

---

***Synergies between DSM  
and ongoing electricity  
reforms in India***

Utility CEO Forum on  
Demand Side Management

Tenth meeting

Discussion Paper

April 2016

---

# *Table of Contents*

<b>1. Role and significance of DSM in India’s Electricity, Energy Conservation and Climate Change reforms .....</b>	<b>3</b>
1.1. Ujwal DISCOM Assurance Yojana (UDAY) .....	3
1.2. National Tariff Policy (NTP) .....	5
1.3. Electricity Amendment Bill 2014 .....	6
1.4. National Renewable Energy Act (Draft) .....	7
1.5. Perform, Achieve and Trade (PAT) .....	7
1.6. Intended Nationally Determined Contribution (INDC) .....	8
<b>2. A case for strengthening the DSM policy framework in India .....</b>	<b>9</b>
<b>3. Policy Pathway .....</b>	<b>12</b>

---

# ***Abstract***

The promise of Utility driven Demand Side Management (DSM) in India includes effective management of electricity deficit, rising power supply costs, rising energy subsidy burden, environmental degradation and energy security concerns, all of which are indispensable problems faced by Indian electricity distribution utilities (also referred as 'DISCOMs' in this document), state governments and society as whole in the foreseeable future.

In fact, the major ongoing and envisaged electricity reforms (viz. Ujwal DISCOM Assurance Yojana, National Tariff Policy Amendments 2016, Electricity Amendment Bill 2014, Draft National Renewable Energy Act 2015 and Power for All), energy conservation reforms (viz. Perform Achieve and Trade) and climate change reforms (viz. India's INDC commitments for COP21 in Paris) also endeavor to overcome the same underlying bottlenecks persisting in the road ahead for sustainable development.

This discussion paper attempts to reinforce the role and significance of DSM in India's electricity, energy conservation and climate change reforms. The paper highlights important synergies between DSM and above mentioned reforms to emphasize how DSM can help accelerate these reforms. The paper also identifies critical policy gaps and concludes with a policy pathway necessary to strengthen the DSM policy framework in India and supplement the ongoing / envisioned reforms with effective demand side strategies that are crucial to achieve the sustainable developmental goals of both state and central governments.

# 1. Role and significance of DSM in India's Electricity, Energy Conservation and Climate Change reforms

## 1.1. Ujwal DISCOM Assurance Yojana (UDAY)

UDAY, launched in November 2015, aims to provide for the financial turnaround and revival of electricity distribution companies (DISCOMs), which are perceived as the weakest link in achieving the power sector developmental goals such as 24\*7 Power for All. UDAY is the most comprehensive upgrade of the Financial Restructuring Plan formulated by the government of India to provide a permanent resolution of the past as well as potential future issues of the power sector under four broad initiatives:

- i. **Improving operational efficiencies of DISCOMs**
- ii. Reduction of cost of power purchase
- iii. Reduction in interest cost of DISCOMs
- iv. Enforcing financial discipline on DISCOMs through alignment with State finances

UDAY is operationalized through a tri-partite agreement amongst the Ministry of Power, Govt. of India, State Government and the DISCOM. Adopting UDAY is optional for States.

### *Salient features of UDAY for improving operational efficiencies of DISCOMs*

<b>Activity</b>	<b>Targeted Benefit</b>
Compulsory feeder and distribution transformer (DT) metering by States	Ability to track losses at the feeder and DT level for corrective action
Consumer Indexing & GIS mapping of losses	Identification of loss making areas for corrective action
Upgrade or change transformer, meters etc.	Reduced technical losses and minimized outages
<i>Smart Metering of all consumers consuming above 200 Units per month</i>	<i>Reduced commercial losses; Enable effective implementation and evaluation of DSM measures</i>
<i>Demand Side Management (LED bulbs, agriculture pump sets, fans, air conditioners, industrial equipment through PAT)</i>	<i>Reduced peak load and energy consumption</i>
Quarterly Tariff revision, Particularly to offset fuel price increase, to be permitted	Reduced burden of rising power costs on DISCOMs
Assure increased power supply in areas of reduced AT & C Losses	Improved collection efficiency

