



NITI Aayog



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# SUPPORTING DISCOMS IN IMPLEMENTING AMENDMENTS TO ELECTRICITY ACT

INSIGHTS FROM THE DISCOM TRANSFORMATION  
PLATFORM WORKSHOP PART 1

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A NITI AAYOG, RMI INDIA AND ROCKY MOUNTAIN INSTITUTE COLLABORATIVE  
JULY 2020





## **ABOUT NITI AAYOG**

The National Institution for Transforming India, also called NITI Aayog, is the premier policy ‘Think Tank’ of the Government of India, providing both directional and policy inputs. While designing strategic and long-term policies and programs for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States. An important evolutionary change from the past, NITI Aayog acts as the quintessential platform of the Government of India to bring States to act together in national interest, and thereby fosters cooperative federalism.

## **ABOUT RMI INDIA**

RMI India is an independent nonprofit organization. RMI India takes inspiration from and collaborates with Rocky Mountain Institute, a 40-year-old non-governmental organization. RMI India’s mission is to accelerate India’s transition to a clean, prosperous and inclusive energy future.

## **ABOUT ROCKY MOUNTAIN INSTITUTE (RMI)**

Rocky Mountain Institute (RMI)—an independent nonprofit founded in 1982—transforms global energy use to create a clean, prosperous, and secure low-carbon future. It engages businesses, communities, institutions, and entrepreneurs to accelerate the adoption of market-based solutions that cost-effectively shift from fossil fuels to efficiency and renewables. RMI has offices in Basalt and Boulder, Colorado; New York City; the San Francisco Bay Area; Washington, D.C.; and Beijing.

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## ACKNOWLEDGMENTS

NITI Aayog

TERI

RAP India

AEEE

WRI

IEA

Prayas (Energy Group)

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EPIC-India

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Rocky Mountain Institute

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01

# ABOUT THIS REPORT

# ABOUT THIS REPORT

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Financially viable electricity distribution companies (DISCOMs) are essential to the future stability of India's economy. But many DISCOMs are currently suffering from a number of financial and infrastructure challenges. These challenges have persisted before the COVID-19 pandemic and many have been exacerbated by the pandemic. Lockdowns have lowered demand for electricity across all consumer groups causing significant reduction in DISCOM revenue putting even great strain on their finances. The Government of India has responded quickly with MoP issued draft amendments to the Electricity Act in April and the Prime Minister announcing a 90,000 crore liquidity boost for DISCOMs in May. The supportive measures create an enabling environment for DISCOMs to get back on track and build back to a stronger and more financially sustainable power sector.

How the sector rebounds will have far-reaching implications for many stakeholders. The new enabling conditions such as liquidity boost, amendments to the Electricity Act, and privatization of DISCOMs in the Union Territories will impact the progress towards the clean energy transition. Stakeholders of all types can adjust and adapt to these changes as stimulus and legislation is implemented and the economy recovers. Ensuring that all stakeholders are aligned and prepared to support DISCOMs' needs over the coming months and years is essential to a quick sector turnaround.

To ensure that civil society and think tanks are best prepared to support DISCOMs and to elevate and accelerate the communities' collective work, RMI and NITI Aayog convened 16 leading civil society organizations (CSOs) from across India to identify new ways to collaborate in supporting DISCOMs. The workshop was designed to create alignment and increase coordination and dialogue amongst this stakeholder group. The first workshop hosted on 11<sup>th</sup> June was the starting point for continued and expanded coordination on the Discom Transformation Platform.

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Ensuring that all stakeholders are aligned and prepared to support DISCOMs' needs over the coming months and years is essential to a quick sector turnaround

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This report offers a reflection of the discussions that took place on the 11th June 2020 e-workshop and a summary of the prioritized opportunities for CSOs and think tanks to help DISCOMs navigate the recent developments. It details the opportunities, including key insights and lessons learned, in order to leverage the complementary ongoing and new efforts across civil society and the think tank community.





# EXECUTIVE SUMMARY

This report offers a reflection of the discussions that took place at the 11th June 2020 e-workshop and a summary of the prioritized opportunities for CSOs and think tanks to help DISCOMs navigate the recent developments. Across the different group discussions and in plenary sessions, three important themes emerged through group consensus.

**Capacity building needs to be a core component of any roadmap** for smooth implementation of sector reform. Trainings are needed across all stakeholder groups including SLDCs, SERCs, DISCOMs, and within certain customer classes. CSOs and think tanks can support this by first helping stakeholders understand the benefits and subsequently providing capacity building resources to support transition planning and implementation.

**Demonstration of the tangible benefits associated with aspects of reform are required** to achieve real buy-in and sincere engagement from stakeholders. CSOs and think tanks need to go beyond studies and capacity building on the theoretical benefits and take a holistic approach to demonstrate those benefits as pilots and eventually at scale. It is critical that adequate monitoring and evaluation of such pilots be instituted to clearly distill key learnings from them.

