



# BC Hydro Extension Policy Changes

Workshop for Lower  
Mainland Developers  
and Consultants  
January 11, 2007

# Agenda

- Introduction
- Regulatory Framework
- Terminology
- Existing Extension Policy
- Drivers for Change
- Straw Model

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# Objectives

- BC Hydro would like to:
  - > Present the drivers for changes to our extension policy
  - > Summarize our experience with the existing policy
  - > Propose a straw model for a new policy
  - > Obtain comments from our stakeholders
- Our Stakeholders are invited to:
  - > Share their experiences with the existing policy
  - > Provide input into the formulation of a new policy

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# Introduction

- BC Hydro is filing a Rate Design Application (RDA) with the BCUC on March 15, 2007
- The filing will include an update to our Extension Policy, as well as revisions to some rates and cancellation of obsolete rates
- 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
  - > FACOS and Rate Rebalancing workshops
  - > Large Commercial Tariff workshops
  - > Distribution Extension workshops
  - > E-Plus survey
  - > Additional 1:1 meeting with interested customers

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# Regulatory Framework

- Why do we charge customers to connect to the grid?
  - > Long-standing principle that customers should pay the cost of their service connection
  - > An offset to extension costs by way of an allowance from BC Hydro is appropriate if the new load will provide sufficient long-term revenue

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# Terminology

- Connection Fee:
  - > New customer pays full cost for line drop and meter installation, with no utility offset
  - > BC Hydro pays for meter cost
- Extension Fee:
  - > Customer is charged full cost of construction, plus upstream System Improvement (SI) fees, less applicable allowance from BC Hydro

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# Terminology

- Offset or Allowance
  - > An allowance provided by the utility that reduces the customer's Extension Fee.
- Customer Contribution
  - > What the customer pays for the construction of facilities. Equals the Connection Fee plus the Extension Fee. Can be Contribution in Cash and/or Contribution in Kind.

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# Existing Policy

- Extension Fee =

Construction cost of extension  
+ upstream Distribution SI  
+ upstream Substation SI  
- Maximum Terminal Value  
- other allowances  
- Revenue Margin allowance

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# Existing Policy

- Upstream Distribution SI
  - > \$ per kW per km of line from substation
- Upstream Substation SI
  - > \$ per kW
- Maximum Terminal Value
  - > Lesser of “salvage value” or revenue margin of years 11 to 40
- Revenue Margin
  - > NPV of 10 years of revenue margin (gross revenue less costs).
- Other Allowances
  - > System Reinforcement, Depreciation, Telus

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# Existing Policy

- Rationale:
  - > Existing customers' rates should not go up due to the addition of new customers
  - > For each customer the net margin is calculated by subtracting incremental costs from incremental revenues.
  - > Customers with a positive net margin can use that amount to offset the extension cost.
  - > Customers with a negative net margin pay that cost.

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# Existing Policy Example: 60 lot subdivision

## ESTIMATED REVENUE:

# OF ACTS	UG/ OH	TYPE	SERVICE VOLTAGE	ESH Y/N	SW AMPS	ANNUAL LOAD KW	LOAD FAC%	AVG MONTH DEMAND %KW	ANNUAL ENERGY KW.H
60	1101 U	A	120/240	Y	200	10.60	21	0	19,500
45	1101 U	E	120/240	Y	100	3.00	21	0	5,519

## SYSTEM EXTENSION TEST

### DESCRIPTION OF EXTENSION:

SUBSTATION:	SQH	LINE VOLTAGE:	25
SUBDIV. INFILL:	80%	# OF ACCTS:	105
ANNUAL ENERGY:	1,418,355 KW.H	FEEDER CF:	45%
DIST. FROM SS:	O/H	U/G	
	FEEDER	0.1 KM	0.3 KM
	TRUNK	5.0 KM	0.3 KM
	3PH BR	0.2 KM	2.0 KM
	1PH BR	0.0 KM	0.0 KM
	EXT LENGTH	0 M	1,050 M

### REVENUE MARGIN (PV OVER 10 YEARS AT 8% DISCOUNT RATE):

ANNUAL ENERGY REVENUE		\$51,336
LESS:		
COST OF ELECTRICITY	\$25,631	
UPSTREAM TRANSM COST	\$1,109	
NET OPERATIONS & MAINT	\$527	
SCHOOL TAX	\$303	
GRANTS IN LIEU OF TAX	\$513	
CAPITAL TAX	\$1,243	
RETAIL COST	\$2,299	
	-----	
TOTAL DEDN FROM ENERGY REV		\$31,624
REVENUE MARGIN		\$19,711
<b>PV 10 YEAR REVENUE MARGIN {A}</b>		<b>\$132,262</b>

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# Example: 60 lot subdivision

