

1.0 INTRODUCTION

1.1 The Applicant

The British Columbia Hydro and Power Authority ("B.C. Hydro" or "the Applicant") is a Provincial Crown Corporation, established by the amalgamation of the former British Columbia Electric Company Limited and the British Columbia Power Commission in 1962. Its mandate is to generate, transmit and distribute electricity in British Columbia. B.C. Hydro generates, transmits and distributes electricity throughout B.C., except for the Kootenay and South Okanagan areas which are served by West Kootenay Power Ltd. and a few municipal district utilities. B.C. Hydro presently operates under the Hydro and Power Authority Act and is subject to regulation by the British Columbia Utilities Commission ("the Commission"). All the provisions of the Utilities Commission Act ("the Act") apply to the utility except for sections dealing with utility financing and asset dispositions.

1.2 The Applications

Prior to 1990, B.C. Hydro's Distribution Extension and Service Connection Policies had not received a comprehensive updating since 1969. Standard Tariff Charges have remained the same since 1976. On April 10, 1990, and by amendment June 7, 1990, B.C. Hydro applied to the Commission to revise these policies in order to follow general business principles, make a clear distinction between economic and uneconomic extensions, and move charges for services such as Connections, Reconnections, Account Transfers and Installation of Additional Meters to full cost recovery. By Order No. G-46-90, dated June 15, 1990, and following submissions from some interested parties, the Commission approved the tariff amendments.

A complaint dated July 19, 1990 was made by the British Columbia Public Interest Advocacy Centre ("CAC"), that inadequate notice was given of the hearing of the Application, and that a public hearing should be directed. By Order No. G-83-90, the Commission determined that the Application would be reconsidered in conjunction with the public hearing of B.C. Hydro's Rate Design Application and directed B.C. Hydro to give public notice of the Order.

The rates approved by the Commission were confirmed effective July 1, 1990, and were to remain in effect until further direction from the Commission. In addition, the Commission ordered that B.C. Hydro file amendments to its tariff substituting the references to "full cost" with the actual rates and charges then in effect. The reconsideration of the Application and notification of the public hearing precipitated several letters to the Commission from the public as well as requests for intervenor status.

On January 15, 1991 B.C. Hydro filed with the Commission an Application for Rate Design of its Electric Tariffs ("the Application"), as required by Commission Decision and Order No. G-31-90 dated April 30, 1990 and Order No. G-95-90 dated November 30, 1990. On March 7, 1991 B.C. Hydro filed a Notice of Motion to adjourn the May 6, 1991 public hearing date and advised all Registered Intervenors. After hearing Argument, the Commission, by Order No. G-28-91, adjourned the public hearing into the Application scheduled for May 6, 1991 and set down a revised schedule of dates for the submission of pre-filed evidence.

As part of its Rate Design Application (Exhibit 1, Tab 5), B.C. Hydro asked for an Order applying a connection charge to all new installations of residential electric space heating, as follows:

Single Family	\$1,150
Row House	\$1,000
Apartment	\$ 650

It was proposed that the charges would only apply in areas served by natural gas and would not apply to certified Quality Plus homes or homes utilizing heat pumps for space heating. The purpose of this charge was to promote the more efficient use of energy by deliberately intervening in the market place to deter people from the selection of electric space heating when other fuel resources, such as natural gas, would be more economic over time. B.C. Hydro was particularly concerned with the high percentage of developers who were choosing electric space heating for new row housing and apartments. This phenomenon was described as a market failure which should be corrected with a price signal in the form of a substantially higher connection charge in those areas served by natural gas.

On May 21, 1991 B.C. Hydro filed certain replacement materials for Volume I of the Rate Design Application, including a revised Application for the first step of the Residential and

General Service portion of its long-term Rate Design Program and a new Industrial Rate Proposal. In response to this filing, the Industrial Users filed a request that the Rate Design Application be adjourned. After Argument was heard, the public hearing of the Rate Design Application was adjourned until the late Fall of 1991. However, the Commission determined that the issues of Distribution Extension Policy and the Residential Space Heating Connection Charge should proceed.

