

Guam Power Authority Electric Department Cost of Service Overview

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Discussion

- **Cost of Service Process**
 - Development of long term financial projections
 - Development of Key Financial targets
 - Debt Coverage Ratio
 - Minimum Cash Requirements
 - Target Operating Income
 - Identification of long term rate adjustments
 - Development of Cost of Service Study
 - Allocation of Revenue Requirements based on Cost-Causation
 - Identification of Customer Classes
 - Development of Allocation Factors
 - Allocation of Revenue Requirements to Customer Classes

How Much Revenue is Required?

- GPA is a non-for-profit utility, with rates set adequately to maintain system reliability and the financial stability of GPA
 - Adequate funding is available for normal capital improvements necessary to ensure system reliability
 - Debt service payments are made and adequate coverage exists to maintain bond ratings
 - Cash reserves adequately provided required working capital to ensure the timely payments of bills
 - Replacement reserves are adequately funded for eventual replacement of existing infrastructure

Revenue Requirements Cash Basis Methodology

+	O&M Expenses (Excluding Depreciation Expense)
+	Capital Expenses
+	Debt Service (Principal and Interest)
=	Total Revenue Requirements



Revenue Requirements Accrual (Utility) Basis Methodology

+	O&M Expense					
+	Depreciation					
+	Rate of Return (Interest Expense; Inflationary Increase on Assets)					
=	Total Revenue Requirements					



How are Costs Determined for Each Type of User?

- The revenue required is allocated to each class of users based on cost causation
 - Generation GPA peak times occur in the early evening and adequate generation capacity is required to ensure electricity can be provided
 - Cost of service study identifies the amount of energy used by each class during the peak hours of the day and year
 - Example Distribution Facilities: Distribution wires and transformers near each customers facility is sized to handle a customers peak demand
 - Cost of service study identifies capacity needed by each class to ensure the local distribution system has adequate capacity
 - Example Metering: Metering costs vary by type of customer and service requirements (Single phase or Three phase)
 - Cost of service study identifies the average metering costs by class of customers

Only a small set of examples included above

How are Costs Determined for Each Type of User?

