

*Tariff Development III: Cost of Service
Studies for Electric Utilities*

Jess Totten, Director
Public Utility Commission of Texas
Briefing for the NARUC/INE Partnership

*Tariff Development III: Cost of Service
Studies for Electric Utilities*

Jess Totten, Director
Public Utility Commission of Texas
Briefing for the NARUC/INE Partnership

Overview

- Steps in Setting Rates
- Information for Allocating Costs and Designing Rates
- Schedules
- Tariff

- # Overview
- Steps in Setting Rates
 - Information for Allocating Costs and Designing Rates
 - Schedules
 - Tariff

```

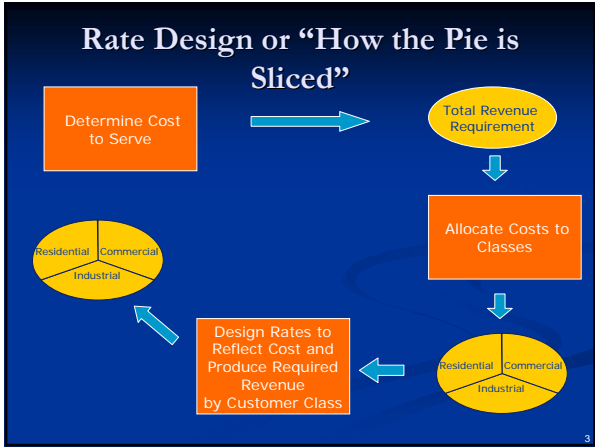
graph TD
    A[Determine Cost to Serve] --> B((Total Revenue Requirement))
    B --> C[Allocate Costs to Classes]
    C --> D((Residential Commercial Industrial))
    D --> E[Design Rates to Reflect Cost and Produce Required Revenue by Customer Class]
    E --> F((Residential Commercial Industrial))
    F --> A
  
```

The diagram illustrates the Rate Design process, which involves determining the cost to serve and allocating costs to different customer classes to produce required revenue.

The process flow is as follows:

- Determine Cost to Serve** (Orange box)
- Total Revenue Requirement** (Yellow oval)
- Allocate Costs to Classes** (Orange box)
- Design Rates to Reflect Cost and Produce Required Revenue by Customer Class** (Orange box)

The process involves three customer classes: Residential, Commercial, and Industrial, represented by yellow ovals.



Information for Allocating Costs and Designing Rates

- Costs
- Consumption
- Billing Determinants
- Tariff

Rate = Cost/Billing Determinants

Charge = Rate * Billing Determinants

4

- # Information for Allocating Costs and Designing Rates
- Costs
 - Consumption
 - Billing Determinants
 - Tariff
- Rate = Cost/Billing Determinants
- Charge = Rate * Billing Determinants
- 4

Information for Allocating Costs and Designing Rates

- Costs
- Consumption
- Billing Determinants
- Tariff

Rate = Cost/Billing Determinants

Charge = Rate * Billing Determinants

4

Information for Allocating Costs and Designing Rates

- Costs
- Consumption
- Billing Determinants
- Tariff

Rate = Cost/Billing Determinants

Charge = Rate * Billing Determinants

4

Information for Allocating Costs and Designing Rates

- Expenses, Invested Capital, Rate of Return
- Consumption
- Weather

- # Information for Allocating Costs and Designing Rates
- Expenses, Invested Capital, Rate of Return
 - Consumption
 - Weather

Expenses, Invested Capital, Rate of Return

- Fuel
- Purchased Power
- Operations and Maintenance
- Factoring, uncollectible
- Depreciation, amortization
- Payroll Taxes
- State and Local Taxes
- Federal Income Tax
- Interest on Customer Deposits
- Return
 - Cost of Debt
 - Cost of Preferred Stock
 - Cost of Equity
- Electric Plant in Service
- Construction Work in Progress
- Working Cash Allowance
- Materials and Supplies
- Base Rate Revenue
- Fuel Revenue

6

- # Expenses, Invested Capital, Rate of Return
- Fuel
 - Purchased Power
 - Operations and Maintenance
 - Factoring, uncollectible
 - Depreciation, amortization
 - Payroll Taxes
 - State and Local Taxes
 - Federal Income Tax
 - Interest on Customer Deposits
 - Return
 - Cost of Debt
 - Cost of Preferred Stock
 - Cost of Equity
 - Electric Plant in Service
 - Construction Work in Progress
 - Working Cash Allowance
 - Materials and Supplies
 - Base Rate Revenue
 - Fuel Revenue
- 6

Consumption

- Number of customers by class
- Kilowatt-hour sales by class
- Class coincident peak
 - Requires statistical sampling with demand meters
- Revenue by class
- Provide test-year actual information and any adjustments
 - Weather normalization adjustment or customer adjustment (classification or number)
 - Annual and monthly information, historical information

7

Adjustments

- If number of customers is increasing or decreasing, should rates reflect the most current information
- Weather normalization reduces fluctuations related to extremes of weather (significant issue in many US states)
 - What would consumption be if weather were normal

8

Weather

- Heating degree days
- Cooling degree days
- Provide test-year actual and historical

CDD = Sum of (average temp – 18 degrees)

HDD = Sum of (18 degrees – average temp)

9

Cost Allocation and Rate Design Schedules

- Allocation of cost categories
- Allocation of total revenue requirements and resulting cost increase
- Proof of revenue for resulting rates

10

Allocation of Production Costs

Class	Allocation 3CP	Percentage	Revenue
Residential	688,858	30.75%	31,696,830
Small Commercial	64,017	2.86%	2,945,652
C&I	1,413,015	60.08%	65,017,894
Municipal	74,193	3.31%	3,413,887
Total	2,240,083	100%	103,074,262

11

Results of Cost Allocation--Revenue Increase by Class (\$ in millions)

Class	Present Revenue	Increase	Percent	Revenue
Residential	94.5	10.8	11.5%	105.2
Small Commercial	13.8	0.8	5.8%	14.6
C&I	171.8	10.2	6.0%	182.0
Municipal	15.4	1.1	7.0%	16.4
Total	295.4	22.9	7.8%	313.3

12

Proof of Revenue--Residential

Rate Element	Billing Determinants	Charge	Revenue
Service Availability	2,522,902	\$5.10	12,866,800
Energy Summer	1,006,992,444	\$0.04500	45,314,660
Energy Winter	1,449,640,630	\$0.03249	47,098,824
Energy Total	2,456,640,630		92,413,484
Total			105,284,250
Rounding Error			(3,966)

13

Residential Tariff

APPLICABLE: To residential customers for electric service used for domestic purposes in private residences and separately metered individual apartments . . . measured through one kilowatt hour meter, where facilities of adequate capacity and suitable voltage are adjacent to the premises to be served.

TERRITORY: Texas service territory.

RATE: Service Availability Charge: \$5.10 per month.

Energy Charge:

4.500¢ per kWh for all kWh used per month during each summer month

3.656¢ per kWh for all kWh used per month during each winter month

WINTER MONTHS: The billing months of October through May.

SUMMER MONTHS: The billing months of June through September.

FUEL COST RECOVERY AND ADJUSTMENTS: The charge per kilowatt hour of the above rate shall be increased by the applicable fuel cost recovery factor per kilowatt hour. This rate schedule is subject to other applicable rate adjustments as in effect from time to time in this tariff.

SECONDARY DISTRIBUTION FUEL COST RECOVERY FACTOR:

The Secondary Distribution fuel cost recovery factor to be billed is 3.4975¢ per kilowatt-hour and shall apply when service is metered at less than approximately 12 kV.

14