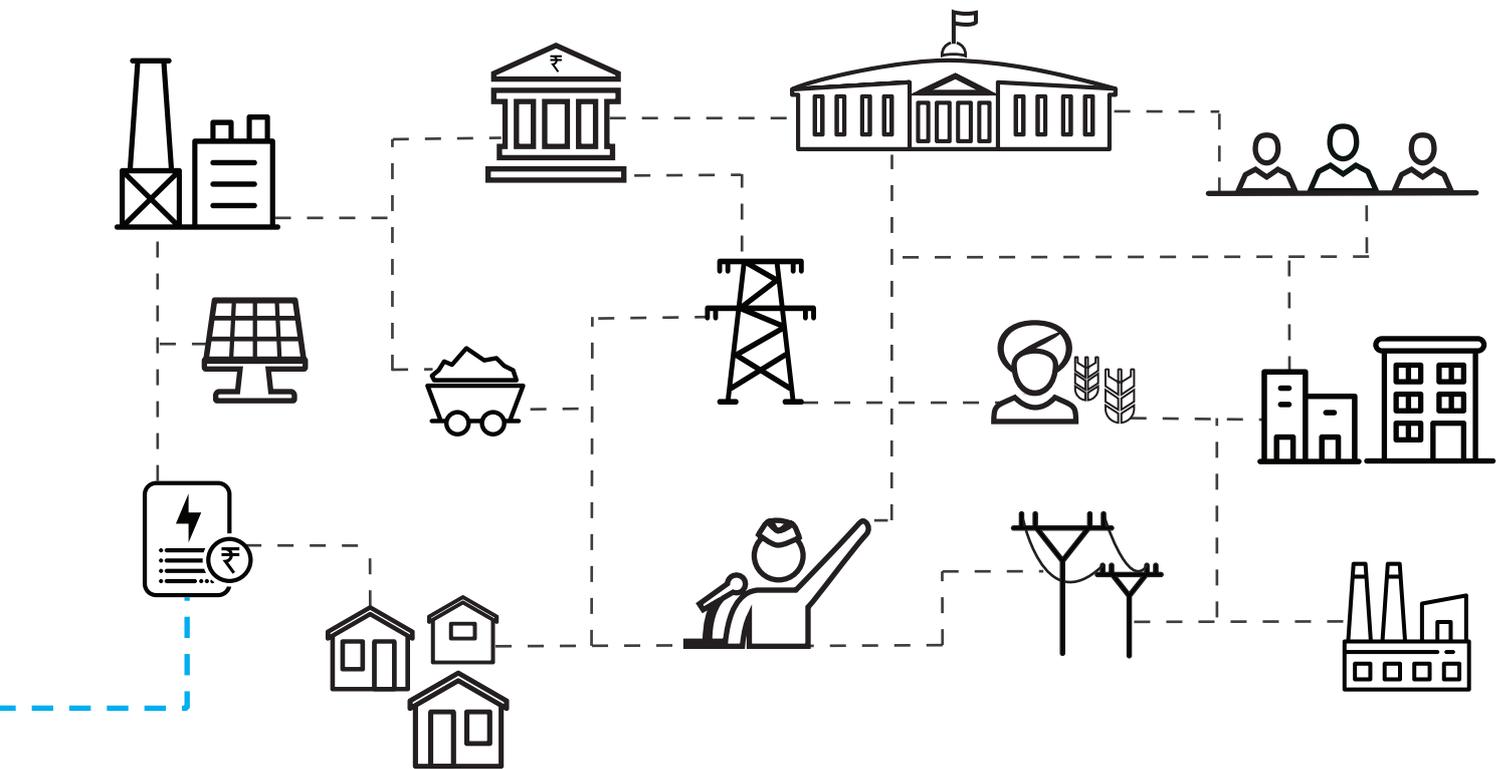


Elephant in the Room

Implications of **subsidy** practices on DISCOM finances



Elephant in the Room

Implications of subsidy practices on DISCOM finances

Prayas (Energy Group), Pune

Nikita Das | Ashwini Dabadge | Maria Chirayil |

Manabika Mandal | Ann Josey

May, 2019



About Prayas

Prayas (Initiatives in Health, Energy, Learning and Parenthood) is a non-governmental, non-profit organisation based in Pune, India. Members of Prayas are professionals working to protect and promote public interest in general, and interests of the disadvantaged sections of society, in particular. Prayas (Energy Group) works on theoretical, conceptual, regulatory and policy issues in the energy and electricity sectors. Our activities cover research and engagement in policy and regulatory areas, as well as training, awareness, and support to civil society organisations. Prayas (Energy Group) has contributed in the development of energy sector policy as part of several official committees constituted by ministries, the erstwhile Planning Commission and NITI Aayog. Prayas is registered as SIRO (Scientific and Industrial Research Organization) with the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

Prayas (Energy Group)

Unit III A & B, Devgiri,
Kothrud Industrial Area,
Joshi Railway Museum Lane, Kothrud,
Pune 411 038
Maharashtra
Phone: 020 – 2542 0720
Email: energy@prayaspune.org
Website: <http://www.prayaspune.org/peg>

Acknowledgements

We would like to thank the various experts who have shared their views on this discussion paper. We would especially like to thank Daljit Singh, Centre for Energy, Environment & Resources (CEER) and Akhilesh Magal, Gujarat Energy Research and Management Institute (GERMI) for reviewing this report. We are grateful to our colleagues at Prayas, particularly Ashwini Chitnis, Shantanu Dixit, and Shilpa Kelkar for their keen observations, advice and assistance. We would especially like to thank Neeta Deshpande for editing this report. Any shortcomings or weaknesses in the report are our own.

We are grateful to Shakti Sustainable Energy Foundation for its support. The Shakti Sustainable Energy Foundation works to strengthen the energy security of India by aiding the design and implementation of policies that support energy efficiency and renewable energy. The views/analysis expressed in this report/document do not necessarily reflect the views of Shakti Sustainable Energy Foundation. The foundation also does not guarantee the accuracy of any data included in this publication, nor does it accept responsibility for the consequences of its use.

Suggested citation: Prayas (Energy Group). (2019). Elephant in the Room: Implication of subsidy practices on DISCOM finances

Cover design: Maria Chirayil, Manabika Mandal, and Gayatri Joag

Layout and Printing: Mudra, 383 Narayan Peth, Pune. Email: mudraoffset@gmail.com

Copyright: Any part of this report can be reproduced for non-commercial use without prior permission, provided that Prayas is clearly acknowledged, and a copy of the published document is sent to Prayas.

For Private Circulation only

Summary

Subsidies to electricity distribution companies (DISCOMs) form 10% to 30%¹ of the aggregate revenue requirement of DISCOMs in various states. These subsidies are not limited to agriculture consumers alone, as many domestic, non-domestic, and even industrial consumers receive free or subsidised power. Though subsidies are already significant and the quantum of subsidy is increasingly rapidly, they are barely able to keep pace with the rise in the average cost of supply in many states. Along with the increase in subsidy commitments, delays in subsidy payment are frequent and the time period of such delays is increasing. Delays in subsidy payments result in increased working capital borrowings for DISCOMs to meet operational expenses. This puts additional stress on cash-strapped DISCOMs. If subsidies are not committed or paid in time, the impact on DISCOM finances will be substantial and will necessitate periodic bailouts in the future.

With the rising cost of supply for DISCOMs and the increasing demand from newly electrified and poor households, the need for subsidies will only increase. With the growth in open access and captive consumption, DISCOMs may not have the ability to raise enough cross subsidy, which further underlines the need for increased subsidy support. Given the crucial role of subsidies and their impact on DISCOM finances, trends in subsidy design, delays in payment and measures to ensure regulatory accountability across six states are explored in this report over a period of the last 10 to 15 years. The six states are Gujarat, Haryana, Punjab, Tamil Nadu, Uttar Pradesh, and Bihar. Understanding current practices should be considered crucial while debating strategies to ensure timely payments, increase subsidy targeting, and for subsidy rationalisation. This is especially relevant as policy mandates over several decades to meet these objectives have yielded limited results. The focus of the report is not to document state specific realities in detail but to highlight state-level observations pointing to larger trends in the sector.

Some of the major observations from our state-level analysis are highlighted below:

Gujarat

- Agricultural consumers in Gujarat are predominant recipients of subsidy. A small portion of subsidies goes to public water works, and more recently, new textile industrial units.
- More than 65% of the total subsidies committed are not reported in regulatory documents or by the Power Finance Corporation (PFC). Subsidy is recorded as constant at Rs. 1,100 Crore with no regulatory accountability for the unreported subsidy. Around 56% of the unreported subsidy is to compensate the fuel surcharge levied upon agricultural consumers.
- The regulator sets a higher tariff for unmetered agricultural consumers to incentivise metering, but subsidies brings unmetered tariffs at par with metered tariffs, which defeats the purpose of the regulator's tariff design.
- Cumulative pending subsidies are comparable to a major share of the DISCOMs' working capital requirements.
- There is limited regulatory oversight on delays and it is not clear if the interest costs are borne by the DISCOM, state government or consumers.

1. Based on the audited actuals of DISCOMs in Gujarat, Haryana, Punjab, Tamil Nadu, Uttar Pradesh and Bihar for the year FY17.

Haryana

- The Haryana government subsidises agricultural consumers substantially, paying for nearly their entire cost of supply, with only a tiny portion of revenue coming from farmers and no revenue from cross subsidy. Thus, subsidy was as high as Rs. 7.1 per unit which amounted to Rs. 6,550 Crore in FY18.
- There have been frequent and consistent delays in subsidy payment. At the end of FY15, the cumulative outstanding subsidy, inclusive of the interest accrued, stood at Rs. 4,334 Crore, which is comparable to 21% of the aggregate revenue requirement of the Haryana DISCOMs.
- In FY18, the government announced subsidies for new industrial consumers as well as domestic consumers. The subsidy is intended for domestic consumers using less than 50 units and also for those using less than 150 units per month. These commitments, which are likely to grow, will make timely payments even more challenging in the future.

Punjab

- More than 1/4th of the revenue required from tariffs in Punjab is financed by subsidies.
- Farmers are given free power and so are scheduled caste, Below Poverty Line (BPL) and backward caste domestic consumers, who use less than 200 units per month, with a connected load of up to 1 kW.
- Significant subsidy provided to industrial consumers to ensure their energy charges do not exceed Rs. 4.99 per unit.
- With these commitments, the annual subsidy requirement has been growing at 9% per annum (in FY12 prices) and was Rs. 7,967 Crore in FY18. However, since FY14, there have been significant delays in payment.
- The SERC (State Electricity Regulatory Commission) conducts regular, detailed scrutiny of category-wise subsidy commitment and payment. Pending payments and interest accrued are added to the future subsidy commitment.
- Despite this practice, delays persist and the growing outstanding subsidies are estimated at Rs. 13,719 Crore for FY19.

Tamil Nadu

- Over 50% of the DISCOM sales in Tamil Nadu are subsidised. BPL homes and agricultural connections receive free power.
- Between FY08 and FY18, subsidy payments grew by 19%, but sales to subsidised categories grew only by 5%. The rapid increase in subsidy could largely be attributed to a 97% increase in subsidy between FY12 and FY13 to compensate for the sharp tariff increase which was driven by increasing losses.
- Subsidy is even provided to domestic consumers using more than 100 units per month. Since FY17, the first 50 units per month are free for all domestic consumers (including those in the highest slab). This may not be equitable.
- The SERC issues an annual subsidy order with reporting of category-wise subsidy promised, along with payment schedules. These orders were issued even in years when tariff orders were not released. However, the SERC does not conduct a 'true-up' of actual subsidy payments which reduces accountability for delayed payments.

Uttar Pradesh

- Subsidy has been increasing at an average rate of 13% per year since FY01 in Uttar Pradesh, with more than 50% increase around elections. In fact, the subsidy promised rose by 55% between FY18 and FY19.
- Agricultural and rural domestic consumers are major subsidised categories. In the initial years, agriculture was a recipient of a large share of subsidy with no cross subsidy. More recently, the subsidy and cross subsidy provision became proportional to sales. Presently, rural domestic consumers get 96% of subsidy.
- Since FY08, the SERC has disallowed cross subsidy for subsidised categories. The revenue required to bridge losses was to be provided as 'additional subsidy'. As the state government has not committed to pay this, it has become part of the DISCOMs' growing losses. Till FY17, the approved 'additional subsidy' amounted to Rs. 32,000 Crore (without carrying costs), which is equal to 60% of the liabilities taken over as a part of UDAY in 2015.

Bihar

- With limited cross subsidy potential, a large number of newly electrified consumers, and the high cost of supply, Bihar's subsidy dependence is significant. More than half the revenue requirement of DISCOMs in the past five years has been met through subsidies.
- From FY13 to FY17, substantial subsidy was provided to compensate for costs due to excess transmission and distribution losses. Tariff subsidy was given to agricultural, rural and urban BPL, rural domestic, and commercial consumers, with domestic consumers being provided the lion's share of subsidies due to the increasing electrification of homes.
- Since FY18, subsidy has been declared on a monthly basis rather than annually along with the tariff orders. Non-payment in any month would require consumers to pay regulated tariffs. As this would result in an impractical increase in tariffs, DISCOMs may have to bear the brunt of delays. Moreover, several good transparency and accountability related practices that existed earlier were lost in the process.

State trends show that the announcement, payment, and reporting of subsidies is a vexed issue with multiple dimensions. Despite its impact on DISCOM finances, there is surprisingly little public information on subsidy across states, like the proverbial 'elephant in the room'. Even though the financial turn-around of DISCOMs is a priority, central government agencies, particularly the Power Finance Corporation (PFC), track subsidy related data in a limited fashion. There are significant discrepancies when this data is compared to information in regulatory documents. Additionally, information tracked in regulatory processes varies in detail and terminology. To address this, it is suggested that:

- DISCOMs report category-wise subsidy promised and finally paid along with delays and interest cost incurred every quarter in specified formats to the SERC.
- SERCs should publish this information after regulatory vetting. The data should be used by ERCs in tariff processes and by other agencies (PFC, Comptroller and Auditor General of India).
- The Forum of Regulators can standardise formats and terminology.
- The Ministry of Power (MoP) can release an annual report on electricity subsidies and report subsidy payment on the UDAY portal periodically.
- Section 65 of the Electricity Act, 2003 can be amended to mandate reporting of subsidy data similar to the provision in Section 59.

There is a need to implement processes to ensure timely payments, especially when cash-strained state governments commit to unreasonably high subsidies. Charging regulated tariffs in case of delays, as mandated in the Electricity Act, 2003 will result in tariff shock for small consumers and may be politically infeasible. Thus, DISCOMs end up bearing the financial brunt of delays. To ensure timely payments:

- The MoP can track subsidy payments and delays on the UDAY portal.
- The Reserve Bank of India, PFC and MoP can track working capital borrowings to ensure it is under 25% of the revenue requirement, as specified under UDAY. This along with one to two percentage point annual reduction in the limit for a period of five years, would increase pressure to ensure timely payments.
- SERCs can ensure that future subsidy commitments are estimated after accounting for pending payments and interest costs from past years.

Given limited state government budgets, it is also necessary to rationalise and target subsidies. Proposals to identify poor domestic households and deserving agricultural consumers should be encouraged. Subsidies can be rationalised via a gradual, phase-wise, inflation-linked tariff increase. Initiatives to reduce subsidy requirement (efficient appliance adoption schemes of newly electrified households, adopting Direct Benefit Transfer) can also be advocated based on observations from varied and multiple pilots.

Without efforts to rationalise, target, and deliver subsidies in a timely manner, while paying close attention to state-level realities and emerging trends, DISCOMs will face a financial crisis unmanageable in scale.

Contents

Summary	iii
List of Figures.....	viii
List of Tables.....	ix
List of Abbreviations.....	x
1 Introduction and context.....	1
1.1 Objective of the study.....	2
1.2 Methodology and data	3
2 Understanding electricity subsidies in India.....	5
3 Subsidy policy mandate.....	7
4 Trends in subsidy.....	8
4.1 Consumer categories that receive subsidy.....	8
4.2 Subsidy as proportion of ARR.....	9
5 Gujarat.....	11
5.1 Overview	11
5.2 Significant subsidy not declared in tariff orders and petitions.....	12
5.3 Dissonance in government subsidy design and tariff design by regulator	13
5.4 Use of subsidy to avoid tariff shock for non-agricultural consumers.....	14
5.5 Delay in subsidy payments and its impacts.....	14
6 Haryana.....	16
6.1 Overview	16
6.2 Subsidy from government inadequate to meet total subsidy requirement.....	17
6.3 Subsidy to industrial and domestic consumers.....	18
7 Punjab	19
7.1 Overview	19
7.2 Delays in subsidy payments, their implications and regulatory action.....	20
7.3 Mode of payment of subsidy.....	21
7.4 Subsidised categories in the state.....	22
7.4.1 Agricultural subsidies.....	22
7.4.2 Domestic subsidies.....	23
7.4.3 Subsidy for industrial consumers	24
8 Tamil Nadu.....	25
8.1 Overview	25
8.2 Sharp jump in overall subsidy quantum	26
8.3 Many recipients of subsidy and free power.....	27

8.4	Changing share of agricultural and domestic subsidy.....	29
8.5	Inequitable domestic subsidy design.....	29
8.6	Regulatory accountability for subsidy.....	31
9	Uttar Pradesh.....	32
9.1	Overview.....	32
9.2	Trends in subsidy allocation in Uttar Pradesh.....	33
9.3	Subsidised categories in Uttar Pradesh.....	34
9.4	Mechanism of allocating subsidy in Uttar Pradesh.....	35
9.4.1	Change in share of agricultural subsidies.....	35
9.4.2	Subsidy against electricity duties.....	36
9.5	Additional subsidy: A regulatory paper tiger.....	36
10	Bihar.....	38
10.1	Overview.....	38
10.2	Trends in subsidy provision.....	39
10.2.1	Subsidy to compensate for costs due to excess T&D losses.....	40
10.2.2	Category-wise break up of tariff subsidy.....	41
10.2.3	Lack of clarity in subsidy for powerlooms.....	42
10.3	Subsidy design post 2018.....	43
11	Commentary.....	45
11.1	Limited tracking of state electricity subsidies.....	45
11.1.1	Data availability across states.....	45
11.1.2	Proposal for reporting and tracking of subsidy-related information.....	47
11.2	Accountability for subsidy payments.....	48
11.2.1	Lack of compliance with legal mandate and need for discipline by state governments.....	48
11.2.2	Measures to improve accountability.....	48
11.3	Need for rationalisation and targeting.....	49
12	References.....	51
13	Related Publications.....	58

List of Figures

Figure 1.1:	Subsidy in PFC and regulatory data.....	4
Figure 2.1:	Relationship between subsidy, cross subsidy and financial loss.....	5
Figure 2.2:	Subsidy process for the financial year 'T'.....	6
Figure 3.1:	Key focus areas of subsidy policy.....	7
Figure 4.1:	Agricultural subsidy as a proportion of total subsidy in selected states.....	8
Figure 4.2:	Subsidy paid and subsidy promised as a % of ARR between FY12 and FY18.....	9
Figure 5.1:	Consumer sales mix of Gujarat DISCOMs between FY07 and FY16.....	11
Figure 5.2:	Subsidy promised by the Gujarat government to Gujarat DISCOMS between FY10 to FY15.....	13

Figure 5.3: Cumulative outstanding subsidy and GUVNL's working capital borrowings at the end of each year.....	15
Figure 6.1: Consumer sales mix of Haryana DISCOMs between FY07 and FY16.....	16
Figure 6.2: Subsidy released and cumulative outstanding subsidy at the end of financial year between FY10 and FY15.....	17
Figure 7.1: Changing sales mix of PSPCL.....	19
Figure 7.2: Subsidy promised and finally paid from FY03 to FY17 in Punjab	20
Figure 7.3: Breakup of subsidy across categories in Punjab from FY03 to FY18.....	22
Figure 7.4: Beneficiaries of free power in domestic category of PSPCL.....	23
Figure 8.1: Tamil Nadu sales mix between FY12 and FY18	25
Figure 8.2: Subsidy promised and its proportion in the ARR of Tamil Nadu between FY08 and FY19.....	26
Figure 8.3: Category-wise subsidy in Tamil Nadu between FY08 and FY19.....	27
Figure 8.4: Shift of subsidy shares from domestic to agriculture in FY13.....	29
Figure 8.5: Slab-wise breakup of domestic subsidy in Tamil Nadu between FY13 and FY18.....	30
Figure 8.6: Subsidy to monthly consumption for typical consumers in Tamil Nadu between FY13 and FY18.....	31
Figure 9.1: Consumption mix in Uttar Pradesh between FY01 and FY19	32
Figure 9.2: Subsidy in Uttar Pradesh from FY07 to FY19.....	33
Figure 9.3: Subsidised consumers in Uttar Pradesh from FY01 to FY19	34
Figure 9.4: Subsidy allocation proportion in Uttar Pradesh over the years.....	35
Figure 9.5: Additional subsidy requirement as computed by the UPERC for FY08 to FY17.....	37
Figure 10.1: Consumer sales mix from FY15 to FY18 for both DISCOMs (NBPDC and SBPDCL) in Bihar	38
Figure 10.2: Subsidy paid to NBPDC and SBPDCL from FY12 to FY18.....	40
Figure 10.3: Category-wise break up of tariff subsidy between FY13 and FY18 in Bihar.....	42

List of Tables

Table 1.1: Subsidy paid and its impact on revenue gap of all state DISCOMs for the year FY17	1
Table 7.1: Concessions for industrial consumers	24
Table 8.1: Major trends in the 'others' category in Tamil Nadu	28
Table 8.2: Assignment of subsidy to cross subsidising categories in Tamil Nadu in FY18.....	28
Table 10.1: Change in distribution loss norm for NBPDC and SBPDCL considered by ERC.....	41
Table 10.2: ABR (Rs./unit) for subsidised categories in Bihar.....	44
Table 11.1 Status of state-wise subsidy related information available from various sources.....	45

List of Abbreviations

ABR	Average Billing Rate	MGVCL	Madhya Gujarat Vij Company Limited
ACoS	Average Cost of Supply	MVNL	Madhyanchal Vidyut Vitran Nigam Limited
APR	Annual Performance Review	NBPDCL	North Bihar Power Distribution Corporation Limited
APTEL	Appellate Tribunal for Electricity	PFC	Power Finance Corporation
ARR	Aggregate Revenue Requirement	PGVCL	Paschim Gujarat Vij Company Limited
BPL	Below Poverty Line	PSPCL	Punjab State Power Corporation Limited
BSEB	Bihar State Electricity Board	PTW	Private Tube Wells
CAG	Comptroller and Auditor General of India	PuVNL	Purvanchal Vidyut Vitaran Nigam Limited
DHVNL	Dakshin Haryana Bijli Vitran Nigam Limited	PVNL	Pashchimanchal Vidyut Vitaran Nigam Limited
DBT	Direct Benefit Transfer	REC	Rural Electrification Corporation
DGVCL	Dakshin Gujarat Vij Company Limited	RGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
DISCOM	Electricity Distribution Company	SBPDCL	South Bihar Power Distribution Corporation Limited
DVNL	Dakshinanchal Vidyut Vitran Nigam Limited	SEB	State Electricity Board
ERC	Electricity Regulatory Commission	T&D	Transmission and Distribution
FPPCA	Fuel Power Purchase Cost Adjustment	TANGEDCO	Tamil Nadu Generation and Distribution Corporation Limited
FRP	Financial Restructuring Plan	TN	Tamil Nadu
FY	Financial Year	UHBVNL	Uttar Haryana Bijli Vitran Nigam Limited
GoB	Government of Bihar	UDAY	Ujwal DISCOM Assurance Yojana
GoUP	Government of Uttar Pradesh	UGVCL	Uttar Gujarat Vij Company Limited
GSDP	Gross State Domestic Product	UP	Uttar Pradesh
HT	High Tension	UPPCL	Uttar Pradesh Power Corporation Limited
KESCO	Kanpur Electricity Supply Company		

1. Introduction and context

The provision of government subsidy to state-owned electricity Distribution Companies (DISCOMs) is an integral part of the country's power sector narrative. The amount of subsidy given has consistently been large. According to the Power Finance Corporation (PFC), this subsidy has ranged from Rs. 37,052 Crore to Rs. 57,680 Crore between the years FY14 and FY16 (PFC, 2017).² For decades, DISCOMs have been relying on government subsidies to meet their rising costs and provide affordable power to consumers. Even with multiple reform efforts, bailouts and changes in the structure of the sector, the importance of subsidy has not diminished. In fact, subsidy plays a critical role in the state of finances of the electricity DISCOMs. Timely subsidy payment has been a crucial recommendation for performance improvement in major DISCOM bailout schemes over the years.³

The subsidy paid by the state government constituted 12% to 33% of the state DISCOMs' Annual Revenue Requirement (ARR)⁴ for Gujarat, Haryana, Punjab, Tamil Nadu, Uttar Pradesh⁵ and Bihar. The degree of dependence of DISCOMs on government subsidies is more pronounced when comparing the original revenue gap with the revenue gap in the absence of subsidy as illustrated in Table 1.1. In the absence of this subsidy, the revenue gap of state DISCOMs would on an average be nearly four times, which would impact consumer tariffs or add to the accumulating losses of DISCOMs.

Table 1.1: Subsidy paid and its impact on revenue gap of all state DISCOMs for the year FY17

Particulars	Gujarat	Haryana ^a	Punjab	Tamil Nadu ^b	UP	Bihar ^b
Subsidy (Rs. Crore)	4,467	6,609	6,608	8,644	5,982	3,834
ARR (Rs. Crore)	38,496	28,541	30,199	51,467	49,584	11,654
Subsidy as a percentage of ARR (%)	12%	23%	22%	17%	12%	33%
Original revenue gap (+)/ surplus (-) (Rs. Crore)	1,237	996	4,571	4,772	3,521	1,633
Revenue gap in the absence of subsidy	5,704	7,605	11,179	13,416	9,502	5,467
Increase in revenue gap in the absence of subsidy (Rs. Crore)	4.6 times	7.6 times	2.4 times	2.8 times	2.7 times	3.3 times

Source: Prayas (Energy Group) analysis using audited data from regulatory orders and (GoG, 2019b)

Note: a. Subsidy in Haryana is exclusive of subsidy on fuel surcharge for agriculture.

b. Data in Tamil Nadu and Bihar are as submitted by the respective state DISCOMs.

2. Data from the PFC does not match subsidy data from state regulatory documents as will be further discussed in Section 1.2.

3. This has been identified as one of the reasons for the financial distress of the state-owned utilities in the State Electricity Board (SEB) Bailout of 2001 and the Financial Restructuring Plan (FRP) of 2012. More details are provided in Section 3.

4. ARR is the quantum of revenue required by a DISCOM to offset all costs incurred by it for the service of purchasing and supplying power to its end consumers.

5. This study includes all the state-owned DISCOMs in the states considered, with the exception of Kanpur Electricity Supply Company Limited (KESCO) in UP. This is primarily because KESCO does not receive subsidy from the state government. Additionally, KESCO's consumer mix is dominantly urban with the existence of franchisees.

Table 1.1 also shows a significant variation in subsidy and subsidy as a percentage of ARR, indicative of the variation of subsidy impacts across states. For example, in Haryana, on account of the low revenue gap of state DISCOMs, the rise in revenue gap in the absence of subsidies would be more than seven times. In Tamil Nadu, where the magnitude of subsidy is the highest, its comparative impact on ARR and revenue gap seems to be low. The variation makes it imperative to understand the state-specific narratives with respect to subsidy provision.

1.1 Objective of the study

The focus of the study is to understand the crucial links between subsidy provision by state governments and the financial predicament of the state DISCOMs, and the importance of these linkages. This is achieved by analysing subsidy data, practices and regulatory processes in six states over the past decade. The states considered are Gujarat, Punjab, Haryana, Tamil Nadu, Uttar Pradesh, and Bihar. To the extent possible, states have been selected on the basis of diversity in subsidy trends and practices, political and economic profiles and geographies. The state narratives cover time series trends of the subsidy promised and paid, consumer categories which receive subsidy, delay in subsidy payments, mechanisms to ensure transparency and accountability for subsidy payments, and modes for the provision of subsidy in these states. Understanding state-level practices and developments is also important in the context of the following emerging trends which will necessitate an increase in the role of subsidies.

Increase in newly electrified, small consumers who need affordable power supply: Due to sustained efforts under various government schemes, more than 99% of rural households are reported to be electrified. In the past seven years, about 116.7 million households have been provided connections. These consumers would require tariff support in the medium term to ensure sustained access and affordable supply. The increase in these consumers would require a sharp jump in subsidies especially in states such as Uttar Pradesh, Assam and Bihar.

Increased open access and captive consumption, and limits to increasing cross subsidy: A significant proportion of tariff support has been provided by cross subsidy from industrial and commercial consumers. Between FY91 and FY97, cross subsidy financed an increasing proportion of the gap between Average Cost of Supply (ACoS)⁶ and the consumer tariff of agricultural and domestic consumers. The proportion increased from 23% to 42% (MoP, 1998) in this period. In recent years, the cross subsidising base for DISCOMs today is increasingly becoming less certain due to sales migration as more and more large consumers are switching to open access and captive options to meet demand. This shift is driven by the increase in cost of supply of DISCOMs and the consequent rise in tariffs for these cross subsidising consumers. In a number of states, captive consumption varied from 20% to 30% of the corresponding DISCOM sales, in the period between FY15 to FY17 (PEG, 2018a). The trend is similar in the case of open access as well. In states like Rajasthan, Maharashtra and Gujarat, open access sales is as high as 20% of the HT (High Tension) sales of the corresponding state DISCOMs (PEG, 2018a). The sales migration trend limits the revenue possible from cross subsidy necessitating increased contribution from subsidies to ensure affordability.

