सत्यमेव जयते
Ministry of Power
Govemment of India

Azadi Ka Amrit Mahotsav

Bureau of Energy Efficiency

Compendium on DSM measures by Electricity Distribution Companies (DISCOMs)

Compendium on Demand Side Management (DSM) measures by Electricity Distribution Companies (DISCOMs)

Message

Demand Side Management (DSM) is seen as one of the key strategy in meeting the growing challenges on the energy front both globally and at the national and sub-national levels. In countries like India it assumes added importance in the context of rapid demand growth and our vision to provide 24X7 reliable power supplies to all at affordable rates, focus on increased share of renewable energy, promotion of e-mobility, etc. The government is committed to energy conservation activities. Through the Energy Conservation Act, 2001, Electricity Act, 2003 and National Electricity Policy, Demand Side Management has been accorded priority. In addition to these efforts, various State Electricity Regulatory Commissions have also notified DSM regulations for their distribution licensees. Despite the legal, policy and regulatory support, Demand Side Management (DSM) being one of the least cost resources of electricity; it has not been able to take off in India at a large scale. Though some efforts have been made silos in some states, enforcement of DSM regulations continues to be limited. The responsibility for on-ground implementation continues to rest with the distribution companies who have not been able to undertake large scale programmes due to several technical, economic and financial barriers. In this context, Bureau of Energy Efficiency has initiated Capacity Building of DISCOMs program under Demand Side Management Scheme since 2014 by including 62 DISCOMs on pan India level and prepared utility specific DSM action plans for aid energy security, avoid new capacity addition and carbon emissions, surge investments and help nation on global energy commitments.

In this regard, Bureau of Energy Efficiency, Ministry of Power, Government of India has prepared a compendium on DSM measures undertaken by DISCOMs based on the details shared by the DISCOMs for replication of programs/schemes and to help for implementation of various DSM activities at DISCOMs. I do hope that this compendium will help to scale up the implementation of DSM activities and to encourage the consumers to use less energy during peak hours or to move the time of energy use to the off-peak hours viz. night to reducing and/or shifting the customers' overall electricity bill. This program also to help utilities to reduce their peak power purchases on the wholesale market, thereby lowering their overall cost of operations.

(Abhay Bakre)

Preface

DSM measures is a cost-effective tool in the Energy Sector. Increasing supply is an option but inadequate capacity additions in the past and associated environmental and climate concerns makes energy efficiency / Demand Side Management (DSM) as an important strategy to manage demand. To meet the target of 24x7 supply of the electricity, the implementation of DSM measures is the best way and to reduce the peak demand and lowering the overall cost of operations. DSM programs encourage the installation of end-use technologies that consume less energy, thereby reducing the customers' overall electricity bill. DSM programs can help utilities to reduce their peak power purchases on the wholesale market, thereby lowering their overall cost of operations.

In this content, Bureau of Energy Efficiency, Ministry of Power, Government of India has initiated Capacity Building of DISCOMs programme under Demand Side Management scheme to implement the DSM measures at various DISCOMs on pan India level. Bureau has included total 62 DISCOMs under this program and engaged zone wise Project Management Consultants for implementation of activities under this program.

Most of the Indian DISCOMs are being implementing the various DSM interventions like replacement of non star rated ACs to 5 star rated ACs, Energy Efficient Ceiling fans, Automatic Demand Reduction programs, Super-Efficient BLDC fans, distribution of LED bulbs etc. programs. But the implementation needs to scale up at large level so that the indicative load reduction & energy savings can be achieved. In this context, Bureau has prepared a compendium on DSM measures undertaken by various DISCOMs for replication of such programs/schemes in other DISCOMs and helping them for modification of consumer's demand of electricity through various methods such as financial incentives and consumer education and help utilities to reduce their peak power purchases on the wholesale market, thereby lowering their overall cost of operations. Bureau thanks to the DISCOMs, who had shared the details of DSM measures implemented by them for the development of this compendium. I do hope that this compendium will help and encourage the electricity distribution companies for replication of various DSM measures at your jurisdiction.

(Milind Deore)
Director

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ABBREVIATION	
ADR	Automated Demand Response
APEPDCL	Andhra Pradesh Eastern Power Distribution Company Limited
Ag DSM	Agriculture Demand Side Management
BEE	Bureau of Energy Efficiency
BYPL	BSES Yamuna Power Limited
BESCOM	Bangalore Electricity Supply Company Limited
BLDC	Brushless DC motors
DSM	Demand Side Management
DISCOMs	Distribution Companies
DGVCL	Dakshin Gujarat Vij Company Limited
EEPs	Energy Efficient Pumps
EWER	Energy Wise Energy Rise
KSEBL	Kerala State Electricity Board Limited
KUSUM	Kisan Urja Suraksha Evam UtthanMahabhiyan
KSEBL	Kerala State Electricity Board Limited
Mu DSM	Municipal Demand Side Management
MSEDCL	Maharashtra State Electricity Distribution Co. Ltd.
SDA	State Designated Agencies
SKY	SuryashaktiKisan Yojana
TPDDL	Tata Power Delhi Distribution Limited
UGVCL	Uttar Gujarat Vij Company Limited

1.0 Background

India is witnessing tremendous growth in electricity demand. Over time, capacity augmentation has not been able to keep pace with the increase in demand and has associated environmental concerns. Given the high capital intensity of infrastructure required and the extensive resources that are expended in the supply of fuels for production of power, energy efficiency measures and Demand Side Management (DSM) initiatives are extremely attractive in economic terms, particularly with the generally poor record of financial performance of the power sector as a whole. The power sector has ample opportunity to improve its avoided-generation capacity if consumers use energy-efficient appliances/equipment and follow energy-saving practices.

The urgency for appropriate interventions to improve the performance of different power utilities in India is fully realized at the central and state levels. Energy Conservation Act, 2001, Electricity Act, 2003, and National Electricity Policy accord priority to Demand Side Management. Bureau of Energy Efficiency (BEE) has commenced a program for capacity building of Distribution Companies (DISCOMs) during 2012-17, further extended up to 2020 by targeted reaming DISCOMs. It is closely linked with BEE's other programs, such as Agricultural Demand Side Management, Municipal Demand Side Management, SMEs (Small and Medium Enterprises), Industries, etc. This program will help integrate these activities with activities managed by the DISCOMs for Demand Side Management. This initiative will also help in the capacity building of DISCOMs and developing various mechanisms to promote DSM in their respective states. The program's objective is the capacity building of DISCOMs for carrying out the load management program, developing the DSM action plan, and implementing DSM activities in their respective areas. 62 DISCOMs (list enclosed at **(Annexure – I)** have participated in activities under the Capacity Building of DISCOMs program.

A Memorandum of Understanding (MoU) was signed amongst BEE, each DISCOMs, and respective SDAs to implement activities under this program. The activities include carrying out load research, finalizing the DSM action plan, conducting the Training of Trainers (ToT) programs to create master trainers, building circle level officials of DISCOMs, and providing human resources support to DISCOMs undertaken as part of the said program.

Major Achievements:

- DSM action plans have been prepared by 57 DISCOMs based on the load research study carried out through engaged Project Management Consultants.
- Developed 928 Master Trainers from senior and middle management officials of DISCOMs.
- Capacity building of 7639 no. of circle level officials on DSM and Energy Efficiency.
- DSM regulations have been notified for 24 States and 8 UTs. The remaining states are pursuing to notify their DSM regulations.
- Dedicated DSM cell has been established by 61 DISCOMs to carry forward DSM activities.
- 69 DSM proposals for various interventions have been prepared and submitted to respective DISCOMs for implementation.
- It is estimated that an electricity demand potentialof 13018 MW and annual electricity savings of about 28069 MU can be achieved by adopting different interventions under DSM and Energy Efficiency program. The investment is envisaged to the tune of Rs. 43,700 Crore.

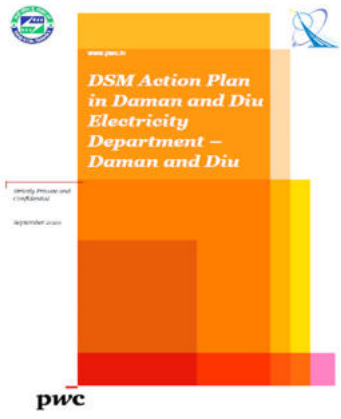
A. MoU signing ceremony organized by BEE in association with State Designated Agencies.

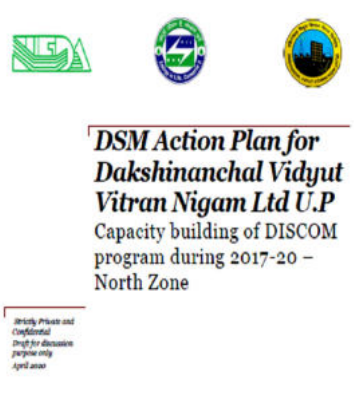
B. Training of Trainers program for DISCOMs on DSM and Energy Efficiency

C. Capacity building of circle level officials of DISCOMs on DSM and Energy Efficiency

D. A series of five regional meetings for five zones were organized by BEE in association with SDAs for DISCOMs, SDAs and SERC/JERC to highlight the roles and responsibilities of officials of each stakeholder under this programme and to touch base with them to further understand the needs of the DISCOMs in-order to effectively implement the program.

E. Preparation DSM action plans based on load research study conducted for DISCOMs

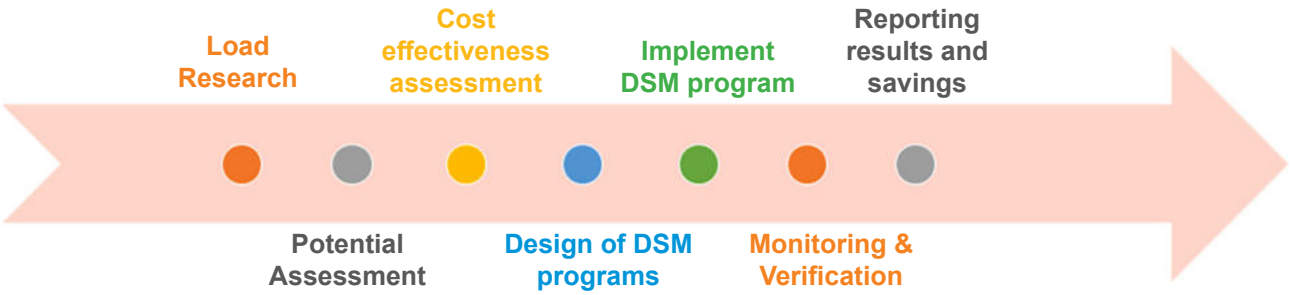




As the DSM regulation, Demand Side Management is any activity undertaken with an objective to lower the overall cost of electricity to the consumers of the Distribution Licensee as well as the Distribution Licensee, by economical and efficient use of resources, which shall include the measures/ principles to:

- Control, reduce and influence electricity demand.
- Encourage consumers to amend their electricity consumption pattern both with respect to timing and level of electricity demand for efficient use of energy.
- Complement supply side strategies to help the utilities to avoid or reduce or postpone a) costly capacity (generation, transmission & distribution network) additions b) costly power purchases
- Reduce the environmental damage by reducing the emission of greenhouse gases.
- Supplement national level efforts for implementation of various DSM programmes set out by the Bureau.
- Make strategic efforts to induce lasting structural or behavioral changes in the market that shall result in increased adoption of energy-efficient technologies, services, and practices.
- Protect the interest of the consumers and shall result in overall reduction in tariff for all the consumers.

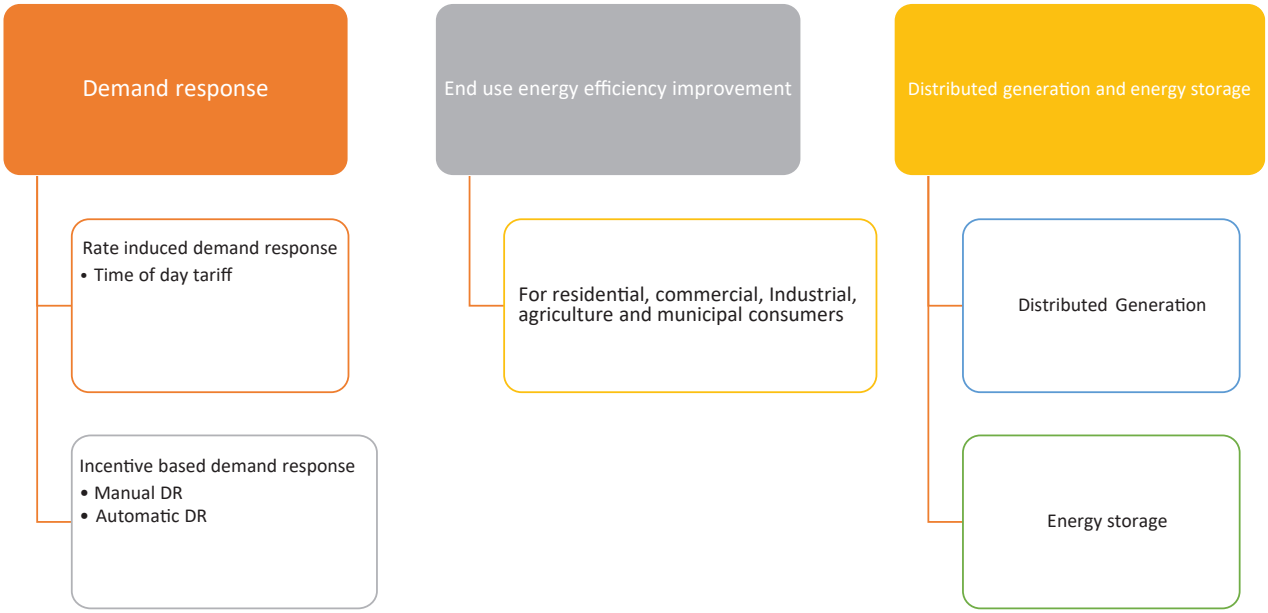
Steps involved in identification of demand side management programme for a utility are provided below:



2.0 State wise list of DISCOMs under BEE's Capacity Building of DISCOMs program

3.0 Utility DSM opportunities and resource potential

The Utility DSM opportunities in India can be broadly categorized into three principal groups or subcomponents - demand response, end use energy efficiency and distributed generation close to the point of consumption. Principal groups of DSM measures are illustrated in figure below:



This report provides a brief about the DSM measures implemented by Indian DISCOMs to date. Most of the DSM measures implemented in India fall majorly under the end-use efficiency improvement (through replacement of existing appliances/systems with energy-efficient systems) category except few pilot projects related to demand response.

In the present scenario, distributed generation and energy storage are mostly not considered DSM measures and are generally utilized by consumers when grid supply is not available, which can happen due to load shedding or lack of grid connectivity.