The hearing on these two issues was held on June 10-11, 1991, with argument on July 5, 1991.

2.0 DISTRIBUTION EXTENSION POLICY

The B.C. Hydro Application for changes to its Distribution Extension Policy, filed as Volume II of the Rate Design Application (Exhibit 2), addressed the following items:

- (i) Residential Single Phase Public Property Extension
- (ii) Residential Single Phase Private Property Extension
- (iii) General, Irrigation, Residential Three Phase and Single Phase Farm Public Property Extensions
- (iv) General, Irrigation, Residential Three Phase and Single Phase Farm Private Property Extensions
- (v) Residential Subdivision Extensions
- (vi) General Subdivision Extensions
- (vii) Uneconomic Extension Allowance
- (viii) Residential (Single Phase Secondary) Service Connections
- (ix) General, Irrigation and Residential Three Phase Service Connections
- (x) Service Connection Heavy-Up (Load Added)
- (xi) Reconnections
- (xii) Additional Meters
- (xiii) Returned Cheque Charge

As evidenced in the hearing, only three of the above items were contentious and the subject of reconsideration by the Commission. Those are items (v), (viii) and (xi).

Since it had requested the reconsideration of the Commission's Decision, and in response to B.C. Hydro's request, CAC provided a list of the issues it expected to raise, as follows:

1. The rationale for using "full costs" in the tariff rather than a specific amount;
2. The basis for B.C. Hydro's decision to adopt this approach for distribution extension and service connection charges and not for other rates which are based on costs;
3. An explanation of the basis for the specific charges so that a customer may determine the appropriateness or correctness of the rate charged;
4. The criteria for establishing what is a "minimum" charge and the criteria used to determine when more than the "minimum" or full cost should be charged, as well as the means used to notify the customers of these criteria; and
5. Justification of the rationale for establishing a reconnection charge at full cost.

Mr. Campbell of C.H.E.E.P.P.S. also expressed concern regarding the issue of "full costs" in the tariff.

The Urban Development Institute ("UDI") took issue with B.C. Hydro's claim that the new extension policy for residential subdivisions resulted in an additional cost to developers of approximately \$250 per lot. This organization also contended that B.C. Hydro's contributions to such extensions should be increased in urban areas where the undergrounding of utility services was a municipal requirement.

Mr. Sandborn, Counsel for the Peace Valley Environmental Association, asked for explanations concerning the replacement of the former Rural Electrification Assistance policy with the Uneconomic Extension Allowance under the new Distribution Extension Policy. Other intervenors were concerned primarily with the size of the increase in the reconnection charge.

2.1 "Full Cost" in the Tariff

2.1.1 Examination of Issues

B.C. Hydro and Power Authority Electric Tariff, page B-4, states: "B.C. Hydro serves all residential customers solely in accordance with the Electric Tariff, including Terms and Conditions and Rates Schedules." There are similar requirements in the General and Irrigation sections. One of the general business principles followed by B.C. Hydro and underlying its Distribution Extension Policy Application, was that standard charges for services should be moved to full cost recovery. As part of this change, B.C. Hydro stated (Response to CAC Question #12, Exhibit 3) that the term full cost was proposed for standard charges included in the tariff, instead of the actual dollar amount, in order to reduce the administrative costs of applying to the Commission for approval of periodic updates. A witness for B.C. Hydro, Mr. Fussell, explained that, once the tariff specified full cost, B.C. Hydro could make future changes without any approval from the Commission, although the latter would be aware of the changes being made and could review them. B.C. Hydro would review the charges annually but would not necessarily change them. Mr. Fussell felt the administrative costs could be very substantial if an application and a hearing were required (T. 26-28).

Mr. Fussell agreed with Mr. Gathercole that where a rate increase has a potentially significant impact on a customer, the customer should have a prior opportunity to comment on the appropriateness of that increase before it came into effect. He was not aware whether B.C. Hydro had considered advising customers of any changes, but didn't see why it couldn't be done (T. 29).