Increasing cost of supply for distribution companies: The ACoS for DISCOMs in ten states was about Rs. 7/unit in FY16 and has been increasing at the rate of 6% per annum for the past three to five years. With lesser room to increase cross subsidy, unless there is an increase in subsidy, the rising cost of supply would result in a sharp increase in tariffs for small enterprises, households and agriculturalists (PEG, 2018a).

6. ACoS is the average cost of supplying one unit of energy to the end consumer, inclusive of the cost of generation, transmission and distribution.

Since the role of subsidies is probably going to increase in the future, efforts to rationalise subsidy design, streamline the mode of disbursement and ensure timely payments are necessary. While contemplating policy ideas and reforms to address this need, it is important to understand the magnitude and trends in subsidy design and payment in states, especially those affecting DISCOM finances.

This study is limited to overall subsidy provision and its impacts on DISCOM finances. A detailed analysis of agricultural subsidies, cross subsidy design and the methodologies used for the estimation of typically subsidised, unmetered demand is beyond the scope of this report.⁷ The report also does not focus on changes in subsidy due to electoral cycles, subsidies provided to write off pending bills, and the de facto procedures for deciding subsidies. The impact of electricity subsidies on the state exchequer is not covered either. The focus of the report is not to document state specific realities in detail but to highlight state-level observations pointing to larger trends in the sector.

1.2 Methodology and data

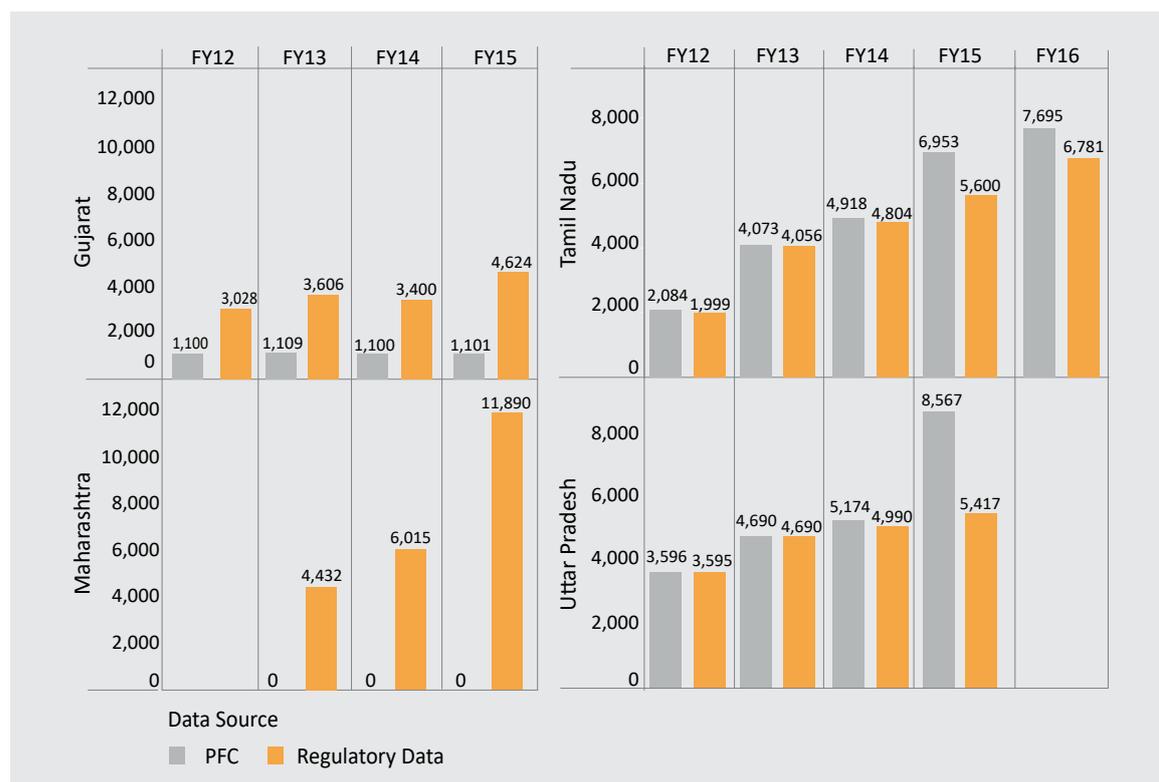
The report relies on regulatory documents, orders and petitions on tariff and subsidy, for data on financial accounts of DISCOMs, as this data has undergone regulatory and public scrutiny. However, consistent, reliable and continuous data on subsidy is hard to find and frequently not available in regulatory documents. Moreover, the available data has many gaps. Many components of the subsidy process are not reported in a consistent manner or are not reported at all. These include aspects such as consumer categories receiving subsidy, breakup of the subsidy according to categories, subsidy finally paid by the government to the DISCOM, mode of subsidy payment, and even the subsidy promised by the government. Some State Electricity Regulatory Commissions (SERCs) do not carry out a true-up⁸ of the subsidy to be paid by the government. This report, thus, has to refer to several sources other than regulatory documents, such as reports of the Comptroller and Auditor General (CAG), government notifications and documents and DISCOM audit reports. Efforts have been made to use audited data where available.

Subsidy details are also reported in periodic reports published by the Power Finance Corporation (PFC) on the performance of state power utilities. There are several substantial discrepancies between data from the PFC and that from regulatory documents, as shown in Figure 1.1. Several crucial subsidy components are not reported as part of the subsidy data. Very large discrepancies in the subsidy promised and paid are observed in states like Gujarat and Maharashtra. In Gujarat, the actual subsidy is between Rs. 3,000 Crore and Rs. 5,000 Crore, which is found in a CAG report and budget documents, is much larger than the subsidy of Rs. 1,100 Crore reported by the PFC, as further discussed in Section 5. In Maharashtra, the PFC reports zero subsidy from the state government, whereas actual subsidy paid was around Rs. 6,000 Crore in FY14 and Rs.11,890 Crore as explained in Section 4.1. There are significant discrepancies in recent years in Uttar Pradesh and Tamil Nadu as well. This is serious because the PFC reports are published based on information submitted by DISCOMs and are widely accepted by stakeholders to understand state level power sectors. In the context of subsidies, it may present an inaccurate picture in some states. However, in Bihar, Punjab and Haryana, the subsidy data in PFC reports is similar to the corresponding regulatory data. Further, PFC reports have not been published since 2017 and data for years after FY16 is not available. Thus, this study uses information from regulatory documents, as it is vetted by the Electricity Regulatory Commission (ERC), rather than PFC reports.

7. For a more detailed discussion on agricultural demand estimation methodologies and subsidies drawing from practices in six states, please see 'Understanding the Electricity, Water, Agricultural Linkages' – Volume 2: Electricity Supply Challenges' (PEG, 2018b).

8. True-up processes involve approval of costs incurred and revenue recovered for previous years, based on audited accounts, to determine the extent of revenue gap to be recovered from consumers. This is further discussed in Section 2.

Figure 1.1: Subsidy in PFC and regulatory data



Source: Prayas (Energy Group) compilation from (PFC, 2010; PFC, 2013; PFC, 2016; PFC, 2017) and regulatory documents

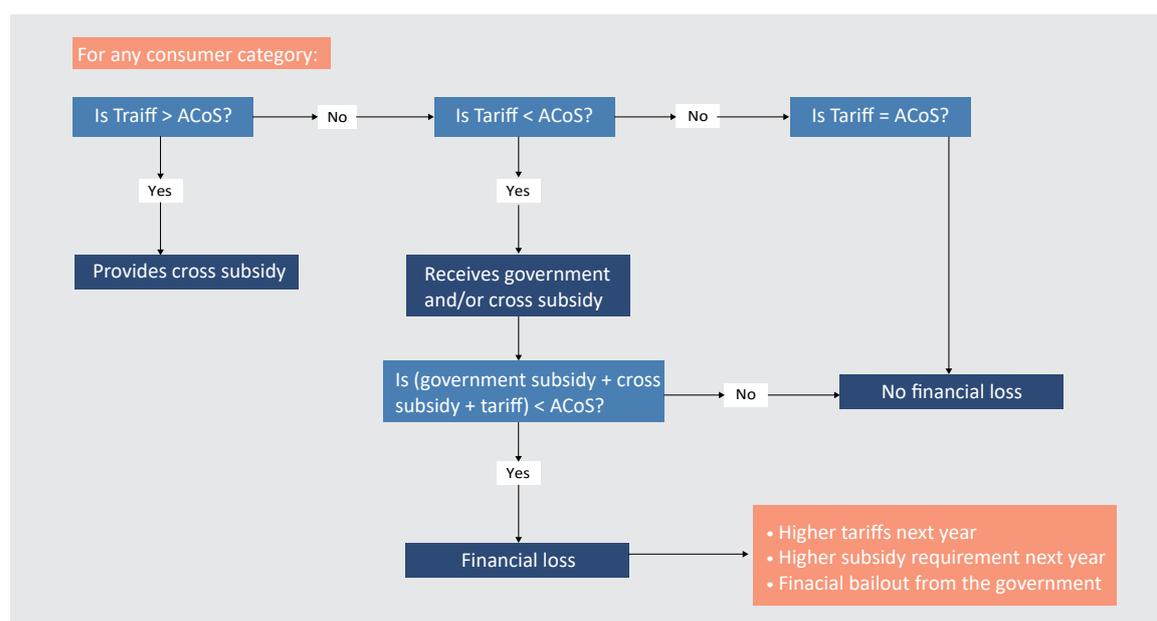
- Note: 1. In Gujarat, the comparison is between data from a CAG report (CAG, 2016a) and data from PFC reports as complete subsidy data is not available from regulatory documents.
2. For Uttar Pradesh, PFC has reported data from provisional accounts of DISCOMs.

Another major challenge is the fact that the terminology used to refer to the subsidy is not consistent across states. For example, in Bihar and Punjab, the term rebate is also used to refer to the subsidy which makes it difficult to assess if the reduction in the tariff reported in regulatory orders is actually due to subsidies or a rebate (typically recovered via cross subsidy). In Uttar Pradesh, the subsidy considered by the regulator consists of the government subsidy as well as the 'additional subsidy' estimated by the ERC. In Punjab, subsidy for arrears has been reported by the ERC as part of the tariff subsidy for the concerned year. The time period of analysis also differs from state to state depending on the data available for that state. However, care has been taken to ensure that the broader lessons and observations drawn in the report hold true irrespective of the limitations in data consistency and availability.

2. Understanding electricity subsidies in India

This section highlights the relationship between subsidy and DISCOM finances and explores the process typically followed in states with respect to subsidy determination and disbursal. Practices in states may vary from the process described here, but are captured in the state specific narratives of the report. Figure 2.1 shows the relationship between subsidy, cross subsidy, and financial loss.

Figure 2.1: Relationship between subsidy, cross subsidy and financial loss



Source: Prayas (Energy Group)

Subsidy is typically given to consumer categories whose tariff is less than the ACoS. There are two major sources of revenue which the DISCOM uses to recover the gap between the ACoS and the regulated tariff:

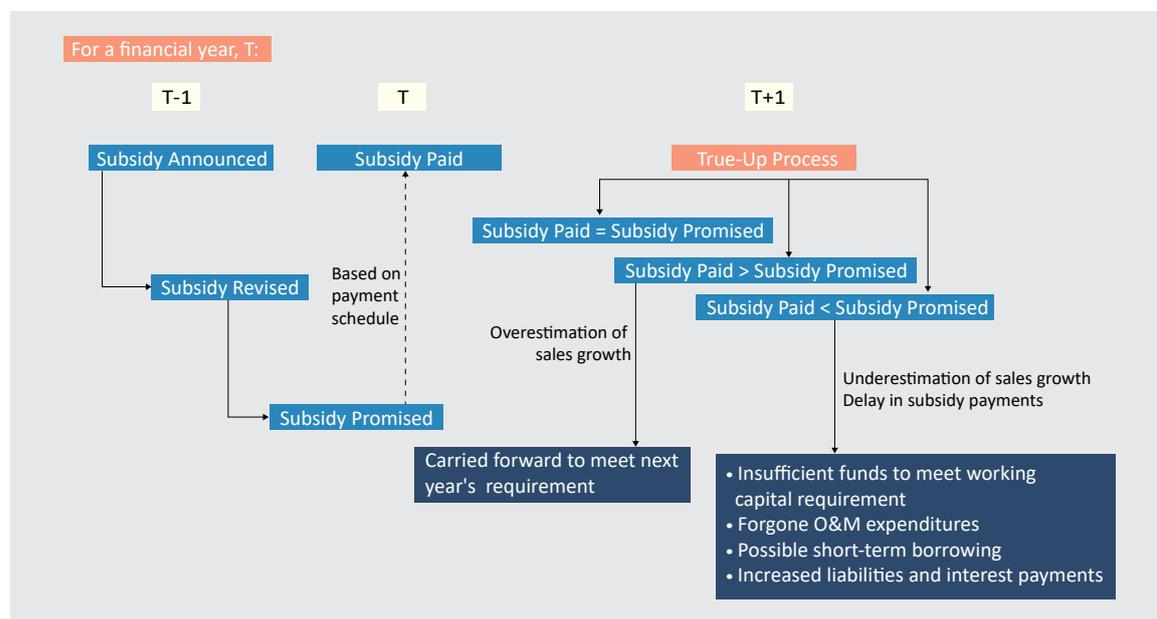
- subsidy from the state government
- cross subsidy from consumers who pay more than the ACoS

If the revenue from tariff, subsidy, and cross subsidy is less than the cost incurred by the DISCOMs, it results in a revenue gap which needs to be recovered in subsequent years. The recovery can take place by increasing future tariffs or subsidy or can become part of the DISCOMs mounting losses. This loss can be managed by the carry-forward of the revenue gap, which results in an increase in tariff or subsidy in subsequent years. In the interim, in order to meet growing costs, the DISCOMs may have to take short-term loans. This will increase the DISCOMs' liabilities and strain their working capital requirements. These liabilities are managed by way of future bailouts, unless pending subsidy payments with carrying costs are made to the DISCOMs.⁹

9. It is possible for DISCOMs to avoid deficits if revenue from tariff, subsidy and cross subsidy is not less than ACoS. However, it is improbable for many DISCOMs saddled with high costs and accumulating losses from previous years.

While cross subsidy is the result of regulatory decisions regarding tariff design, subsidy design depends on government decisions. Figure 2.2 describes the process of determination and disbursement of government subsidy, and its financial implication on the DISCOM.

Figure 2.2: Subsidy process for the financial year 'T'



Source: Prayas (Energy Group)

Typically, the subsidy process for a given financial year, say 'T' begins in the previous financial year 'T-1', with the government announcing a certain subsidy to some consumer category/categories. The subsidy announced is subject to revision according to the regulatory framework in place. The subsidy promised includes subsidy announced along with revisions accounted for at the time. This promised amount is based on estimated sales or projected sales over the year for the consumer category which receives the subsidy. Over the course of the year 'T', the subsidy is disbursed in advance based on a payment schedule, and the total amount of subsidy disbursed by the end of the financial year is the subsidy paid by the government.

In the following financial year T+1, the SERC undertakes the true-up process. In this process, the subsidy paid by the government is compared to the subsidy promised, adjusted for actual sales and costs. The difference between the subsidy promised and paid could be due to delays or variation in estimated sales at the beginning of the year and the final sales to subsidy beneficiaries. If it is found that the subsidy paid is less than that promised, it is indicative of an underestimation of sales growth and/or a delay in subsidy payments. True-ups should also scrutinise and vet past subsidy payments against the reconciled subsidy from the government and account for delayed or pending payments and their interest costs. The delays in subsidy payments have considerable impacts on DISCOM finances and may result in insufficient funds to meet the DISCOM's working capital requirement. The DISCOM could even forgo necessary Operation and Maintenance (O&M) expenditure or limit supply in order to reduce expenditure. To meet costs, the DISCOM may take short-term loans and as a result, be burdened with increased liabilities and interest payments. Thus, timely subsidy payments, especially in states where subsidy helps meet a substantial part of the revenue requirement, is a necessity.

3. Subsidy policy mandate

Over the years, typical concerns related to subsidy provision have been repeatedly discussed in policy mandates, as can be seen in Figure 3.1. The 1980 report by the Committee on Power (MoP, 1980), chaired by V.G. Rajadhyaksha, emphasised the need for targeting the quantum and beneficiaries of subsidies, and for legislative accountability of the state governments. This demand for targeted subsidy has been echoed in the policies of the two following decades. In addition to this, policies also mention metering of agricultural supply and the need to move away from a regime of free power.

Figure 3.1: Key focus areas of subsidy policy

<p>1980 Committee on Power</p> <ul style="list-style-type: none"> • Time period bound selective subsidy • Written instructions from State Government • Explicit budget mention for legislative accountability 		<p>2015 Ujjwal DISCOM Assurance Yojana</p> <ul style="list-style-type: none"> • State Governments provide financial support in transition • No mention of commitment to advance subsidy payment
<p>1994 NDC Committee on Power</p> <ul style="list-style-type: none"> • Restrict subsidies to minimum • Confine subsidy to vulnerable sections 		<p>2012 Financial Restructuring Plan</p> <ul style="list-style-type: none"> • Upfront payment of subsidies • Agricultural subsidy on feeder/DT meter data
<p>1997 9th Five Year Plan</p> <ul style="list-style-type: none"> • Metering of subsidised agricultural consumers 		<p>2005 National Tariff Policy</p> <ul style="list-style-type: none"> • ERC tariff determination without subsidy • Subsidy better than cross-subsidy for poor • Targeting to be efficient and transparent
<p>2001 Expert Group on Settlement of SEB</p> <ul style="list-style-type: none"> • Transparent and targeted subsidies • Move away from a regime of free power 		
<p>2001 Conference of Chief Ministers on Power</p> <ul style="list-style-type: none"> • Subsidies to be explicitly via budget support • Avoid irrational cross-subsidy 	<p>2003 Electricity Act</p> <ul style="list-style-type: none"> • Advance payment of subsidies • Regulated tariff shall be applicable in case of non-payment 	<p>2005 National Electricity Policy</p> <ul style="list-style-type: none"> • Targeting of subsidies • BPL tariffs at least at 50% of ACOS • State governments may provide advance payments

Source: Prayas (Energy Group) compilation based on policy documents

The introduction of the 2003 Electricity Act made provisions for advance payments of subsidies, and for charging regulated tariffs in case of delay or non-payment (Gol, 2003). The reiteration of such measures over the years have intended to relieve DISCOMs from financial stress. However, UDAY¹⁰, launched in 2015 (MoP, 2018d), lacked guidelines regarding subsidy payments.

Over the years, the commitment and mandate to ensure timely payment of subsidies has been repeated several times in policy documents. Similarly, there has been a constant emphasis on subsidy targeting and streamlining. Despite this, delays are commonplace leading to strain in DISCOM finances, and the magnitude of the subsidy has continued to increase.

10. The Ujjwal DISCOM Assurance Yojana (UDAY) is a scheme for the state governments to take over accumulated liabilities of DISCOMs by issuing bonds.

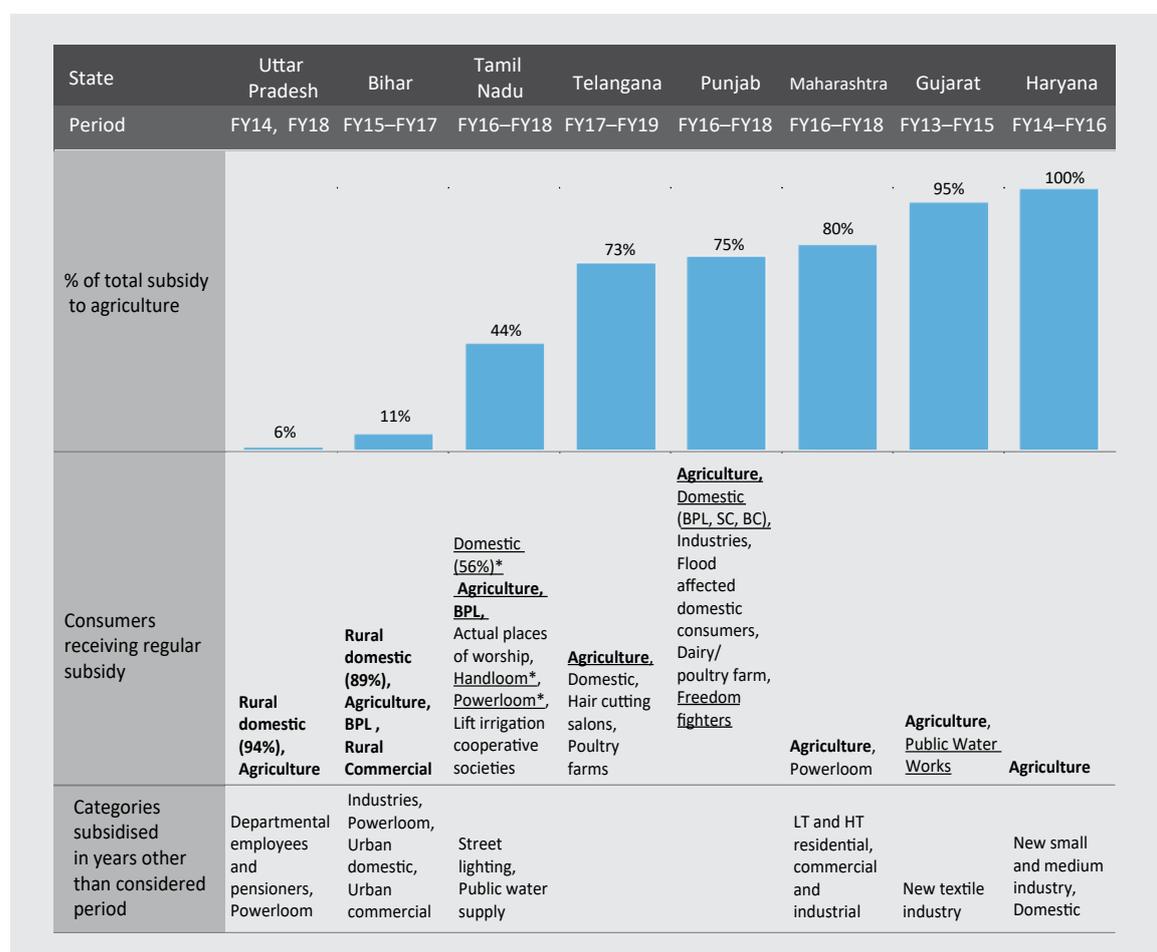
4. Trends in subsidy

This section describes the various trends in the different consumer categories that receive subsidy and the proportion of the subsidy in the ARR of the respective DISCOMs.

4.1 Consumer categories that receive subsidy

Figure 4.1 provides details of the category-wise subsidy for eight states. Along with the states considered in the study, details are also provided for Maharashtra and Telangana. As is seen, a large portion of subsidy is given to unmetered consumers, and many states also provide free power supply to consumers by subsidising the entire tariff. This occurs despite the policy mandates to discourage the provision of untargeted subsidy, as discussed in Section 3.

Figure 4.1: Agricultural subsidy as a proportion of total subsidy in selected states



Source: Prayas (Energy Group) analysis based on tariff orders, petitions and other orders from various states

- Note: 1. Agricultural subsidy as a percentage of total subsidy is the average taken over the period considered.
 2. Categories with unmetered consumers in the considered time period have been marked in bold.
 3. Categories that received free supply in the considered time period have been underlined.
 4. In the Tamil Nadu column, categories are marked (*) to clarify the status of free power provision. The domestic category receives free supply for the first 50 units of power consumption, powerloom consumers receive 100 units of free power, and handloom consumers receive 375 units of free power, per month for the period considered.

Agriculture receives the maximum subsidy, which constitutes 75% to 100% of the total subsidy. In fact, of the states considered in Figure 4.1, Tamil Nadu, Telangana, and Punjab provide free power to the unmetered agriculture category. Tamil Nadu also provides free power to certain sections of domestic, handloom and powerloom consumers. Agriculture is unmetered, either partially or fully, in most states in the country but is not the only unmetered category. In Bihar, Uttar Pradesh, and Tamil Nadu, a proportion of domestic consumers are also unmetered. Unmetered consumption is typically overestimated (PEG, 2018b) and thus, the subsidy allocated to such categories could also be overestimated. In Uttar Pradesh, Bihar, and Tamil Nadu, the contribution of subsidy to non-agricultural consumers exceeds that provided to agriculture. In these as well as other states, among the non-agricultural categories, domestic consumers receive the highest subsidy.

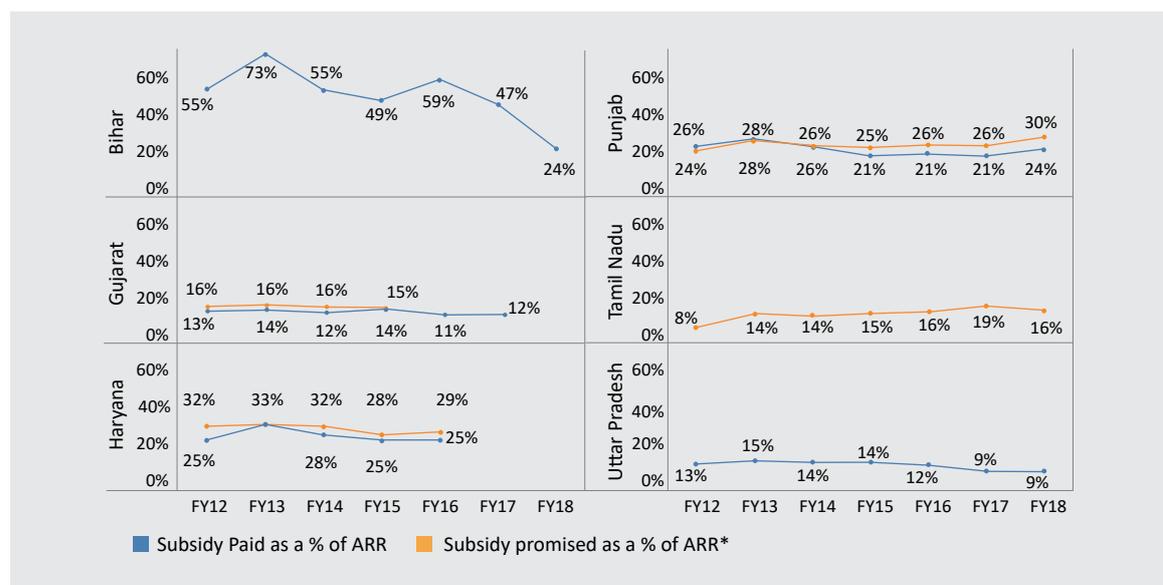
Interestingly, industry, which is traditionally a cross-subsidising category, has been receiving subsidy in Haryana, Punjab, and Bihar in recent years. This is also observed in other small subsidised categories, which vary from state to state. These include categories like powerloom and poultry farms. Apart from consumers who are subsidised regularly, there are consumers who have received subsidy for only a few years or whose subsidy has been discontinued.

The practice of providing subsidies to consumer categories apart from the regularly subsidised categories has also been noted in the states of Maharashtra, Gujarat, and Punjab. For example, in Maharashtra, for the years FY14 and FY15, the subsidy paid to residential, commercial and industrial consumers apart from agriculture and powerloom amounted to Rs. 1,246 Crore and Rs. 4,767 Crore respectively, constituting 21% and 40% of the total subsidy paid in those years (MERC, 2016). This was provided to avoid a tariff shock to consumers due to the levy of additional energy charge (GoM, 2014; MERC, 2014, p. 22).

4.2 Subsidy as proportion of ARR

Even though subsidy quantum has been increasing with time in most states, it is important to compare this increase with the increase in costs. This is needed to assess the role of subsidies in DISCOM finances. Figure 4.2 shows subsidy paid as a proportion of the ARR over time.

Figure 4.2: Subsidy paid and subsidy promised as a % of ARR between FY12 and FY18



Source: Prayas (Energy Group) analysis based on various state tariff orders, (HERC, 2015a), (GoG, 2019b) and (CAG, 2016a)

Note: *Subsidy promised is after adjusting it for actual sales and costs at the end of the financial year.

Even though the magnitude of subsidy has been rising in many states, the proportion of the ARR that is financed by the subsidy has not been increasing. Between FY12 and FY18, with the exception of Tamil Nadu, this proportion shows either a constant or falling trend. Although there are year to year fluctuations (most significant in Bihar), the proportion has stayed more or less the same in Gujarat, Haryana and Punjab, and has fallen in Bihar and Uttar Pradesh. This means that increases in subsidy have barely kept pace with the rise in the costs of the DISCOMs, an observation that can get lost if only trends in subsidy quantum are examined. Reasons behind the rise and fall in subsidy have been touched upon in the respective state sections. This trend is also corroborated using the data provided in PFC reports.