4.0 Demand Side Management

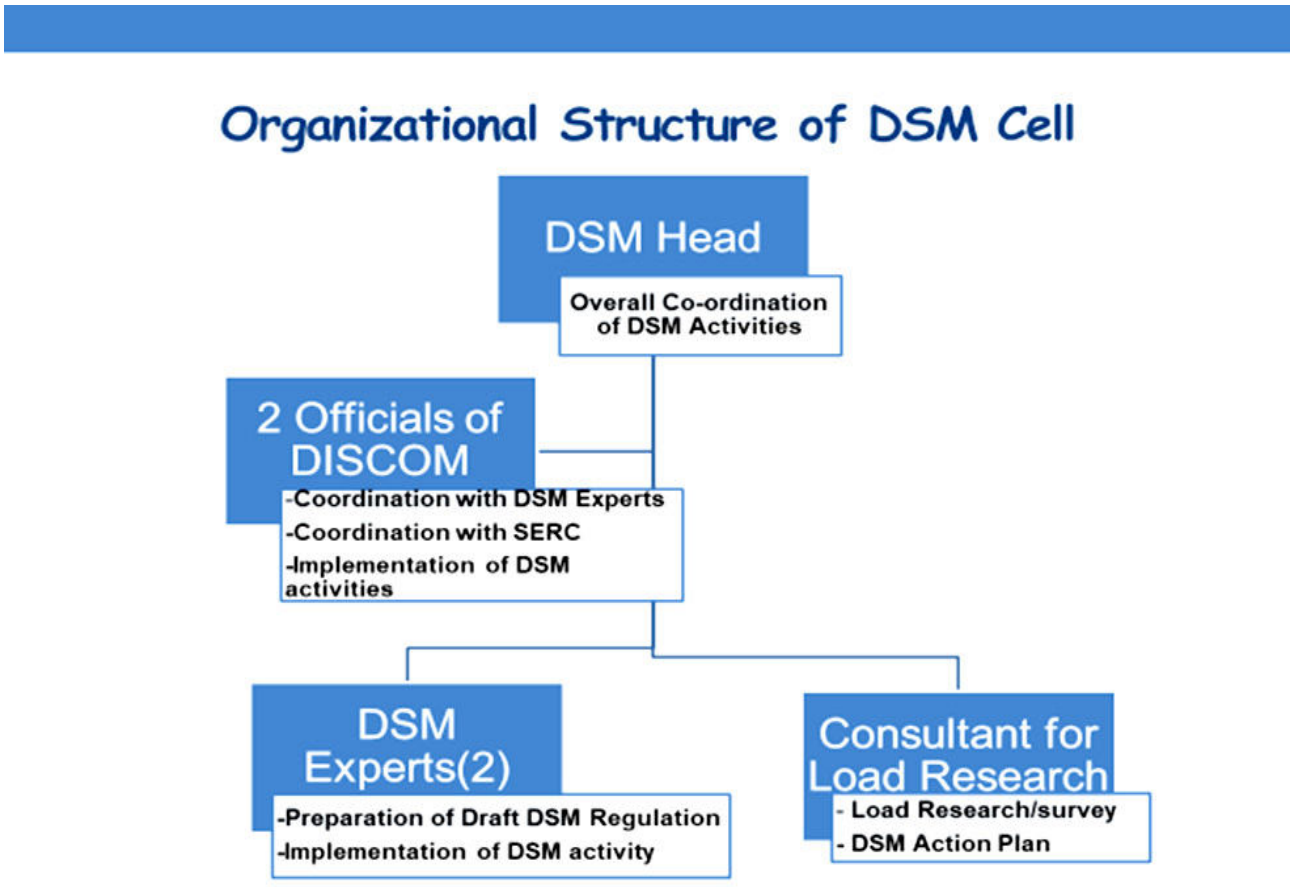
Demand Side Management is any activity undertaken to lower the overall cost of electricity to the consumers of the Distribution Licensee as well as the Distribution Licensee, by economical and efficient use of resources, which shall include the measures/principles to:

- Control, reduce and influence electricity demand.
- Encourage consumers to amend their electricity consumption pattern both with respect to timing and level of electricity demand for efficient use of energy.
- Complement supply side strategies to help the utilities to avoid or reduce or postpone a) costly capacity (generation, transmission & distribution network) additions b) costly power purchases
- Reduce the environmental damage by reducing the emission of greenhouse gases.
- Supplement national level efforts for implementation of various DSM programmes set out by the bureau
- Make strategic efforts to induce lasting structural or behavioral changes in the market that

shall result in increased adoption of energy-efficient technologies, services, and practices.

- Protect the interest of the consumers and shall result in overall reduction in tariff for all the consumers.

5.0 Organizational Structure of DSM Cell



6.0 Demand Side Measures undertaken by DISCOMs – Case Studies

A. BSES Yamuna Power Limited - BYPL

BYPL has undertaken much green and energy efficiency promotion-related initiatives under Demand Side Management after approval of the Hon'ble Commission. Some of the notable initiatives are the Distribution of LED bulbs, LED tube lights, 5 stars rated Energy Efficient fans, replacement of old inefficient ACs with efficient ones, and Manual DR & pilot for Auto DR already completed for air-conditioning. Planning program for clean cooking appliances with EESL: -

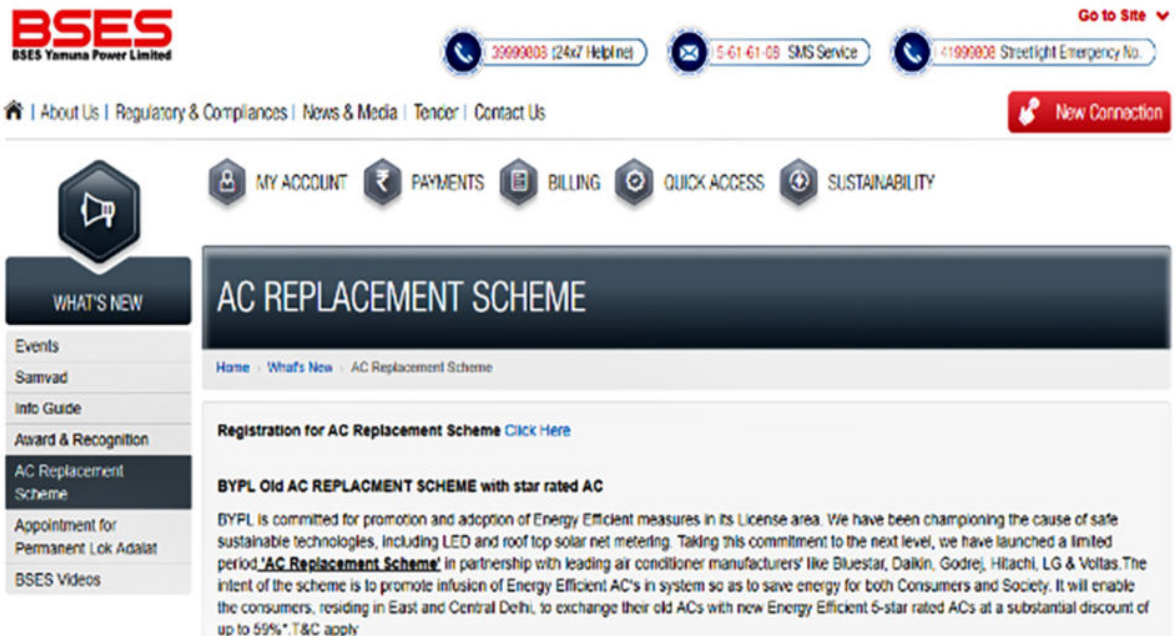
i. Program for energy efficient Air Conditioner

Objective: The program aims to promote energy efficiency and green initiatives among households and decrease power consumption during the peak load.

Scope: The scope involves the replacement of non-star, old, and up to 3-star A/C having capacity of 1, 1.5 & 2 TR with the 5 Star.

Participants: Domestic consumers with old AC (up to 3 stars installed in their premises in working condition) can participate in this voluntary program. The timeline of implementation of the project is May'2018 – May'2019.

Implementation model: DISCOM empanelled the OEMs (Blue Star, Daikin, Hitachi, Voltas, Godrej & LG) for the AC replacement program. Interested consumers can register at the BYPL website and provides details such as the rating, make, model, etc., regarding the ACS needs to be purchased. Based on information from BYPL, authorized dealers of the OEM's supply energy-efficient AC to consumers based on opted choice at a cost lower than the market price, which is estimated after deducting the rebate amount. The rebate amount is calculated based on the rebate equation approved by DERC. Once the AC is supplied and installed at the consumer end, the rebate amount is transferred by BYPL to OEM.



Status: To date, 4000 ACs (Capacity: 1/1.5/2 TR) have been distributed.

Savings: Distribution of energy-efficient AC resulted in electricity savings of 2.3 million units, equivalent to Rs. 1.7 crore.

ii. Pilot Demand Response program

BYPL has successfully carried out a pilot for manual Demand Response in 2017-18 & again in 2018-19. The pilot programs succeeded in triggering awareness amongst the consumers about energy efficiency. DR is a crucial DSM measure that grid managers can also use for managing peak demand. A typical DR program offers several benefits to all the stakeholders involved. A few of these benefits are listed in the illustration alongside. It also provides spin-off benefits to the non-participating customers by reducing costs of the licensee, thus translating into decreasing tariffs. In the present PDD, the financial benefits expected out of the program are being separately discussed in a subsequent chapter.

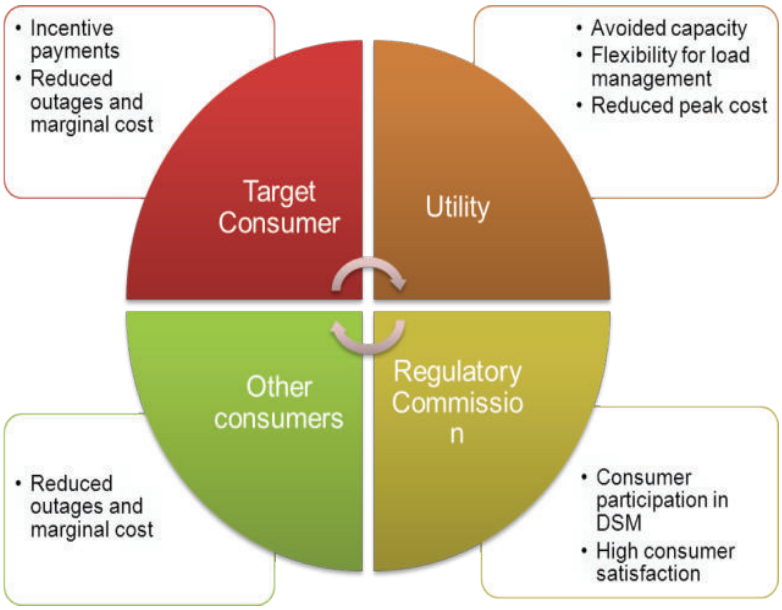
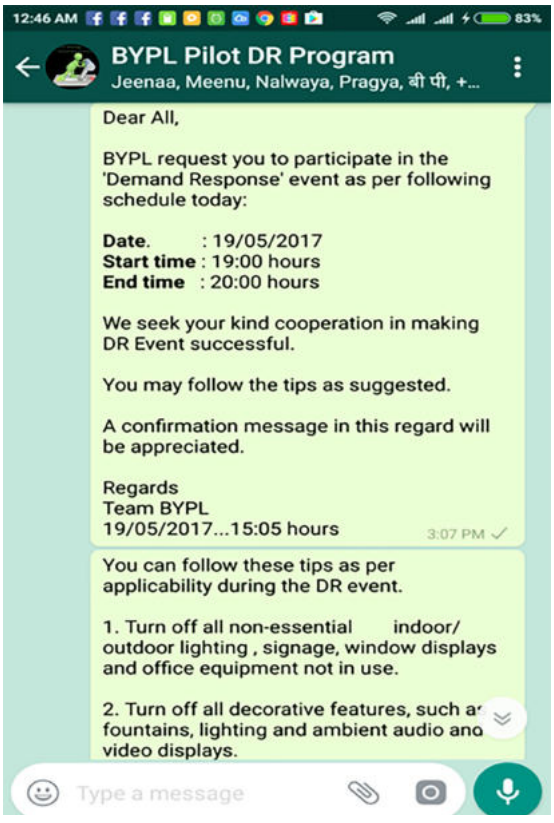


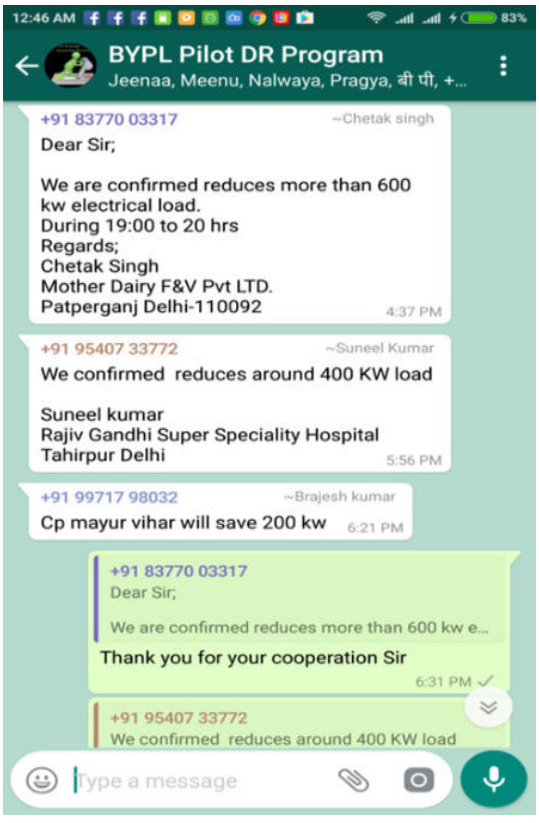
Figure: Stakeholder Benefits of Demand Response

There are various types of DR program being implemented globally by utilities with varying forms of incentive structure, pricing strategy, implementation model, capital requirements etc. Broadly these programs can be classified into three categories based on the sophistication of technology involved.

- **Manual DR Program:** In this case, the consumer responds to the utility's request by manually switching off the electrical equipment at their premises. The utility does not exercise any control over the demand curve of the customer, and hence it is an entirely voluntary program.
- **Semi-Automated DR program:** In this case, selected electrical equipment at the consumer facility is connected to an energy management system to switch off automatically or reduced usage of this equipment. Under such a program, the utility exercises some control over the consumer's demand and may switch it on / off as per requirement.
- **Fully Automated DR program:** In this case, all the electronic equipment in the consumer premises are integrated with energy manages systems which, in response to the utility's request, automatically switch off or reduced usage of selected equipment. In such a program, the utility exercises complete control over the demand of the customer. It also has limitations on the extent of load relief that any participant may provide as the same is pre-decided while installation of the ADR system at the consumer premises. This limits the utilization of the entire load for securing DR relief from the concerned consumer.

