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Impact of Differing Cost Recovery Methods: Hypothetical Example

Docket No. 4545

Presentation at the
Rhode Island Public Utilities Commission
Review of Electric Rates Issues Meeting
May 14, 2015

Agenda

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- Hypothetical Example of the Impact of Differing Cost Recovery Methods – Jeanne Lloyd
- Principles of Cost Allocation – Peter Zschokke
- Update on Non-Wires Alternative DemandLink Pilot – Lindsay Foley

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Hypothetical Example of the Impact of Differing Cost Recovery Methods

Example of the Impact of Differing Cost Recovery

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- Assumptions:
  - $10 million cost recovery amount
  - The cost is eligible for recovery through either the Company's Energy Efficiency Program or its Infrastructure, Safety, and Reliability (ISR) Plan based on the cost's characteristics.
- For Discussion:
  - Does it matter how the Company recovers the cost?
    - From a cost recovery perspective, the cost can be recovered through either mechanism.
    - But from a bill impact perspective, it does matter under what tariff mechanism the cost is recovered.

Example of the Impact of Differing Cost Recovery

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- Why does it matter?
  - Because a cost recovered through the Energy Efficiency Program Charge is allocated to rate classes differently than a cost recovered through the ISR Factor.
  - Because the rate design of the Energy Efficiency Program Charge is different than the rate design of the ISR Factor.
- These two differences will result in differing bill impacts to customers.

Comparison: Recovery via EE vs. ISR

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SUMMARY OF ALLOCATION METHODS

	Total	A-16/60	C-06	G-02	B/G-32	B/G-62	S	X-01
Allocation Factors								
Energy Efficiency (Energy, or kWhs)		40.8%	7.7%	16.3%	26.3%	7.8%	0.9%	0.3%
ISR O&M (O&M Allocator)		48.0%	9.8%	15.5%	15.3%	3.7%	7.5%	0.3%
ISR CapEx (Rate Base Allocator)		52.8%	9.7%	14.7%	13.8%	3.5%	5.2%	0.3%
Allocated Revenue Requirement								
Energy Efficiency ($000)	$10,000	$4,082.1	$766.6	$1,629.3	$2,629.3	$777.2	$85.3	$30.3
ISR-O&M Factor ($000)	$10,000	$4,802.2	$982.9	$1,545.5	$1,525.8	$366.4	$748.6	$28.6
ISR-CapEx Factor ($000)	$10,000	$5,278.1	$971.0	$1,467.9	$1,382.3	$347.9	$521.4	$31.4
Rate Design								
Energy Efficiency (Uniform Charge)		$0.00129	$0.00129	$0.00129	$0.00129	$0.00129	$0.00129	$0.00129
ISR-O&M Factor (Class-Specific kWh Charge)		$0.00152	$0.00166	$0.00123	$0.00075		$0.01138	$0.00122
ISR-O&M Factor (Class-Specific kW Charge)						$0.26		
ISR-CapEx Factor (Class-Specific kWh Charge)		$0.00167	$0.00164				$0.00792	$0.00134
ISR-CapEx Factor (Class-Specific kW Charge)				$0.41	$0.44	$0.25		

Monthly Bill Impacts

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Rate Class	Monthly Usage	Increase (EE)		Increase (O&M)		Increase (Capex)	
A16- Residential	500 kWh	$0.65	0.7%	$0.76	0.8%	$0.84	0.9%
A60- Low Income	500 kWh	$0.65	0.8%	$0.76	0.9%	$0.84	1.0%
C06- Small C&I	1,000 kWh	$1.29	0.8%	$1.66	1.1%	$1.64	1.1%
G02- General C&I	150 kW and 30,000 kWh	$38.70	0.7%	$36.90	0.7%	$57.40	1.1%
	60 kW and 30,000 kWh	$38.70	0.8%	$36.90	0.8%	$20.50	0.4%
G32- Lg Demand	2,500 kW and 500,000 kWh	$645	1.2%	$375	0.7%	$1,012	1.9%
	1,000 kW and 500,000 kWh	$645	1.4%	$375	0.8%	$352	0.8%
G62- Opt Lg Demand	15,000 kW and 3,000 MWh	$3,870	1.2%	$3,900	1.3%	$3,750	1.2%
	6,000 kW and 3,000 MWh	$3,870	1.4%	$1,560	0.6%	$1,500	0.5%