**Increased alignment between different stakeholder groups** and within stakeholder groups emerged as a meaningful near-term opportunity. Participants identified the setting of state and centre goals and policy through more coordination and with consensus building as a major opportunity and challenge. Additionally, participants noted a need to better understand the linkage between India's macroeconomic and developmental goals and power sector reforms and policy.

Rocky Mountain Institute and NITI Aayog will work with platform participants to address issues and opportunities identified at the 11<sup>th</sup> June workshop and begin the transition towards action. The platform will continue to solicit collaboration and partnerships through subsequent workshops, insight briefs, and other engagement opportunities. The immediate actions we will take includes:

**1** A mapping exercise to identify, document, and visualize the stakeholder ecosystem as it exists today

**2** A research paper that will distill the key issues that the electricity distribution sector has been facing. The paper will further delve into what efforts have resulted in performance improvement and where and why such reforms and efforts have failed

**3** A research and pilot tracking initiative to aggregate past and ongoing projects to create increased awareness and improve the learning and scaling between peer DISCOMs

**4** Discom Transformation Platform workshop part II

03

# CONTEXT



# CONTEXT

Over the past decade the collective ecosystem of government agencies, private sector, academia, development agencies, and civil society has made good progress in advancing DISCOM operations, reducing losses, and preparing them for advanced technologies and market reform. There is an opportunity to ensure the progress and learnings of the highly diverse actors are leveraged to enable the most efficient use of resources and to create a pathway to replicate DISCOM improvement at scale across the nation as quickly and smoothly as possible.

To facilitate meaningful collaboration and coordination across the sector, NITI Aayog, RMI India, and Rocky Mountain Institute partnered to launch The DISCOM Transformation Platform. The platform encourages coordination, collaboration, and sharing of learnings and experiences across the diverse actors already engaging with DISCOMs and other stakeholders in the power sector.

The Platform operates as both a virtual information hub to host and organize the diverse set of projects, funders, schemes, and key actors engaging in decarbonization across India, and as a physical convening mechanism to assemble the stakeholder ecosystem to address critical institutional, regulatory, business, and technical barriers in a more coordinated way. The Platform is designed around three guiding pillars:



**1. INCREASE COORDINATION, COLLABORATION, AND SHARING BETWEEN KEY ACTORS**



**2. ACCUMULATE, PROMOTE, AND REPLICATE SUCCESS AT SCALE**



**3. SUPPORT DECARBONIZATION THROUGH OPERATIONAL, TECHNOLOGICAL AND BUSINESS MODEL ADVANCEMENTS**

04

# POWER SECTOR DEVELOPMENTS



# POWER SECTOR DEVELOPMENTS



## About DISCOMs

DISCOM performance and financial health remains the most challenging factor in providing better access and greening up India's grid. National average aggregate technical and commercial (AT&C) losses remains at 19.2%. Despite initial improvement in debt reduction through the UDAY scheme, DISCOM debt is set to rebound to almost the pre-UDAY level of 2.6 lakh crore INR (US\$35 billion) in 2020.<sup>1</sup>

While debt restructuring measures like UDAY and recently announced 90,000 crore INR (US\$12 billion) stimulus is meant to allow DISCOMs breathing room to undertake structural changes to turn around their performance, most efforts haven't yielded the desired results. The sector remains afflicted by issues of cross-subsidies in their tariffs, the increasing cost of power purchases, poor billing and collection efficiency, and most importantly issues of governance and on-ground political economy.

Market reform that can accelerate sector transformation remains sluggish. While electricity distribution has been unbundled in most states, privatization has only been successful in few cities like Delhi, Mumbai, Ahmedabad, Surat, and Agra. Power procurement also remains largely tied to long-term power purchase agreements (PPAs). This is despite the introduction of an active wholesale power market that has the potential to optimize their power purchase costs. Only 12% of power from 2018 to 2019 was procured through the wholesale market.<sup>2</sup>

