

F2008 Rate Design Application

Large Commercial Customer Rate Restructuring Workshop

February 15, 2007



Objectives

- BC Hydro would like to:
 - > Present the drivers for changes to the large general service rate
 - > Present options for restructuring of the rate
 - > Obtain comments from our stakeholders
- Our Stakeholders are invited to:
 - > Provide input into the restructuring of the large general service rate

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Procedural items

- BC Hydro is interested in your questions and input
- We would like to hear
 - > As much input into the issues as possible
 - > The full range of views
- High level summary notes will be produced after this meeting to capture main ideas of the questions/conversation
- Summary will be circulated to participants to ensure that we have captured the proceedings accurately
- Questionnaire will be provided after the meeting to allow everyone to respond to the questions we are posing

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Agenda

- Objectives
- Background
- Current Large General Service (GS>35kW) Rate
- Rate Design Drivers
- Rate Design Objectives
- Rate Design Options
- Feedback
- Additional Rate Application Topics
- Next Steps

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Introduction

- BC Hydro is filing a F2008 Rate Design Application (RDA) with the BCUC by March 15, 2007
- The filing will propose changes to some rates, cancellation of obsolete rates and some changes to the terms and conditions
- The BCUC will be conducting a proceeding to review the RDA
- BC Hydro would like input from our customers prior to making our application to the BCUC
 - > Cost of Service and Rate Rebalancing workshops
 - > Large Commercial Customer workshops
 - > Distribution Extension workshops
 - > E-Plus survey
 - > Additional 1:1 meeting with interested customers

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Revenue Requirement vs. Rate Design

- Revenue Requirement
 - > A revenue requirement is the forecast cost of doing business for a period of time. It must be approved by the BC Utilities Commission. BC Hydro can collect it through tariffs (the rate it charges its customers).
 - > Determines the overall revenue to be collected (the size of the pie).
- Rate Design
 - > The goal of rate design is to ensure that rates are fair to all customer classes, are efficient and are as simple as possible.
 - > No change in overall revenue collected.
 - > Determines what each rate class pays (divides the pie).

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Background – Large General Service Rate Class

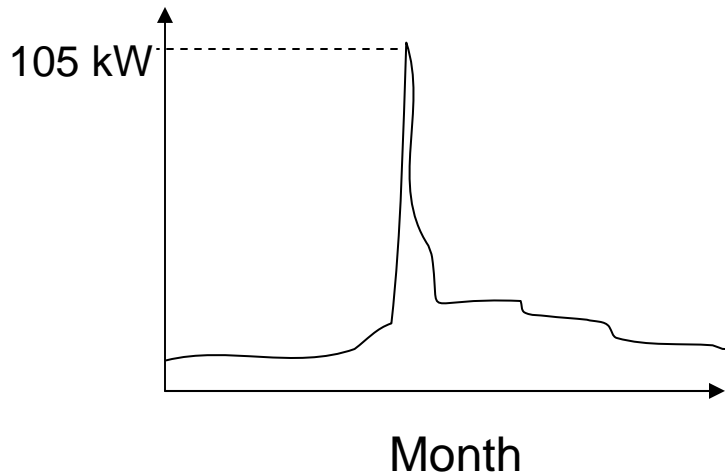
- Includes about 22,000 accounts that are very diverse in size and type.
- About 14,000 accounts less than 100kW in size and about 1,000 accounts over 500kW in size.
- Includes institutions (e.g., schools, hospitals, colleges), businesses (e.g., restaurants, offices, warehouses) and industry (e.g., sawmills, petroleum, mining).
- Accounts vary in how they use electricity.
 - > High load factor accounts have a constant load throughout the month.
 - > Low load factor accounts do not have a constant load throughout the month, but may require significant amounts of electricity at certain times of the month.

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Background – Load Factor

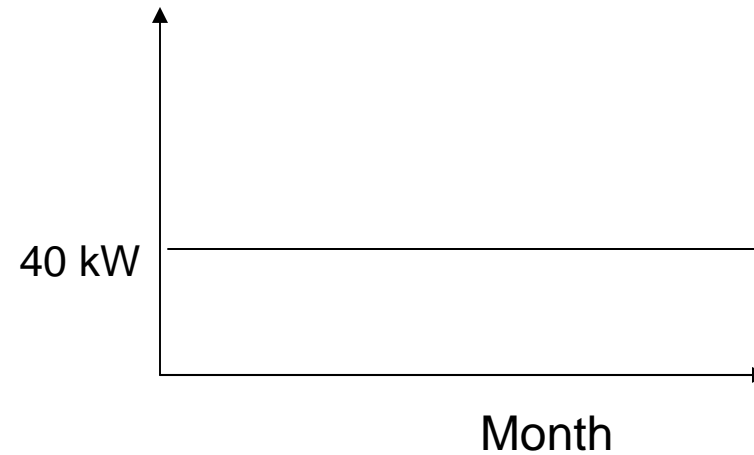
Load factor = average demand/peak demand supplied in period
= $[(\text{kWh}/\# \text{ hours})/\text{kW}] \times 100$

