution networks and improving quality of service, especially in high loss urban areas, some aspects of distribution business were opened up to franchisees in 2009 in UP. Through competitive bidding on the basis of Input Based Distribution Franchisee System<sup>38</sup>, Torrent Power Limited was appointed as the distribution franchisee (DF) in Agra for a period of 20 years.

<sup>38</sup> Input Based Distribution Franchisee System means that through competitive bidding an "input rate" is arrived at, at which the DISCOM supplies power to the franchisee. Tariffs for consumers in the franchisee area remain the same as other consumers. Thus, lower the input rate, more is the profit for the franchisee.

The experience of appointing DFs has not been smooth sailing. Even after choosing the DFs through competitive bidding, the contracts were revised and terms of the contract were modified in 2010. Reportedly, incorrect data for crucial parameters had been considered in bidding documents<sup>39</sup>. For instance, the baseline AT&C losses reported for the bidding process were higher than the audited actuals. To add to this, the AT&C losses, which were 58.77% before takeover, increased to 61.44% in FY11. Presently, in FY19, Torrent power claims that AT&C losses are at 16.11% in Agra. However, only a third-party audit would paint a clear picture of the effectiveness of the DF model.

Similar to Agra, Torrent power was also selected as a DF in Kanpur around the same time in 2009. However, there was a severe delay in takeover. Additionally, it saw resistance from DISCOM employees as well. In 2015, citing improvement of the financial predicament of KESCO, the contract was mutually terminated.<sup>40</sup> In 2018, the UP government again issued tenders, inviting bids to introduce DFs in five cities and for privatization of metering and billing functions in seven districts. But soon after, this was withdrawn, given the pressure from employees' unions.<sup>41</sup>

## 6. DISCOMs' finances

### 6.1. Rising debts of UP DISCOMs and managing regulatory assets in UP

The level of outstanding debt of UP DISCOMs has been one of the highest in the country. For instance, in 2001, it was estimated to be Rs 5,170 Crore, which was the second highest in the country and consisted of 12% of debts (with interest) of all SEBs.<sup>42</sup> In 2012, when the scheme for Financial Restructuring of State Distribution Companies was announced, UP's outstanding debts had grown to Rs. 25,934 Crore.<sup>43</sup>

In 2015, UP DISCOMs' debts had further doubled to Rs. 53,211 Crore, while their losses were to the tune of Rs. 70,738 Crore. As part of the Ujjwal DISCOM Assurance Yojana (UDAY)<sup>44</sup>, 75% of the DISCOMs' debts were taken over in 2016. The debt that has been taken over under UDAY is being financed by bonds issued by the government of UP and it has been transferred through grants, loans, and equity.

As discussed previously, there has been a build-up of losses as revenues and subsidies have not risen commensurate to rapidly increasing costs. Short-term, high interest debt incurred to meet day to day expenses, poor recovery of revenue due to high AT&C losses and build-up of consumer arrears have also contributed to the growing losses and consequently debt.

It is doubtful if these bailout schemes have resulted in improvement of the operational performance and reduction in the dependence on short-term borrowing for the DISCOMs. As on September 2019, 40% of the dues payable to generators for the year are outstanding. It seems like the working capital borrowings are steep, given that receivables of the DISCOMs stand at 63% of their yearly turnover.<sup>45</sup>

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<sup>39</sup> [https://cag.gov.in/sites/default/files/audit\\_report\\_files/Uttar\\_Pradesh\\_PSU\\_1\\_2013.pdf](https://cag.gov.in/sites/default/files/audit_report_files/Uttar_Pradesh_PSU_1_2013.pdf)

<sup>40</sup> [https://www.business-standard.com/article/companies/torrent-powers-agreement-to-distribute-power-in-kanpur-cancelled-115062300810\\_1.html](https://www.business-standard.com/article/companies/torrent-powers-agreement-to-distribute-power-in-kanpur-cancelled-115062300810_1.html)

<sup>41</sup> <https://www.financialexpress.com/economy/pulling-the-plug-ups-power-distribution-reform-plan-scrapped/1124529/>

