BC HYDRO Distribution Load Connections & Policy 6911 Southpoint Drive, Burnaby, BC V3N 4X8

BC hydro
FOR GENERATIONS

ENGAGEMENT SUMMARY REPORT

BC HYDRO
DISTRIBUTION SERVICE CONNECTIONS

RATE DESIGN FEEDBACK

FROM JULY/AUGUST 2014
CUSTOMER ENGAGEMENT WORKSHOPS

FINAL REPORT

Prepared by Magnolia Communications

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INTRODUCTION

BACKGROUND

Magnolia Communications ("**Magnolia"**) was retained by BC Hydro to record customer feedback from Customer Engagement Workshops (**"Workshops"**) held with BC Hydro's distribution service customers during July and August 2014. The Workshops were conducted as part of stakeholder engagement activity for BC Hydro's 2015 Rate Design Application ("**2015 RDA"**).

The purpose of the Workshops was to inform customers about Distribution extension-related scope items identified by BC Hydro, collect customer feedback on these scope items, and report on the results. The focus of the Workshops was Section 8 of BC Hydro's Electric Tariff and associated Distribution extension policies that govern new and/or expanded connections to the distribution system.

Magnolia's primary deliverables for this engagement are as follows:

1. Phoebe Yong, Principal of Magnolia, was responsible to attend each Workshop in person and take notes for the purpose of producing a set of minutes for each Workshop. Minutes were prepared in consultation with BC Hydro staff.

2. Magnolia was responsible to collect, review, synthesize and report on the consolidated results of customer feedback, both written and verbal, for the purpose of preparing this Engagement Summary Report ("**Report"**).

DISCLAIMER

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Magnolia has removed any direct reference to individual customers or corporate entities. Generic information related to customer industry type has been retained for contextual purposes. This Report incorporates information that includes engineering principles, financial concepts and technical discussions related to tariff design, electrical distribution system interconnection and customer operations. While Magnolia has attempted to describe this information as accurately as possible, Magnolia shall be held harmless from any potential misrepresentation. No warranty of accuracy is expressed or implied. BC Hydro certifies that it has reviewed this Report prior to its release.

EXECUTIVE SUMMARY

This Report provides a consolidated summary of feedback obtained from BC Hydro's Distribution service customers as part of stakeholder engagement activity for BC Hydro's 2015 RDA. The focus of BC Hydro's engagement was to conduct an open and candid review of Section 8 of BC Hydro's Electric Tariff (Distribution Extensions – 35 kilovolts ("**kV**") or less). BC Hydro's intent was to build customer awareness and understanding of the existing Distribution extension policy and obtain feedback on its current application to specific Distribution extension circumstances.

BC Hydro staff provided a summary of scope issues and questions to inform this review. The desired outcome was to obtain verbal and written feedback from customers on Distribution extension issues and identify prospective solutions for further analysis. The process highlights BC Hydro's willingness to discuss issues of concern and receive feedback, both positive and negative.

This Executive Summary provides an overview of BC Hydro's customer engagement process, collection of feedback, and presentation of results. The information presented in this Summary assumes the reader has a high-level understanding of the subject matter. For readers less familiar with the material, please refer to the "Part A: Background" section of this Report, starting on page 11. The Discussion Guide document in Appendix A is also a resource.

JULY-AUGUST 2014 CUSTOMER ENGAGEMENT PROCESS

There were a total of three Customer Engagement Workshops conducted by BC Hydro:

- Workshop 1 (Langford) was held on July 31, 2014;
- Workshop 2 (Victoria) was held on August 20, 2014;
- Workshop 3 (Vancouver) was held on August 21, 2014; and a webcast was offered as well.

Each session was approximately two hours in length, running from 9.30am – 11.30am. There was no charge to attend. Customer invitations were sent via email by BC Hydro staff. A total of 32 customer representatives and consultants attended the Workshops, plus three staff participants from the B.C. Ministry of Transportation and Infrastructure (Victoria Workshop) and two staff participants from the BCUC (Vancouver Workshop). BC Hydro presenters and legal/regulatory staff who attended the Workshops are not included in participant numbers. Refer to Tables 1 and 2 below.

Table 1: Total Number of Participants by Workshop Location

WORKSHOP LOCATION	NO. OF PARTICIPANTS
Langford – July 31 , 2014	18
Victoria – August 20, 2014	8
Vancouver – August 21, 2014	11
TOTAL	**37**

Table 2: Participant Industry / Sector Representation

INDUSTRY / SECTOR	NO. OF PARTICIPANTS
Property Development	18
Engineering Firms	6
City/Municipality	3
Gas Processing	2
Transit	2
Large General Service **("LGS")** - Industrial	1
Government Ministry	3
BCUC Staff	2
TOTAL	**37**

Additional Session: Urban Development Institute ("UDI") held on July 22nd, 2014

BC Hydro personnel attended a meeting with the UDI Group and several themes derived from this meeting that could apply to feedback from RDA workshop. They include:

- *Developers are seeking cost sharing solutions for BC Hydro expansions which provide fairness, predictability and equity*
- *Can individual BC Hydro bills be increased slightly to raise funds for shared capital costs and expansions?*
- *Can a Development Charge Cost (DCC) model be adopted, wherein all developments are charged a fee for connecting to BC Hydro. These funds would be spent on future line expansions so that no single new development is burdened with covering the cost of an entire line expansion*
- *Difficulty would be to determine at what level the DCC should be applied (BC Hydro service area, regional, municipal, etc.)*
- *Can the latecomer pay the pioneer directly vs current model*
- *Can extension fee refund window be extended – the general sentiment that 5 years is too short*
- *Need to ensure that if a DCC based system is implemented that they do no cross subsidise other developments*

COLLECTION OF FEEDBACK

Customers were asked to provide both verbal and written feedback. The summary below describes how feedback was collected:

Verbal Feedback

- Verbal feedback was collected by Magnolia during the Workshops using notes and audio recording. Verbal feedback was reported in a set of minutes for each Workshop. Audio was solely used to assist with comment documenting after the sessions, and immediately erased after for privacy. The minutes include customer comments and questions expressed for each scope item, together with BC Hydro's response where one was provided. BC Hydro staff were responsible to review each set of Workshop minutes, including sharing drafts with customer participants as applicable.

Written Feedback

- Written feedback was collected by BC Hydro using a standard "Distribution Extension Policy Feedback Form". These feedback forms were provided to customers in hard copy at each Workshop and subsequently re-provided in electronic format to each participant. A total of six completed Distribution feedback forms were received by BC Hydro (five from customers; one from BCUC staff) and provided to Magnolia. Feedback from BCUC staff was provided in the form of questions for BC Hydro consideration. A short email comment from a sixth customer was also received.

Magnolia identified major feedback themes for each of BC Hydro's scope categories. This was achieved by examining the consolidated summary of verbal and written feedback to distill the main views and perspectives. Refer to theme summaries below. Representative customer comments are provided to support the assessment. There is some overlap between categories. Magnolia notes that verbal and written feedback was provided by a limited number of Distribution customers. The strongest representation was from participants associated with the residential and commercial property development sector.

RESULTS

Customers provided written feedback to targeted questions under four primary scope categories as set out below. Verbal feedback to these specific questions, and the scope categories in general, was also provided during the Workshops. The four primary scope categories are:

1. BC Hydro's Maximum Contribution
2. System Extensions
3. Schedule & Cost Allocation
4. Extension Fee Refunds

Magnolia identified major feedback themes for each of BC Hydro's scope categories. This was achieved by examining the consolidated summary of verbal and written feedback to distill the main views and perspectives. Refer to theme summaries below. Representative customer comments are provided to support the assessment. There is some overlap between categories. Although the feedback provided is detailed in many instances, care should be taken when considering broader application of the results given the limited customer representation.

Note also that the identified themes reflect Magnolia's independent interpretation of the feedback. Themes should not be interpreted to reflect a consensus view, unless specifically indicated. Magnolia assigned no preference to comments based on perceptions of customer size or industry type. That is, each customer comment was given equal weight. Magnolia notes that "silent" support or dissent, such as nodding in agreement, was not considered.

FEEDBACK THEME SUMMARY: BC Hydro's Maximum Contribution

There was limited feedback on the determination of BC Hydro's Maximum Contribution. There was no discussion or feedback with respect to the appropriate discount rate or the cost-of-service mechanism for determination of distribution-related costs. There was some support in the written feedback (3 of 5 respondents) to retain the existing 20 year discount period. One customer advocated for the discount period to be changed from 20 to 40 years to better reflect equipment life. One customer indicated that the current model was broken and needed an overhaul, but provided no supporting detail.

There was limited agreement with respect to the appropriateness of BC Hydro's Maximum Contribution by customer class. Some customers indicated that existing values were fair. Others suggested refinements to better match customer demand and revenue, such as different treatments for sub-sets of a customer class, or to "incentivize" the development of under-served communities. A number of developers commented that rural single-family developments have higher connection costs than urban, high-rise developments. They indicated that BC Hydro's Maximum Contribution is often insufficient to cover the costs of bringing power to a rural development. This can have the effect of limiting project investment.