Low Load Factor



Example:
 $[(28,800\text{kWh}/720)/105\text{kW}] \times 100$
=38% load factor

High Load Factor 100%

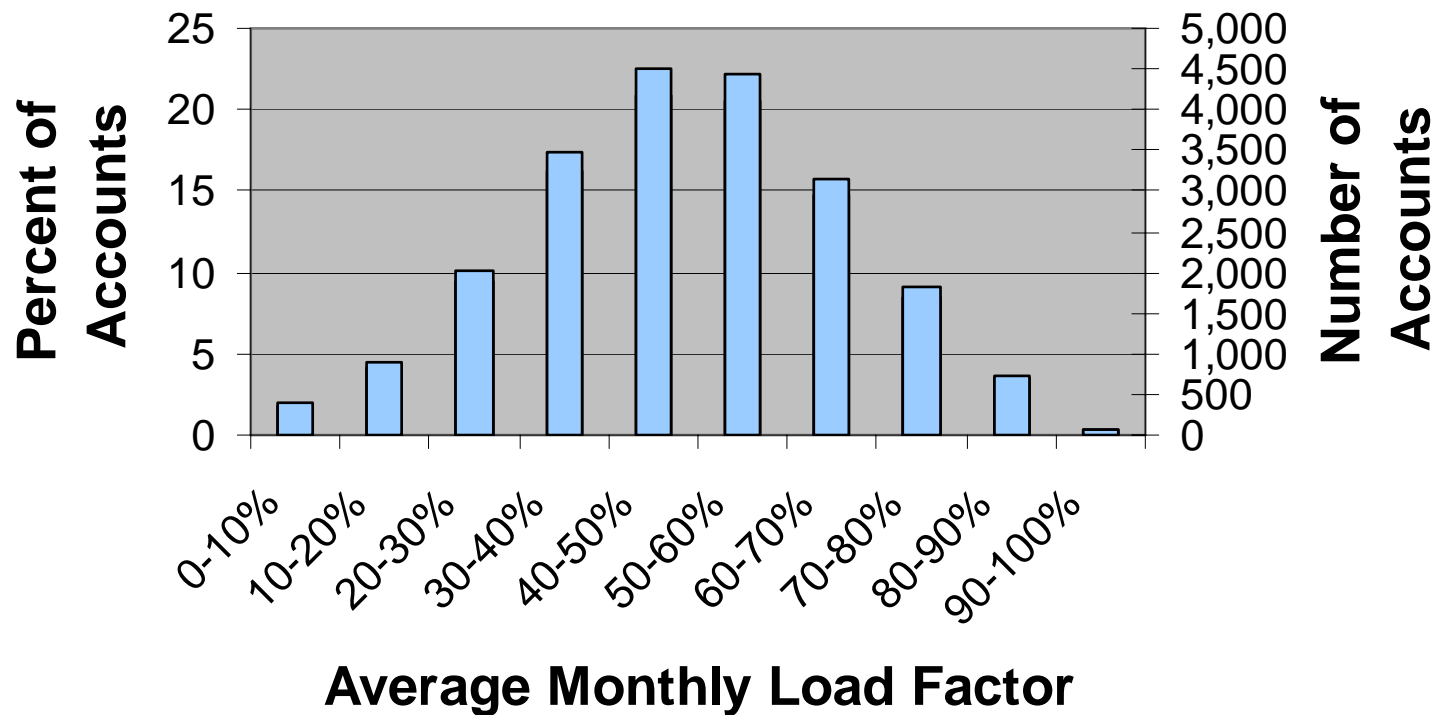


Example:
 $[(28,800\text{kWh}/720)/40\text{kW}] \times 100$
=100% load factor

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Background – Load Factor

Distribution of Average Month Load Factors by Account for >35kW Class



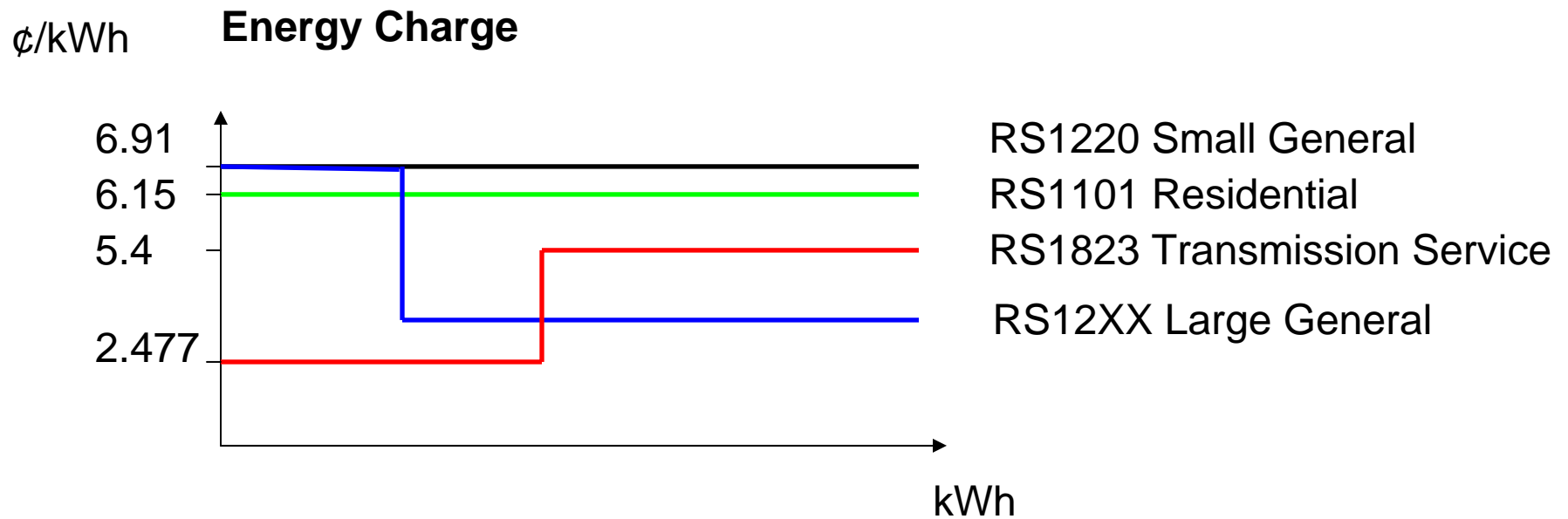
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Background – Load Factor Examples

- Low Load Factor
 - > Water pumping
 - > Dry cleaning
 - > Some manufacturing processes (e.g., wood product, fabricated metal)
 - > Sawmills
 - > Churches
- High Load Factor
 - > Retail food
 - > College
 - > Food and beverage
 - > Pulp and paper
 - > Hospital

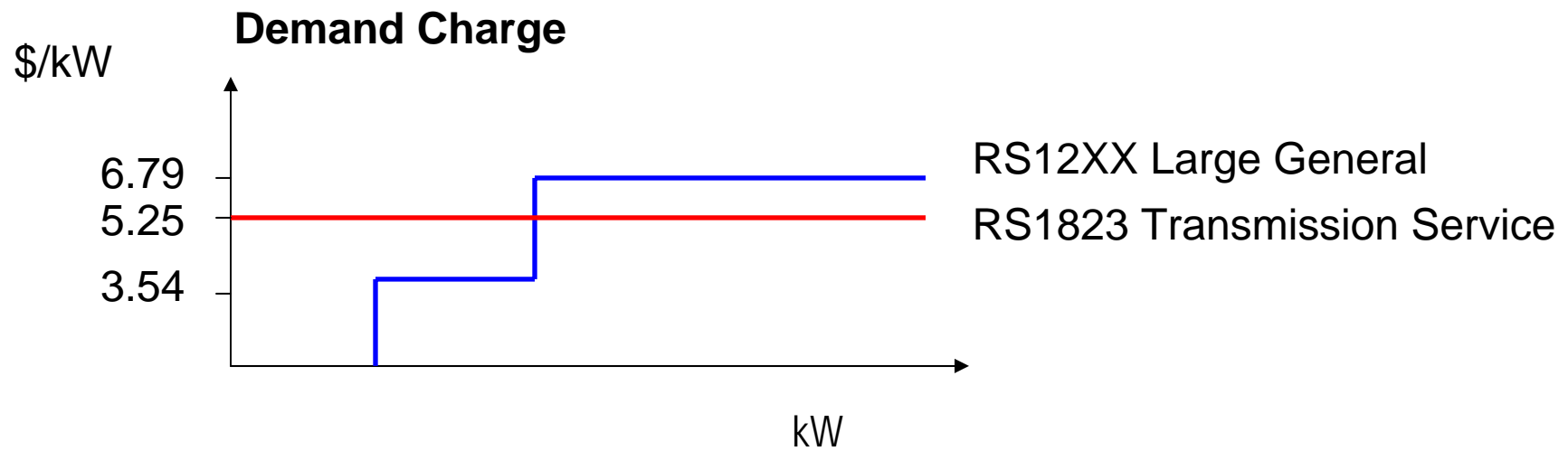
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Current Rate Structures



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Current Rate Structures



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General Service > 35kW Rate (February 1, 2007)

The following are General Service >35kW rates:

- RS1200, RS1201, RS1210, RS1211

The large general service rate is made up of three parts:

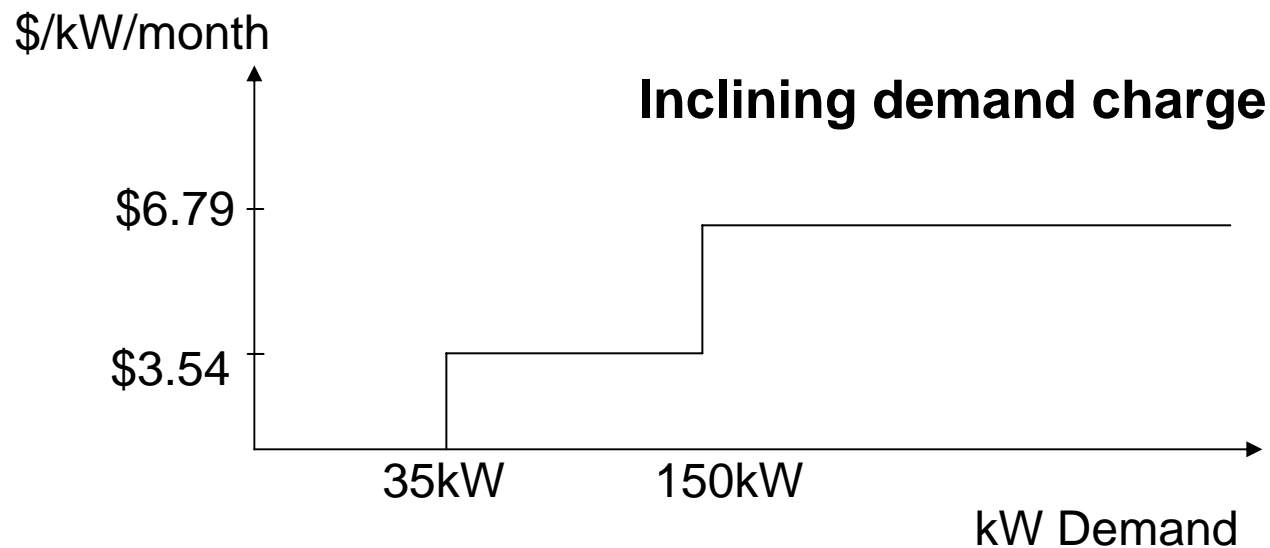
- a customer charge,
- a demand charge, and
- an energy charge.

