

UDAY Power Debt in Retrospect and Prospects: Analyzing the Efficiency Parameters

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Abstract

The Government of India launched the Ujwal DISCOM Assurance Yojana (UDAY), in November 2015, with an objective of “Power for All”. Under the UDAY scheme, selected States agreed to convert 75 per cent of the DISCOM’s (State Power Distribution Companies) power debt into State government non-SLR bonds, priced at not more than 75 basis points above the prevailing cut-off yield rate of government security of 10-year maturity. At aggregate level, so far, around 86 per cent of UDAY bonds have been issued - Rs. 2.32 lakh crores out of Rs. 2.69 lakh crores - across all UDAY States/UTs. Our estimates reveal that the financial and operational efficiency parameters envisaged in UDAY tripartite MoUs – between DISCOMs, the State Governments and the Ministry of Power, Government of India – have not been met by many States. Using UDAY portal data, we find that the average AT&C (Aggregate Technical and Commercial) losses that should have been 15% for all the participating states by 2018-19, presently, on average, stand at 25.41%. Yet another financial indicator, ACS-ARR gap (the gap between Average Cost and Average Revenue) has also widened for many UDAY participating states. The power tariff revisions have also not been implemented in the States -due to political economy reasons - and the operational parameters in our analysis indicate widening inefficiencies across States in power infrastructure.

Key words: Power infrastructure, Power Debt, Bonds, Financial efficiency

JEL Classification codes: H00, I3, J16

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1. Introduction

The Government of India launched the Ujwal DISCOM Assurance Yojana (UDAY), in November 2015, with an objective of “Power for All”. The states have, since then, been joining this scheme at varied times, and so far, 27 states and 5 Union Territories (UTs) are part of this scheme (except Odisha, West Bengal, Chandigarh and Delhi). This ambitious project aims at improving the health of state power DISCOMs (distribution companies) - which had been incurring losses in the past - by improving their “financial” and “operational” efficiency parameters.

Since the inception of the scheme, out of the participating states, 8 States (Uttar Pradesh, Rajasthan, Chhattisgarh, Punjab, Jammu & Kashmir, Bihar, Jharkhand and Haryana) borrowed under UDAY in 2015-16 while in 2016-17, 12 States (Uttar Pradesh, Maharashtra, Punjab, Rajasthan, Bihar, Jammu & Kashmir, Andhra Pradesh, Tamil Nadu, Himachal Pradesh, Telangana, Madhya Pradesh and Meghalaya) borrowed under UDAY. The remaining states/UTs (Gujarat, Goa, Manipur, Tripura, Uttarakhand, Puducherry and Kerala, Arunachal Pradesh, Karnataka, Mizoram, Nagaland and Sikkim, Nagaland, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Lakshadweep Islands & Daman & Diu) have joined UDAY for achieving operational efficiency by envisaging reform measures under the scheme.

In this paper, we analyse the state/ UT-wise progress of DISCOMs focusing on the financial and operational efficiency parameters after the implementation of the UDAY scheme. There are four financial parameters and ten operational efficiency parameters envisaged in UDAY MoUs to be monitored for time-bound improvement. We examine both aggregate and State/UT-wise performance of DISCOMs under the UDAY scheme on a quarterly basis for all the fourteen parameters.

2. Data: Sources and Issues

The UDAY portal is a national dashboard providing information on aggregate as well as state/UT level performance on all the fourteen efficiency parameters. The dashboard for each state provides state health card and also the Memorandum of Understanding (MoU) signed with Government of India. However, since the states and UTs have been joining the scheme on varied timelines, data has not been uniform. Now that 27 states and 5 UTs have joined the scheme, the data is not updated on all parameters. Sikkim, the 22nd state¹ to join UDAY provided data

1) Press Information Bureau, Government of India, Ministry of Power Sikkim becomes 22nd State to join UDAY, February 23, 2017. Please see link:
<http://pib.nic.in/newsite/PrintRelease.aspx?relid=158654>

only on 2 parameters while states/UTs like Nagaland, Andaman & Nicobar Islands, Dadra & Nagar Haveli & Daman & Diu which had joined the scheme for operational improvements on 20th November, 2017, have yet not updated their health card on any of the parameters² (as of May 2018). Lakshadweep joined the scheme for operational improvement on 28th February, 2018.³ West Bengal and Odisha have not joined the scheme along with Chandigarh and Delhi. Although the dashboard doesn't provide us an aggregate picture but with the present information, one can assess the general trend in performance post the introduction of UDAY for the reporting states.

3. Financial Performance of States/UTs under UDAY

This section analyses the UDAY financial performance parameters across States and UTs of India. The financial parameters analyzed in this section are the progress in the issuance of UDAY bonds, the reduction in aggregate technical and commercial losses, the reduction in the gap between average cost of supply (ACS) per unit of power and per unit average revenue realized (ARR) and tariff revisions by DISCOMs post UDAY.

3.1 Issuance of UDAY Bonds

Under the UDAY scheme, States agreed to convert 75 per cent of the DISCOM debt into State government non-SLR bonds. These UDAY bonds were priced at not more than 75 basis points above the prevailing cut-off yield rate of government security of 10 year maturity. In aggregate level, so far, around 86 per cent of UDAY bonds have been issued (Rs. 2.32 lakh crores out of Rs. 2.69 Lakh crores) across all UDAY States/UTs (Figure 1). Five States, namely Jammu & Kashmir, Bihar, Chhattisgarh, Madhya Pradesh and Jharkhand issued 100 per cent of the bonds to the DISCOMs as mandated in the UDAY scheme. Seven States (Maharashtra, Telangana, Himachal Pradesh, Haryana, Meghalaya, Tamil Nadu and Punjab) have issued 75 per cent of the total bonds so far. As per the data accessed in May, 2018, we found that out of 27 States, 16 states continue to issue bonds as per their targets. However, there is no information on issuance of bonds for Assam. Also, there is no debt takeover of DISCOMs by eleven States/UTs, namely, Gujarat, Karnataka, Puducherry, Tripura, Uttarakhand, Goa, Manipur, Kerala, Arunachal Pradesh, Mizoram, Nagaland, Sikkim, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Lakshadweep Islands & Daman & Diu. As per their MoUs, this scheme is targeted only to achieve further operational efficiency of DISCOMs in these States/UTs. It is to

2) Press Information Bureau, Government of India, Ministry of Power, Nagaland, Andaman & Nicobar Islands, and Dadra & NagarHaveli & Daman & Diu sign MoU with Government of India under UDAY Scheme, November 20, 2017.

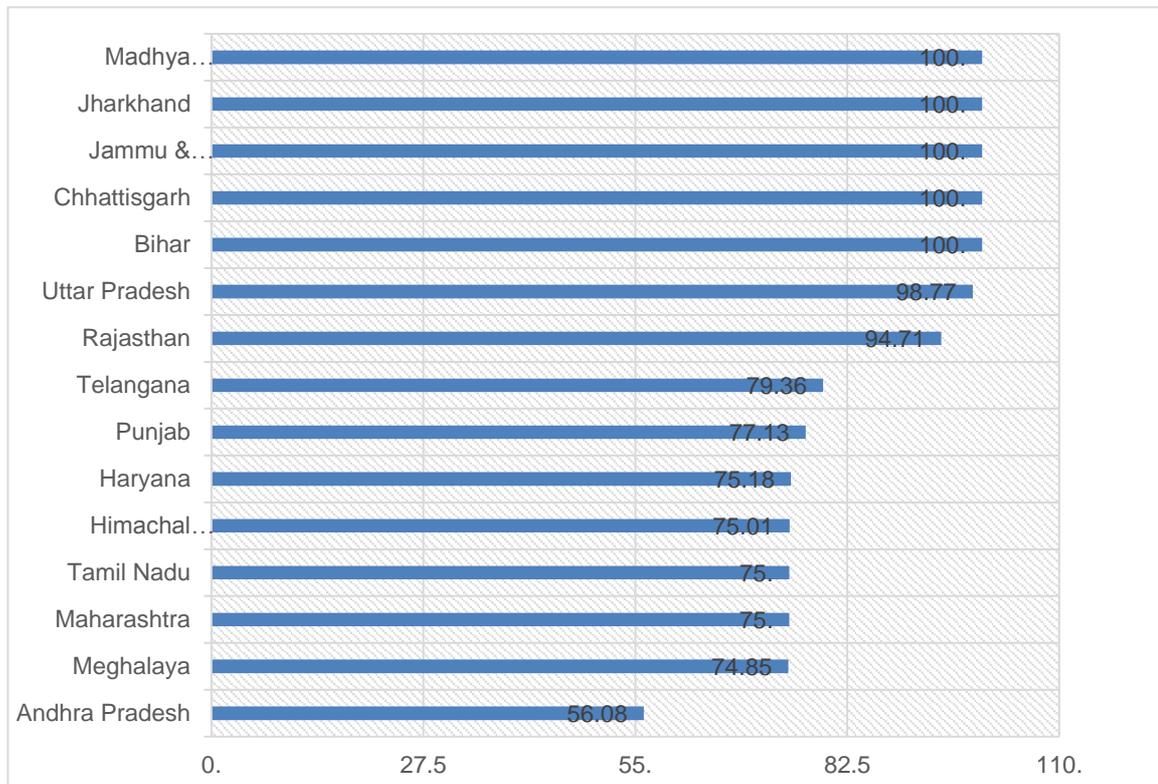
Please see link: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=173673>

3) Press Information Bureau, Government of India Ministry of Power Lakshadweep joins "UDAY" scheme; would derive an overall net benefit of Rs 8 crore through "UDAY", February 28, 2018.

Please see link: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=176895>

be noted here that the UDAY dashboard does not provide any further update on the issuance of bonds and this figures stands for October 2018 as well.

Figure 1: State/UTs Issuance of UDAY Bonds (%)



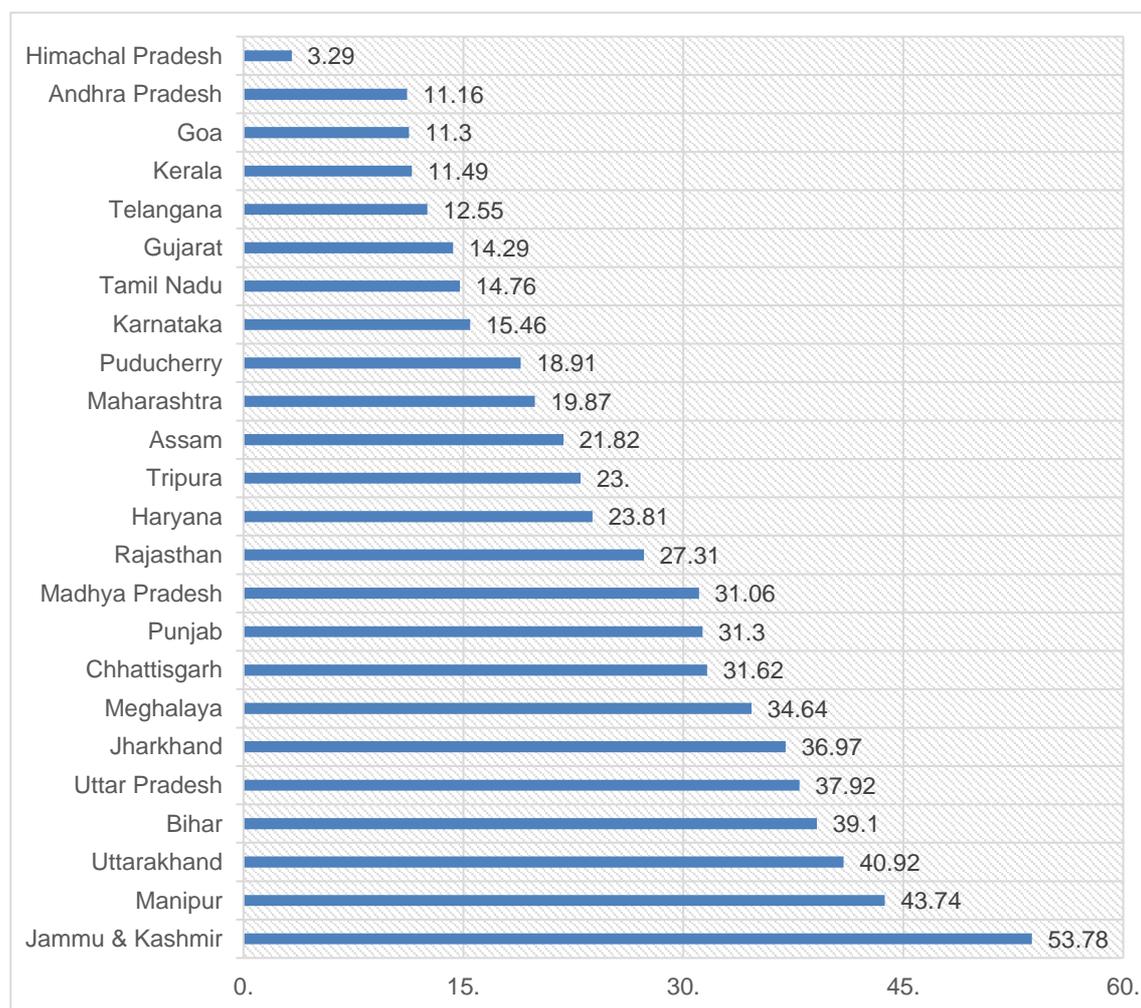
Source: (Basic data), Government of India, UDAY portal

3.2 State-wise Aggregate Technical and Commercial (AT&C) losses

The aggregate technical and commercial loss is termed as AT&C loss. This includes losses which are technical and commercial. The commercial losses also include the loss of electricity due to theft, illegal metering etc. The technical losses are unavoidable losses in the transmission system. As per the UDAY scheme, State and UT governments are required to reduce these losses to 15 per cent by 2018-19.