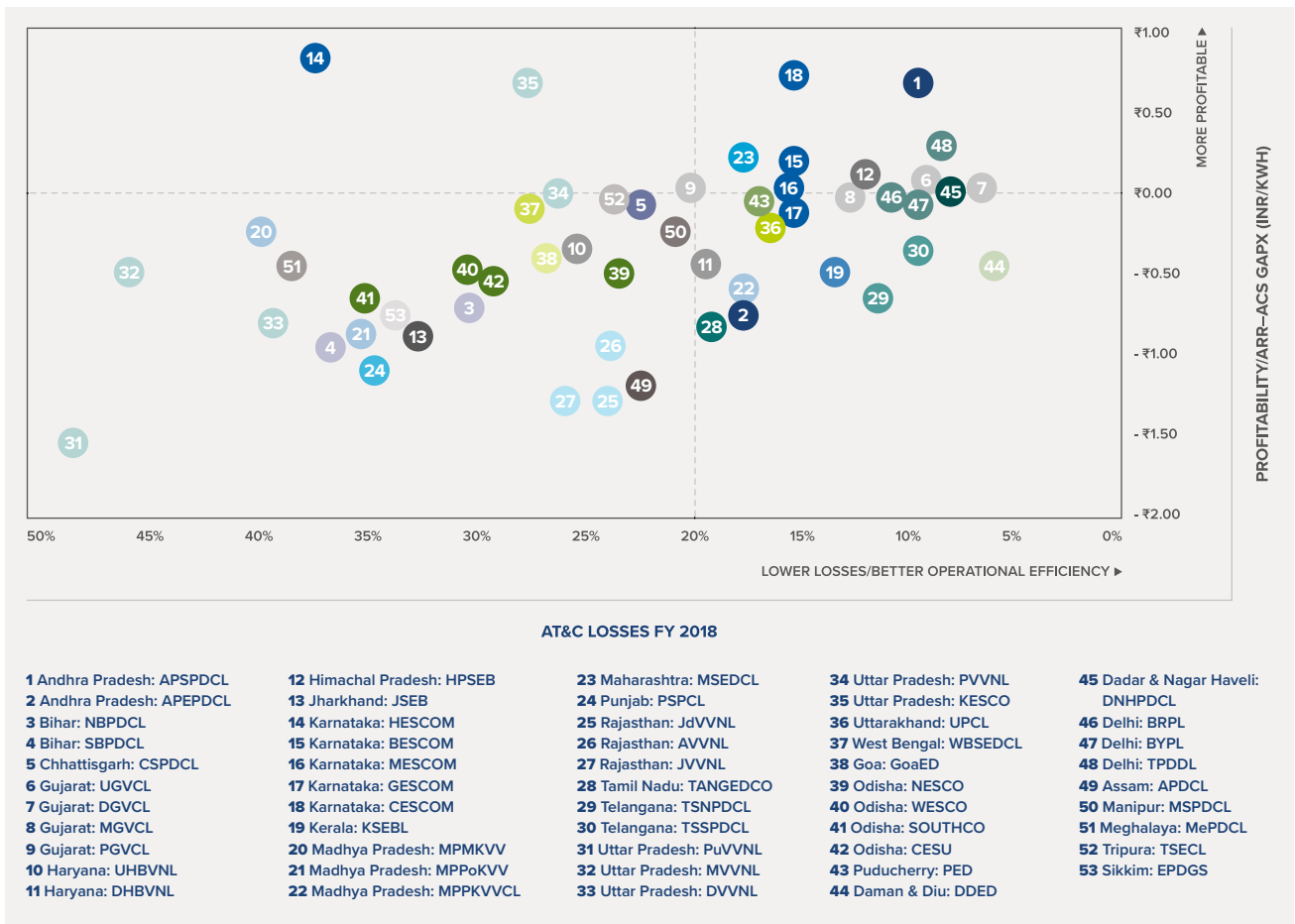
This doesn't mean that the sector hasn't seen improvement all together. Most of the private DISCOMs are operating with much reduced AT&C losses and are looking towards building a utility of the future. Some public sector DISCOMs have managed to be operationally profitable and are increasingly looking towards the benefits of a clean energy portfolio in their system.

<sup>1</sup> Square One: Discom Debt to Reach Pre-UDAY Levels This Fiscal, CRISIL Ratings, May 6, 2019. [www.crisil.com/content/dam/crisil/pr/press-release/2017/12/square-one-discom-debt-to-reach-pre-uday-levels-this-fiscal.pdf](http://www.crisil.com/content/dam/crisil/pr/press-release/2017/12/square-one-discom-debt-to-reach-pre-uday-levels-this-fiscal.pdf)

<sup>2</sup> Report on Short-term Power Market in India: 2018–19, Central Electricity Regulatory Commission. [www.cercind.gov.in/2019/market\\_monitoring/Annual%20Report%202018-19.pdf](http://www.cercind.gov.in/2019/market_monitoring/Annual%20Report%202018-19.pdf)

**FIGURE 1**

Performance map of electricity DISCOMs in India (Source: CEA, UDAY, Discom Tariff Orders)



But this improvement hasn't been uniform (Figure 1). The majority of DISCOMs remain stuck with poor financial and operational performance. This also means that the impact of and the ability to adapt to new challenges that COVID-19 and the various recent sector developments have thrown will not be the same.

There is a need for coordination to scale the lessons learned from individual DISCOM's improvement and support efforts efforts to the larger sector.

### Overview of The Electricity (Amendment) Bill, 2020

In April, the Ministry of Power introduced the Electricity (Amendment) Bill, 2020, to address issues related to generation, transmission, distribution, and trading of electricity. This represents the third set of reforms to the Electricity Act of 2003. The proposed amendments can be loosely sorted into four categories: contract and payment security, renewable generation, tariff and subsidy, and institutional reform. In Figure 2 we present a non-exhaustive overview of the proposed amendments.