Customer charge - \$4.42/month

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General Service > 35kW Rate (February 1, 2007)

- Demand charge based on inclining block
 - > The higher the demand, the higher the demand rate
 - First 35 kW/month - Nil
 - Next 115 kW/month - \$3.54/kW/month
 - Additional kW/month - \$6.79/kW/month



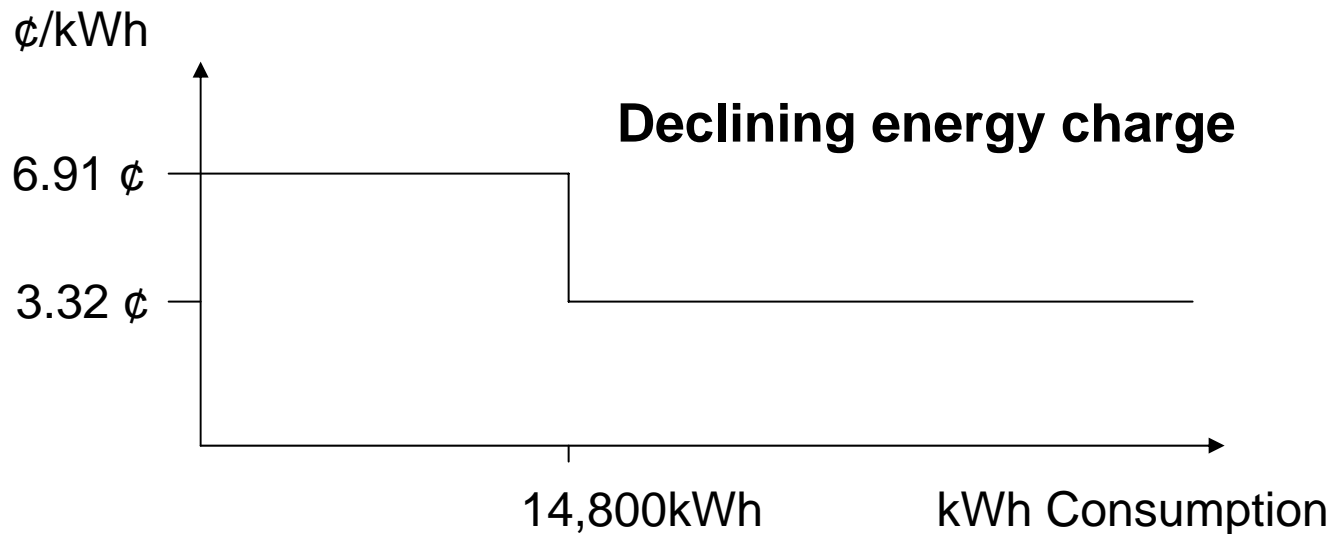
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General Service > 35kW Rate (February 1, 2007)

Energy charge based on a declining block

The higher the usage, the lower the rate

- First 14,800 kWh – 6.91 c/kWh
- Additional kWh – 3.32 c/kWh

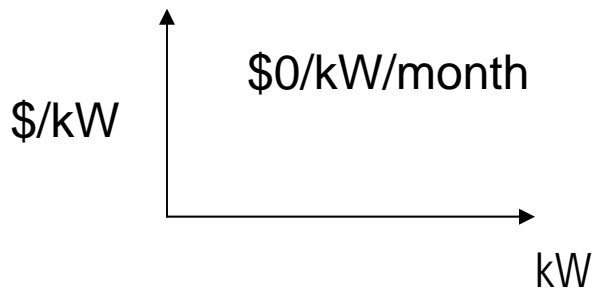


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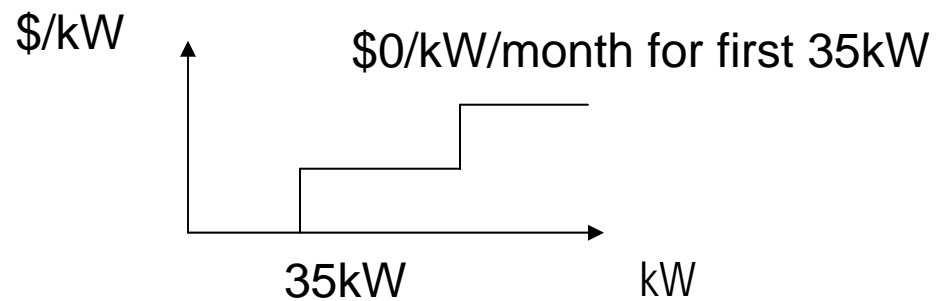
Current Rate Transition Between Small and Large General Service Rate Class

Comparison of Demand Charges

RS1220 <35kW Rate



RS1200 >35kW Rate

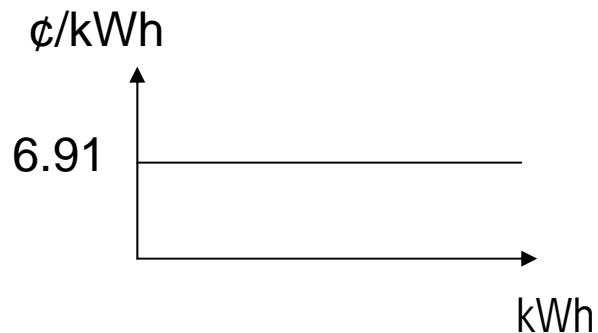


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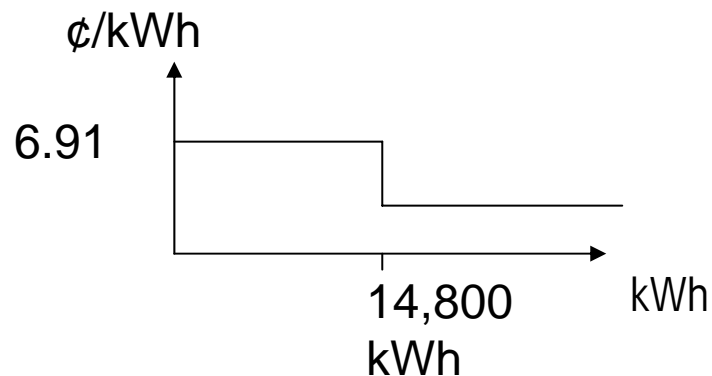
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RS1200 >35kW Rate



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Drivers for Change

- Previous BCUC decisions have directed BC Hydro to achieve flat rates.
- Energy Plan supportive of rates that provide better price signals.
- Facilitate BC Hydro's Long Term Rate Strategy (LTRS) by flattening rates
 - > The LTRS will examine new rate structures that pass on more efficient price signals and that will encourage conservation
 - > New efficient rate structures will more easily be introduced starting from a position of flat rates

