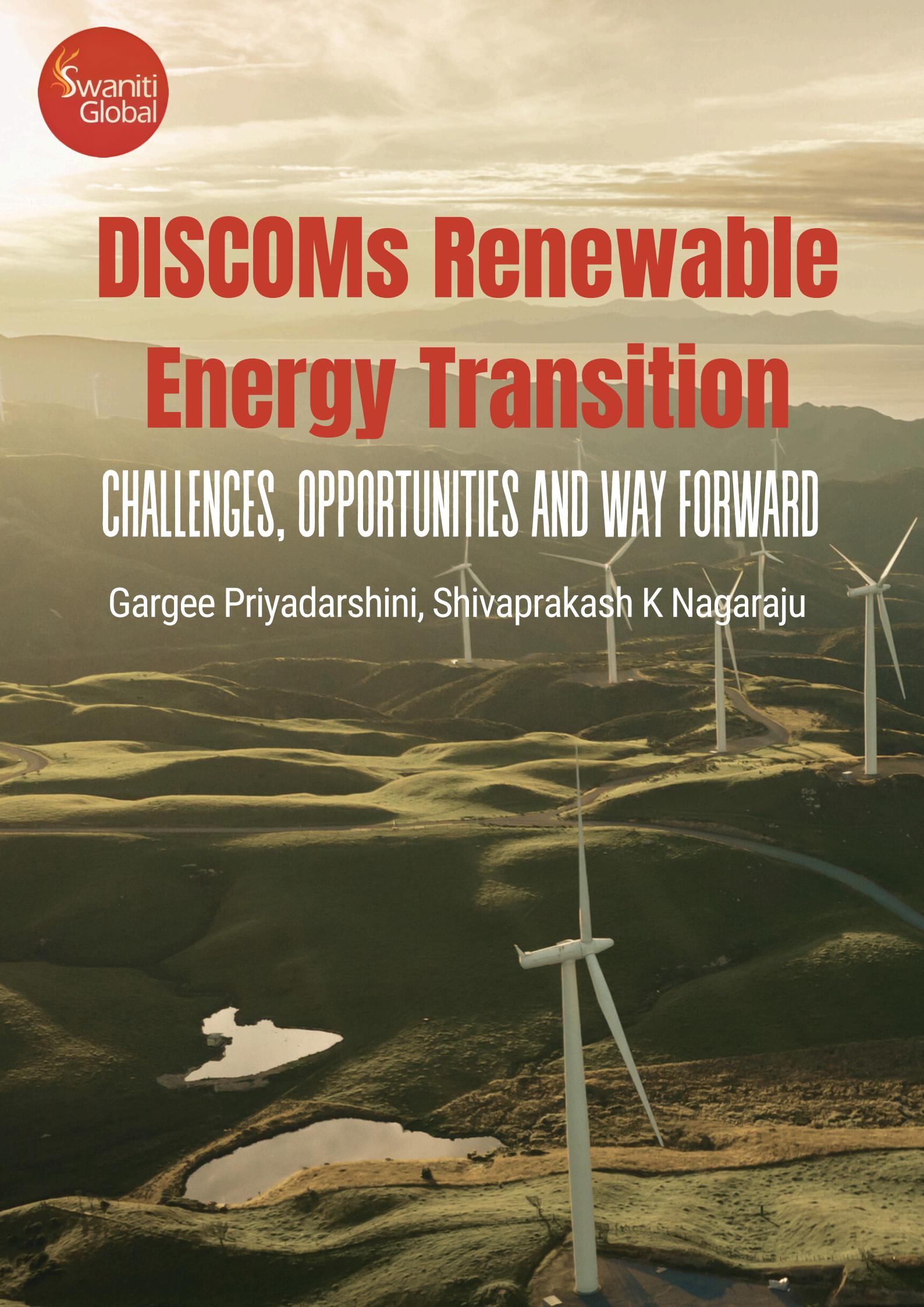




DISCOMs Renewable Energy Transition

CHALLENGES, OPPORTUNITIES AND WAY FORWARD

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About Us

Swaniti Global is a social enterprise that operates at the intersection of policy, governance, and community to drive meaningful, long-term change. Swaniti works across regions to identify opportunities, unlock critical resources, and accelerate the energy transition through context-specific, collaborative strategies. Its approach is rooted in building partnerships with governments, communities, industry clusters, and civil society organizations to co-create solutions that are both innovative and impactful. By engaging with government systems to understand existing capacities and aligning them with community aspirations, Swaniti facilitates the design and implementation of integrated programs that address structural and developmental challenges.

As part of its work, Swaniti invests in high-quality research on climate and development issues and collaborates actively with policymakers, elected officials, and communities worldwide to address pressing climate concerns and harness opportunities for impactful climate action. With deep technical expertise in public service delivery systems and a strong understanding of last-mile development challenges, Swaniti specializes in orchestrating multistakeholder engagements that drive systemic change. We believe that data driven insights, drawn from this kind of research will help identify pathways for meaningful policy and program implementation.



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List of Abbreviations and Acronyms

ACOS	Average Cost of Supply
APERC	Andhra Pradesh Electricity Regulatory Commission
ARR	Annual Revenue Requirement
AT&C	Aggregate Technical and Commercial (Losses)
BESS	Battery Energy Storage System
BU	Billion Units
C&I	Commercial and Industrial
CERC	Central Electricity Regulatory Commission
CSO	Civil Society Organization
DISCOM	Distribution Company
DRE	Distributed Renewable Energy
FDRE	Firm and Dispatchable Renewable Energy
FY	Financial Year
GW	Gigawatt
INR	Indian Rupee
KWh	Kilowatt-hour
KREDL	Karnataka Renewable Energy Development Limited
LCOE	Levelized Cost of Energy
LCoS	Levelized Cost of Storage
MNRE	Ministry of New and Renewable Energy
MSKVVY	Mukhyamantri Saur Krushi Vahini Yojana
MW	Megawatt
O&M	Operation and Maintenance

List of Abbreviations and Acronyms

PPA	Power Purchase Agreement
PFC	Power Finance Corporation
PM-KUSUM	Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan
PM-SGMBY	PM Surya Ghar Muft Bijli Yojana
RA	Resource Adequacy Plan
RE	Renewable Energy
RPO	Renewable Purchase Obligation

1. EXECUTIVE SUMMARY

1.1 Summary

This report examines the challenges and opportunities for India's electricity distribution companies (DISCOMs) in transitioning to renewable energy (RE), with a specific focus on aligning RE adoption with their financial sustainability. Despite the declining cost of renewables and national targets to achieve 500 GW of non-fossil capacity by 2030, DISCOMs face systemic obstacles that hinder their ability to support the clean energy transition.

Key challenges include entrenched financial stress due to high subsidy burdens, inflexible long-term coal-based power purchase agreements (PPAs), revenue losses from open access RE procurement by commercial and industrial consumers, upfront costs of RE adoption, and others. Technical barriers such as inadequate energy storage infrastructure and concerns around grid stability further compound the problem. Additionally, policy inconsistency across states and political resistance often tied to vested interests in fossil fuels has led to hesitation in fully embracing RE solutions. Despite these barriers, the report identifies several opportunities for DISCOMs to take a leadership role in the energy transition. Solarizing agriculture feeders and deploying rooftop solar for domestic consumers who collectively account for over 60% of consumption can significantly reduce subsidy burdens.

Successful models from Maharashtra, Kerala, and Gujarat demonstrate the potential financial savings from such programs. Revising legacy coal PPAs and investing in energy storage systems through government-supported schemes can help address intermittency issues and improve grid reliability.

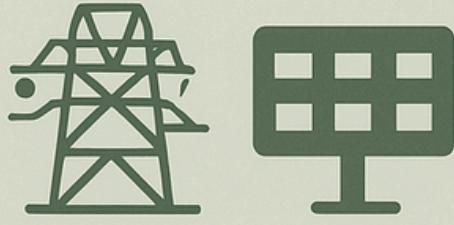
To facilitate this transition, the report recommends five key actions:

1. renegotiating expensive coal contracts,
2. scaling up decentralized solar programs,
3. leveraging central incentives for energy storage,
4. enhancing state-center coordination for realistic policy implementation,
5. building institutional capacity through Green Energy Cells within DISCOMs.

The report is informed by consultations with ten DISCOM officials across six states, two officials from energy department and six experts from four leading think tanks. These consultations revealed a growing interest among DISCOMs to explore financially viable RE models, particularly in subsidized consumer sector. Ultimately, the transition to RE presents not only an environmental imperative but also a financial opportunity for DISCOMs to strengthen their operations. With targeted reforms, strategic investments, and supportive policies, DISCOMs can become pivotal actors in achieving India's 2030 RE targets.