**FIGURE 2**

The proposed amendments of the Electricity (Amendment) Bill

**CONTRACT + PAYMENT SECURITY**

- Establishment of Electricity Tribunal and strengthening of Appellate Tribunal for Electricity for contract enforcement
- Empower load dispatch center to oversee the payment security mechanism before scheduling dispatch of electricity; this is to be made mandatory

**RENEWABLES**

- Establish a National Renewable Energy Policy for the promotion of generation of electricity from renewable sources of energy and prescribe a minimum percentage of purchase of electricity from renewable and hydro sources of energy
- Hydro sources of energy have been recognized as renewable sources of energy. It is proposed to expand the scope of renewable power purchase obligations to include hydro sources

**TARIFF AND SUBSIDY**

- Tariff should reflect the cost of supply of electricity and cross-subsidies to be reduced
- State commissions to determine tariff for retail sale of electricity without any subsidy under section 65 of the Act

**INSTITUTIONAL**

- CERC to regulate the cross border transactions of electricity
- Non functioning SERC's duties to be discharged by other states or a joint SERC
- The Distribution licensee can recognize and authorize a person as "Distribution sublicensee" to distribute electricity on its behalf in a particular area within its area of supply, with the permission of the appropriate state commission

### The Discom Transformation Platform workshop series, part I

Over 35 participants from more than 15 organizations participated in the workshop. The participants represented critical stakeholders across the international civil society and think tank ecosystem.

Workshop participants discussed and developed near-term opportunities to support implementation of proposed amendments to the Electricity Act

#### FIGURE 3

Nearly 40 participants from 16 organizations participated in the 11<sup>th</sup> June 2020 virtual facilitated e-workshop





## PARTICIPATORY ORGANIZATIONS

NITI AAYOG	TERI	RAP INDIA	AEEE
WRI	IEA	PRAYAS (ENERGY GROUP)	CSTEP
CPI	EPIC-INDIA	CENTRAL UNIVERSITY OF JHARKHAND	FLORENCE SCHOOL OF REGULATION
CSIS	CEEW	ROCKY MOUNTAIN INSTITUTE	RMI INDIA



The remaining sections of this report offer a summary of the two breakout sessions held at the event. In breakout session one, participants were divided into five groups, each group discussed the same prompt. “To enable successful implementation of amendments to the Act, what three things do you think need to happen to ensure all stakeholder groups benefit?” In the second breakout session, participants were divided

into four groups to discuss specific opportunities for civil society and think tanks to support different thematic components of the Discom Transformation Platform. During breakout sessions participants were guided through a facilitated discussion by RMI facilitators who supported the development of report templates that were shared back to the full group at the end each breakout session.



# NEAR-TERM OPPORTUNITIES TO SUPPORT IMPLEMENTATION OF AMENDMENTS TO ELECTRICITY ACT

Workshop participants discussed and developed near-term opportunities to support implementation of proposed amendments to the Electricity Act. In breakout groups, participants also identified the elements of the amendments that are most relevant to the opportunities identified. Table 1 presents the top opportunities discussed during the workshop.



## Opportunities to support DISCOMs

**TABLE 1**

Summary of opportunities identified by working group participants

OPPORTUNITIES	DETAILS	AMENDMENT ELEMENTS
<p><b>UNDERSTANDING POLICY IMPACTS</b></p>	<ul style="list-style-type: none"> <li>Identify different implications for different stake-holders and create a conduit of conversation to begin a path forward together; help states and DISCOMs understand the near-term challenges and long-term benefits of the proposed amendments</li> <li>Support pilot program design and implementation to demonstrate optimal benefits</li> <li>Partner with DISCOMs to design the monitoring and verification mechanisms to review pilots and scale them if successful</li> </ul>	<p>Tariffs and subsidy, new business models, institutional, renewables</p>
<p><b>IDENTIFYING MACROECONOMIC + DEVELOPMENT BENEFITS</b></p>	<ul style="list-style-type: none"> <li>Begin linking India’s macroeconomic objectives and specific power sector reforms and encourage greater proactive alignment between them</li> <li>Identify points of complementarity and points of complication between socio-economic development goals and DISCOM reform (e.g., DBT and cost reflective tariffs, etc.)</li> </ul>	<p>Tariffs and subsidy, new business models, institutional, renewables</p>