On behalf of B.C. Hydro Mr. Carpenter argued as follows (T. 333):

"Under the Act if they apply to change a rate a hearing must be held. If a hearing has to be held public notice has to be sent. It doesn't necessarily have to be a public hearing, but all those steps take place, all those steps result in the incurrence of costs and with respect to the matters that are involved here. B.C. Hydro is asking today that the principle be put in place from where those costs are derived from."

In response to the Chairman's question as to how the customer would be given the opportunity to comment on the change, Mr. Carpenter stated (T. 335):

" -- there may be ways to address that concern in that three months prior to B.C. Hydro automatically changing those, and prior to it filing with the Commission those updates which it proposes to do, perhaps in the billing circulars, that information could be laid out and say, 'As on April 1st, 1991, we propose to move the charges for these services to such and such an amount.' Just as any one of a number of institutions do.

I don't see, with respect to the other parties, that having to go through a hearing process, is going to raise the level of debate or raise the level of customer's awareness any further. It seems to me an awful lot of expense to go through, and I appreciate the fact that this is a knowledgeable group, but to inform people where they just -- we all know that they just don't show up. We have sophisticated parties that show up and that will be aware of these things, but to allow individual customers to make comments on those things, I submit that the process is not a hearing process as it's always been held before. There may be another method and B.C. Hydro is certainly willing to suggest ways that that can be done. And one of those may be the billing stuffers."

Mr. Gathercole agreed that a hearing need not be a public hearing, but felt that some form of public process is required (T. 358). He also argued that B.C. Hydro was asking the Commission to give pre-approval to future rate increases and stated specific concerns, including his submission that it would be contrary to Section 67 of the Utilities Commission Act.

In reply, Mr. Carpenter stated (T. 438-439) that the change "in no way ousts any jurisdiction that the Commission has to review those charges". It has the jurisdiction under Section 64 and maintains that jurisdiction. He also noted that, while Section 67 requires that rate schedules shall not be amended without the Commission's consent, the definition of a rate includes a rule, practice, measurement, etc., and stated that's all that this is.

2.1.2 Conclusion

The Commission believes that to adopt the full cost wording in the tariff would have the indirect effect of repealing the mandatory language of Section 67 of the Act, which section clearly does not contemplate a pre-approval of monetary increases in rates. In considering the nature of the specification of charges in tariffs, the Commission has allowed various methods of representing such charges. In the case of discrete costs the actual dollar value is common.

In some cases the actual charge will depend on circumstances at the site. For example, the calculation of extension costs or utility contributions to new equipment are generally based on a formula approved by the Commission. Once approved, the utility undertakes its business in conformity with the approved method, using actual costs and actual consumer rates at the time of extension or application.

An extreme case of not specifying a charge accurately would be a delegation of the determination of the charge to the utility under vague criteria or no criteria. The Commission does not believe it can delegate its responsibility to represent the public interest for charges related to monopoly services. Mr. Gathercole's argument is that the use of full cost is so vague as to be such a delegation.

The Commission recognizes that the proposals to move to a system average full cost approach for standard charges represent a continuing transition over time and an ongoing rationalization of operating practices. B.C. Hydro has chosen in the application to limit changes to those standard charges which are now in the tariff. The Commission views these charges as significant and visible, and which, because of their frequency of application, tend to be the subject of potential customer complaint or misunderstanding.

The Commission is aware that there are certain other standard charges for service which are not currently tariff items but rather are specified in B.C. Hydro's Customer Service Instructions. The Commission, in reflecting a policy approach regarding the stipulation of standard tariff charges in dollar amounts, applies this policy only to the specific items under review in this hearing.

While the Commission accepts the philosophy of moving standard charges to full cost, it does not agree that the term full cost should replace specific dollar amounts in the tariff for these significant cost items. Accordingly, those standard charges which are currently in the tariff can only be amended with Commission approval. By this decision, the Commission affirms that such standard tariff charges must be reflected in dollar amounts. The Commission shares the concerns of B.C. Hydro regarding administrative costs and those of the intervenors regarding appropriate advance notice of changes in rates. Accordingly, the Commission invites B.C. Hydro to make suggestions on methods to satisfy both of these concerns.