*DSM is as an important strategy envisaged to improve the operational efficiencies of DISCOMs under UDAY.*

### *Efficiency improvement benefits envisaged from DSM activities under UDAY*

<b>DSM activity</b>	<b>Benefit</b>
LED bulbs: 77 crore bulbs & 3.5 crore streetlights	45000

Agricultural pumps –1 crore	12000
Fans & Air-conditioners –16 cr. Fans & 18 lakh A/Cs	1500
<b>Total</b>	<b>58500</b>

Source: Ministry of Power, 2015

*Scaling up DSM measures is expected to provide INR 58,500 crore benefit to DISCOMs by way of operational efficiency improvement under UDAY.*

### Overall benefits envisaged from UDAY

Activity	Performance Milestone	Envisaged Benefit (INR crores)
Interest Rate Reduction	3% on 25% DISCOM debt	17,000
	4% on 75% DISCOM debt	
Debt takeover by State	8% on 75% DISCOM debt	27,000
AT&C loss reduction	Reduce to 15%	33,000
Supply of domestic coal and coal swapping		36,000
<b>DSM</b>		<b>58,500</b>
PAT		7,600
Transmission Loss Reduction	1% of Intra State	1,600
<b>Total</b>		<b>1,80,700</b>

Source: Ministry of Power, 2015

*DSM contributes the largest component of benefits to DISCOMs among all the initiatives formulated under UDAY.*

### Key performance milestones and conditions under UDAY

- AT&C loss reduction by FY 2018-19 – 15% for States with AT&C loss > 20% in the current scenario; 10% for remaining States
- Elimination of ACS- ARR gap by FY 2018-19
- DISCOMs to comply with the Renewable Purchase Obligation (RPO) outstanding since 1st April, 2012, within a period to be decided in consultation with MoP
- Working capital will only be allowed up to 25% of the DISCOM's previous year's annual revenue

### Incentives for DISCOMs and state governments operationalizing UDAY and meeting the agreed performance milestones

- Additional / priority funding through DDUGJY, IPDS, Power System Development Fund (PSDF) or other such schemes of MoP and MNRE
- Additional coal at notified prices and in case of availability through higher capacity utilization, low cost power from NTPC and other Central Public Sector Undertakings (CPSUs)
- States not meeting operational milestones will be liable to forfeit their claim on IPDS and DDUGJY grants.

*Given that DSM is expected to serve the largest pie of benefits under UDAY, there is a need to set clear DSM performance milestones so that the participating DISCOMs adopt DSM as an important strategy in achieving the operational efficiency goals envisaged under UDAY. The*

*DSM performance milestones should be set in the form of quantum of energy savings and/or peak demand reduction with a robust mechanism for monitoring and verification.*

*Furthermore, there is a need to review the incentive mechanism proposed under UDAY to adequately compensate the DISCOMs for scaling up DSM activities.*

## 1.2. National Tariff Policy (NTP)

In January 2016, the govt. of India made significant amendments to the principal NTP ratified in 2006. A holistic view of the power sector has been taken and comprehensive amendments made to achieve the objectives of major electricity reforms (Eg: UDAY, Electricity Amendment Bill 2014). The following table highlights the key amendments ratified under the four broad objectives of NTP amendments 2016 and further underscores how DSM can help in achieving specific objectives.