Objective	Reduction in power demand by way of curtailing non-critical load without compromising on output and business requirements of the participating consumers
Scope	Changes in electric usage by end-use customers from their standard consumption patterns in response to changes in the price of electricity over time.
Consumer Eligibility	Voluntary. Having AMR.
Timeline	DERC approval: 29.12.2016 Ist DR: April'17 - June' 2017 IInd DR: June'18 - Oct'18
No. of consumers participated	30 industrial and commercial consumers (April'17 – June' 17) 60 industrial and commercial consumers (June'17- Oct'18)
Electricity savings (in MU)	0.05
Peak avoided (in MW)	April'17 – June' 2017: 17 MW June'17- Oct'18: 32.5 MW
Total CO_2 reduction	41.5 Tonnes


12:46 AM
83%
BYPL Pilot DR Program
Jeenaa, Meenu, Nalwaya, Pragya, बी पी, +...
Dear All,
BYPL request you to participate in the 'Demand Response' event as per following schedule today:
Date. : 19/05/2017
Start time : 19:00 hours
End time : 20:00 hours
We seek your kind cooperation in making DR Event successful.
You may follow the tips as suggested.
A confirmation message in this regard will be appreciated.
Regards
Team BYPL
19/05/2017...15:05 hours
3:07 PM
You can follow these tips as per applicability during the DR event.
1. Turn off all non-essential indoor/ outdoor lighting , signage, window displays and office equipment not in use.
2. Turn off all decorative features, such a fountains, lighting and ambient audio ano video displays.
Type a message


12:46 AM
83%
BYPL Pilot DR Program
Jeenaa, Meenu, Nalwaya, Pragya, बी पी, +...
+91 83770 03317
~Chetak singh
Dear Sir;
We are confirmed reduces more than 600 kw electrical load.
During 19:00 to 20 hrs
Regards;
Chetak Singh
Mother Dairy F&V Pvt LTD.
Patperganj Delhi-110092
4:37 PM
+91 95407 33772
~Suneel Kumar
We confirmed reduces around 400 KW load
Suneel kumar
Rajiv Gandhi Super Speciality Hospital
Tahirpur Delhi
5:56 PM
+91 99717 98032
~Brajesh kumar
Cp mayur vihar will save 200 kw
6:21 PM
+91 83770 03317
Dear Sir;
We are confirmed reduces more than 600 kw e...
Thank you for your cooperation Sir
6:31 PM
+91 95407 33772
We confirmed reduces around 400 KW load
Type a message

iii. Energy Efficient Fan Scheme:

Objective	To reduce energy consumption with the help of energy-efficient Fans and enhance awareness on using efficient equipment that reduces electricity bills and helps preserve the environment.
Scope	Distribution of Old/conventional fans with BEE 5 star rated energy efficient fans with 2 years warranty to reduce electricity bills and help preserve the environment.
Consumer Eligibility	BYPL consumers
Timeline	Started in March 2018
No. of consumers benefitted	Around 1000
No. of energy efficient Fans distributed	3,068 Nos.
Price of energy-efficient Fans	Distributed at a subsidized rate of Rs 1150 per energy-efficient fan
Electricity savings (in MU)	Approx. 0.5 MU
Total CO_2 reduction	446 Tonnes

iv. LED Tube light Distribution Scheme

Objective	To reduce the energy consumption with the help energy-efficient Tube lights and to enhance awareness on using efficient equipment which reduces electricity bills and helps preserve the environment.
Scope	Distribution of LED Tube light of 20 watts to reduce electricity bills and help preserve the environment.
Consumer Eligibility	BYPL consumers
Timeline	Launched in June' 2016 under UJALA
No. of consumers benefitted	Around 9000
No. of LED Tube lights distributed	33,736 Nos.
Price of energy-efficient LED Tube light	Distributed at a subsidized rate of Rs 220 per LED Tube light
Electricity savings (in MU)	Approx. 3.5 MU
Total CO_2 reduction	2,903 Tonnes

v. Energy Efficient LED lighting Scheme:

Objective	To reduce the energy consumption with the help of energy-efficient LED bulbs and enhance awareness on using efficient equipment, which reduces electricity bills and helps preserve the environment.
Scope	Distribution of 9W LED bulbs to reduce electricity bills and help preserve the environment.
Consumer Eligibility	BYPL consumers
Timeline	Launched in June' 2015 under DELP Programme later rechristened as UJALA
No. of consumers benefitted	5-6 lakhs
No. of LED bulb distributed	Over 2.12 million
Price of energy-efficient LED Bulb	Distributed at a subsidized rate of Rs 70 per LED bulb
Total Electricity savings (in MU)	Approx. 257 MU
Total CO_2 reduction	2,14,240 Tonnes

Apart from above BYPL has also carried out / planned following activities: -

vi. Pilot for Auto Demand Response

Pilot for Auto DR at BYPL office for AC load – 27 test events were carried out & average savings of 5.4 kWh were achieved.

vii. Proposal for clean – cooking appliances

BYPL plans to carry out a program for clean cooking appliances with EESL. Appliances proposed under the program are induction cook-top & electric cooker.

B. Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL) DSM Program

i. Ag DSM project – I replacement of conventional agriculture pump sets with Energy efficiency Pump - sets.

Background: EESL and APEPDCL implemented a pilot project under ESCO mode in Rajanagaram Mandal (Rajahmundry circle). Under that project, 973 nos. of old pumps were replaced with BEE 5 star rated energy efficient pump set and resulted in 33% energy savings when compared to old pumps. Based on the results of pilot prosject in Rajanagaram, AP government and EESL decided

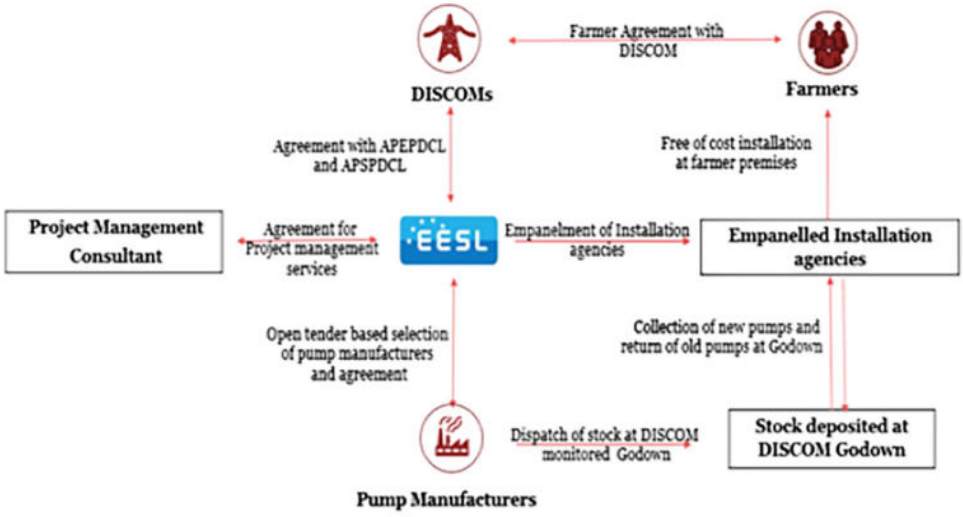
to take up AgDSM project at state level for replacing about 100,000 pump sets in 13 circles (35000 pump sets in 5 circles of APEPDCL).



About the project: Under AgDSM project, AP government is distributing 1 Lakh BEE 5 star rated energy efficient pump sets (EEPS) with smart control panel to farmers. Every farmer with 5 hp sanctioned load and currently using a submersible pump set is eligible to participate in the project. In this project, farmer is provided with pump set and smart control panel free of cost along with free repair and maintenance for 5 years from date of installations. To get the new pump set and smart control panel farmer has to return old pump set and old control panel.

Project implementation model: AgDSM project is being implemented in Andhra Pradesh in PMC model on deemed savings basis. In this project, DISCOM's (APEPDCL/APESPDCL) are making investment for procurement, distribution, installation of 1 Lakh 5 hp BEE 5 star rated energy efficient pump sets and smart control panel and also bearing cost of repair and maintenance for 5 years for installed systems.

In this project, EESL is acting a project management consultancy (PMC) and activities of EESL can be termed as Engineering Procurement Construction (EPC) plus repair and maintenance for 5 years. Figure providing role and relationship between various stakeholders involved in AgDSM project is given below:



Financing: The AP AgDSM project is financed by REC through a RTL of Rs.157.20 Crore under IE Distribution category.

Energy savings at APEPDCL: Details of energy savings at 5 circles of APEPDCL is provided in table below:

Circle	Energy efficient pump sets installed under the project	Percentage Energy Savings (%)	Annual Energy Savings (MUs), 2018-19
Srikakulam	2515	19.67	6.17
Vizianagaram	5100	18.56	9.09
Visakhapatnam	4662	24.38	12.83
Rajahmundry	1565	17.03	2.8
Eluru	2872	24.93	7.58
Total	**16714**	**21.14**	**38.48**

ii. Ag DSM Project - II replacement of conventional agriculture pump sets with Energy efficiency Pump - sets.

- APEPDCL has implemented Ag DSM programme of replacement of old conventional pump sets with most Energy Efficient pump sets in 5 Districts of APEPDCL (PMC by M/s EESL) at no cost to consumer.
- Hon'ble APERC in O.P.No. 12 of 2017, dated 29.04.2017 has accorded Approval for the project implementation and Installation of Energy Efficient Pumpsets by EESL started in September 2017.
- EESL replaced 17300 existing pump sets with Energy Efficient Pump sets.
- The expenditure incurred for 17300 Nos. Pumpsets is Rs.77.70 Crores.
- The district-wise total no. of EEPS distributed in APEPDCL is as shown below:

Sl No.	Circle	No. of EEPS Installed
1	Srikakulam	2558
2	Vizianagaram	5207
3	Visakhapatnam	4663
4	Rajamahendravaram	2000
5	West Godavari	2872
Total EEPS distributed by APEPDCL		**17300**

iii. Energy Efficient LED Tube lights

- APEPDCL proposed to implement the Energy Efficient LED Tube Light (EETL) program with the Financial support of Energy Efficiency Services Limited (EESL), New Delhi .
- The program was launched by the Hon'ble Minister for Energy, Andhra Pradesh on 13.07.2017 at Seetammadhara Section in Visakhapatnam district.
- Under this program LED Tube Lights are sold to the willing consumers in UPFRONT payment mode at the counter
- 90724 Nos Tube Lights have been sold in 5 Districts as on 31.05.2019.

iv. Domestic Efficient FAN Program (DEFP)

APEPDCL proposed to implement the Domestic Efficient Fan Program (DEFP) as a pilot project in Narasapuram and its adjoining areas in West Godavari District with the financial support of Energy Efficiency Services Limited (EESL), New Delhi.

The program was launched by the Hon'ble Chief Minister, Andhra Pradesh on 20.06.2016 at Chiitivaram (V) in Narasapuram (M) in West Godavari district.

Under this program it was proposed to offer 1 lakh (BEE 5 Star rated) ceiling fans to willing consumers at Rs.1100 each fan on upfront payment and for Rs. 1250/- with 24 EMI (Easch EMI Rs.52 per will be collected through CC bill)

Under this program the following package is offered:

- 2 Nos Fans to Domestic Consumers (With or without installments)
- 10Nos Fans to Commercial consumers (Without installments)
- 50Nos Fans to Institutional consumers including Industrial consumers (Without instalments)

v. Energy Efficient LED Tube lights

- APEPDCL implemented Energy Efficient LED Tube Light (EETL) program with the support of Energy Efficiency Services Limited (EESL), New Delhi.
- The program was launched on 13.07.2017
- Under this program LED Tube Lights are sold to the willing consumers on UPFRONT payment mode at the counters of APEPDCL.
- 91234 Nos Tube Lights have been sold in 5 Districts.
- The no. of LED Tubelights distributed is obtained from UJALA dashboard is as shown here under:

Sl No.	Name of the District	No. of Energy Efficient Tube Lights distributed	Total Expenditure
1	Srikakulam	40259	Consumer purchased Tube lights on UPFRONT basis
2	Vizianagaram	20050	
3	Visakhapatnam	9644	
4	East Godavari	15675	
5	West Godavari	5606	
Total		**91234**	

vi. Domestic Efficient FAN Program (DEFP)

- APEPDCL implemented Domestic Efficient Fan Program (DEFP) as a pilot project on 20.6.2016 with the support of Energy Efficiency Services Limited (EESL), New Delhi.
- Hon'ble APERC in OP No. 28 of 2015/ dt 07-11-2015 has accorded Approval for the project implementation.
- Under this program BEE 5 Star rated ceiling fans are offered to willing consumers at Rs.1100 each fan on upfront payment and for Rs. 1250/- with 24 EMI (Each EMI Rs.52 per will be collected through CC bill).
- Under this program the following package is offered:
- 2 Nos Fans to Domestic Consumers (With or without installments)
- 10Nos Fans to Commercial consumers (Without installments)
- 50Nos Fans to Institutional consumers including Industrial consumers (Without installments)
- Wattage of ordinary Fan is 75 W, whereas wattage of EE Fan is 50 W, resulting in 33.33% of energy savings.
- 66215 Nos fans were distributed in 5 Districts of APEPDCL.
- In DEFP scheme consumers purchased Fans on UPFRONT / EMI basis.

Sl No.	Name of the District	Total Nos. of Fan Distributed			Total Expenditure
		EMI option	Upfront option	Total	
1	Srikakulam		2274	2274	Consumer purchased Fans on UPFRONT / EMI basis
2	Vizianagaram		2438	2438	
3	Visakhapatnam		9128	9128	
4	East Godavari		4239	4239	
5	West Godavari	31665	16463	48128	
Total		31665	34542	66207	

vii. Domestic LED Bulbs

- As a part of energy conservation measures the DELP (DSM Based Efficient Lighting
- Programme) scheme has been implemented in APEPDCL for distribution of 2 Nos. LED bulbs to each domestic consumers in 5 Districts of APEPDCL and executed by M/s. Energy Efficiency Services Ltd., (EESL), New Delhi.
- **Totaling to 86.36 Lakh LED bulbs distributed under DELP scheme.**
- Estimated energy savings: 639 MU/annum at 74 units per bulb per annum
- Total investment under DELP scheme is Rs.115 Crs by APEPDCL.
- **Benefits to consumers**
- Monetary Savings in electricity bills every year
- Availability of LED at free of cost as against the market price of Rs. 200-300.
- **Benefits to DISCOM**
- Computed annual energy savings of 639 MU (Million Units) for 86.36 Lakh Bulbs
- Reduction in Peak Demand
- Relieving of stress on the Grid during peak Load hours i.e 6:00 PM to 10:00 PM, wherein every consumer demands power.

C. Tata Power Delhi Distribution Limited

Demand-side management (DSM) is used worldwide to deliberately influence the customer appliance selection and energy use patterns to achieve the desired impact or load shape consistent with Utility goals. With ever-increasing energy requirements, massive differences between peak and average demand, increasing threat of climate change, energy security, and the enormous scope for energy efficiency measures, there is a dire need to implement DSM by Utilities.

For customers, DSM offers the opportunity to reduce their energy bills through efficiency and conservation measures. In the case of industrial customers, this would translate to lower production costs and a more competitive product. For domestic customers, it means that they would save

money, which helps them improve their living standards. Thus, DSM goes hand in hand with both customers as well as utilities.

To bring a focused approach towards Energy Management and Sustainability, Tata Power Delhi Distribution Limited has created a dedicated Demand Side Management Group in 2009 with a mandate to reduce energy consumption across residential, commercial, and industrial establishments and facilitate energy efficiency improvement projects.

The broad objective of the Group is to take up DSM related policy /activity/programs to lower the overall cost of electricity to the consumers of TPDDL by economical and efficient use of resources, which shall include the measures/principles to:

(1) Control, reduce and influence electricity demand.

(2) Encourage consumers to amend their electricity consumption pattern both with respect to timing and level of electricity demand for efficient use of energy.

(3) Reduce the environmental damage by reducing the emission of greenhouse gases.

(4) Supplement national level efforts for implementation of various DSM programs set out by the Bureau.

(5) Make strategic efforts to induce lasting structural or behavioral changes in the market that shall result in increased adoption of energy-efficient technologies, services, and practices;

Approach:

DSM group has already implemented Energy-Efficient Product schemes like Sale of LED Bulbs / Tubes, 5 Star & BLDC Fans, 5 Star ACs, etc. In FY 21-22, the DSM group is planning to continue these schemes and implement new strategies with a focused approach on:

a) Peak Load Reduction: With Four times the difference in Peak and Off-Peak Demand of TPDDL, the focus of DSM Group in FY 21 is for shaving of Peak Demand. Following New Schemes are planned to be implemented in FY 21 - 22 for Peak Load reduction:

1. Replacement of Non-Efficient Commercial Chillers with Energy Efficient Chillers. TPDDL in association with M/s TERI will be carrying out Energy Audit for its industrial consumers of different categories. We plan to cover 10 Cold Storage units for the Audit. Based on the findings of the audit Energy Efficiency projects would be implemented in these units.