CHALLENGES AND OPPORTUNITIES TRANSITIONING TO RENEWABLE ENERGY

Despite falling renewable costs and national goal of 500 GW non-fossil fuel capacity by 2030, India's DISCOMs face systematic obstacles aligning RE adoption with financial sustainability

 CHALLENGES	OPPORTUNITIES
 Entrenched financial stress	 Shifting subsidised consumers to DRE solutions (Agriculture and Rooftop solarisation)
 Long-term coal PPAs	 Revising legacy coal PPAs and investing in energy storage
 Revenue losses from subsidy, Open Access RE, etc	Recommended key actions
 Upfront cost of RE adoption	<ol style="list-style-type: none"> 1 Renegotiating expensive coal contracts
 Technical barriers like energy storage and grid stability	<ol style="list-style-type: none"> 2 Scaling up decentralized solar programs
	<ol style="list-style-type: none"> 3 Leveraging central incentives for energy storage
	<ol style="list-style-type: none"> 4 Enhancing state-center coordination
	<ol style="list-style-type: none"> 5 Building institutional capacity

1.2 Key highlights of the Study

DISCOMs play a crucial role in India's RE transition, as they procure over 70% of RE through power purchase agreements (PPAs) and are responsible for fulfilling renewable RPOs at the state level. Their active participation is essential for India to achieve its RE targets by 2030. Without their strong support, meeting these goals could become a significant challenge. In a series of 18 interviews conducted with officials and experts from DISCOMs, energy department and think tanks in the energy sector, 8 officials and 2 experts expressed concerns about the transition to RE. They highlighted four primary challenges—financial, technical, regulatory, and political—as the primary reasons that are hindering DISCOMs from fully embracing RE transition.

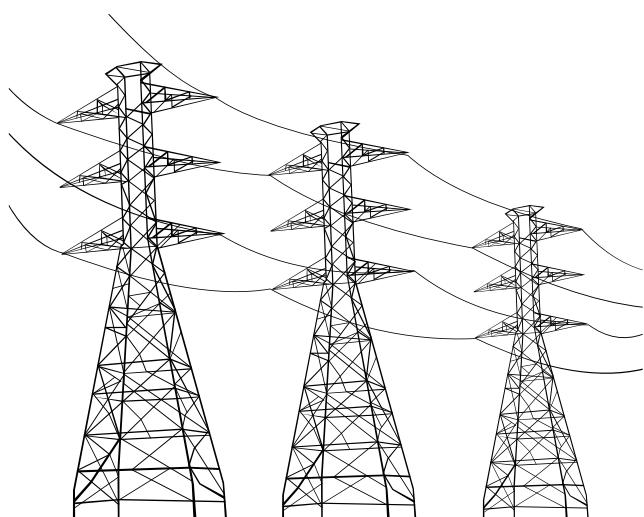
1. Financial stress and subsidy burden:

Despite the significant decline in RE costs, particularly solar, three DISCOM officials and two experts still held the perception that RE is more expensive than conventional power sources when considering subsidies and long-term contracts. They believe that India's RE growth is primarily policy-driven rather than market-driven, and without central government incentives, the leveled cost of energy (LCOE) for renewables could surpass that of fossil fuels.

However, in reality, India has one of the lowest solar power generation costs globally, with the LCOE for large-scale solar projects ranging between Rs 2.0 to Rs 2.7/unit in 2023, compared to Rs 8 to Rs 10/unit for conventional power sources. Financially strained DISCOMs, already burdened by electricity subsidies to farmers and rural households, fear that the upfront costs and potential price volatility of RE could further exacerbate their financial challenges.

2. Grid stability and integration challenges:

Four DISCOM officials identified the intermittency of RE and infrastructure limitations as major barriers to adoption. Solar and wind power are variable, dependent on weather, season, and time of day, necessitating robust energy storage systems or demand response programs to ensure grid stability. However, India lacks widespread deployment of these technologies, making it challenging for DISCOMs to integrate RE efficiently. Energy storage solutions are expensive, and the absence of advanced demand-side management tools, such as smart meters and load management systems, further complicates grid balancing. As a result, DISCOMs often rely on standby thermal power, incurring additional fixed costs for coal-based plants, which in Karnataka alone amounted to Rs 45,000 crore. Additionally, India's existing grid infrastructure is not designed to support the decentralized and variable nature of RE, and grid modernization efforts, including smart grids, have not kept pace with RE expansion. Upgrading the grid and deploying battery storage require significant investments, something which financially strained DISCOMs are currently unable to afford.



3. Legacy coal system and competing interest: All officials interviewed highlighted the challenges posed by DISCOMs' long-term PPAs with coal and gas-based power plants, which include penalties for failing to meet minimum offtake commitments. These financial obligations create a disincentive for DISCOMs to transition to RE, as doing so could disrupt existing business models and impact the profitability of conventional power plants. Additionally, the conventional power sector remains a significant part of India's energy landscape, and resistance from stakeholders, both political and economic, poses further barriers to RE adoption. Experts noted that vested interests within coal-based power plants and related industries actively resist the shift to renewables, hindering DISCOMs from pursuing an aggressive transition strategy.

4. Political ecosystem, policy and regulatory challenges:

All officials interviewed emphasized that electricity distribution is a state subject, leading to varying levels of commitment to RE across states. Many state governments resist RE deployment due to local concerns, such as land use challenges for solar and wind projects, or economic and political ties to coal-based industries. Political dynamics also play a crucial role; states governed by parties different from the central government may resist RE policies pushed at the national level. Since most DISCOMs are state owned or politically influenced, their adoption of renewables is often contingent on state-level priorities. Officials pointed out inconsistencies in RE policy frameworks and incentives across states, which create uncertainty for DISCOMs regarding the long-term viability of RE projects. For instance, in 2020, the Andhra Pradesh Electricity Regulatory Commission (APERC) attempted to renegotiate or cancel previously signed power purchase agreements (PPAs) with RE developers, citing unsustainable tariff rates that were agreed upon in earlier bidding processes. This led to legal disputes, undermining investor confidence and highlighting the regulatory uncertainties in the RE sector.

Additionally, DISCOMs face financial challenges due to the growing trend of large commercial and industrial (C&I) consumers purchasing RE directly from generators through open access, bypassing DISCOMs. This results in revenue losses, as DISCOMs traditionally rely on cross-subsidization, where higher tariffs from industrial consumers help subsidize residential and agricultural consumers. Industry estimates suggest that as of 2023, 40-50% of the energy consumed through open access in India comes from renewable sources, primarily solar and wind. This trend has led to financial losses estimated at Rs 3,000 to Rs 5,000 crore per year for DISCOMs, due to declining sales and under-recovery of fixed costs for maintaining distribution infrastructure. Consequently, DISCOMs view RE as a financial threat rather than an opportunity for transformation, often resisting policies that promote open access to renewables. This reluctance contrasts with the central government's vision, where the Ministry of New and Renewable Energy (MNRE) perceives significant inertia and unwillingness among DISCOMs to adopt RE technologies.

Around 90% of domestic consumers in rural areas and 50-60% of agricultural consumers in India receive subsidized electricity, contributing significantly to the financial losses of DISCOMs. These two consumer groups account for over 60% of the customer base and nearly 50% of total electricity consumption. The average cost of power supply (ACoS) typically ranges from Rs 2.5 to Rs 6 per unit, depending on the energy source, solar power being the cheapest at Rs 2 to Rs 3 per unit, while coal-based power costs between Rs 3 to Rs 5 per unit. However, retail tariffs for agriculture consumers range from Rs 0.5 to Rs 2 per unit, or even free in some states, while domestic tariffs range from Rs 3 to Rs 8 per unit. In contrast, industrial consumers are charged Rs 7 to Rs 10 per unit or more. The significant gap between ACoS and tariffs for subsidized consumers results in consistent revenue shortfalls for DISCOMs. For example, Karnataka alone spends approximately Rs 24,000 to Rs 25,000 crore annually on subsidies for irrigation pumps. DISCOM and energy sector officials believe that transitioning agriculture and domestic consumers to cheaper RE sources could help mitigate these financial losses and improve commercial viability.

To facilitate this transition, government initiatives such as the Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) and PM Surya Ghar Muft Bijli Yojana (PM-SGMBY) aim to promote DRE adoption in the agricultural and domestic sectors.

PM-KUSUM supports farmers in installing solar pumps and standalone solar plants, reducing their reliance on grid electricity, while PM-SGMBY encourages rooftop solar installations for households, decreasing demand from the grid. Successful implementation of these schemes by state governments could lead to significant cost savings for DISCOMs by lowering the volume of subsidized electricity required. States such as Gujarat, Maharashtra, and Kerala have made considerable progress in rolling out these programs, leveraging state support to drive adoption and financial benefits.

A notable example is Maharashtra's Mukhyamantri Saur Krishi Vahini Yojana (MSKVV), launched in 2017 as part of PM-KUSUM Component C. This initiative aims to deploy distributed solar capacity of 2 MW to 10 MW at agricultural feeders, ensuring reliable daytime electricity supply. In 2023, Maharashtra introduced an expanded version, MSKVV 2.0 and Mission 2025, targeting 9,000 MW of solar capacity to cover 30% of agricultural feeders, with plans to scale up to 15,000 MW. The expected generation of over 15 billion units (BU) annually is projected to save Rs 2.5/kWh, leading to potential power purchase cost savings of Rs 1 lakh crore over the 25-year PPA period.

Such initiatives can substantially reduce subsidy burdens and improve the financial sustainability of DISCOMs. Success stories from Maharashtra, Kerala, and Karnataka will further illustrate the impact of these DRE schemes in financial sustainability of DISCOMs.

