



BC Hydro Cost of Service Study and Rate Rebalancing

Stakeholder
Workshop

January 29, 2007

Meeting Objectives

- High Level Objectives
 - > Understanding and acceptance of FACOS model, rate rebalancing proposal
 - > Reduced effort by all parties in regulatory process
- How are we going to achieve this?
 - > Identify areas of agreement during the presentation
 - > Identify questions that require follow-up
 - > Identify rub-points that require further discussion
 - > Meet again prior to filing to finalize areas of agreement and help prepare its application to the BCUC.

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Agenda

- Introduction
- Cost of Service Study
- Rate Rebalancing Model
- Next Steps

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Procedural Items

- BC Hydro is interested in your questions and input
- We would like to hear
 - > As much input as possible
 - > From a 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

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Introduction

- First comprehensive general Rate Design Application since 1991.
- Filing due by March 15, 2007.
- Based on the approved F2008 revenue requirement – the proposed rates and fees will collect the same total revenue as the February 1, 2007 rates and fees.
- New rates and fees are proposed to be effective on April 1, 2008.

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Principal Issues

- Rate Rebalancing
- Restructuring of General Service > 35 kW Rate
- Phase-out of E-Plus Rates
- Distribution Extension Policy
- Standard Charges

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Stakeholder Engagement

- BC Hydro will be holding workshops and conducting surveys with its stakeholders on the principal issues in January and February, 2007
- Results of consultation will guide the drafting of the F2008 RDA

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Purpose of Cost of Service Workshop

- Cost of Service Study
 - > To provide a detailed explanation of the Cost of Service Study and model.
 - > To answer technical questions on the Cost of Service Study and model outside of the formal IR process.
- Rate Rebalancing Model
 - > To demonstrate the use of the rate rebalancing model.
 - > To obtain feedback on rate rebalancing options.

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F2008 Revenue Requirement (\$ million)

Total Revenue Requirement	\$2,892.0
Deferral Account Recoveries (2% Rate Rider)	(55.8)
Total Revenue Requirement to be Recovered from Rates	\$2,836.2

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Purpose of a Cost of Service Study

- The purpose of a Cost of Service Study is to allocate the total Revenue Requirement to the Rate Classes.
- The output of the Cost of Service Study is the Cost to Serve each Rate Class.
- The Cost to Serve each Rate Class is compared to the Revenue from each Rate Class to determine Revenue/Cost Ratios.

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Purpose of a Cost of Service Study

- The Revenue to Cost Ratios provide directional guidance for rate levels by Rate Class.
- Cost classification provides guidance for rate structures by rate class.

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Getting Ready to Complete a Cost of Service Study

- To complete a Cost of Service Study, data has to be gathered from across the company.
 - > Financial Data – Revenue Requirement and the makeup thereof.
 - > Rate Class distinctions.
 - > Forecast Load Data – by Rate Class.
 - > Consumption characteristics by Rate Class.
 - > Interconnection characteristics by Rate Class.

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Steps in a Cost of Service Study

- The traditional Cost of Service Study includes the following three steps:
 - > Functionalization
 - > Classification
 - > Allocation

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Functionalization

- Costs are first grouped into functions:
 - > Generation – production of electric energy.
 - > Transmission – bulk transportation of energy to load centers.
 - > Distribution – distribution of energy to end use customers.
 - > Customer Care – administrative function of billing and customer service.

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Functionalization

- Shown in Schedule 1.0 of the Filing (partial extract below):

		F2008 Revenue Requirement	Generation	Transmission	Distribution	Customer Care
...						
Deferral Accounts, Revenue Offsets and Other						
Sched 1, L 14	Subsidiary Net Income	(138.2)	(138.2)	-	-	-
Sched 1, L 15	Other Utility Revenue	(18.7)	(18.7)	-	-	-
Sched 3, L 17	Intersegment revenues	(145.9)	(96.0)	(49.9)	-	-
Sched 3.4, L 12, 13	Internal Allocations (GRTA, SDA)	(0.0)	37.9	(63.2)	25.3	-
	Def Accounts, Offsets and Other	(302.8)	(215.0)	(113.1)	25.3	-
Total Revenue Requirement		2,836.2	1,604.6	482.7	645.7	103.2

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Classification

- Costs, once functionalized, are classified on the basis of cost causation as:
 - > Demand-Related
 - > Energy-Related
 - > Customer-Related
- Examples:
 - > Cost of fuel within generation, is caused on the basis of energy production and is classified as energy related.
 - > Cost of transmission infrastructure is incurred on the basis of the peak transfer capability and is classified as demand related.
 - > Cost of meters is related to the number of meters, and is classified on the basis of the number of customers.