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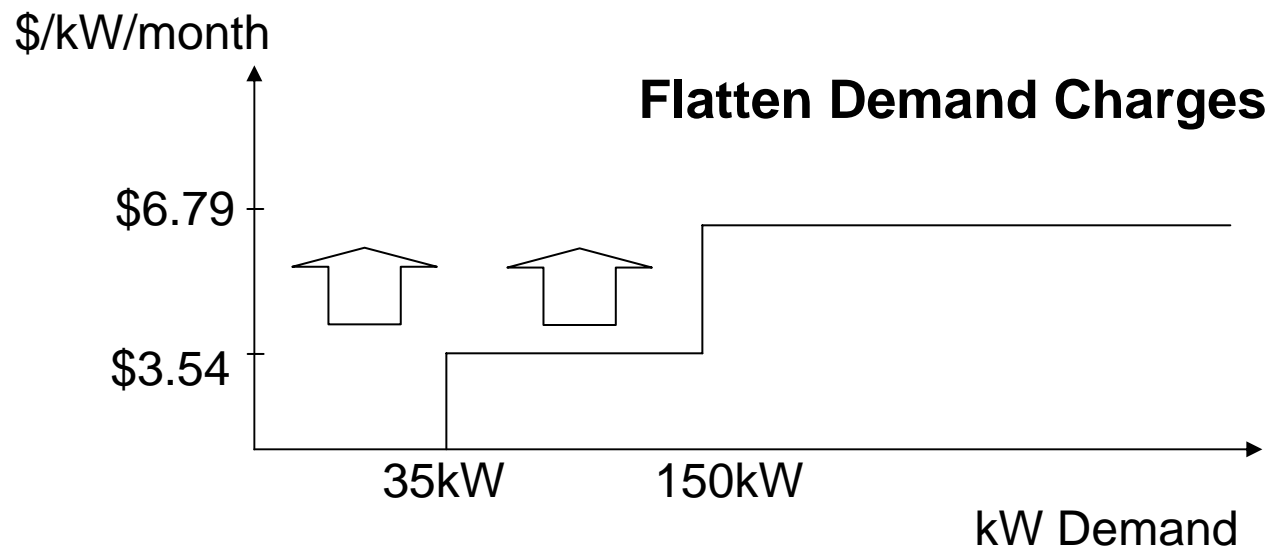
Rate Design Criteria

1. Recover the approved revenue requirement.
2. Fairly apportion costs among customers.
3. Provide price signals that encourage efficient use and discourage inefficient use.
4. Are understandable and acceptable to customers.
5. Are practical and cost-effective to implement.
6. Promote rate stability.
7. Promote revenue stability.
8. Avoid undue discrimination.

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Drivers for Change – Better Price Signals for Demand

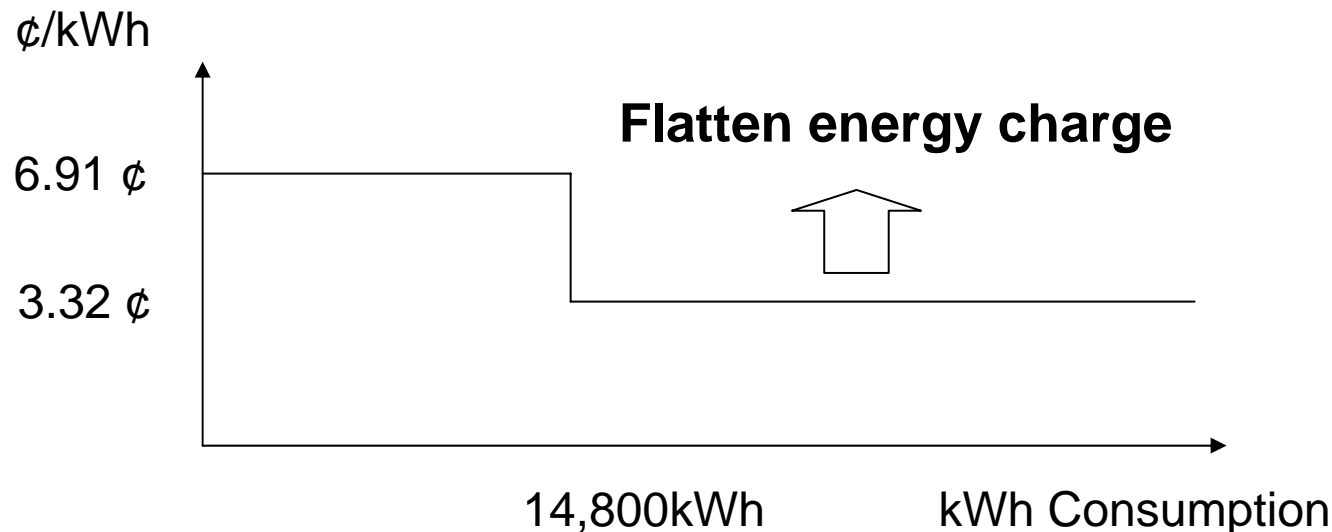
- For simplicity and efficiency purposes, flatten demand charges
 - > Inclining demand charge atypical and does not reflect actual costs.
 - Unit cost to deliver electricity does not increase as greater load is supplied
 - Flattening demand charge will provide better price signal for small and medium customers to control their demands



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Drivers for Change – Better Price Signals for Energy

- > Declining energy charge provides wrong price signal
 - Customers that increase their energy consumption pay less for incremental energy consumption
 - Rate does not encourage the efficient use of electricity
 - Rate does not match the cost of acquiring new energy



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Other Objectives in Setting New Rates

- Collect same revenue requirement as existing rate
- For fairness, minimize bill impacts across customers