2. Replacement of Non-Star / Low Rating Geysers with 5 Star Geysers.

b) Energy Efficiency: In addition to Led lightning and efficient fans, DSM Group plan to implement following scheme to reduce the continuous load of domestic and industrial consumers:

1. Replacement of Non-Star / Low Rating Refrigerator with 5 Star Refrigerator through Subsidy Scheme from DERC.

2. Replacement of Non-Star / Low Rating Fans with Super-Efficient BLDC Fans through Subsidy Scheme from DERC.

3. Spread Public awareness to use of energy efficient IE3 Motors & Pumps.

The Summary of Category wise initiatives planned in FY 21 - 22 is as follows:

Type	Category	Equipment	Approach
Existing	All	Lighting	Promotion and Sale of LED lighting
Existing	All	Fans	Promotion and sale of BLDC Ceiling fans
Existing	All	Air Conditioner	Promote and facilitate replacement of non-star ACs with BEE 5 Star rated ACs
New	All	Air Purifier	Promote and facilitate for Air Purifier
New	Residential	Geysers	Spread public awareness to use 5-star geysers
New	Residential	Refrigerators	Promote and facilitate replacement of old refrigerators with BEE 5 star rated inverter technology-based refrigerator
New	Industrial	Pumps and Motors	Spread public awareness to use of energy efficient motors and pumps
New	Commercial	HVAC Chillers	Promote and facilitate replacement of old Chillers with energy efficient Chillers.

Deployment:

Besides using our traditional approach of using TPDDL customer care centre for creating the awareness of DSM initiatives, DSM group plans to use following new avenues for facilitating and promoting Initiatives:

1) Data - based Targeting of Customers: Customers based on Energy Consumption pattern shall be targeted through SMSs and Emailers for Awareness and Savings.
2) Customers Meet: DSM group representatives shall promote the schemes in all customers meet like IWA Meeting, RWA Meeting and SAMMAN etc.
3) Special Camps of Energy Efficient Products: -In association with RWA/IWA special camps are organized for customer to spread more awareness & sales of Energy Saving Products.

Impact:

The Summary of Impact on MUs saving and Carbon Emission reduction is as Follows:

FY 2021 - 2022			
Product	**Quantity (No's)**	**Energy Saving (MU)**	**Co2 Reduction (MT)**
BEE 5 Star Acs	1000	0.92	306
LED Bulbs	130000	3.67	1222
20W LED Tube light	12000	1.28	426
BLDC Ceiling Fan	1500	0.29	97
Total	**144500**	**6.16**	**2051**

6C i. Steps/Efforts taken to create awareness in public for DSM – Media Bytes

टीपीडीडीएल एलईडी उत्पाद 60 फीसद कम कीमत पर देगी

ENERGY-EFFICIENT LED LAUNCHED

Tata Power – DDL, with Crompton Greaves Consumer Electricals Ltd (CGCEL), launched the energy-efficient LED Lighting programme for its customers in North and North –West Delhi on April 6. This is the first utility-based discounted LED programme, under which the complete range of LED lighting products with 11 assortments would be offered to customers.

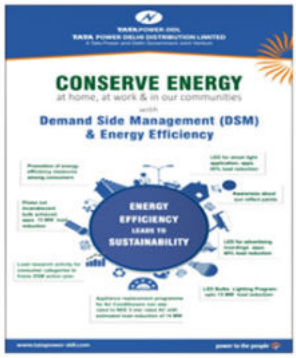
बिजली में अनुसंधान को बढ़ावा देने के लिए स्पर्धा

TPDDL launches energy efficient LED lighting program

बिजली उपकरणों पर 60 फीसदी की छूट

एलईडी लाइट खरीदने पर 60% तक छूट

Pamphlets for various DSM and Energy Efficiency Schemes distributed among consumers



TATA POWER-DDL

AWARDS & RECOGNITIONS

Tata Power Wins the JRD QV Award-2021

GPTW Ranking 2021

Golden Peacock Award-2020

CII Energy Efficiency Award-2019

CII-Innovative Financing in ESCO Model - 2019

CII Energy Efficiency Award-2020

TATA POWER-DDL

with you Non-Stop

6C ii. Tata Power - DDL ceiling Fan (BLDC) Program

Objective of the project: To reduce the energy consumption DISCOM has launch Tata Power-DDL ceiling Fan program using newer-technology (Brushless DC Motor) that is more efficient in comparison to the old and non-star rated ceiling fan duly validated by the BEE.

Participants: This scheme is available for Residential, Commercial & Industrial Consumers

Program brief: TTP - DDL & Atomberg offer Super-Efficient Ceiling Fan at discounted rates under the Tata power – DDL ceiling Fan Program. Under this scheme, BLDC fans are provided by Atomberg at the customer service desk of the TP-DDL and through online mode. The scheme is effective from 26th March 2018 and, as per the last amendment, extended up to 30th September 2019.

Implementation model: An MOU is signed between TPDDL and Stomberg, under which a super-Efficient Ceiling Fan is supplied by the OEM (Atomberg) at TPDDL Centralized Stores. TPDDL is acting as the distributing agency and is distributing Super-Efficient Ceiling Fans through its Distribution Centers at various locations.

Financials: Under this scheme, super-efficient fans are offered at a discount price of Rs. 2200 per unit for offline purchase and Rs. 2300 per unit for online purchase (which includes home delivery free). Tata Power is charging Rs. 100 per fan for each offline transaction and Rs. 50 per fan for each online transaction and the balance amount of the sale is shared with Atomberg as the supplier cost per fan.

6C iii. TPDDL – 10 MW Battery based Energy Storage System (BESS)

About the project: Tata Power, in collaboration with the AES Corporation and Mitsubishi Corporation, installed the first grid-scale battery-based energy storage system at Rohini, Delhi. The 10-Megawatt MW grid-connected system, owned by AES and Mitsubishi Corporation, will pave the path for the broader adoption of grid-scale energy storage technology across India. Fluence, a market-leading supplier of energy storage technology jointly owned by Siemens and AES, supplied its state-of-the-art Advancion lithium-ion storage technology for the project.

Benefits of the BESS: 10 MW energy storage system at Tata Power Delhi Distribution's Rohini Substation to provide better peak load management, system flexibility, and reliability to more than 2 million consumers

- Battery-based energy storage enables electricity to be stored and then delivered within milliseconds, reducing instability of the electric grid and enabling more energy to be captured and delivered on demand.
- Battery-based energy storage provides the flexibility and agility to better integrate intermittent solar and wind energy resources into India's electric grid and ensure high-quality power for consumers.
- Fast-ramping energy storage like the Delhi system can be built in a matter of months to provide critical flexibility to wherever needed. In comparison, older technologies such as pumped hydroelectric energy storage can take years to build and are highly dependent on geographical locations. Battery-based energy storage also uses no water and produces no emissions.

Way Forward: India has the ambitious vision of installing 225 GW of renewable energy generation by 2022.

6D. Maharashtra State Electricity Distribution Company Limited

6D i. Pilot Agricultural DSM Program: Replacement of Old Agricultural Pumps by Star rated pumps in Maharashtra

As a part of the National Agricultural Demand Side Management Programme, MSEDCL, in association with the Bureau of Energy Efficiency, implemented a pilot project to replace inefficient agricultural pump-sets in the Solapur district. The objective of the pilot was to test the ESCO-based program for Agricultural DSM through a public-private partnership.

Project implementation strategy followed.

Implementation strategy followed:

a. The Agia shall be responsible for dismantling the existing pump sets in the identified feeders,

procurement EEPS, installing EEPS, testing, maintenance, and repair/replacement.

b. Project Finance –The project implementation has been selected on ESCO mode with the implementing agency to arrange finance for the initial capital investment required for purchase.

c. Support to Farmers – Farmers shall be provided EEPS free of cost. They will also be provided with free installation of the EEPS. The EEPS shall be procured with a minimum warranty of 12 months. The total R&M of 60 months shall be provided at no cost to the farmer.

d. Disposal of Old Pumpsets – The implementing agency shall remove the existing old pump sets and keep an inventory of old pumps. They shall dismantle and dispose of the old pump sets.

e. Periodic performance – The M&V agency shall periodically demonstrate sample pumpset of different types and sizes during the contract period.

Project finance

The annual payment from MSEDCL to the Agia shall be the sum of the following two components:

i. Rs. 141.26 lakhs from the LMC fund – subject to 'guaranteed annual energy savings' derived from competitive bidding.

ii. The monetized value of annual energy savings to be shared with the implementing agency M/s CRI.

Open Well Submersible Pump set

Installation of EE Open well Submersible Pump set

Sharing of Project Benefits

Energy savings are shared between CRI & MSEDCL on a 30:70 sharing basis, respectively. The energy savings are priced at Rs. 2.70/unit for a project period of five years.

Electricity savings, peak avoided, and monetary savings

Post immediate installation of all the 2209 EEPS, the established energy savings were 6.145MUs. Total Energy saving in 5 yrs is 24.02 MU.

6D ii. Distribution of LED (DELP) under UJALA scheme

- MSEDCL has implemented the Domestic Efficient Lighting Program (DELP) in coordination with M/s EESL under Demand Side Management (DSM) scheme.

- LED Bulb distribution program existing ICL/CFL bulbs have been replaced by energy-efficient bulbs (LEDs) of 7watts & 9 watts on an Upfront and EMI basis resulting in substantial saving in the consumption and reduction in overall demand.
- M/s EESL has supplied 7 watts & 9 watts LED bulb, cost of each bulb was Rs. 105/- and Rs. 95/- on EMI basis down payment of Rs.10/- each. The balance cost towards the price of the LED bulbs recovered from the consumer's electricity bill.
- Scope of work: Domestic consumer, Institute, hospital, colleges & school
- Total LED bulb distributed (Upfront & EMI Basis): Total -2,19,21,607 LED Bulb (7 Watt – 1,97,40,588 LED Bulb , 9 Watt – 21,81,019 LED Bulb)
- Energy Saving achieved through DELP scheme is 422.75 MUs.
- Guarantee period (03 Year) completed. Cumulative energy-saving considered 1268.1 MUs.

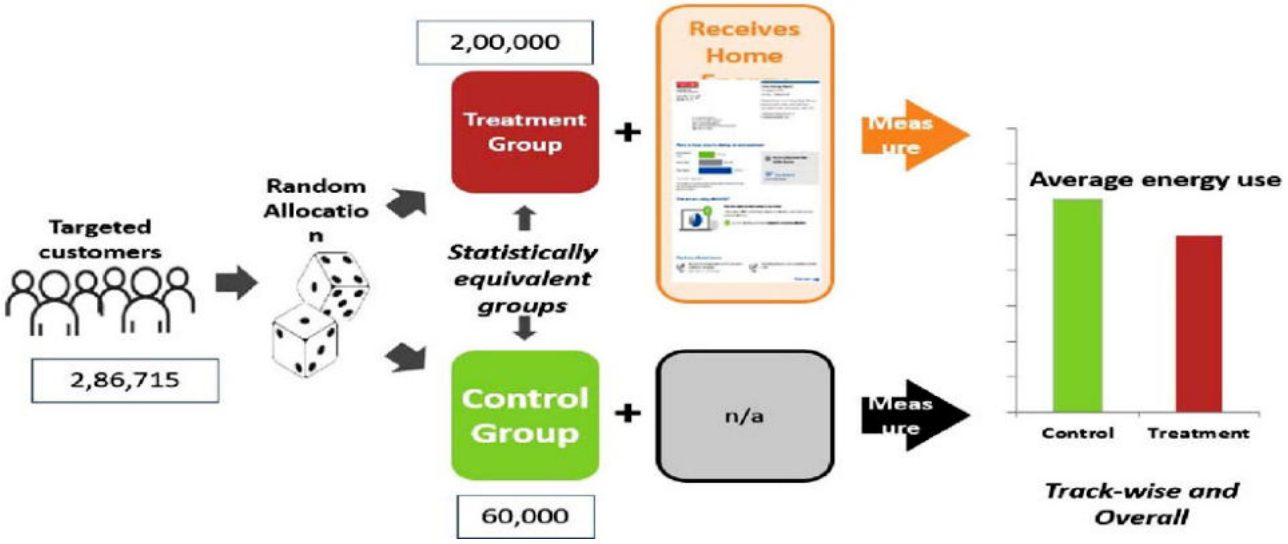
6E. BSES Rajdhani Power Limited (BRPL)

6E i. Behavioural Energy Efficiency Program:

- BRPL had launched India's first Behavioral Energy Efficiency program in association with Oracle Utilities.
- As part of a pilot project covering 2 lakhs customers in South and West Delhi, insights on how energy is used at homes are being analyzed, and individual customized Home Energy Reports are being developed.
- Based on results in comparable markets, Home Energy Reports (HERs) have the potential to save 1-2% of BRPL's peak power demand. The program was rolled out across South and West Delhi in October 2018. Considerable saving has been observed under this program.
- Bimonthly reports are shared with the consumers. The program's main aim is to promote domestic consumer energy literacy and energy efficiency by participation in Energy Efficiency programs.
- The conceptual video of the program - https://www.youtube.com/watch?v=x6xVbLDL6yU

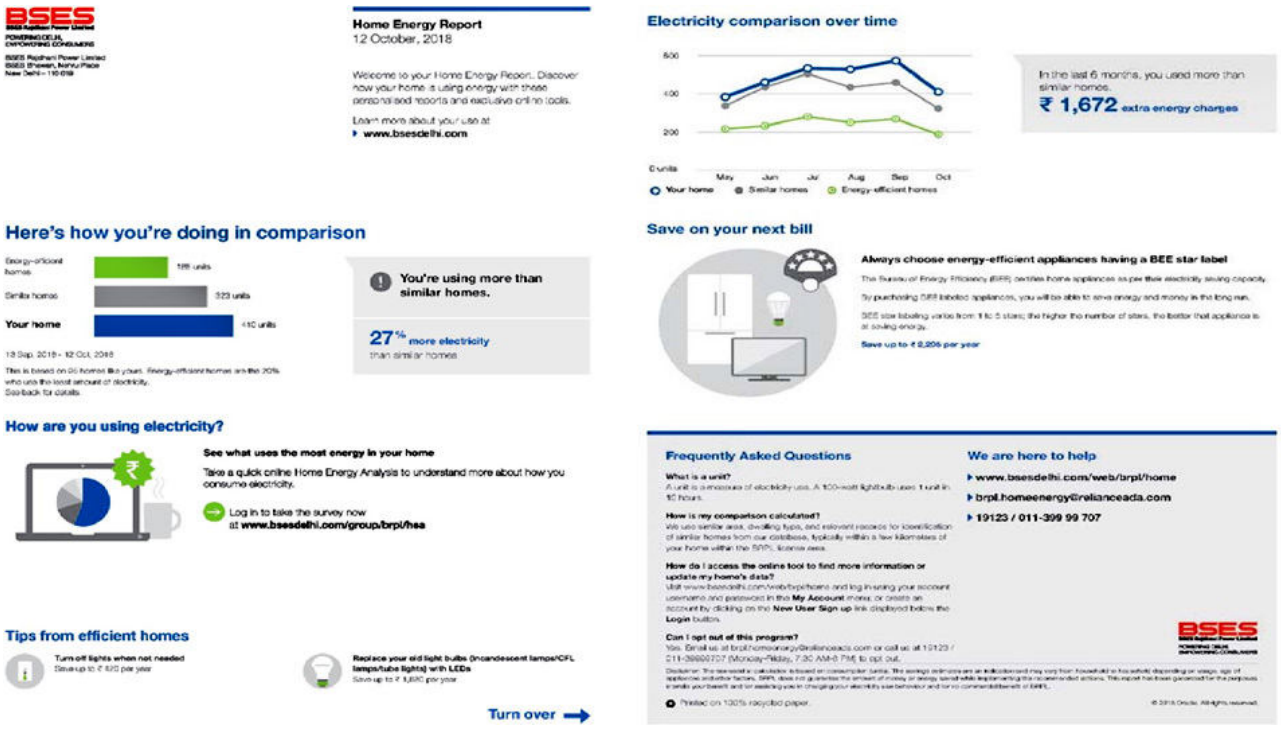
Measurement Approach Adopted in Behavioral Energy Efficiency Program

- Selected consumers were divided into two statistically equivalent groups through random allocation as Treatment group and control group.
- The treatment group consists of 200000 consumers across 10 divisions, and HERs are shared with them every two months.
- The Control group consists of 60,000 members, and they have not shared any reports.
- Now savings are compared across both the groups.