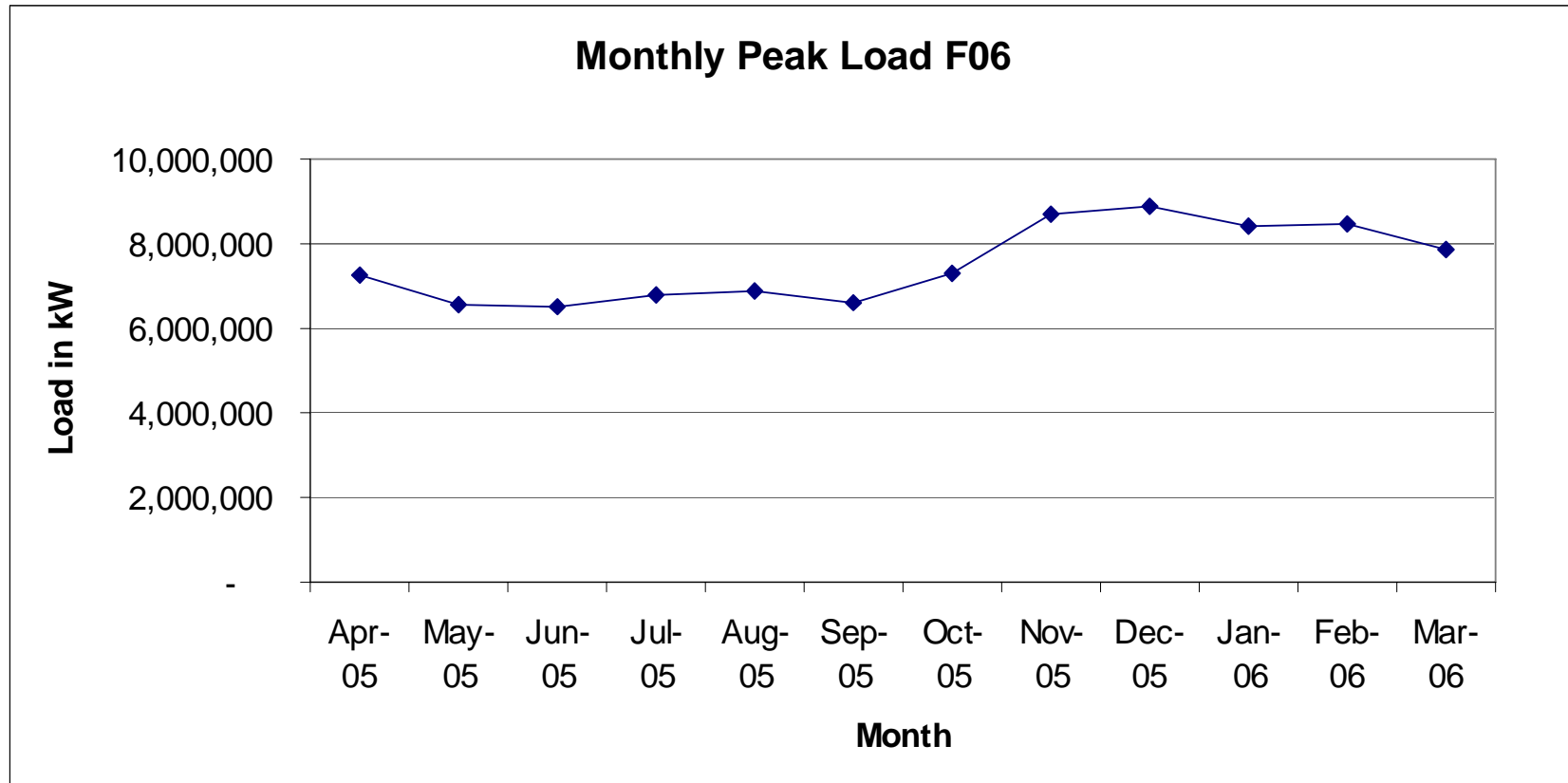
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Classification