Two DISCOM officials and two experts identified short-term focus, capacity constraints, and a lack of skilled workforce as key barriers to RE adoption. Financially stressed DISCOMs often prioritize immediate operational challenges, such as managing daily power supply and preventing outages, over long-term RE planning and investment. Additionally, the technical expertise required for large-scale RE integration such as grid management, forecasting, and energy storage is still developing, and the shortage of trained personnel further hinders progress. To address these challenges, this paper recommends establishing a state-level Green Energy Cell, a collaborative platform that brings together policymakers, technical experts, financial analysts, and project planners to support DISCOMs in transitioning to RE while ensuring financial sustainability. The cell would develop training programs to equip DISCOM staff with the necessary skills for RE integration, design financial models and incentives to attract private investment, and provide strategic guidance on managing RE's variable nature, including demand forecasting and storage solutions. By offering technical and financial support, the Green Energy Cell can help DISCOMs transition to RE more effectively and sustainably.

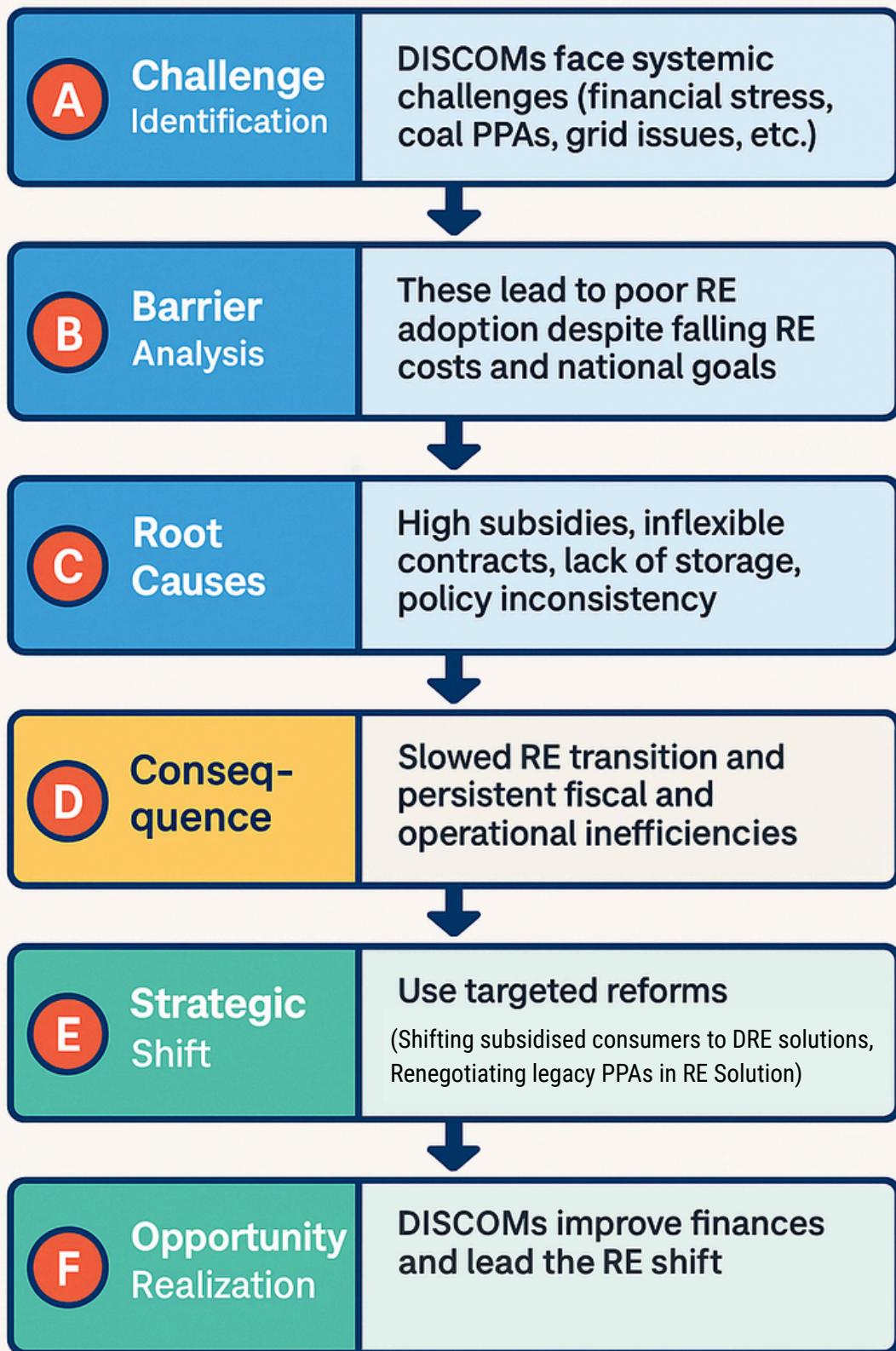
To accelerate the RE transition and improve the financial health of DISCOMs, a combination of technical and financial reforms is crucial to facilitate their shift towards a more sustainable energy model. Based on our interviews, the following key reforms are recommended:

1. gradually reducing reliance on long-term coal-based PPAs through strategic roadmaps,
2. expanding DRE solutions like rooftop solar and solarized agriculture feeders to offload subsidized consumers, and
3. investing in energy storage technologies to address the intermittency of renewables and ensure grid stability.

Additionally, planning firm and dispatchable renewable energy (FDRE) at the state level, enhancing resource adequacy planning in coordination with state and central authorities, and upgrading transmission and distribution infrastructure to support RE growth are essential steps. Providing targeted financial support and incentives will further enable DISCOMs to adopt renewable technologies more effectively.

Implementing these reforms will help DISCOMs lower operational costs, reduce coal dependency, and increase RE adoption, ultimately leading to a more sustainable, reliable, and financially resilient energy sector.

Problem-to-Opportunity Logical Flow



2. BACKGROUND AND CONTEXT

India hosts the third-largest and one of the most complex power sectors in the world. Over the past few decades, the country has witnessed a remarkable evolution of the power sector. From an installed capacity of just 1.4 GW at the time of Independence when electricity access was limited to select industrial hubs and urban centres the country has expanded to a capacity of 446 GW as of June 2024, with near-universal household electrification. There has been transformational change in capacity addition of energy infrastructure, transmission and evacuation infrastructure.

Distribution companies (DISCOMs) as the name suggest, are primarily responsible for the distribution of electricity to end-users. There are over 90 state-owned DISCOMS and 16 in the private sector besides smaller agencies providing last mile supply of power. Despite remarkable advancements in the power sectors, DISCOMs remain the weakest link in India's power sector, especially in the context of its transition to renewable energy (RE). India has committed to ambitious climate goals under the Panchamrit plan announced at COP26, including achieving 500 GW of non-fossil fuel-based capacity and meeting 50% of its electricity needs from renewables by 2030. DISCOMs are expected to play a central role in meeting these targets. However, structural inefficiencies and chronic financial stress continue to hinder their ability to support and scale RE adoption.

The Electricity Act of 2003 unbundled the generation, transmission, and distribution functions of state electricity boards, leading to the formation of separate state-owned entities. In most regions, electricity distribution remains a government-controlled local monopoly, responsible for both the physical infrastructure (wires) and the supply of electricity including procurement, billing, and collection. While DISCOMs enter long-term power purchase agreements (PPAs) with generators, both public and private the tariffs are largely regulated by State Electricity Regulatory Commissions (SERCs), unless discovered through competitive bidding. As of FY 2023–24, coal accounted for over 75% of electricity generation in India.

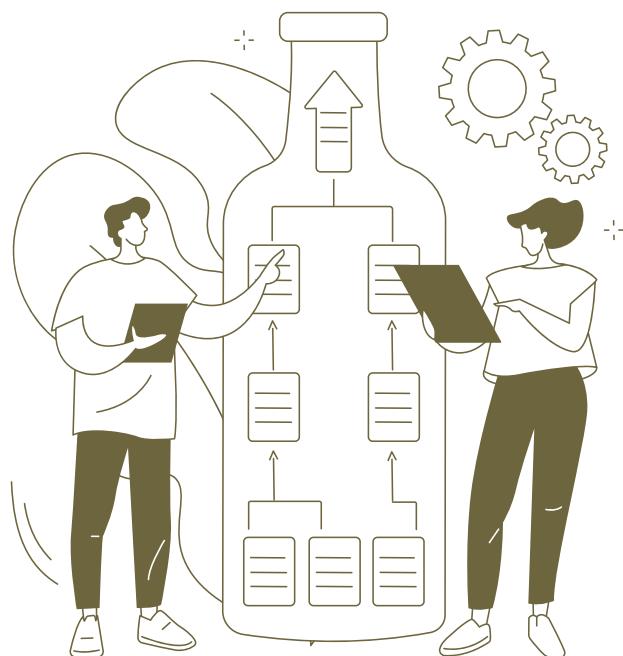
Although private participation in the distribution sector is permitted, it remains limited. In 2023, state-run DISCOMs accounted for 90% of electricity distributed by both revenue and energy volume while the private sector represented only 10%. The experience with privatization has been mixed: DISCOMs in Delhi and select cities in Maharashtra, Gujarat, and Uttar Pradesh have been privatized, while others remain fully state-controlled (see Appendix Table 1).