Continued >

OPPORTUNITIES	DETAILS	AMENDMENT ELEMENTS
<b>ARTICULATING THE BENEFITS</b>	<ul style="list-style-type: none"> <li>Identify value of flexible generation and bring in knowledge-base from private sector to develop implementation plans focused on operational efficiency</li> <li>Support DISCOMs in understanding specific long-term revenue and cost recovery benefits associated with different aspects of the act</li> <li>Identify near-term opportunities to maximize cost savings and distribute risk across stakeholders (e.g., private sector, Centre, State, customers)</li> </ul>	Renewables, tariffs and subsidy
<b>CAPACITY BUILDING AND TRAININGS</b>	<ul style="list-style-type: none"> <li>Work with DISCOMs operational, planning, and procurement departments to train them on how to maximize benefits of real-time markets</li> <li>Continue engagement to support implementation of policies that help DISCOMs improve power procurement practices and reduce power costs</li> </ul>	RTM
<b>PILOT IMPLEMENTATION OF DIRECT BENEFIT TRANSFER (DBT)</b>	<ul style="list-style-type: none"> <li>Develop a roadmap that proposes details of how subsidies will be transferred directly to intended consumers and describe the phasing of such a transition</li> <li>Understand specific challenges and implications for agricultural and industrial consumer mix and begin to address state-specific issues</li> <li>Acknowledge and plan for political implications if there are delays in transfer</li> <li>Monitor and evaluate resulting pilots</li> </ul>	Tariff and subsidy
<b>DESIGNING COST-REFLECTIVE TARIFFS</b>	<ul style="list-style-type: none"> <li>Provide technical assistance and guidance to DISCOMs, SERCs, and other relevant agencies in determining new electricity tariffs that are both cost reflective and incorporate greater use of time-dependent characteristics</li> </ul>	Tariff and subsidy

Continued >

OPPORTUNITIES	DETAILS	AMENDMENT ELEMENTS
<b>WHOLE-SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>• Work with MoP and Centre to bring more clarity to the implementation of the NREP specifically around separate obligations for each state</li> <li>• Provide thorough and comprehensive consultation to states to inform NREP obligations</li> <li>• Work with relevant agencies to encourage NREP to include space and opportunity for innovative/ disruptive new technologies</li> <li>• Encourage inclusion of all types of DERs to meet state obligations; consider including storage component in NREP</li> <li>• Bring a focus on “climate-resilient grid infrastructure” into conversation around system planning and procurement</li> </ul>	Renewables
<b>DATA + TRANSPARENCY</b>	<ul style="list-style-type: none"> <li>• Map activities of peers for better resource utilization and leverage complementary aspects of different efforts</li> <li>• Develop a knowledge sharing platform/portal that can be used by all stakeholders as a “one-stop shop” to understand activities, priorities, and opportunities to collaborate</li> </ul>	Tariffs and subsidy, new business models, institutional, renewables
<b>PLANNING FOR THE RIGHT FUTURE DEMAND PROFILES</b>	<ul style="list-style-type: none"> <li>• Provide technical assistance and capacity building for load forecasts so DISCOMs can begin to optimize the types of contracts that are best matched to their medium- and long-term operational needs (e.g., LT peak, base, hybrid RTC, etc.)</li> </ul>	
<b>INTEGRATION + IMPLEMENTATION PLATFORM</b>	<ul style="list-style-type: none"> <li>• Create a platform for stakeholders of all types to come together to addresses near-term implementation barriers</li> </ul>	

## Key learnings

Each working group generated a diverse set of opportunities that collectively touched on all aspects of recent developments in the sector. Across the different group discussion and in the plenary, three important themes emerged through group consensus.

## Capacity building

The first step to creating a shared understanding of the long-term benefits associated with reform require stakeholders to understand how their organization or department will be specifically impacted by the proposed reforms, both immediately and long-term. Capacity building needs to be a core component of any roadmap for smooth implementation of sector reform. Trainings are needed across all stakeholder groups including SLDCs, SERCs, DISCOMs, and within certain customer classes. CSOs and think tanks can support in first helping stakeholders understand the benefits and subsequently providing capacity-building resources to support transition planning and implementation.

Across working groups in the workshop there was resonance that capacity-building efforts should be designed to educate and train at all levels of DISCOM staff. This includes leadership/MD positions to support strategic long-term vision setting and system planning, operations to understand near-term practical implications and longer-term planning requirements, and customer engagement/customer education to encourage participation in new tariffs and new customer facing programs.

## Local piloting

Demonstration of the tangible benefits associated with aspects of reform are required to achieve real buy-in and sincere engagement from stakeholders. CSOs and think tanks need to go beyond studies and capacity building on the theoretical benefits and take



a holistic approach to demonstrate those benefits as pilots and eventually at scale. Pilot projects and pilot programs are beneficial across the entire value chain and should be designed to clearly test and demonstrate benefits availed to specific stakeholder groups. Pilots should be designed with a focus on documentation, verification, and a clear path for dissemination and scaling. Further adequate monitoring and evaluation of such pilots need to be instituted to clearly distill key learnings from them.

## Alignment

Multiple groups noted the opportunity to increase alignment between different stakeholder groups and within stakeholder groups. Participants identified the setting of State and Centre goals and policy through more coordination and with consensus building as both a major opportunity and challenge. Additionally, participants noted a need to better understand the linkages between India's macroeconomic and developmental goals and power sector reforms and policy.

Specifically, an opportunity exists to focus on the complementary aspects of power sector reform and macroeconomic development goals by identifying areas where increased use of productive energy and power reliability improvements can support economic growth in medium and small enterprises.



# OPPORTUNITIES FOR THINK TANKS, CSOs TO SUPPORT DISCOMs

After discussing broad opportunities to support implementation, the participants were organized into multistakeholder working groups around the four thematic areas identified through the pre-workshop needs assessment survey.

