



# **BC Hydro Extension Policy Changes**

Workshop for Prince  
George Developers  
and Consultants  
February 2, 2007

# Agenda

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

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January 11, 2007

**BChydro** 

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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<br>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<br>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<br>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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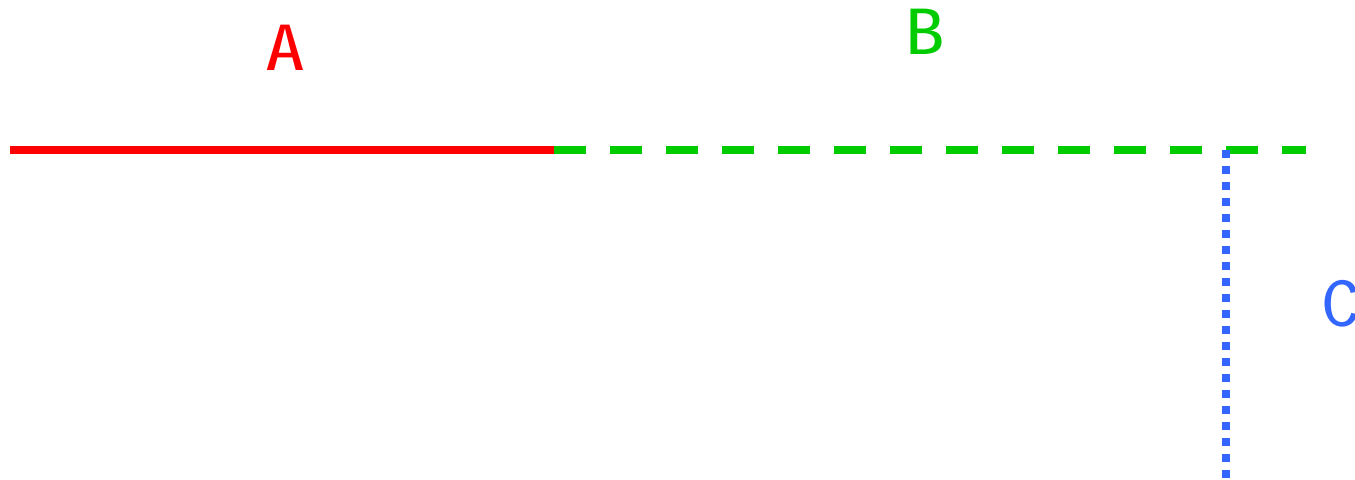
# Example 4

|   |                              | Existing        | SET with No<br>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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