CONSTRUCTION COST:		
TOTAL CONSTRUCTION COST	\$590,007	
DISTRIBUTION SYSTEM IMPROVEMENT COST	\$6,403	
SUBSTATION SYSTEM IMPROVEMENT COST	\$17,086	
REFUND PROCESSING COST	\$125	
	-----	
SUB TOTAL OF CONSTRUCTION & SET CHARGES	\$613,622	
LESS:		
CHARGES EXPT FROM SET	\$400	
SALVAGE	\$0	
DEPRECIATION (SHARED)	\$0	
SYSTEM REINFORCEMENT	\$72,225	
TELUS CONTRIB'N	\$0	
CONNECT CHARGE (DED)	\$9,422	
OTHER ALLOWANCE	\$0	
MAX TERM VALUE	\$102,794	
INFILL REFUND	\$0	
UEA	\$0	
	-----	
TOTAL CREDITS/ADJUSTMENTS	\$184,841	
NET CONSTRUCTION COST {B}		\$428,781
		-----
NET MARGIN {A-B}		(\$296,519)
NET MARGIN {A-B}		(\$296,519)
<b>EXTENSION FEE</b>		<b>\$296,519</b>
PLUS CUSTOMER SHARE OF UEA		\$0
PLUS CONNECTION CHARGE (DEDICATED FACILITIES)		\$9,422
LESS DEPRECIATION (DEDICATED)		\$0
PLUS CHARGES EXEMPT FROM SET		\$400
PLUS CIC ADJUSTMENT/STANDARD CHARGE		\$0
PLUS CONTRIB IN KIND ADJUSTMENT		\$0
<b>NET CUSTOMER CONTRIBUTION IN AID OF CONSTR.</b>		<b>\$306,341</b>
LESS CUSTOMER CONTRIBUTION IN KIND		\$138,508
CUSTOMER CONTRIBUTION IN CASH		\$167,833
GST ON CONTRIBUTION IN CASH (@6.00% )		\$10,069.98
		-----
NET CUSTOMER PAYMENT		\$177,902.98

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# Existing Policy

- Pioneer Refunds
  - > Initial allowance based on known loads
  - > If an extension fee is paid, can apply for refund in first 5 years based on additional loads that connect.
  - > Residential subdivisions can get upfront allowance based on BC Hydro's assessment of the infill rate.
  - > No refund for "extension to an extension"
- Eligibility for Allowances:
  - > Only BC Hydro owned extensions, expected to be shared by *other new* customers in the future, are eligible for BC Hydro contribution
  - > Private property generally not eligible
  - > Strata / malls not eligible even though they serve more than one end-use customer

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# Drivers for Change

- Current policy sets BC Hydro contribution to a new customer extension at the NPV of the net revenue margin of that new customer
  - > Based on incremental cost approach, new customers are assessed the incremental cost of serving them, including the incremental cost of energy.
  - > If the current incremental cost of energy is used in the existing policy, customers would not receive any allowance.
  - > This approach is inconsistent with the heritage contract – all BC Hydro customers are entitled to heritage energy.

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# Drivers for Change

- Feedback from Customers
  - > Very complex calculations
  - > Unfair to private property
  - > Should allow “extension to an extension” refunds
- Improvements Needed
  - > Remove perceived subsidy for electric heat
  - > Fairer treatment for facilities on private property
  - > More flexible pioneer refund policy
  - > Simplify System Improvement (SI) charge

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# Straw Model

- No change to Connection Fee, except updated pricing
- Extension Fee equals the cost to construct the extension less an allowance
- SI fee eliminated except for cases where the extension triggers high upstream costs (e.g. a substation upgrade, a new substation).
- Allow private property extensions to be eligible for offset allowance
- Offset allowance equivalent to 20 years of wires-related revenues for each customer class.

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# Straw Model

- Using current cost of service model, allowances would be:
  - > \$1950 per residential customer
  - > \$450 per kW for commercial
- BC Hydro allowance is the same for all residential dwelling units – large or small, electric or gas heated.
- Revenue Guarantee may still be taken to secure BC Hydro contribution (no change from status quo).
- Optional Facilities (dedicated backup) charged at full cost to customer (no change from status quo).
- Residential subdivision upfront refund – no change from status quo.
- Upfront automatic refund – raise \$3,000 threshold.

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# Example 1

	<b>Existing</b>	SET with No Rev Allow.	<b>Proposed</b>
60 lot subdivision, 80% infill, 45 unit apartment			
<b>Construction Cost</b>	\$590,007	\$590,007	\$590,007
Less Allowance    105 units x \$1950 x 80%			163,800
<b>Extension Fee:</b>	<b>296,519</b>	<b>603,674</b>	<b>344,160</b>
Add:                Dedicated/Service Connection	9,822	9,822	9,822
Less:                Contribution in Kind	138,508	138,508	138,508
<b>Customer Payment</b>	<b>167,833</b>	<b>474,988</b>	<b>215,474</b>
Allowance per customer	2,014	0	1,560

