



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade  
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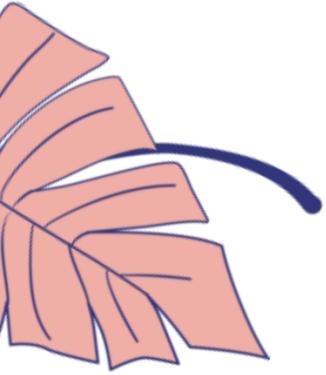
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

UNIT 2

## SMART GRID TECHNOLOGIES – Real Time Pricing

19EEE308 – SMART GRIDS  
III year / VI Semester



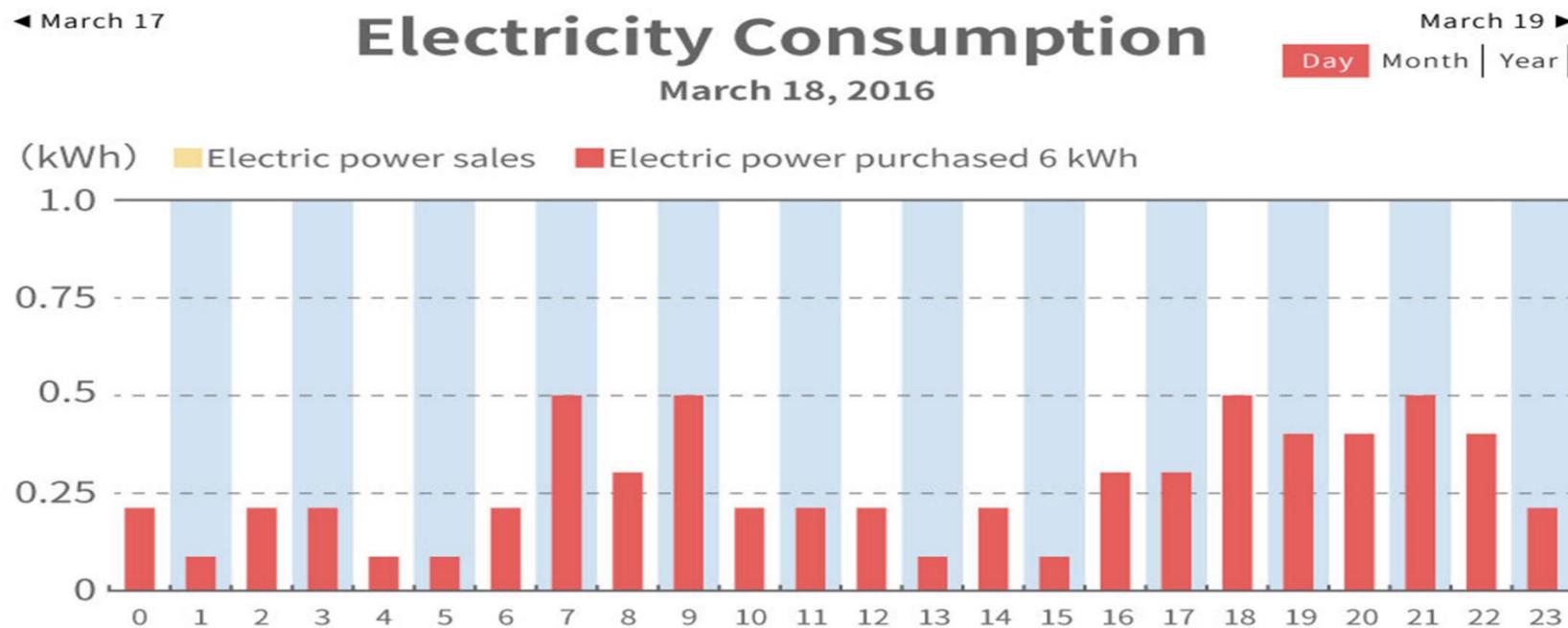
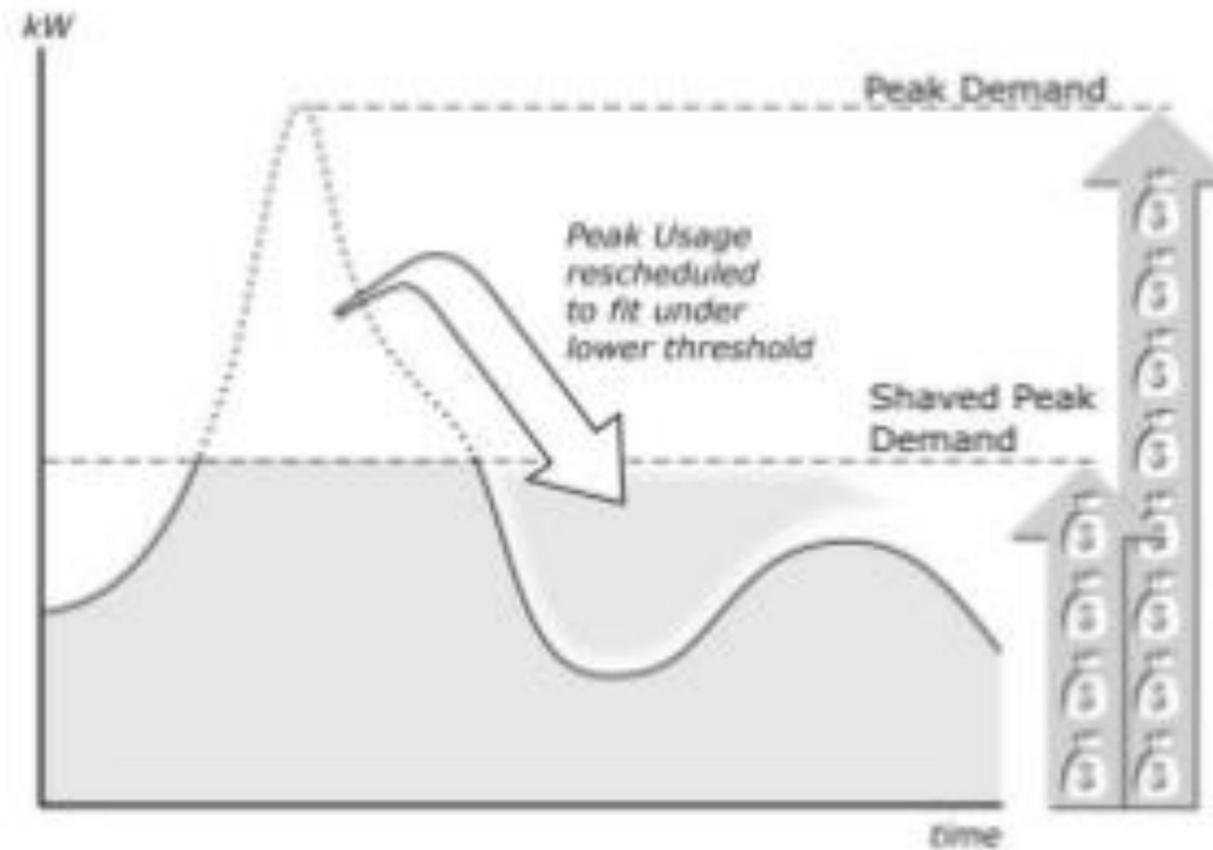


