Marginal Cost Pricing

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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

Marginal Cost Steps

- Categorize
- Functionalize
- Allocate
  - kW
  - kWh
  - Customer

The Price Signal

- The price of a good should reflect the full cost of the resources needed to produce the good.
- Long-run vs. short-run cost of production?

Calculating Marginal Costs

- What is the appropriate increment of output, or margin, to measure?
  - Generating capacity costs: $/kw-yr
  - Energy costs: $/kwh
  - T&D costs: $/kw-yr
- Avoided costs

Capacity Factor

- Capacity factor is a measure of the utilization of a generating facility
- CF =
  - Energy produced in a period
  - divided by
  - (Plant capacity
  - times
  - Number of hours in the period)

Capacity vs. Energy

- General rule:

As the cost of capacity increases, the cost of energy produced decreases

Rate Design and System Planning

- Obligation to serve on demand
  - Therefore, the system must be built to meet expected peak demand
    - (No "busy" signals)

Rate Design and System Planning

- Capacity must be sufficient to meet peak demand
- Least-cost planning capacity (system expansion)
  - Combustion turbines

Rate Design and System Planning

- The system also must serve energy needs
- Relationship between capacity costs and energy costs
- A portion of plant costs must be classified as energy-related

Marginal Cost Pricing

- Promotes economic efficiency
  - Exception: The problem of "second best"
- Those who cause the costs pay the costs
- No undue discrimination
- Challenge:
  - Will pricing at marginal cost cause the utility's to collect its revenue requirement? Will it over-collect, or under-collect?

Marginal-Cost Pricing and the Revenue Requirement

- Reconciling marginal-cost prices with the revenue requirement
  - Relationship of the rev.req. (total cost) to marginal cost
- What kinds of pricing distortions are acceptable?

Marginal-Cost Pricing and the Revenue Requirement

- What principles should guide rate-makers?
  - Fairness
  - Demand Elasticity
- Should the incremental costs of environmental damage be reflected in rates?