<sup>42</sup> As per Report of the Expert Group on Settlement of SEB Dues, 2001 (<http://planningcommission.nic.in/aboutus/speech/spemsa/new/msa36.pdf> pg. 36)

<sup>43</sup> As per the Financial Restructuring of State Distribution Companies Office Memorandum, 2012 ([https://powermin.nic.in/sites/default/files/uploads/Financial\\_restructuring\\_of\\_State\\_Distribution\\_Companies\\_discoms\\_Oct2012.pdf](https://powermin.nic.in/sites/default/files/uploads/Financial_restructuring_of_State_Distribution_Companies_discoms_Oct2012.pdf))

<sup>44</sup> Source: [https://www.uday.gov.in/MOU/MoU\\_Uttarpradesh.pdf](https://www.uday.gov.in/MOU/MoU_Uttarpradesh.pdf)

<sup>45</sup> AS per the UDAY health card for Uttar Pradesh: <https://www.uday.gov.in/health-card-state.php?id=8>



Accumulated liabilities can be attributed to various reasons. For instance, debt can be accrued if consumers do not pay bills on time. In FY18, total outstanding consumer arrears was Rs. 36,000 Crore<sup>46</sup>, which is half of DISCOMs' losses in 2015. Debts also exacerbate if the ERC defers regular recovery of costs which in turn leads to creation of regulatory assets.

Another contributor to the build-up of losses has been the lack of periodic review of revenue gaps through a true-up process. The delay in true-ups have resulted in a build-up of revenues approved to be recovered from consumers in the form of regulatory assets as well as the accrued and avoidable carrying/interest cost. In May 2013, the first true-up was conducted for FY01-FY08. Subsequently, true-ups for other years were caught-up with by FY20 as has been detailed in Table 6.1.

Table 6.1: Years when true-ups were conducted by UPERC

Financial Year/s	FY01-FY08	FY09-FY12	FY13	FY14	FY15	FY16-FY17	FY18	FY19-FY20
When did true-up happen?	FY14	FY15	FY16	FY17	FY18	FY19	FY20	To be done in FY21 and FY22

Source: Prayas (Energy Group) analysis based on true-up orders for FY08-FY18

The consequent cumulative revenue gap situation was addressed by UPERC during the approval of tariffs for FY20. The UPERC assessed the impact of the UDAY debt takeover on regulatory assets of the DISCOMs<sup>47</sup>, where the total cumulative revenue gap from FY01-FY16, at the end of FY16 was determined to be Rs 31,327 Crore. This was inclusive of carrying costs and regulatory surcharge<sup>48</sup>. The UPERC found that the debt takeover under UDAY would be sufficient to cover the outstanding regulatory assets till FY17. With this regulatory dispensation of adjusting cumulative revenue gaps with UDAY debt takeover, the true-up of FY18 resulted in the DISCOMs having a revenue surplus of ~Rs. 1,000 Crore. Added to this, the cumulative revenue gap translated to a surplus of ~Rs. 13,000 Crore. This has been illustrated in Figure 9, where disaggregated cost heads and revenue sources have also been mentioned.

It must be noted that the outstanding debt of utilities includes disallowed costs and borrowing to meet working capital needs, which does not directly reflect the regulated cumulative revenue gaps. Writing off approved revenue gaps to be recovered from consumers in lieu of the debt takeover under UDAY would simultaneously write off the receivables from consumers as well.<sup>49</sup> Thus, even with UDAY, there will be little improvement in the balance sheet of the DISCOMs.

As discussed in Section 4.3, UPERC has disallowed a part of revenue gaps every year since FY08 and treated it as additional subsidy to be paid by the government of UP. However, the government has not agreed to take this up. The amount of additional subsidy (without carrying costs) adds up to ~Rs. 35,000 Crore for FY08-FY18. The cumulative amount has not been considered or adjusted with the takeover

<sup>46</sup> As per UPPCL's "Statistics at a Glance- 2017-18"

<https://drive.google.com/file/d/1rAyGULxotAxXI0Y8jZHokfP9u0MFCvPK/view> (pg. 137), 51% of arrears are pending from government institutions such as public lighting, public waterworks, govt. tube wells. Interestingly 5% arrears are from commercial consumers.