Representative Comments:

- *"Suggest that (the discount period) should be 40 years or the actual in-service life of the infrastructure. The current beneficiary of the additional service life is BC Hydro. This benefit should go to the party responsible for the cost of its installation (i.e., the customer)."*
- *"… Revenue allowance should be more for single family. I would break single family into detached house, townhouse and condo. This would more closely match the revenue they are adding for BC Hydro."*
- *"Rural single-family residential developments have higher costs than urban and high-rise developments, so the BC Hydro allowance gets fully absorbed."*

FEEDBACK THEME SUMMARY: System Extensions

Given the strong developer representation, many customers focused on the application of Extension Fees to subdivisions. A number of customers expressed frustration with BC Hydro related to past experiences for service requests. Lack of trust and transparency emerged as two consistent themes, particularly with respect to how Extension Fees are determined, how System Improvements are linked to the development, and how system benefits such as reliability are considered.

There was limited feedback on the existing 500 kVA threshold for system improvement. One customer identified the potential for gaming with multi-phase developments. One customer questioned how demand was determined. Other customers were less concerned about the threshold, and more focused on transparency related to the need, determination and relative cost sharing for system improvements.

A strong preference was expressed for better alignment of BC Hydro's long-term system planning with regional development plans to provide better cost-certainty and risk management. This was in response to views that the current process of constructing extensions on an "applicant-request" basis was reactionary and can result in a step change in cost allocation to developments.

Collaboration between developers for the sharing of extension costs was welcomed, but recognized as being complex and impractical to enforce. With respect to extensions funded by a "multi-phase" customer, there was little support for the current tariff application. This discussion is continued in the next scope category on schedule and cost allocation.

Representative Comments:

- *"… There needs to be a much greater degree of transparency in assessing what may be system improvements, what these costs are and the relative sharing between BC Hydro and customers."*
- *"What is very important in planning for all parties is better transparency from BC Hydro so developers can plan and understand the new policies created. Developers need certainty to help manage business risk …"*
- *"BC Hydro's planning is the opposite of long term planning, where the tariff is applied on an "applicant by applicant basis". This is a short term, reactive view."*

FEEDBACK THEME SUMMARY: Schedule & Cost Allocation

Customers indicated understanding and support for the "user-pay" principle, whereby the customer is responsible to pay for extension costs directly related to its project. However, customers expressed a desire to avoid large upfront capital investment for multi-phase projects and ensure that all parties who use an extension contribute fairly to the cost. In this respect, customer feedback was focused on principles of fairness, transparency and cost-certainty. Customers suggested various alternatives to the existing Distribution extension policy to incorporate these principles; the three most common are shown below:

(1) Customer who pays for the Extension retains ownership and/or option rights to the capacity;

(2) Customers who subsequently connect to an Extension reimburse the original customer on a pro-rata basis for any portion of "paid-for" capacity used;

(3) BC Hydro pays for the Extension and applies a Development Cost Charge (DCC) to recover investment costs from connecting customers.

Option 3, the DCC approach, was well-supported. Developers indicated that this approach is commonly used by municipalities for other utility services, such as water, to recover the capital costs of infrastructure investment over time from parties that connect to the service. Customers indicated that prospective benefits of a "fixed fee" approach include cost-certainty, prevention of free-ridership and avoidance of front-end loading of costs onto a phased development, which ultimately becomes a pass-through cost to end-use customers (i.e., home buyers). BC Hydro was encouraged to perform a jurisdictional review as part of their assessment of alternative connection fee models.

For each option, customers did not always distinguish their preferences with respect to treatment of System Improvement Costs. Where a distinction was made, support was expressed for BC Hydro to either roll System Improvement Costs into general rates or clearly separate the portion that is specific to their project for recovery through a DCC charge. A separate charge/rider on consumption was also proposed as an alternate mechanism to recover System Improvement Costs.

Representative Comments:

- *"The principal concern here is fairness and equity. If a secondary customer benefits from infrastructure paid for by the initial customer, there needs to be an appropriate mechanism to compensate the initial customer. The current system is an inhibitor to development, as there is an understandable mentality that 'nobody wants to be first'."*
- *"There is inequity in an approach whereby developers bring years of new customer revenues to BC Hydro … the developer will get only a small margin from the sale of lots or houses, yet the BC Hydro tariff requires that all upfront costs have to be recovered from the developer …".*
- *"One solution might be to charge slightly more to individual hydro bills to raise funds for shared capital costs and expansions. Another option is to adopt a Development Charge Cost model, wherein all developments are charged a fee for connecting … these funds would be spent on future line expansions so that no single new development is burdened with covering the cost of an entire line expansion."*

FEEDBACK THEME SUMMARY: Extension Fee Refunds

Written feedback indicated a reasonable level of support for the intent of the existing Extension Fee Refund (pioneer) policy. Once customer indicated that the development fee DCC model is more appropriate and fair. Customers expressed the view that the current refund period of five years is too short. Suggested revisions ranged from 10 – 20 years to better reflect infrastructure life, development lifecycle and investment return. With respect to "capacity offloading", principles of fairness and equity were again central themes, with the intent to ensure that the original customer received compensation for use over a reasonable timeframe. There was clear support for an "average cost" approach or DCC

mechanism to support new developments. BCUC staff noted this would reflect a significant departure from the current tariff approach and justification would be required.

Verbal customer feedback was primarily focused on use of a DCC mechanism to prevent circumstances where the existing BC Hydro refund mechanism was insufficient to recover initial investment costs and/or where subsequent developers "come in for free". Various customer comments focused on details for a prospective DCC mechanism, such as term, flexibility, "late-comer" treatment, review timeframe and BC Hydro service area vs regional vs municipal charges. Cross-subsidization can be an issue. One customer identified that municipal "latecomer" provisions were recently changed from 10 to 15 years.

Customers generally agreed that it was reasonable to pay for system improvements advanced to support a new connection request. A provision was that BC Hydro did not defer capital projects with the intent to transfer costs to customers. One customer suggested a financing charge to cover the time period of advancement for the difference between the total capital cost and the customers' pro-rata share of the capacity.

Representative Comments:

- *"There are massive costs to bring in 3-phase underground power; we develop the street first and the next developer comes in for free; the BC Hydro rebate mechanism doesn't cover this free-rider situation."*
- *"DCC is a good program for long-term community and infrastructure planning, but also needs to be transparent and nimble. This is a challenge for BC Hydro because things seem to be fixed and pre-determined. You need to find a model that fits, not apply one number for the whole province that doesn't make sense."*
- *"BC Hydro should not defer planned works simply to allow such costs to be fully borne by a later customer. Assuming the above is a non-issue, then perhaps the Customer should bear two costs: (1) its share of the extension only; (2) the financing cost associated with advancing the works."*

REPORT STRUCTURE

This Report is structured into four main parts as set out below. Background information was sourced from BC Hydro reference materials. Verbal feedback was consolidated from the Workshop minutes and organized to reflect BC Hydro's primary scope categories. Written feedback was consolidated from the Distribution Feedback Forms received. All feedback was identified as coming from a customer sector/industry, per Table 2. Any reference to specific individuals and/or entities was removed to retain confidentiality. The only exception is questions provided by BCUC staff which is expressly identified as such in the Part C: Written Feedback Summary.

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Appendices:

- Appendix A: Workshop Presentation Materials
- Appendix B: Minutes from Sessions.

1.0 PART A: BACKGROUND

1.1 2015 Rate Design Application

BC Hydro is regulated by the BCUC, which is an independent regulatory agency of the Provincial Government. The BCUC's primary responsibility is the regulation of utilities such as BC Hydro to ensure that rates charged for electricity are fair, just and reasonable, and that utilities provide safe, adequate and secure service to their customers.

BC Hydro is a cost of service utility. This means that BC Hydro rates reflect the generation, transmission, distribution and customer service costs of providing electricity to customers, plus a targeted return to BC Hydro's shareholder (the Province). The BCUC must approve BC Hydro's rates and tariffs for service; the distribution service-level rate schedules and tariff supplements are published in BC Hydro's Electric Tariff.

BC Hydro is presently conducting customer and stakeholder engagement in support of its 2015 RDA. BC Hydro plans to file the RDA in summer 2015 with the BCUC. The RDA will be reviewed by way of a public hearing process. Refer to the Discussion Guide in Appendix A for additional legal and regulatory context.

The RDA will review and as appropriate propose changes to how rates are structured for BC Hydro's residential, commercial, industrial and other customers. It will also consider how to allocate and recover the costs of service between different classes of customers. The overall revenue that BC Hydro collects will not change as a result of the RDA. However, any restructuring or rebalancing of rates will result in changes to the rates paid by different customer classes.

1.2 Engagement Scope & Purpose

In preparation for the RDA filing, BC Hydro is working with stakeholders to examine specific tariff elements and rate structures. The purpose of this engagement phase is to inform customers about the RDA and obtain feedback on key issues and scope items identified for review and discussion.