As of August 2024, renewable sources contribute approximately 34% (200 GW) of India's total installed capacity. The central ministries, MNRE and the Ministry of Power, set national RE targets, but their implementation is driven largely by state governments and DISCOMs. Regulatory oversight is jointly handled by the Central Electricity Regulatory Commission (CERC) and SERCs, including enforcement of Renewable Purchase Obligations (RPOs), which mandate DISCOMs to procure 43% of their electricity from RE sources by 2030.

Given that state-owned DISCOMs control over 90% of electricity distribution, their active engagement is essential for achieving these RE targets. However, India's federal structure means that the success of national RE policies depends heavily on state-level alignment. State governments influence key decisions, such as RPO trajectories, PPA approvals, and budget allocations making their buy-in essential for effective RE adoption.

Despite these imperatives, DISCOMs remain a bottleneck in the clean energy transition due to several interlinked challenges: persistent financial losses, mounting dues from government departments, high Aggregate Technical and Commercial (AT&C) losses, limited access to capital for RE projects, and political pressure to maintain unsustainably low tariffs, especially for residential and agricultural consumers. These pressures limit their appetite for new RE procurement and create resistance to central government initiatives.

Although several reform efforts have aimed at improving DISCOMs' operational and financial performance, a deeper understanding of the specific challenges and opportunities for RE adoption by DISCOMs is still lacking.



IMPLEMENTATION LOGIC: GROUND REALITY TO NATIONAL IMPACT



3. ABOUT THIS STUDY

This study aims to explore the key challenges and opportunities that DISCOMs face in transitioning to RE. It aims to explore how DISCOMs perceive the shift toward RE and what financial incentives or disincentives they face in doing so. The goal is to identify how RE adoption can align with DISCOMs' financial health while simultaneously improving energy access for underserved, subsidy-dependent communities.

3.1 Study Objective

The objective of the study is to understand the financial, operational, and institutional challenges DISCOMs face in adopting RE and to identify actionable opportunities that can facilitate their transition. Thus, this paper presents a preliminary but critical analysis of how India's DISCOMs can accelerate the RE transition. It begins by mapping the core barriers - financial, operational, and political, that hinder RE adoption. Drawing on case studies and stakeholder interviews, it then highlights actionable opportunities to enable a more proactive role for DISCOMs in meeting India's RE goals. The paper addresses the following central questions:

1. What is the financial case for adopting renewable technologies among DISCOMs?
2. Who are the key stakeholders that can drive RE adoption within DISCOMs?
3. What are the feasible pathways to enable DISCOMs' transition to clean energy?

Ultimately, this study aims to lay the groundwork for a longer-term framework to support DISCOMs energy transition at the state level through capacity building, targeted reforms, and innovative financing mechanisms to deliver on India's RE ambitions.

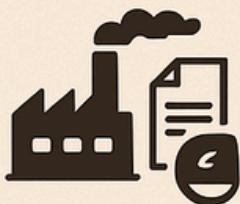
3.2 Methodology

Between September and November 2024, Swaniti engaged with seven DISCOMs across six states, along with four national-level think tanks specializing in power distribution. The objective was to understand the financial, operational, and institutional challenges DISCOMs face in adopting renewable energy (RE), and to identify actionable opportunities to support their transition. To achieve this, the study employed a mixed-method approach, combining both primary and secondary research: Secondary research included analysis of government reports, regulatory filings, news articles, journal articles, and publicly available datasets on DISCOM performance and their RE transition. Primary research involved structured interviews with ten DISCOM officials across six states—Karnataka, Madhya Pradesh, Jharkhand, Delhi, Maharashtra, and Assam, as well as two officials from Karnataka's Energy Department. Additionally, we interviewed six domain experts from four civil society organizations (CSOs) with deep expertise in the power sector. Each interview lasted between 60 and 80 minutes and focused on five core questions (listed in the appendix) relating to RE adoption, financial constraints, technical constraints, stakeholder dynamics, government willingness, and future planning. This comprehensive approach allowed us to capture diverse perspectives and insights critical to understanding the key challenges and opportunities that DISCOMs face in transitioning to RE.

CHALLENGES FOR DISCOMs



FINANCIAL STRESS
due to high subsidy burdens



LONG-TERM COAL PPAs
inflexible power purchase
agreements



REVENUE LOSSES
from Electricity Subsidies, RE open
Access, Aggregate T&C Losses, etc



UPFRONT RE COSTS
barriers to adoption



TECHNICAL BARRIERS
energy storage and grid
stability issues

4. KEY FINDINGS

RE, particularly DRE solutions, offers a valuable opportunity for state-level DISCOMs in India to achieve financial stability and transform the power sector. Large states like Maharashtra have recognized the potential of DRE to reduce electricity subsidy burdens and improve DISCOM financial health, especially by transitioning subsidized consumers to RE sources. For instance, the Maharashtra government launched the MSKVY scheme to promote solar energy adoption in agriculture. The scheme aims to install 15,000 MW of distributed solar capacity by 2026, providing reliable daytime electricity to over 30% of the state's agricultural feeders. This shift to solar power is expected to result in significant cost savings, estimated at Rs 1 lakh crore over the 25-year PPA period. These savings will reduce both the government's subsidy burden and the cross-subsidy costs for DISCOMs, improving the financial sustainability of Maharashtra's power sector and supporting the state's RE goals.

Similarly, Kerala has promoted rooftop solar adoption in the residential sector through initiatives like the 'Urja Kerala Mission.' Under this scheme, the flagship project 'SOURA' provided subsidies and investment to help consumers install rooftop solar systems. As a result, 1.7 lakh households have adopted rooftop solar, with a total installed capacity of 914 MW as of September 2024. This initiative has helped the government save on subsidy costs for residential consumers, while also allowing consumers to earn revenue from selling surplus energy. Gujarat has also made strides in residential rooftop solar, with over 7 lakh households adopting the technology. These consumers save an estimated Rs 2,000 crore in energy bills and generate Rs 200 crore annually by selling surplus energy. By promoting rooftop solar among subsidized domestic consumers (those having tariffs below the cost of supply), DISCOMs can further reduce their financial burdens.



Beyond these specific schemes, states with the largest RE projects tend to share a common approach involving five key components that have contributed to the success of their energy transition efforts. These components not only drive the growth of RE but also align with broader goals of energy security, economic development, and sustainability:

- Strong Leadership and Political Will:**

Successful states have leaders who prioritize RE and take proactive steps to ensure its integration into the power sector. Political will at both the central and state levels is critical in pushing for policy reforms, creating incentives for RE developers, and supporting infrastructure development. States like Gujarat, and Maharashtra have been able to drive significant RE projects both at utility scale and distributed capacity due to alignment of state leadership with central government policies embracing the potential of renewable resources.

- Strategic Regional Focus:**

Each state leverages its unique regional strengths to harness RE to address issues related to subsidies and energy security. For example, Maharashtra and Gujarat are deploying large-scale distributed solar capacity of 15,000 MW and 8,430 MW respectively, to provide reliable daytime electricity to farmers, thereby reducing the subsidy burden on state governments and to improve financial status of DISCOMs by shifting subsidized agriculture consumers to RE-based power supply. In a similar effort, Kerala has aggressively promoted rooftop solar to meet its goal of 40% RE by 2030. Given that land is a limiting factor for expanding renewables, Kerala has designed innovative scheme called 'SOURA' to accelerate the growth of rooftop solar across the state.

- Comprehensive Policy Frameworks:**

States with successful RE sectors typically have well-defined policies that offer clear guidance and incentives for investors and developers. These policies address critical aspects such as land acquisition, grid integration, and financial support mechanisms like subsidies or tax incentives. For instance, Kerala launched the innovative 'SOURA' project, under which the government provided both subsidies and investments to help consumers install rooftop solar systems. Maharashtra's agricultural solarization initiative, 'MSKVVY' facilitates land acquisition on a lease basis and offers a Rs 1 crore subsidy to RE developers. To accelerate utility-scale solar projects, Karnataka's RE Department (KREDL) has pooled land from farmers on lease and invited developers to deploy 2,000 MW of solar capacity. Additionally, KREDL has facilitated long-term power purchase agreements (PPAs) between developers and state DISCOMs to ensure stable electricity procurement.

- Focus on Energy Security:**

Energy security is a top priority for these states, as they recognize the importance of reducing dependence on fossil fuels and ensuring a reliable, sustainable power supply. By investing in RE, states aim to diversify their energy mix, reduce vulnerability to fuel price fluctuations, and ensure a more resilient power system. Maharashtra's promotion of solar energy for agricultural use through the MSKVVY is one example of how states are enhancing energy security through local, renewable sources.



- Infrastructure Development and Grid Modernization:**

Successful RE projects often rely on the development of modern infrastructure, including upgraded transmission networks and smart grids. These upgrades are crucial for integrating large volumes of RE into the grid, ensuring efficient power distribution, maintaining grid stability and meeting increasing energy demands. Numerous states have begun work in this area. For example, Maharashtra, Gujarat, and Karnataka have invested in separating agricultural feeders from the general electricity distribution system. This improves the efficiency, reliability, and sustainability of electricity supply to agricultural consumers, while also enabling dedicated RE projects to serve the agriculture sector.