Comparison: Bill Impacts of Recovery through EE vs. ISR

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Rate Class	Monthly Usage	EE Impact More (Less) than ISR CapEx Impact		EE Impact More (Less) than ISR O&M Impact	
A16- Residential	500 kWh	($0.19)	(0.2%)	($0.11)	(0.1%)
A60- Low Income	500 kWh	($0.19)	(0.2%)	($0.11)	(0.1%)
C06- Small C&I	1,000 kWh	($0.35)	(0.2%)	($0.37)	(0.2%)
G02- General C&I	150 kW and 30,000 kWh	($18.70)	(0.3%)	$1.80	0.0%
	60 kW and 30,000 kWh	$18.20	0.4%	$1.80	0.0%
G32- Lg Demand	2,500 kW and 500,000 kWh	($367.00)	(0.7%)	$270.00	0.5%
	1,000 kW and 500,000 kWh	$293.00	0.6%	$270.00	0.6%
G62- Opt Lg Demand	15,000 kW and 3,000 MWh	$120.00	0.0%	($30.00)	0.0%
	6,000 kW and 3,000 MWh	$2,370.00	0.8%	$2,310.00	0.8%

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Principles of Cost Allocation

Principles of Public Utility Rates by James C. Bonbright

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- Rate attributes: simplicity, understandability, public acceptability, and feasibility of application and interpretation
- Effectiveness of yielding total revenue requirements
- Revenue (and cash flow) stability from year to year
- Stability of rates themselves, minimal unexpected changes that are seriously adverse to existing customers
- Fairness in apportioning cost of service among different consumers (rates based on cost causation)
- Avoidance of “undue discrimination”
- Efficiency, promoting efficient use of energy by the customer (e.g. such that utility’s infrastructure and resources are not strained)

Allocation of Costs

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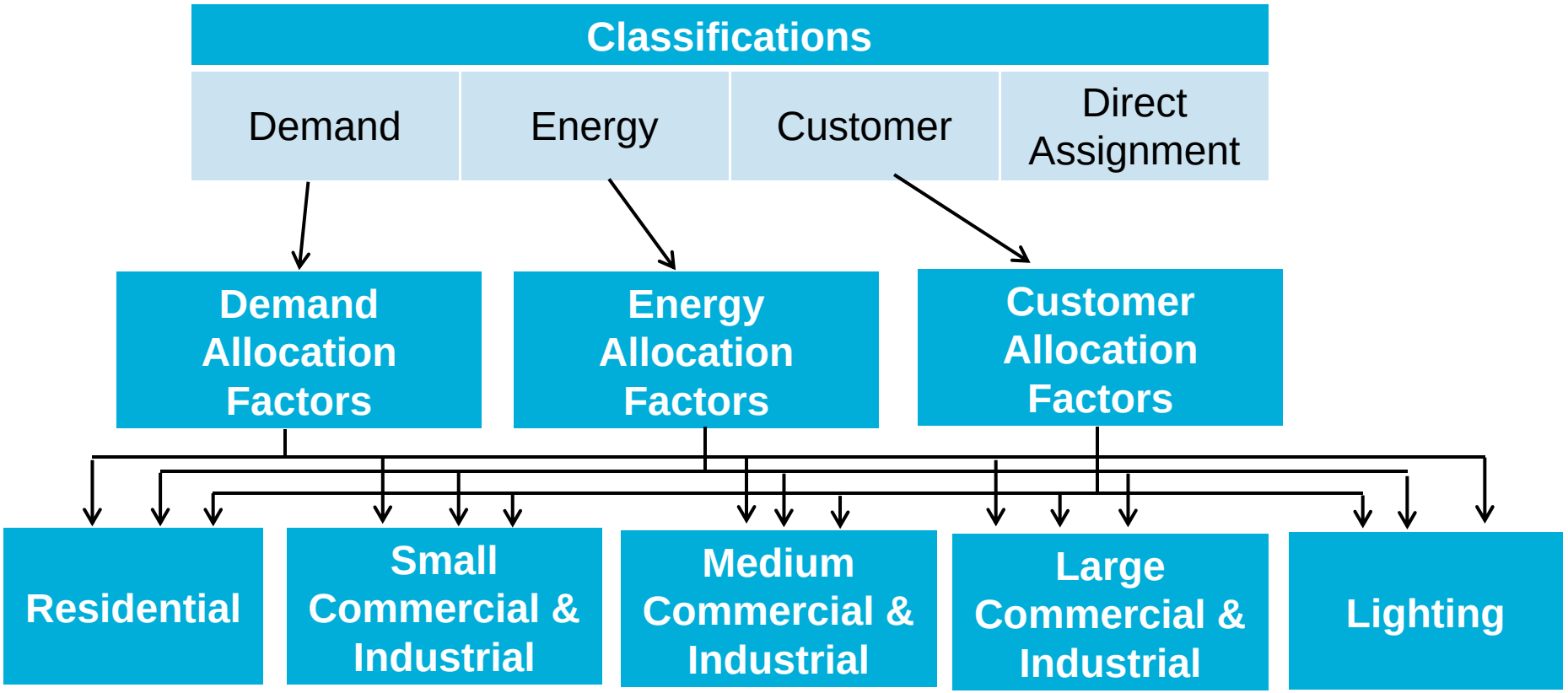