**FIGURE 4**

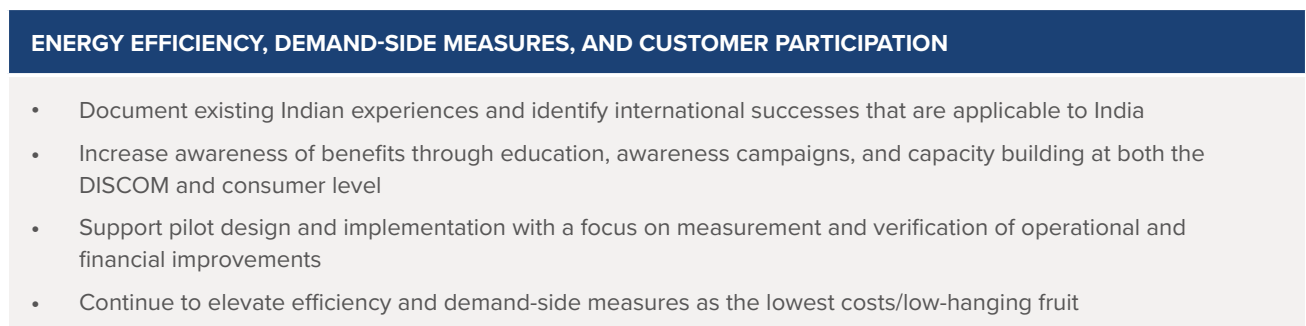
The four multi-stakeholder working groups



In breakout groups, participants discussed the specific opportunities that exist for CSOs and think tanks to support DISCOMs in their respective thematic area. The participants identified the areas where collaboration, coordination, and alignment were critical to the success of the opportunity.

**FIGURE 5**

Summary of proposed actions by thematic area





## NEW BUSINESS MODELS, WHOLESALE MARKETS, OPERATIONAL CHANGES

- Organize a convening of stakeholders to encourage a transformative perspective on possible new business models
- Identify a few innovative business models that can be piloted at various DISCOMs with sustained support from design to documentation and scaling phases
- Continue to capitalize on the availability of blended finance to de-risk some experimental pilots that will allow some “out-of-the-box” thinking around new business models
- Conduct capacity building that supports stakeholders in navigating the transition from long-term PPAs to a liquid wholesale market. It should also take a longer-term perspective on integrated system planning to make use of real-time markets
- Establish ways to engage the consumer in the discussions around new tariffs and consumer new business models to bridge the central—end consumer disconnect and ensure programs are designed with the consumer in mind

## RENEWABLE GENERATION AND SYSTEM INTEGRATION

- Aggregate data, lesson learned, successes, and operational best practices from past and on-going projects and make use of evidence-based success stories to duplicate successes and avoid recreating pilots when solution scaling is appropriate
- Identify and articulate concise benefits and the business case for renewables to DISCOMs and their customers
- Continue to remove procedural barriers and create instruments for transparent trading to enable better use of markets and power trading
- Conduct capacity building with DISCOMs, state load dispatch centers, and state electric regulatory commissions to increase the use and effectiveness of integrated resource planning
- Bring GENCOs, TRANSCOs, DISCOMs, and Nodal Agencies together for improved coordination and planning at the system level and create an integrated plan to implement the National Renewable Energy Policy
- Consider and elevate the importance of contract enforcement and payment security across all future work with stakeholders

## ENERGY STORAGE

- Identify and evaluate opportunities to use small behind the meter storage systems to bridge the reliability gap for the 26 million new connections made under the Saubhagya scheme
- Continue to explore cost effective use cases to replace diesel backup systems in large-scale data centers and other industrial applications where reliability is very valuable/costly
- Support CERC and DISCOMs to plan for and implement a comprehensive ancillary service market that offers accurate compensation for high-performing energy storage systems
- First optimize generation, transmission, and demand flexibility to minimize the need for energy storage and then identify areas where storage is necessary and cost-effective

## Energy efficiency, demand side measures, and customer participation (EE, DSM, CP)

### Key takeaways and insights from the working group

Working group participants generated a list of opportunities to ensure successful deployment of EE, DSM, and increased customer participation. The following list provides a summary of the opportunities discussed:

1. Assist in addressing the knowledge gap around the DISCOM and consumer-facing benefits of energy efficiency and demand-side measures. Stakeholders of various types are currently not aware of the full set of benefits that these measures can provide. CSOs and think tanks can work with DISCOMs to quantify the benefits and identify the highest, medium, and lowest impact opportunities for developing EE and DSM utility programs.
2. Partner with consumer advocacy groups to ensure effective participation of communities by educating each consumer group on the benefits of EE and DSM.
3. Partner with DISCOMs to design pilot programs centered around the business case for DISCOMs. Extend support beyond the design phase and provide sustained engagement through the implementation, monitoring and verification, documentation, and program scale up.
4. Work with policy and regulatory stakeholders to ensure new policy or reforms are aligned with the most impactful and lowest-cost measures.
5. Support the use of demand-side aggregation and address current barriers to aggregated participation in markets and utility programs to allow greater private sector participation in new business models.