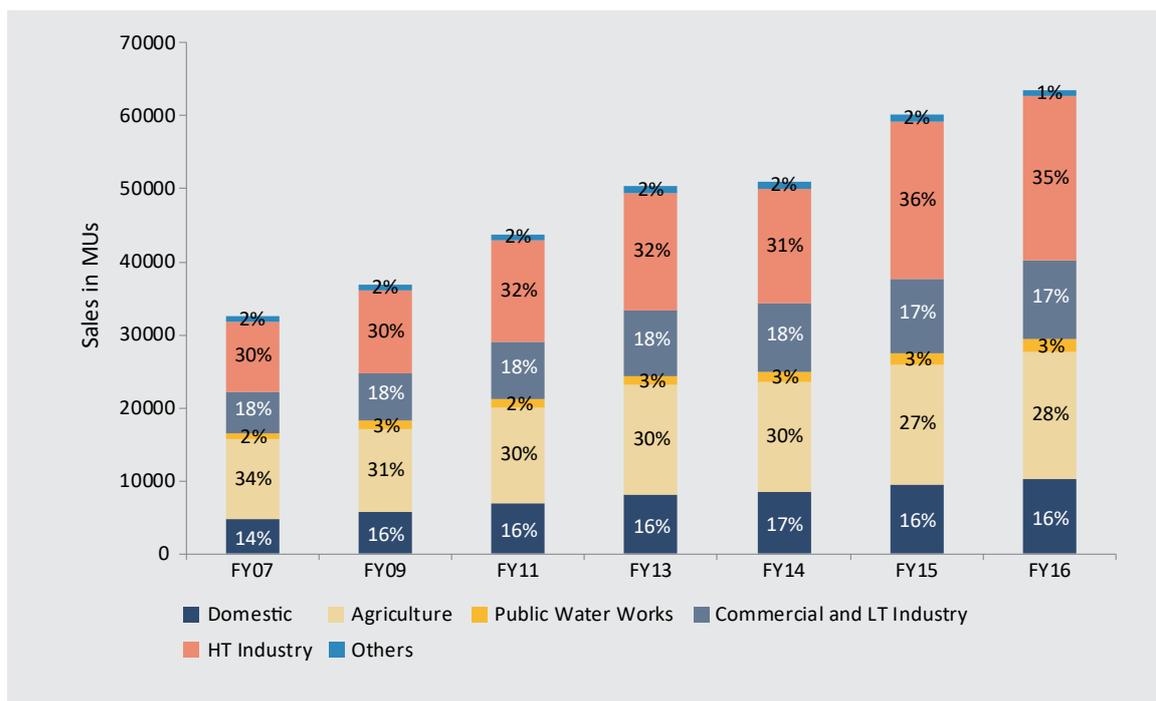
Figure 4.2 also shows a gap between subsidies promised and those paid over the years in three out of six states. This gap is due to outstanding subsidy payments which can have adverse financial impacts on the DISCOM, as explained in Section 2. Although the annual outstanding subsidy seems insignificant in Gujarat and Haryana, the cumulative outstanding subsidy is a substantial amount because of successive delays in subsidy payments. Given the diverse trends in subsidies across states, it is imperative to understand the practices adopted in individual states that are further elaborated in the state specific subsidy histories in subsequent chapters.

5. Gujarat

5.1 Overview

Gujarat is one of India's most industrialised states, and is also a major state in terms of agricultural production. This reflects in the consumer sales mix of the DISCOMs, as most of the sales accrue to HT industry and agriculture consumers, as seen in Figure 5.1.

Figure 5.1: Consumer sales mix of Gujarat DISCOMs between FY07 and FY16



Source: Prayas (Energy Group) analysis from various Gujarat tariff orders

Note: All sales data are audited actuals reported in Gujarat ERC true-up orders.

As per the Sixth Annual Integrated Rating of State Distribution Utilities¹¹, Gujarat DISCOMs are considered the best performing DISCOMs in the country, with an A+ integrated rating. The report observed that Gujarat DISCOMs have a "consistent track record of profitable operations aided by cost reflective tariffs, healthy cash collections and adequate subsidy support from the State Government" (MoP, 2018b, pp. 35-38). This is corroborated by the data published by the Power Finance Corporation from audited accounts, which show that Gujarat DISCOMs have one of the lowest subsidy disbursements in the country. The percentage of the expenditure of the DISCOMs recovered through government subsidy was 3% in FY15. In comparison to this, the national average was 11% (PFC, 2017).

The subsidy captured by PFC for the state-owned Gujarat DISCOMs¹² is the same as reported in regulatory orders and petitions which shows government subsidy as consisting of only agricultural

11. An annual rating exercise conducted by ICRA Limited (Investment Information and Credit Rating Agency of India) and CARE Ratings, coordinated by PFC Limited, based on the mandate and framework prescribed by the Ministry of Power.

12. There are four state-owned DISCOMs in Gujarat, namely, Dakshin Gujarat Vij Company Limited (DGVCL), Madhya Gujarat Vij Company Limited (MGVCL), Paschim Gujarat Vij Company Limited (PGVCL) and Uttar Gujarat Vij Company Limited (UGVCL). Surat and Ahmedabad are served by Torrent Power Limited, a private company, which is not considered in this analysis.

subsidy, at a constant Rs. 1,100 Crore for almost two decades (CAG, 2016a; GERC, 2000). This amount corresponds to the tariff subsidy cap recommended by the Asian Development Bank in FY2000 in the context of power sector reforms. But a closer examination of the government subsidy provision shows that it is much larger than that reported in the tariff orders and petitions.

5.2 Significant subsidy not declared in tariff orders and petitions

According to government budget documents, the subsidy is not limited to the Rs. 1,100 Crore capped subsidy, because the government provides an additional subsidy (called the 'compensation in GERC agricultural tariff subsidy' in the budget) to insulate agriculture consumers from tariff increase. It also fully subsidises the fuel surcharge¹³ levied on agricultural consumers and the tariff for public water works in Gram Panchayats (GoG, 2015, 2016, 2017, 2018, 2019)¹⁴. A CAG report on public sector undertakings in Gujarat also provides information on subsidy claimed by Gujarat DISCOMs (i.e. subsidy promised), subsidy received by them (i.e. subsidy paid) and outstanding subsidy. The subsidy paid figure reported here matches the 'accounts' subsidy figure in the budget documents. Annual reports of the Gujarat Urja Vikas Nigam Limited (GUVNL)¹⁵ from various years report outstanding subsidies which are similar to the amounts reported by the CAG¹⁶.

For further analysis, we consider the subsidy promised by the government as opposed to subsidy paid, as the former also takes into account pending payments from the government. As compared to other states, fuel surcharges in Gujarat are high and more than a quarter of revenue from all consumers is recovered through these surcharges (PEG, 2017, pp. 7, 22). Thus, the subsidy for fuel surcharge of agricultural consumers is also high, constituting 35% to 45% of the total subsidy promised between FY10 and FY15. The total agricultural subsidy also rose with increase in sales and costs to ensure that the tariffs for agricultural consumers remained more or less the same at around Rs. 0.4–0.6/unit. Figure 5.2 gives the break-up of the subsidy promised as reported by the CAG. On an average, more than 70% of the subsidy promised by the government is not reported in regulatory documents.

As evident from Figure 5.2, the unreported subsidy which consists of the GERC agricultural tariff subsidy, agricultural fuel surcharge subsidy and water works subsidy, not shown in the tariff orders, constitutes 71% of the total subsidy (reported + unreported) on an average. As the reported subsidy in regulatory processes is constant, its share in the total subsidy has also been decreasing with time, from 39% in FY10 to 23% in FY15. For the same time period (FY10 to FY15), if the reported subsidy is considered as the only subsidy promised by the government, the percentage of the ARR financed through government subsidy is around 5% on an average.¹⁷ However, the actual subsidy promised by the state government has been as high as 16% of the ARR in the same time period (GERC, 2016; GERC, 2011; CAG, 2016a).¹⁸ The subsidy paid, on the other hand, was estimated to be Rs. 5567 Crore in FY18, more than 4 times the reported subsidy of Rs.1100 Crore (GoG, 2019b). Therefore, the government subsidy provision in Gujarat is not as low as is thought to be.

13. In order to enable periodic revenue recovery to address cost variations during the year, many DISCOMs levy a fuel surcharge in consumer bills. Charged over and above the base fixed and energy charges levied on each category, this charge is collected on a per unit basis every month and is usually revised on a quarterly basis. It is typically estimated as a sum-total of deviation between approved and actual costs due to changes in power procurement prices over the total sales incurred by the DISCOM in that quarter. For more details on this charge, see (PEG, 2017).

14. The budget documents report budgetary allocation for subsidy made by the Gujarat government and subsidy actually paid by it. The former is not the same as subsidy promised. See section 5.5 for more details.

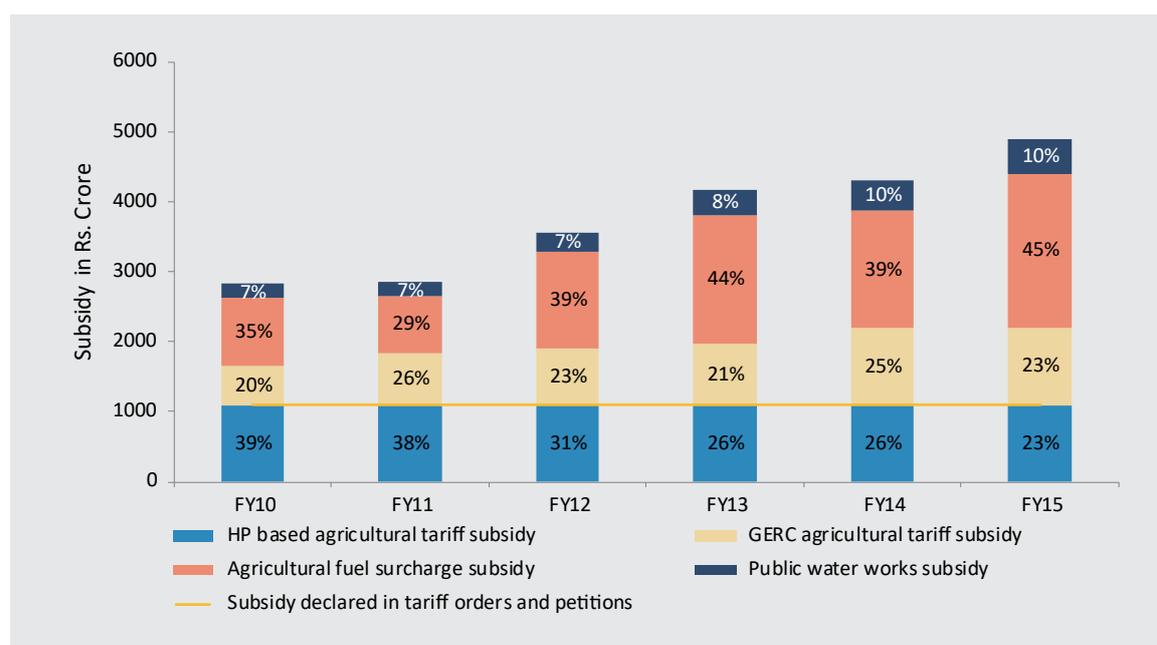
15. Gujarat Urja Vikas Nigam Limited is the holding company responsible for the four state-owned DISCOMs. It claims and receives subsidy from the government on behalf of the DISCOMs.

16. Recent annual reports of GUVNL also report subsidy received by individual Gujarat DISCOMs from the government or GUVNL, but this information is incomplete and the reporting is not clear.

17. In fact, the proportion decreases from 6% in FY10 to 3% in FY15.

18. The share is around 16% in FY10, which reduced marginally to 15% in FY15.

Figure 5.2: Subsidy promised by the Gujarat government to Gujarat DISCOMS between FY10 to FY15



Source: (CAG, 2016a)

Note: The graph only shows tariff subsidies and does not include 50% relief subsidy to agricultural consumers in FY13 and FY15, as it is unclear if this was a tariff subsidy (See footnote 19), nor does it include subsidy to primary schools and one-time subsidies. See next paragraph.

As mentioned earlier, the government not only extends highly subsidised electricity supply to agriculture, but also provides free power to public water works in Gram Panchayats and a '50% relief subsidy' to agricultural consumers in the years FY13 and FY15.^{19,20} The government also used to provide a subsidy to the erstwhile Gujarat Electricity Board (GEB) for small domestic consumers with a monthly consumption up to 100 units, which was discontinued in 2003 (GERC, 2004).

In January 2019, the government of Gujarat announced a power tariff subsidy for new textile industrial units in Gujarat. Eligible industrial units will be given a subsidy of Rs. 2 and Rs. 3/unit depending on whether they have an LT or HT connection and the type of activity, for five years from the date of commencement of commercial operation (GoG, 2019a). Unlike other subsidies in Gujarat, this subsidy will likely be given by the Industry and Mines Department of the government and not the Energy and Petrochemicals Department. As it is hard to determine which tariff category would be applicable to the eligible industrial units and no information is available on the amount of subsidy that will be disbursed under this scheme, it is difficult to assess the impact of this subsidy on the finances of the DISCOMS.

5.3 Dissonance in government subsidy design and tariff design by regulator

The fact that a significant portion of the subsidy is not declared becomes even more important when its recipients are evaluated. The majority of the agricultural tariff subsidies are given to unmetered agricultural consumers (CAG, 2016a). Furthermore, the share of unmetered sales in total agricultural sales has been high—it was almost 70% in FY16 (GERC, 2017). Electricity sales to unmetered

19. It is not clear if this subsidy was for arrears from agricultural consumers or a tariff subsidy. It was Rs. 396 Crore in FY13 and Rs. 510 Crore in FY15, forming 9% of the total subsidy (inclusive of this relief subsidy) in both years.

20. In addition to these subsidies, as per the GUVNL annual reports, the government gave a subsidy for primary schools to MGCVL (Rs. 5 Crore per annum), for energy conservation to PGVCL (Rs. 10 Crore) and a one-time subsidy like that for flood relief (Rs. 19 Crore) to PGVCL in FY18 (GUVNL, 2017; GUVNL, 2018). There is no record of the subsidy to primary schools and flood relief in the state budget, however.

agricultural consumers are estimated on the basis of an average consumption norm for pump-sets which stands at 1700 kWh/HP/annum (UGVCL, DGVCL, MGVCL and PGVCL, 2016). The Gujarat ERC differentiates agricultural tariff in such a way that unmetered consumers have to pay more than the metered ones. For example, the unmetered tariff in FY15 was Rs. 2400/HP/annum, which translates to Rs. 1.4/unit using the norm for unmetered consumption, as opposed to the metered tariff of Rs. 0.6/unit (both tariffs remain unchanged in FY19). However, after the government subsidy to unmetered consumers is considered, their effective tariff was in the range of Rs. 0.4-0.5/unit, depending on pump capacity, and there was ultimately little difference in metered and unmetered tariffs. In this way, the incentive embedded in the tariff to switch to metered connections is lost. Such a subsidy to unmetered consumers is in direct contrast with the regulatory directives and overall policy push towards metering of unmetered consumers.

5.4 Use of subsidy to avoid tariff shock for non-agricultural consumers

In the past, the Government of Gujarat has also provided subsidies to avoid tariff shock for all consumers. From April to September 2008, the Gujarat government subsidised fuel surcharge on electricity sales to all non-agricultural consumers to the extent of Rs. 0.2/unit, which amounted to Rs. 342 Crore. Agricultural consumers continued to receive subsidies on fuel surcharge as was the practice every year. Of the total subsidy disbursed for fuel surcharge during this period, non-agricultural consumers received 40%. The electricity subsidy provision made in the budget was inadequate to meet this incremental subsidy to non-agricultural consumers (GERC, 2008). As a result, GUVNL had to make additional borrowings to cover this deficit (GUVNL, 2009).

5.5 Delay in subsidy payments and its impacts

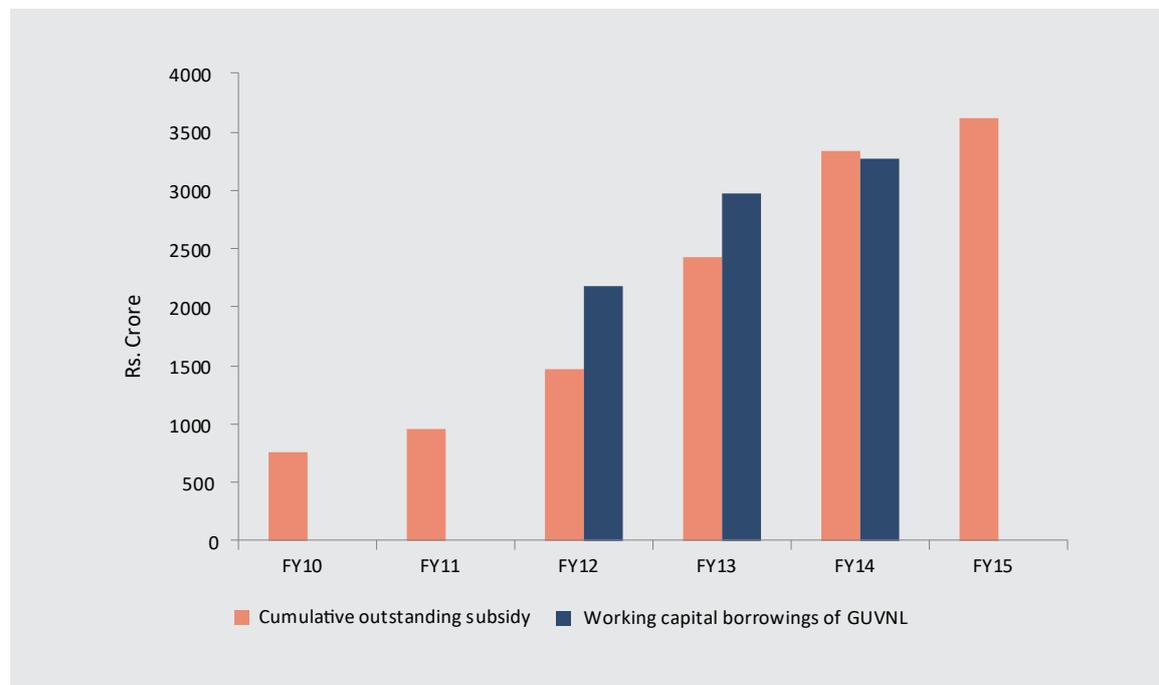
As it turns out, the Gujarat government could not fulfil its electricity subsidy obligation on several occasions. This led to some subsidy remaining outstanding. The Integrated Rating of State Distribution Utilities (see footnote 11) attributes this to the *“lower budgetary allocation than actual subsidy claims”* of the Gujarat government (MoP, 2018b). A CAG report has examined this issue closely in one of its reports (CAG, 2016a). It gives data on subsidy claimed by the Gujarat DISCOMs from the government.²¹ Comparing these subsidy claims with the subsidy allocation in the government budget, the subsidy allocation indeed falls short of the claims. For example, between FY14 and FY15, the subsidy allocated amounted to Rs. 7,318 Crore (GoG, 2014) whereas the subsidy claimed by the DISCOMs amounted to Rs. 9,196 Crore. This difference in subsidy allocated and claimed (26%) is largely due to a shortfall in allocation of subsidy and not so much due to the deviation of actual agricultural sales from that projected, because in both FY14 and FY15, the deviation was only around 6% (GERC, 2016; GERC, 2015).

According to the CAG report, successive subsidy shortfalls had accumulated to a cumulative outstanding subsidy of Rs. 3,612 Crore on 31st March 2015, of which Rs. 2,996 Crore can be attributed to the shortfall in the period of FY10 and FY15. This outstanding subsidy was 13% of the total subsidy claimed by the DISCOMs in that period. This shortfall can be bridged through working capital borrowings to some extent. The CAG reported that the GUVNL had working capital borrowings of Rs. 2,178 Crore, Rs. 2,980 Crore and Rs. 3,272 Crore in FY12, FY13 and FY14 respectively. This could have been reduced with timely subsidy payments. The total cumulative subsidy shortfall reached Rs. 4,664 Crore on 31st March 2016, which is 30% higher than the shortfall in 2015 (GUVNL, 2016, p. 7). The interest cost of the borrowing due to subsidy shortfall between FY10 and FY15 was Rs. 891 Crore. It is not clear if this interest cost is borne by the DISCOMs or is claimed from consumers. The CAG report claims that the interest due to delay in subsidies is passed onto consumers, though this is not explicitly

21. This is the subsidy that the Gujarat government is supposed to pay, so in theory, this is equivalent to the subsidy promised by it.

clear from regulatory accounts of the DISCOMs. (CAG, 2016a, p. 79). If it is indeed passed onto consumers then this is a serious issue as consumers are bearing costs which should be collected from the government. Figure 5.3 shows the outstanding subsidy from the Gujarat government to GUVNL and the working capital borrowings of the company. The cumulative outstanding subsidy is comparable to the working capital borrowings, particularly in FY14. Annual reports of the GUVNL provide information on the outstanding subsidies of the Gujarat government and corroborate the findings of the CAG.

Figure 5.3: Cumulative outstanding subsidy and GUVNL's working capital borrowings at the end of each year



Source: (CAG, 2016a)

Interestingly, the GUVNL has stopped reporting annual unpaid subsidy from FY17 onwards, only reporting the past outstanding subsidy, which would make it even more difficult to account for subsidy shortfalls and their interest costs going forward (MoP, 2018b; GUVNL, 2017). There is no regulatory scrutiny either over reporting of subsidy or over pending subsidy payments.

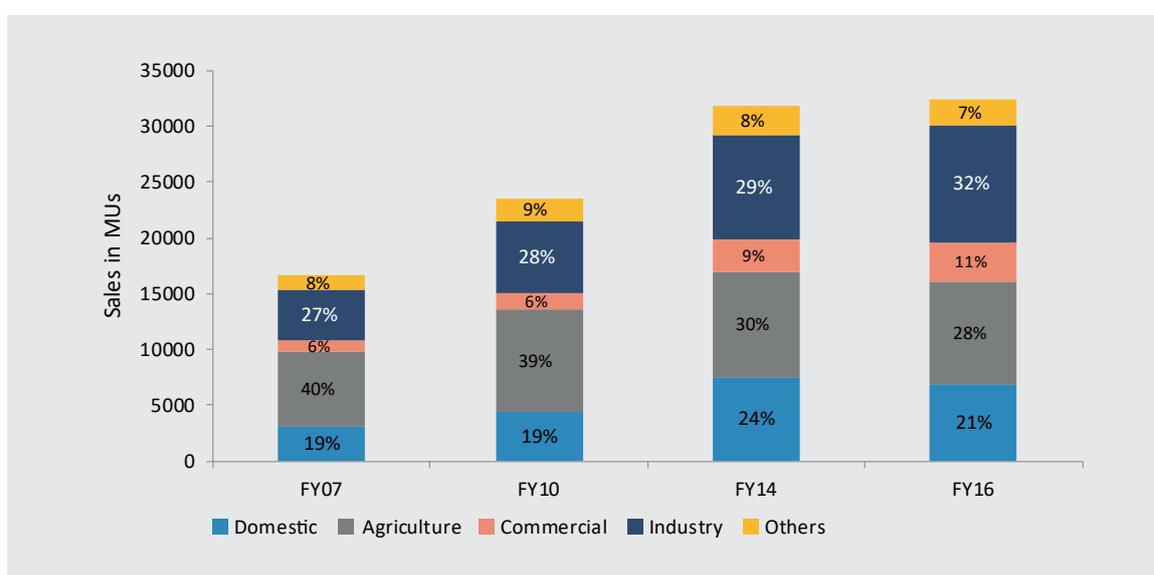
There have been some initiatives across the country to reduce subsidy requirement of DISCOMs, conserve irrigation water and provide day time power to farmers. One of these initiatives includes Gujarat government's pilot called Suryashakti Kisan Yojana (SKY) for solarisation of agricultural connections in the state. It consists of installing grid-connected solar PV panels of capacity 1.25 KW per HP of contracted load, the costs of which shall be shared by the farmer and the central/state government. The generated solar power will be utilised by farmers for irrigation and the surplus can be injected into the grid and sold by the farmers to the DISCOMs at a tariff of Rs. 3.50/unit and an additional Rs. 3.50/unit as a seven-year incentive from the state government. The money will be directly transferred to bank accounts of the farmers specially created for this purpose. However, the implications of such a scheme on the subsidy requirement for agriculture remains to be seen. (MGVCL, UGVCL, PGVCL, DGVCL, 2018)

6. Haryana

6.1 Overview

Haryana is an important agricultural state in the country. The Haryana government subsidises the entire tariff for agriculture, including fuel surcharge. Figure 6.1 shows the consumer sales mix of the two Haryana DISCOMs. It is to be noted that almost half of the subsidy to agriculture went to unmetered sales (HERC, 2015b).²² Unmetered consumption accounted for almost 50% of the agricultural sales and 14% of the total sales in FY16.

Figure 6.1: Consumer sales mix of Haryana DISCOMs between FY07 and FY16



Source: Prayas (Energy Group) analysis from various Haryana tariff orders

Note: The 'others' category consists of lift irrigation, bulk supply, railway traction, public water works, and the Delhi Metro Rail Corporation (DMRC). All sales data are actuals except for the Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) data for FY14 and FY16, which are revised estimates approved by the Haryana Electricity Regulatory Commission (HERC).

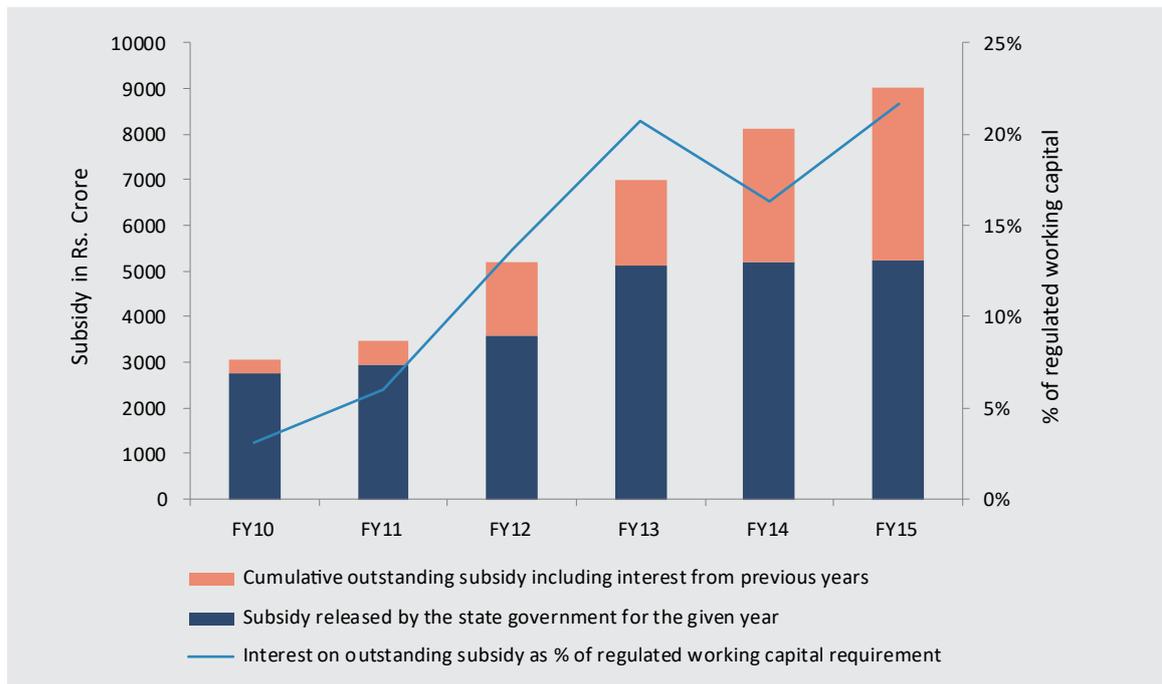
A unique feature of the Haryana power sector is that the agricultural consumers do not receive any cross subsidy. In fact, the Haryana DISCOMs have negligible cross subsidy in their tariff design. As a result, the government subsidy to agriculture is high. The subsidy to agriculture in FY18 was Rs. 7.1/unit, which is almost equal to the cost of supply for LT consumers (Rs. 7.2/unit), and the total subsidy amounted to Rs. 6,551 Crore (HERC, 2017). Thus, the agricultural tariff is low at about Rs. 0.1/unit. This subsidy formed 26% of the aggregate revenue requirement (ARR) in FY18. It forms a substantial part of the state government budget, being comparable to 7% of the budgeted total expenditure of the Haryana government in FY18 (GoH, 2017).

22. Unlike Gujarat, there is no incentive in the regulated tariffs to ensure metering, as the tariff for both metered and unmetered agriculture is very low.

6.2 Subsidy from government inadequate to meet total subsidy requirement

There have been shortfalls in subsidy paid by the government, which leads to additional working capital borrowing for the DISCOM. The outstanding government subsidy at the end of the financial year including interest incurred due to delays as reported by the DISCOMs is provided in Figure 6.2. As can be seen in the figure, since FY10 the cumulative outstanding subsidy as a proportion of the total subsidy requirement has been increasing. This outstanding subsidy can have significant impacts on the finances and operations of the DISCOMs. An indicative analysis shows that the approximate interest costs due to delays in subsidy payment between FY10 and FY15 has also been increasing, and is comparable to 3% of the regulated provision for working capital requirement in FY10, and 22% of this amount in FY15.

Figure 6.2: Subsidy released and cumulative outstanding subsidy at the end of financial year between FY10 and FY15



Source: (HERC, 2015a). The data on regulated working capital requirement are from various tariff orders of the Haryana ERC. The requirements for FY10 to FY13 are projections by the Haryana ERC, whereas those for FY14 and FY15 are trued-up values.

Note: The rate of interest considered by the Haryana ERC on delayed payments for the period FY10 and FY15 is 15% (HERC, 2015a), which is more than the regulated working capital interest rate of 12.5% (Source: various tariff orders of the HERC).