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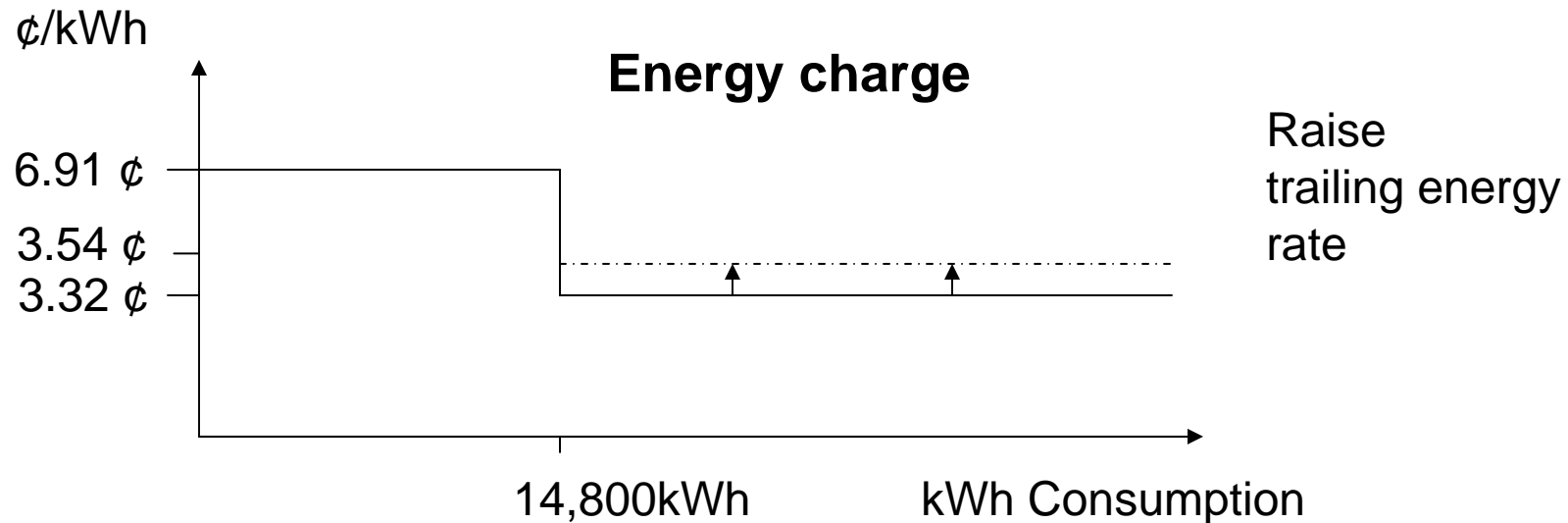
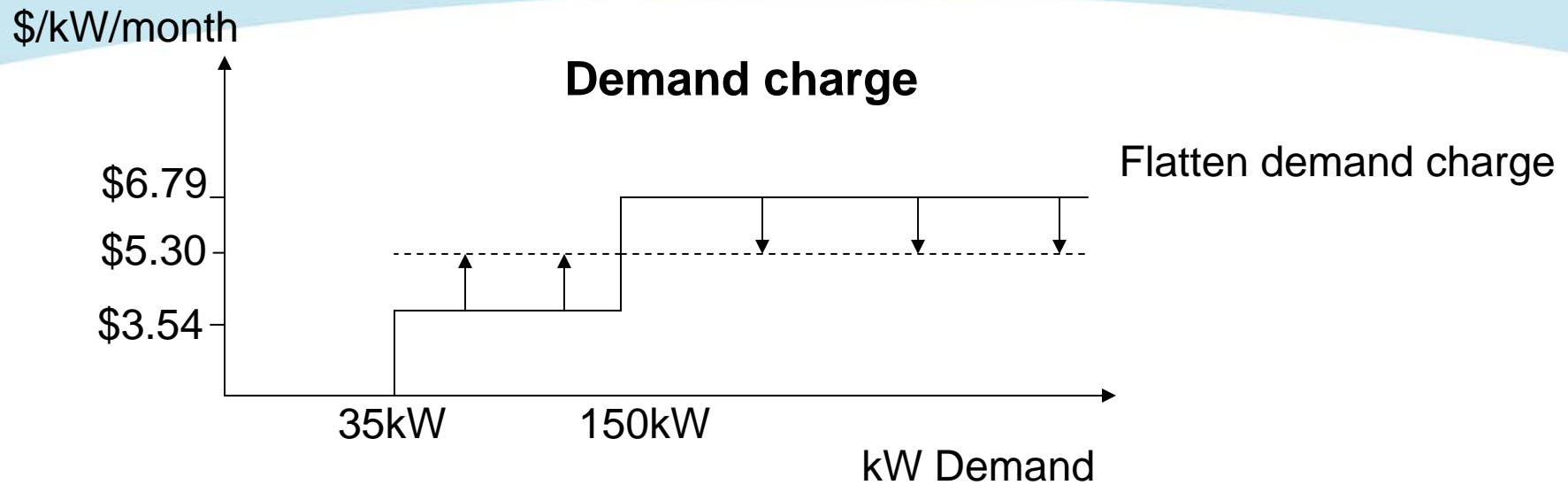
Rate Design Approaches - Option 1

Option 1

- Flatten demand charges and raise trailing energy rate, while maintaining transition with small general service < 35 kW rate.

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Rate Design Approaches - Option 1



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Rate Design Approaches – Option 1

Pro's:

- With two year phase in, annual bill impacts are limited to less than 10% per year
- Maintains rate transition

Con's:

- Cannot flatten energy charge while maintaining rate transition
- Demand charge may still not be cost reflective

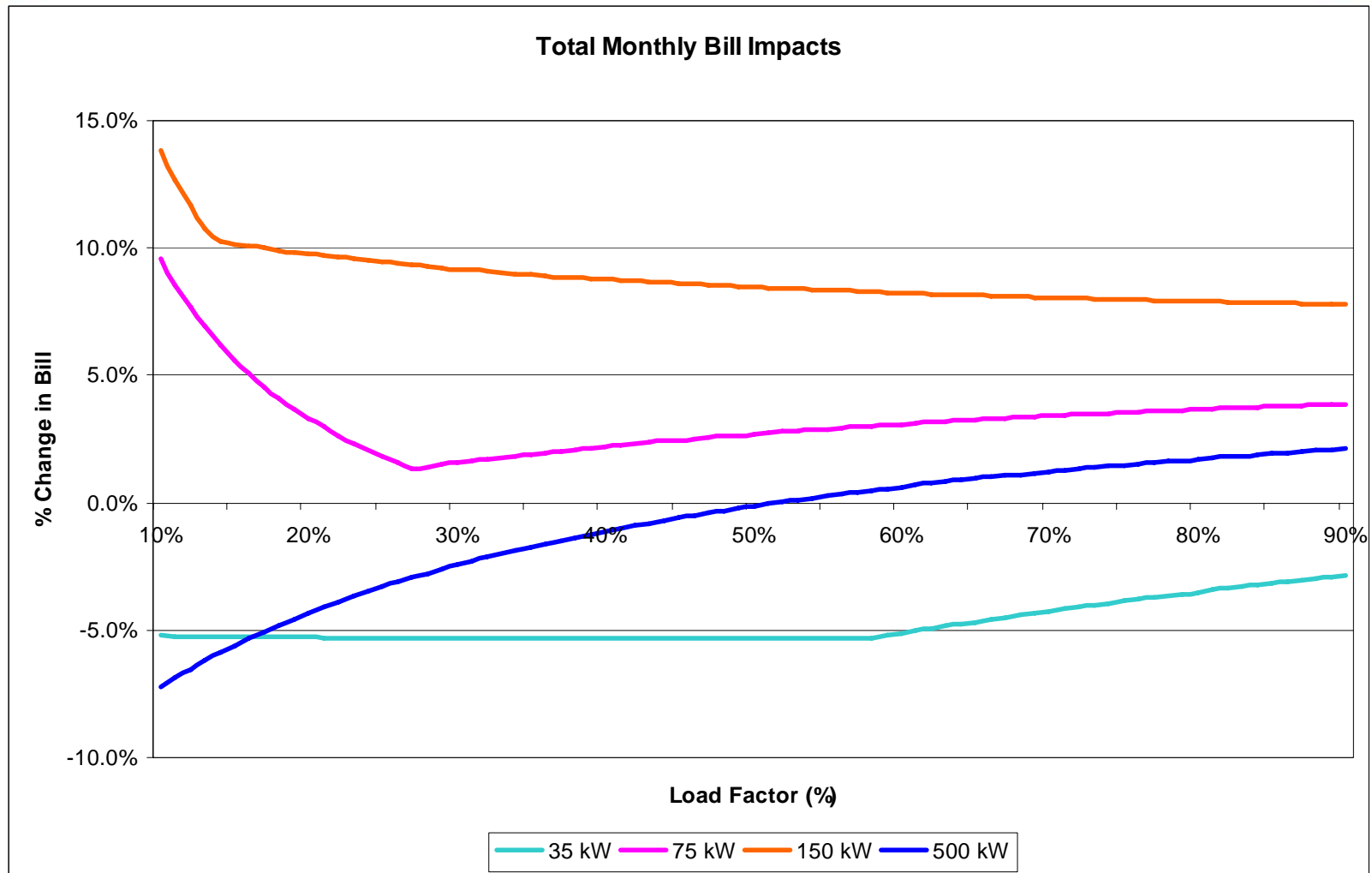
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Rate design – Option 1

	Feb 07 Rates	Actual Cost of Service	Proposed April 09 Rates	
Basic Charge	4.42	36.29	4.18	\$/month
Demand Charge:				
First 35 kW	0	9.31	0	\$/kW/month
Next 115 kW	3.54	9.31	5.30	\$/kW/month
All Additional kW	6.79	9.31	5.30	\$/kW/month
Energy Charge:				
First 14,800 kWh	6.91	2.34	6.54	c/kWh
All Additional kWh	3.32	2.34	3.54	c/kWh

