

# Proceedings

## Third meeting of Utility CEO Forum on Demand Side Management

*September 2013*





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## Introduction

The third meeting of Utility CEO forum on demand side management (DSM) was held on 25 September 2013, to discuss and debate best practices for conducting electric utility load research and designing utility driven DSM programmes through selective case studies. The discussion was chaired by Gireesh B Pradhan, former secretary, Ministry of New and Renewable Energy, and was attended by 24 other participants (see participant profile below) representing the various state electricity distribution companies, electricity regulatory commissions, central nodal agencies and other stakeholders.



## List of Participants

1. Gireesh B Pradhan, IAS (retired), former secretary, Ministry of New and Renewable Energy (MNRE)
2. Krishan Dhawan, CEO, Shakti Sustainable Energy Foundation
3. R. N. Prasher, chairman, Haryana Electricity Regulatory Commission
4. M. R. Sreenivasa Murthy, chairman, Karnataka Electricity Regulatory Commission
5. Pravinbhai Patel, chairman, Gujarat Electricity Regulatory Commission
6. Praveer Sinha, CEO, Tata Power Delhi Distribution Limited
7. Ganesh Das, DGM, Tata Power Delhi Distribution Limited
8. Anup Mondal, senior executive VP - operations, Reliance Infra (Mumbai distribution)
9. Pramod Deo, additional VP - DSM, Reliance Infra (Mumbai distribution)
10. Mahesh Patankar, managing director, MP Ensystems Advisory Private Limited
11. Nilambar Jena, chief commercial officer, Central Electricity Supply Utility of Orissa (CESU)
12. V Ramakrishna, former member, Central Electricity Authority
13. K Sreedhar Reddy, joint director (engineering), Andhra Pradesh Electricity Regulatory Commission
14. Sanjay Srivastava, director (generation), Uttar Pradesh Electricity Regulatory Commission
15. Rajnish Mathur, director (costing and licensing), Uttarakhand Electricity Regulatory Commission
16. J B Mudgil, general manager , Operation, DHBVN, Rewari Circle, Uttar Haryana Bijli Vitran Nigam Limited and Dakshin Haryana Bijli Vitran Nigam Limited
17. Ashish Sharma, assistant manager (Tech.), Energy Efficiency Services Limited
18. Priyaranjan, technical consultant, Bihar Electricity Regulatory Commission
19. Mohan Narasimhan, director and head - Lighting Application Services, Philips Electronics India Ltd.
20. Manish Thakur, general manager – Infrastructure Key Accounts India Region, Philips Electronics India Ltd.
21. Gayatri Ramanathan, director, Probyon Power Consultants
22. Chinmaya Acharya, chief of programme, Shakti Sustainable Energy Foundation
23. Natasha Bhan, programme lead (Electric Utilities), Shakti Sustainable Energy Foundation
24. Amit Kumar, executive director, PwC
25. Kulbhushan Kumar, senior manager, PwC

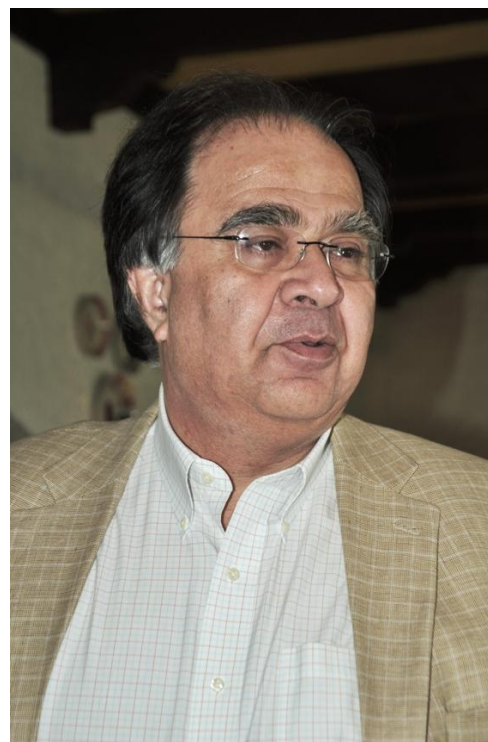
The following sections highlight some of the key points of discussion among the participants and also present the opinions, perceptions and suggestions that emerged from the thematic discussion and presentations.