A CAG report has also highlighted the shortfall in subsidy receipts in FY12 and FY16. The CAG attributed these shortfalls to the DISCOMs not claiming the additional subsidy required from the government that was due to sale to agricultural consumers in excess of sales projections at the beginning of the financial year. As explained in Section 2, a gap between subsidy promised and paid, i.e. a subsidy shortfall, can arise because of two reasons. Either the actual sales to subsidised categories and corresponding costs assessed at the end of the financial year are in excess of the sales and costs projected at the beginning of the year, or there have been pending subsidy payments from the government. As data on actual agricultural sales is not available before FY14, one can verify the reason behind the shortfall only for FY14 and FY15. The DISCOMs supplied 673 MUs of power in excess of the sales approved by the Haryana ERC in this period. The subsidy attributable to this excess power is approximately Rs. 452 Crore²³ and forms only 36% of the outstanding subsidy as reported by the Haryana ERC at Rs. 1266 Crore for this period (HERC, 2015a). Thus, the outstanding subsidy from the

23. This is calculated taking an average of subsidy per unit between FY14 and FY15 which comes to approximately Rs. 6.7/unit

government is much larger than the additional subsidy due to excess agricultural sales. This shows that there are substantial pending subsidies from the government. At the end of FY15, the cumulative outstanding subsidy, inclusive of the interest accrued, stood at Rs. 4,334 Crore.

6.3 Subsidy to industrial and domestic consumers

In 2018, the Haryana government announced a tariff subsidy of Rs. 2/unit to new small and medium industrial enterprises in certain areas of the state for three years from the date of release of their power connection (GoH, 2018). This subsidy is approximately comparable to 30% of the average tariff of industrial consumers of DISCOMs in FY18 (HERC, 2017). Similar to Gujarat, this subsidy is being given by the Industries and Commerce Department, and not the Power Department of the Government of Haryana, as the subsidy is part of the Enterprise Promotion Policy headed by the former. Though it is not being disbursed by the Power Department, it could have been motivated, at least to some extent, by industrial consumers moving to open access and captive options due to high tariffs. The consumption of open access consumers alone from alternative sources was as high as 16% of HT sales in FY16 (HERC, 2016). The quantum of subsidy per unit is smaller compared to that of agricultural consumers, which was Rs. 7.1/unit in FY18, but industrial consumers are usually cross subsidising consumers in other states.

The government also announced a subsidised tariff of Rs. 2/unit (which was earlier Rs. 2.70/unit) and Rs. 2.50/unit (which was earlier Rs. 4.50/unit) for domestic consumers falling in the tariff slabs of 0–50 and 0–150 units a month. Thus, this subsidy forms 26% to 44% of the earlier domestic tariff, depending on the slab-wise consumption of domestic consumers. The domestic subsidy itself amounts to Rs. 677 Crore. Although it forms less than 10% of the total subsidy in FY19, inclusive of agricultural tariff subsidy (but excluding agricultural fuel surcharge and industrial subsidy), the subsidy obligation of the government will increase. It is evident that the Haryana government has not been able to fulfil its subsidy obligations till now, and meeting the growing subsidy requirements of the future, including the subsidy for industrial consumers, might prove to be a challenge (HERC, 2018).

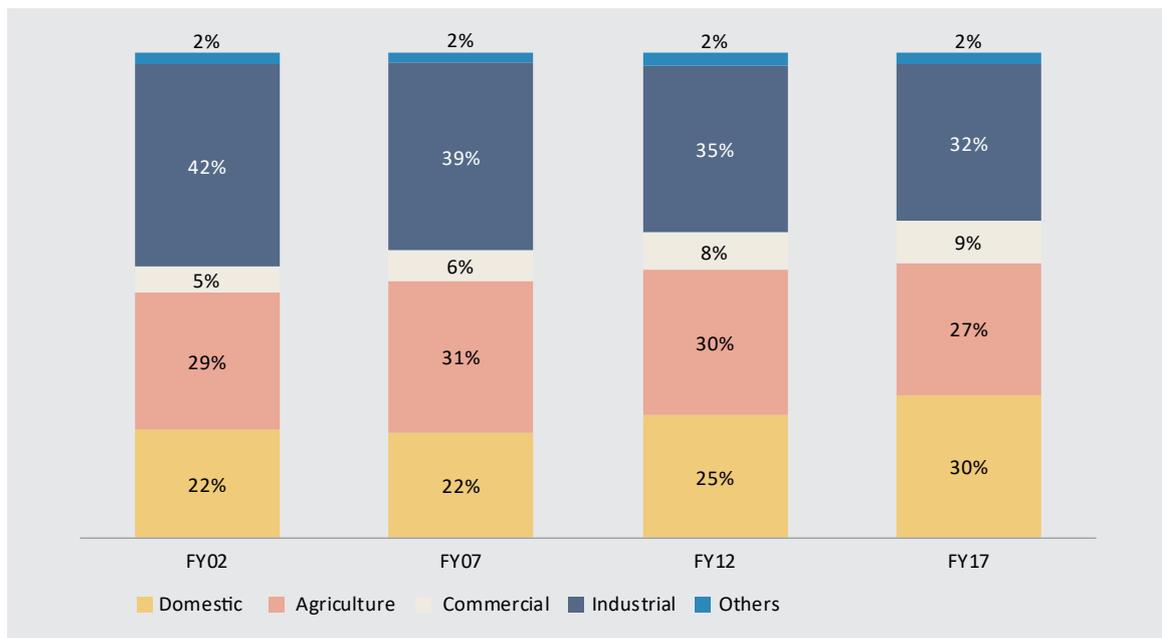
7. Punjab

7.1 Overview

Punjab is among the few states in India which continue to provide free power to not just agricultural consumers but also to a sizable set of domestic consumers. It also has a history of state governments making high subsidy commitments and delaying payment which affects the DISCOM, Punjab State Power Corporation Limited's (PSPCL) already precarious finances. The outstanding debt of PSPCL was estimated at Rs. 11,600 Crore in FY12. This grew to Rs. 20,800 Crore by 2015 when UDAY was launched (MoP, 2016e; MoP, 2012).

As shown in Figure 7.1, the share of domestic and agricultural consumption has been steadily increasing over the years from 51% of total sales in FY02 to 57% of total sales in FY17. What is also interesting is that the share of traditionally cross subsidising industrial sales has reduced from 42% in FY02 to 32% in FY17. In fact, large industrial sales of PSPCL fell by 9% between FY15 and FY16. This is perhaps due to the tepid growth in the manufacturing sector²⁴ and the significant shift of industrial consumers to open access and captive options²⁵.

Figure 7.1: Changing sales mix of PSPCL



Source: Prayas (Energy Group) analysis based on Punjab ERC tariff orders, petitions

24. In fact, the contribution of the manufacturing sector to the state income (GSDP) has been more or less the same since FY96 (GoP, 2018a; Planning Commission, 2002). Industrial hubs such as Ludhiana, Jalandhar and Mandi Gobindgarh are shutting down rather than booming due to rising cost of operations, increased competition from China and other cost-competitive manufacturing hubs, lack of adequate tax incentives, and rising input costs. Many industries are shutting down or are shifting lock, stock and barrel to other states (Rajshkhar, 2015).

25. About 1,962 MU were consumed by open access consumers with PSPCL in FY16, which accounts for 16% of the current HT Industrial sales of the DISCOM (PSERC, 2016b). In the same year, 4457 MU were consumed by captive consumers in Punjab (CEA, 2017).

With the loss of more cross subsidising sales and rising costs, the losses will only increase making subsidies even more crucial. It is in this context that the recent trends in subsidy allocation and disbursal need to be studied.

Unlike many other states, the Punjab ERC and DISCOM, in their tariff orders and petitions, have been consistently providing information regarding subsidy payments during the true-up process. The DISCOM and state government are being held accountable based on the following parameters:

- Subsidy payments promised and finally paid during the year
- Carry-forward of pending payments due to delays
- Interest cost incurred due to payment delay
- Detailed information on category-wise subsidies, even for ad-hoc dispensations

This makes it easier to assess and track subsidy payments in the states and ensure accountability for delays.

7.2 Delays in subsidy payments, their implications and regulatory action

Figure 7.2 shows the subsidy promised and finally paid every year for a fourteen year period. For the past decade or so, the subsidy quantum required has been around 25% of revenue from retail tariffs. The subsidy paid grew at an average rate of 7% even at constant (FY12) prices during this period. However, the subsidy promised by the state government was much higher, especially in recent years.

Figure 7.2: Subsidy promised and finally paid from FY03 to FY17 in Punjab



Source: Prayas (Energy Group) analysis based on Punjab ERC tariff orders, petitions

The gap between promised and paid subsidies, reflective of delay in subsidy payments, has been increasing since FY14. This was the year of the state legislative assembly elections. Till FY14, interest payments for such working capital loans due to delays did not exceed 2% of the total tariff subsidies provided. However, in FY17, this was about 5% of the total subsidy payments of Rs. 6,577 Crore. The gap significantly strains the cash flow and increases the working capital requirement of the DISCOM.

As of February 2018, the total subsidy payable for FY18, including pending payments from previous years, amounted to Rs. 11,542 Crore (PSERC, 2018b). This is as high as 47% of the total development expenditure in the state budget for the year (GoP, 2018b). The state government ascribed the inability to meet this commitment to reduction in revenues with GST implementation and additional payments for subsidies on food (PSERC, 2018b). Despite clearing some of these dues, the remaining pending payments and promised subsidies amounted to Rs. 13,719 Crore in FY19 (PSPCL, 2019). Given the strain on state government budgets, it is unclear how the rising quantum of subsidy to multiple categories will be paid.

Regulatory treatment of delays

The unsustainably high levels of outstanding subsidies is frequently reported and commented upon not only because the magnitude of the subsidy commitment and delays is high but also because information is provided by regulators on delays, and pending payments regularly (Khanna, 2018; Rambani, 2018). Additionally, the regulatory accounting for pending subsidies is such that it is carried forward and become part of the subsequent year's subsidy commitment. The Punjab ERC has also been estimating interest payments due to delays by applying the same rate as that applied for estimating interest on regulated working capital. The interest payments are also added to the subsidy requirement in the next year along with pending payments. This ensures that the burden of delay is compensated for by the state government and is intended to deter consistent non-payment which would increase the pending subsidy payments. However, despite this, delays in subsidy payments have been increasing and pending subsidies have been ballooning. With the increasing delay in subsidy payments, there was a need to make the state government accountable. In this context, based on a petition by a consumer representative, the Punjab ERC in 2018 (PSERC, 2018b) directed the PSPCL to:

- a. Provide information on the subsidy paid and subsidy due on a fortnightly basis on its website to enable the Commission as well as the public to track delay in payments.
- b. Consider the option of charging consumers unsubsidised tariffs during periods when the subsidy is not provided by the state government in advance monthly instalments.

In compliance with these directions, the DISCOM has been publishing information on pending payments more or less on a regular basis. However, just the provision of information in the public domain is not sufficient to ensure accountability.²⁶

The DISCOM was unable to comply with the SERC directions to charge consumers unsubsidised tariffs in case of delay in subsidy payment. In a state which has been receiving free power for major consumer categories, such a step would result in tariff shock and could be politically infeasible. It could also be difficult to implement. The Bihar ERC had also proposed to adopt a similar approach which also faces operational challenges. The implementation issues and policy questions with regard to such a proposal are discussed in greater detail in Section 10.3.

7.3 Mode of payment of subsidy

Given the strained state government finances, it is understandable that the payments are not completely financed by budgetary allocations. The government also adjusts the subsidy amounts to electricity duty payable by PSPCL and makes adjustments based on government loans and interest payable by the DISCOM. In FY10, 55% of payments were through state government budget allocations, 36% of subsidy was adjusted using dues from repayment of loans and the rest was financed from revenue recovered from levy of electricity duty (PSERC, 2011). The PSPCL, like most DISCOMs, has been taking state government loans to repay growing debt and accumulating liabilities under schemes such

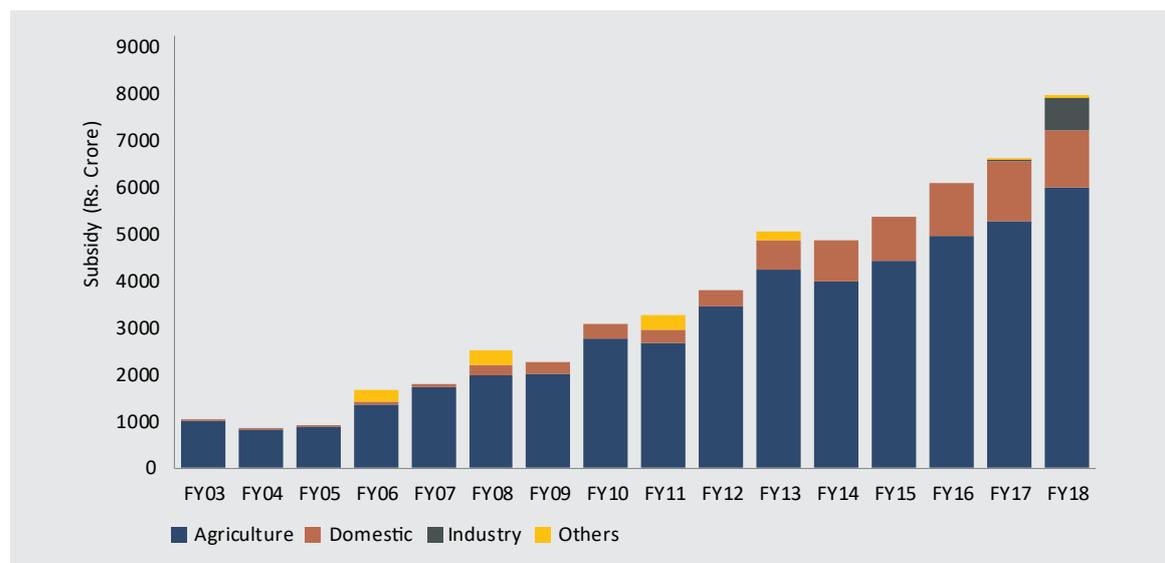
26. The data provided shows that delays continue to persist so that the burden of liabilities increases. In fact, 34% of the total promised and pending subsidy payments to be made in FY19 were still pending at the end of the year (PSPCL, 2019).

as UDAY. With the increase in delayed payments and the debt restructuring undertaken by the state government, payment of subsidies by adjustment of duties and loans has continued. In FY18, 59% of payments were made directly from the budget, and the rest was financed via adjustments (PSERC, 2018b). The practice does not impact DISCOM finances and gives the state government some flexibility to ensure payment. However, such modes of payment make tracking of subsidy payments via state budget documents more complex.

7.4 Subsidised categories in the state

To understand the build-up of subsidies, it is important to study the trends in subsidies to various categories over the years, which are summarised in Figure 7.3.

Figure 7.3: Breakup of subsidy across categories in Punjab from FY03 to FY18



Source: Prayas (Energy Group) analysis based on Punjab ERC tariff orders, petitions

Note: The figure does not include the subsidy for pending payments and interest on it. The 'others' category includes fish farming, subsidy for freedom fighters, subsidy to tube-wells, dairy and poultry farms, etc.

The majority of the subsidies have been provided to agricultural, domestic and industrial consumers. The Punjab government has also provided subsidies to other categories in an ad-hoc manner, and with smaller emoluments. Besides this, subsidies were also utilised to clear outstanding bills of agricultural consumers and flood affected domestic consumers.²⁷ Subsidy was also provided to all consumers to offset the impact of tariff increase in FY08 (PSERC, 2008), which accounted for 10% of the total subsidy that year. Subsidy was provided to all consumers for a second time in FY11 to offset the impact of tariff increase between April 2009 and September 2009 (PSERC, 2014). This was also to the tune of 10% of the total subsidy payments that year. The major subsidised categories are discussed in the sections which follow.

7.4.1 Agricultural subsidies

As is clear from Figure 7.3, agricultural consumers have been provided most of the subsidy growing from about Rs. 1,062 Crore in FY03 to Rs. 6,000 Crore in FY18. The power provided is free barring a brief experiment in FY11 to charge Rs. 50/HP/month, which was quickly rolled back in the subsequent year (PSERC, 2010). Given the extent of subsidies, some efforts were undertaken to rationalise subsidies with limited success. These are discussed below:

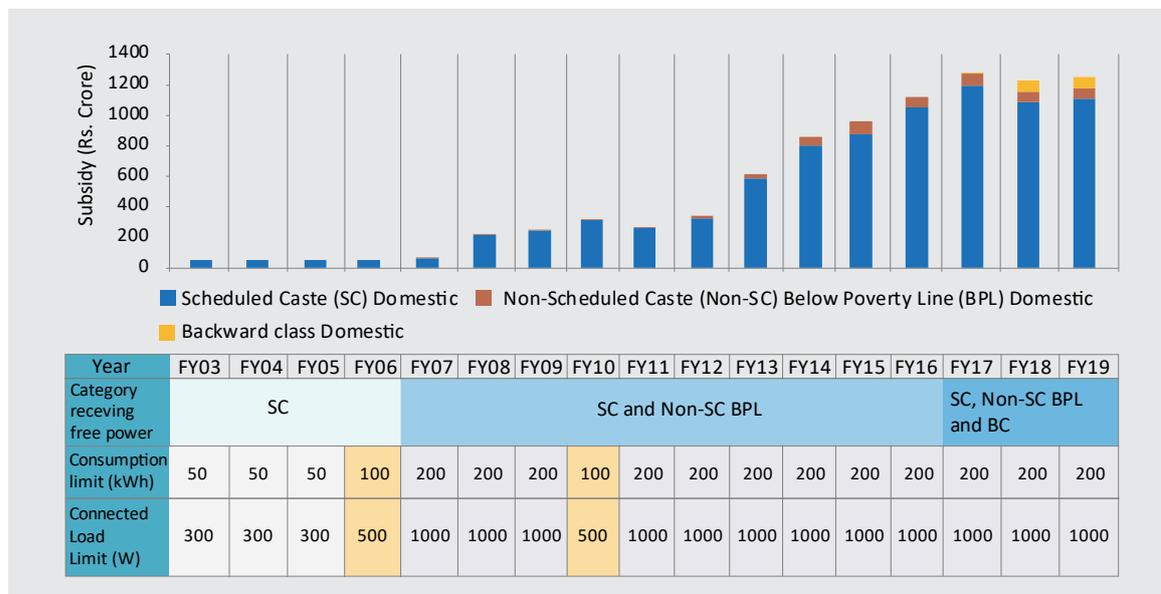
27. The subsidy was provided in FY06 and FY13 for the former and in FY13 for the latter.

- There has been criticism in the past that the subsidies benefit large farmers with significant land ownership instead of small and marginal farmers. In order to rationalise subsidy delivery, the Punjab government provided farmers the option to give up their subsidy partially or fully. Such consumers were to be exempt from paying electricity duty (PSPCL, 2018a). The idea was to get "rich farmers, farm-house owners, business or corporate houses, educational institutes, trusts, deras, etc." to voluntarily give up their subsidies. However, unlike the union government scheme for voluntary surrender of LPG subsidies, the response has been poor (PSPCL, 2018b; MoPNG, 2018).
- Further, in order to encourage efficient water use by farmers, the state government is also providing an additional subsidy on a pilot basis to those among them who register for the scheme and agree to be metered. The scheme 'Paani Bachao, Paise Kamao' provides an incentive of Rs. 4/unit for reduction in consumption from the fixed area-based, seasonal, consumption norm²⁸. This incentive will be transferred directly to the farmer's bank account and is in addition to the free power subsidy. Currently, this voluntary scheme is being implemented on a pilot basis for six feeders covering the districts of Jalandhar, Hoshiarpur and Fatehgarh Sahib (PSPCL, 2018c; Agnihotri Chaba, 2019).

7.4.2 Domestic subsidies

While significant, the share of agricultural subsidies in total subsidies provided to consumers has reduced from 95% in FY03 to 80% in FY17. This reduction is explained by the rise in the share of domestic subsidies which increased from 5% to 19% in the same period. In the initial years, the quantum of subsidies was marginal as it was only to provide free power to consumers who belonged to a Scheduled Caste (SC) with a connected load of up to 300 watts using 50 units. Over the years, BPL cardholders and consumers belonging to Backward Castes (BC) were also included to receive free power. Further, the consumption limits and the connected load limit to be eligible for free power have also been relaxed over time. This is summarised in Figure 7.4.

Figure 7.4: Beneficiaries of free power in domestic category of PSPCL



Source: Prayas (Energy Group) analysis based on Punjab ERC tariff orders, petitions

28. For example, if the farmer consumes 700 units, when the norm is 1000 units, she receives an additional subsidy of Rs. 1200 (300 units at Rs. 4/unit).

Currently, free power is provided to SC, BC and Non-SC BPL consumers having a connected load less than one kW and using up to 200 units per month. Given the increase in beneficiary categories and the change in eligibility limits, the quantum of free power to domestic consumers is bound to increase further. There was a proposal to ensure such monthly subsidy for 200 units was provided to SC, BC and Non-SC BPL consumers using less than 3000 units per year in the year FY20. Such a move, which would have excluded about 11.7 million consumers was not implemented due to political opposition (Chhina, 2019). The awaited Punjab ERC tariff order for FY20 will provide more clarity on the issue.

7.4.3 Subsidy for industrial consumers

The Punjab government announced a spate of incentives for industrial consumers in 2016 to promote investments, such that traditionally cross subsidising industrial consumers in the state were added to its growing list of subsidised consumers. This development is summarised in Table 7.1.

Table 7.1: Concessions for industrial consumers

Group of industrial consumers provided with subsidy	Description
New industries	From 2016, industries set up via the Progressive Punjab Investor's Summit in 2013, are to receive power at concessional energy charge of Rs. 4.99/unit for the first five years, exclusive of fuel surcharges. The difference between the ERC approved tariff and this fixed rate is to be subsidised (PSERC, 2016a).
Small power	The subsidised energy charge of Rs. 4.99/unit was extended to all small industrial consumers in 2016. Rs. 39 Crore was disbursed as subsidy for this purpose. The quantum of subsidy is estimated to be Rs. 114 Crore in FY18 (PSERC, 2018a).
Medium and large industrial consumers	From January 2018, all large and medium industrial consumers are also eligible for energy charge at Rs. 4.99/unit. It is estimated that Rs. 575 Crore was disbursed in FY18, and Rs. 1,380 is promised for the year FY19 to ensure power at this rate (PSERC, 2018a).

In FY17, subsidies to industrial consumers accounted for 1% of the total subsidies, but it is anticipated that it will constitute 16% of the total subsidies in FY19 (PSERC, 2018a). Such subsidies might help attract industries to Punjab and provide small industries with tariff support to ensure competitive production. However, it reduces receipt of cross subsidy and increases the dependence on subsidies for several consumers. Considering the recent history of delayed subsidy payment, these developments will worsen the financial predicament of the DISCOM.

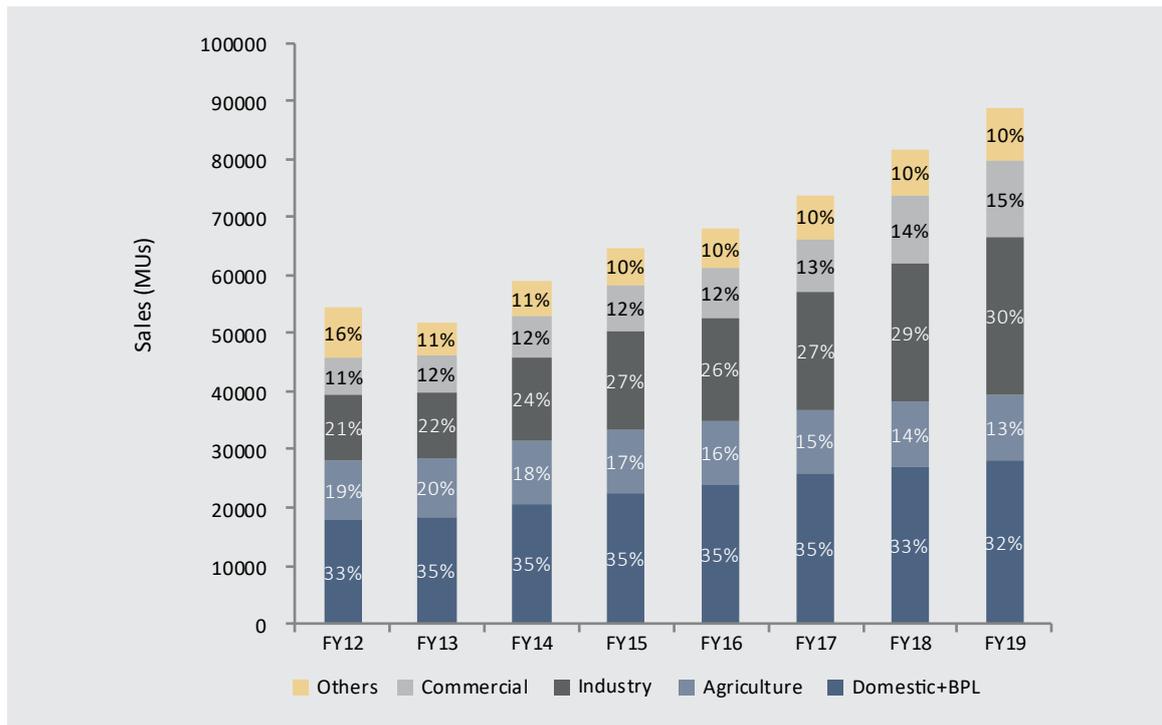
8. Tamil Nadu

8.1 Overview

The electricity subsidy in Tamil Nadu is among the highest in the country at about Rs. 7,700 Crore in FY19. This is predominantly distributed to Below Poverty Line (BPL), domestic, and agricultural consumers. BPL homes and agriculture connections form a significant proportion of DISCOM sales and receive free power due to subsidy.

Figure 8.1 shows the sales mix over multiple years for the only DISCOM in the state, the Tamil Nadu Generation and Distribution Company (TANGEDCO). The domestic sector has consistently contributed 33% to 35% of the total DISCOM sales, while agricultural sales have declined from 19% of total sales in FY12 to 13% in FY19. On the other hand, the contribution of the commercial and industrial sectors to total sales has been rising from 32% in FY12 to 43% in FY19. Such growth, despite high tariffs in this industrialised state, is explained by the high cross-subsidy surcharge²⁹ which disincentivises open access.

Figure 8.1: Tamil Nadu sales mix between FY12 and FY19



Source: Prayas (Energy Group) analysis based on Tamil Nadu Tariff Order (FY18)

As of March 2017, the accumulated liability of TANGEDCO was Rs. 81,312 Crore. This debt is comparable to the Rs. 80,200 Crore disbursed nationwide as expenditure on unskilled wages under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) from FY08 to FY11 (Ministry of Rural Development, 2012).

29. The average cross subsidy surcharge for industrial consumers is about Rs. 3.8/unit (TNERC, 2014).

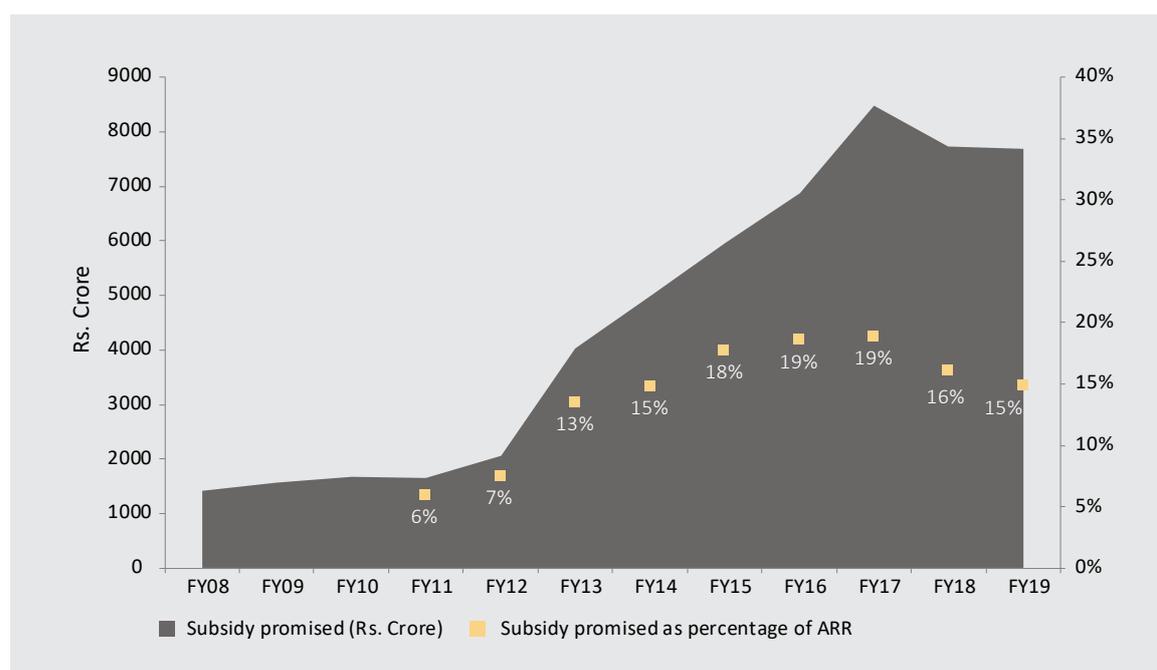
With over 50% of TANGEDCO's sales being subsidised, subsidies certainly contribute significantly to the revenue of the DISCOM. On an average, between FY12 and FY17, the subsidy contributed to 12% of the ARR, and the revenue gap every year would have been almost two times more without the subsidy (TNERC, 2018). Given its crucial contribution to the financial viability of TANGEDCO, the role of subsidy in Tamil Nadu must be examined. However, this is contingent on the availability of subsidy related data.

Toward this end, subsidy promised is reported on a regular basis in Tamil Nadu. The Tamil Nadu ERC issues a separate order annually reporting subsidy promised for every category along with a schedule for advance subsidy disbursal. The order also provides details on revision of subsidy due to changes in actual sales for previous years. In the following sections, the annual subsidy orders of Tamil Nadu have been used as the primary source for category-wise subsidy data.³⁰

8.2 Sharp jump in overall subsidy quantum

Given that a large proportion of the power sold is subsidised, it is not surprising that the quantum of subsidy has also increased significantly over the years. In fact, between FY08 and FY19, subsidy has a much higher growth rate than overall sales in Tamil Nadu. In these years, the subsidy grew at an average rate of 19%, whereas sales increased only by 5%. Figure 8.2 illustrates the growth of subsidy promised according to the ERC's subsidy orders from FY08 to FY18. It also shows the share of this subsidy in the ARR approved by the ERC for the last eight years.