BC Hydro has identified a need to engage with Distribution service customers about **Section 8 of BC Hydro's Electric Tariff (*Distribution Extensions – 35 kV or less*).** Section 8 of the Electric Tariff governs customer connections to the distribution system. Related definitions contained in Section 1 of the Electric Tariff are also in scope. A summary of key definitions is provided in section 1.3 below.

BC Hydro staff provided customers with an information package that described key scope issues and questions related to Section 8 of the Electric Tariff. Customers were invited to attend a Workshop to review and discuss these issues. The desired outcome was to obtain verbal and written feedback and identify prospective solutions for further analysis. This Report summarizes that effort.

BC Hydro Distribution Extension Policy work will be guided by "Bonbright Principles", including: (1) Fair apportionment of costs; (2) Customer understanding and acceptance; (3) Practical and cost effective to implement; and (4) Avoidance of undue discrimination.

BC Hydro will also address the items raised by the BCUC as part of its 2007 RDA decision and subsequent reconsiderations, including:

- How selection and definition of a guiding principle for the determination of BC Hydro's Maximum Contribution;
- How BC Hydro's Maximum Contribution should be calculated;
- The period to be covered by the analysis; and
- The suitable discount rate to be used.

1.3 Electric Tariff: Summary of Definitions

The following definitions are summarized from Section 1 and Section 8 of BC Hydro's Electric Tariff and may serve as a useful reference to specific defined terms in this Report:

BC Hydro's Contribution
BC Hydro's contribution toward the Estimated Construction Cost of an Extension, as determined in Section 8.

Extension
An addition to or the increased capacity of BC Hydro's electric distribution system required to serve a new Customer load or an addition to an existing Customer load, but not including a Service Connection.

Extension Fee
A contribution-in-aid of construction of an Extension from the customer. [Note: The Extension Fee is the Estimated Construction Cost of the Extension less BC Hydro's Contribution].

Estimated Construction Cost
The cost estimated by BC Hydro to construct an Extension or provide a Service Connection. For new services with a total expected Maximum Demand greater than 500 kVA, the Estimated Construction Cost of the Extension shall include the System Improvement Costs.

Point of Delivery
The location where BC Hydro's wires or cables are connected to the meter, the Customer's wiring, or the Customer's switch, whichever comes first.

System Improvement Costs
The incremental costs that BC Hydro estimates will be incurred on the distribution system, including distribution substations, attributed to a Customer's new load.

Service Connection

That part of the BC Hydro distribution facilities extending from the first attachment point on the BC Hydro distribution system to the Point of Delivery. [Note: The Service Connection Charge is separate from the Extension Fee].

Note: this Report uses the term "BC Hydro's Maximum Contribution", which is the maximum contribution that BC Hydro is prepared to make toward an Extension in Zone I (BC Hydro's integrated system) and is set out in section 8.3 of the Electric Tariff by customer class. For Residential customers, BC Hydro's Maximum Contribution is $1,475 per single-family dwelling.

1.4 About BC Hydro's Distribution System

The BC Hydro distribution system serves electricity at voltages from 120 volts to 35,000 volts (35 kV) to over 1.9 million residential, commercial and smaller industrial customers. Distribution customers contribute over $3 billion in annual revenue. Distribution customers are divided into one of six different rate classes, as shown in Figure 1 below. Note that "**SGS**" refers to Small General Service (up to 35 kilowatts ("**kW**") of billing demand), "**MGS**" refers to Medium General Service (35 – 150 kW of billing demand), and "**LGS**" refers to Large General Service (> 150 kW of billing demand).

Figure 1: F2013 Energy Consumption by Distribution Rate Class

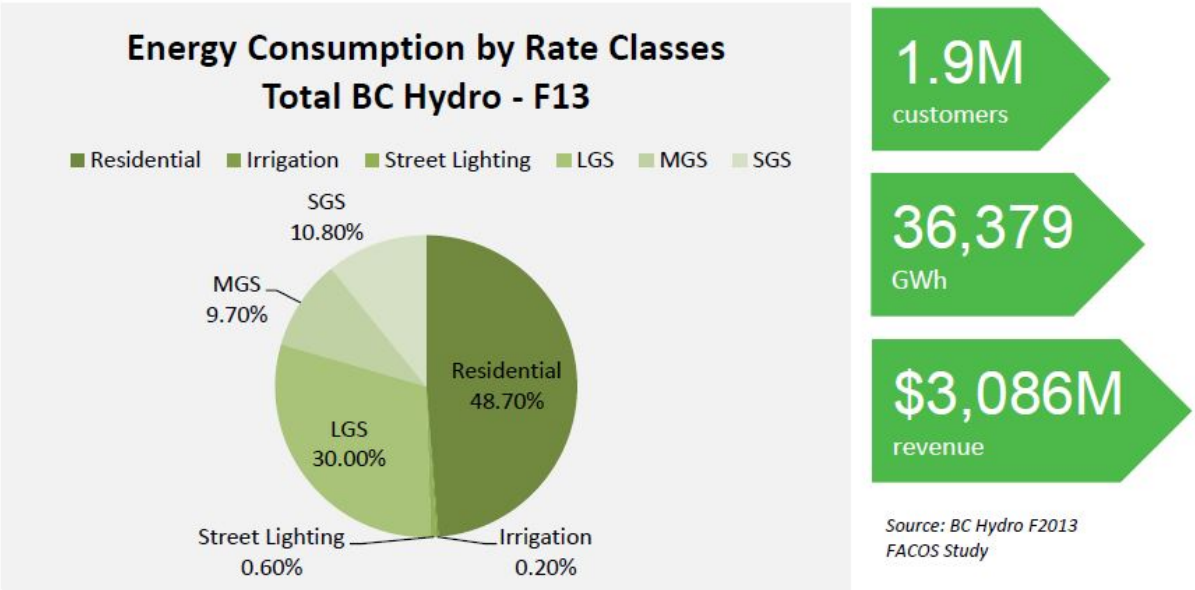

Figure 1 shows total annual energy consumption for BC Hydro's distribution customers and the percentage breakdown of energy consumption for each of the six distribution rate classes.

1.5 BC Hydro's Maximum Contribution

There are approximately 2,000 new Distribution Extensions connecting 20,000 customers (mostly residential) each year. These Distribution Extensions are required to extend the current system to the new customers or for new loads to current customers. Through the 2007 RDA process BC Hydro developed a Maximum Contribution based on Distribution revenue that BC Hydro would give to new eligible Extension costs. This contribution reflects the net present value of distribution capital related revenue during the first 20 years of service. For all new extensions customers will pay an "Extension Fee" which is the Estimated Construction Cost of the Extension less BC Hydro's Maximum Contribution toward the Extension.

Table 3: Maximum BC Hydro Contribution per Section 8.3 of Electric Tariff

8.3. Extension Fee for Rate Zone I

The maximum contribution that BC Hydro is prepared to make toward an Extension in Rate Zone I is as follows:

Rate Class	Maximum BC Hydro Contribution
Residential	$1,475 per Single-Family Dwelling
General Service	$200 per kW of Estimated Billing Demand
Street Lighting	$150 per Fixture
Irrigation	$150 per kW of Estimated Billing Demand

The calculation of BC Hydro's Maximum Contribution is driven by three variables, as outlined in the BCUC 2007 RDA decision and subsequent reconsiderations. The three variables are: (1) Allocation factor; (2) Discount rate; and (3) Discount period. Adjusting any of these variables will impact the calculation of BC Hydro's Maximum Contribution. Refer to the Discussion Guide in Appendix A for more detailed information. BC Hydro is asking for customer feedback on prospective changes to these variables.

1.6 Distribution Extensions

If the cost of a distribution extension is less than BC Hydro's Maximum Contribution, the customer does not pay an Extension Fee (but may need to provide a guarantee equal to the Contribution made). If the cost of the distribution extension is more than BC Hydro's Maximum Contribution, the customer will pay an Extension Fee equal to the difference (and may have to provide a guarantee for the Contribution made). In all cases, the customer will pay a Service Connection Charge for connecting the customer's electrical system to the BC Hydro electrical system.

The Extension Fee can be impacted by the size of the total expected customer load, the connection location, and available capacity in the distribution system. For example, if an existing distribution line has no available capacity or an upgrade from single phase to 3 phase service is required, additional customer-funded extension works or system improvement works may be required. This means that even customers of a similar size and business type may experience different costs depending on where and when they choose to connect.

1.7 System Improvements

In accordance with Section 8.3 of the Electric Tariff, where the expected demand for a new customer service is greater than 500 kVA, additional costs for "System Improvement" if required, are included as part of their Extension Fee. System Improvement costs refer to any incremental costs incurred on the distribution system that are attributable to the new load.

