RATEMAKING FOR ELECTRIC UTILITIES

By John Wolfram

Electric utilities face increasing pressure to achieve financial targets. Slowing demand growth, changes in wholesale markets, new environmental regulations and growing consumer interest in distributed generation are driving changes to the way electric utilities incur costs. Electric utilities must review their costs and customer rates to ensure that the rates reflect these dynamic cost drivers. To do this, utilities should frequently perform rate reviews, by determining revenue requirements, conducting cost of service studies, and reviewing rate design.

Revenue Requirements

The first step of any electric utility rate analysis is to determine the amount of revenue that the customer rates must generate annually. Utilities are entitled to recover their prudently incurred costs and to earn a reasonable return on their investments, so the revenue requirement should include annual *expenses*, for purchased power, O&M, depreciation, taxes and other costs. This includes pro forma adjustments to capture any costs expected when rates will be in effect. It must also include a total *margin* that will allow the utility to achieve the target debt service coverage or other objective financial metric. This allows the utility to pay the interest on long term debt and prepare for contingencies related to weather events, consumption changes, or variations in wholesale power supply costs. In this way the revenue requirement best represents the total annual revenue that the utility must produce in order to meet or exceed its financial goals.

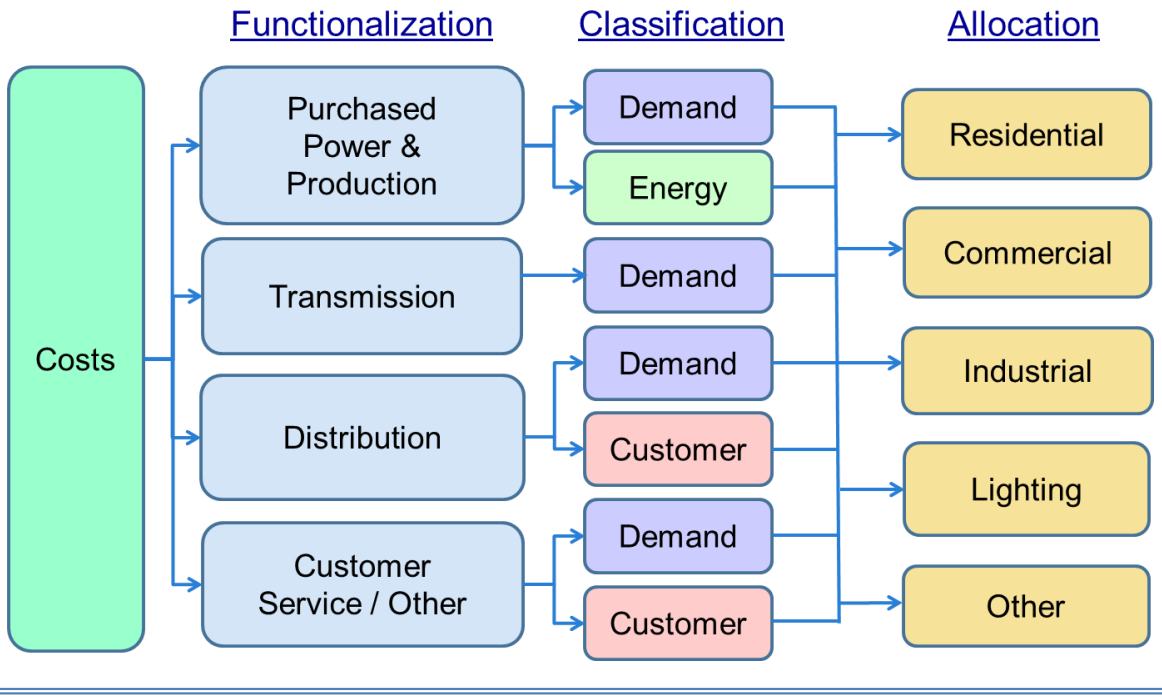
Cost of Service Study ("COSS")

The COSS is used to determine the cost to provide service to customers, both in total and by individual rate class. The COSS is an effective tool for assessing whether each rate class is paying its fair share of total costs and for designing rates that fairly assign costs to each rate class. The electric utility should prepare a COSS using standard methods that have been established by industry experts, accepted by regulators, and/or approved by the courts – even if the electric utility is not subject to state jurisdiction. These methods must determine as accurately as possible what it costs for the electric utility to serve each class of customers.

The first step is to *Functionally Assign* all of the utility's costs into major functional groups, e.g. production, transmission or distribution. This answers the question, to what function does a particular cost relate? The second step is to *Classify* all functionalized costs as related to energy, demand, or the number of customers. This answers the question, how does the particular cost vary? The third step is to *Allocate* the functionalized, classified costs to the rate classes. This answers the question, which customers cause the utility to incur the particular cost? See Figure 1.The COSS can then be used to show the actual per-unit costs to serve each rate class, separated or *unbundled* into demand, energy, and customer components. Those actual costs can then be

adjusted to reflect the target revenue requirement, so that unbundled, *cost-based rates* for each rate class may be calculated. These unbundled, cost-based rates provide essential guidance for designing rates that are fair, just and reasonable.

