Cost of Service/Rate Design
(case study)

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Scott Lawless, Financial Analysis Division
Kentucky Public Service Commission

Rate Design – General Practices

After the revenue requirement is determined, rates are designed that will generate the revenue requirement.

A cost of service study (COSS) is used to determine the amount of the revenue requirement to be allocated to each customer class.

The Commission's general objective is to prevent subsidies between and within customer classes.

COSS - Water

Two Methods have been accepted by the Commission in the past.

1) Base-Extra Capacity

2) Modified Commodity Demand

Base-Extra Capacity

Used by 1 large IOU. A modified version used by 2 large water districts.

Cost are separated into the following categories for allocation to different customer classes:

1) Base Costs – cost to serve average load conditions.
2) Extra Capacity Costs – cost to serve in excess of average conditions.
3) Customer Costs – cost to serve regardless of usage or demand.
4) Fire Protection Costs – cost to meet potential peak demand for fire protection.

Base-Extra Capacity – Resulting Rate Designs

Large IOU uses this method to establish different rates for each class of customer. Rate design includes flat meter charge and flat volumetric rate. The meter charge is dependant on meter size. The volumetric rate is dependant on the class of customer.

Two large districts use a modified version to establish a rate design that includes a meter charge and a declining block rate. The meter charge is dependant on the meter size. The same declining block rates are charged to all meter sizes and customer classifications.

Modified Commodity Demand

Used by smaller, less sophisticated water systems

Costs are classified into one of the three following:

- Commodity Costs
- Demand Costs
- Customer Costs

Modified Commodity Demand

- Information available from small utilities very limited.
- Studies are very subjective.
- Typical Rate Design:

  Minimum Bill with Volumetric Declining Block Rates. (KPSC showing interest in Inclining Block Rates)

  Typically try to capture at least 80 percent of residential customers in first two steps. 5,000 gallons is general standard:

  Minimum Bill Up to 2,000 gallons

  Next 3,000 gallons

  Declining Block Rates apply to all customer classes.

  Minimum bill for each meter size is often based on its equivalent maximum flow rate but not required.

Modified Commodity Demand

Equivalent Meter Factors based on Maximum Flow Rates

Meter Size	5/8" Equivalent	Gallons in Minimum Bill
5/8"	1.0	2,000
1"	2.5	5,000
1 ½	5.0	10,000
2"	10.0	20,000
3"	15.0	30,000
4"	25.0	50,000
6"	50.0	100,000
8"	75.0	150,000
10"	125.0	250,000
12"	200.0	400,000

Case Review of Modified Commodity Demand

COSS filed by Garrison-Quincy Water District in Case No. 2007-00476

COSS – Water – Non-Metered Services

One regulated water utility serving approximately 350 customers operates without the use of customer meters.

Flat monthly rates are applied.

COSS – Electric

First Step: Expenses are "Functionalized" into one of the following:

1) Production
2) Transmission
3) Distribution
4) Customer Accounts
5) Administrative and General

COSS – Electric

Second Step: Functionalized Costs are Classified into one of following:

1) Commodity (Energy) Related
2) Customer Related
3) Demand Related

COSS – Electric

Third Step: Classified Costs are Allocated to each Customer Class.

- Commodity related costs are allocated based on test-year sales.
- Customer related costs are allocated using a variety of factors that are generally based on the number of customers served and the investment necessary to serve those customers.
- Demand Related Charges are allocated using one of a variety of methods.

Common Methods to Allocate Electric Demand Charges

1) 12 Coincident Peak, used by RECC's and one IOU
2) 6 Coincident Peak
3) Base Intermediate Peak, used by 2 IOU's
4) Average and Excess, used by 1 IOU
5) Summer/Non-Summer, used by 1 IOU

12 Coincident Peak

Determines the highest single hour's system load for each month of a 12 month period and sets the "system peak" equal to the average of all 12 months. Each class's coincident peak is that class's average load during those 12 highest hours.

6 Coincident Peak

Same as 12 coincident peak except that only the 3 months with the highest peak during the cooling months and 3 months with the highest peak during the heating months are used.

Base Intermediate Peak

A time-differentiated method that assigns production plant costs to three rate periods: peak hours, secondary peak (intermediate) hours, and base loading hours. In the analysis, units are ranked from lowest to highest operating costs. Those with the lower costs are assigned to all three periods, those with intermediate costs are assigned to the intermediate and peak periods, and those with the highest operating costs are assigned to the peak rating period only.

Base Intermediate Peak

Common allocations methods for categorized costs include:

1) coincident peak allocation factors can be used for peak production plant costs.

2) intermediate production plant costs are allocated using an allocator based on the classes' contributions to demand in the intermediate or shoulder period.

3) base load production plant costs are allocated using the classes' average demands for the base or off-peak rating period.

Average and Excess

Allocates demand costs to rate classes using a factor that combines the classes' average demands and non-coincident peak demands.

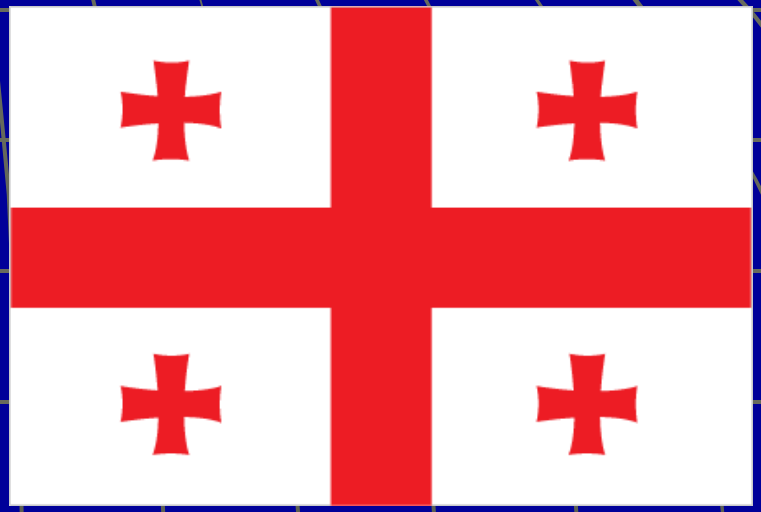
Summer/Non-Summer

A time differentiated method designed to allocate capacity costs based on the weighted class average coincident peak demand contributions during the maximum system load for the summer and non-summer months.

Case Review of COSS using 12 Coincident Peak

Meade County RECC in Case No. 2010-00222

QUESTIONS?



Didi madloba

THANK YOU