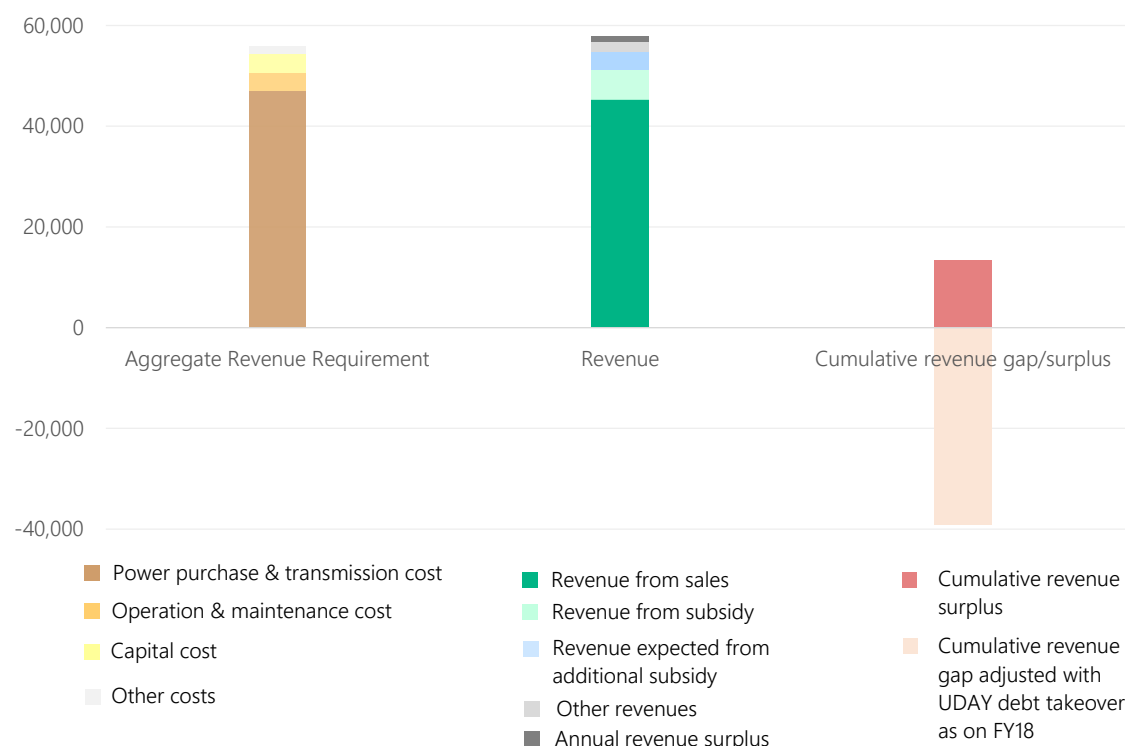
<sup>47</sup> As per UPERC's "Discussion paper on the impact of UDAY on regulatory assets of state DISCOMs", annexed in Tariff order for FY20, pg. 556. [http://www.uperc.org/App\\_File/DISCOMS-pdf93201972728PM.pdf](http://www.uperc.org/App_File/DISCOMS-pdf93201972728PM.pdf)

<sup>48</sup> Between FY15 and FY18, the UPERC had directed the DISCOMs to levy a Regulatory Surcharge on consumer tariffs to reduce revenue gaps. Regulatory surcharge had varied between 2.38% to 4.28% of all consumer tariffs other than that of domestic and agricultural consumers, whose surcharge quantum was lesser. The surcharge was even linked to performance parameters (no. of connections added, conversion of unmetered connections to metered ones & reduction in distribution losses) (DVVNL FY17 Tariff order, pg. 251)

<sup>49</sup> It must be noted that while 50% of the debt takeover was in the form of grants, the rest of the transfer to the DISCOMs was through loans and equity, which the DISCOMs have to still service.

under UDAY. This is comparable to half of the losses of the DISCOMs in 2015, which was Rs. 70,738 Crore. Thus, it seems like UP DISCOMs have a long way to go before past losses can truly be neutralized.