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Monthly Bill Impacts Option 1



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Monthly Bill Impacts Option 1

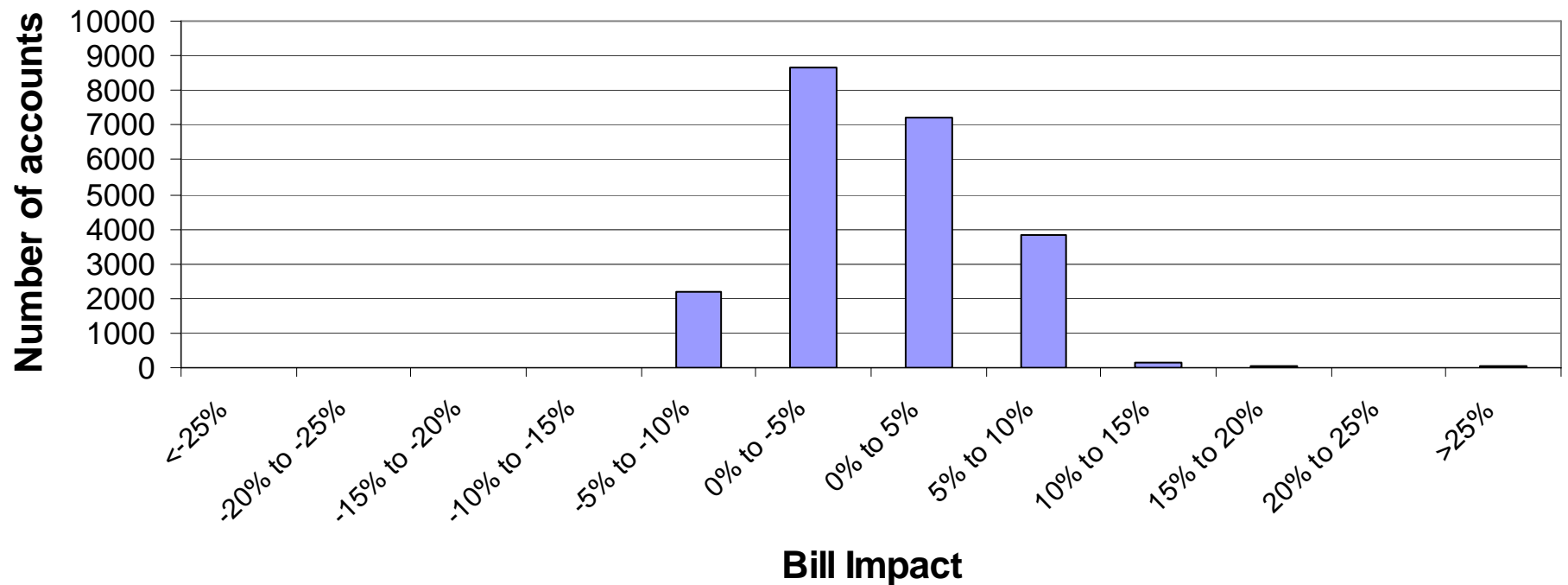
Cumulative Bill Impact, April 1, 2009 Rates:

kW	Difference - \$ Load Factor			Difference - % Load Factor		
	25%	50%	75%	25%	50%	75%
35	-24	-48	-46	-5.4%	-5.4%	-3.9%
50	-8	-21	-1	-1.1%	-1.8%	-0.1%
75	20	43	72	1.8%	2.7%	3.5%
100	67	106	146	4.9%	5.4%	5.7%
150	175	234	293	9.4%	8.5%	8.0%
250	65	164	263	2.1%	3.5%	4.3%
500	-208	-10	188	-3.3%	-0.1%	1.5%
1000	-755	-359	37	-5.9%	-1.9%	0.1%
2000	-1,849	-1,057	-265	-7.2%	-2.8%	-0.5%
5000	-5,131	-3,151	-1,171	-8.0%	-3.3%	-0.9%

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Cumulative Bill Impacts – Option 1

**Bill Impacts from Restructuring of
General Service >35 kW Rate
Option 1**



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Rate Design Approaches – Option 2

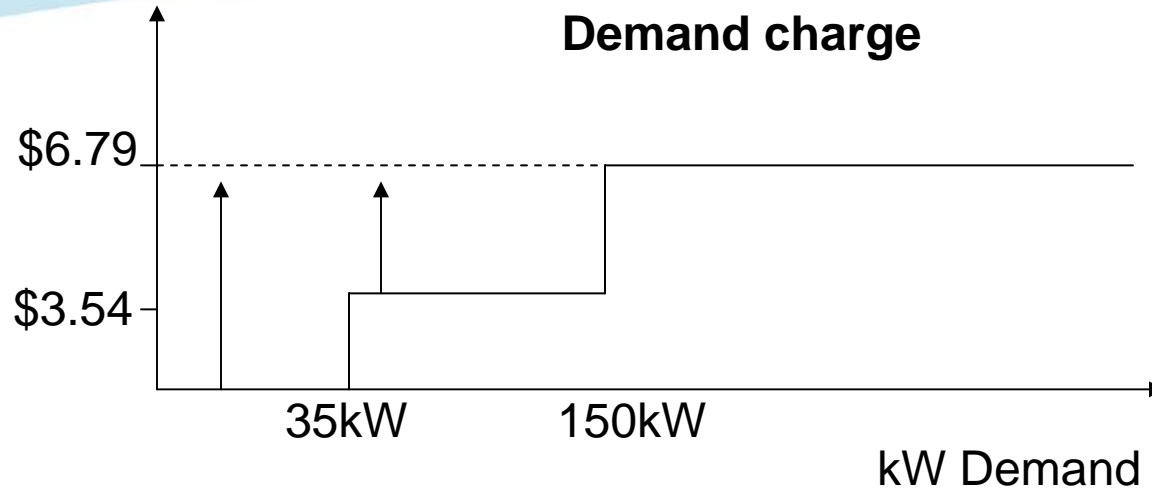
Option 2

Flatten both the demand charge and the energy charge, eliminating rate transition with small general service < 35 kW rate.

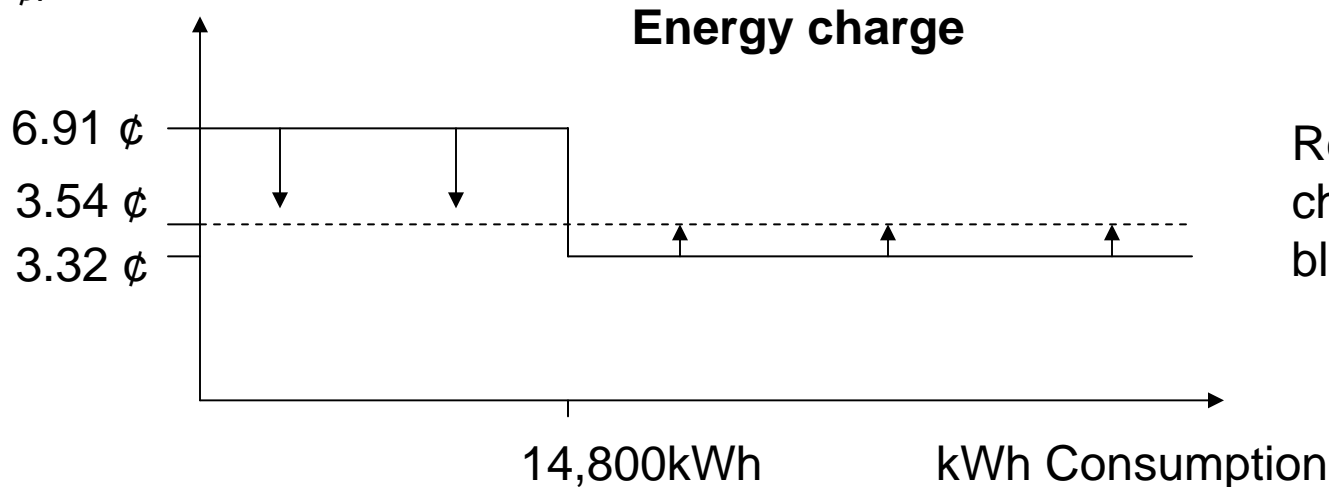
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Rate Design Approaches – Option 2

