
Tariff Development II

Developing Cost of Service Studies

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Why is Cost of Service Study Needed?

- Assign utility costs to customer classes of service.
- How to recover costs from customers in a class
 - *For example: time-of-use vs. flat rate residential customers, or*
 - *Differentiate costs caused among different voltage levels in a large general service class*
- Determine the number and types of service classifications
- Used with class revenue data to establish system, class and subclass rates of return (ROR)
 - *Significant class ROR deviations from system average ROR suggesting over or under contributing, an inequity among classes*
- Form basis for rates or contract prices for special services.
 - *Delivery or standby*
 - *Interruptible or curtailable*

Various Types

- Embedded Cost of Service Study (ECOS)
 - *Historic – focuses on how existing costs were incurred, use of historic test year data*
 - *ProForma – estimate forward looking costs – projections – from recent historic test period costs*
 - Allows for known and anticipated changes from historic base
 - Significant capital expenditures, major changes in workforce, supply cost changes, and so on.
- Marginal Cost of Service Study (MCOS)
 - *Measure the change in cost levels in response to a change in customer usage or demand*
 - *Short Run versus Long Run*
 - Short run – based on small per unit changes (usually variable cost sensitive)
 - Long run – considers broader time spectrum – 3-5 or ten year planning horizons and capital expenditures.

Embedded Cost Study Fundamentals

- Functionalization
 - *Electricity Production or Purchased Power*
 - *Transmission – moving electricity from generators to distribution grid*
 - *Distribution – costs associated with transforming electricity to useable voltage levels and delivering to end-use customers*
 - *Customer Service and Facilities – individual costs such as meters and associated metering and billing functions, service entrance, repairs and customer service functions (call centers)*
 - *Administrative and General – all other costs not covered by previous functions*

Embedded Cost Study Fundamentals (continued)

■ Classification:

- *Customer Costs – includes all functionalized customer costs plus any pro-ration of distribution or A&G costs assigned for recovery from this classification.*
- *Demand – all costs, including pro-rations of A&G, associated with meeting system demand or capacity (kW)*
- *Energy Costs – associated with the volume of electricity (kWh) consumed.*
- *Examples of Classification*
 - Meter reading - Customer
 - Transmission line – Demand, because it's sized to meet instantaneous load
 - Company President's salary - All classifications
 - Generating facility - Demand and Energy
 - Many approaches and options available
 - No one right methodology

Embedded Cost Study Fundamentals (continued)

- Allocation – final step in cost of service study – classified costs are assigned to customer classes and sub classes
 - *Customer-Related Costs*
 - Number of customers in each class, or
 - Weighted number of customers (TOU vs. flat rate)
 - *Demand-Related Costs*
 - Coincident peak method – relative demands imposed on system during peak load conditions
 - Non-coincident peak method – assigned demand related costs according to each class' peak
 - *Energy-related costs – based on each class' percentage of total system energy requirement*
 - *Room for interpretation*

Marginal Cost of Service Studies

- Generally ignore accounting costs
 - *Focus instead on costs resulting from changes in consumption levels*
 - *Disagreement among professionals in rate proceedings*
- Short Run/Long Run Studies
 - *Short Run - primarily incremental expenses such as fuel; small load changes*
 - *Long Run - farther reaching involving capital investments, additional personnel, etc.; greater load changes*
- Decremental Marginal Studies
 - *Avoided cost analysis – what costs can be avoided if load is reduced*
 - *Potential controversies over treatment of “sunk” costs when customers leave and the services remain*

Embedded vs. Marginal COS

Where to Use

- Embedded
 - *Revenue Allocation*
 - Utility “entitled” to recover embedded costs
- Marginal
 - *Rate Design*
 - Marginal costs better reflect current operating costs
 - Better indicator of where rate levels ought to be set
- Embedded and Marginal
 - *Class Rate of Return analyses*