Recovery and Stability of Revenue Requirement

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- Effectiveness of Yielding Total Revenue Requirement
- Implications of recovering capital investment through Energy Efficiency Program
  - Company assets not typically recovered through EE Program
  - Recovery of on-going maintenance/replacement of capital investment is complicated if through EE
- Revenue Stability

Fairness/Equity

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- Appropriate cost allocation
  - Comparison of Primary Cost Drivers
    - Customer
    - Demand
    - Energy
- No undue discrimination

Comparison of "Typical Allocators"

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SUMMARY OF ALLOCATION METHOD

	Total	A-16/60	C-06	G-02	B/G-32	B/G-62	S	X-01
Allocation Factors								
Energy (Based on a measure of kWh)		40.82%	7.67%	16.29%	26.29%	7.77%	0.85%	0.30%
Demand (Based on measures of kW)		52.78%	9.71%	14.68%	13.82%	3.48%	5.21%	0.31%
Customer (Based on customer counts)		88.05%	10.03%	1.63%	0.21%	0.00%	0.08%	0.00%
Allocated Revenue Requirement								
Energy ($000)	$10,000	$4,082.10	$766.57	$1,629.34	$2,629.25	$777.17	$85.31	$30.27
Demand ($000)	$10,000	$5,278.08	$970.95	$1,467.94	$1,382.34	$347.94	$521.35	$31.40
Customer ($000)	$10,000	$8,805.43	$1,002.81	$162.97	$20.82	$0.24	$7.71	$0.02
Rate Design								
Energy (Uniform per kWh Charge)		$0.00129	$0.00129	$0.00129	$0.00129	$0.00129	$0.00129	$0.00129
Demand (Converted to Class-Specific kWh Charge)		$0.00167	$0.00164				$0.00792	$0.00134
Demand (Class-Specific kW Charge)				$0.41	$0.44	$0.25		
Customer (Per Customer Charge)		$1.69	$1.69	$1.69	$1.69	$1.69	$1.69	$1.69

Efficiency/Rate Attributes

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- Rates must be designed to yield total revenue requirement.
- Price signals: Rates should reflect marginal cost
  - Marginal cost is the cost of producing one additional unit of output, other things remaining the same.
- Rates should be simple and easy to understand
- Gradualism: rate changes should be gradual and predictable.

Illustrative Monthly Bill Impacts

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Rate Class	Monthly Usage	Increase (Energy)		Increase (Demand)		Increase (Customer)	
A16- Residential	500 kWh	$0.65	0.7%	$0.82	0.9%	$1.69	1.8%
A60- Low Income	500 kWh	$0.65	0.8%	$0.82	1.0%	$1.69	2.1%
C06- Small C&I	1,000 kWh	$1.29	0.8%	$1.64	1.1%	$1.69	1.1%
G02- General C&I	150 kW and 30,000 kWh	$38.70	0.7%	$57.40	1.1%	$1.69	0.0%
	60 kW and 30,000 kWh	$38.70	0.8%	$20.50	0.4%	$1.69	0.0%
G32- Lg Demand	2,500 kW and 500,000 kWh	$645.00	1.2%	$1,012	1.2%	$1.69	0.0%
	1,000 kW and 500,000 kWh	$645.00	1.4%	$352	0.8%	$1.69	0.0%
G62- Opt Lg Demand	15,000 kW and 3,000 MWh	$3,870	1.2%	$3,750	1.2%	$1.69	0.0%
	6,000 kW and 3,000 MWh	$3,870	1.4%	$1,500	0.5%	$1.69	0.0%

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Additional Information for Reference

Description of Unit Charges

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Customer Charges	Generally, fixed monthly charge designed to collect costs related to being a customer; for example, metering, billing, and customer service.
Demand (per kW) Charges	Demand (per kW) Charges are designed to collect fixed costs (i.e., costs that do not vary with throughput) associated with the distribution and/or transmission systems, such as transformers, conductor, poles, towers, and substations.
Variable (per kWh) Charges	Variable Charges (per kWh) are designed to collect costs that vary with throughput. Generally, these are costs that can be avoided by reducing kWh deliveries, for example, Standard Offer Service costs increase or decrease directly with kWh deliveries.

