



National Association of Regulatory Utility Commissioners

Cost Allocation: From Revenue Requirement to Rates

Robert Eckenrod

23 July 2008







Cost Allocation: Overview

- Revenue requirements, that is, costs of service, are allocated to classes of customers based upon their relative impact or usage of the utility system
- Typical customer classes include:
 - Residential
 - Commercial
 - Industrial
 - Wholesale
 - Agricultural
- Individualized rates are discouraged, although special negotiated (contract) rates may be an exception for large customers







General considerations in developing cost allocations

- Spatial considerations
 - Zonal, distance, pressure needs
- Temporal considerations
 - Time of day, day of week, seasonal
- Volume consumed
- Quality differentiation
 - Higher heating content of gas, or conditioned power
- Social and environmental impacts







Cost of Service Study

- A cost of service study is a process used to assign or allocate a fair share of the total cost of the utility to its various customer rate classes.
- Typically includes three main categories of costs
 - Direct assigned
 - Those costs that are clearly caused by a singe rate class
 - e.g., cost of a transmission plant used on by large customers
 - Joint costs
 - Those costs that are clearly caused by two or more rate classes
 - When two more classes use or share the same facilities, such as a generating plant
 - Common costs
 - Those costs that are common to all rate classes, yet not directly caused by any single class.
 - e.g., the utility's Chief Executive Officer's salary







Cost of Service Study: Steps

- Fair apportionment of costs of service are accomplished through several steps
 - Direct assignment
 - The assignment to a rate class of any costs that are clearly caused or incurred by or for only that rate class.
 - Review all costs to determine if any costs can be directly assigned to any one rate class
 - Functionalization
 - Arrange costs according to major functions, for example, production, transmission and distribution, customer services, administration
 - In U.S., usually arranged according to Uniform System of Accounts
 - Purpose is to facilitate and improve accuracy of ultimate cost allocation step







Cost of Service Study: Steps, continued

- Classification
 - Further division of costs into groups bearing a relationship to a measurable cost-defining, cost-causal relationship, service characteristic.
 - Once the appropriate measurable cost-defining service characteristic is determined then it can be used to allocate joint costs among rate classes
 - Good example of measurable costs defining service characteristic is metered energy used in kilowatt-hours. Because it is metered, it is measurable. The more energy in kilowatt-hours a customer used, the more energy costs (such as fuel) the utility incurs. As a result, energy use measured in kilowatt-hours is a cost-defining service characteristic







Cost of Service Study Steps, continued

- Allocation
 - The apportionment of joint costs among two or more rate classes in accordance with each class's relative share of a measurable cost-defining service characteristic.
 - Some methods of cost allocation include
 - Functional or average use
 - Peak responsibility (coincident, non-coincident)
 - Commodity demand
 - Average excess method







Cost of Service Principles

- Cost causation
 - Costs should be borne by those who cause them to be incurred
 - Sends a correct price signal to the customer
- Equal Rate of Return
 - A traditional measure of fair sharing of total costs among rate classes
 - Only when the rates of return are equal is there a fair apportionment of the total costs of service
 - If the earned rate of return for a rate class is less than system average, then that rate class is not paying its fair share
- Gradualism
 - A principle used in implementing costs of service study results, advocated gradual movement of rates to cost of service so as to minimize rate change impacts to the affected rate classes.







Rate Design: How to Recoup Allocated Costs

- Fixed Charges (do not vary with usage)
 - Fixed charges may be used to recover non-variable costs such as administrative costs
 - Although some utilities may recover a portion of fixed costs through variable charges.
 - Recovering more costs through fixed charges enhances revenue stability, BUT can result in affordability concerns and conservation issues
- Variable Charges (vary with consumption)
 - Recovery of more costs through variable charges can promote conservation and efficiency, but increases revenue instability
- Special Charges
 - Automatic adjustment charges (for example, commodity costs)
 - Special purposes surcharges