The data is reported by 24 states/UTs except Arunachal Pradesh, Sikkim, Mizoram and Nagaland. As shown in Figure 2, only seven States (Himachal Pradesh, Andhra Pradesh, Goa, Gujarat, Kerala, Telangana, and Tamil Nadu) have AT&C losses below the 15 per cent norm. The all States combined average was 21.17 per cent till May 2018 but now stands at 25.41 per cent (as on 26 October 2018). Jammu & Kashmir reports AT&C loss of 53.78 per cent while Himachal Pradesh has the lowest AT&C loss of 3.29 per cent among all the participating states.

Figure 2: States/UTs AT&C Loss (Aggregate Technical and Commercial Loss (%))



Source: (Basic data), Government of India, UDAY portal

Out of the 24 states/UT reporting data on AT&C loss, we see that the losses for some states have risen more than before and for some states it has been reducing quite slowly. The trend can be seen below in figure 3. As on May 2017, Jammu & Kashmir reports AT&C losses were 61.34 which came down to 57.4 per cent in May 2018 and have now further reduced to 53.78 per cent. The same trend has been visible for the states like Himachal Pradesh which reported 6.1 per cent of AT&C loss in May 2018 but has now further scaled down to 3.29%.

However, fourteen States/UTs report AT &C losses in the range of 15-30 per cent. These States/UTs are Assam (21.82%), Chhattisgarh (31.62%), Haryana (23.81%), Jharkhand (36.97%), Karnataka (15.46%), Madhya Pradesh (31.06%), Maharashtra (19.87%), Manipur (43.74%), Punjab (31.3%), Puducherry (18.91%), Tripura (23%), Uttarakhand (40.92%), Rajasthan(27.31%), Uttar Pradesh 37.92 %) and Jammu and Kashmir (53.78 %). Sikkim and Mizoram reported data on their losses till May 2018 but there is now no information available on this parameter.

3.3 States/UTs Commercial Viability: ACS-ARR Gap (Rs per unit kWh)

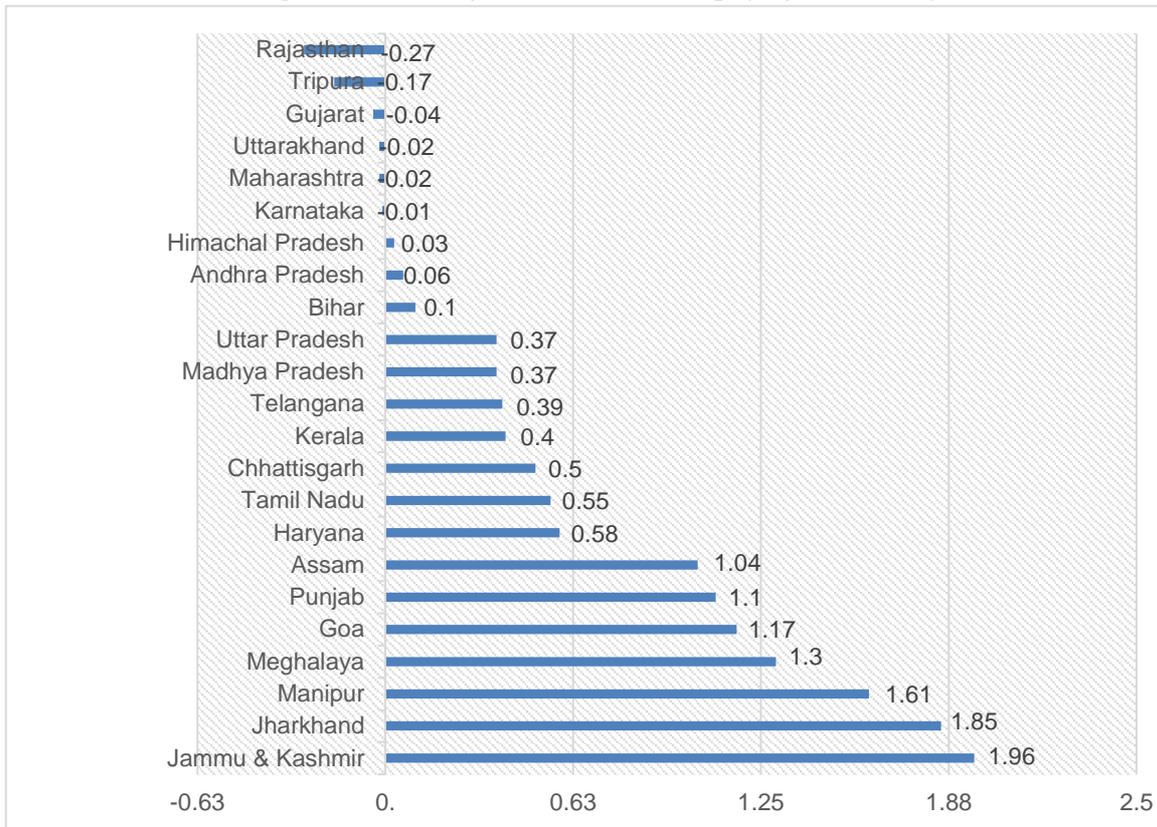
Another milestone to be achieved under UDAY is reduction in the difference between average cost of Supply (ACS) per unit of power and per unit Average Revenue Realized (ARR) to nil by 2018-19. This tests the commercial viability by covering the cost through revenues. The overall gap ratio as per May 2017 UDAY Portal Data was Rs. 0.45 per unit (for 23 states) which reduced to 0.29 per unit (for 26 states) as per May 2018 UDAY Portal Data. However, this ratio has taken an upward trend and is now at 0.55 per unit kWh (for 23 states) as per the latest data available in October 2018.

As per the 2017 May UDAY portal data, 10 States reported gap ratio more than 0.5 but less than 1. These states were Goa, Madhya Pradesh, Punjab, Rajasthan, Kerala, Bihar, U.P., Andhra Pradesh, Telangana and Assam. Three states namely Jammu and Kashmir (2.15) reported the highest gap ratio followed by Meghalaya (1.81) and Jharkhand (1.48) reported gap ratios of more than 1.

As per May 2018, only two states Jharkhand (0.71) and Telangana (0.58) had a gap ratio of more than 0.5 but less than 1. 16 out of the 26 States/UTs that reported the data had a gap ratio of below 0.5 which are Madhya Pradesh, Bihar, Mizoram, Goa, Uttar Pradesh, Chhattisgarh, Rajasthan, Kerala, Tamil Nadu, Haryana, Assam, Tripura, Andhra Pradesh, Uttarakhand, Manipur, and Puducherry. Only Manipur and Puducherry had a zero ACS-ARR gap. Also, Sikkim (5.65) topped the list with the highest ACS-ARR ratio followed by Meghalaya (2.78), Jammu & Kashmir (2.38) and Punjab (1.03). Only Gujarat, Himachal Pradesh, Maharashtra and Karnataka reported negative ratios for the same.

Looking over the latest October 2018 data, we see that the average ACS-ARR gap for all the 23 states reporting data is at 0.55 per unit kWh. The reporting states have reduced because the data for Sikkim, Puducherry and Mizoram is absent from the UDAY dashboard. Also, the gap has certainly increased since May 2018 as well as vis-à-vis May 2017. States namely Meghalaya (1.3), Manipur (1.61), Assam (1.04), Goa (1.17), Jammu & Kashmir (1.96), Jharkhand (1.85) and Punjab (1.1) have an ACS-ARR Gap of more than 1. Six states namely Gujarat, Karnataka, Maharashtra, Rajasthan, Tripura and Uttarakhand have a negative gap ratio indicating they are able to cover up their costs. Out of these 23 states, ten states namely Haryana, Tamil Nadu, Chhattisgarh, Kerala, Telangana, Madhya Pradesh, Uttar Pradesh, Bihar, Andhra Pradesh and Himachal Pradesh have a gap ratio of 0-0.05 (see Figure 3).

Table A3 presents the status of the states on ACS-ARR gap ratio on 3 time-lines: May 2017, May 2018 and October 2018 for a comparative view. For the state of Assam, Jharkhand, Goa, Haryana, Manipur, Punjab and Tamil Nadu, the ratio have risen since May 2017.

Figure 3: States/UTs ACS-ARR Gap (Rs/Unit kWh)


Source: (Basic data), Government of India, UDAY portal

3.4 Tariff Revision

For the FY 2016-17, out of 27 States tariff orders were issued by 25 States. As per the press note released by the Ministry of Power, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim, Uttar Pradesh and Uttarakhand have increased tariffs in the year 2017-18.⁴ The tariff revision status has not been updated since May 2017.

4. Operational Efficiency Parameters under UDAY

Apart from financial parameters to check performance of DISCOM across States, there are 10 operational efficiency indicators to be monitored under UDAY scheme. In the following paragraphs, we analyse these 10 operational efficiency indicators to understand the progress of UDAY across States/UT.

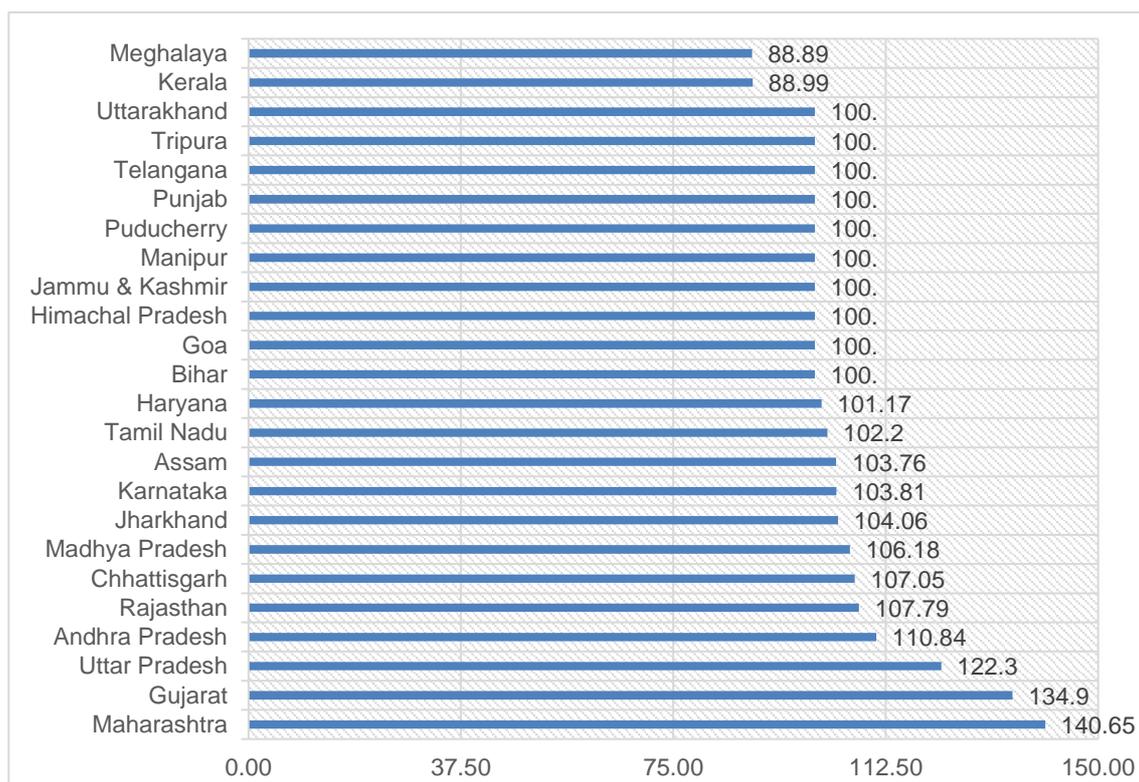
4.1 Power Supply Infrastructure: Feeder Metering

