

SNS COLLEGE OF TECHNOLOGY (An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade **Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

UNIT 2

SMART GRID TECHNOLOGIES -Real Time Pricing 19EE308 – SMART GRIDS

III year / VI Semester



19EEE308 / SM / S.Bharath / AP -EEE

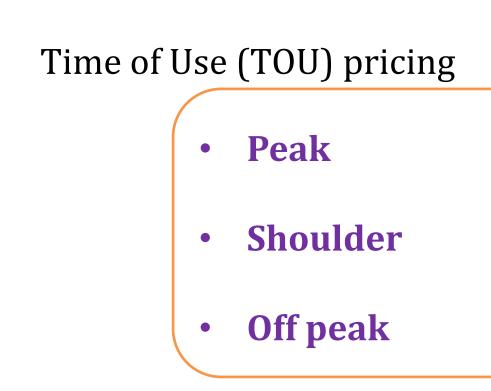






- A new method of electricity pricing has been introduced, which is commonly known as **Real time pricing** where the electricity rates vary hour-to-hour and are based on the electricity demands.
- Real time pricing requires the installation of a smart electricity meter • that can send and receive information about electricity usage and electricity costs and give consumer more information about their own usage.



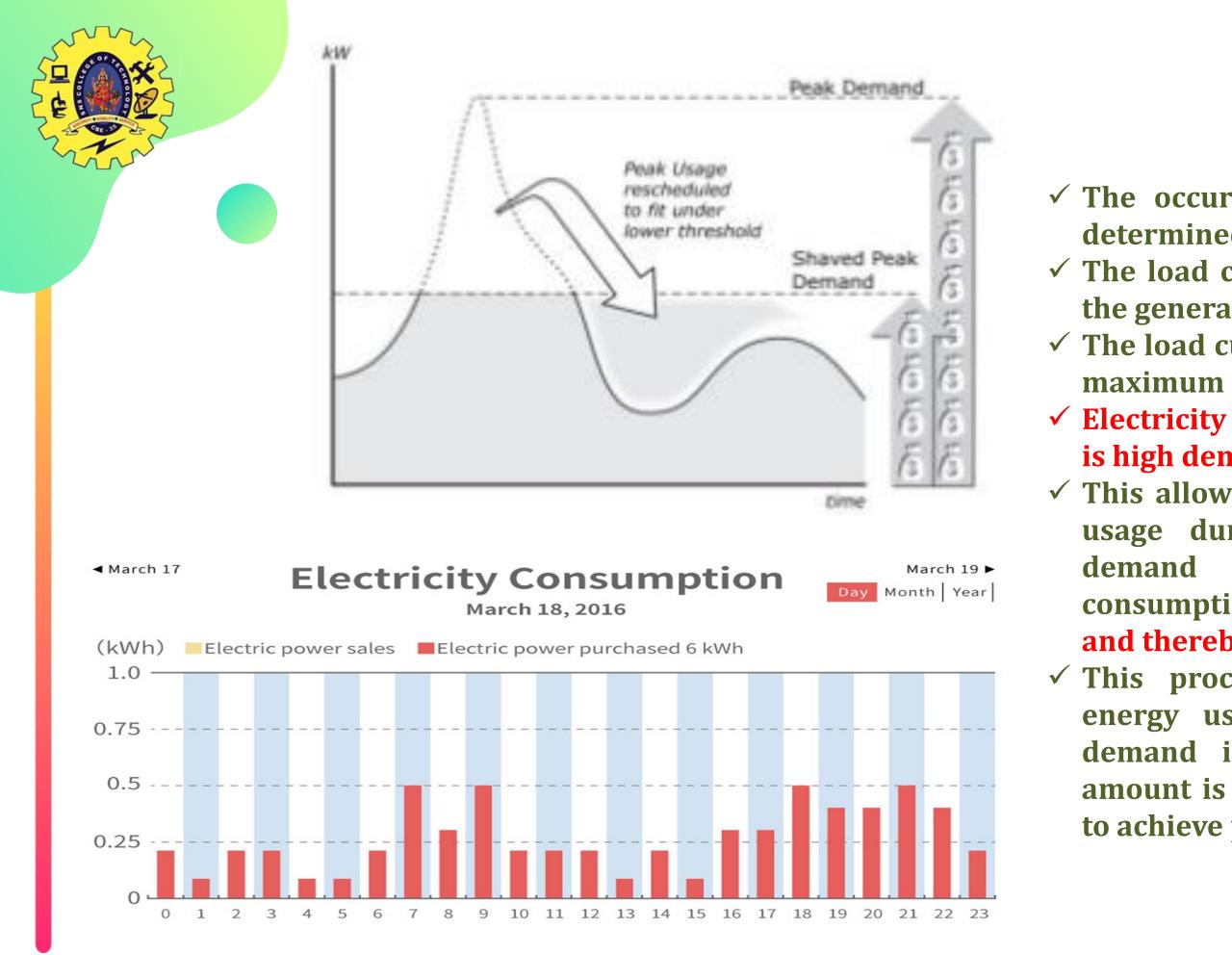


19EEE308 / SM / S.Bharath / AP -EEE









19EEE308 / SM / S.Bharath / AP -EEE



✓ The occurrence of price variation can be determined by the load curve.

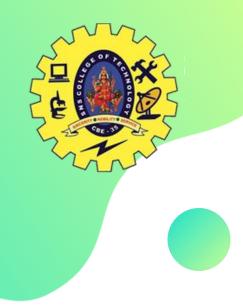
 ✓ The load curve shows the load variation on the generating station with respect to time.
✓ The load curve can be used to determine the maximum demand.

✓ Electricity prices will be greatest when there is high demand on the grid.

This allows customers to limit their energy usage during the periods of maximum demand and shift their electricity consumption to the hours of less demand and thereby lower prices.

✓ This process of controlling the electric energy usage during the hours of high demand in order to reduce the billing amount is called <u>Demand Side Management</u> to achieve peak shaving.

03/08



Real Time Pricing

The real-time pricing (RTP) scheme is an ideal method to adjust the power balance between supply and demand in smart grid systems. This scheme has a profound impact on users' behavior, system operation, and overall grid management in the electricity industry.