Objective	Highlights of key amendments ratified in January 2016	How DSM can help achieve specific objectives
Electricity for all	<ul style="list-style-type: none"> <li>24*7 power for all</li> <li>Remote village electrification through micro grids</li> <li>Affordable power from coal washery reject based plants</li> </ul>	<ul style="list-style-type: none"> <li>Energy savings and peak load management resulting from DSM are important resources for achieving '24*7 power for all' goal</li> <li>Approx. 18% of the end use energy requirement in the country can be supplied through DSM (current energy deficit – 4%)</li> </ul>
Efficiency to ensure affordable tariffs	<ul style="list-style-type: none"> <li>Smart meters to enable time of day tariffs, reduce theft and allow net-metering</li> <li>Reduce cost of power through expansion of existing power plants, transmission capacity and sale of un-requisitioned power</li> </ul>	<ul style="list-style-type: none"> <li>DSM measures enable consumers to realize time of day tariff incentives thereby improving efficiency</li> <li>DSM enables optimization of power resource costs for Utilities - energy savings generally cheaper as compared to energy supply<sup>1</sup></li> </ul>
Environment for a sustainable future	<ul style="list-style-type: none"> <li>Renewable Power Obligation (RPO) - 8% of electricity consumption from solar energy by March 2022</li> <li>Renewable Generation Obligation (RGO)</li> <li>Affordable renewable power through bundling of power</li> <li>No inter-State transmission charges for solar and wind power</li> <li>Procurement of 100% power produced from Waste-to-Energy plants</li> <li>Promotion of Hydro projects</li> <li>Ancillary services to manage grid operation</li> </ul>	<ul style="list-style-type: none"> <li>DSM results in avoided / delayed generation, transmission, and distribution capacity addition and therefore is a clean and sustainable energy resource<sup>2</sup></li> <li>DSM actions directly contribute to India's INDC commitments</li> </ul>
Ease of doing business to attract investments and ensure financial viability	<ul style="list-style-type: none"> <li>Allowing pass through of changes in domestic duties, levies, cess and taxes in competitive bid projects.</li> <li>CERC to determine tariff for composite schemes where more than 10% power sold outside State.</li> </ul>	<ul style="list-style-type: none"> <li>DSM Regulations allow pass through of DSM related technology, finance, promotion and administrative costs</li> <li>DSM investment potential unlocked – INR 1.6 lakh crores</li> </ul>

<sup>1</sup> Eg: UJALA Standard offer programs – Utilities purchased energy savings from EESL at INR 0.8 per unit  
UJALA On-bill programs - Utilities purchased energy savings from EESL at zero cost

<sup>2</sup> Eg: 26,821 tons of CO<sub>2</sub> Reduction per day as a result of over 9 crore LED bulbs distributed under UJALA

*Promotion of renewable generation sources is clearly one of the main focus of the NTP amendments. There is no similar explicit advocacy for demand side resources<sup>3</sup>. Also, it is not clear whether demand side resources implicitly qualify as renewable resource under this Policy.*

*'Faster deployment of smart meters to enable TOD tariff' provides a significant policy thrust to capture and scale up innovative demand response markets. The electricity regulatory commissions must leverage this to strengthen the DSM regulations, enforce smart meter installations and promote demand response initiatives.*

*EESL's DELP has proven that the demand side resources can be purchased / delivered cost effectively at rates substantially lower than the average costs of power supply incurred by many Utilities across the country. In this regard, there is a need to review the NTP for recognizing demand side management as an important strategy for reducing the cost of power.*

*On the sustainability front, there is a need to review NTP for promoting 'demand side resource purchase obligations' just as 'renewable purchase obligations' within the principles of equity, reliability and cost effectiveness. This will also lay the groundwork for 'Integrated Resource Planning' by the Utilities.*

### **1.3. Electricity Amendment Bill 2014**

The Electricity Act 2003 is a consolidated legal framework for generation, transmission, distribution, trading and consumption of electricity in India. The Act is aimed at promoting efficient and environmentally benign policies across the value chain of electricity by adhering to market-based mechanisms. While several provisions<sup>4</sup> in the Act call for efficiency and economical use of resources, DSM can only qualify as an implicit alternative for Utilities in achieving these objectives.

*There are no provisions in the Electricity Act 2003 that explicitly provides 'DSM' as alternative resource option for distribution licensees in their planning for meeting the forecasted peak power and energy demand. The emphasis on DSM as 'alternative resource' can allow it to compete directly with supply side options within the principles of equity, reliability and cost effectiveness.*

The Electricity (Amendment) Bill, 2014 was introduced in the Indian parliament in December 2014 seeking to amend the principal Electricity Act, 2003. This is a crucial exercise with far reaching and long term implications. It also provides an opportunity to change the course of the policy direction and address the critical issues currently faced by the sector.