Feeder metering is to ensure effective power supply and reduction in Aggregate Technical and Commercial (AT&C) losses. Target for 100 per cent metering is

4) <http://www.pib.nic.in/PressReleaseDetail.aspx?PRID=1514456>

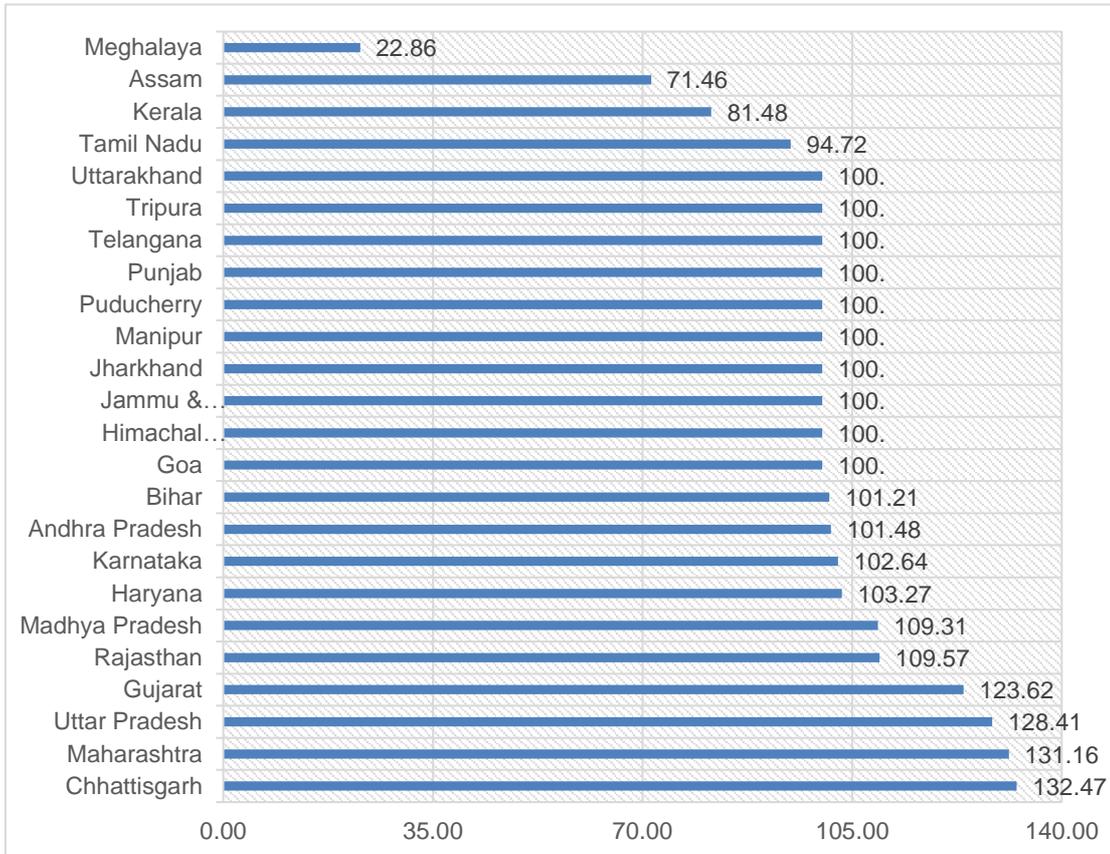
the stated goal under UDAY. Figures 4 and 5 depict the progress made by the distribution companies in this respect for the latest October 2018 data in rural and urban India. These figures represent the progress made in percentage terms on the basis of the target set by the States at the time of joining UDAY. Earlier as per May 2018, out of 24 States/UTs, 22 States achieved 100 percent feeder metering targets. For urban feeders, Meghalaya and Kerala are yet to achieve their targets. The scenario is still the same. As per the portal accessed on October 2018, the State/UT-wise UDAY health cards of respective States report that even though States have not achieved their targets, still there is large improvement compared to pre-UDAY scenario. Feeder metering for both urban and rural shows an upward trend. If we consider Feeder Metering in rural areas, 24 States have provided data, wherein now 20 States have reported to have achieved the targets. States that have not been able to achieve these targets are Meghalaya, Kerala, Tamil Nadu, and Assam. Bihar has been the recent State to have achieved the 100 per cent target since May 2018.

Figure 4: Power Infrastructure: State/UTs Feeder Metering (Urban)
(Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY porta

Figure 5: Power Infrastructure: State/UTs Feeder Metering (Rural)
(Progress w.r.t. target as a %)

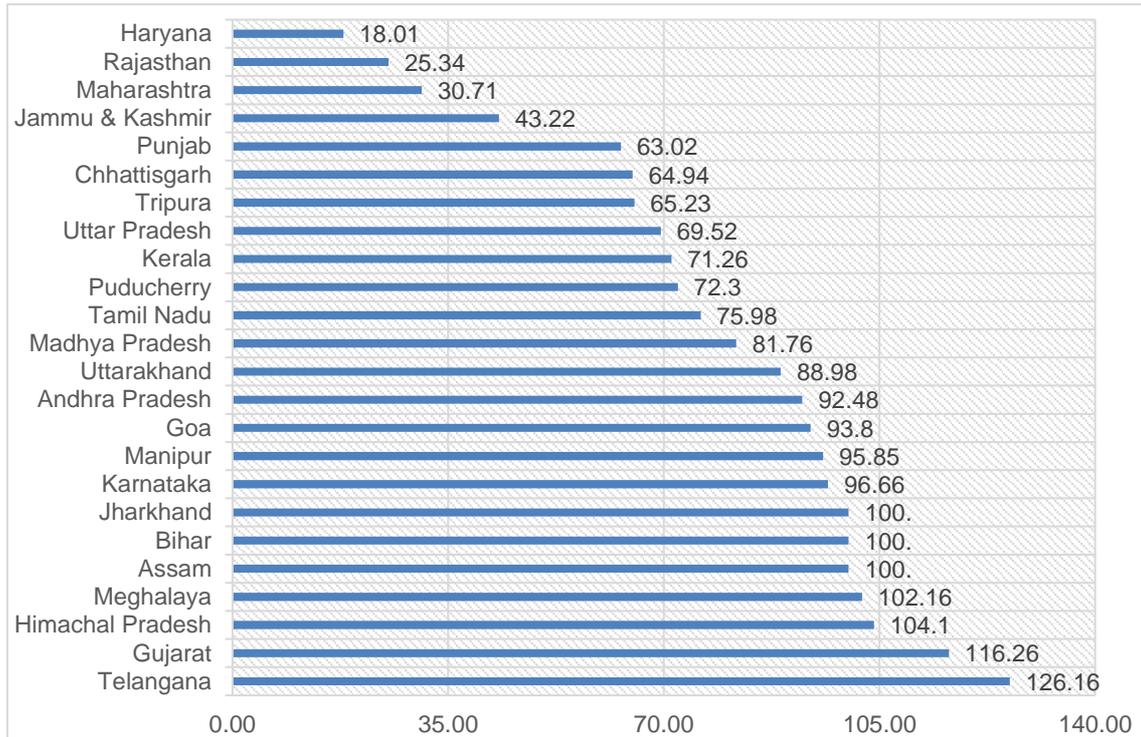


Source: (Basic data), Government of India, UDAY portal

4.2 Energy Distribution Infrastructure: DT Metering

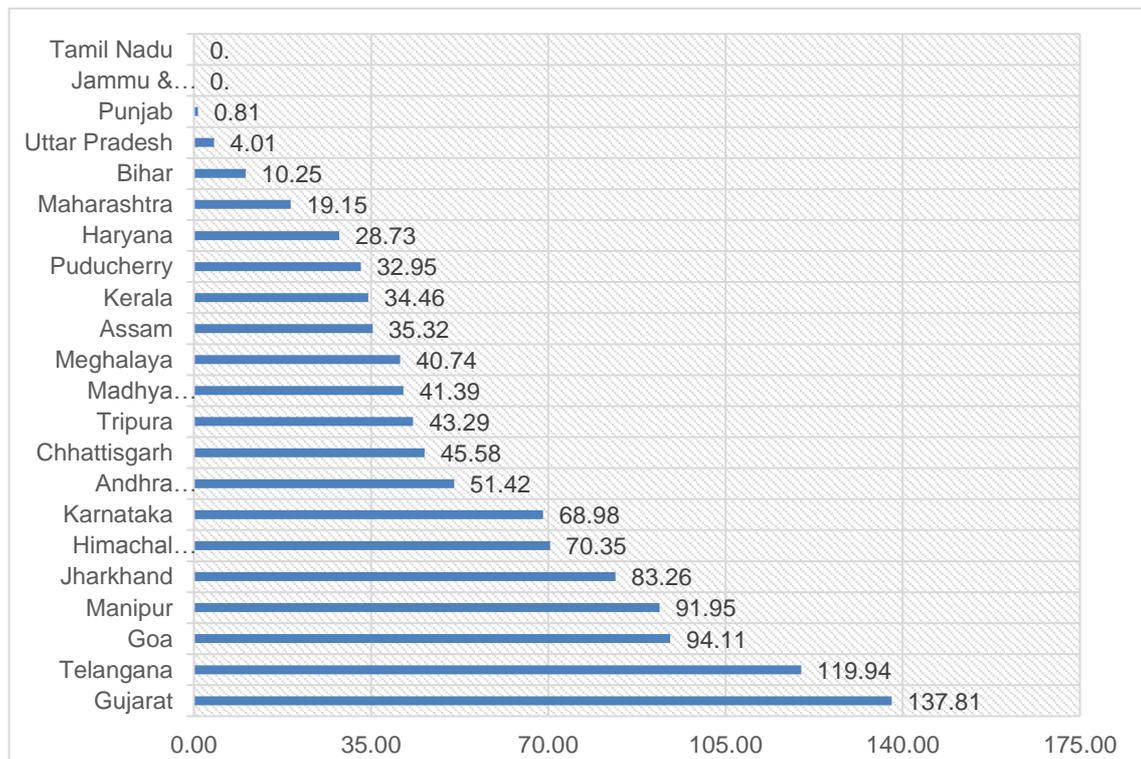
The Distribution Transformer Metering (DTM) helps in improving the energy distribution system and reduces the losses caused by thefts. This helps in load balancing and monitoring the quality of power. Also, it provides real time input and output data of the units consumed for better records. Figures 6 and 7 provide the progress in DT metering for urban and rural areas respectively in percentage terms. As per the May 2018 UDAY portal data, Out of 24 State/UT utilities that report data, this target has been achieved by only seven states namely Telangana, Gujarat Himachal Pradesh, Meghalaya, Assam, Bihar and Jharkhand while other States/UTs lag behind. On the other hand, DT Metering in the rural areas seems to be a major challenge. Till May 2018, only Gujarat has been able to achieve this target while as per the latest estimates of October 2018, Telangana has also now achieved the target. However, the overall picture shows that out of the 22 states, only two have been able to achieve this target for the urban areas.

Figure 6: Energy Distribution Infrastructure: States/UTs DT Metering (Urban) (Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

Figure 7: Energy Distribution Infrastructure: States/UTs DT Metering (Rural) (Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

4.3 Electricity Access to Un-connected Households

Figure 8 provides the progress of the States/UTs on the basis of their targets for the financial year, in percentage terms, for electricity access to unconnected households. As per the October 2018 UDAY portal data, ten states have achieved their targets. Since May 2018, Telangana, Puducherry and Tamil Nadu have achieved 100% electrification targets. Earlier only Seven States namely Gujarat, Andhra Pradesh, Manipur, Kerala, Himachal Pradesh, Punjab and Goa had achieved their targets for the year 2017-18. The data is not available for the north-eastern states of Sikkim, Arunachal Pradesh, Nagaland and Mizoram. Electricity access is low on average for fourteen States while majority of them are coming close to their targets. As reported in the year-end review report published by PIB, Government of India, a total of 15183 villages have been electrified and remaining 2217 villages are yet to be electrified. These villages are in the states of Arunachal Pradesh (1069), Assam (214), Bihar (111), Chhattisgarh (176), J&K (99), Jharkhand (176), Karnataka (8), Madhya Pradesh (34), Manipur (54), Meghalaya (50), Mizoram (11), Odisha (182) and Uttarakhand (33). Also, a new scheme has also been launched in September, 2017 called ‘SAUBHAGYA: Pradhan Mantri Sahaj Bijli Har Ghar Yojana’ to achieve the mission of universal electrification of the country with an outlay of Rs. 16,320 crores with Gross Budgetary Support of Rs. 12,320 crores from the Government of India.

