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Pricing Principles and Rate Design
Rate Design

- Objective: to allocate the revenue requirement among a utility's customers

- Simple Rate Designs
  - Price = Rev. Req./Customers
  - PRice = Rev. Req./Sales
Cost of Service

- Principle: Rates should reflect the cost of providing service

- Qualifications
  - Costs should include all relevant costs, private and social
  - Costs should be reasonably or prudently incurred
Fully Allocated Embedded Costs

Advantages:
- Actual costs
- Reconciled with the revenue requirement

Disadvantages:
- Allocating joint and common costs
- Does not reflect current market trends
Embedded Cost Steps

- Categorize
- Functionalize
- Allocate
  - kW
  - kWh
  - Customer
Marginal Cost Pricing

- Equal to the economic costs of providing the next increment of service
  - Long-run v. Short-term
  - Advantages: forward looking, economic costs
  - Disadvantages
    - Definitions more contentious
    - Reconciliation with rev. req.
    - Requires forecasted demand and costs
    - Potential volatility
Criteria for differential rates

- Value of service
  - Market demand based pricing
  - Potential for pricing flexibility (and monopolistic price discrimination)
  - Ignores cost criteria by service
Marginal Cost Steps

- Categorize
- Functionalize
- Allocate
  - kW
  - kWh
  - Customer
Cost related attributes

- Efficiency of the rate classes and rate blocks in discouraging wasteful use of service
- Fairness among different customers
- Avoidance of "undue discrimination" in rate relationships
Practical attributes

- Simplicity
- Understandability
- Public acceptability
- Feasibility of application
- Freedom from controversies as to proper interpretation
Differential allocations

Based on characteristics of service
- Presumption that different types of service cause the utility to incur different costs
- Differentials depending on the amount of service
  - Usage pricing
  - Requires measurement (meters)
Differential allocations

- Differentials based on the type of service
  - Variety of service offerings
  - Service varying by quality or time
Differential allocations

Based on groups of customers

- Customer classes designated according to the criterion adopted (value, cost, social objectives)
  - Residential (with or without a low income or elderly segment)
  - Commercial
  - Industrial
  - Street lighting
  - Agricultural
Social Value of Service Pricing

➤ Assistance to specific customer classes
  - Residential lifeline rate
  - Economic development/business retention rates

➤ Promote social objectives
  - Conservation/environmental considerations
  - Universal service
Rate Averaging

- Within rate classes
- Across geographic areas: rural vs. urban
- Rate averaging vs. subsidy vs. simplicity
Intra-class allocative patterns

- Flat rates
- Customer, Demand, Usage components
Usage Rate Patterns

- **Flat**
- **Declining block**
  - Cheaper to serve large customers
  - Marginal cost is less than average cost
Usage Patterns

- Inverted block
  - Marginal cost greater than average cost
  - Conservation rate
  - Lifeline rate
- Peak/Off-peak
- Seasonal
- Real-time
Revenue Related Attributes

- Effectiveness in yielding total revenue requirements
- Revenue Stability
- Stability of rates
  - minimize rate changes
  - serious problem for existing customers
Special Contracts

- Customers with unique cost causing characteristics
- Economic Development, load or job retention
- Problem: selling power below cost yields inefficient use of resources and financially weak utilities