All new load has an impact to the distribution system which, at some point, will necessitate system improvements. The determination and allocation of System Improvement Costs is a key scope issue for review. BC Hydro identified multiple complexities related to large developments, phased developments, densification vs greenfield, extensions to rural communities and advancement of BC Hydro investment. For example:

- There can be an issue of fairness if prior customers were able to connect without incurring any System Improvement Costs, but the next customer to connect is the "straw that breaks the camel's back" and is allocated System Improvement Costs to provide capacity for their development.
- BC Hydro may have anticipated future plans to upgrade service to an area based on gradual general load growth, but a single new customer connection request requires BC Hydro to advance the work.

BC Hydro has requested customer feedback on how System Improvement Costs should be allocated in each of these circumstances.

1.8 Extension Fee Refunds

Extension Fee refunds are described in Section 8.5 of the Electric Tariff. In simple terms, this provision allows that BC Hydro may provide additional contributions to the original customer that paid an extension fee (also called a pioneer), in consideration of subsequent customers that connect to the Extension within 5 years. BC Hydro calculates the refund amount as the difference between BC Hydro's Maximum Contribution that was available to each subsequent customer, less the actual BC Hydro's Maximum Contribution that was applied.

The original customer must make written application to BC Hydro for an Extension Fee refund and is limited to one request per year, after a 12-month waiting period. The refund process is administered manually by BC Hydro. It can be complex to determine all of the load customers that may have utilized the pioneer's extension. In some cases, the original customer will be exposed to schedule and cost risks for the extension that are not shared by subsequent customers. BC Hydro terms this "free-ridership". Further, refund payments to the pioneer may be insufficient to recover the original investment cost. BC Hydro used a number of illustrative examples in the Workshops to identify these circumstances. Customer feedback was invited on the current distribution extension policy and prospective solutions.

2.0 PART B: VERBAL FEEDBACK SUMMARY

Verbal comments were consolidated from the Workshop minutes and arranged under each of BC Hydro's primary scope categories. An industry/sector identifier has been used to contextualize the comments, but retain customer confidentiality. Verbal questions from customers are reported separately in Part D: Questions & Answers.

2.1 BC Hydro's Maximum Contribution

SECTOR	CUSTOMER COMMENTS
Developer	*Change discount period from 20 years to 40 years, since 40 years is a better reflection of equipment life.*
Developer	*Rural single-family residential developments have higher costs than urban and high-rise developments, so the BCH allowance gets fully absorbed.*

2.2 System Extensions

SECTOR	CUSTOMER COMMENT
LGS Industrial	*When Customer B knows that Customer A has paid for an extension, Customer B can just "piggy back" on the work and take the spare capacity. Other than condo-type developments, which have faster build-outs, a phased approach for industrial developments is a common growth pattern for these type of facilities and BCH should recognize that.*
LGS Industrial	*Making the customer pay twice for service connections is a loophole in the tariff that needs to be addressed; there are cyclical elements to certain businesses that will impact their load profile; BCH can make system configuration changes that have a direct impact on capacity; these decisions are often made without the customer's knowledge.*
LGS Industrial	*Nobody will agree that double-dipping is appropriate; if customer pays for 10 MW it should be guaranteed; there is a difference between what a business constructs to and how it operates.*
LGS Industrial	*Look at model risk. Customer needs surety/certainty if going to senior management for approvals. History tells you a lot about the future.*
Developer	*What is very important in planning for all parties is better transparency from BCH so developers can plan and understand the new policies created. Developers need certainty to help manage business risk; need to know upfront what the costs will be; there is no certainty that the capacity paid for will be available and cost-creep for extension fees can destroy yield.*
Engineering Firm	*When investigating other jurisdictions, most will have policies that lead to similar conversations; the ones doing it well align planning with municipal agencies, allocation of feeder costs, etc.*

Developer	*Developers are used to dealing with long-range community plans that provide vision on where to spend money and how to develop so they can invest. BCH should have a similar approach to sharing long-range planning information on the distribution system so developers can plan with more certainty.*
Developer	*BCH's planning is the opposite of long term planning, where the tariff is applied on an "applicant by applicant basis"; this is a short term, reactive view. A long- term approach to system planning is ideal (good design practice).*
Developer	*BCH is the monopoly and backbone; planning commitment should be to achieve the best quality system at the lowest cost over the long term; fairness needs to be better defined.*
Developer	*Need a system design that allows for geographical differences; BCH needs to know how costs are being driven and where the numbers are coming from; define which areas are paying premiums and which areas are getting subsidized.*
Engineering Firm	*Thresholds are tricky; you can game around the 500 kVA limit. A multi-phase development could say they are a single phase development to stay below the threshold.*
Engineering Firm	*Fortis has the same consideration for a gas line extension. They make a business decision to extend a gas line to the development.*
Engineering Firm	*Two key factors: (1) Visibility and transparency – need to know what is the maximum investment cost and how it is determined; (2) Risk management – hard for developer to forecast costs to manage risk effectively.*
Developer	*Crucial to know in advance if connection will be a (simple) distribution extension or include system improvement. Many developments are not high density. Rules of the game need to be better defined; there is a potential conflict re: where money should be flowing and who should pay for it.*
Developer	*Communities like Langford are experiencing rapid growth; this includes outlying areas that require extension of electrical services from Hydro. This means new customers for BCH. Costs do not equate to value; customers will not pay a premium for new services.*
Developer	*Distrust is created when there isn't any clarity or open access to information; BCH is a monopoly that controls the game.*
Developer	*I have no faith in the monopoly of BCH; I think BCH is self-serving and lacks transparency. My 2007 experience was that BCH persuaded the Commission to change how to interpret the tariff policy and the outcome was BCH downloading costs onto developers.*
City/municipality	*Tariff interpretations from BCH have not been consistent; it depends on who you ask, at what time of the year; would like to see the rules that BCH uses, rather than just a letter that says "pay $500k".*
Developer	*Don't take exception to the tariff itself; the issue is more how it's applied (e.g., it took two years to get a copy of BCH subdivision policy).*

Developer	*There are 3 fundamental principles to consider: (1) Fair costing; (2) Good planning; and (3) Transparency. Need to get other customer groups together to understand common problems; identify aspects that are broken; propose solutions based on fair representation.*
Developer	*BCH needs to have better planning and definition on overall system improvements, especially where there is a reliability improvement from adding a system component.*

2.3 Schedule & Cost Allocation

SECTOR	CUSTOMER COMMENTS
LGS Industrial	*Trust and transparency need to be in place for customer business planning; and to ensure that BCH does not reconfigure available system capacity.*
LGS Industrial	*This model is not necessary the wrong approach; there are loopholes that need to be closed before it becomes a tariff.*
Developer	*View this (the DCC model) as a fairness test: developments generate tax revenue for the city and utility revenue for BCH. Developers don't mind contributing, but it needs to be fair; there is a breaking point in every project.*
LGS Industrial	*A consumption charge (for system improvements) rather than an upfront capital charge would make ROI more attractive for many developments. This would also allow BCH to tailor the rate to accommodate each customer's specific requirements. This would be viewed as a more fair approach; big concern is the inconsistency that occurs from customer to customer.*
Developer	*The developer is effectively making a load request on behalf of future customers. BCH should consider that all costs (of connection) are passed through to the buyer. Customer mortgage rates will be higher than BCH interest costs passed on through a DCC charge, so there would be (customer) savings there.*
Developer	*BC Hydro and Developers are seeking solutions to provide fairness and equity (cost sharing for Hydro users) and cost predictability for hydro expansions.*
Developer	*One solution might be to charge slightly more (on) individual hydro bills to raise funds for shared capital costs and expansions. Another option is to adopt a Development Charge Cost model, wherein all developments are charged a fee for connecting (to the system). These funds would be spent on future line expansions so that no single new development is burdened with covering the cost of an entire line expansion.*
Developer	*Set fees (i.e., a fixed fee for connection) would definitely be appreciated by the development community. There would be certainty for planning and costs passed on to buyers (which impact housing costs). Sometimes units are pre-sold before extension costs are known. This can create problems for developers if actual costs come back higher.*
Developer	*Most BC developments are large and developed "piece by piece" by a variety of people and groups overtime; if you load the Hydro cost onto the development upfront, I wouldn't want my client to be the first guy in to pay.*

Developer	*Using the "first guy in pays" example, if there are 1,000 units in a development, the guy who develops the first 100 units would need to pay for the total cost of the new system; this creates investment discrepancy.*
City/municipality	*The current model (steep upfront payment) is not rational or reasonable; does not encourage economic development.*
Developer	*There is inequity in an approach whereby developers bring years of new customer revenues to BCH and the City will inherit a strong long-term tax base. The developer will get only a small margin from the sale of lots or houses, yet BCH tariff requires that all upfront costs have to be recovered from the developer … this is where the problem is.*
Developer	*Most developers don't mind paying their way as long as it's fair, transparent and understood. In areas where there is rapid growth, versus slow growth, you need to charge everybody the same.*
Developer	*We need to review what happens in other jurisdictions and apply the best model here. BCH has the ability to do this and do it properly. It's a straightforward approach and BCH has the opportunity to show leadership.*
Developer	*There is a recognized effort, whether it is water or Hydro services, to loop systems to create efficiencies and options; to say there are no benefits realized except to the developer is unfair and unrealistic.*
Developer	*Prior to 2000, there were many large construction projects in Vancouver where BCH picked up the bill; new communities want to have the same treatment.*