- Costs may be incurred on the basis of a combination of classification factors:
 - > Hydro Generation capital-related costs are classified as 50% demand-related and 50% energy-related.
- Demand related costs must be further classified on the basis of cost causation:
 - > Demand related costs incurred to meet the annual system peak load would be classified as 1 CP (load coincident to annual system peak load).
 - > Demand related costs incurred to meet high load conditions throughout the year would be classified as 12 CP (load coincident to each monthly peak load).
 - > Demand related costs incurred to meet each customers peak load would be classified as NCP (non coincident peak load).

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Monthly Peak Load



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Classification

- Generation and Transmission demand-related costs are classified on the basis of load coincident to each monthly peak (12 CP)
 - > Various components are stressed throughout the year.
 - > Different areas have peak load conditions at different times of the year.

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Classification

- Shown in Schedule 2.X of the Filing (partial extract of Schedule 2.0 below):

	Total Gen	Demand	Energy	Demand	Energy
...					
Deferral Accounts, Revenue Offsets and Other					
Subsidiary Net Income	(138.20)	0.00%	100.00%	-	(138.20)
Other Utility Revenue	(18.70)	53.31%	46.69%	(9.97)	(8.73)
Intersegment revenues	(96.00)	53.31%	46.69%	(51.18)	(44.82)
Internal Allocations (GRTA,	<u>37.90</u>	53.31%	46.69%	<u>20.20</u>	<u>17.70</u>
Def Accounts, Offsets and Otl	(215.00)			(40.94)	(174.06)
Total Revenue Requirement	1,604.61			358.08	1,246.52

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Allocation

- Costs, by Function, and Classified, are allocated to each of the rate classes on the basis of each rate classes contribution to the total:
- For example; if the Residential Rate Class accounted for 1/3 of the energy production, and total fuel costs were \$100, then the Residential Rate Class would be allocated \$33 for the fuel component of Generation and each of the other Rate Classes would be allocated a portion of Fuel costs based on the energy production costs to serve each Rate Class:
 - > Residential
 - > Small General Service
 - > Large General Service
 - > Irrigation
 - > Street Lighting
 - > Transmission

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Allocation

- Shown in Schedule 3.X of the Filing (partial extract of Schedule 3.0 below):

	Total BC Hydro - F08			
Function	Generation			
Cost Classes	Generation Demand	Generation Demand Related Costs (Sched 2.0)	Generation Energy	Generation Energy Related Costs (Sched 2.0)
Allocation Basis	12 CP Demand including Loss (Sched 5.1)	358.08	F08 Forecast Energy Including Loss (Sched 5.0)	1,246.52
Residential	33.80%	121.04	32.29%	402.45
GS<35	8.87%	31.77	7.71%	96.14
GS>35	29.62%	106.05	27.51%	342.90
Irrigation	0.16%	0.56	0.18%	2.27
StreetLight	0.18%	0.63	0.39%	4.90
Transmission	27.38%	98.04	31.92%	397.86
Total	100.0%	358.08	100.0%	1,246.52

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Summary of Costs by Function (\$ million)

- Shown in Schedule 4.X of the Filing (partial extract of Schedule 4.0 below):

Total BC Hydro - F08

Summary of Costs by Function (\$ X million)

Functions	Generation Costs	Transmission Costs	Total Distribution Costs	Customer Care Costs	Total
Residential	523.49	163.14	417.76	84.38	1,188.77
GS<35	127.91	42.82	71.76	10.03	252.53
GS>35	448.95	142.95	137.57	5.19	734.65
Irrigation	2.84	0.76	3.00	0.07	6.67
StreetLight	5.53	0.85	15.58	1.14	23.10
Transmission	495.89	132.20	0.00	2.37	630.46
Total Classes	1,604.61	482.72	645.67	103.18	2,836.18

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Summary of Classified Costs (\$ million)

- Extract of Schedule 4.1 below:

Total BC Hydro - F08								
Summary of Costs by Classification								
Cost Classes	Energy Related Costs	Generation Demand Related Costs	Transmission Demand Related Costs	Distribution Demand Related Costs	Total Demand Related Costs	Customer Related Costs	Assigned Costs	Total
Residential	402.45	121.04	163.14	263.47	547.65	238.67	0.00	1,188.77
GS<35	96.14	31.77	42.82	51.75	126.35	30.04	0.00	252.53
GS>35	342.90	106.05	142.94	132.67	381.66	10.10	0.00	734.65
Irrigation	2.27	0.56	0.76	2.60	3.92	0.47	0.00	6.67
StreetLight	4.90	0.63	0.85	3.03	4.51	8.13	5.56	23.10
Transmission	397.86	98.04	132.14	0.00	230.18	2.43	0.00	630.46
Total Classes	1,246.52	358.08	482.65	453.52	1,294.25	289.84	5.56	2,836.18

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Existing Revenue to Cost Ratios

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%

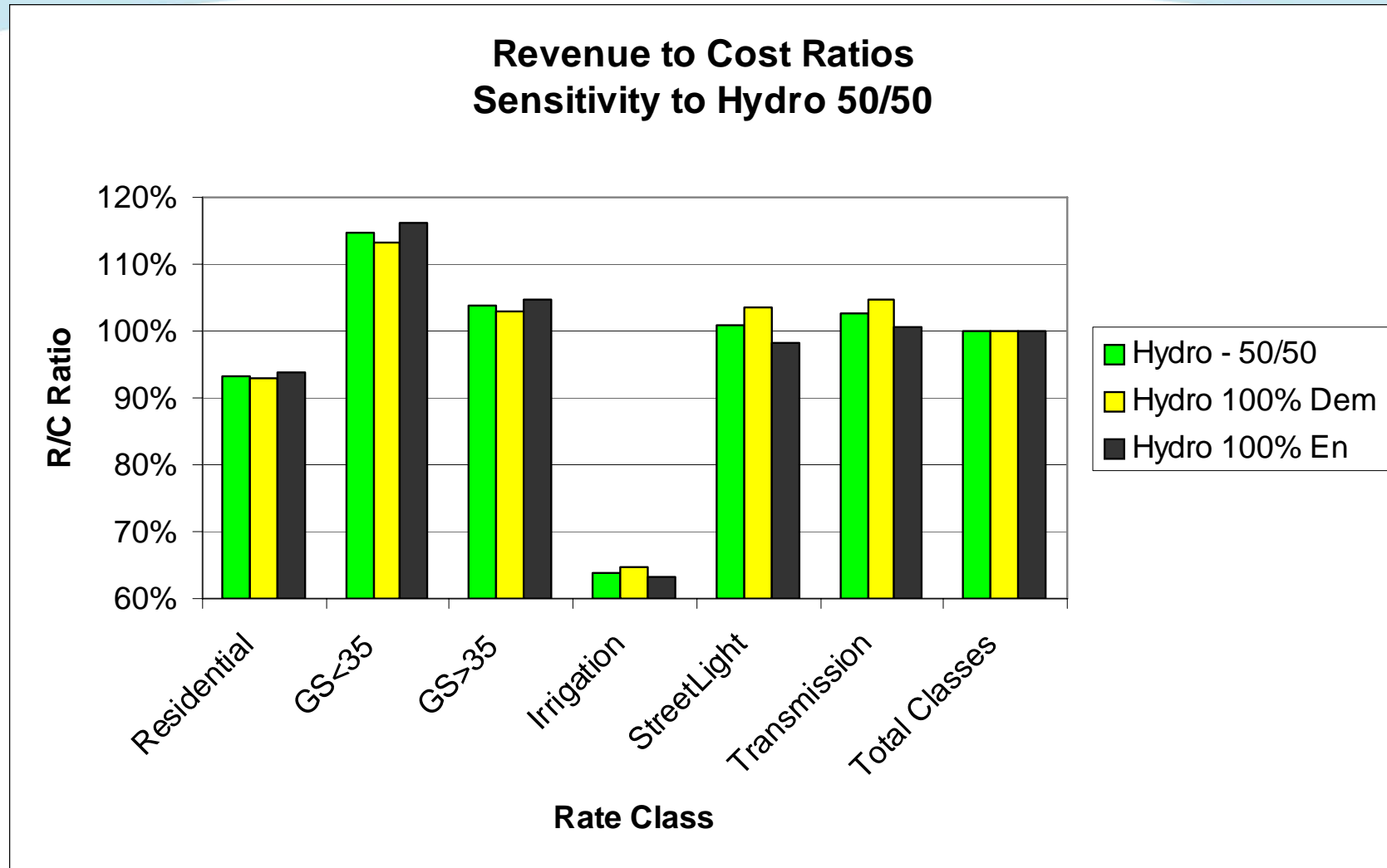
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Sensitivity – Hydro Classification

