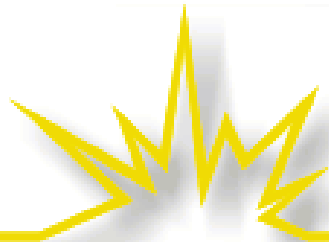


# Marginal Cost Pricing

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# Marginal Cost Pricing

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- 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

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



# The Price Signal

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- 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

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- 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

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- 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

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➤ General rule:

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



# Rate Design and System Planning

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





# Rate Design and System Planning

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



# Rate Design and System Planning

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- 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

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- 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

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- 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

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