Figure 6.1: Financial position of UP DISCOMs as on FY18



Source: Prayas (Energy Group) analysis based on true-up order for FY18

## 7. UPERC functioning

### 7.1. Composition of UPERC and appointments

The Uttar Pradesh Electricity Regulatory Commission (UPERC) was established under the provisions of The Electricity Regulatory Commission Act 1998, and functioned under it until 14<sup>th</sup> January 2000, till the U.P. Electricity Reforms Act, 1999 came into force.<sup>50</sup>

The Commission has functioned with a chairperson and only one member since June 2016, thus not having full quorum. The second member was appointed only in December 2019.<sup>51</sup> Additionally, there are thirteen officers and 31 staff members to assist the Commission in its functioning.<sup>52</sup>

Since its inception, five chairpersons have held office at UPERC. Three of the chairpersons had held prominent positions such as the post of additional chief secretary<sup>53</sup> and principal secretary<sup>54</sup> in the government of Uttar Pradesh. While appointment of chairpersons from state government departments

<sup>50</sup> <http://bareactslive.com/ALL/UP131.HTM>

<sup>51</sup> V.K. Srivastava joined as the second member of the UPERC in December 2019, before which K.K. Sharma was a single member. Suresh Kumar Agarwal was a single member before him since June 2016, when Indu Bhushan Pandey retired. Please note that this particular analysis refers only to the position of a member of the UPERC, and not for the post of chairperson.

<sup>52</sup> <http://uperc.org/html.aspx?FormName=html/Officers.htm> , [http://uperc.org/UPERC\\_Employee\\_List.xlsx](http://uperc.org/UPERC_Employee_List.xlsx)

<sup>53</sup> R.P. Singh, the present UPERC chairperson <http://www.uperc.org/html.aspx?FormName=html/Members.htm>

<sup>54</sup> [https://rajasabha.gov.in/rajya\\_sabha/sg.aspx](https://rajasabha.gov.in/rajya_sabha/sg.aspx)

ensure close understanding and knowledge of the sector, it also raises questions about the independence of this arm's length quasi-judicial institution.

There have been two instances of delays in appointment, where the post of the chairperson has been vacant for 8 months.<sup>55</sup> Both such occurrences have taken place during appointment of the two latest chairpersons.

A total of ten members have been appointed till date. While most members have held posts in other utilities than in the state, two appointed members have been formerly associated with the regulated utility. Delays in appointment of members have been much more common than for chairpersons. There have been eight instances of delay in appointment of new members, even after the seats remained vacant for 3 months<sup>56</sup>. The average duration of such delay has been for 11 months.

## 7.2. UPERC regulatory processes and functioning

For the distribution business, in general, tariff orders have been issued annually. However, there have been some delays. For instance, FY08's tariff order was delayed for a year and issued along with FY09's tariff order in April 2008. Similarly, the tariff order for FY11 was issued along with tariff order for FY12 in March 2012. Other than this, the tariff order for FY19 was issued in January 2019, almost at the end of the financial year. Timely issuance of tariff orders along with regular tariff revisions can ensure, prompt payment for incurred costs, greater financial accountability and health of DISCOMs.

For the state-owned generating stations, ARR for all stations was approved as per MYT regulations for FY15-FY19 in 2016.<sup>57</sup> Along with this, true-ups were also conducted for FY12-FY14. ARR for the state-owned transmission company, UPPTCL, has been approved annually in the past. However, in 2017, an MYT order was passed by the UPERC for FY18-FY20. But a separate order was issued for FY19-FY20 in 2018 subsequently.<sup>58</sup> Section 3.4 has highlighted issues with power purchase planning with significant addition of high cost capacity between FY09 and FY13. UPERC as the concerned authority that approves power purchases could have taken more proactive steps to reduce gross inefficiencies. With such measures, perhaps UP DISCOMs could have avoided build-up of such high regulatory assets.