\$/kW/month



¢/kWh



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Rate Design Approaches – Option 2

Pro's:

- Demand charge is more cost reflective

Con's:

- Energy charge is still below the marginal cost of energy
- Eliminates rate transition
- 6% of accounts will experience bill increases of over 10%

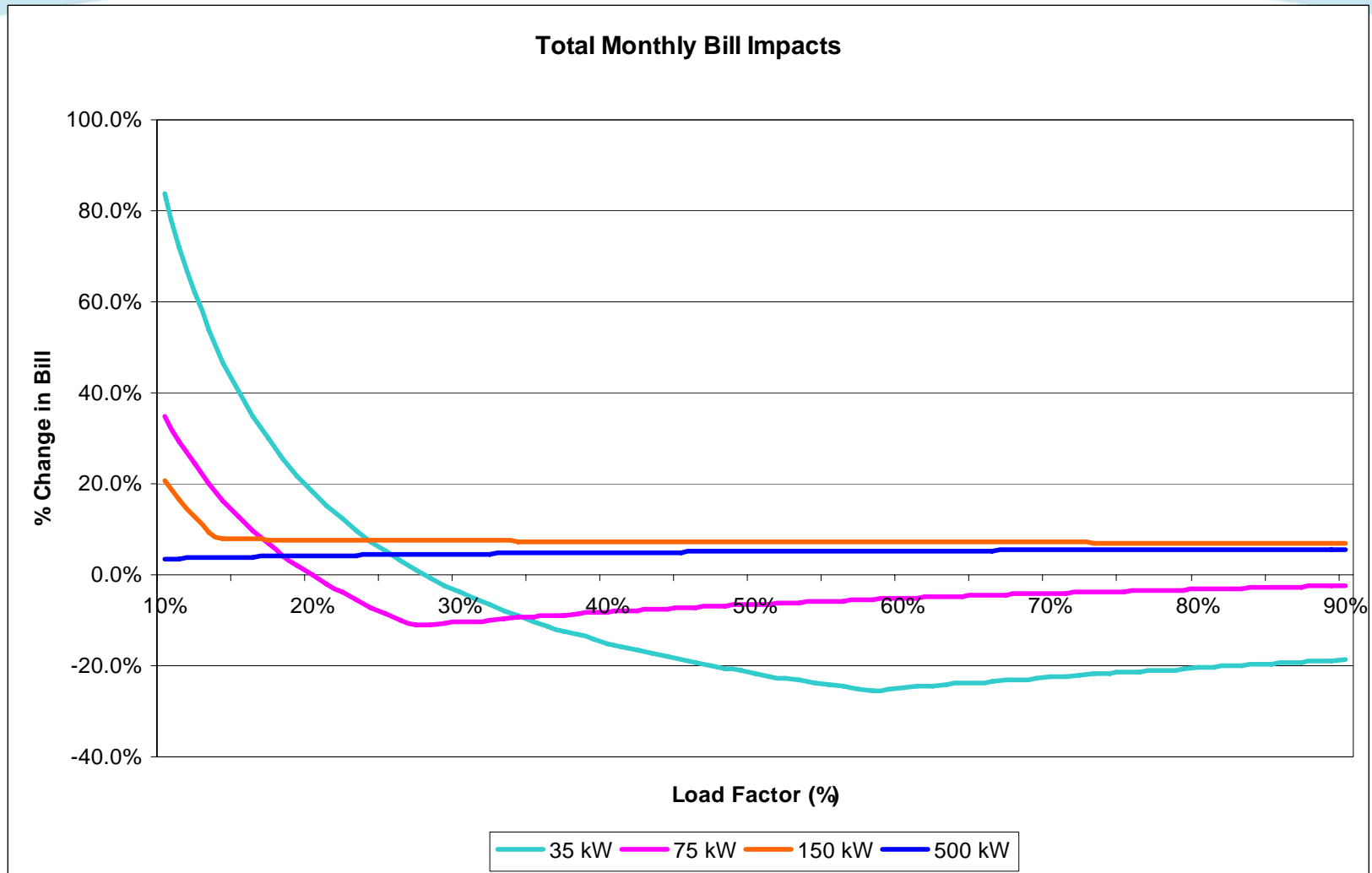
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Rate Design – Option 2

	Feb 07 Rates	Actual Cost of Service	Proposed April 09 Rates	
Basic Charge	4.42	36.29	4.42	\$/month
Demand Charge:				
First 35 kW	0	9.31	6.79	\$/kW/month
Next 115 kW	3.54	9.31	6.79	\$/kW/month
All Additional kW	6.79	9.31	6.79	\$/kW/month
Energy Charge:				
First 14,800 kWh	6.91	2.34	3.54	c/kWh
All Additional kWh	3.32	2.34	3.54	c/kWh

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Monthly Bill Impacts Option 2



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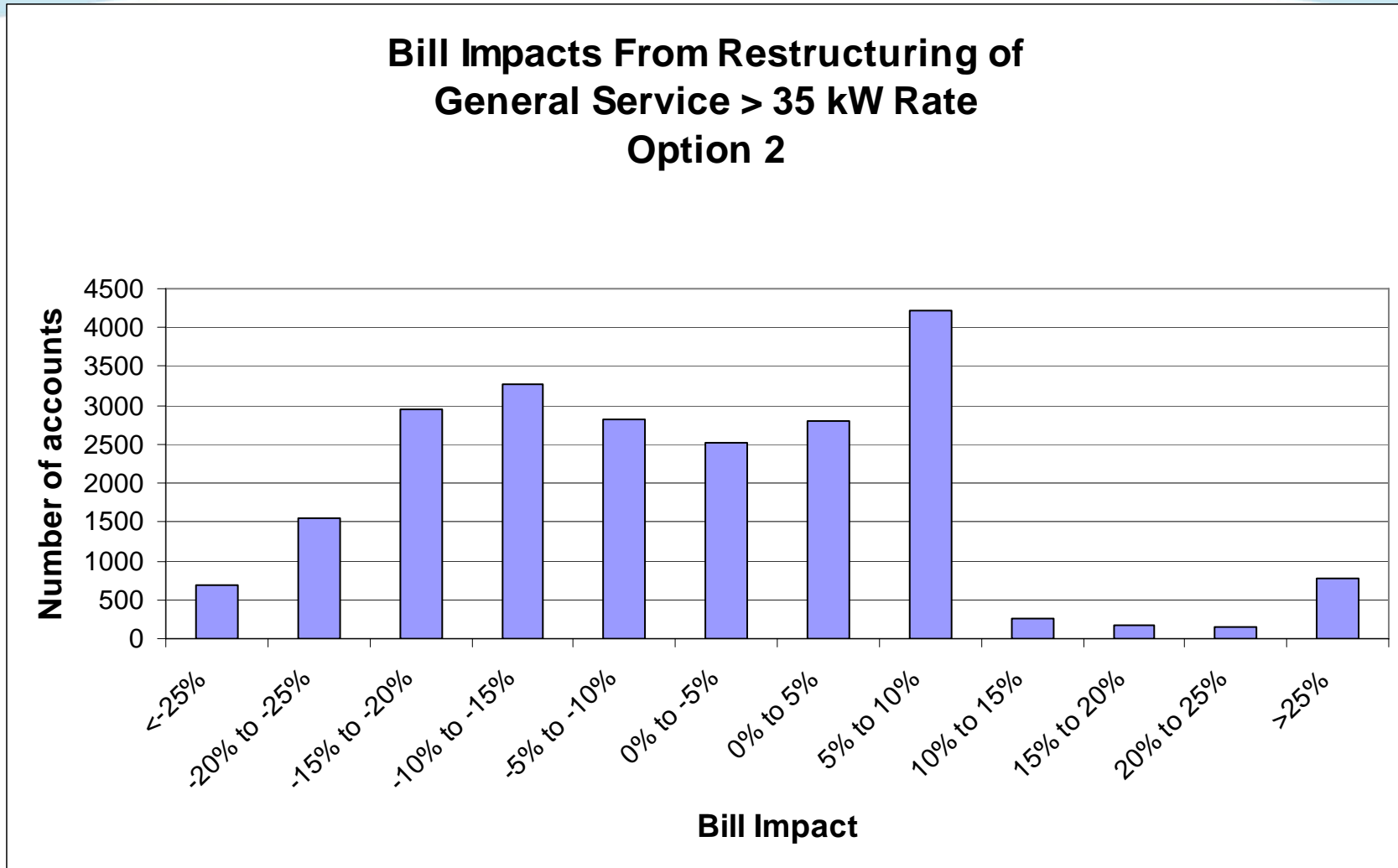
Monthly Bill Impacts Option 2