Figure 1. Cost of Service Study Process



Rate Design

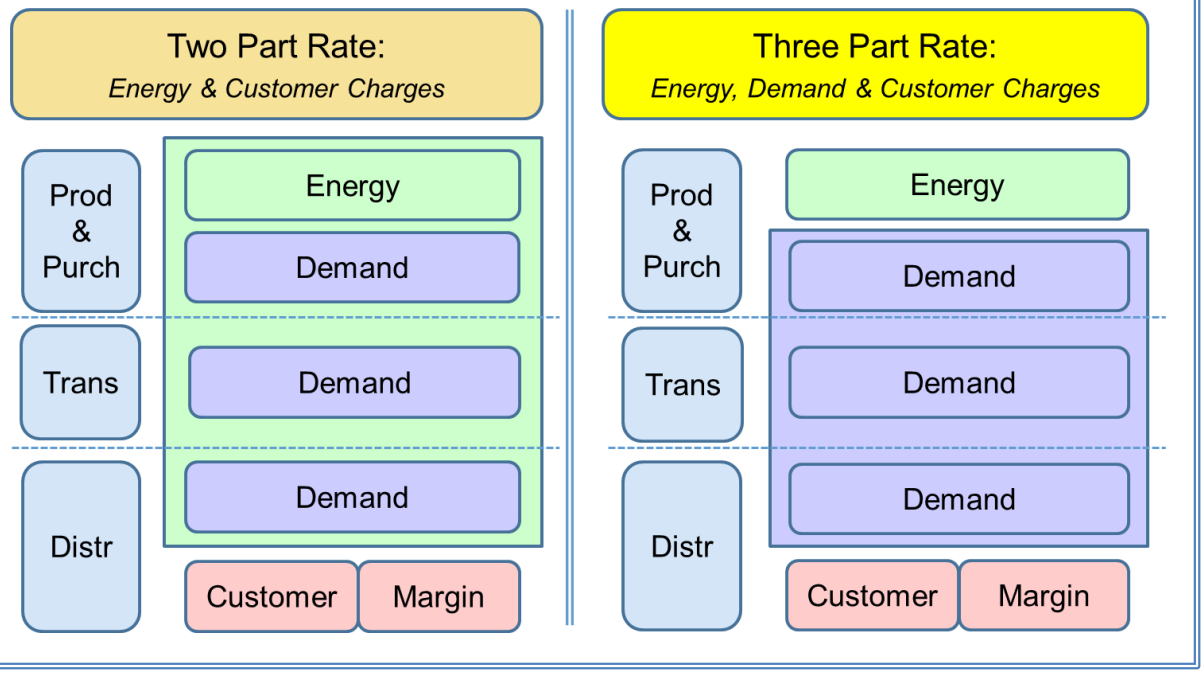
The Revenue Requirement shows whether an overall rate increase is needed. The unbundled, cost-based rates from the COSS show which rate classes are subsidizing or being subsidized by other rate classes, and provide guidance on how the particular rate schedules should be adjusted. When the cost-based rates are unbundled by component – including purchased power demand, purchased power energy, transmission demand (if applicable), distribution demand, and distribution customer – the utility can assess whether the existing charges (customer charge, energy charge, and demand charge where applicable) send the appropriate price signals to consumers, or whether revisions are needed to correct that and/or to afford the utility sufficient protection against revenue erosion.

Significant rate changes can be difficult to adopt in a short period of time. The ratemaking principle of *Gradualism* is applied when electric utilities adjust rates in smaller increments over time to avoid dramatic rate increases all at once.

Utility margins should be included in fixed charges whenever possible, so that variations in weather or conservation do not adversely impact utility margins. Typical rate designs referred to as Two-Part Rates (comprised of per-customer and energy charges) and Three-Part Rates (comprised of customer, energy, and demand charges) are illustrated in Figure 2.

The rate design should (a) allow the electric utility to secure the target revenue requirement, (b) align with the wholesale power rate structure, (c) minimize subsidies within and between rate classes, (d) encourage efficient usage, and (e) properly charge and credit consumers with distributed generation resources. The rates must also be understandable, be stable, and avoid undue discrimination. If a consumer causes the utility to incur a particular cost, the consumer should pay that cost. Rates designed on the basis of unbundled, cost-based rates are an effective way to achieve all of these objectives.

Figure 2. Typical Rate Designs



Conclusion

During periods of rapid change, it is especially important for electric utilities to review their rate structure, to ensure continued financial stability while also addressing the changing economic and social interests of the community they serve. Electric utilities must be flexible, because there is no one perfect rate design – conditions change, and corresponding changes to the rate structure may be warranted. They must also be alert, and continue to monitor emerging trends, customer interests, best practices of other utilities, and the associated impact of all of these dynamic elements on the future financials of the utility. In this way the electric utility will remain best positioned to manage and indeed thrive in whatever environment the future brings.

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