2.4 Extension Fee Refunds

SECTOR	CUSTOMER COMMENTS
Developer	*For provision of site services at other projects, there are similar capacity constraints for sanitary issues and water transmission. We've landed on amenity charges; this is something BCH should entertain.*
Developer	*Would recommend a "front-end" or "late-comers" arrangement to ensure there is some cost certainty and not having to overburden the site on a phased basis as this can have a significant impact on the bottom line.*
Developer	*Development Cost Charge "DCC" on a residential application is a per unit charge; typically a flat rate based on a planning projection. On the commercial side, it's usually calculated per square foot or metre.*
Developer	*Re: upfront allocation of funds ... the municipality looks at future growth plans/needs ... City pays upfront and uses the DCC or amenity charge to recover the proportionate use associated with the development.*
Developer	*In relation to the BCH 5 year refund term, the local government act changed a few years ago from 10 to 15 years for municipal infrastructure.*
Developer	*In terms of DCC's, they should ideally be reviewed every 3-5 years. If you were to roll it into rates, assigned to each unit, then it could be equitably paid for over time (e.g., by 4 or 5 different owners over 20 years).*
Developer	*You could assign DCC costs, roll it into the rate and have it appear separately on the bill so you have transparency. Problem with DCC's is they are typically a hidden cost.*
Developer	*Urban and rural areas may need to be separated. Urban areas won't have stranded asset issues … may have delay due to business cycle fluctuations, but not stranded assets.*
Developer	*In the local government act, within a municipality, there are area-specific DCC's. In a province as large as BC, I would think you would be looking at different models for different areas.*
Developer	*BCH allowances can be fully exhausted solely in the distribution system (for improvements), so there is nothing is left to pay for the extension component; the original customer is left with this capital cost.*
Developer	*There are massive costs to bring in 3-phase underground power; we develop the street first and the next developer comes in for free; the BCH rebate mechanism doesn't cover this free-rider situation.*
Developer	*Administration of a "late-comers fee" can get complicated; local government gets interest on the money over a set period (e.g., 10 yrs); some folks will just wait for the time period to expire.*
Engineering Firm	*Need an equitable way to collect fees from everyone without penalizing the first developer; that can kill the development.*
City/municipality	*In municipal work, with existing DCC programs where there is a benefit to existing users, a certain % of cost is attributed to the development and a certain % of cost is attributed to existing users; so that would be something (for BCH) to consider.*

Developer	*DCC is a good program for long-term community and infrastructure planning, but also needs to be transparent and nimble. This is a challenge for BCH because things seem to be fixed and pre-determined. You need to find a model that fits, not apply one number for the whole province that doesn't make sense.*
City/municipality	*A regional charge makes more sense (to reflect regional capacity).*

2.5 General Comments

SECTOR	CUSTOMER COMMENTS
Developer	*Encouraging energy efficient design at the construction level would be of value; use less energy over long term.*
Developer	*For the forthcoming tariff review, the development industry will be well represented; free-ridership issues will be laid out to the Commission.*
Developer	*The ratepayer is the owner of the system through the vehicle of BCH; need to make sure we are getting a good value system.*

3.0 PART C: WRITTEN FEEDBACK SUMMARY

Written comments were consolidated from the Distribution Extension Policy Feedback Forms and arranged as responses to the specific questions posed by BC Hydro for each primary scope category. There were a total of five customer respondents. An industry/sector identifier has been used to contextualize the comments, but retain customer confidentiality. Note that feedback from BCUC staff was provided in the form of questions for BC Hydro consideration. These questions are separately identified in the feedback summary below.

3.1 BC Hydro's Maximum Contribution

- **Q.1: Is the current discount period of 20 years appropriate?**

SECTOR	CUSTOMER FEEDBACK
Developer	*Time frame of 20 years is fine. Considering an escalator is reasonable. This should be reviewed on a different (more frequent) time frame from the rest of the program. Special consideration should be made for under-served First Nations communities.*
Gas Processing	*Yes it is.*
Engineering Firm	*Yes, seems reasonable, given the distribution of costs.*
Developer	*Suggest it should be 40 years or the actual in-service life of the infrastructure. The current beneficiary of the additional service life is BCH. This benefit should go to the party responsible for the cost of its installation (i.e., the customer).*
LGS Industrial	*Difficult to judge - have not had sufficient time to analyze; but I personally think that the current model is broken and needs a major overhaul.*
	BCUC STAFF FEEDBACK
1.1	*Since the 2007 RDA Decision, does BC Hydro have any experience that a 20-year discount period is not appropriate? For example, is the 20-year period not fair to new customers because the discount period is only half the expected life of the assets?*
1.2	*Should there be a common standard in use by utilities regulated by the BCUC?*
1.3	*Should the discount period reflect the average asset life of BC Hydro?*

- **Q.2: Should factors such as single or multi-family dwelling, or size of service be considered in determining BC Hydro's maximum contribution?**

SECTOR	CUSTOMER FEEDBACK
Developer	*There should be a different program for each type of development. Also, perhaps consider additional incentives for projects that include energy efficiency in the designs and/or bring significant value ad to underserved communities, such as First Nations communities.*
Gas Processing	*I think the existing contribution amounts are fair, with the exception of Irrigation; it should be at least the same as General Service.*
Engineering Firm	*Yes, revenue allowance should be more for single family. I would break single family into detached house, townhouse and condo. This would more closely match the revenue they are adding for BCH.*
Developer	*Current mechanism is appropriate. May be too complex otherwise.*
LGS Industrial	*Should be proportional to design demand.*
	BCUC STAFF FEEDBACK
2.1	*To what extent do the differing consumption attributes of single family versus multi-unit dwelling warrant differentiation in the BC Hydro's maximum contribution?*
2.2	*If a factor is presumably useful as a predictor, BC Hydro should articulate the circumstances where the difference in load between such customers leads to higher distribution extension costs.*
2.3	*The 'Bonbright criteria' include simplicity and understandability as well as an accurate reflection of costs. Another important element is energy efficiency. Is it BC Hydro's objective to send price signals through BC Hydro's level of contribution to distribution extensions?*

3.2 System Extensions

- **Q.3: Is the current 500 kVA threshold for triggering system improvement costs appropriate?**

SECTOR	CUSTOMER FEEDBACK
Developer	*Improvements to the system should be part of the overall responsibility of the utility. This creates an opportunity to invest in a more robust infrastructure that reflects resiliency for an uncertain weather and electrical grid system. This is especially important for under-served First Nations communities that haven't benefitted from earlier investments made at no cost to the user elsewhere in the Provincial Community.*
Engineering Firm	*Seems a bit arbitrary. Load can be calculated many different ways. The difficulty is drawing a line in the sand, where if you exceed the number you have to pay.*
Developer	*Probably no issue with the limit, however there needs to be a much greater degree of transparency in assessing what may be system improvements, what these costs are and the relative sharing between BCH and customers.*
LGS Industrial	*No, not really. Two issues: (1) how is the 500 kVA peak determined - RMS?; (2) this is a small change for an industrial facility. A more appropriate approach would be % of contracted supply on a sliding 3-5yr average.*
	BCUC STAFF FEEDBACK
3.1	*If system improvement costs (are) financed solely by BC Hydro and no customer contribution toward system-related costs are required, then is this a non-issue in distribution system extension?*
3.2	*Is BC Hydro contemplating a charge to be applied to all distribution extensions to reflect future system improvements? Shouldn't system improvement costs be recovered in future rates?*

- **Q.4: Could new customers (developers) collaborate to share extension costs where large capital investments are required?**

SECTOR	CUSTOMER FEEDBACK
Developer	*No. But, consider discounts or added incentives for developments making the investment for a lower than average per square foot energy use on the transmission side. Need to connect the Distribution and Transmission sides of the equation. This is especially important in currently under-served First Nations communities who are investing in the future of their communities.*
Gas Processing	*Yes, I think that they should be required to do this.*
Engineering Firm	*I have seen developers collaborate in certain circumstances. I do not think a mechanism could be put in place to enforce this.*
Developer	*Often this is very difficult due to different customers having differing needs and business models. It is unrealistic for BCH to assume this is always doable. If agreement can't be reached, then there needs to be a mechanism in place where BCH funds some of these costs.*
LGS Industrial	*Some may choose this option, but investment is a fickle issue; ensuring you get your investment out is critical. This option only really makes sense if you could resell capacity.*
	BCUC STAFF FEEDBACK
4.1	*How long after a distribution system is completed will a new customer be required to contribute to the extension?*
4.2	*If new customers could collaborate to share extension costs, does BC Hydro foresee that the new customers would provide BC Hydro with an aggregate capacity requirement and consumption forecasts?*
4.3	*What is the likelihood that when disaggregated to the individual customer (developer) level, certain consumption forecasts would be more acceptable to BC Hydro than others? In the event this happens, how would it affect the sharing of extension costs?*

- **Q.5: In situations where customers with multi-phase developments fund extensions to serve their future load requirements, how should requests for service from other new**

customers who wish to connect before the development is completed be treated and how should costs be shared?