Figure 8.2: Subsidy promised and its proportion in the ARR of Tamil Nadu between FY08 and FY19



Source: Prayas (Energy Group) analysis based on Tamil Nadu tariff order (FY18) and annual Tamil Nadu subsidy orders (FY08 to FY19)

In FY13, subsidy in real terms increased by about 182% compared to the previous year. This massive spike in subsidy is attributed to the 21% increase in tariffs across categories that took place in this period. To protect consumers from tariff shock, the increase in tariffs was directly compensated with subsidy. The tariff increase approved by the Tamil Nadu ERC was an effort at decreasing the massive accumulated revenue gap which was as high as Rs. 17,207 Crore by FY11 (TNERC, 2012). This was

30. For other regulatory data, such as ARR, tariff orders are used.

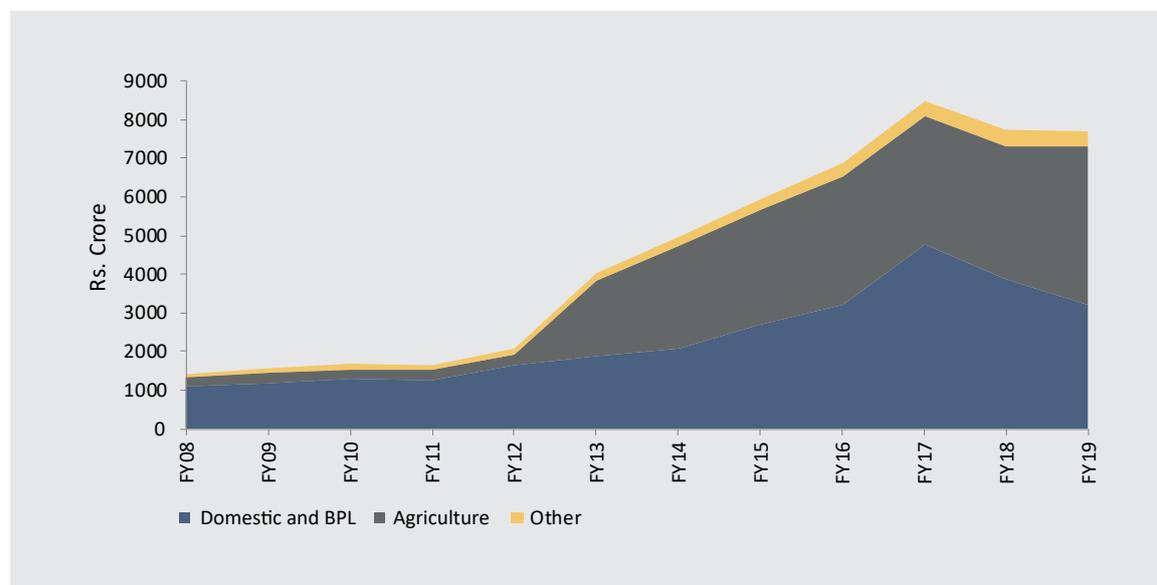
after tariffs had remained unchanged for nearly a decade. Due to the hike, domestic and agriculture tariff underwent a 52% and 600% increase respectively. After this spike, the subsidy has continued to increase steadily, both in quantum and as a percentage of ARR.³¹

8.3 Many recipients of subsidy and free power

Over the years, the consumer categories being subsidised, and the proportion of subsidies to these categories, have seen significant shifts. Subsidy categories in the state can be broadly aggregated as: Agriculture (self-financing scheme (SFS) and non-SFS consumers³²), Domestic (including BPL), and Others (powerlooms, handlooms, street lights and public water supply, actual places of worship, and lift irrigation co-operative societies).

Figure 8.3 summarises the subsidy breakup as per this classification from FY08 to FY19. In the initial years, unlike other states, domestic consumers were dominant subsidy recipients. Since FY12, agricultural subsidy has been increasing with the increase in regulated tariffs. This is because the government directly subsidises the increase in tariff. The trends for subsidies within these categories are further discussed in section 8.4.

Figure 8.3: Category-wise subsidy in Tamil Nadu between FY08 and FY19



Source: Prayas (Energy Group) analysis based on annual Tamil Nadu subsidy orders

Since FY08, the 'others' category accounts for an average of 6% of the total subsidy. The powerloom industry constitutes the major component in the 'others' category. Table 8.1 discusses major trends in this category.

31. Till FY17, when the subsidy quantum accounted for 19% of the ARR. In FY18 and FY19, subsidy accounted for 16% and 15% of ARR. This drop in the subsidy quantum is not supported by a corresponding change in sales.

32. Agricultural consumers covered under self-financing schemes (SFS) were initially not subsidised. They started receiving free power from FY07 onwards, along with non-SFS agricultural consumers, who have been consistently subsidised.

Table 8.1: Major trends in the 'others' category in Tamil Nadu

Category	Description
Powerloom	Accounts for around 50% to 90% of subsidies to 'others'. Consumers using less than 250 units monthly were given free power. In FY12, this was extended to up to 325 units per month.
Handloom	Received free power for up to 50 units per month till FY11. This was revised to 100 units in FY12.
Lift irrigation and cooperative societies	High tension category that also receives free power.
Street lights and public water supply	Subsidised for four years (FY09 to FY12) during which period the subsidy accounted for 40% of the subsidy to 'others'.
Places of public worship	Premises with annual income below Rs. 1,000 have consistently received free supply. Since FY06, places of public worship with income above Rs. 1,000 and below Rs. 10,000 were also subsidised. Subsidy to this category is marginal and contributes to 0.3% (averaged over eleven years) of the total quantum of subsidy (TNERC, 2006). These consumers pay 42% less than regulated tariffs due to subsidies.

Source: Prayas (Energy Group) analysis based on annual Tamil Nadu subsidy orders (FY05 to FY18)

Tariffs to all the categories are set based on considerations of sales mix, paying capacity of a class of consumers, and cross subsidy design. Thus, certain categories, like places of public worship and lift irrigation and co-operative societies, are considered to be traditionally cross subsidising by the Tamil Nadu ERC based on economic and social factors. However, like governments in Punjab and Haryana provide subsidy to industries, the Tamil Nadu government has been providing some subsidy to these traditionally cross subsidising categories. As shown in Table 8.2, the sales to such consumer categories are minor and, thus, account for a small proportion of overall subsidy. However, the benefit to the consumers is substantial.

Table 8.2: Assignment of subsidy to cross subsidising categories in Tamil Nadu in FY18

Consumer Category	Average Billing Rate (ABR) (Rs./ unit)	ABR/ACoS (%)	Subsidised Tariff (Rs./ unit)	Percentage of Total Subsidy
Lift irrigation and co-ops (HT)	6.35	109%	0	0.07%
Places of public worship (LT)	6.92	118%	4.02	0.22%

Source: Prayas (Energy Group) analysis based on Tamil Nadu tariff order (FY18) and annual Tamil Nadu subsidy orders (FY18)

As depicted in Figure 8.3, the total subsidy quantum promised to the domestic category has been growing till FY17. But while domestic subsidy shows an average growth rate of 12% between FY08 and FY19, the year on year growth rate across the last decade has been erratic, indicating a lack of consistent subsidy policies by the Tamil Nadu government. In fact, the most significant escalation in subsidy to domestic consumers occurred during election years, a 30% increase between FY11 and FY12 and a 48% increase between FY16 and FY17. This erratic growth in subsidy is not unique to the domestic sector. It is seen in all three categories.

8.4 Changing share of agricultural and domestic subsidy

Driven by multiple farmers' agitations through the 1980s, agriculture became the first consumer category to receive free supply in 1990, as it does currently as well (Rao, 2017). A notable trend, which is clear in Figure 8.3, is that agricultural subsidy has been increasing since FY12 despite agriculture's declining contribution to the sales mix. This is because of the following changes in FY12:

- The tariff increased from Rs. 250/HP/annum to Rs. 1750/HP/annum which resulted in a subsidy increase as compensation for the tariff hike (TNERC, 2012).³³
- A change in design of the subsidy in the same year such that the agriculture subsidy was also extended to all agriculture and allied activities (Rao, 2017).

As seen in Figure 8.4, agriculture's share in subsidy increased from 14% in FY12 to 49% in FY13, even though the category's contribution to total sales did not increase substantially. This was a major shift from the scenario in FY12, when domestic consumers were promised 80% of the total subsidy. In subsequent years as well, the subsidy quantum accorded to agriculture continued to increase without any corresponding rise in sales.

Figure 8.4: Shift of subsidy shares from domestic to agriculture in FY13



Source: Prayas (Energy Group) analysis based on Tamil Nadu tariff order (FY18) and annual Tamil Nadu subsidy orders (FY12 and FY13)

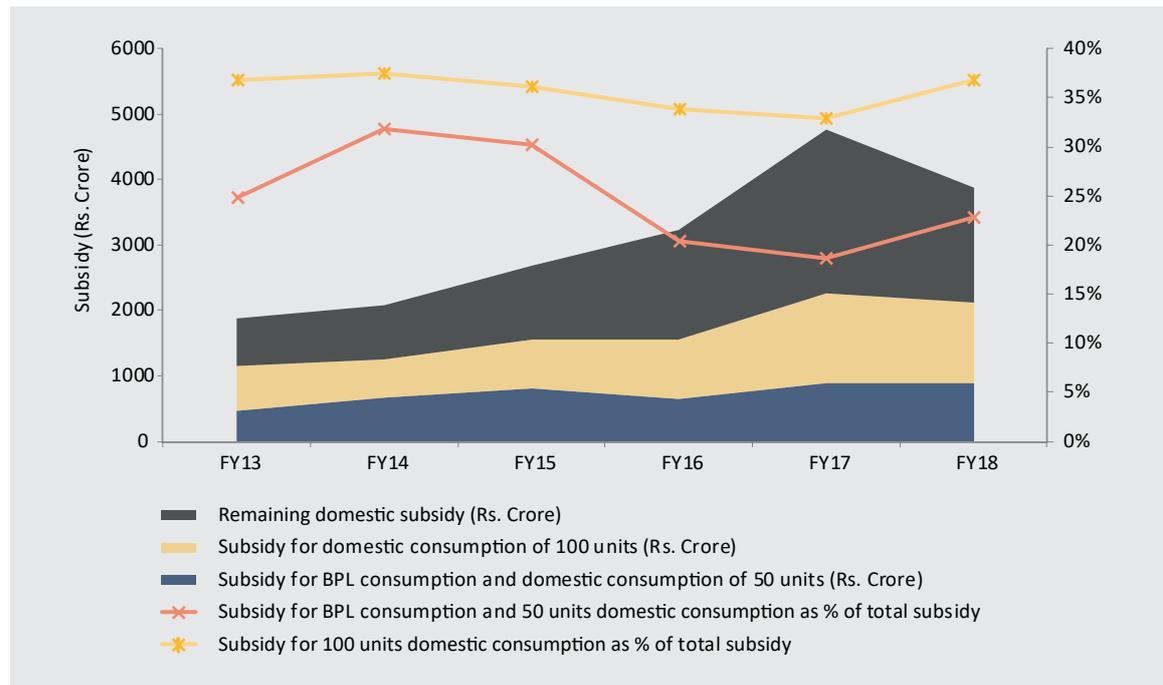
8.5 Inequitable domestic subsidy design

As of FY18, BPL consumers receive free supply, while all other domestic consumption is partially subsidised.

33. This tariff of Rs. 1750/HP/annum stayed in effect from April 2013 to June 2013. From June 2013 the tariff further increased to Rs. 2500/HP/annum. In December 2014 the tariff underwent further increase and amounted to Rs. 2875/HP/annum. These subsequent hikes in tariff were also directly subsidised by the government.

Figure 8.5 depicts the subsidy provided for different consumption slabs within the domestic category. For the purpose of this analysis, domestic category includes BPL consumers³⁴. BPL consumers and consumers using less than 50 units per month are small consumers. As is illustrated, these consumers received an average of 25% of the total domestic subsidy from FY12 to FY18. Consumers using around 100 units per month characteristically use appliances like refrigerators, but are not users of air conditioners and washing machines. These consumers receive an average of about 36% of the domestic subsidy. Since subsidy is typically provided as an avenue of assistance, targeting intended recipients is central to the efficiency of the mechanism. But in Tamil Nadu, like in Punjab and Haryana, domestic subsidy is provided even to consumers using more than 100 units per month.

Figure 8.5: Slab-wise breakup of domestic subsidy in Tamil Nadu between FY13 and FY18

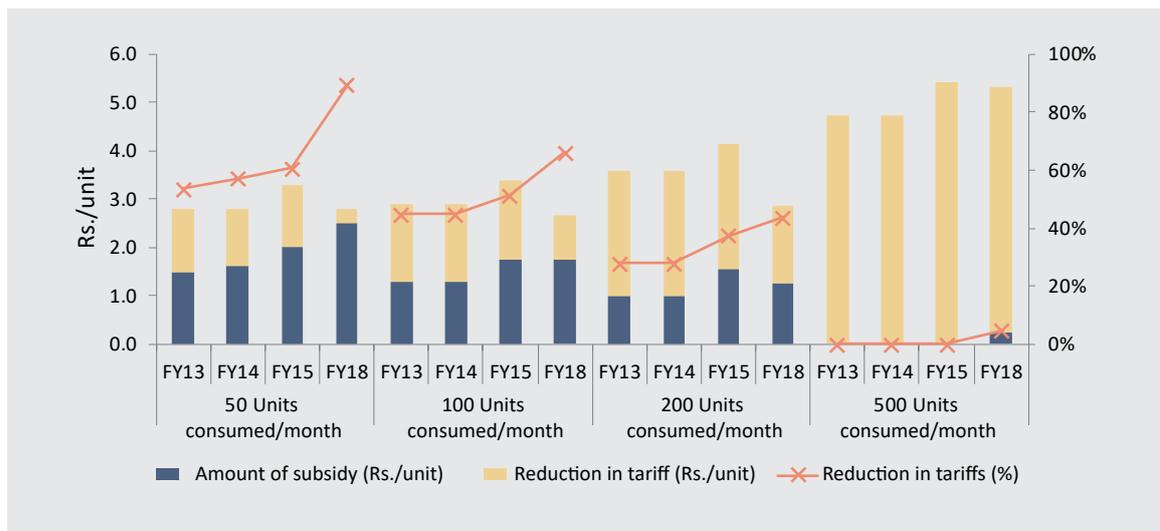


Source: Prayas (Energy Group) analysis based on annual Tamil Nadu subsidy orders (FY13 to FY18)

This skewed distribution of subsidy is further explained in Figure 8.6 which illustrates the share of subsidy promised in the bills for different levels of monthly consumption (50 units, 100 units, 200 units and 500 units) across years. The graph shows the contribution of per unit tariffs paid by consumer and the per unit subsidy which make up the regulated tariff. In FY13, a consumer using 50 units per month had a 54% reduction in tariff payable due to the provision of subsidy, which increased to a 89% reduction in FY18. Conversely, consumers using more than 250 units per month did not receive any subsidy from FY13 to FY17. However, in FY17, the first 50 units of consumption per month were given for free to all domestic consumers, across all connected loads and levels of consumption. As a result, consumers in the highest slab were also subsidised.

34. The Tamil Nadu government documents record BPL domestic consumers as hut consumers. According to the TNEB, "A hut is a living place not exceeding 250 square feet area having a single room with a mud wall and thatched roof/tiles/asbestos/metal sheets like corrugated G.I. sheets roofing." (TNERC, 2006)

Figure 8.6: Subsidy to monthly consumption for typical consumers in Tamil Nadu between FY13 and FY18



Source: Prayas (Energy Group) analysis based on Tamil Nadu tariff orders (FY11, FY13, FY14, FY15 and FY18)

8.6 Regulatory accountability for subsidy

As discussed in Section 8.1, the regular reporting of subsidy promised is a positive practice that takes place in Tamil Nadu. However, tariff orders are not issued with the same regularity. One of the major reasons for the buildup of losses in Tamil Nadu was that tariffs were not revised between FY03 and FY11, and even though costs incurred increased, no tariff orders were issued by the Tamil Nadu ERC. Even in the years where no tariff order was published, the Tamil Nadu ERC put out an order reporting the subsidy promised. This practice of providing an annual subsidy order should be adopted by other states as well.

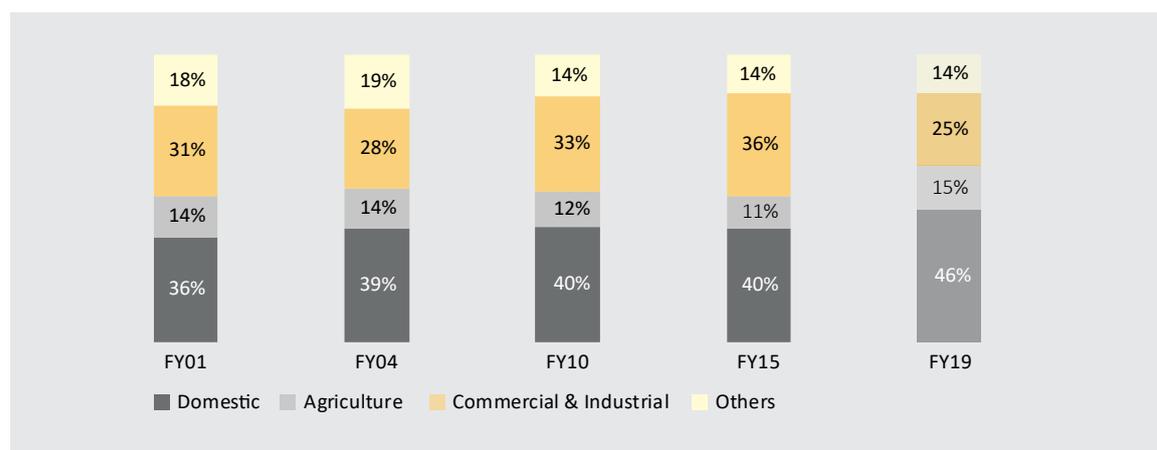
Even though subsidy orders are provided, a true-up of subsidy payments is not done annually. The CAG report on state finances records the subsidy disbursed to the domestic category from FY13 to FY17 (CAG, 2017). A variation of 2% to 12% is observed between the estimates in the subsidy orders and the actual amount reported by the CAG. It is not clear if this variation is due to change in sales or delays in disbursement. The extent of delays and the actual subsidy disbursed will only be clear in a true-up exercise which also assesses subsidy payments and interest cost incurred due to delays. Such a process, which has not been implemented in Tamil Nadu, is vital to ensure accountability within the sector.

9. Uttar Pradesh

9.1 Overview

Uttar Pradesh has historically been one of the least electrified states in India. However, in the past decade, the state has reportedly managed to electrify around 23 million³⁵ houses which has increased the growth of domestic sales. As seen in Figure 9.1, domestic category sales, which contributed to 36% of electricity consumption in FY01, increased to 40% by FY15, and are estimated to account for 46% in FY19 (UPERC, 2017b). Over the years, the share of agricultural sales has been only around 13%, unlike in Punjab, Haryana, or Gujarat where the proportion has been substantially higher. Majority of the consumption in the state, about 60% in FY19, is by the domestic and agricultural categories which typically pay much less than the cost of supply. Further, the traditionally cross subsidising commercial and industrial consumption is less significant at 25% in FY19. This amplifies the role of state government subsidies to extend support to these categories. With electrification, it is likely that, along with domestic consumption, agricultural consumption might increase as well, requiring more subsidy support.

Figure 9.1: Consumption mix in Uttar Pradesh between FY01 and FY19



Source: Prayas (Energy Group) analysis based on data compiled from various UPERC tariff orders

Note: Consumption data as per audited accounts for FY01 to FY15, and is provisional for FY19, as approved by UPERC.

The categories of rural domestic consumers and private tube wells (PTW) (which is the agricultural category in receipt of subsidy in Uttar Pradesh) have been historically subsidised by the state government. Given the low level of industrialisation, and thus, low potential for cross subsidy, the Uttar Pradesh Electricity Regulatory Commission (UPERC), since 2001, has been of the opinion that the cost of supplying to these categories should completely be met through tariffs and government subsidy alone. This has left no room for cross subsidy. In other words, according to the UPERC, the difference between ACoS and ABR should be met through government subsidy alone (UPERC, 2000, p. 44). However, the actual quantum of subsidies promised and paid is much less than this difference between ACoS and ABR, contributing to the buildup of losses. The outstanding debt of Uttar Pradesh DISCOMs

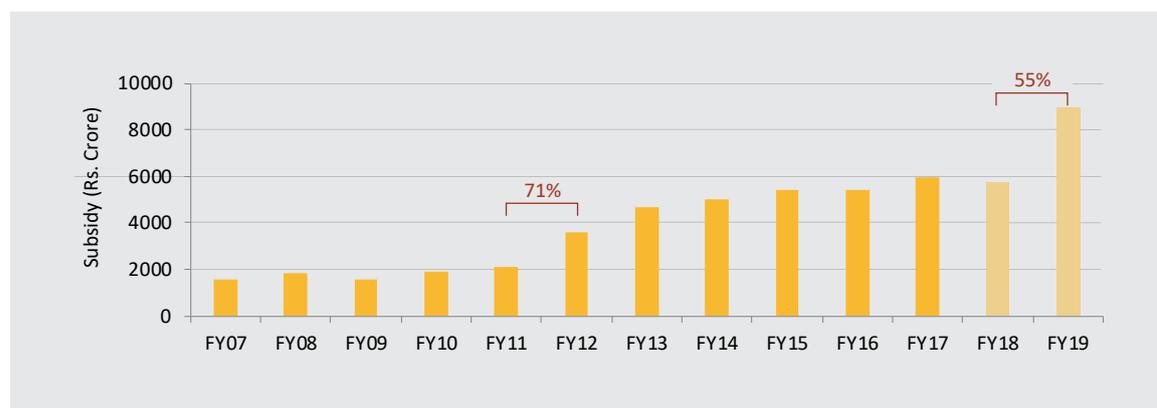
35. 60,54,978 rural houses were electrified in 2011 in Uttar Pradesh (Census of India, 2011). In 2017, the number was recorded as 2,11,96,195, and since then 79,80,568 houses have been electrified (MoP, 2019).

was Rs. 25,934 Crore in 2012, and had reached Rs. 53,211 Crore at the end of September, 2015 (MoP, 2012; MoP, 2016b). In this context, it is necessary to see how subsidy support has been provided by the Uttar Pradesh government.

9.2 Trends in subsidy allocation in Uttar Pradesh

The subsidy paid from FY07 to FY17 and the subsidy promised till FY19 by the Uttar Pradesh government has been shown in Figure 9.2.

Figure 9.2: Subsidy in Uttar Pradesh from FY07 to FY19



Source: Prayas (Energy Group) analysis based on data compiled from various UPERC tariff orders

Note: The subsidy quantum paid by the Uttar Pradesh government as per true-up orders is represented till FY17. For FY18 and FY19, subsidy promised is represented, as approved by the UPERC in the tariff orders.

On an average, about 20% of the DISCOMs' revenue requirement is met by subsidies. Subsidy payments between FY01 and FY05 grew steadily as domestic subsidy was introduced along with the existing agricultural subsidy. The growth slowed down between FY07 and FY11 to about 8% per annum. Between FY11 and FY12, the subsidy shot up by 71% and increased from Rs. 2,097 Crore to Rs. 3,595 Crore. This increase was probably due to increased subsidy commitment around the state legislative elections in early 2012. A similar jump was noticed in FY05 right before the elections with a 48% increase in subsidy. From FY13 to FY15, the average annual growth continued at about the same pace at 7% per annum.

Between FY16 and FY18, subsidy promised has not seen much growth while the subsidy promised in FY18 is lesser than the previous year. The subsidy quantum reduced by 4% even though the revenue requirement for the DISCOMs increased by 24%. The proportion of revenue requirement met by subsidy which was 15% in FY13, fell to 12% by FY17 and has been projected to be 10% for FY18. This reduction in subsidy commitment in recent years, especially with almost 8 million households getting connections since 2017, may pose a challenge for Uttar Pradesh DISCOMs which are already under severe financial duress.

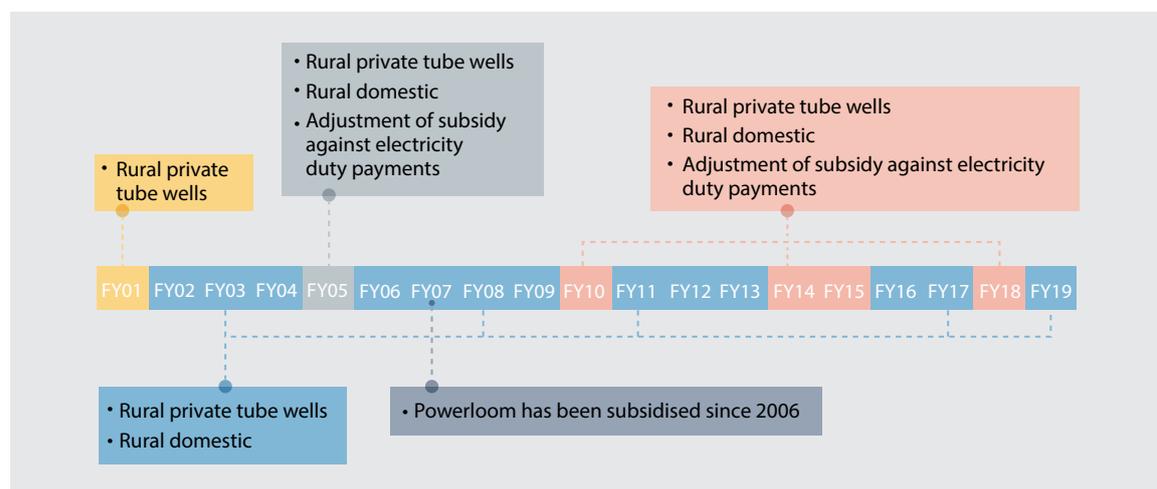
The subsidy quantum announced by the state government for FY19 has been Rs. 8,900, which is a substantial increase given past trends. This projection is a 55% increase³⁶ in commitment as compared to FY18. But this subsidy quantum is still not enough to completely cover the ACoS and ABR gaps for the subsidised categories in the absence of cross subsidy.

36. The reason for sharp increase is unclear as there has been no upward revision of regulated tariffs, and sales have also not grown enough to explain this increase.

9.3 Subsidised categories in Uttar Pradesh

Most of the subsidy in the state is provided to agricultural and rural domestic consumers. It is important to note that even today, a major proportion of this consumer base is unmetered (49% of rural domestic sales, 58% of agricultural sales) (UPERC, 2017a, p. 493). Yearly consumption of unmetered sales is based on consumption norms, rather than actual consumption. This could lead to overestimation³⁷ of consumption and subsidy.

Figure 9.3: Subsidised consumers in Uttar Pradesh from FY01 to FY19



Source: Prayas (Energy Group) analysis based on data compiled from various UPERC tariff orders

Figure 9.3 shows a timeline of various categories that have been subsidised over the years. Years that had the same subsidised categories have been marked in the same colour (for example: rural private tube wells and rural domestic were the only two categories receiving subsidy in all the years marked in blue). Only private tube wells³⁸ (PTW) for agricultural use were subsidised in FY01, and the subsidy for rural domestic³⁹ consumers was introduced in FY02. These two categories have been consistently subsidised across the years.

Curiously, in FY05, subsidy was provided to the employees and pensioners of utilities (UPERC, 2004, p. 211).⁴⁰ The information on subsidy provision to the other categories is not readily available in a comprehensive manner. In June 2006, the Uttar Pradesh government announced a revenue subsidy for low tension powerloom consumers.⁴¹ However, no information is available in tariff orders regarding the magnitude. As per a CAG audit report, powerloom consumers received Rs. 355 Crore in subsidy from FY09 to FY13. The subsidy claimed by the DISCOMs for this category was higher at Rs. 622 Crore, which was not paid by the government even after regular requests from the DISCOMs (CAG, 2014). Given that the quantum compares to around 7% to 9% of the total subsidy quantum (UPPCL, 2013), and there is a possibility of delayed payment, it is important that such details are provided.

37. For example, the UPERC assumed that rural domestic consumers would typically use about 144 units/kW/ month which is comparable to the average consumption of consumers in cities such as Mumbai and Hyderabad (UPERC, 2016).

38. This category consists of all low-tension consumers taking supply for irrigation purposes, and for additional agricultural purposes such as the use of chaff-cutters, threshers, cane crushers, and rice hullers.

