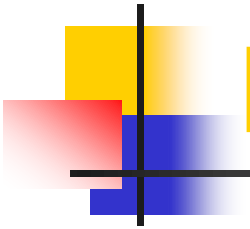


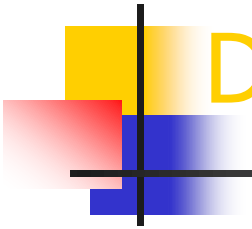
Load Forecasting

Sub-PSPR

Sem-7th

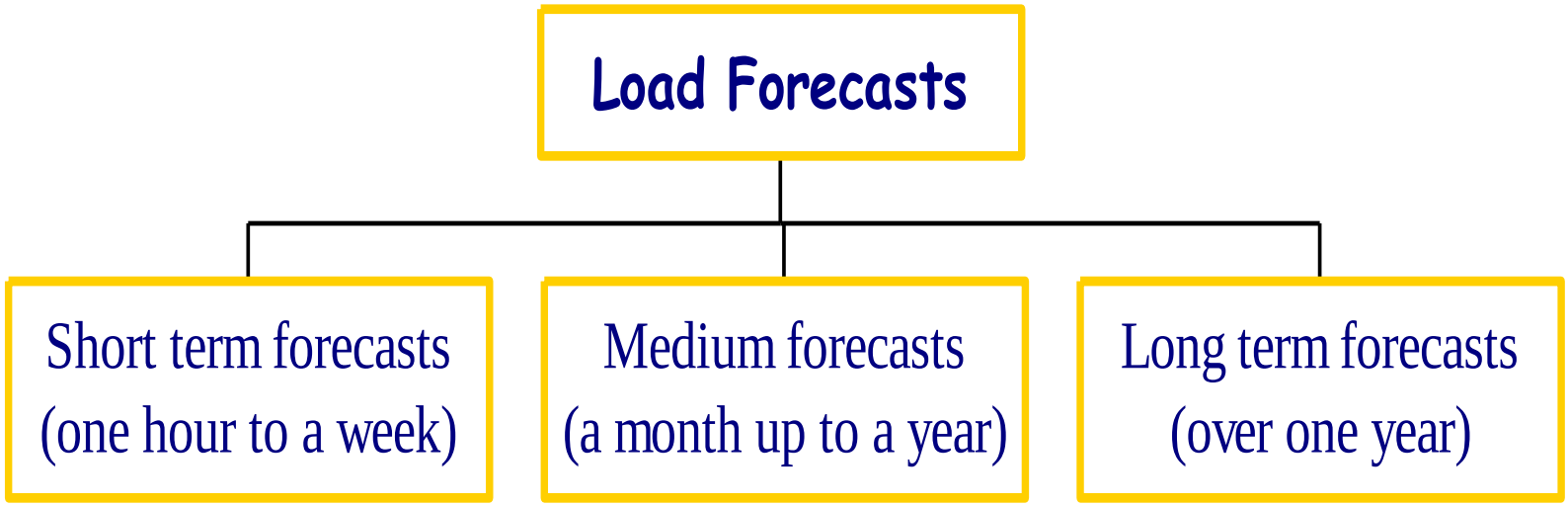
Presented By:Ms.Priti Sathe

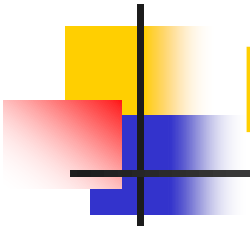
Importance of Load Forecasting in Deregulated Markets



- Purchasing, generation, sales
- Contracts
- Load switching
- Area planning
- Infrastructure development/capital expenditure decision making

Types of Forecasting





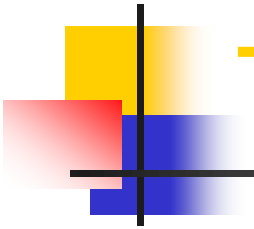
Factors for accurate forecasts

- Weather influence
- Time factors
- Customer classes

Weather Influence

Electric load has an obvious correlation to weather. The most important variables responsible in load changes are:

- Dry and wet bulb temperature
- Dew point
- Humidity
- Wind Speed / Wind Direction
- Sky Cover
- Sunshine



