Considerations in Designing Special Rates

Larry Feltner
The Prime Group, LLC

Reasons for Offering Special Rates

- Customer is served in a non-standard manner
- Customer has extremely large load
- Customer has “unusual” load characteristics
- Cooperative desires to modify the load or consumption behavior of a particular type of customer

Customers Requiring Non-Standard Service - Examples

- Customer is served directly from a G&T substation
- Customer is served from a radial feed
- Customer requires redundant feeds with automatic switching

Customers Requiring Non-Standard Service- Considerations

- Avoidance of stranded costs
  - Contract term
  - Minimum charges
  - Recovery of net investment due to early termination of contract
  - CIAC
- Rate should be sufficient to cover all marginal costs:
  - Cost of distribution investment necessary to serve the customer
  - Purchased power costs

Customers Requiring Non-Standard Service- Considerations

- Contribution in Aid of Construction (CIAC)
  - Line extension policy (revenue test)
  - Need for competitive rates
  - Stranded Investment Risk
  - Maintenance requirements
  - Asset replacement requirements

Customers Requiring Non-Standard Service- Rate Design Example

- Facts
  - New ethanol plant
  - 10-year contract term
  - Max demand – 20,000 kW
  - Annual Energy – 148,920,000 kWh
  - Load Factor – 85%
  - Distribution Investment (radial feed, transformation, metering equipment, etc.) -- $950,000
  - 1.5% Losses

Customers Requiring Non-Standard Service- Rate Design Example

- Facts (Continued)
  - Wholesale Demand Charge of $10.00 per Coincident Demand
  - Wholesale Energy Charge of $0.035 per kWh

Customers Requiring Non-Standard Service- Rate Design Example

- Development of Non-Levelized Carrying Charge Rate
  - Desired Rate of Return of 8.00%
  - Depreciation Rate on Facilities of 2.86% (35 years)
  - Anticipated O&M Cost on Facilities as a Percent of Investment (from Cost of Service Study) 4.50%
  - Property Tax and Insurance as a Percent of Investment (from Cost of Service Study) .65%

Customers Requiring Non-Standard Service- Rate Design Example

- **Non-Levelized Carrying Charge Rate**

Rate of Return	8.00%
Annual Depreciation	2.86%
O&M Expense	4.50%
Property Tax & Insurance	0.65%
Carrying Charge Rate	16.01%

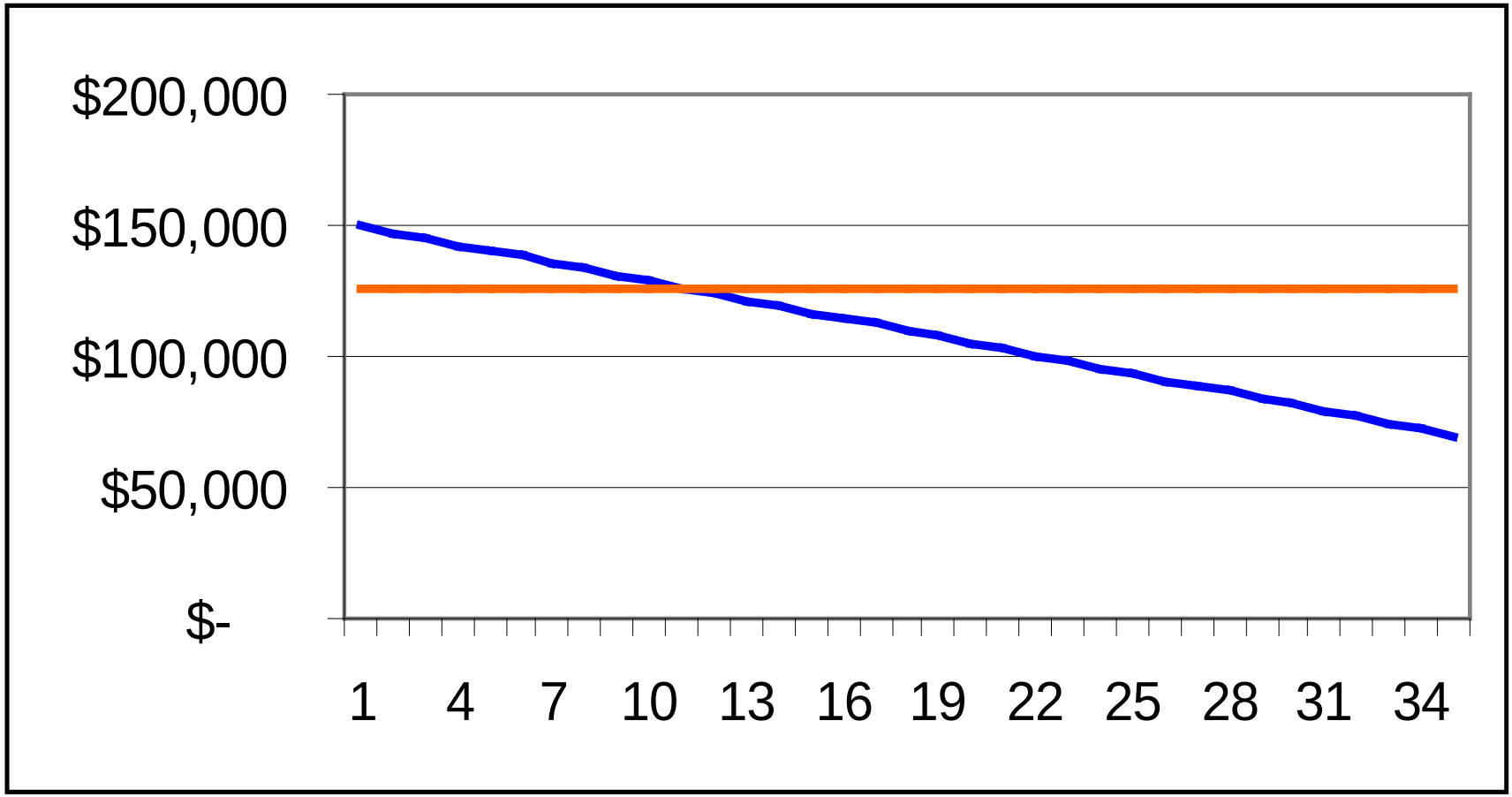
Customers Requiring Non-Standard Service- Rate Design Example