However, DISCOM officials from Assam, Jharkhand, Karnataka, and Madhya Pradesh, along with experts from CSOs, shared the view that states not currently leading the RE transition will eventually be compelled to integrate RE into their energy mix. Therefore, states that are lagging behind in the RE transition need targeted technical support to help them adopt renewables and incorporate them into their energy systems effectively.

The resistance of DISCOMs in India to the transition toward RE is a complex issue driven by several interconnected factors. Despite the clear financial benefits of RE, such as its potential to lower the Average Cost of Supply (ACoS) by offering lower marginal costs compared to outdated and inefficient thermal power plants, DISCOMs continue to act as significant barriers to the country's energy transition. This resistance persists even though RE could enhance the long-term financial health of DISCOMs by reducing costs. Understanding the root causes of this resistance is essential to addressing these challenges and ensuring India meets its 2030 RE targets.

Another reason for DISCOMs' resistance is their limited involvement in the decision-making process related to RE targets and policies. As officials from Karnataka, Jharkhand, and Assam have highlighted, DISCOMs are often assigned RE targets without adequate consultation or input. This top-down approach leaves DISCOMs feeling disconnected from the process and can lead to a lack of ownership, which makes it harder for them to effectively implement the targets. They may also perceive the targets as unrealistic or not aligned with their operational constraints, and in Karnataka in particular, DISCOM officials noted the absence of open communication channels to express those concerns. This ultimately leads to a further deepening of resistance to RE transition.

To address this issue, DISCOMs must be engaged early in discussions about RE policies and targets, both at the state and central levels. Providing a platform for DISCOMs to voice their concerns, share insights, and suggest feasible strategies for integrating RE would lead to better collaboration and smoother implementation. Engaging DISCOMs from the start will allow policymakers to design more realistic and effective strategies for RE adoption that take into account the operational and technical realities faced by these utilities. Additionally, establishing dedicated forums or working groups where DISCOMs can regularly discuss RE related issues, share experiences, and provide feedback would foster a more collaborative and inclusive approach to energy transition. This would not only help address concerns but also ensure that the strategies adopted are practical and supported by those responsible for their execution.

Our efforts in this study, based on literature review and stakeholders' consultations, reveal several key findings related to 1) barriers or challenges preventing DISCOMs from moving towards RE, and 2) potential opportunities or solutions that can encourage them to do so.

The specific findings of our study include the following:

- The financial challenges faced by DISCOMs in India are a major barrier to the growth and stability of the power sector. By FY 2023, DISCOMs had accumulated losses of approximately Rs 6.77 lakh crore, with losses growing by an average of 10% annually since 2015-16. The Power Finance Corporation (2024) reports that the net worth of these utilities remains negative, highlighting ongoing financial distress. This instability causes delays in payments to power generators, including those producing RE, and leads to non-payment of dues. These payment delays undermine confidence among power generators, particularly for long-term PPAs related to RE projects. To address these challenges, many DISCOM officials agree that a potential solution is to target loss-making customer segments. These customers are often those who are subsidized, fail to pay bills, or reside in areas prone to theft or inefficiency represent a significant financial burden. For example, while DISCOMs sell electricity to farmers and residential consumers (29% and 21% of total sales, respectively), they recover only 3% from agricultural consumers and 21% from residential ones. By shifting these loss-making segments to more affordable RE sources, DISCOMs could reduce their financial strain, improve cash flow, and create a more sustainable energy distribution model. This approach would not
 - only enhance the financial viability of DISCOMs but also make them more attractive to investors and power generators, particularly for RE projects.
 - Revenue subsidies are provided to ensure that certain consumer segments, primarily agricultural and domestic consumers, can access power either free of cost or at concessional rates. In 2022-23, these subsidies amounted to Rs 1.66 lakh crore for all state-owned DISCOMs (PFC, 2024). According to state tariff orders from 37 states and UTs, subsidies accounted for 10% to 30% of DISCOMs' total expenditure (annual revenue requirements), significantly contributing to their financial losses. As a result, DISCOM and energy department officials believe that shifting these subsidized consumers to cheaper energy sources, such as RE, could help reduce financial losses and improve commercial viability. For example, DRE solutions could provide electricity to these consumers at a cost of Rs 2.5 to Rs 3 per kWh, which is about half the cost of electricity supplied from fossil fuel-based sources (Rs 6 to Rs 8 per kWh). By adopting DRE solutions, DISCOMs could save 30-50% of subsidy costs, significantly easing their financial burden and contributing to greater financial stability and sustainability in the power sector.

- Legacy coal PPA agreements obligate DISCOMs to pay fixed costs for excess capacity, even when power is not generated by the thermal plants. In states like Gujarat, Karnataka, and Rajasthan, nearly 100% of power demand is locked into such contracts. While these PPAs provide supply security, they limit DISCOMs' ability to capitalize on cheaper alternative energy sources like renewables. Fixed costs, which make up around 47% of total power costs, must still be paid even if DISCOMs seek lower-cost RE options. This financial burden from legacy coal PPAs discourages DISCOMs from transitioning to RE. For instance, Maharashtra DISCOMs are facing over Rs 10,000 crore in overdue payments for surplus coal power. Analysis shows that phasing out 4,020 MW of coal power units over 20 years and replacing them with RE could save over Rs 10,000 crore in five years to Maharashtra DISCOMs. To mitigate the financial strain of coal-based power, Maharashtra is actively increasing RE capacity in its energy mix, particularly in the agricultural sector, to offset the cost of subsidized power to farmers. By promoting decentralized renewable systems, such as grid-connected solar feeders for agriculture, the state is reducing its dependence on coal and associated subsidies. This strategy not only supports cleaner energy but also improves the financial health of DISCOMs by lessening their long-term commitment to costly thermal power.
- Of the 18 stakeholders interviewed, 25% (two DISCOM officials and two experts from civil society organizations) believed that the lower cost of RE in India is primarily driven by central government policies and incentives aimed at promoting RE growth. In contrast, in developed nations, it is market forces that help reduce RE costs. These stakeholders argued that if government subsidies and incentives for RE were removed, the LCOE for renewables in India would exceed that of fossil fuels. As a result, they felt that some DISCOMs may resist the transition to RE unless it is driven more by market dynamics rather than government policies. However, the majority of stakeholders (eight DISCOM officials, two energy department officials, and four experts from CSOs) agreed that renewables are indeed cheaper than other energy sources and that DISCOMs must transition to RE to meet future energy needs. They also highlighted that globally the cost of RE continues to decline due to advancements in technology and the increasing efficiency of panels and turbines. This trend makes the transition to RE financially viable for DISCOMs, particularly when compared to the ongoing reliance on expensive fossil fuel-based power.