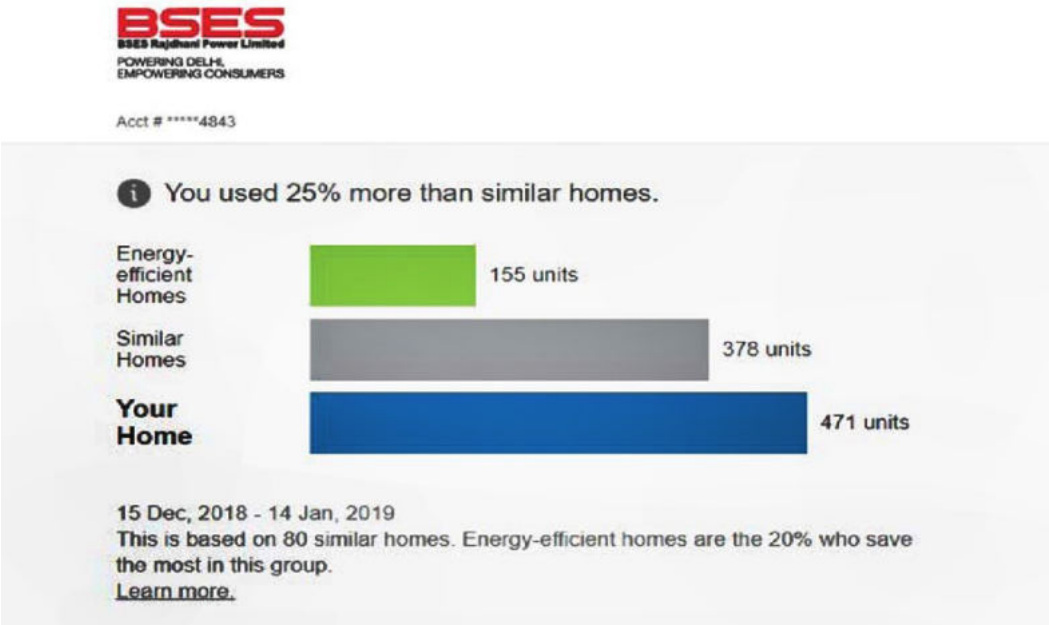
All two lakh BRPL customers in the treatment group receives the following:

- Paper-based Home Energy Reports (HERs) sent on an opt-out basis bimonthly by post. In total, 10 papers HERs will be sent over the 18.month program implementation period.



- Web & mobile-based information, insights & analysis made available 24 hours/day through widgets embedded on the BRPL Website. Those in the treatment group can access personalized data analytics and advice by logging into their account and viewing several online tools (which are made to be interactive, enticing the customer to enter more detailed household and appliance level information to receive further customized insights and recommendations).

- E-mail Home Energy Reports (eHERs), an electronic version of the paper HERs , though sent monthly (as opposed to bimonthly in the case of the paper version) to all treatment group customers with registered, valid email addresses.



- The savings due to implementation of BEE Program for 2 lakh consumers is
- At discom periphery, the savings are 2.8 MUs and
- Savings at Consumer periphery are 2.6 MUs
- BEE Program is highly scalable, and it promotes uplifts of other Energy Efficiency Programs and results in high consumer satisfaction.
- BRPL had submitted a proposal to the Hon'ble Commission to extend the program to a large consumer group across 10 divisions of the BRPL licensee area.
- BRPL organized various stakeholder programs, and glimpses are shared below.

BRPL to get $ 1 million grant from US USTDA to Promote Energy Conservation

US Trade and Development Agency (USTDA) has signed a grant ($ 1,021, 896) supporting BRPL to develop and deploy India's first Behavioural Energy Efficiency (BEE) program. The objective of the program is to bring-about verifiable energy savings. Based on results in comparable markets, the initiative has the potential to save 1-2% in BRPL' peak power demand once the program is rolled-out across the discom.

Under the pioneering initiative, Oracle America Inc (Redwood Shores, CA) will carry-out a pilot project covering 2 lakh customers in South and West Delhi using Oracle Utilities' Opower customer engagement software.


BSES wins $1mn grant for energy conservation programme

$1m grant for discom

BSES discom gets US grant for green plan

BSES to develop 1st Behavioural Energy Efficiency programme

US agency grant for BSES

$1 million grant to discoms for energy programme

STATESMAN NEWS SERVICE

BRPL organises workshop on Behavioural Energy Efficiency Program

BRPL and Oracle Utilities, aided by US Trade and Development Agency (USTDA), organised an interactive stakeholder workshop in September 14, 2018, on the soon-to -launch Behavioural Energy Efficiency pilot project covering two-lakh consumers in South and West Delhi. It was addressed by the DERC Chairman Hon'ble Justice S S Chauhan and included eminent speakers from BRPL, USTDA, Oracle Utilities, TERI, Prayas, Shakti Foundation and AEEE. BRPL CEO Mr Amal Sinha also addressed the gathering.

BRPL organises workshop on Behavioural Energy Efficiency Program

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6E ii. Super Energy Efficient BLDC Fan Scheme:

- Super Energy efficient BLDC fan is the new revolution in the ceiling fan industry. BLDC technology, in simpler terms, BLDC uses a combination of Permanent Magnets and Electronics to achieve the kind of efficiency and performance it delivers.
- The super energy-efficient BLDC fan consumes only 28W at rated speed against the 80W consumption of conventional fans.
- BRPL had submitted the DPR for Super Energy Efficient Fan schemes to Hon'ble commission, and Hon'ble Commission has approved the rebate-based Super Energy Efficient Fan scheme for 50,000 fans for BRPL residential consumers only.

Salient Features of the Schemes are as follows:

1. Total Number of fans offered under the Scheme: 50,000.
2. A fan offered under buy-back scheme: 40,000
3. A fan offered under without buy-back scheme: 10,000
4. The rebate approved under the Scheme is Rs 815 per fan.
5. Maximum three Number of fans to be offered under buy-back scheme.
6. Maximum two Numbers of fans to be offered without buy-back scheme.
7. Old fans must be disposed of in an environment-friendly manner under the buy-back Scheme.

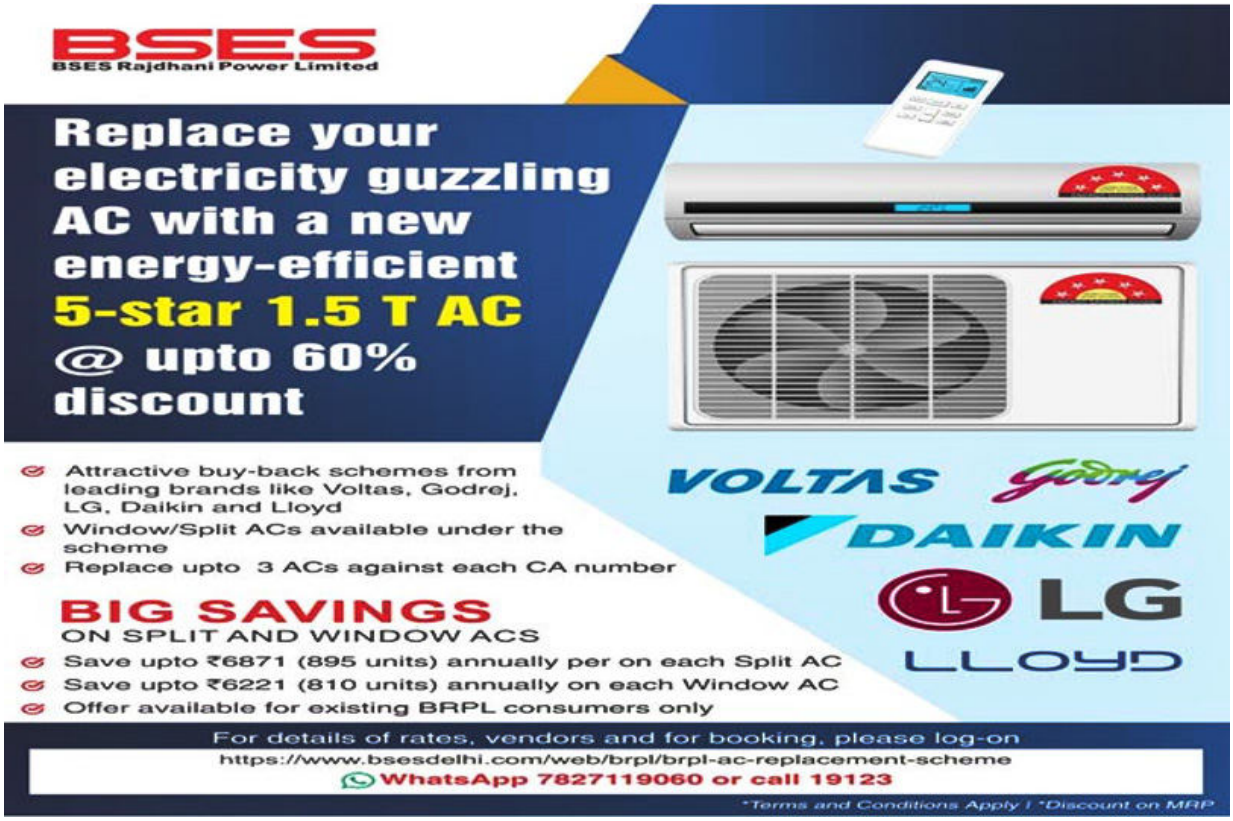
- Till FY 2020 – 21, a total of 6628 Energy Efficient fans are installed under Consumer premises resulting in annual savings of 0.83 MUs at the consumer end and 0.90 MUs at DISCOM Periphery.

6E iii. Replacement of Old AC with 5 stars rated energy-efficient AC:

- BRPL had launched the 'AC Replacement Scheme' in partnership with leading air conditioner manufacturers in the month of May 2018 after getting approval from the Hon'ble Commission.
- 7584 ACs are replaced with BEE 5 star rated ACs for residential consumers till FY 2020 – 21 and expected savings at the consumer end is 5.92 MUs and 6.41 MUs at DISCOM periphery.

Salient Features of the Schemes are as follows:

1. The Scheme shall be operated under 100% buy-back arrangement.
2. The Scheme offers 10,000 Numbers of 1.5-ton AC.
3. The rebate amount is calculated based on the regression equation given by the Hon'ble commission, which ranges from Rs 4000 to 5300 per depending on the full load power consumption of Ac and compressor warranty period.
4. The Scheme is proposed for Window, Window inverter, and Split Inverter type 5 Star rated 1.5 tonnage AC only.
5. A maximum number of 3 ACs are offered to a consumer on a first-come, first-serve basis.
6. Old ACs must be disposed off in an environment-friendly manner.



6E iv. Automated Demand Response (ADR) Program by BSES Rajdhani Power Limited

When the demand increases and becomes commercially unviable for DISCOMs to meet the increasing demand by increasing generation, Automated Demand Response is one of the effective solutions that DISCOMs can implement. Automated Demand Response (ADR) is the consumer's ability to reduce electricity consumption at their location when wholesale prices are high, or the reliability of the grid is threatened. It helps DISCOMs in peak load management through improved demand management and generation of Negawatts (energy saved) by engaging consumer categories in ADR interventions. As the share of renewable energy increases in the generation basket, ADR programs can also support grid balancing.

ADR POC Program:

- The Hon'ble Commission has given in-principal approval to implement the Automated Demand Response (ADR) program through its vide letter subject to the following conditions.
- The ADR mentioned above shall be a pilot scheme that may be continued for one year without any CAPEX liability on the consumer.
- BRPL shall agree with the participating consumers.
- BRPL partnered with IIM Ahmedabad and Sustained Impact to conduct an Automated Demand Response (ADR) POC program.
- A customizable web-based platform is developed for onboarding the consumers, through which DISCOM can publish the events, send notifications to the participating consumers about the events.

SUSTAIN IMPACT — Dashboard | Demand Response Events | Customers | Reports

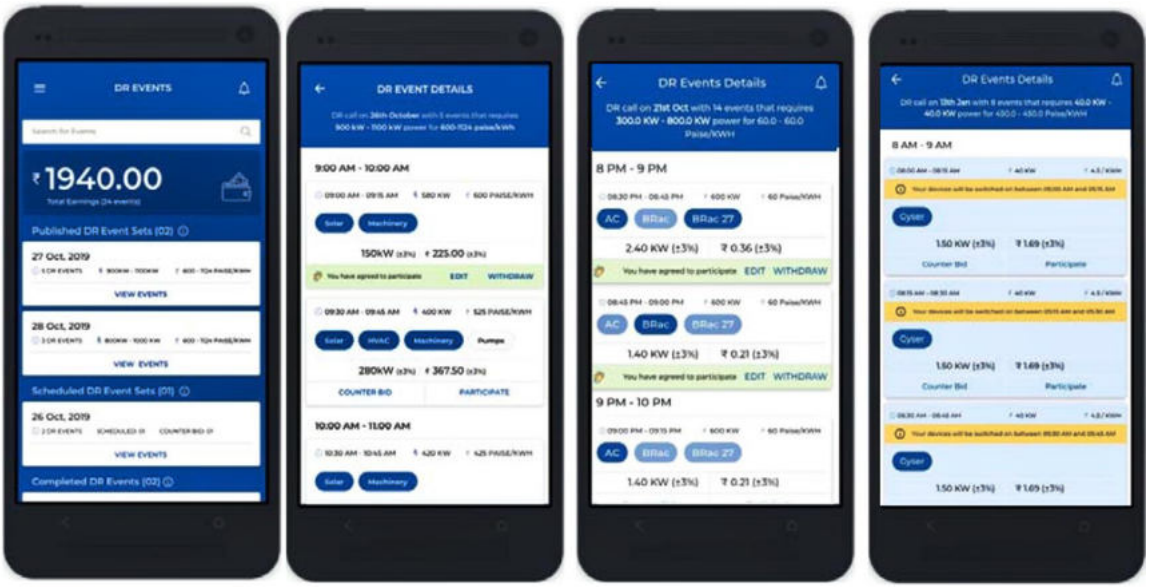
Dashboard / Demand Response Events / 20191026HYS

20191026HYS — Publish Events | Event Overview | View Customers

Exclude times with '0' quantity & price

DR EVENTS	TIME	PLANNED QUANTITY (KWH)	PRICE (PAISE)	COMMITMENTS (KWH)	SHORTFALL (KWH)	ACTUAL QUANTITY (KWH)
2019102604HYS	0800 - 0815	-100	500	-100	0	-100
2019102605HYS	0815 - 0830	450	925	450	0	450
2019102606HYS	0830 - 0845	200	925	200	0	200
2019102607HYS	0845 - 0900	700	1025	700	0	700
2019102608HYS	0900 - 0915	250	1025	220	30	LIVE 153
2019102609HYS	0915 - 0930	500	925	190	310	--
2019102610HYS	0930 - 0945	500	925	250	250	--
2019102611HYS	0945 - 1000	250	500	50	200	--
2019102612HYS	1015 - 1030	250	500	50	200	--
2019102613HYS	1030 - 1045	1000	1025	500	500	--
TOTAL	--	4200	--	2710	1490	1603

- A mobile-based app is designed for the participating consumers. The participating consumers can approve the events published by DISCOM so that the connected appliances are operated as per the scheduled events.