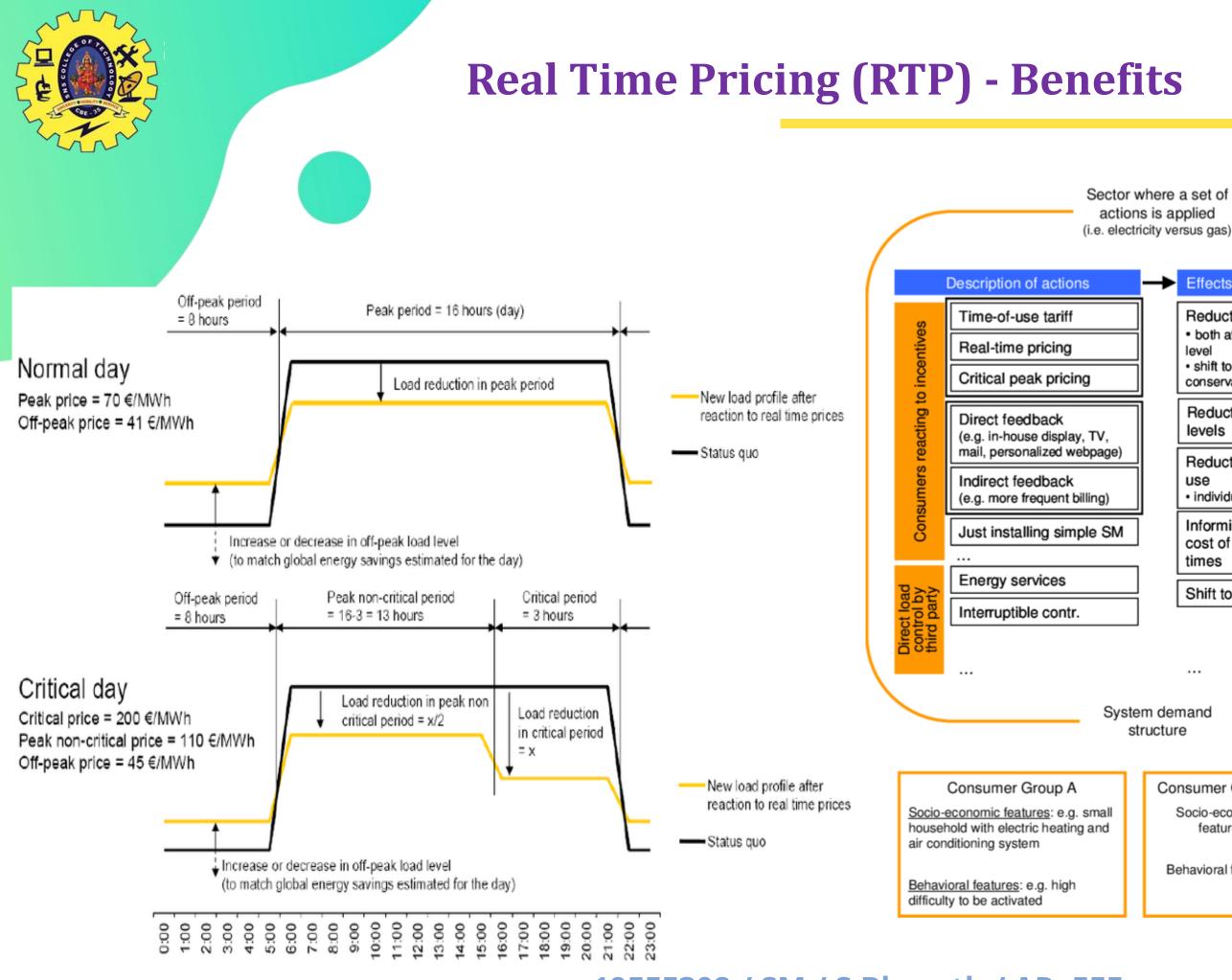
The benefits of real time pricing can be maximized by considering four main criteria:

- ✓ Duration for which energy consumption pricing varies
- ✓ Ability to buy energy during low energy prices
- ✓ Ability to control appliances according to energy price at a given time.
- ✓ A smart meter that measures the total usage and time of usage of energy

19EET302 / PS / S.Bharath / AP -EEE







19EEE308 / SM / S.Bharath / AP -EEE



Supply system features

	->	Effects on system	n fu	inctioning	→	В	en	efits for consumers		
		Reduction in peak load levels • both at individual and global level					Reduction in capacity charges		Economic	
		shift to off-peak vs. energy conservation				Reduction in the overall level of energy prices		Econ		
		Reduction in off-peak load levels				Higher supply security (short vs. long-tem) and		Reliability		
╢		Reduction in overall energy				syster	system reliability		Re	
		use • individual vs. global				Lower carbon footprint				
		Informing consumers about cost of energy at different					eased consumer reness			
٦		times				Less inconvenience due		Others		
ł		Shift to own micro-generation				to remote metering		Ò		
					Increase in transparency of tariffs computation					
em demand Regio structure chara					on-spe acteris					
	Co	Consumer Group B Consume			er Group C			Consumer Group		
	Socio-economic features			Socio-economic features				Socio-economic features		
	Behavioral features Behav			Behavior	ral features			Behavioral features		





Summary



19EEE308 / SM / S.Bharath / AP -EEE



Activity





keep learning.. **Thank u**

SEE YOU IN NEXT CLASS

19EEE308 / SM / S.Bharath / AP -EEE