Figure 8: States/UTs Electricity Access to Unconnected Households
(Progress w.r.t. target as a %)

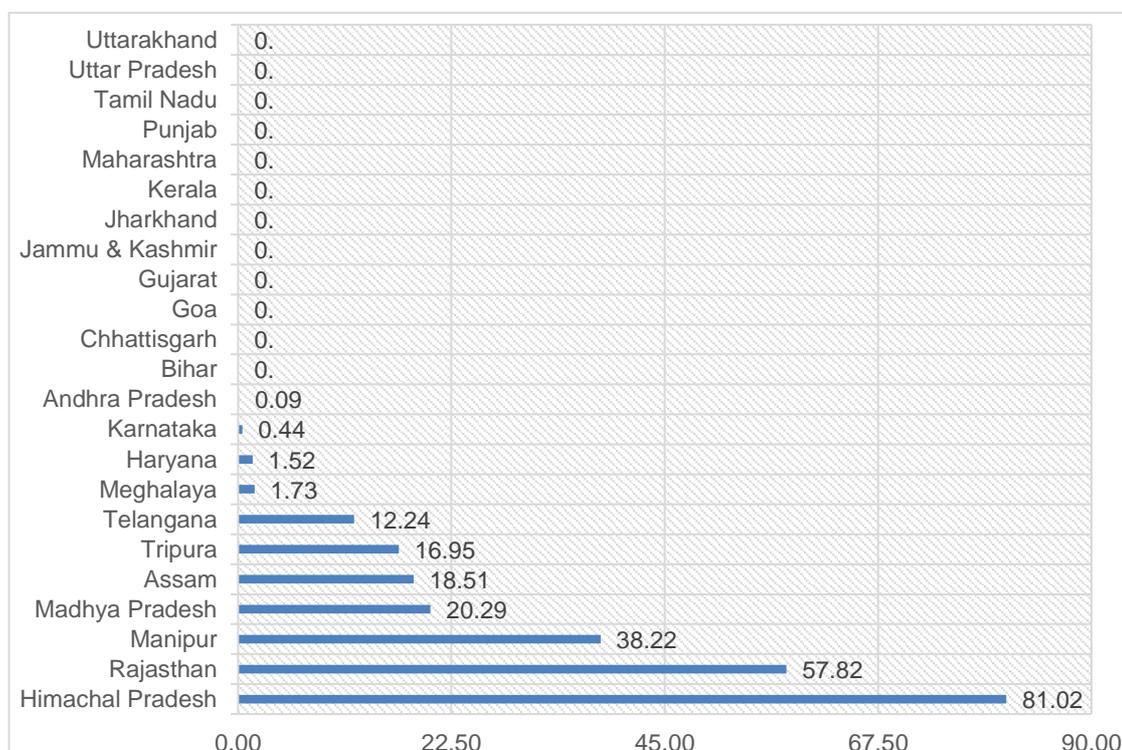


Source: (Basic data), Government of India, UDAY portal

4.4 Smart Metering above 200 and upto 500 kWh & above 500 kWh

Installations of Smart Meters help in recording energy consumption in intervals of an hour or less and communicate the same to State utilities for effective monitoring and billing.⁵ The government aimed to reach this target by December 2017 for greater than 500 units and December 2019 for greater than 200 units. Out of the 27 States/UTs that have signed the MoU, Punjab, Puducherry, Sikkim, Arunachal Pradesh, Mizoram, Nagaland, had not provided data on their progress till May 2018. Also, none of the 21 States reached anywhere near the target for above 500 kWh and only Himachal Pradesh has reached the metering target for above 200 kWh and up to 500 kWh. As per the latest estimates of October 2018, we see that only Himachal Pradesh has met the target for above 200 kWh and up to 500 kWh (see figure 9 & 10). None of the states are close enough to reach the 100% smart metering targets. Also, the data is not available for the north-eastern states of Arunachal Pradesh, Mizoram, Nagaland, Sikkim while for the states like Punjab, Rajasthan, Uttarakhand, Tamil Nadu, Jammu & Kashmir, Jharkhand, Maharashtra there is no mention on the progress over their determined targets and hence, no comparison can be made between the states. Hereby, it can be inferred that this parameter has been overlooked by the states and the target seems unachievable till the said deadline for both above 500 kWh and up to 500 kWh.

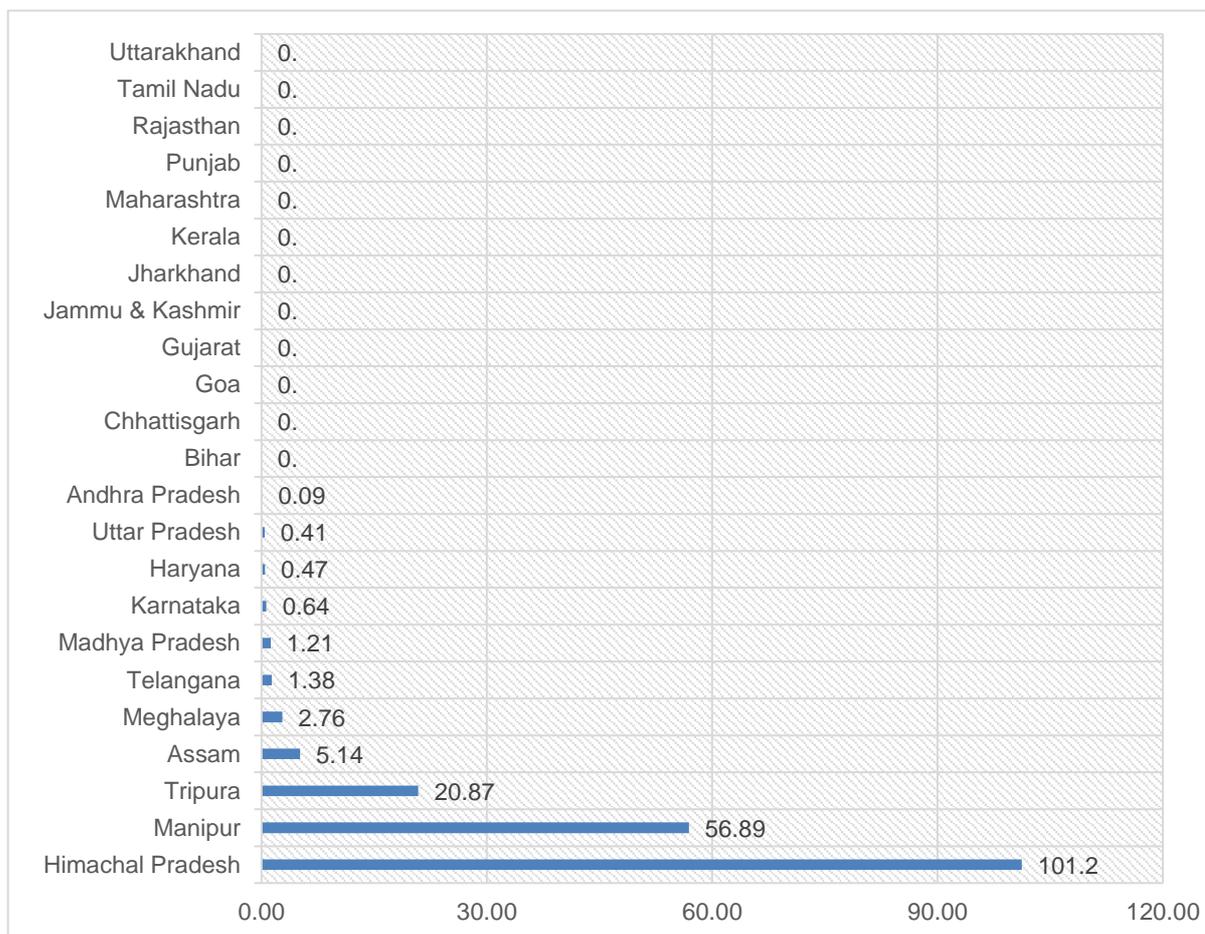
Figure 9: Power Infrastructure: States/UTs Smart Metering Above 500kWh (Progress w.r.t. target as %)



Source: (Basic data), Government of India, UDAY portal

5) Ministry of Power, Coal and New & Renewable Energy, 2015. "Presentation on Towards Ujwal Bharat UDAY: The Story of Reforms", (November).

Figure 10: Power Infrastructure: States/UTs Smart Metering target above 200 kWh up to 500kWh (progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

4.5 Feeder Segregation

As per the RBI State Finance report 2016, those States who join UDAY and perform as per operational milestones will be given additional / priority funding through Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Power Sector Development Fund (PSDF) or other such schemes of Ministry of Power and Ministry of New and Renewable Energy.⁶ The Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) aims to segregate agricultural and non-agricultural feeders for uninterrupted supply to non-agricultural consumers in the rural areas.⁷

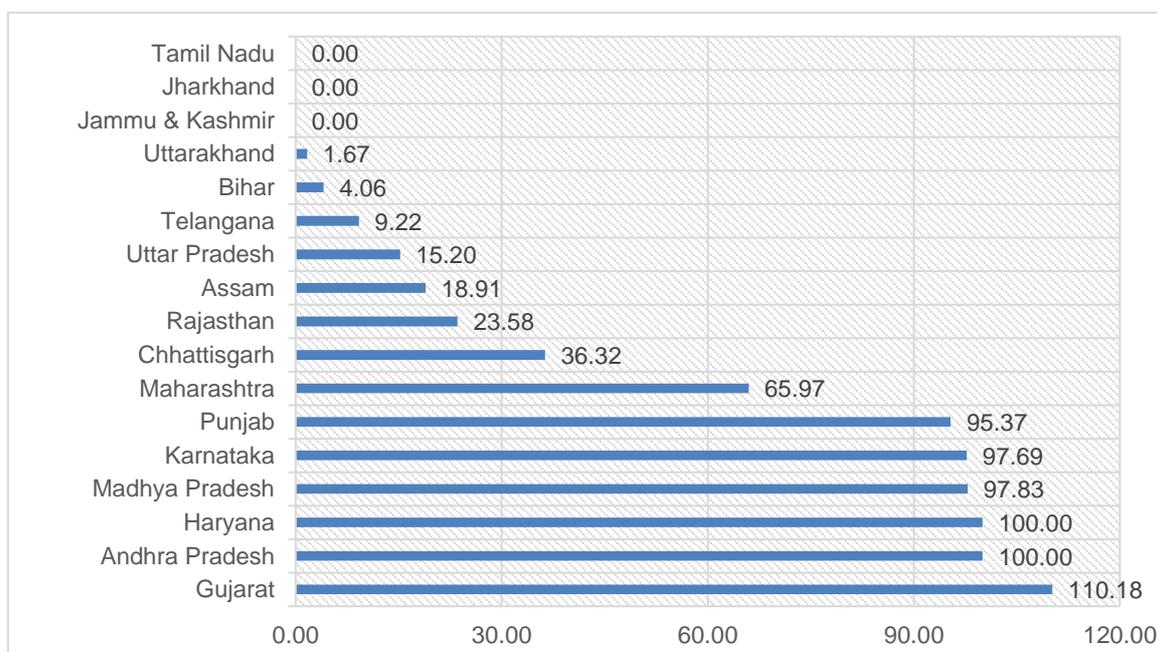
6) States not meeting operational milestones, however, will be liable to forfeiture of their claim on IPDS and DDUGJY grants. (Box IV.1 of RBI State Finance Report, April 2016).

<https://rbi.org.in/scripts/PublicationsView.aspx?id=16836>

7) Ministry of Power. 06-August-2015. "Feeder Segregation Scheme". Press Information Bureau, Government of India.

Figure 11 gives us the States/UTs Feeder segregation progress with respect to targets (in per cent) so far. According to the data noted in May 2018, 16 States/UTs reported data wherein only Gujarat, Andhra Pradesh and Haryana had achieved the targets. As per the October 2018 estimates, the story remains the same while now 17 states are reporting data on this parameter (see figure 13). The States namely Arunachal Pradesh, Mizoram, Nagaland, Sikkim, Puducherry, Goa, Himachal Pradesh, Kerala, and Tripura have not reported yet. States like Maharashtra, Punjab, Madhya Pradesh and Karnataka are likely to achieve the targets soon. Also, the states of Manipur and Meghalaya show progress over no determined targets while Jammu & Kashmir, Jharkhand and Tamil Nadu show zero progress over determined targets. Such low score on segregation by the states poses a big economic issue for the country as a whole.