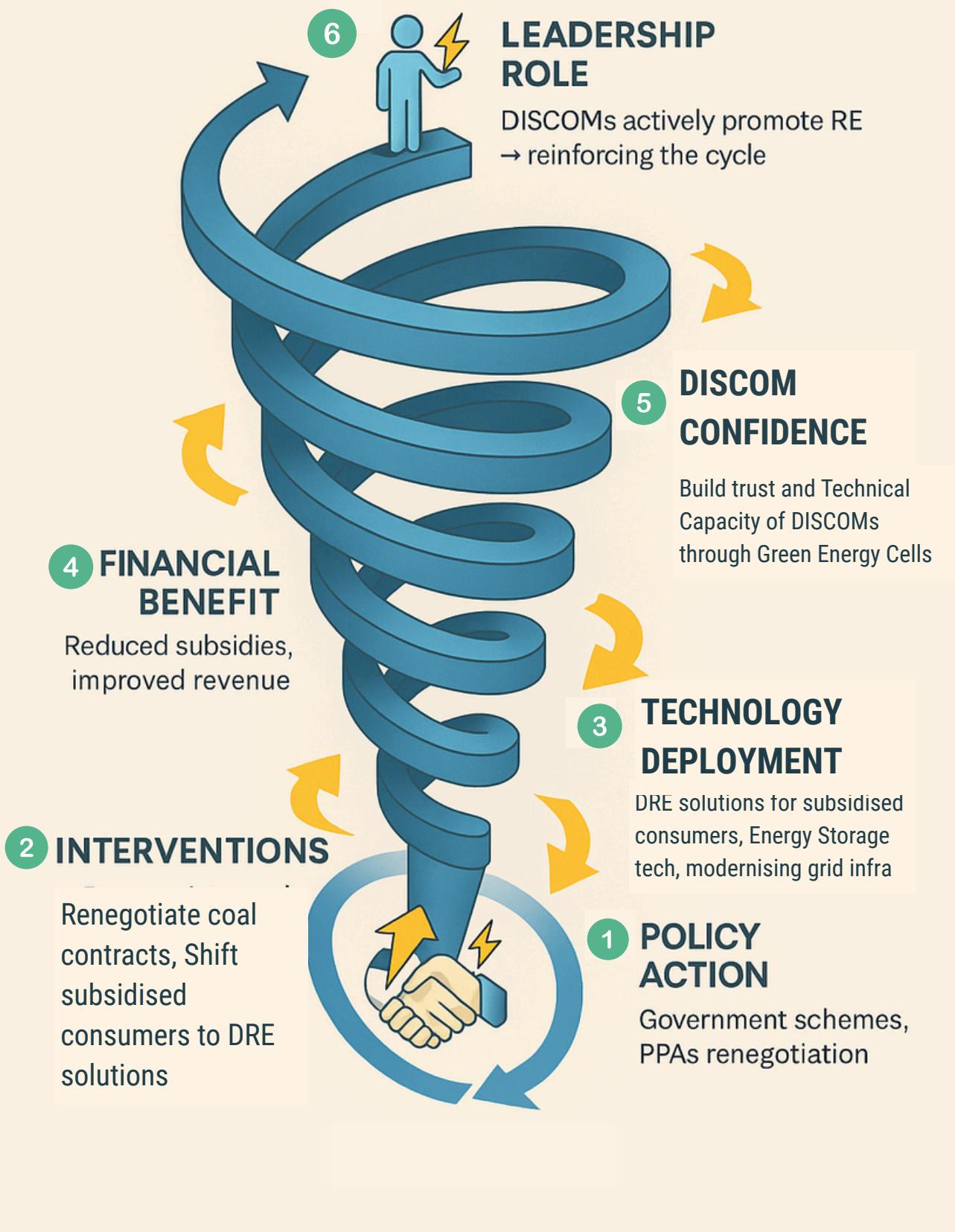


- In 2022-23, DISCOMs could bill only 87% of the electricity injected into the grid and collected just 97% of the billed amount, leading to aggregate technical and commercial losses of 15.7%. These losses were driven by transmission and distribution inefficiencies, as well as commercial issues like theft and non-payment. Six of the eight DISCOM officials consulted noted that RE could play a key role in reducing these losses. DRE systems, such as rooftop solar and small scale wind or solar plants, allow consumers to generate and consume electricity on-site, easing the burden on the grid and reducing transmission losses. Solar home systems and microgrids can also help consumers become more self-reliant, decreasing grid dependency and minimizing theft or non-payment. Furthermore, pay-as-you-go models for off-grid systems can improve payment reliability, reducing commercial losses. By integrating RE and promoting decentralized energy generation, DISCOMs can enhance grid reliability, improve financial health, and drive long-term sustainability. However, this transition requires significant upgrades to the grid and new technologies, necessitating substantial investment. Without adequate financial support, DISCOMs may continue to resist RE transition.
 - DISCOMs are required to provide round-the-clock electricity, but the intermittency of RE sources like solar and wind poses reliability challenges. Most officials from DISCOMs and experts from CSOs agree that significant investment in storage technologies, such as Battery Energy Storage Systems (BESS), pumped hydro, and others, is needed to address this. To support this transition, the central government has introduced a Viability Gap Funding (VGF) scheme to help DISCOMs implement BESS projects.
 - The scheme provides up to 30% capital cost support, aiming to develop 4,000 MWh of BESS by 2030-31. With a target Levelized Cost of Storage (LCoS) between Rs 5.50 to Rs 6.60 per kWh, this makes storage a viable solution to manage peak demand and ensure reliable power. By storing excess energy for later use, these systems can reduce reliance on costly thermal plants, improving grid stability and accelerating the adoption of RE.
- The role of state-level governments in driving public DISCOMs to adopt RE is crucial. However, when the central government introduces RE-related policies, a lack of coordination with state governments often results in resistance or pushback from the states. One key challenge highlighted by DISCOM officials from the states of Karnataka, Jharkhand, and Assam is that DISCOMs are frequently not consulted when resource adequacy (RA) plans and RPO targets are being developed at the national level. As a result, these targets may be unrealistic or mismatched with the operational capabilities and technical constraints of DISCOMs. When DISCOMs are tasked with meeting these ambitious RPO targets without adequate support or consultation, they often struggle to comply, leading to frustration and reluctance to fully embrace the RE transition. This disconnect between central policies and state realities creates a barrier to the effective implementation of RE goals, as DISCOMs may feel that the targets are not feasible given their existing infrastructure, financial limitations, or technical challenges. To overcome this, greater coordination and dialogue between the central government, state governments, and DISCOMs is essential. This would help ensure that RPO targets and other RE policies are aligned with the ground realities of power distribution and more achievable in the long run.

- DISCOM officials expressed concerns regarding the central government's RE open access policies, which allow commercial and industrial consumers to bypass DISCOMs and directly procure RE from producers or developers. These consumers, who typically have higher consumption levels and pay higher tariffs, are essential for supporting the financial health of DISCOMs. Additionally, DISCOMs rely on cross-subsidization, where the higher rates paid by commercial and industrial customers help subsidize the electricity costs for residential and agricultural consumers. If these higher-paying consumers shift to RE open access, DISCOMs will lose a crucial revenue stream, potentially resulting in higher tariffs for the remaining consumers, particularly those in the residential and agricultural sectors. This could further exacerbate the financial challenges faced by DISCOMs, making it more difficult for them to maintain stable operations and meet financial obligations. Consequently, DISCOMs may resist integrating more RE into the grid if open access policies lead to substantial revenue losses.
- On the positive side, the growth of RE open access can lower the cost of RE generation. As more businesses and industries move to direct RE procurement, the increased demand for RE can lead to economies of scale, thereby driving down costs and making RE more affordable. Despite these benefits, RE open access policies present a complex challenge for DISCOMs. While they promote the expansion of RE, which is vital for environmental sustainability and energy security, they also pose risks to DISCOMs' financial viability. To address these challenges, DISCOMs may need to adapt by diversifying their business models, improving operational efficiency, and leveraging new technologies, such as energy storage and flexible pricing mechanisms. Striking a balance between fostering RE growth and maintaining DISCOM financial health will be key to ensuring the success of India's energy transition.



REINFORCING CYCLE FOR CLEAN ENERGY LEADERSHIP



RECOMMENDATIONS

The central and state governments should re-evaluate legacy coal PPA and design solutions to gradually free up DISCOMs from buying expensive power from older, inefficient power plants through long term PPA contracts. This will provide financial freedom for DISCOMs to take advantage of lower power costs associated with other energy resources such as renewables and also encourage DISCOMs to procure more RE and achieve RPO targets to contribute towards the country's RE commitment.

States need to design and implement schemes to shift subsidized consumers from the agriculture and domestic sectors to RE-based power supply. Learning from agriculture solarization schemes from Maharashtra and Gujarat and rooftop solarization success in Kerala could help other state DISCOMs to design similar schemes to offload subsidized consumers to cheaper energy source such as RE. This will help DISCOMs in their financial stability and profitability and also encourage them to adopt RE transition.

Though policies such as open access help to accelerate RE growth, they also have business impacts on DISCOMs. While designing such schemes, there should be a better co-ordination among central energy departments and state-level distribution utilities to ensure that such policies will be a win-win for RE growth while avoiding negative financial impacts on distribution utilities. DISCOMS should be financially and technically empowered to adopt cost-effective RE solutions, so that they will not lose out on commercial and industrial consumers with higher consumption levels and higher paying capacity. This will change the perception among DISCOMs that RE transition as a threat to their business.

DISCOMs should take full advantage of central government policies and financial incentives to enhance the reliability of power supply from RE sources, particularly through the adoption of energy storage technologies. As noted earlier, the VGF scheme recently introduced by the central government should help make the use of stored RE a more viable solution for managing peak power demand across India. To ensure the benefits of the scheme are maximized, at least 85% of the BESS project capacity will be allocated to DISCOMs, enabling them to store excess energy generated during periods of high renewable output for use during times of low generation or peak demand, ensuring a more stable and reliable power supply. By utilizing this financial support, DISCOMs can not only improve the integration of RE into the grid but also reduce reliance on costly and inefficient backup power from thermal plants. The VGF scheme makes it more financially feasible for DISCOMs to invest in these storage technologies, accelerating the adoption of RE while strengthening grid reliability. This approach is vital for DISCOMs to meet the rising demand for clean energy while maintaining a stable and reliable power supply for consumers.

States must prioritize building technical capacity within DISCOMs to help them recognize the potential benefits of RE transition and understand how it can help in their long-term financial stability and profitability. Joint efforts or consortiums of institutions with expertise in policy, technical, and financial analysis as well as the technological and project planning expertise to create a knowledge-sharing platform or technical cell at the state-level would enable capacity building of DISCOMs towards RE transition.

FIVE PRIORITY ACTIONS



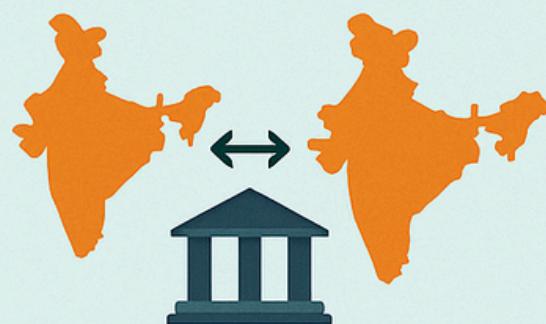
Renegotiating
expensive coal
contracts

Scaling up
decentralized
solar programs



Leveraging central
incentives for energy
storage & Grid Infra

Enhancing
coordination
between state and
central governments



Building institutional
capacity through
Green Energy Cells
within DISCOMs

CONCLUSION AND WAY FORWARD

India's RE transition hinges significantly on the active participation and financial resilience of its electricity distribution companies (DISCOMs). Despite their current financial constraints, technical limitations, and entrenched coal-based power procurement models, DISCOMs recognize the economic potential of integrating low-cost renewable energy (RE) solutions, particularly for high-subsidy consumer segments such as agriculture and rural households. Encouragingly, there is growing willingness among DISCOM officials to adopt distributed renewable energy (DRE) models, such as solarized feeders and rooftop solar, to offset rising subsidy burdens and improve long-term financial sustainability.