SECTOR	CUSTOMER FEEDBACK
Developer	*The developer who pays for the improvements should get priorities on those improvements, and have first right of refusal for any future claims on that capacity. Upgrades to the utility system should be borne by the utility to ensure a well-thought out, forward thinking, holistic approach to designing and implementing a resilient system.*
Gas Processing	*If any single developer wants to 'reserve capacity', they should be responsible for the entire upgrade/extension costs (i.e., build and own private infrastructure to BCH standard). They can then lease/sell capacity rights on their infrastructure.*
Engineering Firm	*I think the easiest way to deal with these situations is for the initial developer to pay for the extension, then if the "paid for" capacity gets used up by others, the initial developer would be retroactively reimbursed by the others. This method would work to protect BCH and the original developer. Also, I think developers should be able to pay for dedicated feeders; they should be required to fund the full amount and not receive revenue allowance until the load materializes.*
Developer	*Principal concern here is fairness and equity. If a secondary customer benefits from infrastructure paid by the initial customer, there needs to be an appropriate mechanism to compensate the initial customer. The current system is an inhibitor to development, as there is an understandable mentality that "nobody wants to be first". A DCC type mechanism is a means to address this.*
LGS Industrial	*It was suggested at the session to use the municipal cost recovery model (development fee) by special levy or tariff on consumption. This model is fairer than most and can be adjusted based on the # of participants receiving benefit from the infrastructure development.*
	BCUC STAFF FEEDBACK
5.1	*Is this issue related to the 'cost-sharing' or refund period? If the refund period is extended from the current 5-year period to a 7 to 10-year period for larger projects, would the cost sharing be more fair?*
5.2	*Does BC Hydro have evidence that many cost-sharing opportunities have been missed?*

3.3 Schedule and Cost Allocation

- **Q.6: Should all new customers contribute towards system improvements, even if improvements are not currently required, as they will be using up capacity for future customers (i.e. should free-riders contribute)?**

SECTOR	CUSTOMER FEEDBACK
Developer	*Capacity should be reserved for those who paid for it – first right of refusal.*
Gas Processing	*Yes, this should be required.*
Engineering Firm	*Yes, I think this model works. However, cashflow for BCH is a problem. BCH will need to keep the traditional model in place for funding SI while building a cash pool to fund SI in the future unless BCH is willing to go cash negative. Developers will not be thrilled about contributing to a pool that will not be used for a number of years.*
Developer	*I feel this is a fairer system.*
LGS Industrial	*No, although they currently do as the costs are just hidden in the overall electricity supply tariffs. System improvements should continue by BCH's overall requirements.*
	BCUC STAFF FEEDBACK
6.1	*If this policy is adopted, how does one differentiate between new accounts and new customers (i.e., existing customers who may not have an account in their own name, such as renters)?*
6.2	*How does this policy deal with customers who may be on a part of the distribution system where existing capacity exceeds what may be required into the foreseeable future?*
6.3	*How does this policy work if the new customer's actual load might turn out to be lower than expected? Does the customer have to repay a portion of the investment originally made by BC Hydro in the system extension and does BC Hydro have to repay the customer because it will not be using up capacity for other future customers?*

- **Q.7: Are the current definitions of System Improvement and System Extension appropriate?**

SECTOR	CUSTOMER FEEDBACK
Developer	*No – the entire utility grid requires upgrading and redesigning. Better to work in hand with developers and First Nations attempting to invest in an end product that supports long-term goals and their under-utilized communities rather than attempting to capture the varying scenarios under two single definitions.*
Gas Processing	*Yes they are.*
Engineering Firm	*I think it makes sense.*
Developer	*Absolutely not! The definitions are far too broad and vague, allowing an enormous amount of latitude for BCH interpretation. They should be as specific as possible, and be supported with a range of examples that can be accessed via the development community, not simply an in-house BCH policy document. This has been one of the most significant issues that we have encountered in dealing with BCH.*
LGS Industrial	*Definitions need work as the judgement when it's a (System) Improvement vs Extension can quickly become confusing if BCH has already notified customers of an upcoming change in service, even if it's a decade out.*
	BCUC STAFF FEEDBACK
7.1	*Whether the definitions are appropriate or not would depend on the objectives of system extension policy. The 1996 SET Guidelines hearing listed "to improve the fairness and efficiency" as a purpose. What policy objectives have been changed and/or added?*

- **Q.8: Should developers pay for the entire system improvements in areas where the BC Hydro system is at or near capacity or just the costs related to the advancement of the improvements if BC Hydro is planning on system improvements in its capital plan?**

SECTOR	CUSTOMER FEEDBACK
Developer	*First Nations in previously under-served regions should receive extra benefits and supports in investments in their communities. These are communities that have not benefitted from earlier (no cost to user) investments in other communities. As the single provider the investment and maintenance of the system remains with the utility. That said, there are many opportunities for building a more resilient, less load intensive system at a lower cost through an open, active collaboration between the utility, communities and developers.*
Gas Processing	*Yes, they should be responsible for the full cost of required improvements if the timeline for any BCH improvements is moved forward.*
Engineering Firm	*I think you need to protect the ratepayer, so yes they (developers) should pay. BCH needs to look at a model where the distribution costs are equally shared amongst developers to ensure they do not hinder development in general.*
Developer	*Developers should only pay for that proportion of system improvement that relates to their project. Due to the lack of transparency exhibited to date, there is a mistrust of BCH and perceived belief that BCH often delays its capital program in the knowledge that a future developer will require this service and costs can then be transferred to this developer.*
LGS Industrial	*It was suggested at the session that BCH needs to consider different cost-recovery models depending on whether you are growing a concentrated area or developing a whole new one. The latter should be covered by the general BCH tariffs for fairness reasons.*
	BCUC STAFF FEEDBACK
8.1	*Is it reasonable that the developer should pay for the advancement of any planned improvements, and any increase in size or scope of the improvements from what was in the plan?*

- **Q.9: How should costs be allocated (i.e., who should pay) for new feeders required for spot load?**

SECTOR	CUSTOMER FEEDBACK
Gas processing	*New feeders - customer should pay.*
Engineering Firm	*(Customer should) pay the full cost if they require the full feeder; if they require half the feeder, pay the full cost and be reimbursed by other developers as they connect.*
Developer	*The philosophy remains the same for all cases. Customer to pay for that portion of cost that relates to its project. This respects the principle of fairness. The manner in which costs are applied currently is patently unjust. A common DCC mechanism, or standard charge per connection, would largely address this matter.*
LGS Industrial	*Difficult to argue that a spot load should not be covered by the customer.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.10: How should costs be allocated (i.e., who should pay) for non-customer specific load growth?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*Duct bank - new customer should pay and original investor (customer) should be reimbursed in a proportional manner.*
Engineering Firm	*Everyone pays a piece; DCC model.*
Developer	*The philosophy remains the same for all cases. Customer to pay for that portion of cost that relates to its project. This respects the principle of fairness. The manner in which costs are applied currently is patently unjust. A common DCC mechanism, or standard charge per connection, would largely address this matter.*
LGS Industrial	*A development tariff would resolve the issue of non-customer specific load growth by allocating costs through consumption.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.11: How should costs be allocated (i.e., who should pay) for the cost of underground systems to connect new development in areas where overhead routes are already at capacity?**

SECTOR	CUSTOMER FEEDBACK

Developer	*Underground routes, system upgrades and designing a more resilient system for the uncertain future is best borne by the utility, with active collaboration from developers and communities. Working together we can reduce requirements and increase capacity and reliability on an aging system (North American challenge – not just a BC specific commentary). BC and BC Hydro should lead the way demonstrating innovative approaches to collaboration on this critical resource subject. Linking together the Distribution and Transmission formula, investment in under-served communities, especially First Nations, is a long-term investment for a robust future.*
Engineering Firm	*DCC model; developers should pay for the infrastructure required for their developments, not ratepayers. The costs should be shared based on load.*
Developer	*The philosophy remains the same for all cases. Customer to pay for that portion of cost that relates to its project. This respects the principle of fairness. The manner in which costs are applied currently is patently unjust. A common DCC mechanism, or standard charge per connection, would largely address this matter.*
LGS Industrial	*Underground systems are not necessarily the choice of the user but mandated by 3rd parties in many cases. Conversion to underground should be (a new section) in the Tariff.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.12: Should new customers pay a portion of the initial investment in underground systems when they utilize existing duct banks for their extension?**

SECTOR	CUSTOMER FEEDBACK
Engineering Firm	*DCC model; developers should pay for the infrastructure required for their developments, not ratepayers. The costs should be shared based on load.*
Developer	*The philosophy remains the same for all cases. Customer to pay for that portion of cost that relates to its project. This respects the principle of fairness. The manner in which costs are applied currently is patently unjust. A common DCC mechanism, or standard charge per connection, would largely address this matter.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.13: Are there any impacts to developers of providing BC Hydro with long range plans which will likely require system improvements in the future?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*No.*
Engineering Firm	*Positive impacts; we encourage this. If they do not provide plans, we can run into major issues in the future. 1-3 yr delays are more costly to developers than extra BCH infrastructure.*
Developer	*This is exactly what we did - this resulted in greater load demands and hence higher costs. In our case, and I'd suggest most developers, we would prefer to work with a plan that meets our long term projected needs, rather than finding partway through the project that there isn't the ability to service the ultimate load. The developers are also better placed to advise BCH on their long term planning goals than assumptions made by BCH.*
LGS Industrial	*As long as everybody knows it's a long range plan. But the converse is true as well. BCH needs to do a better job on sharing their long-range plans.*
	BCUC STAFF FEEDBACK
	No response provided.