Time factors

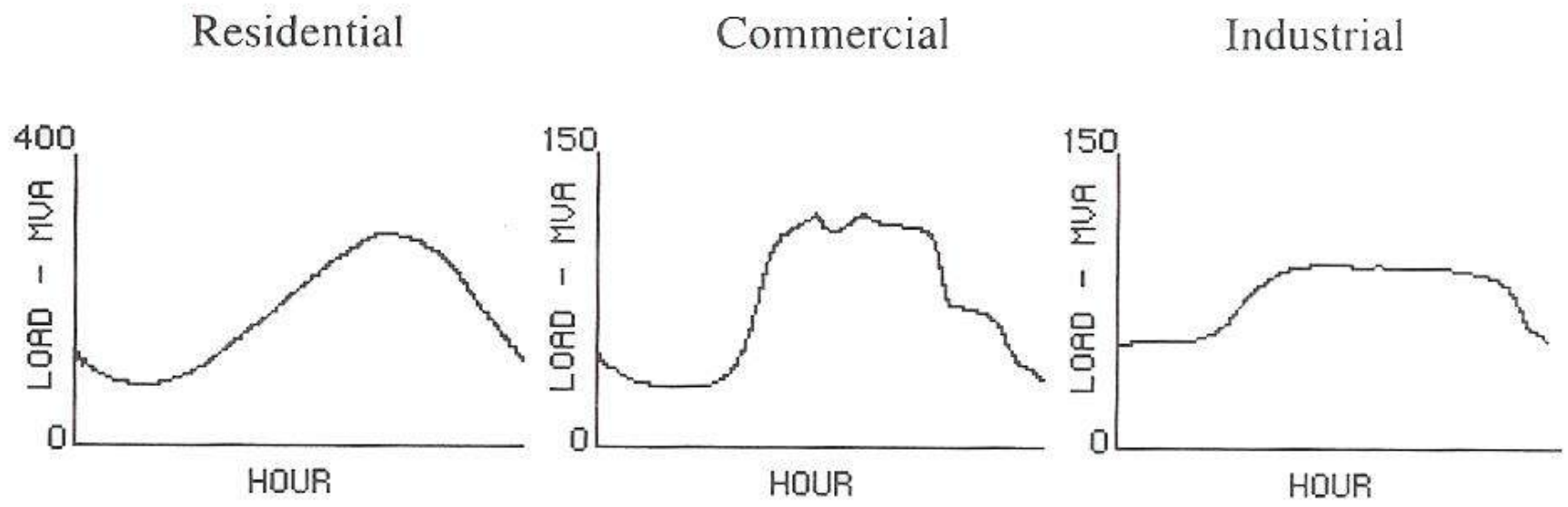
In the forecasting model, we should also consider time factors such as:

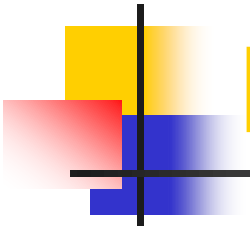
- The day of the week
- The hour of the day
- Holidays

Customer Class

Electric utilities usually serve different types of customers such as residential, commercial, and industrial. The following graphs show the load behavior in the above classes by showing the amount of peak load per customer, and the total energy.

Load Curves


Residential
Commercial
Industrial
400
150
150
LOAD - MVA
LOAD - MVA
LOAD - MVA
0
0
0
HOUR
HOUR
HOUR



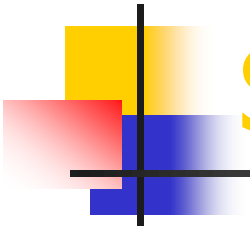
Mathematical Methods

- Regression models
- Similar day approach
- Statistical learning models
- Neural networks

Long Term Forecasting

The focus of this project was to forecast the annual peak demand for distribution substations and feeders.

Annual peak load is the value most important to area planning, since peak load most strongly impacts capacity requirements.



Short Term Forecasting

The focus of the project was to provide load pocket forecasting (up to 48 hours ahead) and transformer ratings.

We adjust the algorithm developed for long term forecasting to produce results for short term forecasting.

Short Term Load Forecasting