However, unlocking this opportunity requires a coordinated and strategic approach. State governments must align more closely with national RE goals and take proactive steps to revise existing regulatory frameworks, support DISCOMs in renegotiating inflexible coal PPAs, and enable investment in grid modernization and energy storage. Simultaneously, central schemes offering viability gap funding, technical support, and financial incentives for energy storage can serve as catalytic enablers.

To accelerate progress, the following five actions are recommended as the way forward:

- 1. Renegotiate Legacy Coal PPAs:** Enable DISCOMs to reduce procurement from high-cost thermal sources and redirect savings toward renewables.
- 2. Scale Up Decentralized Solar Deployment:** Prioritize agriculture and residential sectors to reduce subsidy outflows and promote energy equity.
- 3. Leverage Central Incentives for Storage and Modernization:** Utilize existing schemes to address intermittency and ensure grid reliability.
- 4. Strengthen State-Center Policy Coordination:** Harmonize RPO targets, streamline implementation, and mitigate political resistance through consultative mechanisms.
- 5. Build Technical and Institutional Capacity:** Establish dedicated Green Energy Cells within DISCOMs to support planning, forecasting, and RE integration.

With the right institutional support, DISCOMs can evolve from being perceived as bottlenecks to becoming enablers of India's clean energy future, contributing meaningfully to the 2030 target of 500 GW of non-fossil fuel capacity while ensuring reliable, affordable power for all.



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Appendix

Table 1: Distribution Utility Ownership Structure (2022-23)

Supplier	State/UT
Power Department	Arunachal Pradesh Goa Jammu and Kashmir Mizoram Nagaland Sikkim
State Government-owned Distribution Company	Andhra Pradesh Assam Bihar Chhattisgarh Gujarat Haryana Jharkhand Karnataka Madhya Pradesh Maharashtra Meghalaya Odisha Rajasthan Telangana Uttar Pradesh Uttarakhand West Bengal
State Government-owned Company (integrated generation and distribution utility)	Himachal Pradesh Kerala Manipur Punjab Tamil Nadu Tripura
Joint venture between Private Company and State	Delhi Uttar Pradesh
Private Sector	West Bengal Gujarat Maharashtra

Interview Questions for DISCOMs on Renewable Energy Transition

1. How do you see the role of DISCOMs in driving India's renewable energy transition?
2. What are the key barriers or challenges DISCOMs face in transitioning to renewable energy?
3. What factors could make the renewable energy transition more attractive for DISCOMs?
4. In which areas do DISCOMs require the most support to accelerate the adoption of renewable energy?
5. Can you share insights on successful renewable energy transitions in your state and the critical role DISCOMs played in achieving them?

Note: These questions were further refined and adapted to align with the specific state context and stakeholder perspectives.

Figure 1: State and category wise electricity subsidy.

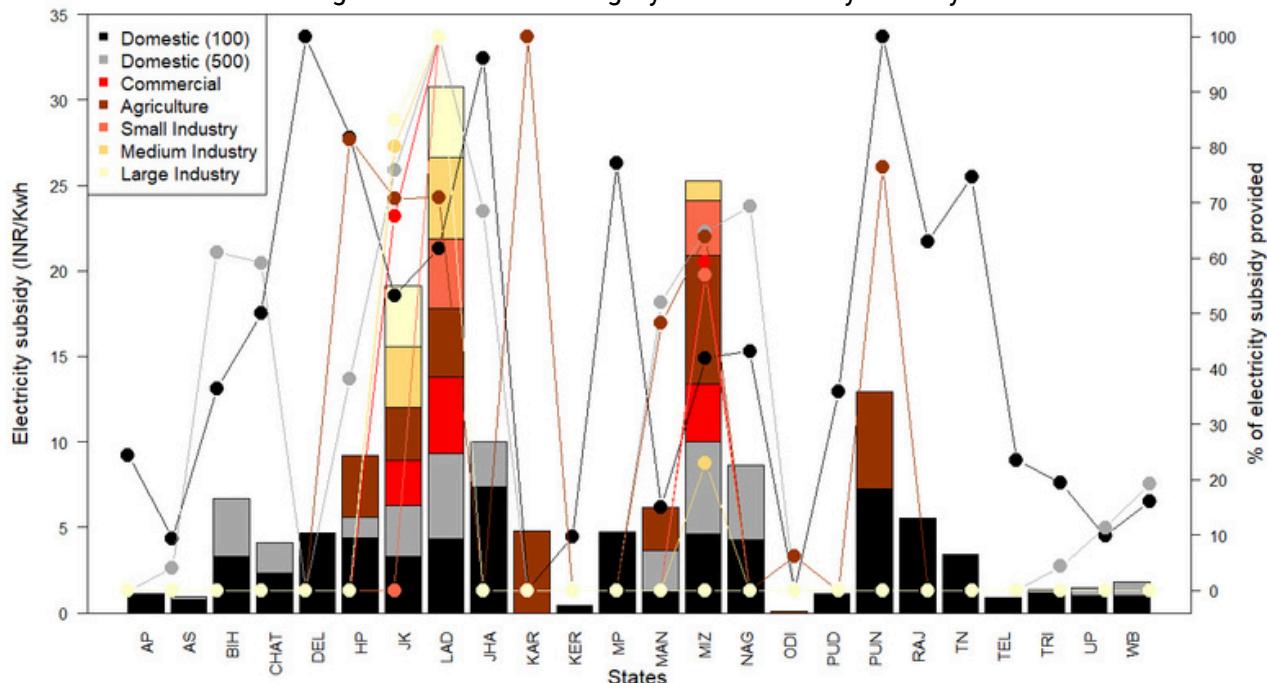


Figure 1: summarizes data on which consumer groups benefit most from electricity subsidies across these 37 states and UTs:

Note: According to state tariff orders from 37 states and UTs that provide sufficiently disaggregated information, subsidies formed 10% to 30% of the total expenditure (annual revenue requirements) of DISCOMs in various states. These subsidies are not limited to domestic and agriculture consumers alone, as many non-domestic and even industrial consumers receive free or subsidized power.

1. As of 2023, 24 of the 37 states and UTs provided free or subsidized power.
2. At an aggregate level, domestic consumers were allotted the largest share of subsidy, receiving 0.7 to 96% of subsidy in 22 states and UTs. Kerala provided the lowest subsidy at 9.7% and Punjab, Jharkhand and Delhi provided 100% subsidy.
3. Agriculture consumers were allotted the second largest share of support, receiving 6 to 100% of the total subsidy value in 8 states and UTs. Karnataka, Punjab, J&K and Ladakh were major subsidy provider in agriculture.
4. Interestingly, commercial and industry sector, which is traditionally a cross-subsidizing category, received a share of subsidies in some states in FY 2023, amounting to 6% of the total national subsidy value. This included significant shares of total state-level subsidy value in J&K, Ladakh, and Mizoram. It is interesting to note that few states offer indirect support by way of electricity duty exemptions to certain sets of industries or to all industries in a certain region/district.

Table 2: Category wise cost of power supply for different consumers

State/Union territories	Average billing rate (ABR)							Average cost of supply (AcoS)
	Domestic_100	Domestic_500	Commercial	Agriculture	Small Industry	Medium Industry	Large Industry	
Andaman and Nicobar	3.35	6.97	10.67	2.21	10.26	12.24	12.39	28.72
Andhra Pradesh	3.41	7.11	9.58	3.93	7.27	7.1	7.66	7.73
Arunachal Pradesh	4	4	5	3.1	3.85	3.5	3.35	10.29
Assam	7.25	7.6	9.6	5.85	6.23	6.94	8.17	6.69
Bihar	5.75	6.4	12.21	8	10.62	9.57	10.27	5.86
Chhattisgarh	2.3	3.59	8.26	6.27	6.13	6.76	5.16	5.99
Chandigarh	3.29	4.06	5.06	2.6	4.62	5.22	9.73	3.87
Dadra and Nagar Haveli	1.9	2.64	4.35	0.9	3.92	4.34	5.62	5.06
Daman and Diu	1.9	2.64	4.35	0.9	3.92	4.34	5.62	5.15
Delhi	0	4.82	11.43	2.73	9.85	9.28	8.82	7.49
Goa	2.55	3.75	5.76	1.92	5.18	5.22	6.55	5.59
Gujarat	4.02	5.23	5.5	0.84	5.57	5.51	5.65	6.28
Haryana	3.43	5.34	8.3	8.93	7.15	7.25	6.99	8.02
Himachal Pradesh	0.98	4.39	6.14	1.06	5.53	6.27	6.35	6.39
J and K	2.89	3.95	5.96	1.28	5.04	5.67	6.43	7.22
Ladakh	2.69	3.78	5.37	1.64	4.4	5.21	5.68	11.71
Jharkhand	0.3	4.12	7.95	5.51	6.98	6.63	6.8	6.51
Karnataka	5.77	8.16	9.32	0	8.44	9.44	8.8	8.05
Kerala	4.1	9.15	9.87	2.71	6.48	6.8	7.86	5.37
Lakshadweep	2.47	5.57	10.94	0	8.41	8.27	10.99	48.04
Madhya Pradesh	1.4	8.48	8.45	6.43	9.39	8.62	9.05	7.38