'Separation of Carriage (wires) and Content (supply)' is an important strategy focused in the bill to promote operational efficiency improvement and competition. The bill envisages a separate 'Supply licensee', who will supply electricity to consumers and the 'Distribution licensee' will maintain the distribution network and enable the supply of electricity for the supply licensee.

<sup>3</sup> means a saving in consumption (kWh) and/or demand (kW/KVA) available as a result of implementation of DSM program, to be expressed in the following three important dimensions:

- Quantum – as to how much is available (kWh and/or kW)
- Time – as to when is it available (at what time of day, on what days, in what season)
- Cost – as at what would be the cost

<sup>4</sup> Section 42 (1), 62 (D), 61 (C), 61(D), 86 (2.1), 86 (4),

*DSM will have a streamlined role in enhancing operational efficiency of Supply licensees envisaged in the Electricity Amendment Bill 2014.*

Maintenance of grid security is also focused in the bill, especially given that the share of intermittent generation resources (Eg: solar, wind etc.) is expected to increase in the foreseeable future. For this purpose, the bill proposes to introduce ancillary services<sup>5</sup> and create a market for the same.

*Worldwide experience has shown that demand side measures such as ‘demand response’ enabled by smart grid technologies are increasingly adopted as ancillary service to supply low cost reliability products to the bulk electricity system especially when the penetration of intermittent generation sources are high.*

Decentralised distributed generation is another key strategy promoted in the bill to reduce losses in a sustainable manner by promoting renewable sources of energy.

Energy savings resulting from DSM programs and related activities is both decentralised and distributed virtual generation of electricity. The DSM market *potential* in India is currently 178 billion units of energy savings per annum.

## **1.4. National Renewable Energy Act (Draft)**

The draft ‘National Renewable Energy Act (RE Act)’, published by MNRE (Ministry of New and Renewable Energy) in early 2015, seeks to promote the production of energy through the use of renewable energy sources in accordance with climate, environment and macroeconomic considerations that reduce dependence on fossil fuels, ensure security of energy supply, reduce CO<sub>2</sub> and other greenhouse gas emissions.

For the first time in India’s energy policy framework, the draft RE Act emphasizes the need to move towards ‘Integrated Energy Resource Planning (IERP)’ defined as a strategic planning exercise that examines all available energy-resource options, including supply side as well as demand side options for securing reliable and cost-effective energy resources.

*While the explicit reference to IERP in the draft RE Act signifies the importance of demand side resources in India’s energy mix, there is still no clear mandate for IERP compliance by the energy Utilities in the draft. More importantly, at the state level, there is a need to provide clear mandate for IERP enforcement by the electricity regulatory commissions while performing their regulatory duties towards energy resource planning undertaken by the Utilities. Also, the draft RE Act must clearly clarify what constitutes ‘demand side resources’ in the main body of the Act. Further the Act can consider ‘demand side resource’ as an independent resource option or consider it as qualifying resource under the definition of renewable energy sources in section 3 of the draft RE Act.*

## **1.5. Perform, Achieve and Trade (PAT)**

PAT is a regulatory instrument to reduce specific energy consumption in energy intensive industries, with an associated market based mechanism to enhance the cost effectiveness through certification and trading of

---

<sup>5</sup> “ancillary services”, in relation to power system or grid operation, means the services necessary to support the power system or grid operation for maintaining power quality, reliability and security of the grid

excess energy savings. The Energy Conservation Act 2001 has provided the statutory basis to regulate energy consumption and enforce energy efficiency standards for energy intensive industries (energy users notified as 'designated consumer') under PAT.

In 2012, Indian government through the Bureau of Energy Efficiency notified specific energy consumption improvement targets over a three year cycle (2012-15) for 478 designated consumers (individual obligated entities) in eight energy intensive sectors, namely thermal power plants, aluminum, cement, chlor-alkali, fertilizer, iron and steel, pulp and paper, and textiles. These sectors represent 65% of India's total industrial energy consumption. In the next cycle, PAT envisages to deepen and widen the regime of targets by including more no. of consumers from existing and new sectors.