Figure 11: State/UTs Feeder Segregation
(Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

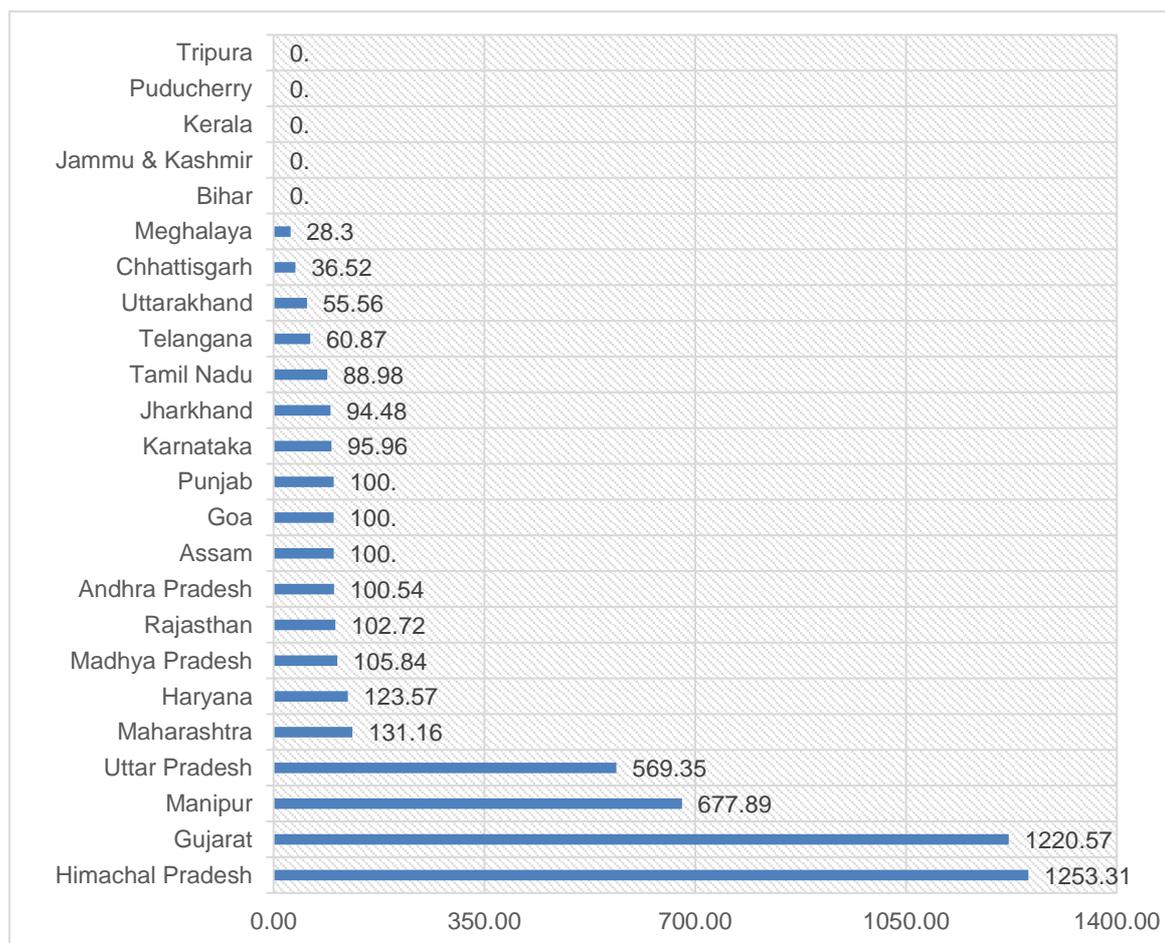
4.6 Rural Feeder Audit

Rural feeder audit helps in identifying the utilities/ feeders making losses and helps in taking necessary actions to improve their health. Also, the audit locates the areas that require immediate attention thereby improving efficiency. Figure 12 provides States/UTs data for rural-feeder audit. As per October 2018 estimates, now 12 states namely Gujarat, Maharashtra, H.P., Haryana, Madhya Pradesh, Uttar Pradesh, Goa, Manipur, Assam, Andhra Pradesh, Punjab and Rajasthan have successfully reached their targets for energy audit.⁸ Moreover, out of 24

8) For H.P., the progress is 6404 units which is higher than the target (634) set in the MoU. Similarly, Gujarat's progress stands at 83588 units over the target (9456 units). Manipur's progress is 644 units over the target of 95 units.

States, earlier 17 States/UTs were yet to attain their objectives while as per the recent estimates, 12 states are still to reach their targets. Six states/UTs that show no progress are Puducherry, Tripura, Bihar, Kerala and J&K. States like Karnataka, Jharkhand, Tamil Nadu, Telangana, Uttarakhand, Meghalaya, and Chhattisgarh are gearing up slowly on audits as evident from Figure 12.

Figure12: State/UTs Rural Feeder Audit
(Progress w.r.t. target as a %)



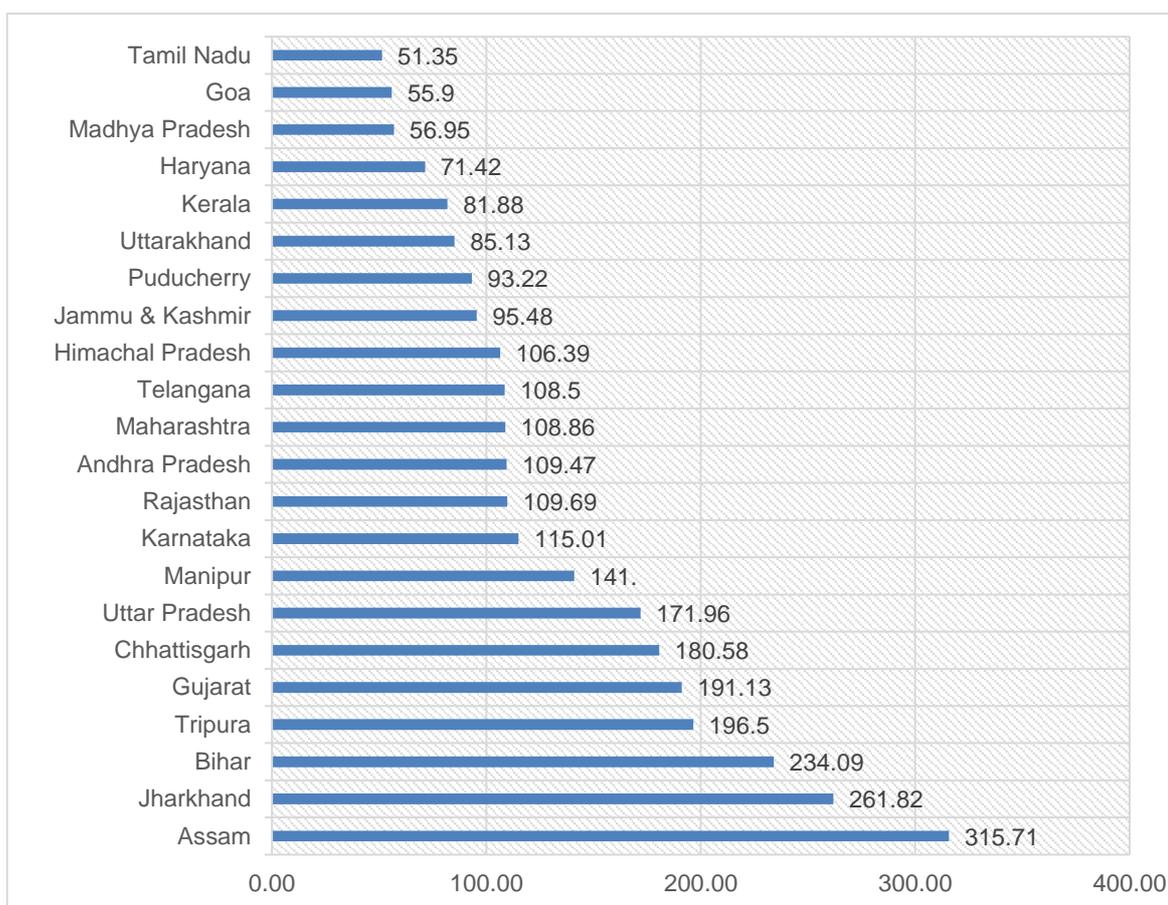
Source: (Basic data), Government of India, UDAY portal

4.7 Distribution of LEDs under UJALA

UJALA, an acronym for Unnat Jyoti by Affordable LEDs for All, is being implemented by Energy Efficiency Services Limited (EESL). Under this scheme, superior quality energy efficient LED bulbs are distributed to domestic consumers at the rate of Rs.75 to 95, which is 80 per cent less than the market price of Rs. 350-450. The main idea is to promote energy conservation and creating awareness about energy saving technologies. Figure 13 depicts State/UT-wise distribution of LEDs under UJALA scheme. Only 22 states have been reporting data while states like Arunachal Pradesh, Mizoram, Nagaland, Sikkim report no data on this parameter. Punjab and Meghalaya data shows certain discrepancies and hence,

the comparisons can't be made. Out of the 22 States, 14 states have successfully achieved their targets and have also performed much ahead of the targets as seen in Figure 15. Other states are definitely catching up with their set targets. Assam now tops the list of distribution of LEDs and has left behind Jharkhand that performed remarkably on this parameter⁹ as per the May 2018 estimates.

Figure 13: State/UTs Distribution of LEDs under UJALA
(Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

5. The Aggregate Analysis

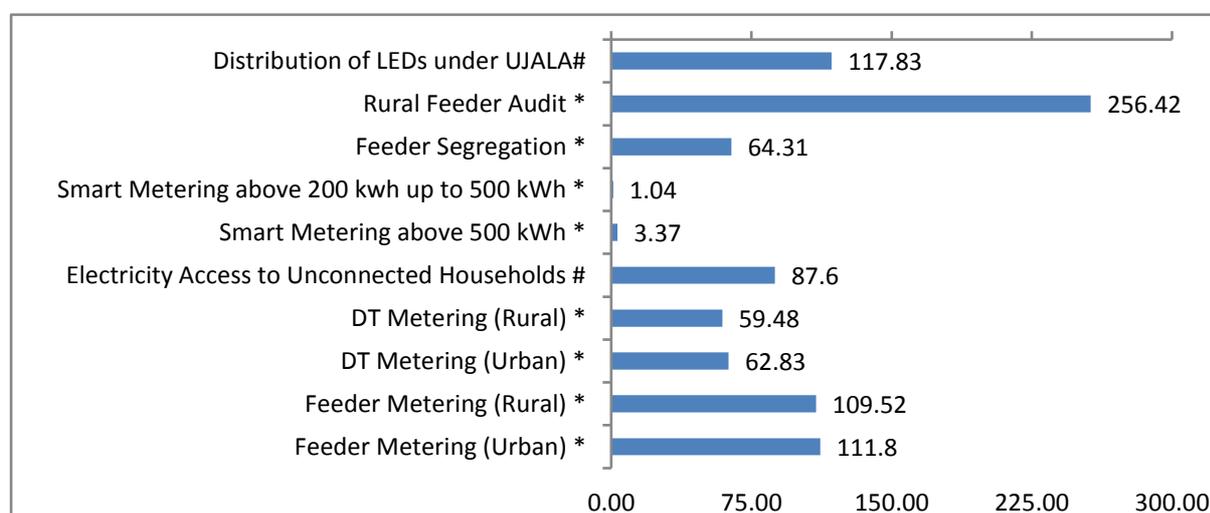
The UDAY portal gives the average “All India” figures for the financial and operational parameters of UDAY in the “national dashboard”. These average figures of the financial and operational parameters show handful of improvement in October 2018, vis-à-vis with the data accessed from the portal in May, 2017. However, the large ACC-ARR gap as well as the AT&C losses raises real concern. The overall AT&C losses stand at 25.41 per cent as per the data accessed on October

9) Jharkhand distributed 120 lakhs (approx.) LED over their set target of 25 Lakhs.

2018 vis-à-vis 21.17 per cent noted in May 2018. While the ACC-ARR Gap had declined from Rs. 0.45 per unit kWh in May 2017 to Rs. 0.29 per unit kWh in May 2018, we see widening in the gap ratio to 0.55 per unit kWh.

This low performance of efficiency parameters may have high repercussions on the lives of people living in these areas, as erratic power cuts reduce the socio-economic benefits that could have been made from a 24-hour continuous power supply and these states might also lag behind other states in economic growth due to poor power infrastructure. This makes the technical infrastructure a crucial part of the electrification system. Taking India as a whole, the aggregate picture of UDAY operational parameters is presented in Figure 14.