39. This category consists of all low-tension residential consumers who classify under the rural schedule.

40. Allocation of subsidy was not significant but the category enjoyed fixed, flat rate tariffs (Rs. /connection/month).

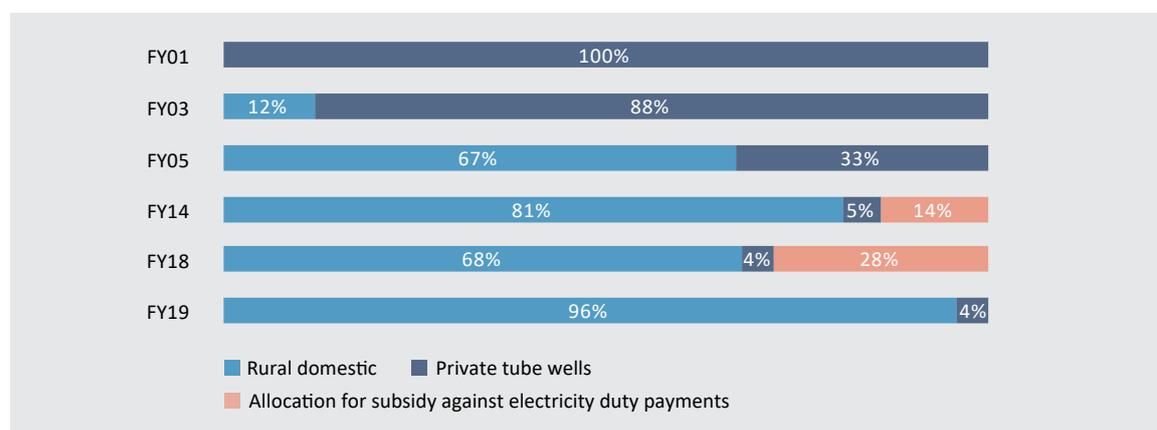
41. Preceding this, in FY04, low tension powerloom consumers used to receive rebates on their energy charge, which was 10% for consumers with < 5 kW load, and 20% for consumers with > 5 kW load.

Subsidy was also allocated for 'adjustment of electricity duty' in FY10, FY14, FY15 and possibly FY18. While announcing promised subsidy (for the years marked in pink, in Figure 9.3), the Uttar Pradesh government would announce that out of the total subsidy provision, a certain part would not be paid in cash, but would be adjusted with electricity duty collected by the DISCOMs in the upcoming months of the financial year. This subsidy has neither been assigned to a particular category, nor to meet a specific expense. Thus, it could perhaps be used to finance DISCOM losses⁴².

9.4 Mechanism of allocating subsidy in Uttar Pradesh

The allocation of total subsidy quantum among major consumer categories is shown in Figure 9.4. As information is difficult to find on all categories, efforts were restricted to mapping changes in major categories. One can see a dramatic shift in the share of subsidies provided to agricultural consumers and domestic consumers. In fact, the proportion of total subsidy to agriculture has reduced considerably over the years from 88% in FY03 to 5% in FY14. Domestic subsidy has seen a considerable increase in share in the same period. Even though allocation for subsidy to be recovered from electricity duty does not cater to a specific consumer category, it has been included in the figure as it formed a part of the total subsidy declared by the Uttar Pradesh government in the respective years.

Figure 9.4: Subsidy allocation proportion in Uttar Pradesh over the years



Source: Prayas (Energy Group) analysis based on data compiled from various UPERC tariff orders

9.4.1 Change in share of agricultural subsidies

The reduction in subsidies to private tube wells (or agricultural consumers) and the increase in domestic subsidy is not because of a reduction in sales in the former category and the increase in the latter. In fact, the proportion of agriculture sales to total sales has remained more or less constant over the years. The same is true for the domestic category. The shift is perhaps explained by a change in the mechanism used for allocating subsidies.

From FY02 to FY04, the Uttar Pradesh government prioritised agricultural consumers in subsidy allocation. The remaining amount of government subsidy was allocated to rural domestic consumers (UPERC, 2004, p. 144). The allocated subsidy was first used to meet the difference between the average cost of supply of the DISCOMs and the average tariff for agriculture. Thus, it can be seen that its share was disproportionately high in the early years of the UPERC in the absence of cross subsidy.

42. Though this is not reported in any tariff order, in a reply to data gaps, for FY15–FY17, it is seen that the Madhyanchal Vidyut Vitaran Nigam Limited (MVVNL) received a separate subsidy for operational losses over and above the adjustment against electricity duty (UPPCL, 2018).

Since FY05, the subsidy has been split between agriculture and rural domestic categories on the basis of sales, and both categories received cross subsidy. The reduction in subsidy and increase in cross subsidy is the reason for the fall in subsidy for the agricultural category, even though agricultural sales have increased over the years. As the share of domestic sales has been higher, the increase in domestic subsidy share is also explained.

9.4.2 Subsidy against electricity duties

As mentioned in Section 9.3, the Uttar Pradesh government would not pay all subsidies directly in cash but would adjust some payments on the basis of electricity duty collected by DISCOMs. In earlier years, revenue from electricity duties were adjusted against promised equity grants by the state government for capital expenditure (UPERC, 2000). Since FY10, in particular years, the Uttar Pradesh government had been specifying the quantum of revenue subsidy to be adjusted against electricity duties while announcing subsidy for the year. This practice is unlike other states where some part of the promised category-specific subsidy is adjusted on the basis of electricity duties actually recovered by DISCOMs over the year. The quantum of the adjustment in the recent years has been significant, as it accounted for 14% (Rs. 624 Crore) of the subsidy payments in FY14 and was projected to cover 28% (Rs. 1500 Crore) of the subsidy for 2018 (UPERC, 2017a). Even though the multi-year tariff order for FY18–FY20 approved subsidy for adjustment against electricity duty, in the revised tariff order for FY19, the UPERC seems to have discontinued this practice (UPERC, 2019).

9.5 Additional subsidy: A regulatory paper tiger

As explained in Section 2, tariffs, losses, and the provision of subsidy are interlinked. With burgeoning costs, inefficient practices, and low revenue recovery, DISCOMs have accumulated significant losses over time. In 2013, while truing up for FY08, the UPERC decided that categories consistently being subsidised by the state government (i.e. agriculture and rural domestic) would not receive any cross subsidy. This was done in accordance with the UPERC tariff regulations which came into effect in 2008 (UPERC, 2013).

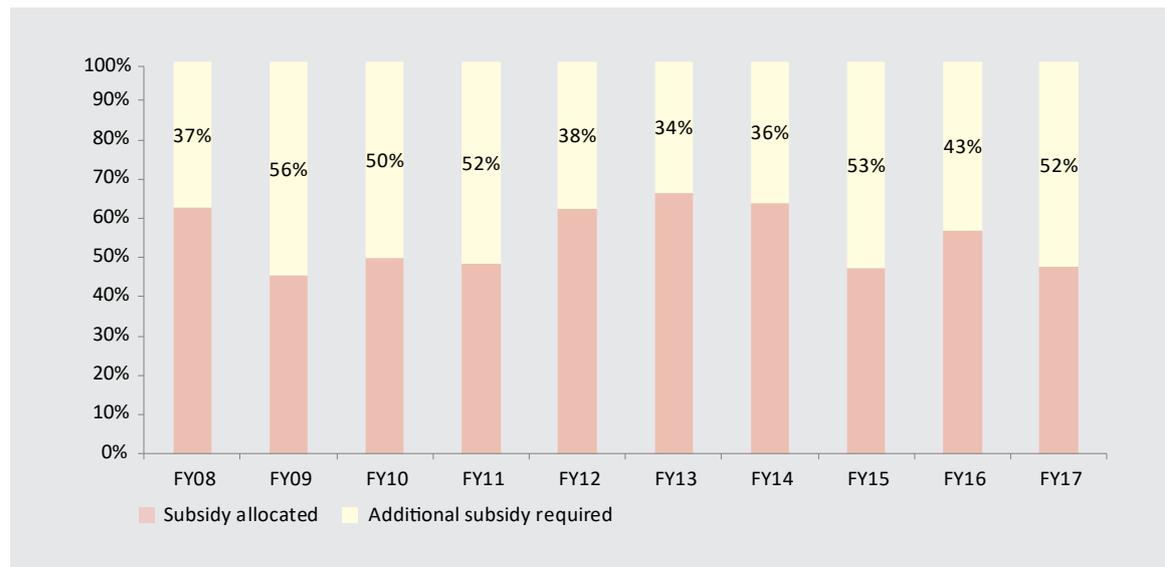
For these two categories, the UPERC, following its tariff design, estimated the difference between the cost of supply and the total revenue recovered from tariff and subsidy. The difference was deemed as an additional subsidy to be recovered from the state government. In the case of non-payment of additional subsidy by the state government, the amount would not be allowed to be added to the revenue gap or regulatory asset for recovery from consumers in subsequent years.

UPERC's change in tariff design and the directions to recover additional subsidy was subsequently challenged by the DISCOMs before the Appellate Tribunal for Electricity (APTEL) which upheld the UPERC order (APTEL, 2015). The APTEL judgement seemed to treat the DISCOM as an extension of the state government rather than a separate, corporatised entity. While tariff design set by the regulator needs to be complied with by all parties, subsidy design is the prerogative of the state government. Therefore, subsidy design is based on different considerations than tariff design and is motivated by political compulsions and budgetary constraints. Thus, state governments can decide not to commit to providing 'additional subsidy'. In such a case, the unrecovered revenue will become a part of the growing losses of the DISCOMs. This possibility was not discussed in the judgement. The provision of additional subsidy has continued for the true-up processes⁴³ for following years and is still applied by the UPERC.

43. For FY14 and FY15, the UPERC estimated the additional subsidy during the tariff determination process itself which when subsequently trued-up, was inflated further.

As seen in Figure 9.5, as per the UPERC, additional subsidy consistently accounted for about 35% to 55% of the total subsidy to be paid by the state government. The approval of additional subsidy has ensured that there is elimination of cross subsidy requirement and has also insulated consumers from tariff shocks on account of these costs. However, despite the regulatory approval, there has been no record of commitment for this additional subsidy by the state government in any year. As per a CAG report, this is despite the Uttar Pradesh Power Corporation Limited (UPPCL) repeatedly corresponding with the state government claiming the disbursement of additional subsidy quantum.⁴⁴ In the face of rising costs, the non-recovery of additional subsidy implies a significant strain on the DISCOMs' operations and working capital requirements.

Figure 9.5: Additional subsidy requirement as computed by the UPERC for FY08 to FY17



Source: Prayas (Energy Group) analysis based on data compiled from various UPERC tariff orders

For the period FY08–FY17, the additional subsidy requirement stands at Rs. 32,000 Crore, which is about 70% of the trued-up revenue gaps (without carrying cost) for these years. This is about 60% of the debt that the state government had taken over as part of UDAY in 2015 (MoP, 2016b). As of FY17, the carrying costs due to carry forward of unrecovered additional subsidy would be to the tune of about Rs. 13,500 Crore⁴⁵. This is almost as high as the central government support for providing connections under the SAUBHAGYA scheme (MoP, 2017). This amount of additional subsidy should ideally be paid by the state government in a timely manner or it will keep adding to the debt taken over as part of UDAY.

The cumulative quantum of losses due to non-payment of additional subsidy and working capital loans to meet costs is already significant and will grow in the years to come. The next financial bailout in Uttar Pradesh might be needed much sooner than foreseen.

44. These claims were 30%–40% higher than what was approved by the UPERC for FY10 and FY12 (CAG, 2014).

45. Assuming an interest rate of 10.85% of carrying cost.

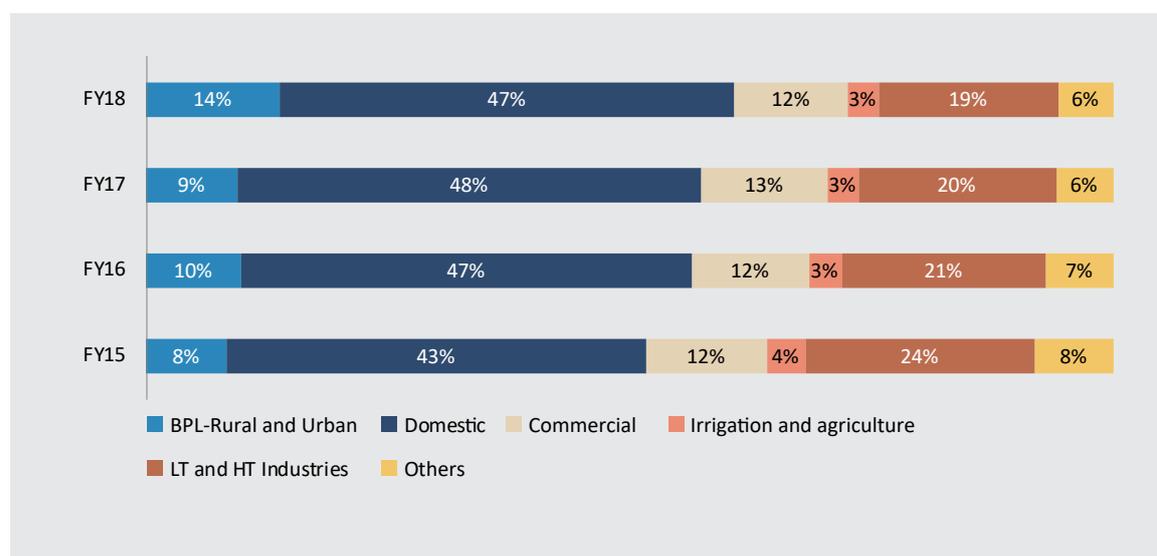
10. Bihar

10.1 Overview

Bihar is one of the states whose DISCOMs have been affected by financial distress for years. The cost of supply, which was Rs. 7.35/unit in FY17, has been consistently increasing, especially due to the increasing power procurement costs (BERC, 2018a; BERC, 2018b). De-electrification, defective meters and unmetered consumption have weighed down heavily on the state DISCOMs' aggregate technical and commercial (AT&C) losses at 36% in FY17 (BERC, 2018a; BERC, 2018b). These two factors resulted in a total accumulated debt of Rs. 3,100 Crore for both DISCOMs till September 2015 (MoP, 2016d; MoP, 2016c). This is significant for a state like Bihar where the liabilities are comparable to 38% of the ARR of the DISCOMs in FY17.

Bihar's energy sales mix as seen in the Figure 10.1 shows a very unique composition of consumers, reflective of low industrial demand and rising domestic load. Unlike many other states, domestic consumption dominates at 51% to 61% of total sales, industrial consumption only accounts for one fifth of the total sales, and agricultural consumption is marginal at 3% to 4% of total sales across the period considered.

Figure 10.1: Consumer sales mix from FY15 to FY18 for both DISCOMs (NBPDC and SBPDCL) in Bihar



Source: Prayas (Energy Group) analysis based on data from various tariff orders

- Note:
1. Sales do not include sales to the distribution franchisee, sales to Nepal and unscheduled interchange adjustments.
 2. BPL⁴⁶ and Domestic categories make up total domestic sales.
 3. The 'Others' category includes Street Lighting, Public Water Works and Railway Traction Services.
 4. NBPDC stands for North Bihar Power Distribution Company Limited and SBPDCL stands for South Bihar Power Distribution Company Limited.

Over the last two decades, the reported electrification rate of households in the state has increased dramatically from 5.13% in 2001 to 100% in 2018 (Census of India, 2011; MoP, 2019). With more than

46. In Bihar, BPL consumers are called Kutir Jyoti Yojana consumers. This term is applicable to all huts and dwelling houses of rural and urban families which are BPL, and houses built under the Indira Awas Yojana (BERC, 2017a).

12 million⁴⁷ homes electrified only in the past eight years, the number of newly electrified and BPL consumers⁴⁸ is substantial. Comparable to this, total domestic sales have also increased by more than five times from 1,450 MUs in FY07 to 9,085 MUs in FY18. In fact, sales to BPL consumers accounted for 23% of domestic sales in FY18 which is indicative of this change.

The sales mix and tariff design is such that revenue from cross subsidy is limited. Between FY12 and FY18 consumers from urban domestic, urban commercial, industrial and other categories like street lighting and public water works have switched at least once from being cross subsidising to cross subsidised consumers and vice versa⁴⁹. At any point in time the cross subsidising consumers have been small in number. This implies that there is no consistent cross subsidising base on whom the DISCOM can depend on.

The rising cost of supply, increase in rural poor consumers due to electrification, and limited cross subsidy potential has resulted in significant dependence of the DISCOMs on government subsidies. While the ARR has increased at a rate of 15% per annum between FY12 and FY17, the subsidy, in this period has been financing nearly 56% of the ARR and was as high as 73% of total revenue requirement in FY13.

10.2 Trends in subsidy provision

Subsidy provision can be studied in three distinct phases, summarised as below:

Subsidy for DISCOM operation (FY07 to FY11): In this period almost all⁵⁰ of the subsidies were provided to the DISCOM for costs incurred rather than to provide tariff relief for a specific consumer category. In fact, compensating costs and liabilities was seen as subsidy provided to all “consumers across the board” (BERC, 2012a, p. 157).

The erstwhile Bihar State Electricity Board (BSEB), in a true-up petition before the Bihar ERC, requested that the government subsidy should be first used to meet power procurement costs incurred due to high Transmission & Distribution (T&D) losses in excess of the Bihar ERC prescribed norm. This was different from subsidising overall costs in excess of revenue recovered. The remaining subsidy, after meeting this quantum, was to be used to provide subsidies to agricultural and rural consumers. In Appeal No. 128 of 2008, the APTEL had held the Bihar ERC accountable for drawing out a stringent trajectory for DISCOMs' T&D losses and ensuring that the same is adhered to (APTEL, 2009). In keeping with this line of thought the ERC stated that it did not find it appropriate to treat the subsidy in such a manner, since a subsidy would provide no incentive for BSEB to meet the ERC norm for T&D losses (BERC, 2012a, p. 75).

Subsidy for high T&D losses (FY12 to FY17): A government notification issued on September 19th, 2011 echoed the BSEBs' request (BSEB, 2013, p. 152). It stated that the Bihar government would provide subsidy in the following order of priority:

-
47. 17,60,403 rural households were electrified in 2011 (Census of India, 2011). In 2019 the number was reported as 1,39,73,122 (MoP, 2019). This implies that between 2011 and 2019, 1,22,12,718 households were electrified.
 48. Newly electrified and BPL consumers may not necessarily be exclusive consumer categories as newly electrified consumers are typically rural and poor, and free connections under large scale electrification schemes such as Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and SAUBHAGYA scheme were provided only for BPL households.
 49. For example, the categories of public water works and street lighting were cross subsidised in FY12. They were cross subsidising categories from FY13. The street light category was cross subsidised again in FY15, but since FY16 only the unmetered streetlights remain cross subsidised.
 50. The subsidy provided for tariff relief was insignificant and ad-hoc. The Industrial Incentive Policy, 2006 mentions an electricity grant of Rs. 0.75/unit to powerloom consumers and tariff incentives to all sick, closed, existing and new industrial units (Department of Industries, Bihar, 2006, pp. 10, 8-9). An exemption in the Fuel Power Purchase Cost Adjustment (FPPCA) was provided to the categories of private agriculture and BPL consumers until 2012 (BERC, 2012b, p. 3).

- o Priority 1: To cover power purchase costs disallowed on account of high T&D loss
- o Priority 2: To provide tariff subsidy to consumers

In FY12, the Bihar ERC did not allow subsidy to be used as first priority to recover disallowed costs on account of high T&D loss retrospectively, as the government notification was issued after the tariff determination process for that year had been completed. Hence to avoid “*post facto adjustment of the revenue resource gap*”, the ERC continued the practice of previous years. Subsidy for such disallowed costs was given second priority (BERC, 2013, p. 114). But from FY13 the priorities as set in the government notification were upheld and this practice continued till FY17.

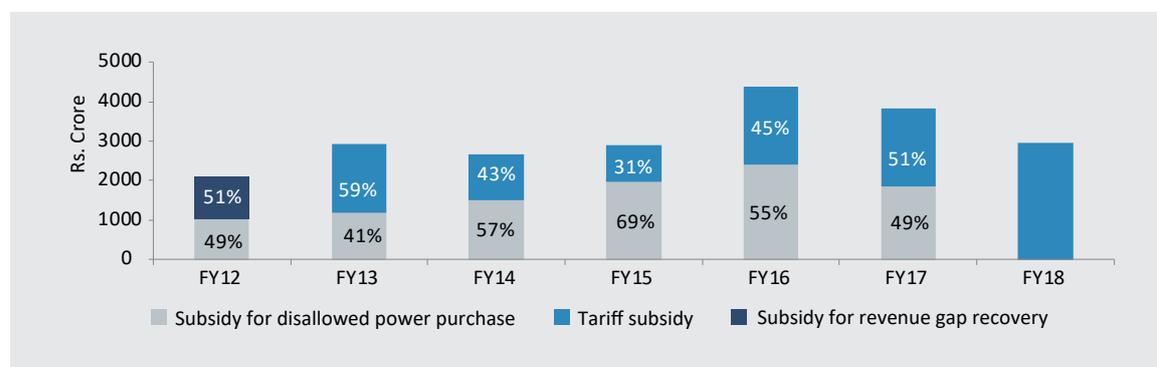
Monthly subsidy payment and announcement (FY18 onwards): In FY18, the subsidy announcement time schedule was decoupled from the tariff determination process. The Bihar ERC set tariffs and approved the revenue gap without any indication of subsidy contribution. Subsidy was to be announced later and paid on a monthly basis (BERC, 2017a, p. 305). This is the current practice in Bihar.

These methods and principles of subsidy disbursement between FY12 and FY18 are discussed in greater detail in the sections below.

10.2.1 Subsidy to compensate for costs due to excess T&D losses

In the event of very high T&D losses, a DISCOM must procure enough power in order to compensate for the energy lost in transmission and distribution wires. But this excess power procured over and above the ERC prescribed T&D loss norm is disallowed by the ERC with the purpose to push the DISCOM to be more efficient. As can be seen in Figure 10.2, between FY12 and FY17, the Bihar government subsidised disallowed power purchase due to high T&D losses in addition to the subsidy for revenue gap recovery or the tariff subsidy. The figure shows that the subsidy to finance costs incurred due to T&D losses in excess of the norm accounted for the major proportion of total subsidies till FY16.

Figure 10.2: Subsidy paid to NBPDC and SBPDCL from FY12 to FY18



Source: Prayas (Energy Group) analysis based on data compiled from various tariff orders

In FY16 and FY17, the proportion of subsidy paid to finance disallowed power purchase cost has reduced. This is perhaps due to a shift in prioritisation towards increased tariff subsidy. In FY18 the subsidy for disallowed power purchase was not given due to the significant change in the distribution loss norm approved by the ERC.⁵¹ The adoption of a higher norm meant a reduction in T&D losses in excess of the norm and change in subsidy required.

51. The subsidy is provided to meet power purchase cost incurred for power procurement in excess of the T&D loss norm. However, the transmission losses and the distribution losses are estimated separately. Intra-state and inter-state transmission losses typically are incurred due to technical reasons and are in the range of 3% to 6% of the energy input. The distribution loss forms bulk of the T&D loss and is the parameter where significant improvements are possible with concerted efforts. Thus, norm based approaches to ensure efficiency also focus on reducing the distribution losses.

The higher norm was adopted in line with the losses specified in the UDAY MoU with Bihar DISCOMs, and the trajectory for loss reduction committed to by the state government and DISCOMs in the MoUs. The losses in the MoU specified for the year FY15 are closer to the actual losses reported by the DISCOMs than the ERC norms.⁵¹ The loss targets approved for subsequent years were therefore higher than the norm specified by the ERC for the same period. As can be seen in Table 10.1, the distribution loss norms approved by the Bihar ERC were changed to reflect the higher loss norms specified in the MoU signed by the state government for the years FY18 and FY19 (BERC, 2018a).

Table 10.1: Change in distribution loss norm for NBPDC and SBPDCL considered by ERC

Distribution loss norms	FY17	FY18	FY19
Approved by ERC as per MYT (BERC, 2016b, p. 7)	19.25% (Both DISCOMs)	18.25% (Both DISCOMs)	17% (Both DISCOMs)
Approved by ERC in FY18, for FY17-19 (BERC, 2018a, p. 8)	19.25% (Both DISCOMs)	30% (SBPDCL) 24% (NBPDC)	22% (SBPDCL) 20% (NBPDC)
As per UDAY MoU ⁵³ (BERC, 2017b, p. 294) (BERC, 2018a, p. 70)	34% (SBPDCL) 28% (NBPDC)	30% (SBPDCL) 24% (NBPDC)	22% (SBPDCL) 20% (NBPDC)

Source: Prayas (Energy Group) compilation based on various tariff orders

The ERC norms specified earlier were lower than the revised norms. Although the revised ERC norms are in line with UDAY MoU trajectories, the UDAY loss reduction trajectory is also more aggressive. For example, the loss reduction trajectory shown in Table 10.1 as per earlier ERC norms, specified a 1 percentage point reduction per year, whereas the UDAY trajectory is more aggressive, expecting a 4 to 8 percentage points reduction every year for both NBPDC and SBPDCL respectively. Though this upward revision in loss means a reduction in subsidy commitment for losses in the initial year, it could rise going forward, especially if the DISCOM is unable to meet the revised norm and the state government continues to be committed to providing this type of subsidy (BERC, 2015, p. 207; BERC, 2016b, p. 272; MoP, 2016c, p. 10; MoP, 2016d, p. 10; BERC, 2018a).

10.2.2 Category-wise break up of tariff subsidy

Until FY12 there was no specific subsidised consumer category. From FY13 till FY17, only BPL consumers and rural consumers in the domestic, commercial and agricultural categories were consistently subsidised. From FY18 onwards, there were additional categories which were given subsidies. In FY18, urban domestic, urban commercial and all industrial categories received a subsidy of Rs. 1.48/unit, Rs. 0.40/unit, Rs. 0.20–0.50/unit, respectively (NBPDC, 2017; BERC, 2017c). In FY19, urban domestic and urban commercial categories and high tension special services⁵⁴ continued to receive subsidy at the rate of Rs. 1.83/unit, Rs. 0.53/unit and Rs. 0.09/unit respectively. In addition to these three categories, state irrigation projects were also subsidised (BSPHCL, 2018). In most states industrial consumers are typically cross subsidising, but in Bihar even before they received subsidy they were paying less than the ACoS.

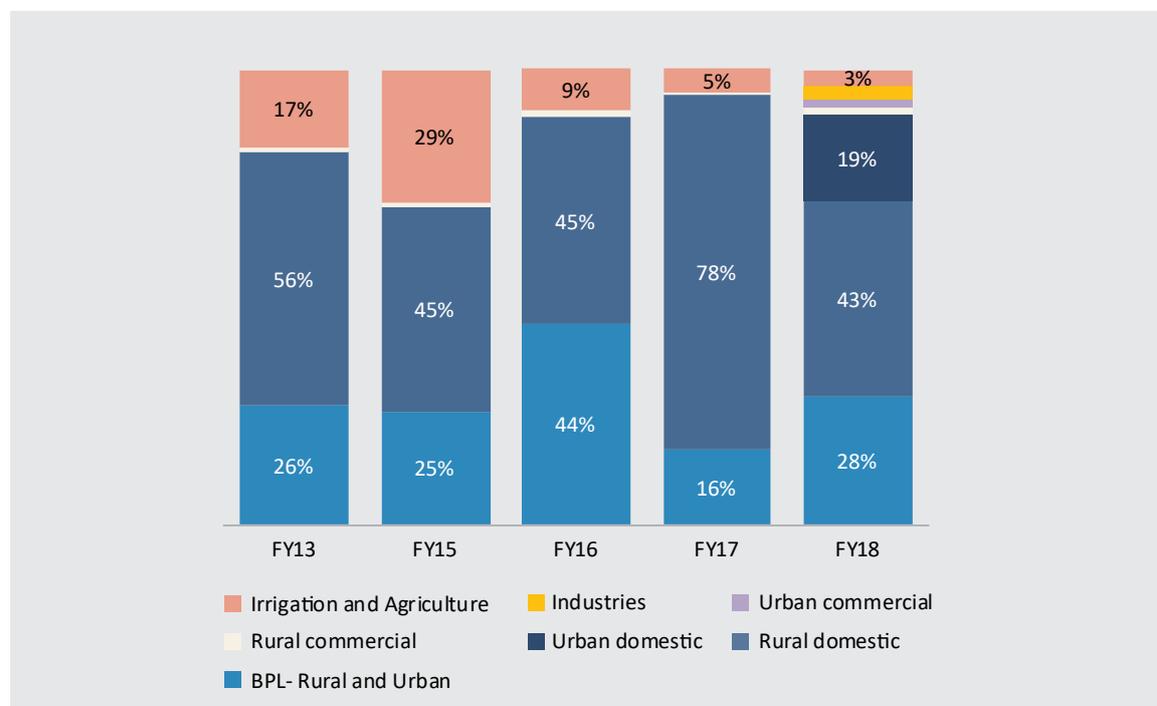
52. For the year FY15, the ERC had approved a distribution loss of 21.4% for both DISCOMs (BERC, 2014). However, as per the MoU, this figure was as high as 45% for South Bihar Power Distribution Corporation Limited (SBPDCL) and 38% for North Bihar Power Distribution Corporation Limited (NBPDC). This can be compared and contrasted with the audited actuals reported by the DISCOMs for the year FY15. For SBPDCL, the distribution loss reported was 45% and for NBPDC, it was 29.54% (BERC, 2016b).

53. Though this is mentioned in the ERC order as distribution loss trajectory approved under the UDAY MoU (BERC, 2018a, p. 68; BERC, 2018b, p. 69), this MoU specifies the same trajectory as AT&C losses (MoP, 2016c, p. 11; MoP, 2016d, p. 11). These two can reconcile only if the revenue collection efficiency is considered to be 100% for both DISCOMs.

54. This consists of HT consumers who have a contract demand of 300 kVA or more for induction furnace including Ferro Alloy loads (BERC, 2017a).

Figure 10.3 shows the category-wise breakup of the tariff subsidy requirement reported by Bihar ERC till FY17 and subsidy paid in FY18. Since FY15, there has been a reduction in the share of subsidies to agriculture and an increase to domestic consumers. This shift is very clear in FY17, the year Har Ghar Bijli Yojana—the state government scheme to provide free electricity connections—was launched (Live Hindustan, 2016).