Example: Customer Usage Profiles

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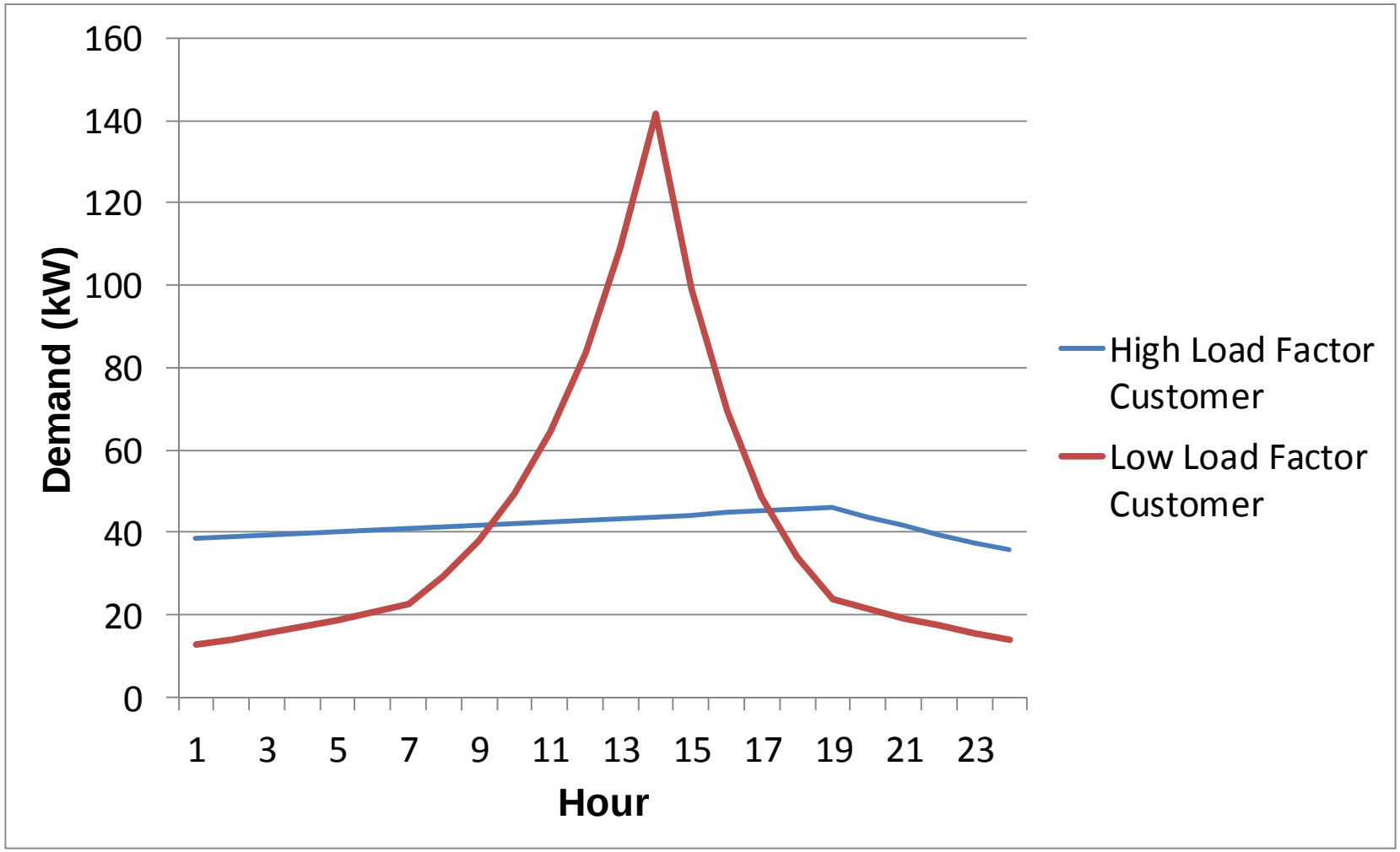

Class Contribution to Peak Demand

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