Figure 14: Progress of UDAY Operational Parameters
(Progress w.r.t. target as a %)



Source: (Basic data), Government of India, UDAY portal

6. The Conclusion

Using the UDAY portal data, the analysis revealed that it is crucial to move beyond the “fallacy of aggregation” of UDAY indicators and focus on the financial and operational efficiency parameters of lagging states in meeting the UDAY targets. Our analysis based on the state-specific file sheets – State Health Cards - given in the state-wise dashboards, suggests that there are serious concerns in making the DISCOMs sustainable. We find that Gujarat, Karnataka, Himachal Pradesh and Telangana are the only States that have been performing well on majority of the financial and operational parameters of UDAY scheme. As per the recent estimates based on the UDAY portal data accessed on October 2018, we find that financial and operational parameters of power infrastructure for majority of the States in India have shown a dismal picture and in turn raise questions about the efficacy of the UDAY scheme in materializing a turnaround in power sector.

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Appendix Tables
Financial Indicators
Table A1: Issuance of UDAY Bonds to States/ UTs

Sl. No.	States/Uts	Bonds Issued (Rs. Crore)	To Be Issued (Rs. Crore)
1	Andhra Pradesh	8256 (56.08)	14721
2	Arunachal Pradesh	ND	ND
3	Assam	ND	ND
4	Bihar	3109 (100%)	3109
5	Chhattisgarh	870 (100%)	870
6	Goa	No debt takeover	No debt takeover
7	Gujarat	No debt takeover	No debt takeover
8	Haryana	25951 (75.18)	34517.34
9	Himachal Pradesh	2891 (75.01)	3854
10	Jammu & Kashmir	3538 (100%)	3538
11	Jharkhand	6136 (100%)	6136
12	Karnataka	No debt takeover	No debt takeover
13	Kerala	ND	ND
14	Madhya Pradesh	7360 (100%)	7360
15	Maharashtra	4960 (75%)	6613
16	Manipur	ND	ND
17	Meghalaya	125 (74.85%)	167
18	Mizoram	ND	ND
19	Nagaland	ND	ND
20	Odisha	NP	NP
21	Puducherry	No debt takeover	No debt takeover
22	Punjab	15629 (77.13%)	20262.01
23	Rajasthan	72090 (94.71)	76120
24	Sikkim	ND	ND
25	Tamil Nadu	22815 (75%)	30420
26	Telangana	8923 (79.36%)	11244
27	Tripura	ND	ND
28	Uttar Pradesh	49510 (98.77)	50125
29	Uttarakhand	No debt takeover	No debt takeover
30	West Bengal	NP	NP

Note: The data has remained same for the issuance of bonds as on 26 October, 2018.

All India: Total Bonds Issued: Rs. 232163 Crore (86.29%) against Bonds to be issued: Rs.269056.35 Crore.

Note: The table does not include data of recently joined UTs namely; Daman & Diu, Dadra & Nagar Haveli, Andaman & Nicobar Islands, Lakshadweep Islands as well.

Source: UDAY Portal as accessed on May 2017 and May 2018 and 26 October 2018.

ND: No Data; NP: Not a part of UDAY Scheme

Table A2: Aggregate Technical and Commercial (AT&C) Loss of States/UTs

Sl. No.	States/UTs	AT&C Loss as of May 2017 (in %)	AT&C Loss as of May 2018 (in %)	AT&C Loss as of 26 Oct. 2018 (in %)
1	Andhra Pradesh	10.96	9.71	11.16
2	Arunachal Pradesh	ND	ND	ND
3	Assam	25.09	19.96	21.82
4	Bihar	41.75	36.75	39.1
5	Chhattisgarh	19.34	22.25	31.62
6	Goa	16.79	17.04	11.3
7	Gujarat	12.28	11.88	14.29
8	Haryana	25.69	23.28	23.81
9	Himachal Pradesh	4.15	6.1	3.29
10	Jammu & Kashmir	61.34	57.4	53.78
11	Jharkhand	29.9	36.28	36.97
12	Karnataka	15.29	15.28	15.46
13	Kerala	17.28	11.57	11.49
14	Madhya Pradesh	25.16	31.63	31.06
15	Maharashtra	18.3	20.15	19.87
16	Manipur	36.89	25	43.74
17	Meghalaya	34.87	32.28	34.64
18	Mizoram	ND	39.04	ND
19	Nagaland	ND	ND	ND
20	Odisha	NP	NP	NP
21	Puducherry	18.98	21.52	18.91
22	Punjab	17.57	29.47	31.3
23	Rajasthan	23.81	24.44	27.31
24	Sikkim	ND	42.54	ND
25	Tamil Nadu	14.53	14.04	14.76
26	Telangana	14.33	13.9	12.55
27	Tripura	16.61	18.62	23
28	Uttar Pradesh	30.21	30.94	37.92
29	Uttarakhand	14.5	25.02	40.92
30	West Bengal	NP	NP	NP

Source: UDAY Portal as accessed on May 2017 and May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A3: Commercial Viability: ACS-ARR Gap of States/UTs

S. No.	States/UTs	ACS-ARR Gap (Rs/Unit kWh) as of May 2017	ACS-ARR Gap (Rs/Unit kWh) as of May 2018	ACS-ARR Gap (Rs/Unit kWh) as of 26 October 2018
1	Andhra Pradesh	0.6	0.03	0.06
2	Arunachal Pradesh	ND	ND	ND
3	Assam	0.65	0.09	1.04
4	Bihar	0.71	0.47	0.1
5	Chhattisgarh	-0.15	0.27	0.5
6	Goa	0.95	0.44	1.17
7	Gujarat	-0.03	-0.04	-0.04
8	Haryana	0.08	0.23	0.58
9	Himachal Pradesh	-0.26	-0.1	0.03
10	Jammu & Kashmir	2.15	2.38	1.96
11	Jharkhand	1.48	0.71	1.85
12	Karnataka	0.27	-0.1	-0.01
13	Kerala	0.53	0.24	0.4
14	Madhya Pradesh	0.86	0.48	0.37
15	Maharashtra	0.22	-0.05	-0.02
16	Manipur	0.1	0	1.61
17	Meghalaya	1.81	2.78	1.3
18	Mizoram	ND	0.47	ND
19	Nagaland	ND	ND	ND
20	Odisha	NP	NP	NP
21	Puducherry	0.07	0	ND
22	Punjab	0.71	1.03	1.1
23	Rajasthan	0.74	0.26	-0.27
24	Sikkim	ND	5.65	ND
25	Tamil Nadu	0.36	0.24	0.55
26	Telangana	0.6	0.58	0.39
27	Tripura	0.02	0.08	-0.17
28	Uttar Pradesh	0.66	0.39	0.37
29	Uttarakhand	0.14	0.03	-0.02
30	West Bengal	NP	NP	NP

Note: ACS-ARR Gap stands for (the gap between Average Cost of Supply and Average Revenue Realized in Rs. per unit kWh)

Source: UDAY Portal as accessed on May 2017, May and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A4: Tariff Revision of States/UTs (2016-17)

Sl. No.	State/Uts	MYT/ARR Petition (Filed/Not Filed)	Tariff Order (Issued/Not Issued)
1	Andhra Pradesh	Filed	Issued
2	Arunachal Pradesh	Filed	Issued
3	Assam	Filed	Issued
4	Bihar	Filed	Issued
5	Chhattisgarh	Filed	Issued
6	Goa	Filed	Issued
7	Gujarat	Filed	Issued
8	Haryana	Filed	Issued
9	Himachal Pradesh	Filed	Issued
10	Jammu & Kashmir	Filed	Issued
11	Jharkhand	Filed	Issued
12	Karnataka	Filed	Issued
13	Kerala	Not Filed	FY14-15 order is extended for FY16-17
14	Madhya Pradesh	Filed	Issued
15	Maharashtra	Filed	Issued
16	Manipur	Filed	Issued
17	Meghalaya	Filed	Issued
18	Mizoram	Filed	Issued
19	Puducherry	Filed	Issued
20	Punjab	Filed	Issued
21	Rajasthan	Filed	Not Issued
22	Sikkim	Filed	Issued
23	Tamil Nadu	Filed	Not Issued
24	Telangana	Filed	Issued
25	Tripura	Filed	FY14-15 order is continuing for FY16-17
26	Uttar Pradesh	Filed	Issued
27	Uttarakhand	Filed	Issued

Note: There is no update of data as on 26 October 2018.

Source: UDAY Portal as accessed on May 2017, May and 26 October 2018.

Operational Indicators
Table A5: Power Infrastructure: States/UTs Feeder Metering (Urban)

Sl. No.	States/UTs	Feeder Metering as of May 2017 (no. of units)		Feeder Metering as of May 2018 (no. of units)		Feeder Metering as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	2632	1605	1779	1605	1779	1605
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	376	399	414	399	414	399
4	Bihar	591	591	591	591	591	591
5	Chhattisgarh	972	908	972	908	972	908
6	Goa	95	95	95	95	95	95
7	Gujarat	4160	3911	5140	3911	5276	3911
8	Haryana	2024	1391	2024	1391	1381	1365
9	Himachal Pradesh	1027	1027	393	393	393	393
10	Jammu & Kashmir	644	644	644	644	644	644
11	Jharkhand	436	419	436	419	436	419
12	Karnataka	3111	3096	3198	3096	3214	3096
13	Kerala	945	1072	954	1072	954	1072
14	Madhya Pradesh	2534	2523	2565	2523	2679	2523
15	Maharashtra	4049	2964	4107	2964	4169	2964
16	Manipur	66	66	66	66	66	66
17	Meghalaya	75	90	80	90	80	90
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	52	52	52	52	52	52
22	Punjab	3266	3266	3266	3266	3386	3386
23	Rajasthan	4150	3953	4213	3953	4261	3953
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	5059	4950	5059	4950	5059	4950
26	Telangana	3017	3017	3017	3017	3017	3017
27	Tripura	112	112	112	112	112	112
28	Uttar Pradesh	6866	5686	6922	5686	6954	5686
29	Uttarakhand	585	585	585	585	585	585
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A6: Power Infrastructure: States/UTs Feeder Metering (Rural)

Sl. No.	States/UTs	Feeder Metering as of May 2017 (no. of units)		Feeder Metering as of May 2018 (no. of units)		Feeder Metering as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	9025	8893	9025	8893	9025	8893
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	194	1756	751	1051	751	1051
4	Bihar	1238	1572	1492	1572	1591	1572
5	Chhattisgarh	2538	2790	3485	2790	3696	2790
6	Goa	289	289	289	289	289	289
7	Gujarat	9958	9324	11206	9324	11526	9324
8	Haryana	3352	1628	2520	1628	1674	1621
9	Himachal Pradesh	0	0	634	634	634	634
10	Jammu & Kashmir	1227	1227	1227	1227	1227	1227
11	Jharkhand	484	761	761	761	761	761
12	Karnataka	7915	7870	8061	7870	8078	7870
13	Kerala	842	1053	858	1053	858	1053
14	Madhya Pradesh	11811	11389	12043	11389	12449	11389
15	Maharashtra	4185	3389	4281	3389	4445	3389
16	Manipur	110	95	95	95	95	95
17	Meghalaya	28	175	40	175	40	175
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	55	55	55	55	55	55
22	Punjab	6657	6657	6657	6657	7414	7414
23	Rajasthan	20307	19440	20795	19440	21301	19440
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	ND	ND	2423	2558	2423	2558
26	Telangana	ND	ND	5906	5906	5906	5906
27	Tripura	235	235	235	235	235	235
28	Uttar Pradesh	6803	8743	11186	8743	11227	8743
29	Uttarakhand	1395	1395	1395	1395	1395	1395
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A7: State/UTs Distribution Transformer (DT) Metering (Urban)