*The government is contemplating to notify DISCOMs as designated consumers under the EC Act 2001 and subsequently notify targets under the PAT scheme. There is a perception in the industry that this would provide a major policy thrust for Utility driven DSM. The mandate of a designated consumer under the EC Act and PAT scheme is to reduce one's own energy consumption or intensity within its operating boundary or facility. For distribution Utilities this means the electricity losses within the distribution network and not the electricity demand beyond the customer's meter. Moreover, the electricity regulatory commissions are already regulating the AT&C losses and distribution losses under the governance framework provided by the Electricity Act 2003.*

## **1.6. Intended Nationally Determined Contribution (INDC)**

In the recently concluded COP21<sup>6</sup>, India along with other countries across the globe committed to create a new international climate agreement, which is expected to be a new global framework that drives collective action towards low-carbon and climate-resilient future. India has communicated its climate actions/ambition [known as 'Intended Nationally Determined Contribution' (INDC)] intended to take under this new international agreement. After decoding India's INDC<sup>7</sup>, some of the important commitments that rests critically on the power sector transformation are as below:

1. To reduce the emissions intensity of GDP by 33% to 35% by 2030 from 2005 level.
2. To achieve about 40% cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030.

*DSM is regarded as alternative low cost clean energy resource worldwide and therefore an important strategy for India to achieve its INDC commitments. Scaling up DSM would add more clean energy resources in the energy resource basket of Indian electric Utilities and also delay adding power generation (tied up with conventional fossil fuels), transmission and distribution capacity. These impacts would directly contribute to improved air quality and controlled environmental degradation.*

<sup>6</sup> 21<sup>st</sup> U.N. Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP21) held in Paris in December 2015

<sup>7</sup> INDIA'S INTENDED NATIONALLY DETERMINED CONTRIBUTION: WORKING TOWARDS CLIMATE JUSTICE; UNFCCC

## 2. A case for strengthening the DSM policy framework in India

Despite the enormous potential for DSM in India, few DSM actions<sup>8</sup> have taken off on a significant scale to achieve considerable impact on the power system and society as whole. The progress and achievements on the DSM front, so far, is primarily driven by institutional development<sup>9</sup>, donor funded studies and pilots<sup>10</sup>, market based investments facilitated by national institutions in the broader context of energy efficiency & conservation<sup>11</sup>, economic efficiency of retail tariffs<sup>12</sup>, market recognition for DSM based Utility services, enhanced customer satisfaction and other ad hoc competitive advantages for Utilities, especially in the competitive electricity distribution markets (Eg: Delhi and Mumbai). By virtue of these market driven approaches, the DSM market has significantly evolved in India. The phenomenal success of EESL's Domestic Efficient Lighting Program (DELP), which adopts unique market based mechanisms, has unlocked tremendous potential for DSM investments. The government of India has recently revised its estimate of DSM investment potential from INR 74,000 crores (gauged about six years ago) to INR 1.5 lakh crores, which is envisaged to deliver 178 billion units of energy savings per annum. Residential end use appliances, agriculture/irrigation pumping and municipal infrastructure are the top three DSM markets contributing to this potential.

On the policy front, DSM Regulations have been active in about **17 states and 7 Union Territories** till date. These regulations provide a systematic approach for the entire DSM implementation cycle by clearly defining the roles and responsibilities for the key stakeholders. However, the enforcement of DSM regulations continues to be limited in many states.

Given that the market driven DSM mechanisms have gained significant momentum in the recent times, India is at the cross roads for adopting the right policy approach that can effectively complement the market mechanisms in capturing the DSM potential and also delivering the promise of DSM.