- Historically, the fixed cost of Hydro generation facilities have been classified as 50% demand related and 50% energy related,
- Sensitivity to this assessment is shown in the following slide: The fixed cost of Hydro generation facilities are classified as 0%, 50% (filed COS), and 100% demand related.

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Sensitivity – Hydro Classification



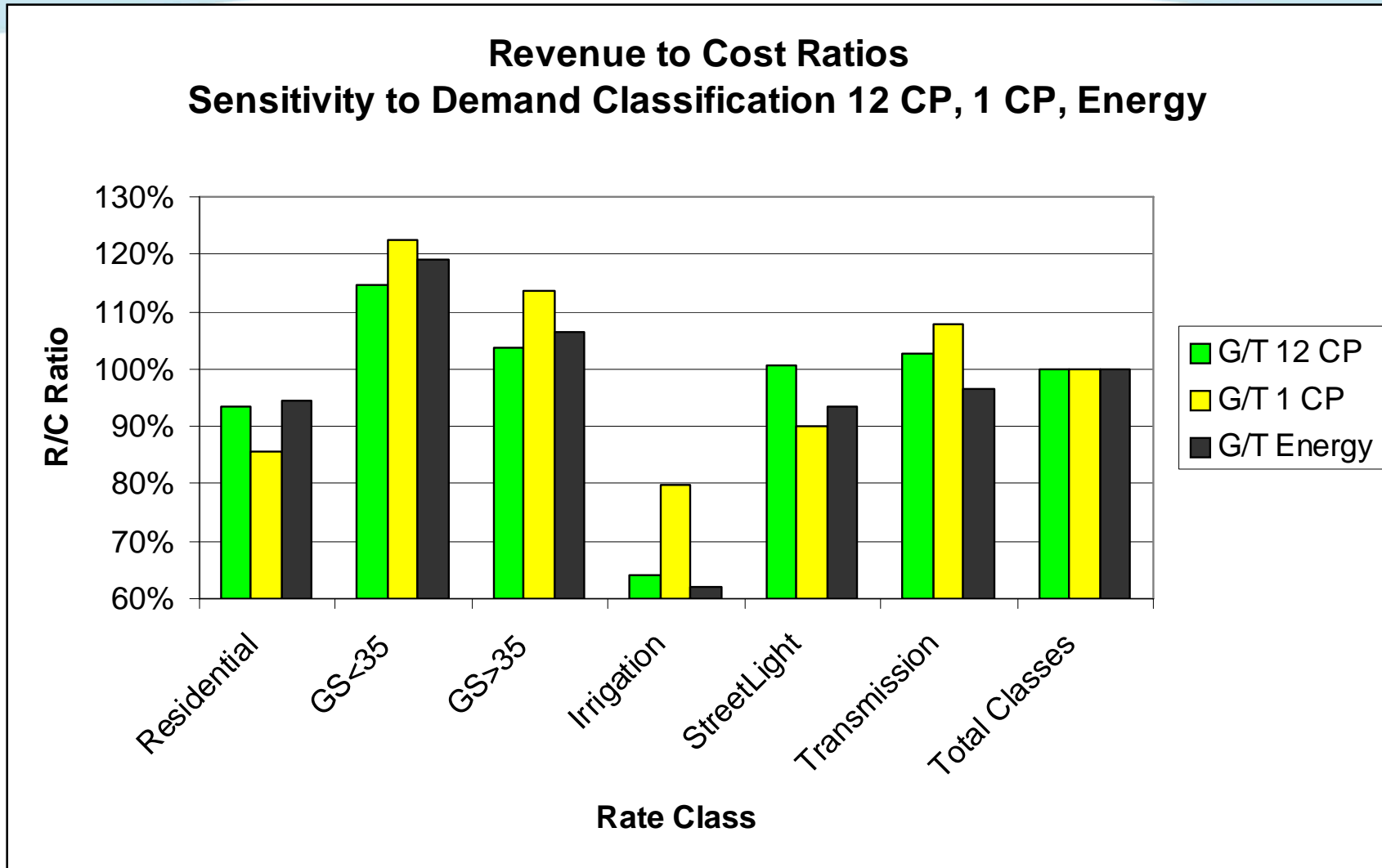
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Sensitivity – Demand Allocators

