Group Exercise II: Rate Setting

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Rates Recover Costs

- After the completion of a Phase I rate case in Colorado, the electric utility either:
  - Implements a rate rider to adjust existing rates on a percentage basis in order to recover the new level of revenue requirements
    - A “General Rate Schedule Adjustment” or GRSA
    - A positive GRSA increases rates (higher revenue requirement)
    - A negative GRSA decreases rates (lower revenue requirement)
  - Sets new rates by allocating the new Phase I revenue requirements to rate classes and designing new rates to recover those class-allocated revenue requirements; this process is the Phase II rate case

Phase II Methods

- Take Phase I revenue requirements
  - Overall Cost of Service
- Functionalize costs
  - Classify cost by utility function (*e.g.*, generation, transmission, distribution)
- Categorize costs
  - Separate the functionalized costs into further classifications based on the components of service
  - Categorization of costs based on drivers (*e.g.,* demand, electricity usage, fixed customer service)
- Assign costs to customer/rate classes
- Design rates to recover class-allocated costs

Cost Categories

- Demand-Related Costs
  - Costs that vary with the demand on the system
- Energy-Related Costs
  - Costs that vary with the usage of electricity
- Customer-Related Costs
  - Costs that vary with the number of customers served

Cost Allocation

- Assign costs to the different customer classes
- Common customer classes:
  - Residential
  - Commercial
  - Industrial
  - Agricultural
  - Street Lighting and Traffic Signals
  - Municipal
- Sometimes customer classes based on size of load, load factor, or the voltage level (e.g., Secondary, Primary or Transmission)
- Metering sometimes defines a class (*e.g.*, TOU Residential)

Cost Causation

- Functionalized and categorized costs are allocated among the customer classes consistent with cost causation
  - Demand allocators – costs change with change in kW
  - Energy – costs change with change in kWh
  - Customer– costs change with change in customers
  - Allocators sum to 100% so that total costs are distributed among the customer classes
- Some costs serve only a particular customer and these are assigned to those customers directly

Public Service's Phase II Model

- Exhibit JCJ-1 (May 1, 2009)
- Page 1
- Concepts:
  - Inputs from Phase I
  - Functionalization of Costs

Public Service's Phase II Model

- Exhibit JCJ-1 (May 1, 2009)
- Pages 2-10
- Concepts:
  - Rate Classes
  - Inputs to Class Allocators

Public Service's Phase II Model

- Exhibit JCJ-1 (May 1, 2009)
- Pages 11-21
- Concepts:
  - Allocators as Percentages Summing to 1.00
  - Class Allocation of Functionalized Costs

Public Service's Phase II Model

- Exhibit JCJ-1 (May 1, 2009)
- Pages 22-23
- Concept:
  - Categorized Costs by Class

Rate Design

- The setting of the prices that customers are billed
- Prices intended to collect the assigned revenue requirements from each customer class
- Billing determinants are the units (*e.g.*, kW, kWh, and customer counts) that are divided into a class-allocated cost of service to calculate a "rate element"

Rate Design Principles

- Fair, reasonable and not unduly discriminatory
  - Based on cost
- Equitable
  - Horizontal Equity: “Equals treated equally”
  - Vertical Equity: “Unequals treated unequally”
- Rates should be stable
- Rates should be easily understood
- Rates should be efficient

Types of Charges

- Demand Charge
  - $ per kW of monthly metered customer billing demand
  - Ideally derived by taking the demand-related costs and dividing these costs by class “billing demand”
  - Customers without demand meters pay demand-related costs through energy charge
- Energy Charge
  - $ per kWh of monthly customer energy use
- Customer Charge
  - Minimum charge
  - $ per customer per month

Public Service's Proposed Rates

- Exhibit DAW-1 (May 1, 2009)
- Concepts:
  - Billing Units
  - Rates Developed by Costs Category
  - Customer Charge (Service & Facility Charge)
  - Demand Charge
  - Energy Charge
  - Revenue Proof

Electricity Bill

- Base rates:
  - Customer charge — $/month ($/bill)
  - Usage charge — $/kWh
  - Demand charge — $/kW (large customers)
- Adjustment clauses:
  - Electric Commodity Charge (ECA) — $/kWh (fuel clause)
  - Purchased Capacity Charge (PCCA) — $/kWh or $/kW
  - DSMCA — $/kWh or $/kW
  - Renewables — 2% of sum of above