## Welcome note

Krishan Dhawan, CEO of Shakti Sustainable Energy Foundation (Shakti) extended a warm welcome to all participants and gave the first time attendees a background on the purpose of the forum. He expressed his sincere gratitude to Gireesh B Pradhan, former secretary, MNRE, for officiating the forum's meetings in an honorary capacity. He also acknowledged that PwC's support as knowledge and logistic partner for this initiative. He highlighted that DSM has witnessed tremendous success in meeting energy shortages in many parts of the world and similar measures can be applied in India to overcome the challenge of power shortages. Dhawan mentioned that megawatt scale DSM investments by utilities can substantially ease supply-side pressures on the system to meet the rising electricity demand.

He cited the rationale and objectives for establishing the forum and further gave a brief about the earlier meetings. He highlighted that the 'model state policy on electricity DSM' was conceptualised by the forum and the Delhi government took lead on the development of such a policy for ratification.

He concluded by asserting the need for creating case studies of successful DSM investments by utilities so that the regulatory commissions and DISCOMS in the country would acknowledge DSM as a resource for delivering cost effective electricity.



**Krishan Dhawan, CEO, Shakti Sustainable Energy Foundation**

## Setting the context

Gireesh B Pradhan commenced the meeting by talking about the current status of DSM programmes in India. He pointed out that the discussion during the first meeting focused on the '*Barriers and enabling mechanisms for advancing megawatt scale DSM programmes in India*', which under laid all the discussions being taken forward by the forum.

Pradhan stressed the need for discussing the best practices on load research and DSM programme design. He also asserted that the outcome of these activities form the critical milestone in the overall DSM process driven by utilities. He also mentioned that the participants are welcome to actively put across their inputs and suggestions during the presentation so that the forum can brainstorm, foster ideas, and add value to discussions.



**Gireesh B Pradhan, Former Secretary, Ministry of New and Renewable Energy**

Pradhan concluded by briefing the agenda and requested the participants to introduce themselves before starting the session.



## ***Review of the outcomes of second meeting: Model DSM Policy***

This presentation was delivered by Amit Kumar, executive director at PwC. The presentation focused on the draft model DSM policy, which was discussion theme at forum's second meeting. Kumar explained the need for a state policy on electricity DSM and further outlined the key revisions made in the draft model policy based on the comments and suggestions received from the stakeholders.

The presentation was followed by an enriching discussion and debate amongst the participants.

### ***Key points of discussion***

Ramakrishna, former member of CEA, asserted that the monitoring of energy savings is a critical component in the DSM programme cycle and is very essential to evaluate the impact of DSM programmes.

Prasher, chairman of HERC, supported this view by stating that the lack of effective M&V systems during the silent revolution of CFL's and other energy efficient devices in North India has left the industry unaware of the exact impact in terms of energy savings.

Kumar mentioned that the model policy has addressed the need for a well defined M&V framework and the states should actively adopt such a policy to accelerate megawatt scale DSM investments.

Pradhan highlighted that the model DSM policy in its current shape is only a guiding framework for the state governments, which can further formulate/modify/reject any element of the policy to suit the priorities and interests of stakeholders.

Kumar informed the participants that the final version of the model DSM policy will be available on the website of SSEF<sup>1</sup> and the participants can reach out to the SSEF/PwC for any clarifications in the model policy or for any assistance in the drafting of state specific DSM policy by formulating the model policy.

### ***Theme presentation and discussion***

This presentation was delivered by Kulbhushan Kumar, senior manager at PwC. The presentation focused on a case study, which illustrated the methods of load research study conducted in Himachal Pradesh in the year 2010-11. The presentation also summarized the key features of several successful DSM programme designs adopted in South Africa, US and their pilot prototypes in India.

During the presentation, while Kumar was highlighting the load restriction initiatives in Himachal Pradesh, the discussion among the participants echoed the sentiment that 'load Shedding



<sup>1</sup> [http://www.shaktifoundation.in/cms/UploadedImages/model\\_dsm\\_policy%20-%20post%20second%20meeting%20final.pdf](http://www.shaktifoundation.in/cms/UploadedImages/model_dsm_policy%20-%20post%20second%20meeting%20final.pdf)

or load restriction cannot be considered as a DSM measure' and utilities must explore energy efficiency resources to manage demand supply gaps.