International experience suggests that a strong legal, policy and regulatory framework with clear and unambiguous mandates that prioritize demand side resources over other supply side options have had significant impact in driving electric Utility DSM investments and programs. In USA, compliance with statewide legislative mandates or regulatory savings or spending targets is poised to be the primary driver for the increase in Utility DSM program spending through 2025<sup>13</sup>. Policies that drive Utility DSM investments in US include: energy efficiency resource standards, renewable portfolio standards under which energy efficiency is a qualifying resource, statutory requirements that stipulate "utilities must first obtain all cost-effective energy efficiency and demand reduction resources to bridge demand supply gaps", and long-term integrated resource planning<sup>14</sup> requirements. In the European Union (EU), article 7(6) of the Energy Efficiency Directive requires EU member countries to achieve energy saving targets by end of 2020. As a consequence of this directive, many EU member countries have adopted a combination of legislative actions and regulatory mechanisms to enforce energy efficiency obligations<sup>15</sup> (EEO) on energy Utilities. These binding obligations require electricity distribution and retail service providers to reduce the demand for energy by promotion of demand side measures. A survey by IEA in 2012 has found dozens of jurisdictions around the world with some form of the EEO on energy Utilities.

### *Snapshot of Utility DSM obligations in select countries across the globe*

<sup>8</sup> LED bulbs distribution under the Domestic Efficient Lighting Program (DELP), LED Street Lighting solutions, Time of Day Tariffs (mostly for High Tension category of consumers), incentives and mandates for solar water heaters etc.

<sup>9</sup> Establishment of the Bureau of Energy Efficiency, Energy Efficiency Services Limited, DSM cells within electric Utilities, and designation of state nodal agencies.

<sup>10</sup> USAID's WENEXA and On-bill CFL pilots in Karnataka, Shakti Sustainable Energy Foundation's Demand Response pilot in Rajasthan etc.

<sup>11</sup> National Mission for Enhanced Energy Efficiency (NMEEE) introduced in 2007-08, Bachat Lamp Yojana, Agriculture DSM pilot projects, DELP, National LED Street Lighting program, National Energy Conservation Awards for Electric Utilities etc.

<sup>12</sup> Time of Day (TOD) tariffs for high tension industrial and commercial consumers.

<sup>13</sup> The Future of Utility Customer Funded Energy Efficiency Programs in the United States: Projected Spending and Savings to 2025; Ernest Orlando Lawrence Berkeley National Laboratory; 2013

<sup>14</sup> IRP is a long term utility plan for meeting forecasted annual peak and energy demand, plus some established reserve margin, through a combination of supply-side and demand-side resources over a specified future period. IRP has been practiced in USA for more than 25 years through state legislations and regulatory oversight.

<sup>15</sup> EEO is a regulatory mechanism that requires obligated parties to meet quantitative energy efficiency improvement targets in a predefined time frame. Typically, EEO is placed on energy utilities, who are in the business of distribution and retail sales of energy commodities.

<b>Country</b>	<b>Target</b>	<b>Obligated parties</b>	<b>Enforcement mechanism</b>	<b>Compliance mechanism</b>
Australia - New South Wales	0.4% of total electricity sales in 2009 Increasing to 4.0% in 2014	Electricity retailers and customers who purchase power directly from wholesale market	Combination of legislation and regulation Financial penalty for non-compliance	Self-achievement of savings Or Purchase of energy efficiency certificates
Canada – Ontario	1330 MW reduction in peak demand by 2014 6,000 GWh of energy savings by 2014	Electricity distribution licensees	Combination of legislation and regulation	Self-achievement of savings verified by third party and approved by regulator
China	0.3% of electricity sales and maximum load in the previous year	Government-owned grid companies	Regulation issued by central government agency	Self-achievement of savings verified by third party
Italy	6 Mtoe cumulative in 2012	Distributors of electricity and natural gas	Combination of legislation and ministerial decrees Financial penalty for non-compliance	Self-achievement of savings Or Purchase of energy efficiency certificates
Poland	53,452 GWh by 2016	Electricity, natural gas, and district heating companies and brokers	Combination of law and regulation Financial penalty for non-compliance	Self-achievement of savings Or Purchase of energy efficiency certificates
United States – California	6,965 GWh, 1537 MW, and 150 million therms in 2010-2012 for investor-owned utilities; 700,000 MWh for publicly owned utilities	Investor-owned and publicly owned electricity and natural gas utilities	Combination of legislation and regulation Financial penalty for non-compliance	Self-achievement of savings rigorously verified by third party contractors
United Kingdom	12.4 MtCO <sub>2</sub> under the Carbon Emissions Reduction Obligation (CERO), 6 MtCO <sub>2</sub> under the Carbon Saving Community Obligation (CSCO)	Large energy suppliers	Combination of legislation and regulation	Self-achievement of savings