Figure 10.3: Category-wise break up of tariff subsidy between FY13 and FY18 in Bihar



Source: Prayas (Energy Group) analysis based on data compiled from various tariff orders

Note: 1. Subsidy to consumers in the DISCOMs' area of supply was considered
 2. Approved estimates for subsidy considered for all years with the exception of FY18, for which trued up actuals were considered. Category-wise estimates were not available for FY14.

10.2.3 Lack of clarity in subsidy for powerlooms

As noted in other states, Bihar also has instances where subsidies are not reported in a systematic manner. The case of powerloom tariffs illustrates this point. The Industrial Incentive Policy, 2006 mentions that a 'tariff grant' of Rs. 0.75/unit would be provided to powerloom consumers (Department of Industries, Bihar, 2006, p. 10). It is not clear if it was provided as a rebate or a subsidy in this period. There is no mention of this tariff grant in any regulatory order or submission. In 2016, the DISCOMs reported receipt of a powerloom subsidy of Rs. 2.20 Crore from the Industries Department to the Bihar ERC (BERC, 2016a). The CAG reports this as an implicit subsidy being provided as a "rebate on electricity consumption of powerlooms", which still does not make it clear if there was a budgetary allocation for this rebate (CAG, 2016b, p. 36).

Reporting of subsidies takes place for all other categories in a consistent manner before the Bihar ERC with total trued-up subsidy values also being reported. However, the quantum and impact of powerloom subsidies is not known. In 2016, the Bihar ERC directed the DISCOMs to report the powerloom subsidy quantum separately in the ARR. However, this directive has not been complied with till date. Albeit a small quantum, the DISCOMs' books and regulatory accounts must be reflective of such subsidies even if funds are directed to the DISCOMs from other departments of the government.

10.3 Subsidy design post 2018

In most states across the country, the decisions regarding ARR determination, tariff design and declaration of subsidy promised take place more or less at the same time. However, in FY18, in Bihar a new practice was initiated wherein the subsidy promised was declared much after the new tariffs for the year was announced, as the state government reserved its right to announce subsidies on a monthly basis after the determination of tariff. Thus, the tariff order for FY18 mentioned no subsidy promised by the Government of Bihar.

In anticipation of announcement of subsidy promised from the government later in the year and in order to tackle the burgeoning losses, the Bihar ERC approved a tariff hike, bringing the tariff closer to the ACoS for FY18 (BERC, 2017a, p. 379). There was also a similar tariff hike announced in FY19 following this very subsidy practice. One can see that such a reduction in cross subsidy is necessary for a state like Bihar which has a growing base of small consumers with limited potential for obtaining cross subsidy. However, to ensure affordability, the subsidy contribution needs to be guaranteed, which may not be the case as the quantum of such subsidy was unclear at the time of tariff determination. The intention of such a move could be to ensure financial viability of the DISCOMs (MoP, 2016a). But, this practice could have several adverse impacts on consumers and DISCOMs.

- As per the true-up for FY18, the state government paid a total subsidy of Rs. 2,952 Crore to the DISCOMs (BERC, 2019, p. 134). This subsidy quantum is significantly lesser than past years when the announcement was made annually. This is clear from the fact that in FY18, the subsidy is estimated to contribute to 24% of the net revenue requirement for both DISCOMs. This is a sharp decline in financial help from the average subsidy aid of 56% in the last six years. Such a reduction, while providing relief to the state exchequer, has a significant impact on the DISCOM financial viability in the short run, especially when the DISCOMs are adding many consumers with limited ability to pay under the central and state level electrification drives, and there is a possibility of low revenue recovery.
- Tariff determination processes take place through extensive public consultation as it is meant to provide a forum for all consumers, especially small consumers, to approach the Commission regarding issues of affordability and quality of supply and service. However, given this new practice, consumers may not be able to easily ascertain the actual annual tariff impact applicable to their category during the tariff determination processes. This is because the tariffs announced by the ERC are expected to be lowered via subsidy intervention at a later date. But there is a likelihood that the actual subsidy paid may not be enough to provide adequate relief from tariff shock in that period. This is illustrated in Table 10.2 which tabulates the average tariff for all subsidised categories in FY17, prior to the adoption of this practice, as well as in FY18 and FY19. Between FY17 and FY18, the tariff finally paid by subsidised consumers increased substantially, marking a stark reduction in subsidies to these categories. The tariff shock after subsidy was as much as 29% for rural domestic consumers and 14% for BPL consumers. In FY19, there was a considerable hike in tariff announced by the ERC, in comparison to FY18. However, the final subsidised tariff that the consumer had to pay remained the same. This implies that the state government's contribution to subsidy increased marginally.

Table 10.2: ABR (Rs./unit) for subsidised categories in Bihar

Subsidised consumer category	FY17	FY18		FY19		% increase in ABR with subsidy	
	ABR with subsidy (before change in practice)	ABR without subsidy	ABR with subsidy	ABR without subsidy	ABR with subsidy	FY17–FY18	FY18–FY19
BPL	2.05	5.95	2.37	6.37	2.37	14%	0%
Domestic-R	2.25	6.28	3.18	6.68	3.18	29%	0%
Commercial-R	3.06	6.96	4.46	7.45	4.53	32%	1%
Agriculture	1.10	5.42	1.13	5.77	1.13	2%	0%

Source: Data from tariff schedules for all three years (NBPDC, 2017; BSPHCL, 2018)

Note: Domestic-R and Commercial-R refers to rural categories of domestic and commercial consumers who are subsidised.

- Even though the mechanism was introduced to ensure financial viability of the DISCOMs, the same may continue to persist due to possibility of delay in subsidy payment. In case of delay, it is likely that the DISCOMs will have to charge the consumers subsidised tariffs as determined in previous years, since charging consumers non-subsidised tariffs under such conditions would imply a 60 to 400% tariff hike and may be politically impractical. This in turn will imply that DISCOMs will have to bear the brunt of increased working capital requirements. Thus, the overarching fact remains that such a practice could create a space for lower accountability on the part of the government, while leaving the DISCOMs to face the brunt of delays.

In this new subsidy design, the subsidy paid is being reported in the bills of the consumers and category-wise subsidy paid was calculated in the true-up for FY18. Additionally, DISCOMs have also been reporting two tariff schedules with and without subsidy for each consumer category in FY18 and FY19 (NBPDC, 2017; BERC, 2017c; BSPHCL, 2018). However, these steps are not enough to replace accountability mechanisms that existed previously. Declaring subsidies on a monthly basis without an annual account or estimate for category-wise subsidy payments makes it difficult to ascertain payments made to various categories and to compare with disbursements in previous years.

Moreover, the process also erodes existing good practices in terms of subsidy reporting and accountability. Bihar DISCOMs reported subsidy paid by the state government on a consistent basis over the past decade. For the year FY18, the DISCOMs, on the advice of the state government, did not put forth any subsidy requirement while computing ARR. During the Annual Performance Review (APR)⁵⁵ process for the same year, the DISCOMs stated that the subsidy was being disbursed on a monthly basis (BERC, 2018a, p. 229). The DISCOMs did not report the actual monthly subsidy provided to various categories in the year, and the Commission has also not explicitly asked for this information. In fact, the Commission has further reduced the reporting requirements by stating that the monthly subsidies should be reported along with revenue from retail tariffs instead of reporting these amounts separately as was the earlier practice (BERC, 2017a, p. 379). Finally, as of FY20, tariff orders for both DISCOMs do not mention any subsidy promised. Thus, ascertaining the annual subsidy disbursement through regulatory accounts is currently not possible. Without this data, it is difficult to hold the state government accountable for subsidy commitments and delay in payments.

55. APR is the review of performance and costs of the DISCOMs for the current financial year, typically initiated along with the tariff determination process of the subsequent year. The assessment by the SERC is based on estimates and information given by the regulated licensee.

11. Commentary

The announcement, payment, and reporting of subsidies play a major role in the states' political economy and DISCOM finances. It is a vexed issue with multiple dimensions, having implications beyond the power sector. Subsidy commitments by state governments have been increasing over the years but so have delays in payment which affect the working capital requirements of the DISCOMs. The state-level trends highlighted in the report point to a gradual shift in subsidy provision from only farmers to residential consumers and to even typically cross subsidising industrial consumers as well. Given the increasing need for financial support for DISCOMs, subsidies will continue to play a significant role. Thus, the political commitment of state governments to provide support should be backed by financial discipline to ensure sustainable operations in the sector. This section highlights major trends from the states which need to be taken note of, and suggests some measures to address issues.

11.1 Limited tracking of state electricity subsidies

11.1.1 Data availability across states

Table 11.1 Status of state-wise subsidy related information available from various sources⁵⁶

Parameter (Rs.Crore)	Bihar	Gujarat	Haryana	Punjab	Tamil Nadu	Uttar Pradesh
Subsidy promised	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Subsidy paid	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
Outstanding/Pending payment	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Interest payments due to delay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Category-wise subsidy	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
Mode of financing subsidy (budget allocation, adjustment with electricity duties and loan repayment)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Legend	Yes	No	Notes
Central Govt tracking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Table notes reporting and does not comment on consistency of information in different sources. 2. Table captures information for the year where the latest tariff order was available in the state. 3. In Bihar, category-wise subsidy is not available in the tariff order for FY20 but true-up has taken place for FY18 subsidies. 4. In Gujarat, state government documents include both budget documents and GUVNL annual reports. 5. The table is compiled based on publicly available and published sources of information.
State Govt documents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Regulatory documents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Despite its wide-reaching impacts and its role in DISCOM finances, there is surprisingly little information about subsidies in the public domain across states. Many agencies track subsidy-related information

56. As tariff orders and regulatory documents with subsidy data are issued with lesser frequency and lower predictability than state government budgetary documents, it was used as the least common factor to decide on the year when information was tracked. For example, in Punjab, the latest tariff order available was for the year FY19. Similarly, the latest subsidy order issued by the ERC for Tamil Nadu was for the year FY19. Therefore, the state budgetary documents for FY19 were studied to record information reported. Central government tracking is quite infrequent and limited, and most of the information is based on the tracking in the 6th Annual Integrated Rating of State Distribution Utilities published in 2018 (MoP, 2018b) and the Report on the Performance of State Power Utilities (2013-14 to 2015-16) published in 2017 (PFC, 2017). The latest available information was used in this case.

but it is not done in a comprehensive manner as shown in Table 11.1. Further, as highlighted in Section 1.2, there is a variation in terminologies used and lack of consistency in data availability across states, making it challenging to track trends.

Despite central government's commitment to DISCOMs' financial turn-around, many subsidy parameters not tracked: Central government agencies track state subsidy related data in a very limited fashion. The Power Finance Corporation (PFC), in its report on the performance of state power utilities, captures subsidy booked and paid without any information on category-wise subsidies, revisions of subsidies during the year, and impact due to delays in payments. Further, as highlighted in Section 1.2, the data reported for some states by PFC is not consistent with reports from the CAG or information submitted by the utilities during regulatory processes. The Annual Integrated Ratings released by PFC for the State DISCOMs report instances of delay in subsidy payment without stating the quantum or period for delay, or the interest payments incurred (MoP, 2018b).

Limited details in state government documents: State governments' budget documents report only direct budget allocations for subsidy and do not capture amounts adjusted with electricity duties and loan repayments in a systematic manner. In many states, these amounts could be significant. Further, it is not clear if the budgetary allocation is to meet pending payments or current subsidy commitments. Subsequent revisions in subsidy commitments could be reported in government orders but are not systematically captured or collated. In addition to revenue subsidies, many state governments provide subsidies to waive pending payments or arrears from certain categories, particularly agriculture. This has taken place in many states and has also recently been announced in Uttar Pradesh, Madhya Pradesh, Gujarat, and Maharashtra. However, this information has not been consistently reported or tracked over the years (GoUP, 2018; GoMP, 2018; Pathak, 2018; GoM, 2017). Annual accounts of the state-owned holding companies or the licensees also have limited information on the subsidies.

Crucial parameters for certain states are tracked in CAG reports but not in regulatory documents: The CAG, while auditing the DISCOMs or particular programmes, provides details on subsidies. The objective of the exercise for CAG is to track performance and highlight irregularities rather than provide a comprehensive account of the DISCOMs' costs and revenues. Hence, such scrutiny takes place in an ad-hoc manner for multiple years at a time, based on CAG priorities. Unfortunately, the CAG, which has the larger objective of assessing the performance of multiple state-owned enterprises across sectors, provides more details than regulatory filings and orders for tariff determination and performance evaluation. This was specifically observed in Gujarat and Haryana.

State ERCs can report and track crucial parameters but many do not: State ERCs account for subsidies during the tariff determination and true-up processes for the DISCOMs. However, the information reported varies across states and even across years for the same DISCOMs. In Bihar, Uttar Pradesh, Maharashtra (MERC, 2016) and Gujarat, the subsidies provided to particular categories are not reported in regulatory processes and are not clearly documented in audits. The variation is starkest in Gujarat, where more than 70% of the revenue subsidies over the years were not reported. At the same time, there are some ERCs who ensure DISCOMs provide information on subsidies in a detailed and systematic manner, and have practices in place which can be adopted by all states.

- In the tariff and true-up orders and petitions, the Punjab ERC and PSPCL respectively have been reporting category-wise information on subsidies, delays in subsidy payment and interest cost due to the same. The PSPCL, based on ERC directions, is also providing information on subsidy payments on a fortnightly basis⁵⁷.
- The TNERC releases a subsidy order every year which provides details on category-wise subsidies and revision in subsidy amounts due to variation in sales.

57. This information can be accessed here: <http://docs.pspcl.in/frmshow.aspx?ofc=fadvisor>

- In the past, the Bihar ERC had been providing detailed information in their tariff orders. However, since 2018, with the adoption of the new subsidy regime, the practice has been stopped.

It must be noted that regulatory information provided can also change over time based on regulatory approaches and decisions.

11.1.2 Proposal for reporting and tracking of subsidy-related information

It is vital that basic information on subsidies be reported and tracked by central and state agencies as these are important indicators to gauge the stress faced by DISCOMs and can increase state government accountability. Based on the data currently being reported by various agencies across states, the following information can be reported to SERCs on a quarterly and annual basis by the DISCOMs. This reporting can be similar to the quarterly reports filed by the DISCOM for reporting compliance with the Standards of Performance of the licensee as per SERC regulations and Section 59 (2) of the Electricity Act, 2003. For this purpose, the SERCs can draft regulations and specify formats under Section 65 and Section 86 of the Electricity Act.

These quarterly reports can include information on parameters listed below:

- Subsidy promised and paid during the period and change in subsidy due to revision of sales.
- Schedule of payment of subsidies and deviation from the same on a monthly basis.
- Delays in subsidy payments in days along with short-term loans and accumulating interest payments incurred due to delays.
- Detailed break up of payments which include budgetary payments, subsidy adjustments with electricity duties collected and adjustments in loan repayments.
- Break up of revenue subsidy paid to each consumer category or class of beneficiaries in the period. This should provide details on tariff subsidy, subsidy on fuel surcharge levied, as well as subsidy in lieu of rebates.
- Break up of subsidy provided to each category to compensate for pending dues or arrears.
- Break up of subsidised sales on a category-wise basis along with subsidised and unsubsidised tariff.

DISCOMs should also submit an annual report on subsidy payments to ERCs. The quarterly reports as well as the annual reports should be vetted and approved by the SERC and be available on the ERC website. The information as well as analysis based on the same should also be part of the tariff and true-up petitions and orders.

In order to ensure standardisation of formats and information, the Forum of Regulators could prescribe uniform formats and model regulations for effective implementation across states. Reporting and compilation of information at the state level, facilitated by SERCs, can take place based on these prescribed formats. This information, in standardised formats using consistent terminology can be utilised by the PFC and the CAG for comparison and tracking across states.

The Ministry of Power could initiate efforts to track subsidies across states based on the regulatory submissions and release an annual report on state level power sector subsidies. This can be similar to the study of state budgets released by the Reserve Bank of India (RBI, 2018). The MoP could also track subsidy payments and delays on a quarterly basis for each state (based on the regulatory submissions) on the UDAY website to provide a more comprehensive picture of DISCOM finances.

In order to ensure adoption of reporting formats by SERCs, any exercise to amend the Electricity Act, 2003 should also ensure amendment of Section 65 to mandate quarterly reporting of subsidy data by DISCOMs as per ERC regulations in a manner similar to provision in Section 59.

11.2 Accountability for subsidy payments

Though provision and tracking of information as highlighted in the previous section, is crucial, it is not enough to ensure timely payments. Given budgetary constraints, competing demands for subsidy allocation strong accountability mechanisms are necessary to ensure timely payments; else the DISCOMs have to bear the brunt of delays with increased liabilities incurred to meet working capital requirements in the interim. This section highlights the fact that timely payments are rare even with strong legal mandates and discusses possible measures to strengthen accountability mechanisms.

11.2.1 Lack of compliance with legal mandate and need for discipline by state governments

Section 65 of the Electricity Act states that:

"If the State Government requires the grant of any subsidy to any consumer or class of consumers in the tariff determined by the State Commission under section 62, the State Government shall, notwithstanding any direction which may be given under section 108, pay, in advance and in such manner as may be specified, the amount to compensate the person affected by the grant of subsidy in the manner the State Commission may direct, as a condition for the licence or any other person concerned to implement the subsidy provided for by the State Government:

Provided that no such direction of the State Government shall be operative if the payment is not made in accordance with the provisions contained in this section and the tariff fixed by State Commission shall be applicable from the date of issue of orders by the Commission in this regard."

The state level narratives highlight the fact that most cash strained state governments are unable to make these subsidy payments as per schedule. Yet, regulated tariffs are not charged for subsidised categories. SERCs in Punjab and Bihar are issuing directions to DISCOMs to levy regulated tariff on consumers in case of delay. As mentioned in Section 10.3, such a move could imply a 60% to 400% tariff shock for consumers in Bihar, making this politically difficult to implement. In such a situation, DISCOMs may choose to continue to charge subsidised tariffs and thereby bear the brunt of the delay.

Thus, despite the legal mandate, subsidy commitments continue to grow, aggravating the issue of delayed payments. One could perhaps argue that State Governments are the entities which ultimately take over DISCOM liabilities during bailouts like UDAY, and thus are addressing the issue eventually. However, if state governments fulfill their subsidy commitments, DISCOM operations can be less strained and the burden on state finances would reduce due to avoided interest costs.

11.2.2 Measures to improve accountability

In this context and given the challenges, some suggestions to ensure timely payments include:

Greater accountability under UDAY: UDAY and the bailout schemes that came before it identified timely payment of subsidies as an important parameter to ensure the financial health of DISCOMs. Despite the direct link between delays in subsidy payments and increase in short-term borrowing of DISCOMs, there has been no initiative to ensure timely payment under UDAY, which is being jointly implemented by the Central and State Governments. UDAY specifies that working capital borrowings of the DISCOM should not exceed 25% of their ARR. There are no measures to publically track or to minimise the actual working capital borrowing itself, let alone the contribution of delayed subsidy payments to working capital borrowing. Measures could be put in place along with RBI, Rural Electrification Corporation (REC) and PFC to track borrowings by DISCOMs. The Ministry can also report the working capital borrowings by DISCOMs on the UDAY portal. Further, the current limit to working capital borrowing under UDAY can be progressively reduced over time say, by one to two percentage points every year for five years. The increase in limit to borrowing over time reduces the avenues to finance working capital requirements necessary to meet operational needs. Such a move could pressure the state governments to ensure timely payments.

Subsidy commitment to include pending payments and related interest costs: Pending subsidy payments are typically not accounted for separately in regulatory processes. They perhaps automatically become part of the burgeoning revenue gaps or regulatory assets or liabilities of the DISCOMs. Pending subsidy payments and the interest costs due to delays could also be recovered from consumer tariffs in subsequent years. Punjab is the only state studied in the report where the interest payments and subsidies are carried forward as part of the subsidy commitment of the state government in the next year. Notwithstanding the fact that delays continue to persist in Punjab, such a practice can be adopted by ERCs in all states to ensure fairness in accounting for costs and liabilities of the DISCOM.

11.3 Need for rationalisation and targeting

Given the limits to the state exchequer, as well as competing developmental needs, it is necessary to ensure that the rising demand for subsidy is met in the best possible manner. Therefore, there is a need to rationalise subsidies and ensure better targeting of beneficiaries across states. However, the trends in subsidy provision are more towards broad-basing, rather than rationalising or targeting subsidy. Some examples in this respect are listed below:

- In Punjab, Bihar, Haryana, Tamil Nadu and recently Gujarat, there has been a trend to subsidise industrial and other typically cross subsidising consumers.
- For several years, the state government in Bihar has been subsidising operational losses and subsequently power procurement costs incurred due to T&D losses in excess of the norm, which essentially entailed subsidising the inefficiency of the DISCOMs.
- In Haryana, tariff design is such that agricultural consumers are not cross subsidised at all, but it is unclear how the state will be able to sustain Rs. 7/unit subsidy for such consumers.
- In Uttar Pradesh, the regulator has been advocating an additional subsidy to compensate the DISCOM for the disallowed cross subsidy recovery for subsidised categories. As the state government has not increased the subsidy commitment to pay these amounts, it adds to the accumulating DISCOM losses.
- Many states have been providing tariff subsidy for all consumers, to help them avoid tariff shock. This has been noted in Punjab, Gujarat and Bihar during the levy of high fuel surcharges, and in Maharashtra (for a wider set of consumer categories) during the levy of an additional charge on tariffs (PEG, 2017). Such a move not only protects consumers from tariff shock but also reduces accountability for gross inefficiencies.
- An increase in agricultural tariffs approved by the Tamil Nadu ERC resulted in a massive surge in agricultural subsidies to compensate for the tariff increase such that consumers continued to get free power.

There are some efforts to ensure targeting and rationalising of subsidy in many states which have had limited success. DISCOMs in Maharashtra and Chattisgarh provide concessional power to all homes using less than 360 units per year, instead of 30 units per month or only BPL cardholders. This provides flexibility in consumption to poor households and reduces exclusion errors. Attempts have been made in the past to target small farmers for subsidy provision with limited success (PEG, 2018b). Subsidy needs to be targeted not just on the basis of connected load or use, but also on non-electricity parameters such as crop grown and groundwater levels. Subsidies can also be rationalised via a gradual, phase-wise, inflation linked increase in tariffs for subsidised consumers.

Subsidy commitment can be limited by meeting the needs of the consumers by more efficient means and thus reducing energy required to meet demand. For example, better estimation of typically subsidised unmetered demand, adopting innovative approaches to provide low cost solar power for agricultural consumers, or launching bulk efficient appliance programmes designed specifically for newly electrified households would help meet the need of the consumers without increase in subsidy.

Another mechanism to ensure targeting that policy makers are advocating is Direct Benefit Transfer (DBT) for all subsidy disbursement in India (MoP, 2018c; MoP, 2018a). DBT involves subsidy provision in the bank accounts of the consumers as opposed to the current mechanism where the subsidy is given to the DISCOM. This could help in better targeting of subsidies and reduce inefficiency in subsidy delivery. However, several issues specific to the electricity sector need to be addressed before such a mechanism is adopted. For one, the DBT mechanism does not address the issue of delays in payments. Under DBT, if subsidies are provided directly to consumer bank accounts by the state government, delay in payments would mean consumers face a tariff shock. This could lead to non-payment of bills or delayed payment. This in turn could result in a build-up of arrears, increase in AT&C losses or even disconnection. Alternatively, if the subsidy is to be provided to consumers from the DISCOM's accounts in case of delays, it is possible that the DISCOMs will continue to charge subsidised tariffs and bear the brunt of the delayed payments.

In the pilots that are being implemented, there were issues in identifying the bank account for transfer of funds especially in case of property disputes. There were also issues where the users of electricity were tenants but the electricity connection was in the name of the owner of the premises. There is a need for legal steps to ensure that benefits can be provided to tenants while the rights of the owners are protected. Hence, before universal implementation of DBT for electricity subsidies, close attention should be paid to on-going pilots and more large-scale pilots should be conducted.

Some ideas on these lines could be considered on a case-to-case basis, based on the state-specific situation and approach. However, such measures can only take place with political commitment. Limiting these subsidies will be harder in the future when political demand intensifies and cross-subsidy contribution falls. This calls for measures to ensure targeting sooner than later.

Subsidies form a major part of the state-owned DISCOMs' revenue and business model, and the financial predicament of the utilities is closely linked to the timely payment of subsidies. However, while subsidies are an integral part of the discourse, they are not tracked or reported in a systematic manner across states, like the proverbial 'elephant in the room'. State government as an agency should be made accountable through channels other than direct political pressure; especially when political promises do not necessarily translate into action. Else it is DISCOMs who bear the brunt, especially in the case of delays. Subsidies are an important instrument to ensure operations when DISCOMs are coping with sales migration, shrinking cross-subsidies, rising cost of supply, and an increase in newly electrified consumers. However, the role and nature of provisions of subsidies will have to change. Unless there is a calibrated, phase-wise approach to rationalise, target, and deliver subsidies, which pays close attention to state-level realities, emerging trends and experiences, DISCOMs will face a financial crisis unmanageable in scale.

12. References

- Agnihotri Chaba, A. (2019, January 04). Reforming agriculture: When power is worth saving. Retrieved January 08, 2019, from The Indian Express: <https://indianexpress.com/article/india/reforming-agriculture-when-power-is-worth-saving-5520945/>
- APTEL. (2009, February 12). Appeal No. 128 of 2008, IA No. 166 of 2008, Appeal No. 126 of 2008 & IA No 165 of 2008. Retrieved November 29, 2008, from Appellate Tribunal for Electricity: <http://aptel.gov.in/judgements/Jugs%20126%20n%20128%20of%20%2708.pdf>
- APTEL. (2015, November 23). Appeal Number 128 of 2014. Retrieved July 18, 2018, from Appellate Tribunal for Electricity: <http://www.aptel.gov.in/judgements/Judg2015/A.No.%20128%20of%202014.pdf>
- BERC. (2012a, January 04). Truing up of the Aggregate Revenue Requirement (ARR) for FY 2006-07, FY 2007-08 and FY 2008-09 for Bihar State Electricity Board. Retrieved June 2018, from Bihar Electricity Regulatory Commission Website: <http://old.berc.co.in/media/Other-Order/BERC%20True%20up%20Order%20FY%202006-07%20FY%202007-08%20FY%202008-09%20-%204Jan12.pdf>
- BERC. (2012b, May 31). Case No. FPPCA 18 /2012. Retrieved June 2018, from Bihar Electricity Regulatory Commission: <http://old.berc.co.in/media/ord-FPPCA-March%202012.pdf>
- BERC. (2013, March 15). Case No. TP- 41 of 2012. Retrieved March 3, 2019, from Bihar Electricity Regulatory Commission: <http://old.berc.co.in/media/Tariff-Order/BERC%20Tariff%20Order%20FY%202013-14-pdf.pdf>
- BERC. (2014, February 28). Case No.24 of 2013. Retrieved April 8, 2019, from Bihar Electricity Regulatory Commission: <http://old.berc.co.in/media/Tariff-Order/NBPDCL%20Tariff%20Order%20FY%202014-15l.pdf>
- BERC. (2015, March 16). Case No. 48 of 2014. Retrieved July 2018, from Bihar Electricity Regulatory Commission Website: <https://berc.co.in/orders/tariff/distribution/nbpdcl/159-tariff-order-of-nbpdcl-for-fy-2015-16-corrigendum-to-tariff-order-of-nbpdcl-fy-2015-16>
- BERC. (2016a, January 11). Petition on behalf of SBPDCL & NBPDCCL for granting approval for giving subsidy to Power-loom Consumers of SBPDCL & NBPDCCL. Retrieved June 2018, from Bihar Electricity Regulatory Commission Website: <http://old.berc.co.in/media/Daily%20Order%20Sheet/os-36of15%20dt%2011-1-16.pdf>
- BERC. (2016b, March 21). Case No. 44 of 2015, Case No. 49 of 2015. Retrieved July 2018, from Bihar Electricity Regulatory Commission Website: <http://old.berc.co.in/media/Tariff-Order/NBPDCL%20Order%20FY%202016-17%20210316.pdf>
- BERC. (2017a, March 24). Case No. 45 of 2016. Retrieved June 2018, from Bihar Electricity Regulatory Commission Website: <https://berc.co.in/orders/tariff/distribution/nbpdcl/1143-tariff-order-of-nbpdcl-for-fy-2017-18>
- BERC. (2017b, March 27). Case No. 46 of 2016. Retrieved January 28, 2019, from Bihar Electricity Regulatory Commission: <https://berc.co.in/orders/tariff/distribution/sbpdcl/1142-tariff-order-of-sbpdcl-for-fy-2017-18>
- BERC. (2017c). Schedule of Tariff Rates. Retrieved June 2018, from Bihar Electricity Regulatory Commission: <https://berc.co.in/public-notice/1139-press-release-tariff-order-fy-2017-18-hindi-english>
- BERC. (2018a, March 21). Case No. 40 of 2017. Retrieved June 2018, from Bihar Electricity Regulatory Commission Website: <https://berc.co.in/orders/tariff/distribution/nbpdcl/1447-tariff-order-of-nbpdcl-for-fy-2018-19>
- BERC. (2018b, March 21). Case No. 41 of 2017. Retrieved January 29, 2019, from Bihar Electricity Regulatory Commission: <https://berc.co.in/orders/tariff/distribution/sbpdcl/1444-tariff-order-of-sbpdcl-for-fy-2018-19>
- BERC. (2019, February 25). Case No. 40 of 2018, Case No. 48 of 2018 (NBPDCCL) and Case No. 41 of 2018 and Case No. 47 of 2018 (SBPDCL). Retrieved April 4, 2019, from Bihar Electricity regulatory Commission: <https://berc.co.in/orders/tariff/distribution/nbpdcl/1968-tariff-order-of-nbpdcl-for-fy-2019-20>