- Development of Distribution Demand Charge
  - Annual Distribution Revenue Requirement of $152,095 ($950,000 x 16.01% = $152,095)
  - Distribution Delivery Demand Charge per kW of $0.63 ($152,095 / (20,000 kW x 12) = $0.63)

Customers Requiring Non-Standard Service- Rate Design Example

- Using a Levelized Carrying Charge Rate Instead of Non-Levelized
  - Levelized Carrying Charge Rate “annuitizes” the Annual Revenue Requirement over the Life of the Asset
  - Unless the Non-Levelized Rate is changed each year the levelized rate will yield a lower overall rate

Levelized vs. Non-Levelized Carrying Charges



Levelized Revenue Requirement

Assumptions:

Investment	$	950,000
Book Life		35
Tax Life		35
Composite Tax Rate		0.00%
Property Tax Rate		0.65%
Levelized Revenue Requirement Years		35
O&M as Percent of Investment		4.50%

Results:

Present Value Revenue Requirement	$	1,472,355
Levelized Revenue Requirement		$126,333
Levelized Carrying Charge Rate		13.30%

Customers Requiring Non-Standard Service- Rate Design Example

- Development of Levelized Distribution Demand Charge
  - Annual Distribution Revenue Requirement of $126,333 ($950,000 x 13.30% = $126,333)
  - Demand Charge per kW of $0.53 ($126,333 / (20,000 kW x 12) = $0. 53

Customers Requiring Non-Standard Service- Rate Design Example

- Development of Purchased Power Charges
  - Purchased Power Demand Charge of $10.15 per Coincident Peak Demand ($10.00 / (1 - .015)) = $10.15
  - Purchased Power Energy Charge of $0.036 per kWh ($0.035 / (1 - .015)) = $0.036

Customers Requiring Non-Standard Service- Rate Design Example

- **Minimum Bill**
  - Helps protect the cooperative against stranded investment
  - Generally designed to ensure the recovery of the out-of-pocket cost (capital cost) of providing service
  - Minimum should be calculated to ensure recovery over the contract term
  - Can be a dollar minimum or demand minimum
  - Minimum dollar amount should be based on Net Revenue

Customers Requiring Non-Standard Service- Rate Design Example

- Development of minimum bill
  - Minimum Bill Expressed as Minimum Monthly Distribution Demand ($950,000 / $0.63 / 10 Years / 12 Months) = 12,566 kW)
  - Minimum Bill Expressed as Minimum Monthly Bill (950,000 / 10 Years / 12 Months = $7,917 per Month of Net Revenue

Extremely Large Customers

- Reasons for Special Rate
  - So that contract provisions can be included to minimize risk to the cooperative (to insure recovery of costs)
  - So that a pure cost-based rates can be offered
  - So that special billing provisions can be included (e.g. the cooperative may want to integrate billings demand over a shorter time frame)
  - Large customers often have unusual load charactersistics (e.g. demand fluctuations)

Customers with Unusual Load Characteristics

- **Seasonal Customers**
  - Grain dryers, irrigators, cotton gins, peanut processors, asphalt plants, schools, etc.
  - Rate Options – seasonal demand rates, TOU rates
  - May want to ratchet the demand billings or establish a minimum demand to ensure recovery of cost
  - Customer charge should be cost based
- **Customers with sporadic demands**
  - Scrap yards, saw mills, well pumps, etc.
  - Rate Options – demand rates, TOU rates
  - May want to ratchet the demand billings or establish a minimum demand to ensure recovery of cost
  - Customer charge should be cost based

Customers with Unusual Load Characteristics

- **Customers with the flexibility to operate off peak**
  - Many of those mentioned above have the capability
  - Rate Options -- TOU rates, critical peak pricing, real-time pricing rates, demand response rates
- **Customers who can interrupt or self generate**
  - Rate Options – TOU rates, interruptible rates, critical peak pricing, real-time pricing rate, demand response rates