Prasher, chairman of HERC, highlighted the lack of studies, which benchmark the power factor requirement for different categories of consumers. He also mentioned this scenario is compelling the SERCs to arbitrarily set targets without the knowledge of potential for power factor improvement.

The participants noted the initiatives taken by Eskom in South Africa and further discussed challenges of replicating such programmes in India. While discussing the benefits of up scaling successful pilots in the agriculture pump set market, Murthy, chairman of KERC, opined that large scale investments require substantial deliberations from stakeholders. He further opined that there may not be any company (ESCO/Manufacturer) capable of supplying efficient pump sets in the scale of millions. In view of supplementing this argument, Chinmaya of SSEF, highlighted that the super efficient appliance programme of the Indian bureau of energy efficiency is currently working on alternative delivery models, which seek to channel the incentives directly to the manufacturing sector for market transformation.

Pradhan reiterated the need for monitoring of DSM programmes by utilities. He opined that effective monitoring protocols, followed by utilities, would bring in transparency and also create substantial data for verification by stakeholders.

In the context of delivering large scale DSM programmes by utilities, Murthy suggested that alternate models should be explored and these models could avoid large scale procurement of energy efficient appliances by utilities. He highlighted the success of CFL and solar water heater programmes in Bangalore which promoted rebates from the manufacturers or utilities either at the time of purchase or through electricity bills.

Ashish Sharma, assistant manager at EESL, mentioned that EESL is currently adopting innovative ESCO performance contracting models in Karnataka for deploying energy efficient pump sets in the agriculture feeders. He also asserted that the lack of established legal framework and standardization of ESCO contracts is hindering the growth of such initiatives in other parts of the country.

Prasher highlighted that in Haryana, many new agriculture connections are sought in the wake of defunct tube wells on account of falling water table. He opined that in such scenarios, strict regulations prescribing energy efficiency standards for new connections could sustain the benefits of DSM resulting from the growth of agriculture pump sets.

In the context of resolving the barriers for upscaling DSM investments by utilities and EESL in the agriculture pump set markets, Prasher proposed a stakeholder meeting in Haryana which could involve EESL, HERC, DISCOMS and the Haryana state government officials in order to discuss the business model and the need to standardize ESCO performance contracts.

## **Industry speak: Tata Power**

Tata power presented a demand response study that focused on the energy audits, which identified the demand shifting potential in various categories of consumers. The presentation also highlighted the various smart grid systems necessary to automate the demand response programme. This presentation was delivered by Ganesh Das, DGM at Tata Power.

During the presentation, the participants clarified the need for automated systems and the GIS mapping. Ganesh responded by highlighting the gaps in the traditional load surveys conducted through questionnaire based interviews. He asserted that such load survey data gets outdated after a while as the consumer behavior is dynamically changing. Therefore smart meters, meter data management systems and auto DR servers are essential for continuous collection of the dynamic



electricity end use data of the consumers.

The participants also enquired whether any financial incentives are offered by Tata Power to the participating consumers. Ganesh informed that the participation is currently voluntary and there are no financial incentives designed currently for the consumers. However, Praveer Sinha, CEO of Tata Power, highlighted that the TOD tariffs approved by the Delhi electricity regulatory commission (DERC) currently offer financial incentives for load shifting by the consumers. Pradhan enquired whether Tata power would be financing the energy efficiency opportunities identified for the consumers. Ganesh asserted that the majority of the measures identified through energy audit pertain to load shifting. However if the consumers are willing to opt for efficient equipment, then they would be self financing the identified measures and the smart metering infrastructure would help the consumers monitor the energy consumption profile before and after the implementation.

Natasha of SSEF enquired about the financing for the entire demand response infrastructure. Praveer Sinha informed that the investment is currently approved by DERC and is jointly undertaken by Tata Power and its partners. Ramakrishna enquired about the no. of consumers and the connected load covered in the entire study by Tata power. Ganesh informed the participants that 250 consumers with connected of 350 MW have been covered so far. He also asserted that 10% of load shifting potential has been identified through preliminary energy audits.