- Through a mobile interface, consumers can also check their savings achieved through participation in the events and history of participated events.
- Total 22 consumers, including domestic and commercial, and industrial consumers, are onboarded in the ADR POC.
- Domestic consumers: 19 Numbers
- C&I Consumers: 03 Numbers
- Virtual interactive sessions were organized with all the participating consumers to explain the

project and clear any doubts.

- The program was conducted in two phases.
- In phase – I, peak shaving is demonstrated by turning AC loads ON/OFF using a 16A Smart Plug-in evening and late-night peak hours in summer. Peak Shaving is also demonstrated with 10 participants by increasing the AC set point during the ADR event through IR Blasters.
- In Phase – II, Load Shifting is demonstrated by shifting the water heating loads (Geysers) from morning peak hours to early morning odd peak hours during winter through the smart plug.
- Commercial and Industrial consumers are participating only in peak shaving events.

Fig 1: Smart Plugs

Fig 2: IR Blasters

- A total of 4806 events are published for domestic consumers, out of which

  Peak Shaving events – 3727 events are published in 106 days.

  Load Shifting events – 1079 events are published in 85 days.
- 363 events are published for C&I consumers for 68 days.
- Total Energy savings observed through ADR POC is 652 KWh, and total relief offered is 1005 KW.
- For every consumer that participated in the POC, data was harvested from three sources, i.e., BRPL energy meter, Consumer smart plug, and the Demand response platform. As real-time data is unavailable through domestic consumer energy meters, Energy consumption is monitored with a smart plug and validated with an Energy meter. However, an Energy meter records the total energy consumption of a house, whereas a smart plug monitors the energy consumption of connected appliances.
- BRPL requested the Hon'ble commission to give its approval for large-scale deployment of the ADR Program.

6E v. Energy Wise Energy Rise (EWER) program by BSES Rajdhani Power Limited

- With the increasing energy demand, effective management and conservation have become the need of the hour. Education plays a critical role in saving the world's energy and power resources. Recognizing the immense value that schools and school children can bring to the initiative and considering this urgent need, BSES, in collaboration with The Energy and Resources Institute (TERI), started the campaign, Energy Wise Energy Rise, in March 2018. Each year, the program aims to build competencies and skillset amongst students, teachers, and general masses on sustainable practices towards energy conservation that are in sync with the UN's Sustainable Development Goals 12(Sustainable Consumption and Production), SDG 7(Affordable and Clean Energy) and SDG 4(Quality Education).
- Each year a new set of 100 government middle schools and 30,000 students and school teachers are engaged. This dedicated energy and environment awareness program sensitizes young children regarding the impact of their decisions and actions on the planet's welfare. It encourages them to play a proactive role, be it at home or school. Developing an ever-growing community of 30,000+ energy messengers each year, armed with crucial knowledge that enables resource-efficient decision making, enables the future generation to focus on the current issues and equips them with the necessary skills to deal with the challenges of an unpredictable future. The children are taught how to do energy audits in their households and neighborhoods to optimize monthly energy consumption at the community level. The program is currently in its third phase in the year 2021.

6E vi. Glimpses from Energy Wise, Energy Rise 2018

Documentary of Year 1 of the programme.
https://www.youtube.com/watch?v=1P8ontaZ3M

Mr Amal Sinha, CEO, BSES and Mr Manish Sisodia, Dy. Chief Minister of Delhi at the launch of the project outcome report

Mr Manish Sisodia, Dy. Chief Minister of Delhi, presents the awards to teachers and programme participants.

- **Documentary of Year 2 of the programme.**

  https://www.youtube.com/watch?v=fteZpoTVMmw

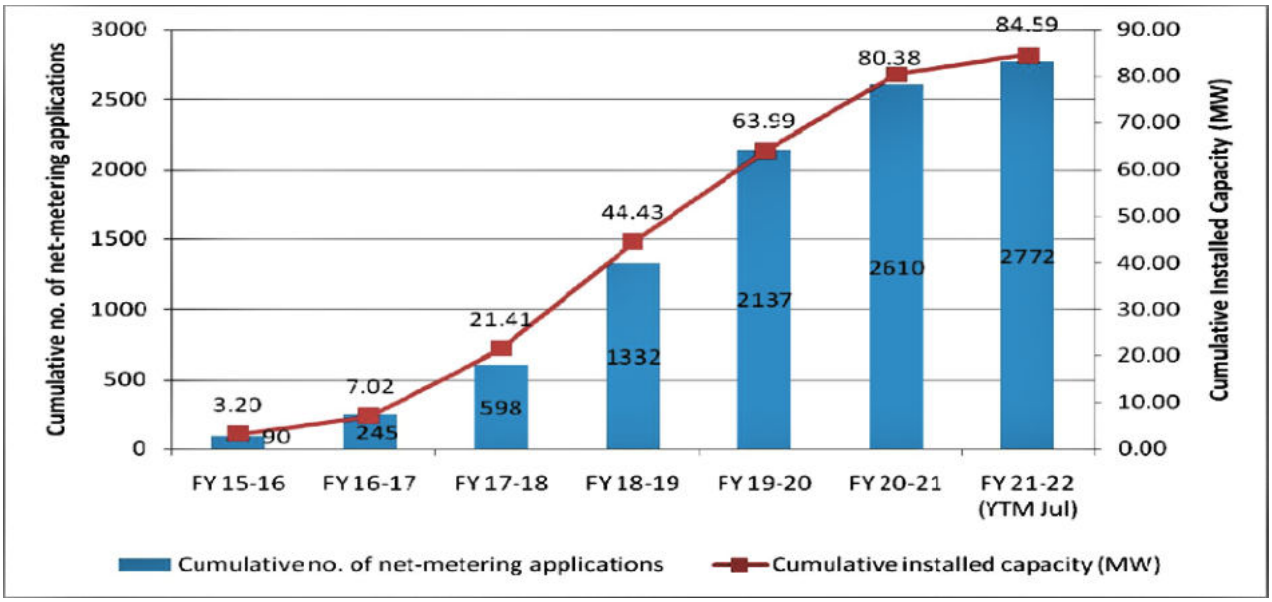
6E vii. Rooftop Solar PV Installations:

- BRPL is at the forefront of leading the solar revolution in the city and sees the unique benefits of adding distributed generation to its network.
- BRPL started its 1st India utility anchored solar rooftop consumer aggregation program for residential consumers; Solar City initiative – "Solarize Dwarka" on 07th January 2018, is a path-breaking initiative that aims to maximize the utilization of solar rooftop potential.
- Under this program, rooftop solar installations will be provided at a single point for the entire apartment complex. This program was launched in partnership with United States Agency for International Development (USAID).PACE.D and Indo. Germanic Collaboration (GIZ) and TERI. Under this initiative, around 25 societies have installed a solar capacity of 1.5 MWp.

- After the extraordinary response of Phase I of the Solar City Initiative – 'Solarise Dwarka,' BRPL launched its phase – II of its solar city initiatives. 'Solarise Shakur Basti' on 28th October 2018. Shakur Basti area is home to important colonies like Paschim Vihar & many apartment complexes, and the area has a solar rooftop potential of around 15 MWp. It is targeting to realize 5MWp of rooftop net metering from the area.
- BRPL launched its community-based demand aggregation program "Solarise Safdarjung" in a virtual ceremony on 1st November 2020 in the presence of the RWAs from the Safdarjung area, for a limited period and a limited area in partnership with Smart Power and the Council on Energy, Environment, and Water (CEEW).
- The intensive 8–10-week campaign to accelerate the adoption of rooftop solar in the Safdarjung area is completely virtual, using innovative online tools that bring together the residents and vendors at one place.
- The campaign aims to raise awareness through community dialogues and word-of-mouth recommendations and address consumers' challenges in adopting the technology through an online platform called WeeGreen.

- Under this program, products are offered under Non-Central Financial Assistance (NCFA) only.
- In the existing Phase – II scheme Domestic Content Requirement (DCR) component is mandatory. Still, the non-DCR component of solar panels may be a better deal for consumers offered under this program. The consumer can also have the opportunity to select non-DCR component panels by paying a slightly high cost.

- As a result of the consumer awareness programs, BRPL has energized a record of over 2770 rooftop solar connections – with a solar load of over 84.59 MWp in the south and west Delhi. Consumers across various categories, including residential and CGHS, have warmed up to rooftop solar net metering in a big way.

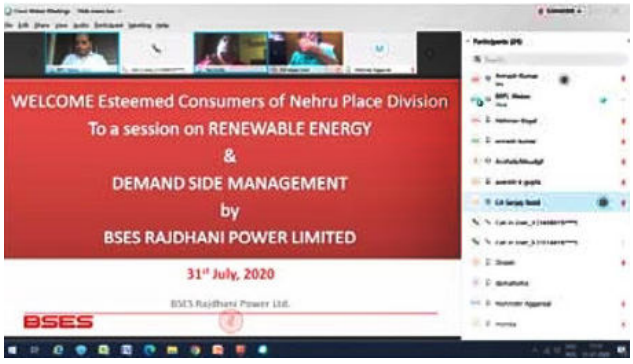


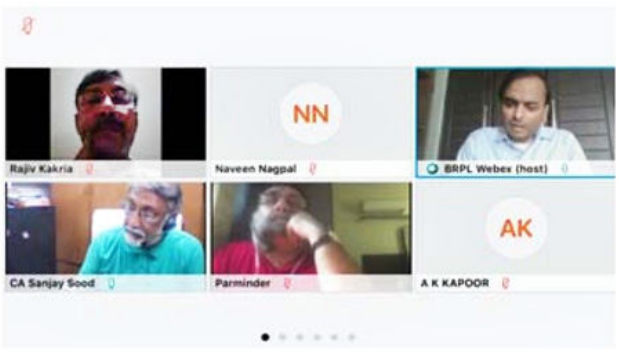
6E viii. Consumer Awareness Programs:

BRPL is continuously educating the consumers through its awareness programs on Rooftop Solar and Energy conservation. The program mainly focuses on the roles and responsibilities of the consumer regarding eergy saving and energy efficiency by explaining the importance of the usage of star-rated appliances over conventional appliances and the benefits of the Rooftop solar system. Consumers are very interested in participating in these awareness programs, and the response was very good from the participated consumers.

Due to Covid in FY 2020 – 21, 25+ consumer outreach programs were conducted through virtual meetings covering various topics like Rooftop Solar, PV Port, AC Replacement Scheme, and Super Energy Efficient Fan Scheme. A glimpse of the consumer awareness program is as follows.

Online consumer awareness program:





6F. Telangana State Renewable Energy Development Corporation Ltd. (TSREDCO)

6F i. Municipal Demand Side Management (MuDSM) project

About Project: In Telangana, under Mu DSM, more than 9.2 Lakh existing streetlights have been replaced in 73 Urban Local Bodies with energy-efficient LED lights. A significant share of replacement was done at GHMC (4.2 Lakhs)

Savings: During 2018-19, at GHMC, replacement of 4.2 Lakh streetlights had resulted in a reduction of demand by 40 MW and energy savings of 158 MUs, which is equivalent to Rs. 85 crores of electricity bill per annum. In the remaining 72 ULBs, in 2018-19, 76.64 MUs of Energy have been saved, which is equivalent to Rs.45 Crores.

6G. Kerala State Electricity Board Ltd (KSEBL)

6G i. Filament Free Kerala Program

Objective

- Aimed at supplying good quality LED lamps at moderate rates to replace CF lamps, fluorescent tubes, and filament bulbs commonly used in houses and streetlights.

Implementers involved

- Kerala State Electricity Board Ltd
- Energy Management Centre (EMC) Kerala

Details of the initiative

- A tender was released for the procurement of 1 Crore (9W) LED bulbs, for which six bidders submitted their bids.
- Crompton Greaves Consumer Electricals Ltd was the lowest bidder (L1), and M/s H.Q Lamps Manufacturing Co. Pvt Ltd was the second-lowest bidder (L2) as per the tender conditions. Upon discussion, the second-lowest bidder confirmed its willingness to match the rates quoted by the L1 bidder.
- PO issued to M/s Crompton Greaves Consumer Electricals Ltd and M/s. HQ Lamps Manufacturing Company Private Limited to supply 1 Crore LED bulbs in 70: 30 ratio at the L1 price of 46.70 INR/LED (Inclusive of GST@12%).

Details of the initiative

- The selling price of 9 W LED bulb: Rs.65/- per bulb + 3 years guarantee period.
- The cost of the bulb can be paid together with the electricity bill or in installments.
- The Hon'ble Chief Minister of Kerala did the state-wide inauguration of the program on 7th January 2021. Chief Minister stated that through this initiative, 100 to 150-megawatt electricity could be saved daily*.

Achievement

- Target achieved by distributing 1 Crore 9W LED bulbs
- Due to an additional requirement of LED bulbs from the consumers, KSEBL decided to procure an additional 25 Lakhs 9W LEDs and the delivery is to be completed by 24th September 2021.

6H. Uttar Gujarat Vij Company Ltd. (UGVCL)

6H i. SuryashaktiKisan Yojana (SKY)

Scope: As per the scheme, farmers with existing electricity connections will be given solar panels according to their load requirements.

Eligibility: The scheme applies to agricultural connections. The farmer is allowed to install 1.25 kW per HP of contracted load. For example, a consumer of 10 HP load can install 12.5 kW of a solar PV panel.

Implementation model: Under this scheme, the State and Central governments will give a 60 percent subsidy on the project's cost. The farmer must pay 5 percent of the cost, while 35 percent will be provided as an affordable loan, interest on which the state government pays. The duration for repayment of the loan amount has been fixed for seven years. Farmer can sell surplus energy to

the grid. “For the first 7 years, farmers will get per unit rate of Rs 7 (Rs 3.5 by GUVNL + Rs 3.5 by state govt.). For the subsequent 18 years, the farmer will get the rate of Rs 3.5 for each unit sold to the grid. During the loan repayment period, the ownership of SPV will be with DISCOM on behalf of the state government. After completion of loan repayment, the ownership of SPV shall be with the farmer.

Benefits of the scheme:

- Power generated from the SPV projects of the scheme may be accounted towards meeting the RPO of DISCOMS
- The scheme will help to reduce cross-subsidization among consumers.

Status on Date: The status of the implementation as of date is provided below:

No of feeders completed by March-2019	No. of Consumers covered in SKY Scheme	Aggregate total Capacity of SPV System (MW)	Total Project Cost (Rs. In Lakh)
12	277	11.830	6172.21

6l. Dakshin Gujarat Vij Company Ltd. (DGVCL)

6l i. Kisan Urja Suraksha Evam UtthanMahabhiyan (KUSUM) Scheme

The objective of the project: -

To reduce the financial burden of DISCOM and Government as well as cross-subsidization to another consumer by lowering the subsidized power to farmers

To promote the source of renewable energy and meet the solar renewable purchase obligation of DISCOM.