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# Example 2

	Existing	SET with No Rev Allow.	Proposed
61 unit Strata Townhouse, gas heat			
<b>Construction Cost</b>	\$146,208	\$146,208	\$146,208
Less Allowance    61 units x \$1950			118,950
<b>Extension Fee:</b>	<b>0</b>	<b>43,077</b>	<b>13,477</b>
Add:            Dedicated/Service Connection	112,730	112,730	4,830
Less:            Contribution in Kind	10,797	10,797	10,797
<b>Customer Payment</b>	<b>\$101,933</b>	<b>\$145,010</b>	<b>\$7,510</b>
Allowance per customer	1,231	0	1,950

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# Example 3

	Existing	SET with No Rev Allow.	Proposed
40 unit Apt plus Gen Acct, elec heat			
<b>Construction Cost</b>	\$40,759	\$40,759	\$40,759
Less Allowance    40 x \$1950 + 24 kW x \$450			88,800
<b>Extension Fee:</b>	<b>0</b>	<b>\$32,563</b>	<b>0</b>
Add:            Dedicated/Service Connection	17,906	17,906	12,005
Less:            Contribution in Kind	0	0	0
<b>Customer Payment</b>	<b>\$17,906</b>	<b>\$50,469</b>	<b>\$12,005</b>
Allowance per customer	1,688	0	2,166

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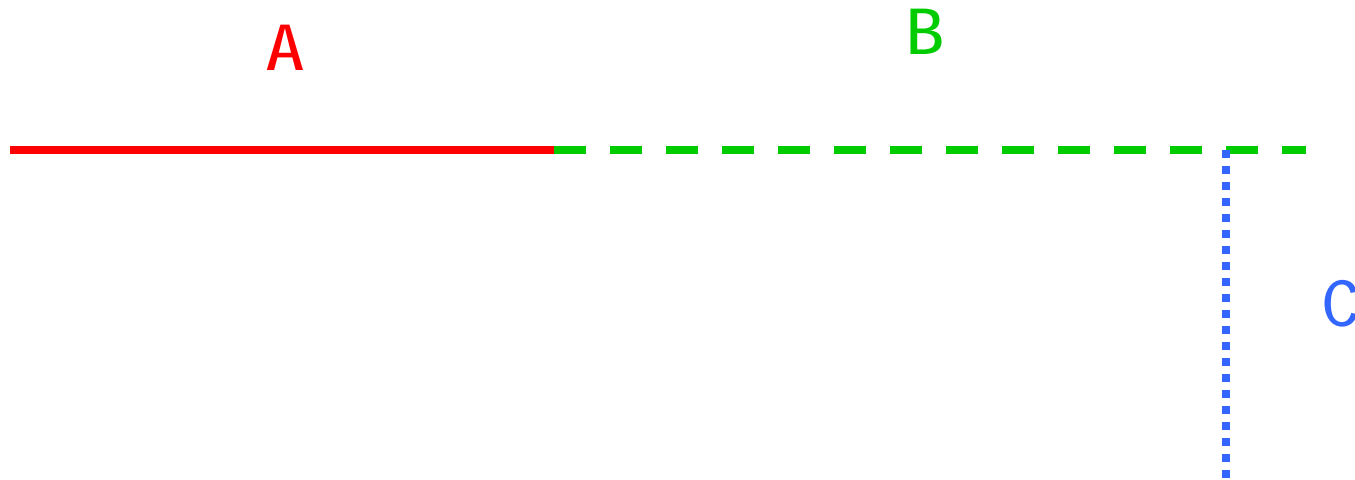
# Example 4

		Existing	SET with No Rev Allow.	Proposed
57 lot subdivision, elec heat, 90% infill				
<b>Construction Cost</b>		\$217,025	\$217,025	\$217,025
Less Allowance	57 x \$1950 x 90%			100,035
<b>Extension Fee:</b>		<b>65,125</b>	<b>\$242,223</b>	<b>95,702</b>
Add:	Dedicated/Service Connection	10,842	10,842	0
Less:	Contribution in Kind	37,082	37,082	37,082
<b>Customer Payment</b>		<b>\$38,885</b>	<b>\$215,983</b>	<b>\$58,620</b>
	Allowance per customer	2,220	0	1,755

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# Straw Model

- Infill Refunds – allow “extension to extension”



Extension C may contribute to both A and B

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# Impact of Proposed Changes

- < 2% difference in total customer contribution
- No impact on rates
- Increased benefit to private property construction
- Increased benefit to high density loads
- Increased benefit for infill refunds
- Reduced benefit for electric heat and residential subdivisions

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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.

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# Feedback

- BC Hydro is seeking your input on the following issues:
  - > The proposal to change how private property is treated;
  - > The proposal to treat gas and electrically heated houses the same;
  - > The proposal to change how infill improvements are treated;
  - > The proposal to leave unchanged the revenue guarantee process;
  - > The proposal to eliminate System Improvement fees (except for extensions that trigger high upstream costs);
  - > Is the proposed policy easier to understand?
  - > Any other comments on the extension policy?
  - > Any other comments on other BC Hydro rate design issues?

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