



# Rate Design

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# Presentation Overview

- Definition
- Load Research
- Objectives
- Types Of Rate Designs
- Analysis

# Rate Design

Rate Design is a discipline that merges engineering, load research, cost of service, and judgment to produce price structures reflective of the underlying costs (mostly) to provide service to a group of customers that share common usage characteristics.

# Load Research

Load Research is a statistical discipline that measures the way in which consumers use electricity. These measurements provide valuable insights for cost of service and rate design.

# Rate Design Objectives

Rate Design has many objectives that often conflict rather than complement. The most notable objectives are:

- Reflecting cost of providing service (plus appropriate return)
- Revenue stability for the utility
- Conservation

# Basic Types Of Rate Design

- Energy charges only
  - Typical where usage is small and it would be expensive to measure demand, e.g., residential
    - Flat charge for each kWh
    - Declining block, e.g., 8¢ for first 300 kWh, 6¢ for all usage above 300 kWh
    - Inverted block, e.g., 8¢ for first 1000 kWh, 10¢ for all usage above 1000 kWh

# Basic Types Of Rate Design

- Demand and energy charges
  - Typical for large customers where demand is metered
    - Pure demand and energy
    - Some demand-related charges in an energy charge
    - Hours-use where charges are reflected in an energy charge only, but demand is used to assign energy to the blocks

# More Complex Rate Design

- Time-Of-Use
  - Reflects costs of peak and off-peak usage (e.g., night, day, summer, winter)
  - Difficult to determine costs
  - Billing and administrative costs are often significantly higher