3.4 Extension Fee Refunds

- **Q.14: Is the current (extension fee refund) policy appropriate?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*It is OK.*
Engineering Firm	*I think it is, with some tweaks. Pioneer (existing policy) is situational dependent and does not always protect the developer. Also, it is super confusing.*
Developer	*Current system is quite workable & equitable for Underground Residential Distribution extensions. However, this isn't the case for feeder & SI works as noted in Slide 13.*
LGS Industrial	*No, the development fee model is far more acceptable and creates a greater level of fairness.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.15: Is the current time limit of five years for extension fee refunds appropriate?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*It should be longer as the life of the infrastructure is typically much more than 5 years.*
Engineering Firm	*5 years is tough; large scale developments may not materialize for 10-15 years.*
Developer	*Not for the General Service rate class (application to commercial developments); 5 years is too short.*
Developer	*Example: A new feeder line and vista box may cost $200k and have the ability to provide service for 5 commercial buildings (each 100,000 ft^2). It is unlikely that one developer would be able to fund and complete all these buildings within the 5 year window to gain the maximum refund. Extending this to at least 10 years would be more appropriate.*
LGS Industrial	*5 years in an industrial development lifecycle is nothing. As major investment is made on a 15-20 year ROI basis for industrial customers, this is a more appropriate timeline.*
	BCUC STAFF FEEDBACK
15.1	*If the refund period is extended from the current 5-year period to 7 to 10 year period for larger projects, would the cost sharing be more fair? Definition of a 'larger project' may be required.*

- **Q.16: How should Extension Fee Refund customers be treated, particularly in areas where off-loading has occurred?**

SECTOR	CUSTOMER FEEDBACK
Developer	*Available capacity should be "owned", "controlled" and have first right of refusal by the entity that made the initial investment.*
Engineering Firm	*I would keep the pioneering model, but add onto it; where the feeder is offloaded, the original developer is reimbursed.*
Developer	*Principle should reflect equity & fairness (i.e., other customers should not bear the entire cost of "free riders").*

LGS Industrial	*This issue goes away using the development fee model.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.17: Should new customer extension fees include a fee to refund Extension Fee Refund customers?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*Yes for all except the "Pioneer".*
Engineering Firm	*BCH should recover all administrative costs related to "pioneering".*
Developer	*Confusing question? Seems as though there are fees on top of fees though, which is obviously undesirable.*
LGS Industrial	*This issue goes away using the development fee model.*
	BCUC STAFF FEEDBACK
17.1	*Is this the same as paying to get your money back? Is it appropriate to add further costs to new customers?*
17.2	*With today's computer account systems, how significant is this cost of administering the refund policy?*

- **Q.18: How should extension fees for multi-phased projects beyond five years be treated?**

SECTOR	CUSTOMER FEEDBACK
Engineering Firm	*Rather than the 5yr timeframe, could the timeframe not be indefinite and the asset just depreciates yearly? Example: Developer A (pays to) install a duct bank worth $1M and receives no revenue allowance. This is pioneered and the asset depreciates at 10% per year. The pioneer lasts forever, however the maximum allowance they can collect is reduced each year. I feel this is a fair model for BCH and the developer.*
Developer	*DCC type mechanism*
LGS Industrial	*This issue goes away using the development fee model.*
	BCUC STAFF FEEDBACK
	No response provided.

- **Q.19: Should BC Hydro consider extension fees which "average out" costs of supporting new developments, similar to Development Cost Charges used by some municipalities?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*May be worth considering.*
Engineering Firm	*Yes.*
Developer	*We support this mechanism.*
LGS Industrial	*Yes, this model has worked successfully in municipal developments and avoids front-end loading of costs (onto the customer), effectively killing ROI for some projects.*
	BCUC STAFF FEEDBACK
19.1	*More detailed description is required, for example, whether this can be done in an equitable way. Currently, are municipal Development Cost Charges considered equitable by the development community and are they a useful model?*
19.2	*Do municipalities subscribe to the principle of intergenerational equity?*
19.3	*This method will be a significant departure from the current "user pay" principle that would lead to winners and losers; therefore, justification on the departure from current practice will be required. Has BC Hydro considered any unintended consequence from this "average out" policy such as leading to more projects in high cost service areas?*

- **Q.20: How should customers be treated in situations where the customer development is in advance of BC Hydro's planned future upgrades or improvements in the area?**

SECTOR	CUSTOMER FEEDBACK
Gas Processing	*Customer should pay for upgrades.*
Engineering Firm	*DCC model should cover; there are some challenges regarding cashflow.*
Developer	*BCH should not defer planned works simply to allow such costs to be fully borne by a later customer. Assuming the above is a non-issue, then perhaps the Customer should bear two costs: (1) its share of the extension only; (2) the financing cost associated with advancing the works.*
Developer	*Example: BCH's planned improvements are $1M, beginning in 5 years. A customer makes a request which necessitates the advancement of these improvements. The customer component based on load demand is $200k. The customer would pay $200k (their share), plus an equivalent financing cost on the difference (i.e., $800k) over 5 years.*
LGS Industrial	*Costs should be discounted if already in BC Hydro's long-term capital plan and funded under the general tariff.*
	BCUC STAFF FEEDBACK

SECTOR	CUSTOMER FEEDBACK
20.1	*This question appears to raise the issue (of) whether the costs in the distribution extension policy are appropriate in the circumstance. If the distribution extension policy can still be appropriately applied, then the question is whether new extensions should contribute to a system improvement charge to contribute to local system upgrade(s).*

3.5 General Comments

SECTOR	CUSTOMER FEEDBACK
LGS Industrial	*There is no mechanism for a customer to voluntarily switch service (i.e., from 12 to 69 kV), creating extra capacity on the 12 kV system. This voids BCH of an incentive for customers to change service levels and receiving a delayed reinforcement cost. BCH needs to revisit this because the current situation almost demands that larger load customers receive their energy at higher service voltages to ensure the most cost effective distribution model.*
LGS Industrial	*The current LGS portfolio puts our (industrial) operations in the same group as small commercial ventures. Our interests and requirements are significantly different; rate class (definitions) need to be revisited.*

4.0 WORKSHOP QUESTIONS & ANSWERS

Customer questions as presented in the minutes for each Workshop, together with BC Hydro's response, are listed below. In some cases, Magnolia made minor edits to the questions for purposes of brevity and clarity only.

4.1 Langford Workshop Q & A

Developer

Q: Please clarify the definition of an "allowance" provided by BC Hydro.

A: An "allowance" is BC Hydro's Maximum Contribution towards the cost of extending the distribution system to a customer. There is a maximum amount that BC Hydro will contribute per customer class. The customer is responsible to pay for any costs that exceed BC Hydro's Maximum Contribution, as well as any Service Connection costs.

Developer

Q: Does BC Hydro have a capital development plan for the western community? Is there a commitment to improvements that BCH is initiating and can we know that? Can BC Hydro share long-range planning information on the distribution system so developers can plan with more certainty?

A: BC Hydro does have a 1, 3, 5, 10 year capital plan - the plan is mainly tied to substations and feeder resources. In some cases, customer developments come forward in advance of these capital projects. There is recognition that BC Hydro constructs extensions on an "applicant request" basis and that this may be perceived as reactionary planning.

Developer

Q: What infrastructure is BCH putting in to support local community plans?

A: BC Hydro uses Official Community Plans at a macro level to plan its system on a substation level, but in some cases it plans specific improvements in response to customer requests. BCH recognizes that the current model may result in a step change in the cost allocation to various phases within a development.

Developer

Q: Is BC Hydro proposing to change the current model (i.e., that has such a steep upfront payment for the initial customer)?

A: BC Hydro is seeking developer feedback regarding issues associated with the current model of cost allocation and recovery.

Developer

Q: Will BC Hydro policies be made available for review in advance of the hearing? Will some of these issues trigger an amendment to the tariff?