## Areas where collaboration or coordination is most important

- Conduct a mapping exercise that documents ongoing activities of peer organizations for better resource utilization and cross-learnings.
- Develop, populate, and use a knowledge portal as a one-stop shop for resource sharing best practices, successes, tools, and resources.
- Maintain continuity of our efforts through partner engagements and discussion forums that are organized around local participation.
- Collaborate to develop insight briefs that explore the multidimensional understanding of various barriers and potential solutions to accelerate adoption of known technology.



### IMMEDIATE OPPORTUNITY FOR ACTION

Participants identified an immediate need to increase the level of coordination and engagement between CSOs and think tanks to minimize duplication of efforts and best align organizational strengths. The group discussed the near-term opportunity to conduct a joint mapping exercise to generate an overview of existing activities, programs, and tools. Several organizations will be collaborating to develop the ecosystem map to be hosted on the Discom Transformation Platform knowledge hub.

## New business models, wholesale markets, operational changes

### Key takeaways and insights from the working group

Working group participants generated a list of opportunities to encourage the use of wholesale markets, make use of new business models, and support DISCOM operational changes. The following list provides a summary of the opportunities discussed:

1. Conduct rigorous technical and economic evaluation of several innovative and distinct business models that span privatization, PPP, and separation of content and carriage.
2. Work with DISCOMs to leverage saving opportunities through significantly increased market participation by educating key decision makers on benefits. In parallel, DISCOMs will need support in restructuring existing long-term PPAs and help in navigating the transition to increased use of market signals for long-term integrated planning.
3. Work with DISCOMs, customers, and government to develop a roadmap to tariff reform that addresses the need for subsidy and identifies the steps required to implement a successful transition to Direct Benefit Transfer.
4. Over the coming years conduct impact evaluations, access pilot successes and failures, and conduct course corrections as necessary to ensure the gradual transformation of the sector is informed by learnings along the way. Create feedback loops between pilots, scaling, and new policy or regulatory reform.

### Areas where collaboration or coordination is most important

Working group participants identified a strong need to better align the ongoing work across the different states and DISCOMs. To avoid replication and ensure effective communication, the community should

develop a mechanism to increase knowledge sharing through data hosting, convenings, and more collaboration on joint funding opportunities.

Participants noted the importance of making use of such a platform and the challenges that have arisen in past efforts. Having NITI Aayog and Ministry of Power as central partners on the coordination platforms has been highly successful in the path and should continue to be leveraged.



### IMMEDIATE OPPORTUNITY FOR ACTION

The community of civil society and think tanks need to formalize the approach to collaborating, sharing, partnering, and learning from peers. The Discom Transformation Platform was identified as a starting platform to begin this work. NITI Aayog and RMI will be taking feedback from the working group and incorporating it into the platform design.

## Renewable generation

### Key takeaways and insights from the working group

The working group participants discussed the near-term opportunities to ensure successful deployment of renewable generation and optimized system integration. The following list provides a summary of the opportunities discussed:

1. Build platforms to bring in think tanks and civil societies to engage and coordinate with different state regulators and nodal agencies in planning for meeting government renewable generation targets. Consider the state-specific financial and operational implications of planning for and

implementing the National Renewable Energy Policy and support DISCOMs in developing a long-term planning strategy.

2. Conduct Discom-specific analysis to identify and quantify the benefits of distributed energy resources on their network and work with them to develop programs that enable better revenue recovery.
3. Support DISCOMs with specification and compliance with RPOs.
4. Work across stakeholder groups to maintain the sanctity of contracts while creating a transition plan to move from reliance on long-term PPAs to increased market participation.
5. Continue to support and advocate for supportive policy that puts all stakeholders on a path towards increased renewable deployment.
6. Enhance the capacity of DISCOMs, SLDCs, SERCs, and other nodal agencies to make use of international best practices for integrated system planning and increased market participation.
7. Continue to support CERC and others in developing new frameworks and markets that will enhance interstate power transfer.

**Areas where collaboration or coordination is most important**

- Coordination across states and between states and central agencies such that targets, policies, and roadmaps are consistent in timeframe and ambition and reflective of state-specific considerations. This is particularly important for integrated resource planning at the transmission and generation level.
- Consistency and alignment on capacity building and policy guidance to State, Centre, and nodal agencies to encourage convergence towards a shared set of desired outcomes.



**IMMEDIATE OPPORTUNITY FOR ACTION**

- Prioritize sharing of data and information on pilot programs, policy advisory, and other areas of DISCOM support to leverage existing work and avoid duplicity of efforts. Identify the areas where CSOs and think tanks have shared goals and map the different approaches for policy advisory and technical support to maximize complementary components of the community’s efforts.
- Develop a consortium of civil societies, think tanks, and policy advisors or create cross-functional working groups that engage staff from different CSOs and think tanks.



