

MR. PADMANABHAN, EXECUTIVE DIRECTOR, OPERATIONS, TATA POWER

Demand Side Management fits into the overall strategy of Tata Power

Mr. Padmanabhan talks to Energetica India on Tata Powers Demand Side Management (DSM) initiatives that have been introduced by the company for better energy utilization among its consumers.

ENERGETICA INDIA: Please share some details on Thermal Storage Systems technology for central air conditioners?

MR. PADMANABHAN: Thermal Energy Storage shifts the Air Conditioning load to night hours. The Thermal storage is an ice storage system. The secondary coolant in the chiller is normally 25% to 30% ethylene glycol/water solution which circulates and converts the phase change liquid to ice, stored in an insulated tank. The chillers are run during night hours (off peak) and the energy stored in ice is then used during peak hours for cooling without the as-

sistance of the chillers and hence shift the load. By using the Thermal Energy Storage technology, consumers benefit as they optimize demand charges and also benefit from the reduced Time of Day Tariff.

BY USING THE THERMAL ENERGY STORAGE TECHNOLOGY, CONSUMERS BENEFIT AS THEY OPTIMIZE DEMAND CHARGES AND ALSO BENEFIT FROM THE REDUCED TIME OF DAY TARIFF



ENERGETICA INDIA: What kind of pilot project is Tata Power working on for Thermal Storage System for air conditioners?

MR. PADMANABHAN: The aim of the pilot programme is to provide information about thermal storage, demonstrate how it works in order to create a better understanding of the system. In case the consumer opts for the Thermal Storage system under this programme, Tata Power installs software, i.e. online remote energy monitoring system on their Thermal Energy Storage system for measurement and verification. Thus, we measure the actual load shift from peak hours to off peak hours.

ENERGETICA INDIA: Tata Power has also started Demand-Side Management activity. How does this fit in the overall strategy of Tata Power, considering it's not necessarily within its framework?

MR. PADMANABHAN: Demand-Side Management is a co-operative activity that takes place between utilities and customers (occasionally with the help of third parties i.e. energy service companies) in order to increase efficient energy utilisation which in turn benefits not just the customer and utility but the society at a larger scale. Tata Power is committed to 'responsible growth'. We focus on the production of clean and green power, invest and implement eco-friendly technologies, reduce our carbon footprint and join global initiatives to combat climate change.

DSM fits into the overall strategy of Tata Power as it minimises adverse environmental impacts, lowers the cost of energy, reduces power cuts and shortages, and conserves energy thus helping us in carrying forward our green legacy.

ENERGETICA INDIA: Please explain in detail the initiative called "My Mumbai Green Mumbai".

MR. PADMANABHAN: "My Mumbai Green Mumbai" is a Tata Power DSM initiative

that's aimed at residential, commercial and industrial consumers. In order to offer the different categories of consumers with the appropriate energy efficient appliances, we have partnered with leading Customer appliance manufacturers such as Havell's India Limited for ceiling fans, OSRAM- a Siemens Company for T5 tube lights and Voltas / Godrej for Air Conditioners (ACs). These energy efficient appliances will assist consumers in saving their energy costs by nearly 30-50%, thus preserving the environment and leading us to a greener Mumbai. Additionally, we offer Energy Audits at reduced rates to our Industrial and Commercial customers.

ENERGETICA INDIA: In the initiative called "My Mumbai Green Mumbai", Tata Power has tied up with appliance manufacturers for energy efficient equipment. For end-user how does this differ from his going out on his own and buying an appliance?

Mr. Padmanabhan: Due to the tie up with leading Customer appliance manufacturers it is possible for us to offer our consumers with an exchange scheme wherein they can interchange their old appliances with new, long lasting energy conserving appliances at a great discount. The end user benefits, as he can get rid of inefficient appliances, buy new ones at a discount and save on energy costs in future!

ENERGETICA INDIA: How has been the response of end-user to these initiatives from Tata Power?

Mr. Padmanabhan: So far, we have a cumulative total of 7,791 customers availing the benefit of the 5 Star Ceiling fan Replacement Program and 73 industrial and commercial consumers utilising the Energy Audit Program. We have enrolled a capacity of 8000 TRH in the Thermal Storage Pilot Program and have applied to MERC for increasing the scope. We introduced the Demand Response Program to 5 key consumers and held four events during which we succeeded in curtailing load of around 15 MW.

ENERGETICA INDIA: How does Demand Response work? How do you see this working on a large scale in India?

Mr. Padmanabhan: Technically, Demand Response (DR) is defined as voluntary

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load curtailment by the consumer when needed by a utility. The first of its kind, it is an extremely critical tool in Demand Side Management and has been approved by MERC. The program awards consumers a financial incentive in curtailing power loads by reducing electricity usage compared to their regular consumption levels. Several DR events have taken place since November 2011 with participants like IT & ITES organisations, sewage pumping stations and other industrial and commercial customers of Tata Power. DR is considered to be a smart grid solution where the utility works along with the consumer in voluntary load management.

We see huge potential in large scale

implementation of Demand response programs in India and several successful pilots done by us have emphasized this point.

ENERGETICA INDIA: What kind of analysis/ insights was obtained from "Load Research"? How will it help the end-consumer?

Mr. Padmanabhan: Tata Power started the DSM initiative with extensive 'Load research' which equipped us with first-hand knowledge of consumer load patterns, peak load contributors, energy guzzlers used by consumers and behaviour patterns. Armed with this information, we designed programmes specific to the different categories. Since we laid the correct research foundation we were well equipped to partner with leading appliance manufacturers to offer substantial discounts to consumers for exchange of old appliances. Overall, the Load research has proven to be extremely useful as it has assisted us in providing our consumers with apt technologies to be energy efficient environmentally and financially.