Praveer Sinha concluded the discussion by asserting that Auto Demand response along with smart metering infrastructure is a sustainable model and will pave the way forward for the real time pricing of electricity tariffs.

### **Industry speak: Reliance Infra**

The presentation by Reliance Infra focused on the load research study and some innovative pilot programmes initiated by the company in the Mumbai distribution circle. This presentation was delivered by Pramod Deo, addition VP at Reliance Infra.

During the presentation, Pramod highlighted some of the DSM initiatives funded by the 'LMC' fund of the Maharashtra electricity regulatory commission (MERC). Pradhan and Ramakrishna enquired about the nature of this fund and its background. Pramod responded by informing that the fund was raised introducing a cess ('load management charge') with the approval of MERC in 2005.



Pramod concluded the presentation by asserting that there is huge potential for deploying energy efficient appliances in the Mumbai circle and the lessons from the current pilot projects by Reliance Infra will be useful in up scaling the programmes and deriving mega watt scale savings.

### **Industry speak: MP Ensystems**

The presentation by MP Ensystems focused on promoting innovative models to scale up DSM implementation by utilities. Outsourcing DSM activities was the core idea. This presentation was delivered by Mahesh Patankar.

Ashish Sharma from EESL supported this idea by giving an example of the case of Madhya Pradesh, where PwC is supporting the state owned DISCOMS in their effort to transform the power sector in the state.





## Industry speak: Philips Electronics

The presentation by Philips Electronics India focused on the energy efficient lighting solutions using LEDs. The presentation highlighted the need for a planned approach to accelerate new technologies of lighting solutions. The presentation also showcased the efficacy and economics of LED lighting solutions in the current scenario. This presentation was delivered by Mohan Narasimhan.

During the presentation, Mohan highlighted that a number of municipalities in the country had floated tenders for adopting energy efficient lighting solutions through performance contracting mode by linking the payments to the supplier with the energy savings realized by the municipality. However many of these tenders have failed due to faulty baseline and the Monitoring framework proposed by the municipalities.



Pradhan asserted that the cost of LED luminaires would drop with demand aggregation similar to the CFL story in India. He also concluded the discussion by highlighting the potential of LEDs to transform the lighting market in the country.

## Closing comments

Before concluding the session, Pradhan opened the floor for discussion and requested the participants to clarify any issues regarding DSM.

Ashish Sharma sought to understand the drivers for DSM in surplus power scenarios. Chinmaya of SSEF highlighted that cost effectiveness of resources could be the primary driver for DSM in surplus situation. He asserted that DSM resources could be least cost resource for utilities as compared to other expensive short term resources.

Gayatri Ramanathan opined that outsourcing of DSM planning and implementation activities to third party agencies should be the key delivery model to be adopted by utilities in order to upscale the existing pilot projects.

## Way forward

The chairperson mentioned that the Forum seeks to meet again in the first week of December 2013. He also asserted that 'load research' is an important activity in the DSM programme cycle and the electric utilities in the country must undertake this activity in a periodic manner to identify and evaluate strategic DSM resources. The Chairperson concluded the meeting by highlighting the impact of the forum's meetings so far and stressed that the Forum would be willing to support any state government, seeking to formulate the model DSM policy and ratify the same. He also mentioned that the model DSM policy in its current state would be circulated to all the stakeholders in the country.

He also mentioned that the stakeholder meeting proposed by Prasher in Haryana is a key outcome of this meeting and he requested EESL to follow up with relevant stakeholders to coordinate and organize the meeting. He concluded the session by asserting that the future meetings of the Forum would discuss several enabling mechanisms to accelerate mega watt scale DSM investments in the country.



**Dignitaries from SERC discussing the way forward for the Forum.**

**From L-R: Rajnish Mathur (Director, Uttarakhand ERC), Sanjay Srivastava (Director, UPERC), V. Ramakrishna (Ex-Member, CEA), Pravinbhai Patel (Chairman, GERC), M.R. Sreenivasa Murthy (Chairman, KERC)**

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