Cumulative Bill Impact, April 1, 2009 Rates:

kW	Difference - \$ Load Factor			Difference - % Load Factor		
	25%	50%	75%	25%	50%	75%
35	22	-193	-251	5.0%	-21.7%	-21.5%
50	-21	-205	-185	-3.1%	-17.1%	-12.3%
75	-93	-104	-74	-8.6%	-6.5%	-3.6%
100	-42	-3	37	-3.1%	-0.1%	1.4%
150	140	200	259	7.6%	7.2%	7.1%
250	180	279	378	5.7%	6.0%	6.1%
500	279	477	675	4.4%	5.1%	5.4%
1000	477	873	1,269	3.7%	4.6%	5.1%
2000	873	1,665	2,457	3.4%	4.4%	4.9%
5000	2,061	4,041	6,021	3.2%	4.3%	4.8%

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Cumulative Bill Impacts Option 2



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Assessment

- It will be difficult to achieve flat energy rates under Option 1
 - > because of rate transition, the initial block is priced at a relatively high level.
- Flattening the energy rates will be easier under Option 2 by eliminating the rate transition, but...
 - > 6% of accounts will experience bill increases of over 10%
 - > higher administration cost of keeping accounts on the boundary at the right rate

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Feedback – What do you think?

- In its Rate Design Application, BC Hydro will try to find the best balance among a list of competing objectives
- BC Hydro is seeking your input on these competing objectives, through:
 - > Discussion
 - > Exploration of different options (if needed)
 - > Questionnaire

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Discussion of Priorities

- BC Hydro is exploring options to flatten energy and demand charges.
- In doing so, it is trying to balance the following objectives:
 - > Send better price signals for energy use
 - > Send better price signals for demand
 - > Minimize administrative burden (e.g. rate articulation)
 - > Minimize rate shock to customers
 - > Fairness among customers
- Which of these should be most important (and why?)
- Which of these should be least important (and why?)
- Are we missing anything?

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Additional Rate Application Topics

- Rate Rebalancing
- E-plus
- Terms and Conditions
 - > Extension Policy
 - > Service Connection Charges
 - > Miscellaneous Charges

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Rate Rebalancing

- The purpose of a Cost of Service Study is to allocate the total Revenue Requirement to the Rate Classes.
- The Cost to Serve each Rate Class is compared to the Revenue from each Rate Class to determine Revenue/Cost Ratios.
- The Revenue to Cost Ratios provide directional guidance for rate levels by Rate Class.

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Rate Rebalancing

Existing Rates (\$ million)

Rate Class	F2008 Cost of Service	Revenue @ Feb 07 Rates	R/C Ratio @ Feb 07 Rates
Residential	1,188.8	1,109.9	93.4%
General < 35 kW	252.5	289.4	114.6%
General > 35 kW	734.7	762.8	103.8%
Irrigation	6.7	4.3	64.0%
Street Lighting	23.1	23.3	100.8%
Transmission	630.5	646.6	102.6%
Total	2,836.2	2,836.2	100.0%

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E-plus Background

- Introduced in 1988 to develop a market for surplus generation. Closed in 1990.
- Provides an approximate 50% discount for heating loads.
- Customers must maintain alternate heating source, but have never been curtailed.
- About 13,000 customers; of which the majority are on Vancouver Island.
- E-Plus discount no longer justified; BCUC concurred in VIGP decision.

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Feedback regarding E-Plus rate

- Again, BC Hydro is trying to find a balance among different objectives:
 - > Sending better price signals
 - > Avoiding rate shock
 - > Being fair to customers
 - > Avoiding discrimination among customers
 - > Avoiding administrative burden
- How would you balance the above objectives in thinking about maintaining or phasing out the E-plus rate?

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Feedback regarding E-Plus rate

- BC Hydro polled 700 E-Plus customers, and 700 non-E-Plus customers
- E-Plus customers overwhelmingly felt that the rate should be maintained
- A majority of non-E-Plus customers felt the same way
- Rationale of non-E-Plus customers
 - > “a deal is a deal”
- Does this change your reaction?

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Distribution Extension Policy

- Will be updated to simplify the policy and improve transparency for customers.
- Maintains the same overall level of customer contributions.
- The customer's Extension Fee will be calculated as follows:

$$\begin{aligned} \text{Extension Fee} = & \\ & \text{Service Connection Charge} + \\ & \{\text{Cost of the Extension} - \text{BC Hydro's Contribution}\} \end{aligned}$$

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BC Hydro's Contribution

Rate Class

BC Hydro Contribution

Residential	\$1,950 / customer
General Service < 35 kW	\$450 /kW of demand
General Service > 35 kW	\$450 /kW of demand
Irrigation	\$225 /kW of demand
Street Lights	\$115 /fixture

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Service Connection Charges

	Existing Fee	Proposed Fee
Overhead - 100 Amp.	\$ 312	\$ 463
Overhead - 200 Amp.	\$ 372	\$ 496
Overhead - 400 Amp.	\$ 696	\$ 798
Underground - 100 Amp.	N/A	\$ 605
Underground - 200 Amp.	N/A	\$ 855
Underground - 400 Amp. < 15 meters	N/A	\$ 1,172
Underground - 400 Amp. 15-30 meters	N/A	\$ 1,499
Additional Meter - Same Trip	\$ 25	\$ 23
Additional Meter - Separate Trip	\$ 77	\$ 92

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Miscellaneous Charges

Charge	Existing	Proposed	Last Changed
Late Payment Charge	1.5%	1.5%	1984
Account Charge	\$10	\$12.40	1990
Transformer Rental Charge	17%	17%	1980
Collection Charge	\$32	\$39	1991
DataPlus Service	\$360	\$360	1997
Call-Back Charge – Zone I	\$140	\$194	1998
Net Metering Inspection	\$600	\$600	2004
Reconnection – Regular	\$64	\$125	1991
– Overtime	\$91	\$158	1991
– Call-Out	\$217	\$355	1991

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Next Steps

- BC Hydro will be considering comments/feedback from stakeholders in drafting its RDA application.
- Application will be filed no later than March 15, 2007.
- BCUC will commence a public proceeding to review the RDA
- All information regarding the review/proceeding will be on BC Hydro's and BCUC's websites.
- Please fill out the feedback form.
- If you require additional information please call your Key Account Manager.
- Other contacts for additional information include:

Fred James, Manager Rate Design and Tariff Administration
Phone: 604-623-4317
E-mail: fred.james@bchydro.com

Jane Christensen, Relationship Manager
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