State/Union territories	Average billing rate (ABR)							Average cost of supply (ACoS)
	Domestic_100	Domestic_500	Commercial	Agriculture	Small Industry	Medium Industry	Large Industry	
Maharashtra	8.1	14.23	12.76	5.2	8.41	11.03	10.94	8.48
Manipur	7.05	5.77	8.31	2.66	6.15	8.68	7	6.8
Meghalaya	6.95	6.45	9.04	4.66	8	7.62	8.75	5.45
Mizoram	6.4	9.18	9.2	4.26	8.59	9.31	0	13.47
Nagaland	5.67	6.63	8.66	3.35	6.86	7.42	7.5	14.02
Odisha	4.78	5.63	7.6	1.54	6.78	6.88	7.14	5.26
Puducherry	2.03	5.08	7.97	0.24	6.69	7.75	7.08	5.79
Punjab	0	7.96	8.74	1.74	7.27	7.66	8.31	6.5
Rajasthan	3.25	8.13	9.68	5.96	7.7	8.1	8.44	8.33
Sikkim	2.1	3.21	6.46	0	4.91	8.67	7.98	5.31
Tamil Nadu	1.18	7.15	9.58	5.27	8.56	10.32	9.09	8.32
Telangana	2.89	7.4	10.58	4.18	8.27	8.1	9.27	6.69
Tripura	4.93	6.64	7.4	4.22	7.94	8.05	7.98	6.06
Uttar Pradesh	9.13	6.56	12.56	3.01	9.94	9.17	8.45	6.93
Uttarakhand	5.4	6.03	6.35	3.4	6.81	6.31	7.69	6.13
West Bengal	5.14	6.8	8.81	4.75	7.75	9.09	8.86	6.08

Note: It can be observed from table that, in most of the states and UTs, billing rate of consumers in different category lower than average cost of power supply (ACoS). Especially, the tariff is very low for agriculture and residential consumers as compared to ACoS. Whereas, tariff is high for commercial and Industrial consumers to that of ACoS. At a national level, in FY 2023, the ACoS increased by 15% (since FY 2016), whereas the average revenue realized only grew marginally, by 6%. Predominantly, D&A categories are subsidized, while C&I categories have been cross-subsidizing. In the last eight years (FY 2016 to FY 2023), at an aggregated level, the revenue deficit on account of residential & agriculture consumers has increased considerably, whereas the cross-subsidy paid by commercial & Industrial consumers has not increased commensurately.

To put this in numbers, from FY 2016 to FY 2023, the revenue deficit on account of residential & agriculture consumers has grown 55% from INR 1,17,824 crore (USD 16.1 billion) to INR 1,74,391 crore (USD 23.7 billion). Whereas, the cross-subsidy inflow has increased by just 15% from INR 67,785 crore (USD 9.2 billion) to INR 75,027 (USD 10.1 billion). This decrease in cross-subsidy inflow can be attributed to disproportionate change in consumption by residential & agriculture consumption and the migration of C&I consumers to other cheaper sources of power through open access (including market-based purchase and renewable energy group captive mode)

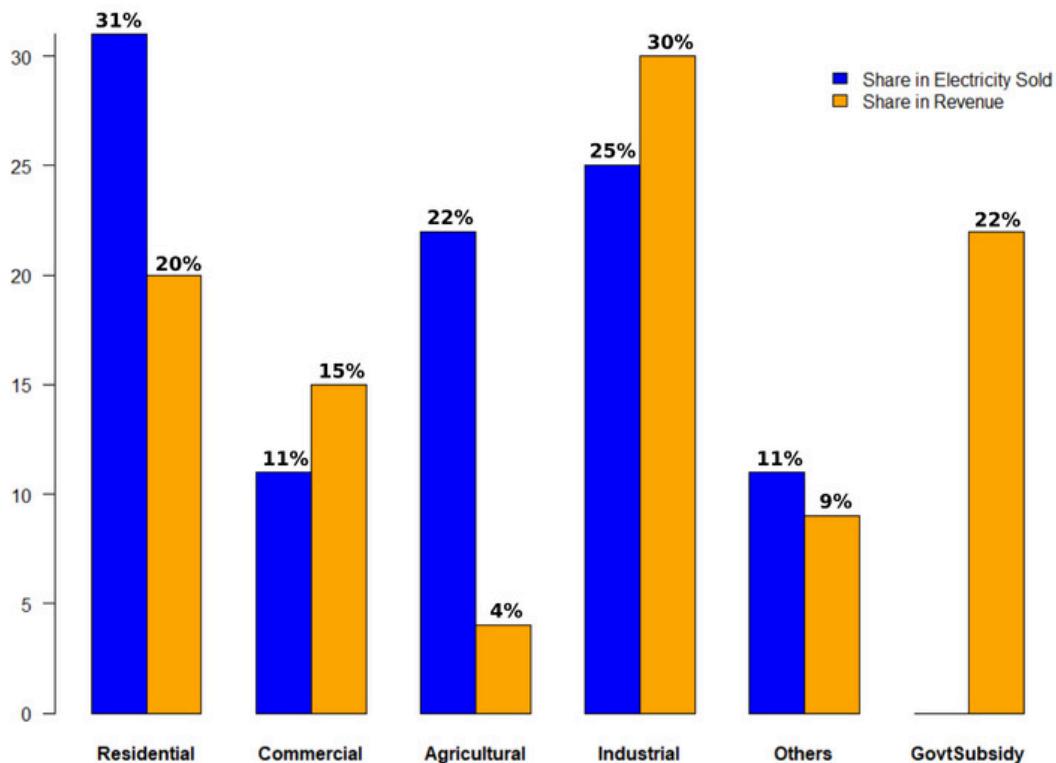


Figure 2: Consumer category wise share in sales and revenue FY-2023

Note: It can be observed that in Figure 2, sales from revenues of residential and agriculture sector are low due to subsidized supply of power. Thus, residential and agriculture sectors majorly contribute to loss making.

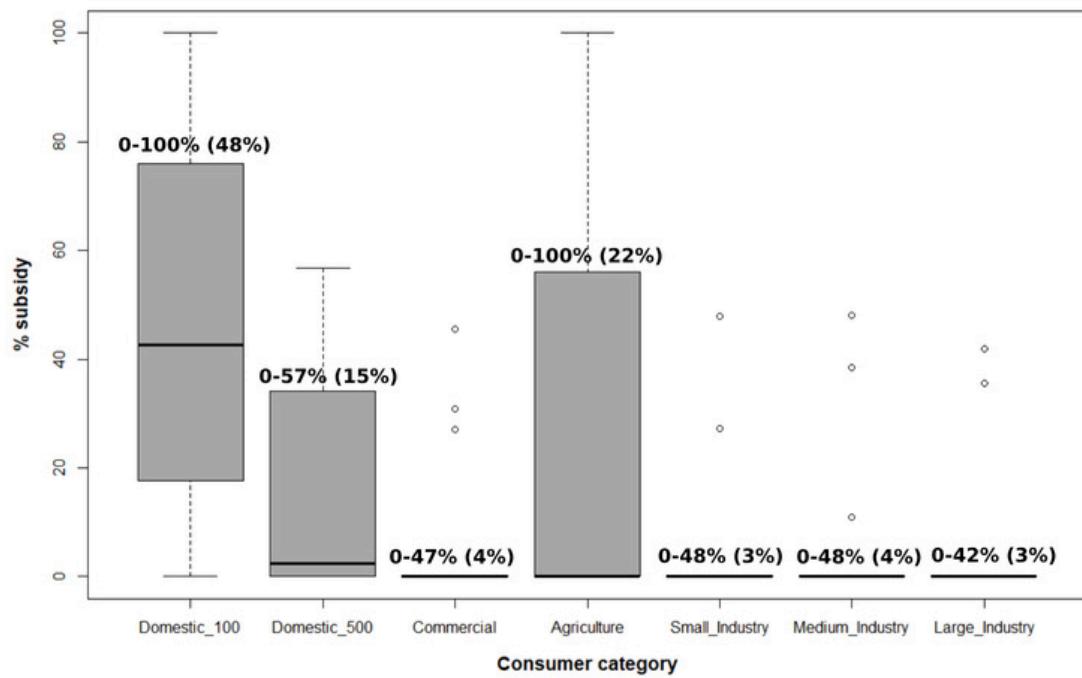


Figure 3: Consumer wise % electricity subsidy

Note: Domestic and agriculture consumers on an average gets higher subsidy compared to other consumers.



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