The revenue required is allocated to each class of users based on cost causation

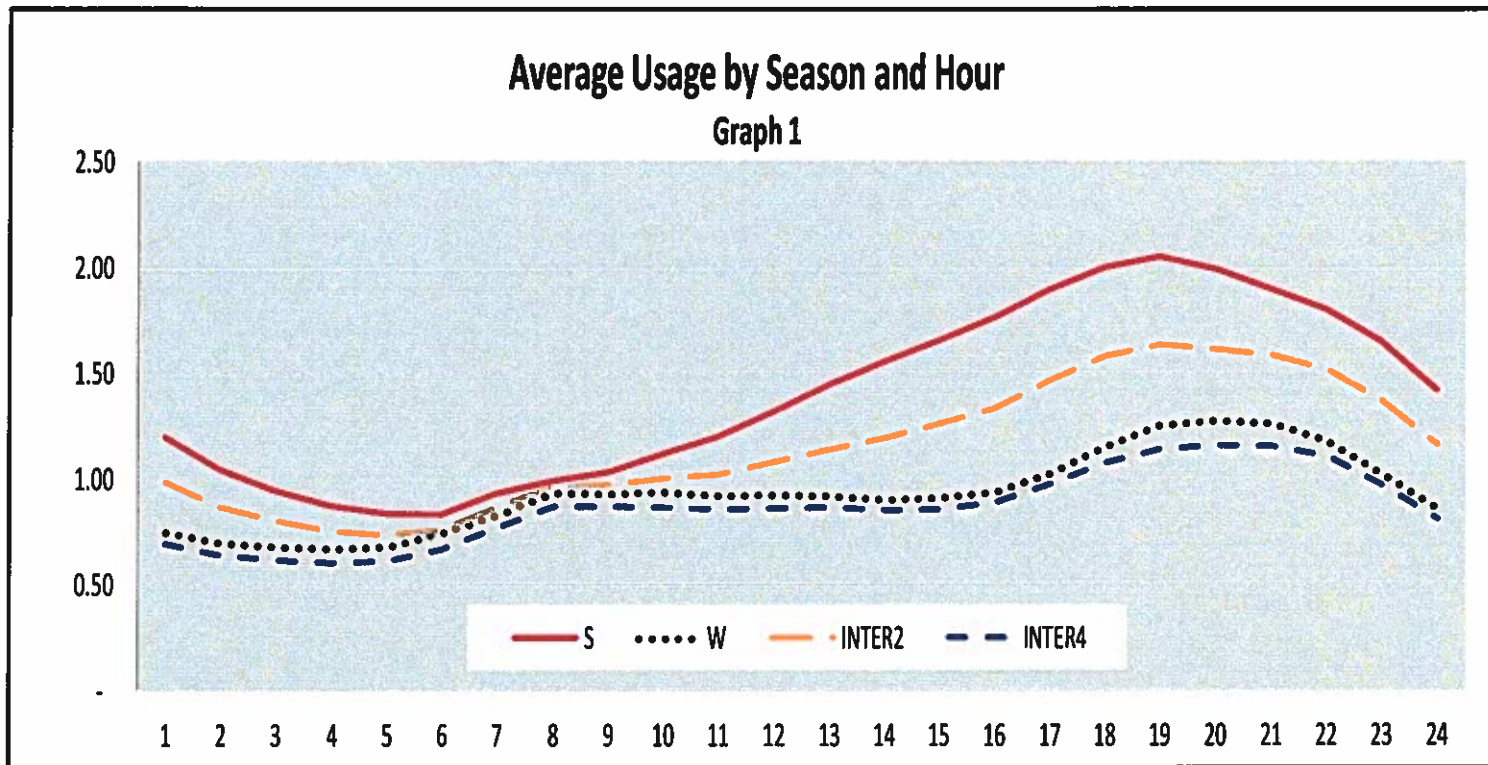
Examples of Cost Causation

- **Generation**
 - GPA peak times occur in the early evening
 - Cost of service study identifies usage by each class during the peak hours
- **Distribution Facilities**
 - Distribution wires and transformers near each customer is sized to handle their peak
 - Cost of service study identifies capacity needed by each class
- **Metering**
 - Costs vary by type of customer
 - Cost of service study identifies average metering costs by class

What are Demand Charges?

- GPA's distribution system is not sized to handle kWh but the peak demand the customer creates on the system
- Infrastructure such as substations, lines and transformers are sized based on the peak demands
- For example, residential customers tend to create a peak demand between 7 – 8 in the evening. The customer is billed for infrastructure based on this peak demand

Aggregated Residential Usage Pattern



Customer Charges (Base Charges) Cost Component Recovery

Recovers
cost for
connection
to Grid at
zero kWh
consumption

- Meter operation, maintenance and replacement costs
- Meter reading costs or AMR installation costs
- Billing Costs
- Customer Service Department
- Service into customers facilities
- Portion of Distribution System based on minimum system

How are Customer Classes Determined?

- Customers with similar usage patterns are combined into a single class of users
 - Classes are established based on common usage patterns, common sizing requirements and service level
 - GPA Current Classes
 - Schedule "R" (200 kwh/day or less)
 - Schedule "G" – non demand (Between greater than 200 kWh/day and less than 5,000 kWh/month)
 - Schedule "J" – demand (Greater than 5,000 kWh/month and less than 200 kW demand)
 - Schedule "P" – demand (Greater than 200 kW demand)

Additional schedules exist for governmental services, Navy and lighting

Are Costs Reasonably Represented of Cost to Serve Apartments and Condominiums

Many Apartments are currently billed on Rate "P" with some on Rate "J"

- Energy Charge:
 - First 55,000 kWh per month - per kWh \$0.14170
 - Over 55,000 kWh per month - per kWh \$0.06444
- Demand Charge:
 - Per kW of billing demand per month - per kW **\$8.94**
- Customer Charge: - per month \$59.25
- Determination of Demand:
 - Minimum 200 kW
 - Based on customer peak occurring in current month or previous 11 months

How Apartment Costs are Determined?

- COS will separately identify the cost to serve apartments and condominiums
 - Identify billing units
 - Identify usage patterns
 - Allocate costs of providing service
- Study Outputs:
 - Identify Monthly Customer Charges
 - Demand Charge
 - Distribution, Transmission & Generation
 - Energy Charges (LEAC)

Questions?