A: Through the RDA engagement process and distribution extension policy review, BC Hydro seeks feedback concerning the cost allocation model, but we can't say at this time if there will be a change in the tariff and/or costs allocated to developers for extensions required to serve their developments. These workshops are not the only RDA-related engagement process concerning Distribution extension policy; there will be a Technical Workshop towards the end of the year, for example. BC Hydro would expect to discuss any proposed Distribution extension-related changes with stakeholders prior to filing such changes with the BCUC.

Developer

Q: Is the goal to change the tariff to improve the process?

A: The key message we have heard is that developers want certainty, transparency and a greater sense of fairness. Through these sessions, BCH will review feedback and use it to inform what BC Hydro is proposing in the RDA filing.

Developer

Q: Have any changes been made to the distribution (Electric Tariff) since 2007?

A: In general, only minor changes have been made (such as amendments for the Smart Meter program). The tariff was amended in May 2013 for new large loads > 10 MW to allow for the application of provisions in Tariff Supplement No. 6 (transmission service extension) where an upstream reinforcement of the transmission system is required to serve the customer's load.

Developer

Q: Has BC Hydro reviewed what happens in other jurisdictions, so the best model can be applied here?

A: BC Hydro will complete a jurisdictional review including pioneer treatment and free-ridership rules. We are looking to you to provide not only feedback on the current tariff, but also your views with respect to other jurisdictions that have a model that works for you. As result of feedback at these workshops, BC Hydro will be exploring a DCC model for System Improvement Costs, for example.

4.2 Victoria Workshop Q & A

Developer

Q: Is LGS the largest type of distribution customer? Would a typical LGS customer be an industry or a town?

A: Yes. LGS is defined as peak demand > 150 kW. A typical LGS customer could be a large commercial or industrial facility.

Developer

Q: Is a single family dwelling part of the residential class?

A: Yes, single family dwelling is residential rate class. SGS class is small business < 35 kW. MGS class is > 35 kW – 150 kW. LGS class is > 150 kW.

Developer

Q: In your example (customer underground extension), if BC Hydro chooses to add additional ducts, does BC Hydro pass that incremental cost on to the customer? Does the developer need to do the civil work and incur the cost, or does BC Hydro make that investment?

A: It depends. There is a list of criteria that planning uses. Generally, the cost for system improvement is allocated to the developer; any incremental investment cost is paid by BC Hydro.

Engineering Firm

Q: The way clouds are drawn in your slide (slide 9 from presentation), is it fair to say that customer driven work never includes the substation?

A: Wouldn't say "never", but it's rare. Customers are not typically allocated costs for distribution substations, unless it's an optional facility, remote location where a substation is required to serve a single customer's load or a dedicated breaker position serving a sensitive load.

Developer

Q: For the (residential) allowance of $1,475 per unit, does this go to the on-site extension or to off-site improvements as well?

A: The Extension Fee will be sum of the on-site and off-site extension works plus any system improvements attributable to the customer's new load, less any BC Hydro Contribution. The only part that's not included in the Extension Fee calculation is the service charge.

Developer

Q: What subsidies from the Province are provided for extensions to small/remote communities?

A: None. BC Hydro has no specific mandate to encourage development. BC Hydro works on the basis of cost recovery (from the connecting customer) and examining existing ratepayer impacts.

Developer

Q: So the cost (of an extension to a remote community) is solely on the developer in that example?

A: Yes / it depends. If the request is from a single customer requesting a large amount of capacity driving the need for extension and system improvement, then the costs would generally be allocated to that customer. If the load increase is related to general load growth within a community, BC Hydro will typically upgrade the facilities in accordance with its system plans and will not allocate costs to any specific customer.

Developer

Q: Does BC Hydro take into consideration economic changes and cost increases for civil work (to set Contribution amounts)? For instance, costs from 20 years ago do not reflect costs today.

A: Currently, we only review the tariff pricing at these RDA intervals. It's a good point. Should we review the pricing at different / more frequent intervals?

Developer

Q: What is BC Hydro seeing (with respect to the appropriateness of the 500 kVA threshold for system improvement)? Is it development or area-specific?

A: Meeting customer load requirements in urbanized areas is often very different from rural areas. In rural areas, even loads < 500 kVA can drive the need for system improvement, but technically can't be allocated under the existing tariff.

Engineering Firm

Q: How much would BC Hydro rates change if all (extension and system improvement) costs were covered by BC Hydro (i.e., paid by all customers in rates)?

A: It's a good question and I don't have a specific number. The idea behind BC Hydro's extension policy is to allocate costs to customers who drive the need to upgrade/improve the system.

Developer

Q: What is the ability to sit down with developers to find another way to run the extension to bring costs down for everyone?

A: BC Hydro looks for the most cost effective way to serve the customer given the unique circumstances and in accordance with municipal bylaws. BC Hydro staff conduct a review of appropriate designs. There are some cost items that the developer can take on, such as rock and tree clearing as well as civil works on private property that BC Hydro would otherwise contract out. This may result in some cost savings for developers.

Developer

Q: How much investment is BC Hydro making to make the (distribution system) infrastructure more resilient?

A: There is a group that assesses system reliability and risk. They prioritize projects to address that via ranking of 1200 circuits using several blended indices, such as interruption frequency.

Developer

Q: Has BC Hydro ever started upgrade work and, when a developer comes along and requires higher load, turn around and charge these costs back to the developer?

A: Generally, if BC Hydro has initiated the project, then the costs are not typically retroactively allocated to a subsequent developer. This is related to one of the questions being asked for feedback: if BC Hydro built the ducts in advance, should a portion of these costs be allocated back to the developer?

Developer

Q: Please clarify where the 5 year (extension fee refund) window originated?

A: The System Extension Test (SET) Guidelines issued by the Commission in 1996 recommended a 5 year minimum refund period.

Developer

Q: How are you calculating the refund? Is it based on peak load? What capacity value is used?

A: The original BC Hydro's Maximum Contribution is based on estimated future operating load(s), with no re-assessment. The Pioneer refund is based on actual customer load additions (i.e., actual connected load for new services in each year).

Developer

Q: Was it BC Hydro or BCUC that established the 5 year pioneer rate (refund period)?

A: The BCUC Issued the SET Guidelines in 1996 after a public hearing.

4.3 Vancouver Workshop Q & A

Developer

Q: How closely is BC Hydro working with municipal planning teams (re: planning for growth)?

A: Our planners seek to be educated on the official community or neighborhood plan to understand upcoming phased developments. We try to work with customers to better understand their phased development plans.

LGS Industrial

Q: How would customers be protected from BC Hydro system reconfigurations that result from a temporary customer turndown due to business cycle with a subsequent return to full load?

A: In some cases, there are agreements that are made with some companies that are going into temporary shutdowns. But we don't have a specific mechanism in place.

LGS Industrial

Q: How does BC Hydro deal with businesses that have cyclical processes? Who bears this risk?

A: It's a good question to consider re: whether there is an opportunity to share some risks in a cyclical business environment. The customer will normally have a service agreement that assures capacity through minimum demand charges.

LGS Industrial

Q: What if the customer wants to change service levels, such as from distribution to transmission?

A: BC Hydro stated that this is an item we will be reviewing during this process.

LGS Industrial

Q: Regarding incremental additions to infrastructure, how does BC Hydro see this model working when BC Hydro wants to change the service in an area (i.e., planned change from 12 kV to 25 kV)?

A: BC Hydro has initiated a voltage conversion program in some areas. In these cases, BC Hydro has funded the conversions.

LGS Industrial

Q: Is the intention that a service voltage upgrade will be a BC Hydro-funded project? Or will the first person who wants the service pay upfront and everybody else who goes on the mandatory service also have to pay?

A: In areas where BC Hydro has identified that there is future potential of voltage conversion, BC Hydro is requesting that all customers have service entrance equipment capable of receiving

the higher voltage. BC Hydro may pay a small increment towards the cost of having the customer's transformer capable of operation at the current and future voltage.

LGS Industrial

Q: For the amenities approach in your cost modeling, has BC Hydro considered a consumption charge as opposed to an upfront capital fee? For example, have you considered a contribution over time based on per kWh consumption or kW demand charge to recover the capital over a 20 year life?

A: That recommendation would give owners more cost certainty; this is something we will consider in the development of the model going forward.

Engineering Firm

Q: Can BC Hydro clarify how the "infill percentage" is calculated to determine the number of units that will be connected in the 1st 5 years and that will be eligible for the $1,475 contribution?

A: Extension fee provisions in the tariff allow BC Hydro to estimate the infill on a residential development. For example, BC Hydro forecasts 80% occupancy in 5 years and pays the contribution upfront. The developer is not eligible for future refunds. There have been some challenges with this approach: (1) differences in estimate between BC Hydro and developer; (2) BC Hydro understands that developers feel pressured to accept BC Hydro estimate; (3) BC Hydro bases subsequent percentages on previously accepted infill estimates.