Brief details of the project: -

- This program is aligned with the Govt. of India’s Kisan Urja Suraksha Evam UtthanMahabhiyan (KUSUM) Scheme.
- Farmers are eligible for 1.25 kW of solar panel per HP of contracted load.
- Participation of a minimum of 70% farmers the feeder mandatory for SKY implementation; others will be separated by “watchdog.”
- Space required in the farm:- 100 sq. feet per KW of SPV installation.
- Farmers’ contribution towards solar PV project cost will be 5%, balance 95% amount from a subsidy from Central/ State Govt. and a loan from NABARD/other financial institutions.
- Farmers shall utilize the generated solar energy for their irrigational requirements. Surplus energy shall be injected into the grid for sale to DISCOM at a tariff of Rs. 3.50/Unit and another Rs. 3.50/Unit will be paid by the State Govt. as EBI incentive (within the limit of 1000 Units/Kw/Annum). The payment of EBI of Rs. 3.50/Unit shall be considered as30 % towards Govt. of Gujarat share to NABARD/ Financial Institutions.

- EBI subsidy of Rs 3.50/Unit shall be applicable only for the Loan repayment period of 7 years, and after that, no subsidy will be granted by the state Govt.
- After the loan repayment period, the applicable tariff will be Rs 3.50 /unit for a balance period of 18 years.

Benefits of project: -

(1) Benefits to DISCOM

- Reduced transmission & distribution losses.
- Reduced amount of subsidy to farmers.
- Profit from reselling solar energy.

(2) Benefits to Consumers

- Farmer is benefited through the sale of surplus energy.
- The farmer will get free maintenance and a guarantee for 7 years from the agency.
- Farmers will get daytime electricity generation to arrange human resources for the watering schedule and other agricultural activities.

(3) Achievements of project

- India's 1st pioneer SKY feeder 11KV Pariag was commissioned in Nov 2018.
- DGVCL has commissioned a total of 11 nos. of Agriculture feeders with 373 nos. of AG consumers solarized under the SKY scheme, amounting to Rs. 19.15 Crore with 2.64 MW SPV system installed in FY 2018-19.

6J. Bangalore Electricity Supply Company Limited (BESCOM)

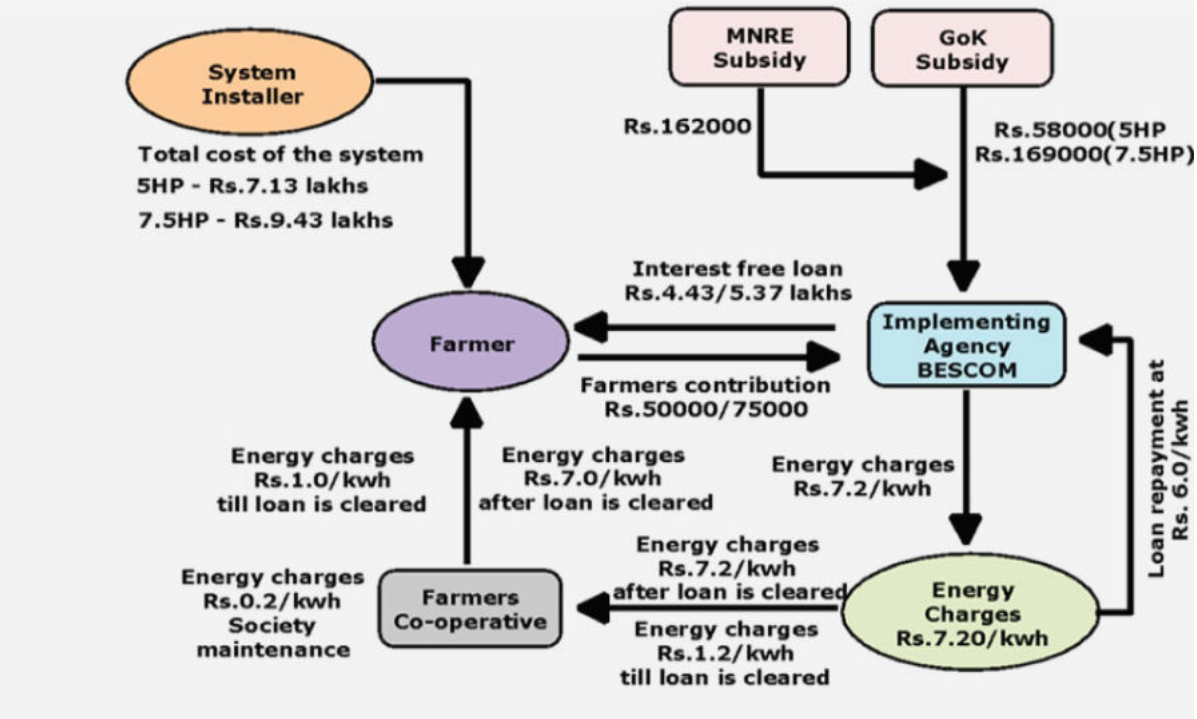
6J i. Surya Raitha Pilot Project

About the project: The existing 310 irrigation pumps (IP) sets were replaced by energy-efficient variable frequency drive pump sets with Solar PV. Solar PV installed under this project is oversized by 50%. About two-thirds of the solar energy is being utilized to run the IP set, and 1/3rd is being exported to the BESCOM grid. The project also involves Famer Cooperative, which takes care of maintenance.

Project Cost: Cost of the project and its breakup based on source is provided below:

Particulars	Cost (In Rs. Crore)
Total cost of pilot project	**24.35**
GoK subsidy	**2.87**
MNRE subsidy	**5.02**
Upfront payment by farmers	**1.79**
Interest free loan from BESCOM	**14.67**

Implementation model: Schematics of implementation model is provided in figure below:



Results: Energy generated from the SPV and details about import and export to grid is provided in table below:

Particulars	Electricity (In MUs)
Total Solar Generation	**4.49**
Export	**2.52**
Import	**0.95**
Total electricity consumption by Pump	**2.92**

Benefits of the project:

BENEFITS TO DISCOM:

- Reduction in realizing of subsidies by Govt. to ESCOMs
- Reduction in energy consumption
- Reduction of T&D loss
- Reduction in failure of DTs
- Assured quality of power supply to farmers during day time
- Save on infrastructure cost
- Save on high cost energy
- Reduction in green gas emissions and global warm issues
- Improvement in fiscal deficits
- Increased agricultural productivity
- Improvement of water table
- Enhance quality of irrigation
- Assured day time power supply
- Steady income from solar generation apart from income earned through crops
- Source of income during drought years. Details of assured incomeprovided below:
- Loan period (upto 12 to 15 years)
- 5 HP monthly income of Rs.450/- to Rs.600/-
- 7.5 HP monthly income of Rs.600/- to Rs.800/-
- Post loan repayment (from 15 to 25 years) :
- 5 HP monthly income of Rs.3200/-
- 7.5 HP monthly income of Rs.4300/-

6K. Electricity Department, Dadar & Nagar Haveli

6K i. Ujala Scheme

The objective of the scheme was to replace inefficient household appliances such as Incandescent lamps, Ceiling fans, etc., with energy-efficient LED bulbs (9W), ceiling fans, and Tube lights. The aim was to conserve energy and reduce electric demand in the domestic and commercial categories.

The scheme was implemented from the month of Sep-2017. Under this scheme, up to 197974 nos. of LED bulbs, 11827 nos. of tube light, and 2963 nos. of ceiling fans were distributed by DNHPDCL. The target category for this scheme were Domestic and Commercial consumers. Under the Ujala scheme, Solar Energy Corporation of India limited sold the above appliances. There was no direct financial implication on DNHPDCL.

UJALA SCHEME																		
ITEMS	SEP-2017	OCT-2017	NOV-2017	DEC-2017	FEB-2018	APR-2018	MAY-2018	JUN-2018	JUL-2018	AUG-2018	SEP-2018	OCT-2018	NOV-2018	DEC-2018	JAN-2019	FEB-2019	MAR-2019	GRAND TOTAL
LED BULBS	145430	6258	5266	1941	3428	6754	4052	3371	2998	940	4017	3382	1955	2032	2301	1668	2181	197974
TUBELIGHTS	2009	6887	910	1421	100	70	70	0	0	0	0	0	0	0	0	241	119	11827
ENERGY EFFICIENT CELING FANS	191	2043	46	0	100	98	87	98	43	9	49	95	23	24	15	18	24	2963

6L. Tata Power Northern Odisha Distribution Ltd.

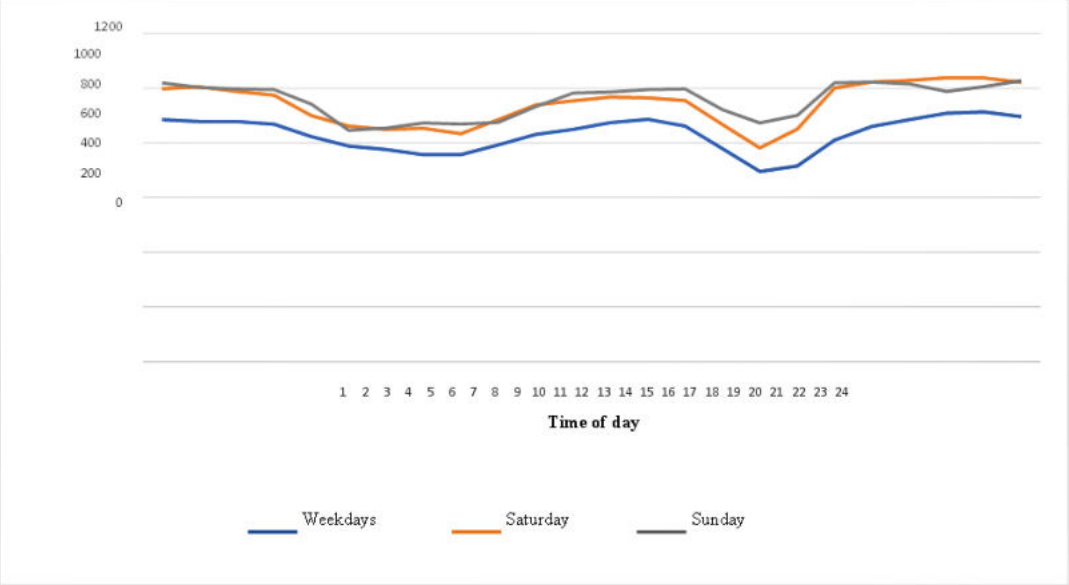
6L i. Energy Conservation Measures

Tata Power Northern Odisha Distribution Ltd. has taken the following steps taken under DSM.

Sl. No.	Description of energy efficiency improvement measure
1	Consumer awareness programs for the use of energy-efficient appliances through Media Campaigning and through print and electronic media and also using social media handles
2	Shifting peak demand by offering TOD Tariff incentive to flatten the load curve
3	Replacement of incandescent bulbs by Energy Efficient LEDs of 9 Watt (under Ama Ghare LED Scheme)
4	No penalty for overdraw up to 120% of CD during off-peak hours
5	Replacement of conventional mechanical energy meters with static digital electronic meter
6	Replacing of conventional/non-star rated transformers with energy-efficient/ star rated transformers
7	Installation of AMRs for High-value consumers

A plot between drawl of the DISCOM in MW against time on weekdays and weekends has been depicted below and it shows almost flat load pattern.

Load in MW



Major Achievements in the PAT- II Cycle for Tata Power Northern Odisha Distribution Limited.

Year	Quantity of Energy saved by DISCOM (In BU)	Monetary benefits (In Cr.) from energy savings achieved	Generation capacity that have been avoided by due to DSM activities (MW)	GHG emissions avoided (In metric tonnes of Co2) by implementing DSM activities
2015-16	0.171	55.91	28.06	226152
2016-17	0.136	43.93	21.39	172424
2017-18	0.038	12.53	5.91	47648
2018-19	0.169	55.20	24.69	198967
Total	**0.515**	**167.572**	**80.056**	**645191**

7.0 Ongoing & Future DSM measures are to be implemented by Indian DISCOMs

Currently, various DSM measures are ongoing, and some are in the process of implementation by DISCOMs.

7A. Andhra Pradesh Eastern Power Distribution Company Limited

7A i. Ag DSM Project-II: Replacement of conventional agriculture pump sets with energy efficiency pump-sets

APEPDCL has initiated the Ag DSM program to replace 35000 No's old conventional pump sets with the most Energy Efficient pump sets in 5 Districts of APEPDCL.

The total Annual consumption of existing old pumps is about - 377.72 MU
Total Annual consumption of New EEPS about - 264.60 MU
Energy savings to DISCOM per year - 113.12 MU
Benefits from the program are - Rs.45.25 Cr.

Total project cost including PMC works out to Rs.153.77 Crs & REC has sanctioned an RTL of Rs.157.20 Crsunder IE Distribution category. Initially, APEPDCL has programmed for the installation of 18000 No's pump sets. Also, EESL replaced 16714 existing pump sets with Energy Efficient Pump sets as of 31.05.2019.

Sl. No.	CIRCLE	No. of EEPS installed as on 31.05.19	Energy Savings Calculated as per Sampling data before and after using EEPS		Number of Energy efficient Pumpsets installed			Energy Saving due to installation of EEPS in Year			Total Savings achieved as on 31.05.19	Total Amount Paid to EESL in Rs.Crs as on 31.05.19
			% Energy Savings	Average power savings achieved for each 5 HP EEPS	Upto Mar-2018 (FY 2017-2018)	From 01.04.18 to 31.03.19 (FY 2018-2019)	May-2019	2017-18	2018-19	2019-20 (Up to 31.05.19)		
1	Srikakulam	2515	19.67	1.16	1468	987	6	833828	6177808	1240284	8251920.0	7.27
2	Vizianagaram	5100	18.56	1.17	2307	2055	427	1434761	9098569	2349512	12882842.7	11.81
3	Visakhapatnam	4662	24.38	1.66	1769	2879	1	1374967	12828739	3300870	17504575.5	14.62
4	Rajamahendravaram	1565	17.03	1.02	507	983	46	414661	2802697	664560	3881917.9	6.01
5	West Godavari	2872	24.93	1.39	1260	1604	0	1004974	7577741	1706178	10288892.6	8.97
APEPDCL		16714	21.14	1.26	7311	8508	480	5063191	38485554	9261404	52810148.6	48.68
						Saving in MU		5.06 MU	38.48 MU	9.26 MU	52.81 MU	48.68 CRS
										Cumulative Cost of energy saving to the end of 05/2019 in Rs. Crs.	21.177	

Inauguration by Shri. Sushilkumar Shinde, Power Minister

Inauguration at Nandeshwar Feeder

7A ii. Off-Grid - Solar AGL Pumpsets

The government of Andhra Pradesh has launched a significant program for irrigation with solar-powered pumps and appointed M/s NREDCAP as the state nodal agency to implement the program by tendering process and finalize the rates. The MNRE, Govt of India allots the quota of pump sets to A.P.

GoAP has allotted APEPDCL a quantity of 16,754 Nos Solar AGL pump sets in a phased manner. As of 31.05.2019, APEPDCL has received 15,549 Nos (7,272 Nos under Normal Plan and 8,277 Nos under NTR Jalasiri).