## Energy storage

### Key takeaways and insights from the working group

The working group participants discussed the near-term opportunities to ensure successful deployment of energy storage. The following list provides a summary of the opportunities discussed:

1. Understanding the role of electric vehicles in both providing possible grid flexibility or requiring additional system upgrades (including storage) to manage peak charging requirements. Civil society can work with DISCOMs to build awareness of opportunities and challenges related to EVs and energy storage and help them prepare for integration planning on the system.
2. Creating the right market frameworks and sending the appropriate price signals to encourage a diversity of use cases for energy storage that is inclusive of transmission, distribution, and behind-the-meter connected storage systems.
3. Conducting battery storage pilots in rural households to provide reliability services for both domestic and commercial applications and identifying use cases that are economic today and can save DISCOMs network upgrade costs and enable greater willingness or capacity to pay for more reliable service.
4. Supporting the planning, development, and implementation of ancillary service markets and working with DISCOMs in parallel to ensure they are well prepared to maximize cost savings and performance-improving benefits of the new market framework.
5. Increase the engagement of customer/end user in the deployment of small scale behind-the-meter storage.



6. Evaluate the techno-economic feasibility of inter-state trading based on differentiated demand profiles (daily and seasonal).
7. Develop a program to accelerate the transition from diesel backup to solar plus storage or storage-only backup for key commercial and industrial customers.

### Areas where collaboration or coordination is most important

Designing pilots and demonstration projects that show DISCOMs specific benefits and how they can capture those benefits. Coordination between CSOs, bilaterals, consultancies, and DISCOMs is required to ensure testing and sharing of different applications between DISCOMs and minimizing duplication of demonstrations. CSO and think tanks can play a central role in aggregating and disseminating learnings and supporting the design of new additive pilot programs and the creation of capacity-building programs to scale pilot learnings to other DISCOMs.

# RECOMMENDED NEAR-TERM STAKEHOLDER ACTIONS



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## CIVIL SOCIETY AND THINK TANKS

- Leverage collective convening power to bring together the stakeholder ecosystem to create broader alignment of efforts.
- Develop a coordinated strategy to provide a wide range of complementary but distinct pilot and demonstration projects with various DISCOMs.



## PHILANTHROPY

- Leverage private sector interest in project finance through blended finance to enable early risk piloting of new business models with a few DISCOMs.
- Encourage complementary strategy development across civil society by incentivizing collaboration and coordination between grant recipients.



## DISCOMS

- Collaborate with civil society and think tanks to quickly assess state-specific implications of sector developments and work with relevant agencies to identify major issues and opportunities.
- Embrace early opportunities to increase use of wholesale markets, tariff reform, and supportive policy for clean energy portfolios.
- Partner with private sector and civil society to conduct joint venture exploratory pilots with rapid testing cycles and clearly defined scaling paths.



## MULTI- AND BILATERAL AGENCIES

- Help DISCOMs scale and adapt to new challenges and sector reform through focused technical assistance funding, in tandem with efforts from the think tank community.
- Identify and channel financing for key technologies and business model transitions through development policy financing as well as more focused project financing.

# MOVING FORWARD TOGETHER





# MOVING FORWARD TOGETHER



The Discom Transformation Platform is an initiative designed to elevate the impact of complementary efforts across the diverse stakeholder ecosystem and adapt to the evolving needs of DISCOMs. The platform aims to provide a transparent space for collaborative discussion and collective action. Rocky Mountain Institute is committed to creating an impactful and dynamic platform through close collaboration with all stakeholder groups over the coming years.

Rocky Mountain Institute and NITI Aayog will work with platform participants to address issues and opportunities identified at the 11<sup>th</sup> June workshop and begin the transition towards action. The platform will continue to solicit collaboration and partnerships through subsequent workshops, insight briefs, and other engagement opportunities. The immediate actions we will take include:

- A mapping exercise to identify, document, and visualize the stakeholder ecosystem as it exists today. The exercise will focus on elevating the organizational efforts, approaches, and priorities of organizations and agencies across the ecosystem. The initial phase of mapping will include civil society and think tanks that share

the mission to support DISCOMs and enable deployment of clean energy portfolios. The scope of mapping will be expanded in subsequent phases.

- A research paper that distills the key issues that the electricity distribution sector has been facing. The paper will further delve into what efforts have resulted in performance improvement and where and why such reforms and efforts have failed. Further, it will provide potential solutions to address underlying structural challenges to the sector's improvement.
- A research and pilot tracking initiative to aggregate past and ongoing projects to create increased awareness and improve the learning and scaling between peer DISCOMs.
- Discom Transformation Platform Workshop Part 2.

Together we can leverage our complementary efforts to address critical institutional, regulatory, business, and technical barriers to support DISCOMs and accelerate clean energy portfolios. The RMI team has an open-door policy and welcomes ideas and opportunities to collaborate.



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**NITI Aayog**

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