Sl. No.	States/UTs	DT Metering as of May 2017 (no. of units)		DT Metering as of May 2018 (no. of units)		DT Metering as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	46585	53704	49328	53704	49663	53704
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	8619	8619	8619	8619	8619	8619
4	Bihar	21378	55021	14442	14442	14442	14442
5	Chhattisgarh	35128	55498	35128	55498	36039	55498
6	Goa	2026	2386	2101	2386	2238	2386
7	Gujarat	144702	142871	133737	118735	138043	118735
8	Haryana	51509	286069	51509	286069	51509	286069
9	Himachal Pradesh	21184	29162	4117	3955	4117	3955
10	Jammu & Kashmir	3550	12442	5125	12442	5378	12442
11	Jharkhand	20180	10140	10140	10140	10140	10140
12	Karnataka	96957	104921	99776	104921	101412	104921
13	Kerala	16443	23074	16443	23074	16443	23074
14	Madhya Pradesh	55627	82693	63728	82693	67606	82693
15	Maharashtra	79623	263323	79998	263323	80868	263323
16	Manipur	1994	2098	2011	2098	2011	2098
17	Meghalaya	1667	1716	1753	1716	1753	1716
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	969	1372	971	1372	992	1372
22	Punjab	34864	73139	44980	73139	46093	73139
23	Rajasthan	16486	66459	16822	66459	16842	66459
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	ND	ND	50200	66073	50200	66073
26	Telangana	ND	ND	85086	107927	136156	107927
27	Tripura	3058	4688	3058	4688	3058	4688
28	Uttar Pradesh	96413	164182	99639	164182	114146	164182
29	Uttarakhand	5664	6616	5664	6616	5887	6616
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A8: State/UTs Distribution Transformer (DT) Metering (Rural)

Sl. No.	States/UTs	DT Metering as of May 2017 (no. of units)		DT Metering as of May 2018 (no. of units)		DT Metering as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	322529	661037	331073	661037	339873	661037
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	58992	63692	21265	60199	21265	60199
4	Bihar	2830	54724	9766	95303	9766	95303
5	Chhattisgarh	32905	73955	32905	73955	33709	73955
6	Goa	2936	3529	3076	3529	3321	3529
7	Gujarat	794347	869988	1105274	894124	1232230	894124
8	Haryana	63744	221897	63744	221897	63744	221897
9	Himachal Pradesh	ND	ND	17711	25207	17733	25207
10	Jammu & Kashmir	0	40193	0	40193	0	40193
11	Jharkhand	0	62794	42627	62794	52282	62794
12	Karnataka	134176	215286	140155	215286	148505	215286
13	Kerala	17365	50386	17365	50386	17365	50386
14	Madhya Pradesh	145028	454194	168354	454194	188007	454194
15	Maharashtra	46460	247708	47025	247708	47435	247708
16	Manipur	2214	2411	2217	2411	2217	2411
17	Meghalaya	3096	7599	3096	7599	3096	7599
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	434	1317	434	1317	434	1317
22	Punjab	969	118997	969	118997	969	118997
23	Rajasthan	ND	ND	ND	ND	ND	ND
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	0	180748	0	180748	0	180748
26	Telangana	45201	220893	59791	220893	264937	220893
27	Tripura	2605	8486	3203	8486	3674	8486
28	Uttar Pradesh	52822	604500	16624	506283	Progress	Target
29	Uttarakhand	ND	ND	ND	ND	339873	661037
30	West Bengal	NP	NP	NP	NP	ND	ND

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018

ND: No Data ; NP: Not a part of UDAY Scheme

Table A9: States/UTs Electricity Access to Unconnected Households

Sl. No.	States/UTs	Electricity Access to Unconnected Households as of May 2017 (in lakhs)		Electricity Access to Unconnected Households as of May 2018 (in lakhs)		Electricity Access to Unconnected Households as of 26 October 2018 (in lakhs)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	89.34	87.15	90.22	87.15	91.05	87.15
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	37.68	58.09	41.49	61.84	45.13	61.84
4	Bihar	121.98	198.04	127.7	198.04	129.33	198.04
5	Chhattisgarh	55.57	63.6	57.05	63.6	59.93	63.6
6	Goa	5	5	5	5	5	5
7	Gujarat	119.47	115.09	121.56	115.09	123.44	115.09
8	Haryana	45.06	49.18	45.17	49.18	45.45	49.18
9	Himachal Pradesh	19.04	19.18	19.12	19.18	19.19	19.18
10	Jammu & Kashmir	15.28	18.18	15.54	18.18	15.71	18.18
11	Jharkhand	29.69	54.58	31.17	54.58	31.64	54.58
12	Karnataka	33.11	39.18	34.15	39.18	35.2	39.18
13	Kerala	92.84	92.28	94.01	92.28	94.48	92.28
14	Madhya Pradesh	112.46	153.46	123.9	153.46	130.85	153.46
15	Maharashtra	250.73	260.84	254.57	260.84	259.27	260.84
16	Manipur	6.54	6.36	6.56	6.36	6.56	6.36
17	Meghalaya	1.36	5.21	3.88	5.21	3.88	5.21
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	2.9	2.94	2.92	2.94	2.94	2.94
22	Punjab	62.08	62.08	62.08	62.08	66.82	66.82
23	Rajasthan	106.15	119.45	110.78	119.45	115.25	119.45
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	ND	ND	ND	ND	189.93	189.93
26	Telangana	98.41	102.1	100.77	102.1	102.98	102.1
27	Tripura	7.85	9.5	8.08	9.5	8.19	9.5
28	Uttar Pradesh	137.48	308.73	170.01	308.73	193.31	308.73
29	Uttarakhand	20.09	21.17	20.2	21.17	20.24	21.17
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018

ND: No Data ; NP: Not a part of UDAY Scheme

Table A10: States/UTs Smart Metering Above 500kWh

Sl. No.	States/UTs	Smart Metering Above 500 kWh as of May 2017 (no. of units)		Smart Metering Above 500 kWh as of May 2018 (no. of units)		Smart Metering Above 500 kWh as of 26 oct. 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	250	399713	358	399713	358	399713
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	0	31000	5737	31000	5737	31000
4	Bihar	0	197831	0	197831	0	197831
5	Chhattisgarh	0	488307	0	488307	0	488307
6	Goa	0	34163	0	34163	0	34163
7	Gujarat	0	247583	0	247583	0	247583
8	Haryana	0	431797	5630	431797	6583	431797
9	Himachal Pradesh	175	0	397	490	397	490
10	Jammu & Kashmir	0	215828	0	215828	0	215828
11	Jharkhand	0	26534	0	26534	0	26534
12	Karnataka	365	137456	610	137456	610	137456
13	Kerala	0	136000	0	136000	0	136000
14	Madhya Pradesh	58898	295644	59994	295644	59994	295644
15	Maharashtra	0	10385	0	10385	0	10385
16	Manipur	51420	134527	51420	134527	51420	134527
17	Meghalaya	1455	86368	1494	86368	1494	86368
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	ND	ND	ND	ND	16000	0
22	Punjab	ND	ND	ND	ND	0	697711
23	Rajasthan	15887	31136	17970	31136	18003	31136
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	0	1552000	0	1552000	0	1552000
26	Telangana	1000	168634	1604	168634	20649	168634
27	Tripura	3210	32508	5410	32502	5510	32502
28	Uttar Pradesh	0	278722	0	278722	0	278722
29	Uttarakhand	0	75000	0	75000	0	75000
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018

ND: No Data ; NP: Not a part of UDAY Scheme

Table A11: States/UTs Smart Metering above 200 kWh up to 500 kWh

Sl. No.	States/UTs	Smart Metering Above 200 kWh up to 500 kWh as of May 2017 (no. of units)		Smart Metering Above 200 kWh up to 500 kWh as of May 2018 (no. of units)		Smart Metering Above 200 kWh up to 500 kWh as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	410	1671543	1445	1671543	1445	1671543
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	0	150000	7703	150000	7703	150000
4	Bihar	0	336113	0	336113	0	336113
5	Chhattisgarh	0	652146	0	652146	0	652146
6	Goa	0	120307	0	120307	0	120307
7	Gujarat	0	632581	0	632581	0	632581
8	Haryana	0	822747	3174	822747	3857	822747
9	Himachal Pradesh	885	0	925	914	925	914
10	Jammu & Kashmir	0	582149	0	582149	0	582149
11	Jharkhand	0	125896	0	125896	0	125896
12	Karnataka	1300	291650	1876	291650	1876	291650
13	Kerala	0	745000	0	745000	0	745000
14	Madhya Pradesh	8886	776487	9356	776487	9406	776487
15	Maharashtra	0	49680	0	49680	0	49680
16	Manipur	123417	216940	123417	216940	123417	216940
17	Meghalaya	5096	189553	5229	189553	5229	189553
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	ND	ND	ND	ND	5000	0
22	Punjab	ND	ND	ND	ND	0	934394
23	Rajasthan	0	56000	0	56000	0	56000
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	0	8256000	0	8256000	0	8256000
26	Telangana	0	689446	2422	689446	9531	689446
27	Tripura	11852	79026	16252	79026	16490	79026
28	Uttar Pradesh	3200	781220	3200	781220	3200	781220
29	Uttarakhand	0	225000	0	225000	0	225000
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A12: States/UTs Feeder Segregation

Sl. No.	States/UTs	Feeder Segregation as of May 2017 (no. of units)		Feeder Segregation as of May 2018 (no. of units)		Feeder Segregation as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	4964	5987	5987	5987	5987	5987
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	136	0	166	878	166	878
4	Bihar	0	565	0	566	23	566
5	Chhattisgarh	419	1049	436	1283	466	1283
6	Goa	ND	ND	ND	ND	ND	ND
7	Gujarat	6866	6560	7091	6560	7228	6560
8	Haryana	3536	3536	3536	3536	3536	3536
9	Himachal Pradesh	ND	ND	ND	ND	ND	ND
10	Jammu & Kashmir	0	116	0	1227	0	116
11	Jharkhand	0	460	0	460	0	460
12	Karnataka	1937	2506	2414	2506	2448	2506
13	Kerala	ND	ND	ND	ND	ND	ND
14	Madhya Pradesh	6173	6862	6542	6862	6713	6862
15	Maharashtra	4244	7355	4468	7355	4852	7355
16	Manipur	ND	ND	1	0	1	0
17	Meghalaya	ND	ND	3	0	3	0
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	ND	ND	ND	ND	ND	ND
22	Punjab	5319	5590	5319	5590	5686	5962
23	Rajasthan	1672	9581	2125	9581	2259	9581
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	0	1920	0	1920	0	1920
26	Telangana	291	4158	387	4196	387	4196
27	Tripura	ND	ND	ND	ND	ND	ND
28	Uttar Pradesh	179	5257	553	5257	799	5257
29	Uttarakhand	0	40	0	60	1	60
30	West Bengal	NP	NP	NP	NP	NP	NP

BI: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A13: Sates/UTs Rural Feeder Audit

Sl. No.	States/UTs	Rural Feeder Audit as of May 2017 (no. of units)		Rural Feeder Audit as of May 2018 (no. of units)		Rural Feeder Audit as of 26 October 2018 (no. of units)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	3183	7920	7920	7920	7963	7920
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	0	1756	1051	1051	1051	1051
4	Bihar	0	1572	0	1572	0	1572
5	Chhattisgarh	72	2793	471	2793	1020	2793
6	Goa	289	289	289	289	289	289
7	Gujarat	34882	9456	78599	9456	115417	9456
8	Haryana	992	1638	2836	1638	2003	1621
9	Himachal Pradesh	2696	1027	6404	634	7946	634
10	Jammu & Kashmir	0	1227	0	1227	0	1227
11	Jharkhand	227	761	719	761	719	761
12	Karnataka	7389	7870	7535	7870	7552	7870
13	Kerala	0	1053	0	1053	0	1053
14	Madhya Pradesh	11836	11457	12014	11457	12126	11457
15	Maharashtra	4185	3389	4281	3389	4445	3389
16	Manipur	213	95	644	95	644	95
17	Meghalaya	75	265	75	265	75	265
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	0	55	0	55	0	55
22	Punjab	0	6657	0	6657	7414	7414
23	Rajasthan	19756	19711	19756	19711	20248	19711
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	516	2558	1616	2558	2276	2558
26	Telangana	1440	5906	3305	5906	3595	5906
27	Tripura	0	235	0	235	0	235
28	Uttar Pradesh	4925	8743	11430	8743	49778	8743
29	Uttarakhand	0	1395	700	1395	775	1395
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A14: States/UTs Distribution of LEDs under UJALA