Accordingly, as per the NREDCAP guidelines and allotments, quantities of 15,462 Nos (7,272 Nos under Normal Plan and 8,190 Nos under NTR Jalasiri) works were allocated to the empaneled channel partners communicated from time to time by NREDCAP. 14,694 Nos were completed (7,124 Nos under Normal Plan and 7,570 Nos under NTR Jalasiri), and 855 Nos Works are under progress (148 Nos under Normal Plan and 707 Nos under NTR Jalasiri).

7B. Daman and Diu Electricity Department

The Electricity Department of Daman and Diu has proposed setting up a 6.8 MW wind farm in the U.T. of Daman and Diu. CEA has technically sanctioned the scheme for an estimated cost of Rs.51.61 Crores and is presently under tender process & Battery Energy Storage System (BESS) of 4MW to store surplus power presently under DPR preparation.

7C. Uttar Gujarat Vij Company Ltd. (UGVCL)

7C i. Solar Roof Top Project

Existing Solar P.V. System capacity can be enhanced and, if total capacity is up to 3 kW, then 40% subsidy granted for enhanced Solar P.V. System capacity. And for 3 kW to 10 kW, the enhanced capacity will 20% subsidy. If consumers have an existing Solar P.V. System & not claim for the subsidy of earlier installation, they will be eligible for a subsidy for enhancing the Solar P.V. system.

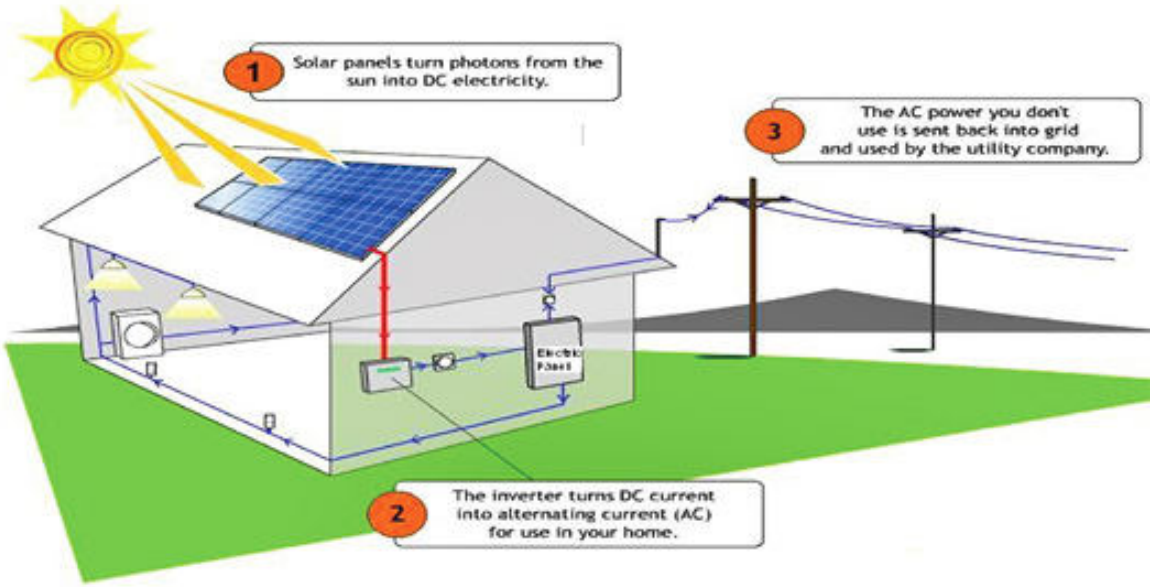
Solar P.V. system must be installed in the consumer's power boundary area, on a roof, or the ground in his premises. Also, Solar P.V. system for capacity of Solar P.V. system up to 6 K.W.,1. ph and for more than 6 K.W., 3. ph connection is required.

The target of Solar Roof Top up to 2022 is 8 Lacs in the Residential category. During 2019-20 Target is set up 2.0 Lacs for DISCOMs for Gujarat. At present, the State Nodal Agency is GEDA for registration of application & payment of subsidy. Subsidy for the consumer is as below:

- Up to 3 K.W. – 40% subsidy.
- Above 3KW to 10KW -20% subsidy.

The subsidy will be either from State or from MNRE.

Pre-Registration charges for 1. ph Solar rooftop system is 1000/- Rs and 3. ph 3000/-(as a deposit), which will be adjusted in the consumer bill after commissioning the solar system. The application will be registered at the concerned sub-division office in the CRM module of E-urja. Also, the deposit for the registration charge will not be refunded if the consumer will not install the Solar Roof Top System.



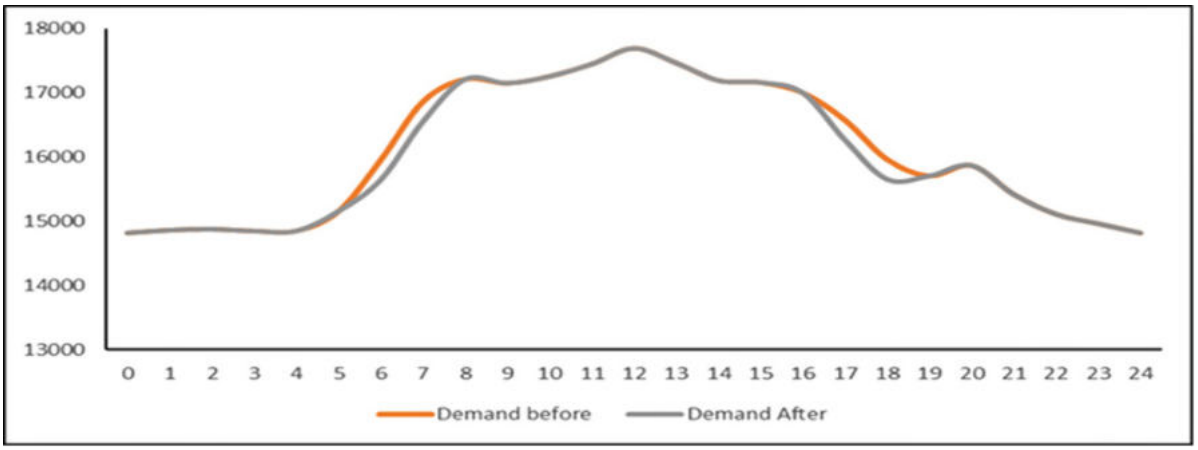
7D. Maharashtra State Electricity Distribution Company Limited (MSEDCL)

7D i. Street Light Timer at Grampanchayat Area of Maharashtra

The street light system in the Grampanchayat area is one of the vital areas where energy conservation is possible. Generally, the street light connections in the gram panchayat area are manually controlled by the staff appointed by the respective Grampanchayat. There is no accurate schedule to switch ON or OFF the streetlights, which results in the excess consumption of power. This leads to extra electricity bills. Also, the payments of street light electricity bills are not regular. In this respect, MSEDCL has proposed installing a timer to street light connections in Grampanchayat areas for timely switching ON and OFF streetlights for curtailment in unnecessary ON time & to stop wastage of electricity. The total nos. Of street light connection in the Grampanchayat area is 66531 (Monthly Consumption: 115 MUs). Considering the number of street light timers to be replaced, the same is divided into 4 regions.

This project aims to optimize the energy consumed by street lights in the gram panchayat area. Due to socio-economic causes, the tariff of these connections is of a flat rate, and thus this causes a huge subsidy burden on other category consumers. Due to manual operations, these lights are switched ON much earlier than needed in switched OFF actual. MSEDCL will provide timer-based switching off lights to rectify this common problem, making this process more efficient and removing any manual interface. This project includes installing a timer circuit with related auxiliaries like MCB's, Contractor and Relay, etc., with 11 hrs of ON time.

Demand-side activity is any measure taken to flatten or reduce the peak demand load as per the load curve. It is seen as per the load curve that the evening peak for MSEDCL is at around 19:00 Hrs, and the afternoon peak is at 12:00 Hrs. It is noticed that morning load starts increasing from 5:00 hrs in the morning. By calculation, it is observed that street lights in gram panchayat constitute nearly 310 MW load (considering the load which is accounted for and there is various unmetered load also). Similarly, for the Pune region, it is an 80 M.W. load. By optimizing ON-OFF timing, there can be a saving of 80 M.W. burdens borne by the grid, and it will considerably affect the peak load spike during morning hours.



7D ii. Replacement of existing Pumps of HT LIS Consumers by Energy Efficient Pumps (EEPs) in Kolhapur District

MSEDCL plans to replace inefficient pumps in the Kolhapur district with more efficient pumps, which will save around 25 % electricity consumption. Currently, discussions are underway with ESCO companies regarding the implementation of this project under the ESCO model, and after the finalization of terms and conditions, the tender will be floated for it.

Name of District	No of Consumers (HT)	Sanctioned load in HP (HT)	Pump	Annual Consumption in Mus
Kolhapur	327	60467	780	87.73

Funding Arrangement:

MSEDCL has conducted a meeting with Lift Irrigation societies and explains the advantages & benefits of schemes & LIS Societies have shown their willingness to participate in the scheme by contributing 50% share. MSEDCL will contribute a balanced 50% share.

8.0 Way Forward

The various DSM measures have been undertaken by DISCOMs under "Capacity Building of DISCOMs" program of BEE. The implementation of DSM programs is required to be scale up at the large level at DISCOMs. Therefore, BEE has intended to strengthen the utilities by providing following activities to DISCOMs for load management, development of DSM action plans and implementation of DSM activities and same will also help the electricity Distribution Companies (DISCOMs) in reducing their peak power purchases on the wholesale market and lowering their overall cost of operations.

- Develop one guidebook which may help the DISCOMs in smooth implementation of DSM activities.
- Organizing outreach programs to be carried out under Ag DSM and Mu DSM program at district and block level.
- Demonstrate the utility-based DSM program in selective States/DISCOMs for "proof of concept" of DSM through deployment of energy efficient technologies and various business models like on bill financing (OBF), subsidy schemes etc.
- BEE would help DISCOMs in knowledge/information sharing through interactive platforms like dedicated web portal, focused group meetings, workshops, virtual load research library and study tours.
- BEE would conduct study tours of the DISCOM's officials to the successful demonstration locations.

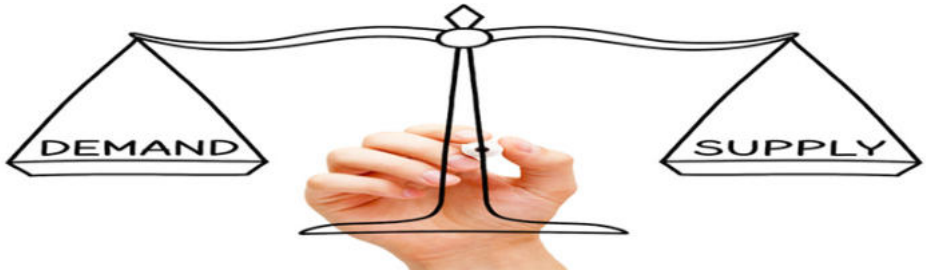
9.0 BEE's officials involved for implementation of activities under Capacity Building of DISCOMs program.

Sl No.	Name of the officials	Designation	Contact Number	e-mail
1	Shri Abhay Bakre	Director General	011-26766702	dg-bee@nic.in
2	Shri Milind Deore	Director	011-26766713	mdeore@beeindia.gov.in
3	Mr. Raghunath Baskey	Project Engineer	011-26766700	raghunath.baskey@beeindia.gov.in

Annexure – I

List of beneficiary DISCOMs under Capacity Building of DISCOMs program of BEE		
S.No.	**Name of DISCOM**	**State**
1	Himachal Pradesh State Electricity Board Limited	Himachal Pradesh
2	Tata Power Delhi Distribution Limited	Delhi
3	BSES Rajdhani Power Limited	
4	BSES Yamuna Power Limited	
5	New Delhi Municipal Corporation	
6	Uttar Haryana Bijli Vitran Nigam	Haryana
7	Dakshin Haryana Bijli Vitran Nigam	
8	Uttarakhand Power Corporation Limited	Uttarakhand
9	Punjab State Power Corporation Limited	Punjab
10	Purvanchal Vidyut Vitran Nigam Ltd.	Uttar Pradesh
11	Paschimanchal Vidyut Vitran Nigam Limited	
12	Madhyanchal Vidyut Vitran Nigam Limited	
13	Dhakshinachal Vidyut Vitran Nigam Limited	
14	Electricity Department, UT of Chandigarh	Chandigarh
15	Power Development Department, Jammu &Kashmir*	Jammu &Kashmir
16	Manipur State Power Distribution Company Ltd	Manipur
17	Department of Power, Arunachal Pradesh	Arunachal Pradesh
18	Department of Power, Nagaland	Nagaland
19	Sikkim Power Development Corporation Limited	Sikkim
20	Meghalaya Energy Distribution Corporation Limited	Meghalaya
21	Power & Electricity Department, Government of Mizoram	Mizoram
22	Assam Power Distribution Company Limited	Assam
23	Tripura State Electricity Corporation Limited	Tripura
24	Kerala State Electricity Board Limited	Kerala
25	Chamundeshwari Electricity Supply Company Limited	Karnataka
26	Gulbarga Electricity Supply Company Limited	
27	Bangalore Electricity Supply Company Limited	
28	Mangalore Electricity Supply Company Limited	
29	Hubli Electricity Supply Company Limited	
30	Telangana State Southern Power Distribution Company Ltd	Telangana
31	Telangana State Northern Power Distribution Company Ltd	
32	Electricity Department, UT of Lakshadweep	Lakshadweep

33	Electricity Department, UT of Puducherry	Puducherry
34	Electricity Department, UT of Andaman & Nicobar	Andaman & Nicobar
35	Southern Power Distribution Company of A.P. Limited	Andhra Pradesh
36	Andhra Pradesh Eastern Power Distribution Company Ltd	
37	Uttar Gujarat Vij Company Limited	Gujarat
38	Paschim Gujarat Vij Company Limited	
39	Dakshin Gujarat Vij Company Limited	
40	Madhya Gujarat Vij Company Limited	
41	Tamil Nadu Generation & Distribution Corporation Limited	Tamil Nadu
42	Electricity Department, Government of Goa	Goa
43	Madhya Pradesh Madhya Kshetra Vidyut Vitran Company Limited	Madhya Pradesh
44	MP Paschim Kshetra Vidyut Vitran Company Limited	
45	MP Poorv Kshetra Vidyut Vitran Company Limited	
46	Jaipur Vidyut Vitran Nigam Limited	Rajasthan
47	Ajmer Vidyut Vitran Nigam Limited	
48	Jodhpur Vidyut vitran Nigam Limited	
49	Maharashtra State Electricity Distribution Co. Ltd.	Maharashtra
50	Brihmanmumbai Electric Supply Company	
51	Chhattisgarh State Power Distribution Company Ltd.	Chhattisgarh
52	Dadra & Nagar Haveli Power Distribution Corporation Ltd	UT of Dadra NH
53	Electricity Department, UT of Daman & Diu	UT of Daman & Diu
54	West Bengal State Electricity Distribution Company Limited-North (formerly DPL)	West Bengal
55	West Bengal State Electricity Distribution Company Limited-South	
56	Jharkhand Bijli Vitran Nigam Limited	Jharkhand
57	North Eastern Supply Company Limited	Odisha
58	Southern Electricity Supply Company Limited	
59	Central Electricity Supply Company Limited	
60	Western Electricity Supply Company of Odisha Limited	
61	North Bihar Power Distribution Company Limited	Bihar
62	South Bihar Power Distribution Company Limited	



BUREAU OF ENERGY EFFICIENCY
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