In India, despite the development of DSM markets, a policy overhaul is essential for the sustainability and growth of those markets. Since the business of electricity distribution is licensed and regulated in India, a strong legal and policy framework can provide a clear, unambiguous and explicit mandate for DSM. Moreover,

---

DSM regulations are active only in 17 states and 7 union territories. Also, the enforcement of DSM regulations is very limited in most of the states. A strong legal and policy framework would bring in active DSM regulations in all states and empower regulatory commissions to strictly enforce those regulations. More importantly, strengthening the DSM policy framework is essential to support the growth of DSM investments, in a manner which ensures the delivery of its promise. In the current policy framework for Utility resource planning, DSM is not considered a resource option. This has a down side effect on demand side resources as it substantially reduces the cost effectiveness and does not deliver the promise of resource cost optimization for Utilities. A favorable policy framework that can overcome this barrier would ensure the promise of reduced cost of power through DSM, thereby unlocking new markets.

---

## 3. Policy Pathway

Lack of clear / explicit impetus for Utility DSM is both an immediate and long term obstacle to achieve policy driven growth of DSM resource acquisition by electric Utilities. Moreover, demand side resources lack the kind of impetus laid for promotion of renewable energy sources in the current legal and policy framework governing the Indian power sector. There is a need to explicitly recognize ‘demand side resources’ as alternative resource option in the energy resource basket of electric Utilities. There are broadly two options available for the policy makers to achieve this.

- In the first option, the ‘demand side resources’ can be defined and emphasized as stand-alone independent resource apart from the conventional and renewable energy sources. This however requires legislative action to empower the state regulatory commissions for effective enforcement and consideration of DSM by the Utilities and central /state governments.
- In the second option, the ‘demand side resources’ can be recognized as a qualifying resource under the definition of renewable energy sources in the existing legal and policy framework.

Further, the legal and policy framework must provide provisions to allow state commissions to stipulate stand-alone ‘demand side resource purchase obligations’ just as renewable purchase obligations and solar purchase obligations. Typically such obligations must share the following features:

- A quantitative binding target for energy efficiency improvement in terms of the quantum of energy savings and peak demand reduction
- Target enforced by laws and regulations with the threat of financial penalties
- Clear definition of obligated parties (DISCOMs in this case) that must meet the target
- A systematic process for compliance verification

In addition, there is a need for consideration of demand side resources at the planning stage to enable integrated resource planning by the electric Utilities and central /state governments. The importance of IRP cannot be over stated, especially in the India’s power market conditions, because it not only creates a market for demand side resources but also saves on the enormous fixed costs otherwise paid by utilities towards the committed capacity for generation, transmission and distribution. This ensures that the enhanced penetration of demand side resources in the overall energy resource mix of Utilities effectively optimizes power resource costs and results in the reduced cost of power for consumers. This is one of the important promises of demand side resources.

Under UDAY, there is a need to set clear DSM performance milestones in order to ensure effective adoption of this DSM by participating DISCOMs. These milestones, must be defined in terms of quantum of energy savings with a robust evaluation mechanism to verify such savings. Additionally, there is a need to review the incentive mechanism proposed under UDAY to adequately compensate the DISCOMs for scaling up DSM activities.

### **Conclusion**

The electricity, energy conservation and climate change reforms need DSM as much as DSM needs a strong policy framework. In the current legal and policy framework for electricity governance, there is a need to enhance the perception that demand side resources are ‘alternative resource option’ and equivalent to energy purchase by DISCOMs. ‘One unit of energy saved is two units of energy produced’ must be considered in spirit and reflected accordingly in the policy framework. Apart from this, exclusive DSM Targets and IRP are key ingredients of a strong policy framework.