# Rate Design Analysis

From Cost Of Service

Rate RS

Demand \$

Energy \$

Customer \$

Coincident  
\$

Noncoincident  
\$

Variable  
Costs \$

Other Fixed  
Costs \$

e.g., generating unit

e.g., line transformers

e.g., fuel

e.g., billing and metering

{ 10 kW

12 kW

2000 kWh

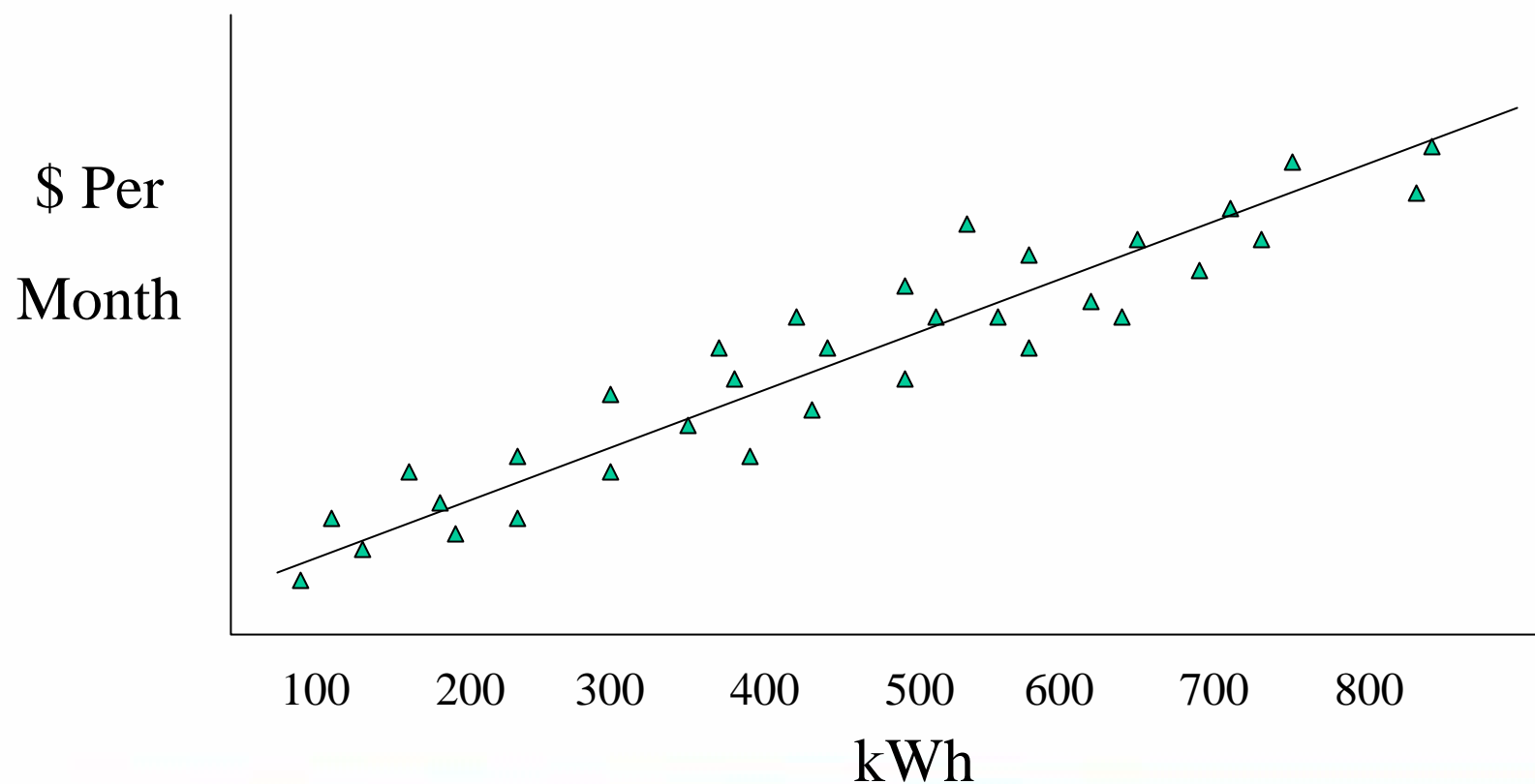
Fixed Per Month

\$ / Customer / Month

From  
Load  
Research

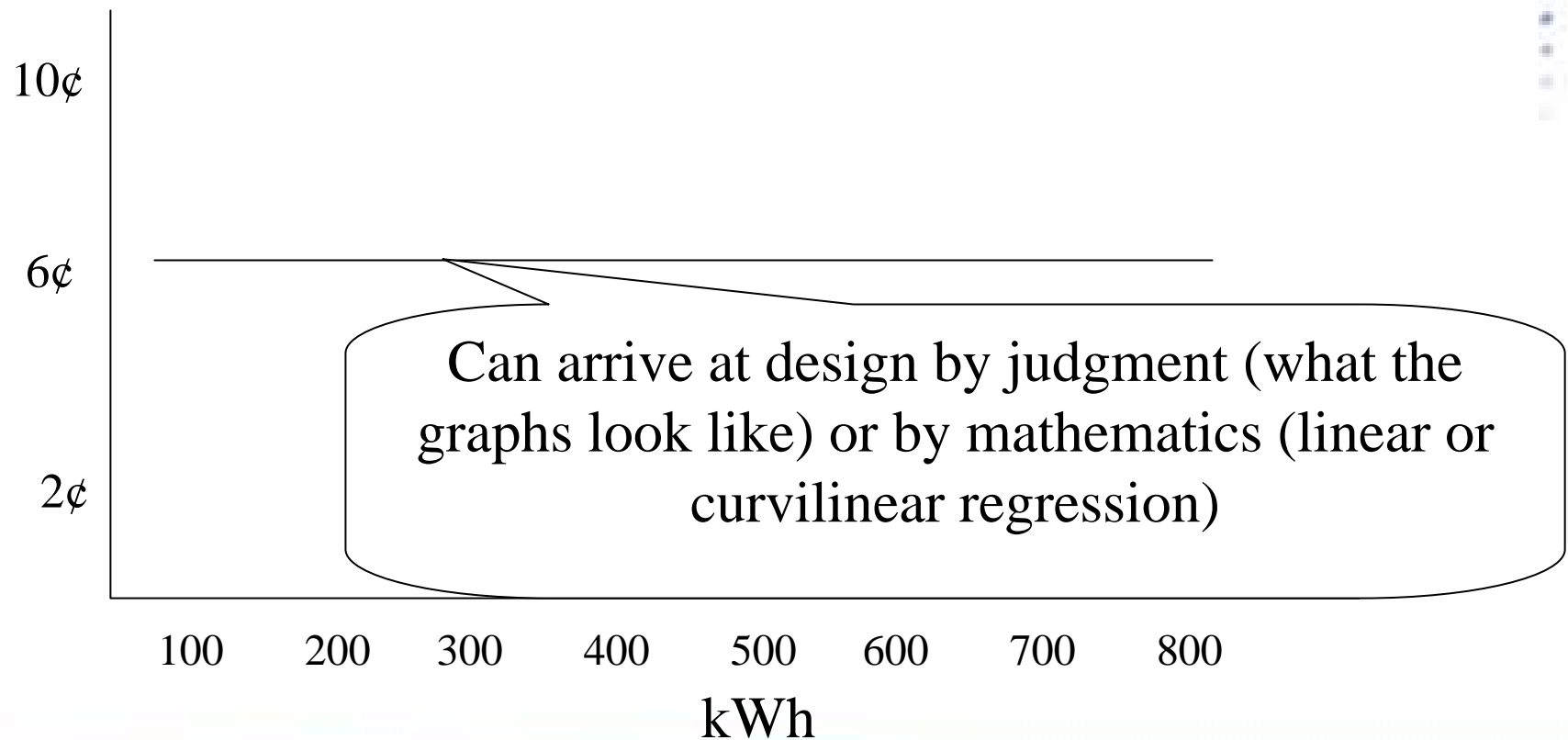
# Rate Design Analysis

Depiction Of Cost Per Customer Per Month At Various Usage Levels



# Rate Design Analysis

Depiction Of Cost Per kWh At Various Usage Levels



# Rate Design Analysis

- Verify that the rate design produces the sought after revenue through bill frequency analysis
- Bill frequency analysis is a tabulation of bills and sales that, in addition to above, can be used to audit books and records