Public hearings for annual revision of DISCOM tariffs and costs are held at all DISCOMs' headquarters. This is a good practice since Uttar Pradesh is geographically a big state, and holding public hearings at multiple locations ensure greater chance of public participation. For the transmission and generation businesses, hearings are generally held at only one location.<sup>59</sup>

Historically, true-ups have not been regular. The first true-up was conducted for FY01-FY08 in May 2013. In October 2014, true-ups were conducted for FY09-FY12. As a result, as discussed in Section 6, there was a significant build-up of revenue gaps, which could have been averted if UPERC had been strict about annual true-ups. Since then, true-ups for the back-log years have taken place and in 2019, true-ups for both FY16 and FY18 were conducted. Even then, true-up orders do not provide details on crucial performance and cost parameters such as category-wise revenue and subsidy receipt or source-wise

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<sup>55</sup> Rajesh Awasthi was removed in October 2012, and Desh Deepak Varma assumed office late September 2013. Subsequently, Desh Deepak Verma vacated office in August 2017, while R.P. Singh assumed office in July 2018.

<sup>56</sup> The assumed vacancy has been that of 3 months because as per section 78 (6) of the Electricity Act, 2003, a Selection Committee must finalise the selection of a Chairperson or Member within 3 months from the date of notification of vacancy.

<sup>57</sup> [http://uperc.org/App\\_File/UNLAdmittanceOrder7-1-16-pdf18201644758PM.pdf](http://uperc.org/App_File/UNLAdmittanceOrder7-1-16-pdf18201644758PM.pdf)

<sup>58</sup> <https://upenergy.in/upptcl/en/article/arr-tariff-order>

<sup>59</sup> [http://www.uperc.org/App\\_File/UPPTCLTARIFFORDERFY2019-2027-AUGUST2019-pdf827201963241PM.pdf](http://www.uperc.org/App_File/UPPTCLTARIFFORDERFY2019-2027-AUGUST2019-pdf827201963241PM.pdf) (pg.19)

power purchase quantum and cost, which will help ensure accountability of DISCOMs and increase legitimacy of the regulatory scrutiny.

SERCs are empowered by Section 129 of the Electricity Act, 2003 to issue directions to DISCOMs. The UPERC issues directives along with annual tariff orders. The directives are presented in tabular formats and information is provided on the status of directives of the past two financial years. The tables mention the directive, the time period allotted for compliance with the directive, the status of such directive, and fresh directives regarding the same. This is a good practice which more SERCs can adopt. Directives have been issued on topics such as status of metering of unmetered consumers, metering status of departmental employees, provision of information regarding sub-category-wise billing determinants, reporting of arrears, clarity on capital expenditure and capitalisation plans, voltage level studies for cost of supply, etc.<sup>60</sup> However, in spite of directives repeatedly being issued, it can be seen that most reports or data that have been sought by the UPERC, have not been submitted by the DISCOMs.

Issuing directions to the DISCOM is a powerful tool in the hands of the SERC to ensure compliance and to increase accountability. Even though UPERC has issued directives in a systematic manner, there has been little compliance. The Electricity Act (under sections 142 or 146) gives the SERCs power to penalize DISCOMs for non-compliance of directives. Thus, if UPERC takes stricter measures, it is possible that there will be greater compliance.

## 8. Observations

Presently, the most pressing challenge in the UP electricity sector is to ensure optimisation of cost of supply so that quality, reliable and affordable power can be supplied to all, especially the 8 million beneficiaries of the recent large scale electrification efforts.

The sector has been experiencing several inefficiencies entailing high AT&C losses, already signed expensive PPAs, revenue losses in the form of additional subsidy, untimely tariff revisions and true-up processes, which cannot be taken care of just with bailouts from the government.

Debt takeovers will have to be coupled with prudent power purchase in the future, timely true-ups, tariff revisions, periodic third-party energy accounting measures, investments for loss reduction and accountability for any more deemed "additional subsidy payments". The electricity sector is seeing rapid transitions, influenced by technological, environmental and policy changes. It is crucial that during such a time the UP electricity sector pays attention to and addresses past issues in order to prepare for newer challenges that are yet to come.

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<sup>60</sup> Directives in FY20 Tariff order (pg. 455)