Sl. No.	States/UTs	Distribution of LEDs Under UJALA as of May 2017 (in Lakhs)		Distribution of LEDs Under UJALA as of May 2018 (in Lakhs)		Distribution of LEDs Under UJALA as of 26 October, 2018 (in Lakhs)	
		Progress	Target	Progress	Target	Progress	Target
1	Andhra Pradesh	202.84	185.3	202.84	185.3	202.84	185.3
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND
3	Assam	2.8	2.8	6.8	2.8	8.84	2.8
4	Bihar	155.19	83.8	188.77	83.8	196.17	83.8
5	Chhattisgarh	79.2	75.04	109.69	75.04	135.51	75.04
6	Goa	8.2	14.67	8.2	14.67	8.2	14.67
7	Gujarat	354.18	202	380.25	202	386.08	202
8	Haryana	123.63	457	149.9	214	152.83	214
9	Himachal Pradesh	74.85	76.19	79.39	76.19	81.06	76.19
10	Jammu & Kashmir	64.31	80	69.98	80	76.38	80
11	Jharkhand	100	25	120.36	25	130.91	50
12	Karnataka	169.68	160.91	203.42	168.41	217.27	188.91
13	Kerala	87.56	161.9	126.64	161.9	132.57	161.9
14	Madhya Pradesh	132.04	203.66	165.39	300.4	171.09	300.4
15	Maharashtra	213.67	199.48	218.01	202.48	220.41	202.48
16	Manipur	0	1	1.41	1	1.41	1
17	Meghalaya	2	0	2.9	0	2.9	0
18	Mizoram	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP
21	Puducherry	6.7	6.97	6.7	6.97	7.01	7.52
22	Punjab	0	0	9.92	0	11.8	0
23	Rajasthan	136.53	143.76	151.52	143.76	157.69	143.76
24	Sikkim	ND	ND	ND	ND	ND	ND
25	Tamil Nadu	2.06	54.2	16.3	54.2	27.83	54.2
26	Telangana	12.09	14.83	15.1	14.83	16.09	14.83
27	Tripura	5.1	0	6.11	0	7.86	4
28	Uttar Pradesh	195.43	175.12	271.42	175.12	301.13	175.12
29	Uttarakhand	40.94	59.33	46.87	59.33	50.51	59.33
30	West Bengal	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

ND: No Data ; NP: Not a part of UDAY Scheme

Table A15: Aggregate: Financial Indicators under UDAY

	India as of May 2017	India as of May 2018	India as of 26 October 2018
UDAY Bonds Issued (crore)*	232163	232163	232163
UDAY Bonds to be Issued (crore)*	269056.35	269056.35	269056.35
AT&C Loss (%) #	19.93	21.17	22.99 (25.41 for 25 states)
ACS-ARR Gap (Rs/Unit)kWh #	0.46	0.29	0.27
Tariff orders issued	25/27 states/UTs	25/27 states/UTs	25/27 states/UTs

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018.

* Depicts Data for 16 States

Depicts Data for 24 States

Table A16: Aggregate: Operational Indicators under UDAY

	as of May 2017		as of May 2018		as of 26 October 2018	
	Progress	Target	Progress	Target	Progress	Target
Feeder Metering (Urban) *	46844	42422	46684	41788	47071	42103
Feeder Metering (Rural) *	96977	97200	105427	97158	107512	98164
DT Metering (Urban) *	879540	1624193	884611	1534271	965156	1536033
DT Metering (Rural) *	1728778	4164334	2091086	4152546	2472428	4156483
Electricity Access to Un- connected Households #	1470.16	1851.38	1545.98	1855.31	1798.58	2053.1
Smart Metering above 500 kWh *	132660	5011130	150624	5011620	193115	5733302
Smart Metering above 200 kwh up to 500 kWh *	155046	17449484	174999	17450398	191257	18429956
Feeder Segregation *	35736	61542	39028	62713	40574	63090
Rural Feeder Audit *	92896	97828	159645	96730	250458	97676
Distribution of LEDs under UJALA#	2168.99	2382.96	2556.88	2247.2	2709.1	2299.25

Source: UDAY Portal as accessed on May 2017, May 2018 and 26 October 2018

* measured as no. of units

measured in lakhs

Table A17: An Overall Picture of Operational & Financial Indicators for States under DAY (as of 26 October 2018)

S. N	States	ATC Losses (in %)	ACC-ARR Gap (Rs./unit)	Feeder Metering Urban (no. of units)	Feeder Metering Rural (no. of units)	DT Metering Urban (no. of units)	DT Metering Rural (no. of units)	Electricity Access to Households (in Lakhs)	Smart Meter Above 500 (no. of units)	Smart Meter Above 200 to 500 (no. of units)	Feeder seg. (no. of units)	Feeder Audit (no. of units)	Distribution of LEDs (in Lakhs)
1	Andhra Pradesh	11.16	0.06	110.84	101.48	92.48	51.42	104.48	0.09	0.09	100	100.54	109.47
2	Arunachal Pradesh	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	Assam	21.82	1.04	103.76	71.46	100	35.32	72.98	18.51	5.14	18.91	100	315.71
4	Bihar	39.1	0.1	100	101.21	100	10.25	65.30	0	0	4.06	0	234.09
5	Chhattisgarh	31.62	0.5	107.05	132.47	64.94	45.58	94.23	0	0	36.32	36.52	180.58
6	Goa	11.3	1.17	100	100	93.80	94.11	100	0	0	ND	100	55.90
7	Gujarat	14.29	-0.04	134.90	123.62	116.26	137.81	107.26	0	0	110.18	1220.57	191.13
8	Haryana	23.81	0.58	101.17	103.27	18.01	28.73	92.42	1.52	0.47	100	123.57	71.42
9	Himachal Pradesh	3.29	0.03	100	100	104.10	70.35	100.05	81.02	101.20	ND	1253.31	106.39
10	J & K	53.78	1.96	100	100	43.22	0	86.41	0	0	0	0	95.48
11	Jharkhand	36.97	1.85	104.06	100	100.00	83.26	57.97	0	0	0	94.48	261.82
12	Karnataka	15.46	-0.01	103.81	102.64	96.66	68.98	89.84	0.44	0.64	97.69	95.96	115.01
13	Kerala	11.49	0.4	88.99	81.48	71.26	34.46	102.38	0	0	ND	0	81.88
14	Madhya Pradesh	31.06	0.37	106.18	109.31	81.76	41.39	85.27	20.29	1.21	97.83	105.84	56.95
15	Maharashtra	19.87	-0.02	140.65	131.16	30.71	19.15	99.40	0	0	65.97	131.16	108.86
16	Manipur	43.74	1.61	100	100	95.85	91.95	103.14	38.22	56.89	1/0	677.89	141
17	Meghalaya	34.64	1.3	88.89	22.86	102.16	40.74	74.47	1.73	2.76	3/0	28.30	2.9/0
18	Mizoram	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19	Nagaland	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20	Odisha	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
21	Punjab	31.3	1.1	100	100	72.30	0.81	100.00	0	0	95.37	100	11.8/0
22	Rajasthan	27.31	-0.27	107.79	109.57	63.02	ND	96.48	57.82	0	23.58	102.72	109.69
23	Sikkim	ND	ND	ND	ND	25.34	ND	ND	ND	ND	ND	ND	ND
24	Tamil Nadu	14.76	0.55	102.20	94.72	ND	0.00	100.00	0	0	0	88.98	51.35
25	Telangana	12.55	0.39	100	100	75.98	119.94	100.86	12.24	1.38	9.22	60.87	108.50
26	Tripura	23	-0.17	100	100	126.16	43.29	86.21	16.95	20.87	ND	0	196.5
27	Uttar Pradesh	37.92	0.37	122.30	128.41	65.23	4.01	62.61	0	0.41	15.20	569.35	171.96
28	Uttarakhand	40.92	-0.02	100	100	69.52	0	95.61	0	0	1.67	55.56	85.13
29	West Bengal	NP	NP	NP	NP	88.98	NP	NP	NP	NP	NP	NP	NP

Source: UDAY Portal as accessed on 26 October 2018.

ND: No Data; NP: Not a part of UDAY Scheme

Table A18: An Overall Picture of Operational & Financial Indicators for UTs under UDAY (as of 26 October 2018)

S.N.	States	ATC Losses (in %)	ACC-ARR Gap (Rs./unit)	Feeder Metering Urban (no. of units)	Feeder Metering Rural (no. of units)	DT Metering Urban (no. of units)	DT Metering Rural (no. of units)	Electricity Access to Households (in Lakhs)	Smart Meter Above 500 (no. of units)	Smart Meter Above 200 to 500 (no. of units)	Feeder seg. (no. of units)	Feeder Audit (no. of units)	Distribution of LEDs (in Lakhs)
1	Andaman & Nicobar Islands	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	Chandigarh	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
3	Dadra & Nagar Haveli	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4	Daman & Diu	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5	Delhi	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
6	Lakshadweep	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7	Puducherry	18.91	ND	100	100	72.3	32.95	100	16000/0	5000/0	ND	0	93.22

Source: UDAY Portal as accessed on 26 October 2018.

ND: No Data; NP: Not a part of UDAY Scheme

Table A 19: List of Electricity Distribution Companies for States/UTs

S. No	States	Electricity Distribution Companies
1	Andhra Pradesh	1. Andhra Pradesh Eastern Power Distribution Company (Visakhapatnam) 2. Andhra Pradesh Southern Power Distribution Company (Tirupati)
2	Arunachal Pradesh	1. Power Department*
3	Assam	1. Assam Power Distribution Company Ltd.
4	Bihar	1. North Bihar Power Distribution Company Limited 2. South Bihar Power Distribution Company Limited
5	Chhattisgarh	1. Chhattisgarh State Power Distribution Company
6	Goa	1. Goa Electricity Department
7	Gujarat	1. Dakshin Gujarat Vij Company Limited 2. Madhya Gujarat Vij Company Limited 3. Paschim Gujarat Vij Company Limited 4. Uttar Gujarat Vij Company Limited
8	Haryana	1. Uttar Haryana Bijli Vitran Nigam Limited 2. Dakshin Haryana Bijli Vitran Nigam Limited
9	Himachal Pradesh	1. Himachal Pradesh State Electricity Board
10	Jammu & Kashmir	1. Jammu & Kashmir Power Development Department
11	Jharkhand	1. Jharkhand Bijli Vitran Nigam Limited
12	Karnataka	1. Bangalore Electricity Supply Company (BESCOM) 2. Mangalore Electricity Supply Company (MESCOM) 3. Hubli Electricity Supply Company (HESCOM) 4. Gulbarga Electricity Supply Company (GESCOM) 5. Chamundeshwari Electricity Supply Corporation (CESC)
13	Kerala	1. Kerala State Electricity Board Limited (KSEBL)
14	Madhya Pradesh	1. Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Ltd 2. Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Ltd 3. Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Ltd.
15	Maharashtra	1. Maharashtra State Electricity Distribution Co. Ltd (MSEDCL) Mumbai
16	Manipur	1. Manipur State Power Distribution Company Limited
17	Meghalaya	1. Meghalaya Power Distribution Corporation Ltd.
18	Mizoram	1. Power department*
19	Nagaland	1. Power department*
20	Odisha	<i>Not part of the UDAY Scheme</i>
21	Punjab	1. Punjab State Power Corporation Limited (PSPCL)
22	Rajasthan	1. Jaipur Vidyut Vitran Nigam Limited 2. Ajmer Vidyut Vitran Nigam Limited 3. Jodhpur Vidyut Vitran Nigam Limited
23	Sikkim	1. Energy and Power Department*
24	Tamil Nadu	1. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)
25	Telangana	1. Southern Power Distribution Company of Telangana Ltd (Hyderabad) 2. Northern Power Distribution Company of Telangana Ltd (Warangal)
26	Tripura	1. Tripura State Electricity Corporation Ltd. (TSECL)
27	Uttar Pradesh	1. Dakshinanchal Vidyut Vitran Nigam Limited (Agra) 2. Kanpur Electricity Supply Company Limited (Kanpur) 3. Madhyanchal Vidyut Vitran Nigam Limited (Lucknow) 4. Paschimanchal Vidyut Vitran Nigam Limited (Meerut) 5. Purvanchal Vidyut Vitran Nigam Limited (Varanasi)
28	Uttarakhand	1. Uttarakhand Power Corporation Limited
29	West Bengal	<i>Not part of the UDAY Scheme</i>

Table A 19: List of Electricity Distribution Companies for States/UTs (Contd..)

S No.	Union Territories	Electricity Distribution Companies
1	Puducherry	1. Puducherry – Electricity Department
2	Andaman and Nicobar Islands	1. Administration of UT of Andaman & Nicobar Islands*
3	Dadra & Nagar Haveli	1. DNH Power distribution Corporation Limited (DNHPDCL)*
4	Chandigarh	<i>Not part of the UDAY Scheme</i>
5	Daman & Diu	1. Administration of UT of Daman & Diu*
6	Delhi	<i>Not part of the UDAY Scheme</i>
7	Lakshadweep	2. Administration of UT of Lakshadweep*

Source: UDAY Portal, Government of India.

Note: * indicates that the name of the electricity distribution company/corporation is not listed on the UDAY Dashboard but the mention of such electricity distribution companies is present in MoU signed between the Government of India, respective States/UTs and with the power distribution companies of the states/UTs. However, some MoU agreements have been bipartite as well.

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