- BSEB. (2013, February 18). Filing of the Review Petition for FY 2011-12 and Aggregate Revenue from Charges or Aggregate Revenue Requirement (ARR) Et Tariff Petition for FY 2012-13. Retrieved April 3, 2019, from Bihar State Power Holding Company Limited: <http://bspchl.bih.nic.in/Notices/Tariff-Petition-for-FY12-13.pdf>
- BSPHCL. (2018). Urja Vibhag. Retrieved October 2018, from Bihar State Power Holding Company Limited Website: <http://bspchl.bih.nic.in/Downloads/Tariff-Rate-2018-19.pdf>
- CAG. (2014, June). Report of the Comptroller and Auditor General of India (Public Sector Undertakings) for the year ended 31 March 2013: Government of Uttar Pradesh, Report No. 2 of 2014. Retrieved October 2018, from Comptroller and Auditor General of India: https://www.cag.gov.in/sites/default/files/audit_report_files/Uttar_Pradesh_2_2014.pdf
- CAG. (2016a). Report on Public Sector Undertakings for the year ended 31 March 2015: Government of Gujarat. Retrieved 06 23, 2018, from https://www.cag.gov.in/sites/default/files/audit_report_files/Gujarat_%20Public_Sector_Undertakings_Report_1_2016.pdf
- CAG. (2016b). Report of the Comptroller and Auditor General of India on State Finances for the year ended March 2016. Retrieved June 2018, from Comptroller and Auditor General Website: https://cag.gov.in/sites/default/files/audit_report_files/Report_No_2_of_the_year_2016_State_Finance_Government_of_Bihar.pdf
- CAG. (2017). Comptroller and auditor general of India. Retrieved January 23, 2018, from Comptroller and auditor general of India web site: https://cag.gov.in/sites/default/files/audit_report_files/Report_No_6_of_2017_-_State_Finances_Government_of_Tamil_Nadu_5.pdf
- CEA. (2017). General Review 2017 containing data for 2015-16. New Delhi: Central Electricity Authority.
- Census of India. (2011). Source of lighting 2001-2011. Retrieved from http://www.censusindia.gov.in/2011census/hlo/Data_sheet/Source%20of%20Lighting.pdf
- Chhina, M. A. (2019, February 22). Punjab govt reverses power subsidy order hrs after Oppn walkout. Retrieved May 3, 2019, from The Indian Express: <https://indianexpress.com/article/india/punjab-govt-reverses-power-subsidy-order-hrs-after-opp-walkout-5595760/>
- Department of Industries, Bihar. (2006). Industrial Incentive Policy, 2006. Retrieved June 2018, from Government of Bihar Website: <http://gov.bih.nic.in/Documents/Industries%20Policy%202006.pdf>
- GERC. (2000, October 10). CASE NO. 19 OF 1999. Retrieved August 6, 2018, from Gujarat Electricity Regulatory Commission: <http://www.gercin.org/uploaded/document/1291cccc-bf54-49fa-be60-69a4ab67873b.pdf>
- GERC. (2004, June 25). Case No. 292 / 2003: Tariff Order. Retrieved August 6, 2018, from Gujarat Electricity Regulatory Commission: http://www.gercin.org/uploaded/document/en_1360934708.pdf
- GERC. (2008, December 15). Approval of subsidy to be given by State Government to GUVNL towards partial sharing of FPPPA. Retrieved June 14, 2018, from Gujarat Electricity Regulatory Commission: http://www.gercin.org/uploaded/document/en_1303196761.pdf
- GERC. (2011). Case Nos 1099-1102 of 2011, Truing up for FY 2009-10 for MGVCL, UGVCL, DGVCL and PGVCL. Retrieved March 25, 2019, from http://www.gercin.org/orders.aspx?o_cat=1
- GERC. (2015). Case No. 1463 to 1466 of 2014: Truing up for FY 2013-14 and Determination of Tariff for FY 2015-16. GERC.
- GERC. (2016). Case No. 1547-1550 of 2015: Truing up for FY 2014-15. Retrieved March 25, 2019, from http://www.gercin.org/orders.aspx?o_cat=1
- GERC. (2017, March 31). Case No. 1622-1625/2016: Truing up for FY 2015-16 for UGVCL, DGVCL, MGVCL and PGVCL. Retrieved August 7, 2018, from Gujarat Electricity Regulatory Commission: http://www.gercin.org/orders.aspx?o_cat=1#
- GoG. (2014). Budget estimates of energy and petro-chemicals department for 2014-15. Retrieved April 1, 2019, from Open Budgets India: <https://openbudgetsindia.org/dataset/d4039ef9-bf98-4882-b7d1-9c9a4fdc6e02/resource/0ef7627d-c576-4fee-9425-d0421d6f4e0f/download/5.-energy-and-petro-chemicals.pdf>

- GoG. (2015, 2016, 2017, 2018, 2019). Budget estimates of energy and petro-chemicals department. Retrieved March 25, 2019, from Open Budgets India: https://openbudgetsindia.org/dataset?q=gujarat+energy&sort=score+desc%2C+metadata_modified+desc
- GoG. (2019a, January 10). Resolution No TEX/102018/3327/CH. Retrieved January 24, 2019, from Industries and Mines Department, Gujarat Government: http://www.imd-gujarat.gov.in/Document/Ch%20Branch_1975_10_Jan_2019_67.pdf
- GoG. (2019b). Budget estimates of energy and petro-chemicals department for 2018-2019. Retrieved March 25, 2019, from Energy and Petrochemicals Department: https://guj-epd.gujarat.gov.in/uploads/Budet_2018-19.pdf
- GoH. (2017). Budget at a glance 2017-18. Retrieved April 1, 2019, from Open Budgets India: <https://openbudgetsindia.org/dataset/727e6043-fe67-4fd3-9f98-7e3629a657b9/resource/a275bc3f-db83-42d4-8f1e-696836ae7c47/download/budget-at-a-glance.pdf>
- GoH. (2018, June 12). Notification No. 49/43/2018-41B1b. Retrieved July 17, 2018, from Industries and Commerce Department, Government of Haryana: <https://haryanaindustries.gov.in/themes/backend/uploads/Uploads/Power%20Tariff%20Subsidy%20Scheme%202018.pdf>
- Gol. (2003). The Electricity Act. New Delhi: Ministry of Law and Justice.
- GoM. (2014, January 29). Government resolution: Sankirna 2013/Pr.Kr. 278/ (Bhag-1)/Urja-5. Retrieved 2019, from Government of Maharashtra.
- GoM. (2017, October 31). Mukhyamantri Krishi Sanjeevani Yojana. Retrieved January 26, 2019, from Department of Energy, Government of Maharashtra: <https://www.maharashtra.gov.in/site/Upload/Government%20Resolutions/Marathi/201710311808049510.pdf>
- GoMP. (2018, June 14). Bijlee Bill Maafi Yojana. Retrieved January 26, 2019, from Department of Energy, Government of Madhya Pradesh: <http://www.mpenergy.nic.in/sites/default/files/saral%20samadhan.pdf>
- GoP. (2018a, January 31). Punjab v/s India As on 31-01-2018. Retrieved July 16, 2018, from Economic and Statistical Organization, Government of Punjab: <http://www.esopb.gov.in/Static/PDF/GSDP/Level/PunjabvsIndia.pdf>
- GoP. (2018b, March). Annual Financial Statement and Explanatory Memorandum on the Budget for 2018-19. Retrieved July 20, 2018, from Government of Punjab: <https://openbudgetsindia.org/dataset/b6f6f40a-91c2-4402-8d19-9b184d33c27d/resource/eb970150-946f-4cf1-8f7a-52d2f3818ff9/download/annual-financial-statement.pdf>
- GoUP. (2018, December 31). Surcharge Samadhan Yojana. Retrieved January 26, 2019, from Department of Energy, Government of Uttar Pradesh: http://upenergy.in/site/writereaddata/uploadedCirculars/C_201901011325528899.pdf
- GUVNL. (2009). 5th Annual Report 2008-09. Retrieved July 16, 2018, from GUVNL: http://www.guvnl.com/guvnl/PDFFiles/GUVNL_Annual%20Report%202008-09.pdf
- GUVNL. (2016, December 17). 12th Annual Report 2015-16. Retrieved October 2018, from Gujarat Urja Vikas Nigam Limited: <http://www.guvnl.com/DownloadFiles/File/GUVNL/Annual%20Report%20Year%202015-16.pdf>
- GUVNL. (2017, December 12). 13th Annual Report 2016-17. Retrieved August 7, 2018, from Gujarat Urja Vikas Nigam Limited: http://www.guvnl.com/DownloadFiles/File/GUVNL/GUVNL%202016-17%20Annual%20Report_English.pdf
- GUVNL. (2018, December 24). 14th Annual Report 2017-18. Retrieved March 25, 2019, from Gujarat Urja Vikas Nigam Limited: <http://www.guvnl.com/GUVNL/pdfFiles/ANNUALREPORT2017-18GUVNL.pdf>
- HERC. (2015a, August 27). Case No. HERC/RA-7 of 2015. Retrieved July 31, 2018, from HERC: <https://herc.gov.in/WriteReadData/Orders/O20150827.pdf>

- HERC. (2015b). CASE No's: HERC/PRO-62 of 2014 & HERC/PRO-63 of 2014: Retail supply tariff for the FY 2015-16. Retrieved August 8, 2018, from Haryana Electricity Regulatory Commission: <https://herc.gov.in/writereaddata/orders/o20150507.pdf>
- HERC. (2016). Case No. HERC/PRO of 2016. Retrieved August 8, 2018, from Haryana Electricity Regulatory Commission: <https://herc.gov.in/writereaddata/orders/o20160801a.pdf>
- HERC. (2017). CASE No's: HERC/PRO-39 of 2016 & HERC/PRO-40 of 2016. Retrieved November 25, 2018, from <https://herc.gov.in/CurrentYearOrders/1.aspx>
- HERC. (2018, November 15). CASE No's: HERC/PRO - 83 of 2017 & HERC/PRO - 85 of 2017: TARIFF FOR THE FY 2018-19. Retrieved April 25, 2019, from HERC: <https://herc.gov.in/WriteReadData/Orders/O20181115a.pdf>
- Khanna, R. (2018, April 9). Govt yet to clear subsidy, power tariff order delayed. Retrieved May 2, 2019, from The Tribune: <https://www.tribuneindia.com/news/punjab/govt-yet-to-clear-subsidy-power-tariff-order-delayed/570844.html>
- Live Hindustan. (2016, November 15). Har Ghar Bijli Yojana ka Nitish Kumar ne kiya udghatan. Retrieved July 2018, from Live Hindustan Website: <https://www.livehindustan.com/news/patna/article1-CM-Nitish-kumar-launches-har-ghar-bijli-lagatar-yojna-600888.html>
- MERC. (2014, June 11). Case No. 38 of 2014. Retrieved April 5, 2019, from Maharashtra Electricity Regulatory Commission: http://www.mercindia.org.in/pdf/Order%2058%2042/Final%20Order_Case%20No%2038%20of%202014.pdf
- MERC. (2016, June 13). Replies to Data Gaps in Case No. 48 of 2016. MSEDCL . Mumbai, Maharashtra , India: Maharashtra State Electricity Distribution Company. Retrieved from Maharashtra Electricity Regulatory Commission.
- MGVCL, UGVCL, PGVCL, DGVCL. (2018, July 19). Petition for implementation of Suryashakti Kisan Yojana. Retrieved May 1, 2019, from UGVCL: <http://www.ugvcl.com/Petition%20of%20%27SKY%27%20YOJANA.pdf>
- Ministry of Rural Development. (2012). MGNREGA Sameeksha. Retrieved from Mahatma Gandhi National Rural Employment Guarantee Act Web site: https://nrega.nic.in/Circular_Archive/archive/MGNREGA_SAMEEKSHA.pdf
- MoP. (1980, September 4). Report of the Committee on Power. New Delhi, New Delhi, India: Department of Power, Ministry of Energy, Government of India.
- MoP. (1998). Chief Ministers' Conference on Power- Background Papers. New Delhi: Government of India.
- MoP. (2012, October 5). Scheme for Financial Restructuring of State Distribution Companies. Retrieved July 24, 2018, from Ministry of Power Office Memorandum No. 20/11/2012-APDRP: https://powermin.nic.in/sites/default/files/uploads/Financial_restructuring_of_State_Distribution_Companies_discoms_Oct2012.pdf
- MoP. (2016a, January 28). National Tariff Policy, 2016. Retrieved September 2018, from Ministry of Power: https://powermin.nic.in/sites/default/files/webform/notices/Tariff_Policy-Resolution_Dated_28012016.pdf
- MoP. (2016b, January 30). Tripartite agreement between Ministry of Power, Government of Uttar Pradesh and UPPCL under UDAY scheme. Retrieved July 24, 2018, from <https://www.uday.gov.in>: https://www.uday.gov.in/MOU/MoU_Uttarpradesh.pdf
- MoP. (2016c, February 22). Tripartite MOU amongst Ministry of Power, Government of Bihar and North Bihar Power Distribution Corporation Limited. Retrieved July 2018, from Ujjwal Discom Assurance Yojana: https://www.uday.gov.in/MOU/Bihar/North_Bihar.pdf
- MoP. (2016d, February 22). Tripartite MOU amongst Ministry of Power, Government of Bihar and South Bihar Power Distribution Corporation Limited. Retrieved July 2018, from Ujjwal Discom Assurance Yojana: https://www.uday.gov.in/MOU/Bihar/South_Bihar.pdf
- MoP. (2016e, July). Tripartite agreement between Ministry of Power, Government of Punjab and PSPCL under UDAY scheme. Retrieved July 17, 2018, from Ministry of Power: https://www.uday.gov.in/MOU/Mou_Punjab.pdf

- MoP. (2017, October 11). Saubhagya Office Memorandum- F. N.o. 44/2/2016-RE. Retrieved from Ministry of Power: [https://saubhagya.gov.in/assets//download/OM-SAUBHAGYA%20\(SIGNED%20COPY\).pdf](https://saubhagya.gov.in/assets//download/OM-SAUBHAGYA%20(SIGNED%20COPY).pdf)
- MoP. (2018a, May 30). Draft Amendments to Tariff Policy. Retrieved October 2018, from Ministry of Power: https://powermin.nic.in/sites/default/files/webform/notices/Proposed_amendments_in_Tariff_Policy_0.pdf
- MoP. (2018b, July). State Distribution Utilities Sixth Annual Integrated Rating. Retrieved August 7, 2018, from Power Finance Corporation: http://www.pfcindia.com/DocumentRepository/ckfinder/files/Gol_Initiatives/Annual_Integrated_Ratings_of_State_DISCOMs/6th_rating_booklet.pdf
- MoP. (2018c, September 07). Draft Electricity (Amendment) Act, 2018. Retrieved November 2018, from Ministry of Power: https://powermin.nic.in/sites/default/files/webform/notices/Proposed_amendment_to_Electricity_Act_%202003.pdf
- MoP. (2018d). Ujjwal DISCOM Assurance Yojana. Retrieved 10 24, 2018, from MoP: <https://www.uday.gov.in/home.php>
- MoP. (2019). SAUBHAGYA Portal. Retrieved March 18, 2019, from Ministry of Power: <https://saubhagya.gov.in/>
- MoPNG. (2018). Give it Up Campaign. Retrieved July 23, 2018, from Ministry of Petroleum and Natural Gas: <http://www.givitup.in/>
- NBPDCL. (2017). Public Notice: Tariff Schedule with subsidy for 2017-18. Retrieved June 2018, from North Bihar Power Corporation Limited Website: [https://nbpdc.co.in/\(S\(uhqty1scnbb3npjqwsrlofzf\)\)/Tariff_Regulation_PDF/125/K.%201483/MICROSOFT%20WORD%20-%20TARIFF%20NEW%20SHEDULE%202017-18.PDF](https://nbpdc.co.in/(S(uhqty1scnbb3npjqwsrlofzf))/Tariff_Regulation_PDF/125/K.%201483/MICROSOFT%20WORD%20-%20TARIFF%20NEW%20SHEDULE%202017-18.PDF)
- Pathak, M. (2018, December 19). Gujarat govt to write off pending electricity bills worth 625 crore. Retrieved January 26, 2019, from Live Mint: <https://www.livemint.com/Home-Page/BELwf0uKDe4TDGkXQaHdLL/Gujarat-govt-to-write-off-pending-electricity-bills-worth-6.html>
- PEG. (2017, November). The Lesser Known Tariff: Fuel Surcharge Levy in Indian States. Retrieved January 27, 2019, from Prayas (Energy Group): www.prayasgroup.org/peg/publications/item/365
- PEG. (2018a, May). Electricity Distribution Companies in India: Preparing for an uncertain future. Retrieved June 2018, from Prayas Energy Group: <http://www.prayasgroup.org/peg/publications/item/377>
- PEG. (2018b, September). Understanding the Electricity, Water and Agriculture Linkages. Vol 2: Electricity Supply Challenges. Retrieved December 5, 2018, from Prayas (Energy Group): http://www.prayasgroup.org/peg/publications/item/download/929_c7ad475a5d2e9f08ee471f40721c3fd1.html
- PFC. (2010). The Performance of State Power Utilities for the years 2006-07 to 2008-09. New Delhi: Power Finance Corporation.
- PFC. (2013). The Performance of State Power Utilities for the years 2009-10 to 2011-12. New Delhi: Power Finance Corporation.
- PFC. (2016). The Performance of State Power Utilities for the years 2012-13 to 2014-15. New Delhi: Power Finance Corporation.
- PFC. (2017). The Performance of State Power Utilities for the years 2013-14 to 2015-16. Retrieved August 8, 2018, from Power Finance Corporation: http://www.pfcindia.com/DocumentRepository/ckfinder/files/Operations/Performance_Reports_of_State_Power_Utility/1_Report%20on%20the%20Performance%20of%20State%20Power%20Utilities%202013-14%20to%202015-16.pdf
- Planning Commission. (2002, December 28). Punjab Development Report- Chapter on Industrial Development. Retrieved July 16, 2018, from Planning Commission of India: http://planningcommission.nic.in/plans/stateplan/sdr_punjab/sdrpun_ch6.pdf
- PSERC. (2008, September 8). Petition No. 1 of 2009. Retrieved May 3, 2018, from Punjab State Electricity Regulatory Commission: http://pserc.nic.in/pages/tariff_order2009-10.htm
- PSERC. (2010, April 23). Case No. 25 of 2009. Retrieved January 08, 2019, from Punjab State Electricity Regulatory Commission: http://www.pserc.in/pages/TARIFF%20ORDER%202010-11/tariff_order2010-11.htm

- PSERC. (2011, May 9). Case No. 49 of 2010. Retrieved May 3, 2018, from Punjab State Electricity Regulatory Commission: http://pserc.nic.in/pages/Tariff%20Order%20_Page%201-152.pdf
- PSERC. (2014, August 22). Petition No. 63 of 2013. Retrieved May 3, 2018, from Punjab State Electricity Regulatory Commission: http://pserc.nic.in/pages/PSPCL_TO_2014_15_Volume_I.pdf
- PSERC. (2016a, July 26). Case No.70 of 2015. Retrieved July 22, 2018, from Punjab State Electricity Regulatory Commission: <http://pserc.in/pages/Order%20in%20Petition%20No.70%20of%202015.pdf>
- PSERC. (2016b, November 5). Order on Petition No.57 of 2016. Retrieved July 18, 2018, from Punjab State Electricity Regulatory Commission: <http://www.pserc.nic.in/pages/petition-no-57-of-2016.pdf>
- PSERC. (2018a, April 19). PSPCL True-up for 2016-17, APR for 2017-18 and Revised Estimates for 2018-19. Retrieved July 22, 2018, from Punjab State Electricity Regulatory Commission: <http://pserc.in/pages/Tariff%20Order%20PSPCL%20for%20FY%202018-19.pdf>
- PSERC. (2018b, June 5). Order on Petition 29 of 2017. Retrieved July 20, 2018, from Punjab State Electricity Regulatory Commission: <http://pserc.in/pages/Order-petition-no-29-of-2017.pdf>
- PSPCL. (2018a, February 23). Commercial Circular No.11/2018. Retrieved July 23, 2018, from Punjab State Power Corporation Limited: <http://docs.pspcl.in/docs/cecommercial1520180223162438168.PDF>
- PSPCL. (2018b, June 1). Commercial Circular with Memo No: 393/97/S-V/84/V-6/AP Free Supply. Retrieved July 23, 2018, from Punjab State Power Corporation Limited: <http://docs.pspcl.in/docs/cecommercial1520180601160613140.jpg>
- PSPCL. (2018c, June 12). Paani Bachoo, Paise Kamao scheme PSPCL. Retrieved July 23, 2018, from Punjab State Power Corporation Limited: <http://www.pspcl.in/2018/06/paani-bachoo-paise-kamao-scheme-pspcl/>
- PSPCL. (2019, April 1). Status of Subsidy Received upto 31.03.2019. Retrieved April 12, 2019, from Punjab State Power Corporation Limited: <http://docs.pspcl.in/docs/fadvisor20190401164825041.xlsx>
- Rajshshkhar, M. (2015, December 11). Why is industry fleeing Punjab. Retrieved July 16, 2018, from Scroll.in: <https://scroll.in/article/772899/why-is-industry-fleeing-punjab>
- Rambani, V. (2018, March 7). Power subsidy non-payment: Punjab government buys time, PSPCL lives off loans. Retrieved May 2, 2019, from Hindustan Times: <https://www.hindustantimes.com/punjab/power-subsidy-non-payment-punjab-government-buys-time-pspcl-lives-off-loans/story-rIsiJ8aRbokoaxrdGsNFMI.html>
- Rao, K. V. (2017, August). Tamil Nadu Electricity Sector: The Subsidy Narrative (1989-2016). Retrieved October 2018, from http://www.cprindia.org/system/tdf/working_papers/rap-india-mappingpower-tamil-nadu-2017-august.pdf?file=1&type=node&tid=6388&force=1
- RBI. (2018). State finances: A study of budgets of 2017-18 and 2018-19. Retrieved August 8, 2018, from Reserve bank of India: https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/OSF201718_FULLL6EE17CFBD8004287A0CD4FDB0632AFE8.PDF
- TNERC. (2006, February 6). Tamil Nadu Electricity Regulatory Commission. Retrieved October 2018, from Tamil Nadu Electricity Regulatory Commission Web site: <http://www.tnerc.gov.in/Orders/TO70TEMPLETARIFF.pdf>
- TNERC. (2012, March 3). Tamil Nadu Electricity Regulatory Commission. Retrieved October 2018, from Tamil Nadu Electricity Regulatory Commission Web site: <http://www.tnerc.gov.in/orders/Tariff%20Order%202009/2012/T.O%20No.%201%20of%202012%20dated%2030-03-2012.pdf>
- TNERC. (2014, December 11). Suo-Motu Determination of Tariff for Generation and Distribution. Retrieved October 2018, from Tamil Nadu Electricity Regulatory Commission: <http://www.tnerc.gov.in/orders/Tariff%20Order%202009/2014/Tariff%20Order/TANGEDCO/Tariff%20Order%2009%20of%202014-TANGEDCO.pdf>
- TNERC. (2018). Tariff Order 2018. Retrieved from Tamil Nadu Electricity Regulatory Commission: <http://www.tnerc.gov.in/>
- UGVCL, DGVCL, MGVCL and PGVCL. (2016). CASE NO. 1622-1625/2016: Determination of Tariff for FY 2017-18. Retrieved November 18, 2018, from http://www.gercin.org/orders.aspx?o_cat=1

- UPERC. (2000, July 27). Order under UP Act No. 24 of 1999. Retrieved July 11, 2018, from Uttar Pradesh Electricity Regulatory Commission: http://www.uperc.org/App_File/tariffordercompletefinalcorrected-zip727201112147PM.zip
- UPERC. (2004, November 10). Application for Annual Revenue Requirement and Tariffs for FY 2004-05, Petition No.183 of 2004. Retrieved July 11, 2018, from Uttar Pradesh Electricity Regulatory Commission: http://www.uperc.org/App_File/TariffOrderUPPCL-04-05-zip752011120656PM.zip
- UPERC. (2013, May 21). Uttar Pradesh Electricity Regulatory Commission. Retrieved July 17, 2018, from True-up Order for petition No. 809 of 2012: http://uperc.org/App_File/True_Up_Order_PetNo809of2012_Issued_21052013-docx522201344418PM.docx
- UPERC. (2016, December 9). Suo motu proceedings for revision of consumption norms for unmetered category of consumers. Retrieved October 16, 2018, from Uttar Pradesh Electricity Regulatory Commission: http://www.uperc.org/App_File/OrderDated9-12-16fnl-pdf129201661325PM.pdf
- UPERC. (2017a). Approval of Business Plan, determination of Multi Year Aggregate Revenue Requirement (ARR) and tariff for the first control period (financial year 2017-18 to financial year 2019-20) and True-up of ARR and Revenue for FY 2014-15. Retrieved July 19, 2018, from <http://www.uperc.org>: http://www.uperc.org/App_File/UPStateDiscomsMYTTariffOrder-pdf1130201745119PM.pdf
- UPERC. (2017b). Approval of Business Plan, Determination of Multi Year Aggregate Revenue Requirement and Tariff for the First Control Period. Retrieved July 19, 2018, from Uttar Pradesh Electricity Regulatory Commission: http://www.uperc.org/App_File/UPStateDiscomsMYTTariffOrder-pdf1130201745119PM.pdf
- UPERC. (2019, January 22). Uttar Pradesh Electricity Regulatory Commission. Retrieved from Suo-Moto Case No. 15SM of 2018: [http://www.uperc.org/App_File/TariffOrder-StateDiscom\(22-01-2019\)-rar122201951731PM.rar](http://www.uperc.org/App_File/TariffOrder-StateDiscom(22-01-2019)-rar122201951731PM.rar)
- UPPCL. (2013, February 06). Data Gaps/Deficiencies in the ARR Petition of DVVNL for the financial year 2013-14 (Petition No. 866 of 2012). Lucknow, Uttar Pradesh, India: UPPCL.
- UPPCL. (2018, November 15). Reply to Data Gaps for Suo-moto proceedings on tariff for FY 2018-19. Retrieved from Uttar Pradesh Power Corporation Limited: <https://drive.google.com/file/d/1y6q5gN8XuAm2E1iKoJEh9bhxVK408AAm/view>

Related Publications

1. Many Sparks but Little Light: The Rhetoric and Practice of Electricity Sector Reforms in India (2017)
<http://prayaspune.org/peg/publications/item/332>
2. Know Your Power: A Citizens' Primer on the Electricity Sector (2019)
<http://prayaspune.org/peg/publications/item/410-know-your-power-a-citizens-primer-on-the-electricity-sector.html>
3. Five Stitches in Time: Regulatory and policy actions to ensure reasonable electricity service (2019)
<http://prayaspune.org/peg/publications/item/418-five-stitches-in-time-regulatory-and-policy-actions-to-ensure-effective-electricity-service.html>
4. The Percentage Problem (2019)
<http://prayaspune.org/peg/publications/item/407.html>
5. 175 GW Renewables by 2022 - A September, 2018 Update (2019)
<http://prayaspune.org/peg/publications/item/405-175-gw-renewables-by-2022-a-september-2018-update.html>
6. Amicus Populi? A public interest review of the Appellate Tribunal for Electricity (2018)
<http://prayaspune.org/peg/publications/item/393.html>
7. Electricity Distribution Companies in India: Preparing for an uncertain future (2018)
<http://prayaspune.org/peg/publications/item/377.html>
8. Understanding the Electricity, Water and Agriculture Linkages (2018)
<http://prayaspune.org/peg/publications/item/395.html>
9. Bricks without Clay: Crucial data formats required for effective tariff processes (2018)
<http://prayaspune.org/peg/publications/item/372.html>
10. The Obstinate Light Bulb- Moving beyond price-focused interventions to tackle India's persistent incandescent bulbs problem (2018)
<http://prayaspune.org/peg/publications/item/380.html>
11. The Lesser Known Tariff: Fuel Surcharge Levy in Indian States (2017)
<http://prayaspune.org/peg/publications/item/365.html>
12. Choosing Green: The status and challenges of renewable energy based open access (2017)
<http://prayaspune.org/peg/publications/item/364.html>

Electricity revenue subsidies finance 10% to 30% of the revenue required by electricity distribution companies (DISCOMs) in India. Consequently, they have significant impacts not only on the state exchequer but also on DISCOM finances. The report documents the subsidy design and payment practices across six states in India, namely- Gujarat, Haryana, Punjab, Tamil Nadu, Uttar Pradesh, and Bihar. It highlights various state specific trends and focuses on the multiple dimensions of the impact of subsidy payments on DISCOM finances. The trends explored in this report highlight the following:

- » Like the proverbial elephant in the room, there is limited reporting of subsidy related information in regulatory processes despite its impact on revenue requirement.
- » Even with the focus on financial turn-around of DISCOMs, there is no tracking of subsidy payments, delays and their impacts on DISCOM finances under the Ujwal DISCOM Assurance Yojana (UDAY). The tracking by the Power Finance Corporation is not only limited but also inconsistent with data reported and vetted in regulatory processes.
- » In spite of strong legal and policy mandates to ensure timely payments, there are significant delays across states which strain the working capital requirement of cash-strapped DISCOMs. This is due to limited political commitment and inadequate accountability for state government promises in regulatory processes and central government programmes.
- » There is a growing trend to subsidise typically cross subsidising domestic, commercial and industrial consumers, which will make rationalising and targeting subsidies more challenging in the future.

Without efforts to rationalise, target, and deliver subsidies in a timely manner, while paying close attention to state-level realities and emerging trends, DISCOMs will face a financial crisis unmanageable in scale.

SBIDA