- A new method of electricity pricing has been introduced, which is commonly known as **Real time pricing** where the electricity rates vary hour-to-hour and are based on the electricity demands.
- Real time pricing requires the installation of a smart electricity meter that can send and receive information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



### Time of Use (TOU) pricing

- **Peak**
- **Shoulder**
- **Off peak**



- ✓ 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 **Demand Side Management** to achieve peak shaving.



## 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**

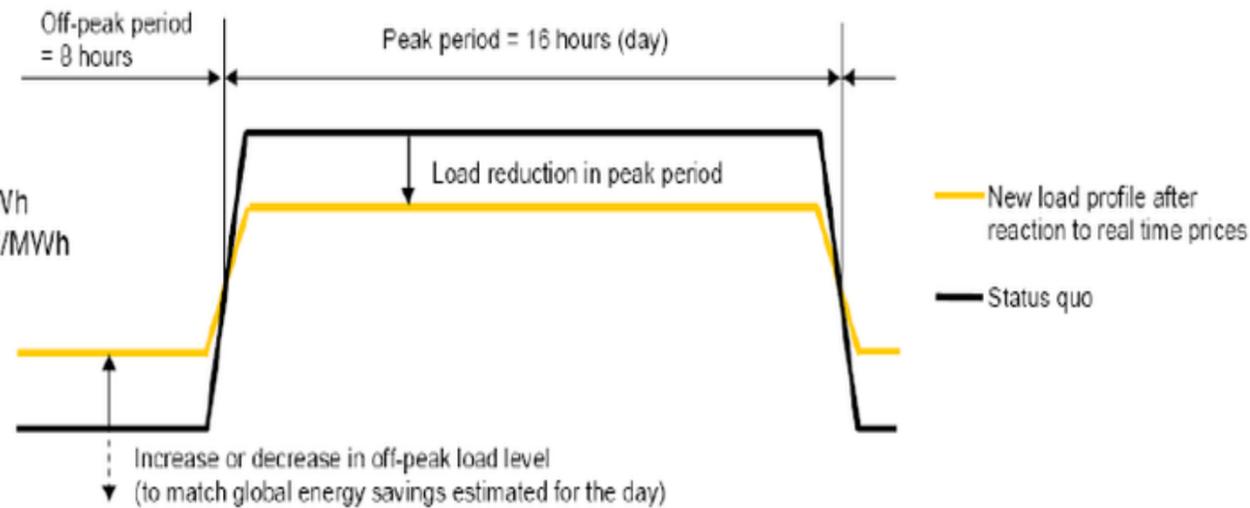


# Real Time Pricing (RTP) - Benefits



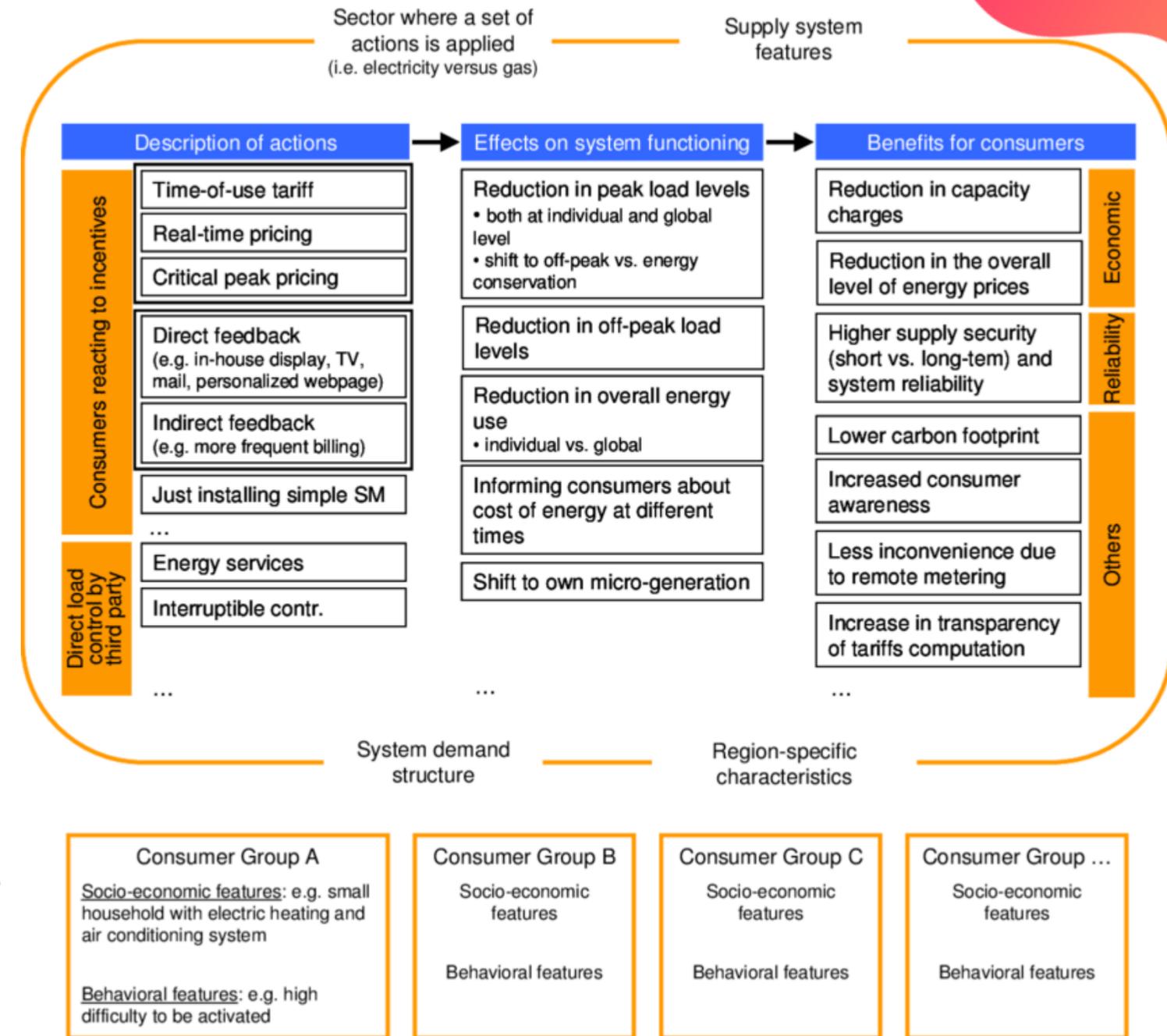
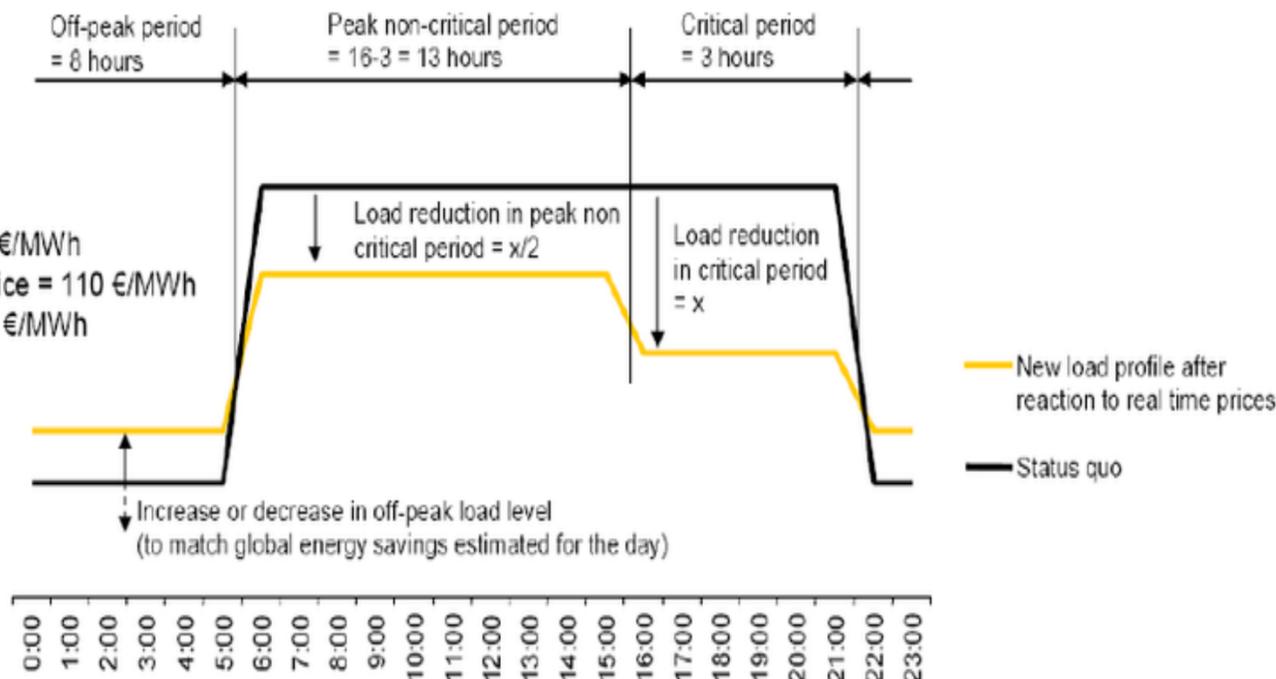
## Normal day

Peak price = 70 €/MWh  
Off-peak price = 41 €/MWh



## Critical day

Critical price = 200 €/MWh  
Peak non-critical price = 110 €/MWh  
Off-peak price = 45 €/MWh





# Summary

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## Activity



**KEEP  
LEARNING..  
Thank u**

SEE YOU IN NEXT CLASS