

DEMAND SIDE MANAGEMENT

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1.1 Introduction

Demand side management (DSM) was the term first coined by Electric Power Research Institute in the year 1980s and is also widely known as energy demand management. DSM is the term used for the changes made in the consumer demand pattern, through different methods like financial incentives and education in order to have an improved operational efficiency and flexibility. The primary objective of demand side management is to convince the consumers to utilize less energy during peak hours, or to shift the energy usage of the consumers to off peak hours. Peak demand management does not mean reducing the total energy consumption, rather it aims at reducing the need for investments in the networks. It also encourages using various energy storage units for storing energy during off-peak hours and using them to discharge during peak hours. The current integration of internet of things technology with traditional power grid is called Smart Grid which makes DSM more feasible. DSM indicates the scientific control of demand and usage of electricity in order to have an improved load factor and economy, by the supplier. The success of DSM greatly depends upon the initiatives taken at the consumer side.

Demand side management surrounds a complete range of management functions related with directing demand side activities, which include program planning, evaluation, implementation as well as monitoring. In order to change the amount or timing of energy consumption there must be some action taken on the meter at consumer side. Electricity DSM strategies aims at maximizing the efficiency of the end user so as to remove the need of constructing a new generating station.

Demand side management is an initiative to influence the consumer's capability and their willingness for reducing electricity consumption. In other way we can say that fine tuning of the consumers power consumption pattern based on the utility's energy production and distribution capacity is called as demand side management. DSM does the controlling and managing of demand within the source of supply and through load management, it also helps in managing and manipulating peak load and off peak load demand. The DSM targets can be achieved by using procedures like time of delay metering and differential pricing.

1.2 Why DSM

- 1) DSM reduces overall cost of installed capacity
- 2) DSM ensures quality and equity of supply
- 3) DSM reduces power blackout
- 4) DSM increases the system reliability
- 5) DSM reduces energy pricing
- 6) DSM avoids harmful gas emission to the atmosphere
- 7) DSM reduces environmental pollution.

1.3 Types of DSM

- 1) Energy efficiency: Completing the same task by taking comparatively less power
- 2) Demand response: Reduction, shifting or flattening of peak demand by taking any reactive or preventive method.