- Generation and Transmission at 12 CP, 1 CP and 100% Energy.
- Revenue to Cost ratios for these scenarios shown on next slide.

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Sensitivity – Demand Allocators



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Existing Revenue to Cost Ratios

Existing Rates (\$ million)

Rate Class	F2008 Cost of Service	Revenue @ Feb 07 Rates	R/C Ratio @ Feb 07 Rates
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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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Discussion and Summary

- Areas of agreement
- Questions
- Areas of concern and/or disagreement
- Next steps

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Existing Revenue to Cost Ratios

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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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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Rate Rebalancing Scenarios

- The rate rebalancing model can be used to demonstrate the impact on the rates of customer classes of varying cost allocations.
- Several different scenarios have been prepared for discussion purposes.

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Rate Rebalancing – Scenario 1

Scenario 1 (\$ million)

Rate Class	Increase	Increase	Revenue @	R/C Ratio @
	%	\$	New Rates	New Rates
Residential	0.0%	0.0	1,109.9	93.4%
General < 35 kW	-1.1%	-3.2	286.2	113.3%
General > 35 kW	0.0%	0.0	762.8	103.8%
Irrigation	0.0%	0.0	4.3	64.0%
Street Lighting	0.0%	0.0	23.3	100.8%
Transmission	0.0%	0.0	646.6	102.6%
Additional Fee Revenue		3.2	3.2	
Total	0.0%	0.0	2,836.2	100.0%

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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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Rate Rebalancing – Scenario 2 (+/-10%)

Scenario 2 (\$ million)

Rate Class	Increase	Increase	Revenue @	R/C Ratio @
	%	\$	New Rates	New Rates
Residential	0.7%	8.0	1,117.8	94.0%
General < 35 kW	-4.0%	-11.6	277.8	110.0%
General > 35 kW	0.0%	0.0	762.8	103.8%
Irrigation	10.0%	0.4	4.7	70.4%
Street Lighting	0.0%	0.0	23.3	100.8%
Transmission	0.0%	0.0	646.6	102.6%
Additional Fee Revenue		3.2	3.2	
Total	0.0%	0.0	2,836.2	100.0%

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Rate Rebalancing – Scenario 3 (+/-5%)

Scenario 3 (\$ million)

Rate Class	Increase	Increase	Revenue @	R/C Ratio @
	%	\$	New Rates	New Rates
Residential	1.9%	20.7	1,130.6	95.1%
General < 35 kW	-8.4%	-24.3	265.1	105.0%
General > 35 kW	0.0%	0.0	762.8	103.8%
Irrigation	10.0%	0.4	4.7	70.4%
Street Lighting	0.0%	0.0	23.3	100.8%
Transmission	0.0%	0.0	646.6	102.6%
Additional Fee Revenue		3.2	3.2	
Total	0.0%	0.0	2,836.2	100.0%

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Feedback and Discussion

- In its Rate Design Application, BC Hydro will try to find the best balance among a list of competing objectives
- In order to approach this rate rebalancing issue, BC Hydro is seeking your input on these objectives:
 1. Fairly apportion costs among customers.
 2. Provide price signals that encourage efficient use and discourage inefficient use.
 3. Practical and cost-effective to implement.
 4. Promote rate stability.
- Should the existing rates be rebalanced?
- If so, how balanced is “balanced enough”?

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Next Steps

- BC Hydro will work to clear up remaining questions and concerns during the next few weeks with participants
- BC Hydro invites participants to a meeting on Feb 22 or Feb 26 (TBD) to finalize areas of agreement and to help prepare its application to the BCUC.
- 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
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