2.2 Residential Subdivision Extensions

2.2.1 Added Costs to Developers

B.C. Hydro's approved Application (now under reconsideration), provides the subdivider with an allowance equivalent to the cost of all overhead transformers and secondary lines required to serve the subdivision. B.C. Hydro estimated that the impact of this new policy on a subdivider's costs would be an average increase of \$250 per lot for standard lots, assuming fill-in within the first year (Exhibit 2, BCUC Question 97, page 13). The UDI questioned the reasonableness of B.C. Hydro's estimate. Referring to Exhibit 6, the UDI supported the change in principle from the previous rebate system to an up-front contribution by B.C. Hydro, but did not share B.C. Hydro's conclusions respecting the \$250 impact on a subdivider's costs.

Exhibit 6 also contains an updated submission from the UDI which highlights its concerns on the matter of subdivision extensions. The information suggests that the \$250 estimated by B.C. Hydro is substantially at variance with the actual experience of the UDI members since July 1, 1990. The following excerpt from Exhibit 6 refers:

"In our May 30, 1990 brief, we expressed concern about the estimated average \$250.00 increased front end cost to the developer (on behalf of the ultimate homeowner), due to the new policies.

To date we have data on the projects noted below that have proceeded since July 1, 1990, some of which appear to have experienced increased costs well in excess of \$250.00 per lot, which raises serious concerns about the cost implications of the new extension policies."

The UDI requested that B.C. Hydro revert to its previous subdivision extension policy with respect to pricing and structure until the UDI receives, reviews and comments on B.C. Hydro's background estimates, assumptions and data regarding the new policy.

The UDI also proposed a phase-in period for the proposed policy, should it be accepted by the Commission. They were unable to provide any insight as to what aspect of the policy might be phased-in (T. 87). The contention was that until B.C. Hydro's methodology for calculating the costs was known, the UDI could not make meaningful suggestions regarding a phase-in period.

In response to the above observation of the UDI, which precipitated an information request (T. 87-88), B.C. Hydro developed Exhibit 15 which explained the major differences between the new and the old policies as follows:

"B.C. Hydro's previous residential extension subdivision policy was:

- (a) The subdivider paid the estimated cost of providing all facilities. These included primary line transformers and secondary lines required to serve the subdivision.
- (b) B.C. Hydro would rebate at the rate of \$1,000/lot for each lot taking service during the first year and \$275 for each lot taking service in the second, third or fourth years. The maximum amount rebated for an underground subdivision would be the lesser of \$1,000/lot or the cost of providing equivalent overhead primary lines, poles,

transformers and secondary lines required to serve the subdivision. The maximum amount for an overhead subdivision would be the lesser of a \$1,000/lot or the cost of providing the facilities.

In B.C. Hydro's present policy which is being reviewed during the hearing, B.C. Hydro gives the subdivider the estimated cost of providing overhead transformers and secondary lines required to serve the subdivision. All other costs are borne by the subdivider."

In Exhibit 15, B.C. Hydro did not provide a calculation of the increased cost to developers and advised that the analysis was not available. Rather, the utility provided a tabulation which compared the estimated costs of both the underground electrical facilities and the equivalent overhead facilities for 12 recent subdivisions in the Lower Mainland, under the old extension policy as well as the new extension policy. The analysis showed an average incremental cost to the developer of \$232 per lot under the new policy.

The average incremental cost to the developer of \$232 per lot compares favourably with the \$250 figure in B.C. Hydro's Application. In questioning this estimated figure, the UDI did not present a strong argument to support its position, or any substantial information to challenge the figure presented by B.C. Hydro.

2.2.2 Conclusion

In consideration of all the evidence presented, the Commission reaffirms B.C. Hydro's new structure for Residential Subdivision Extension Policy as approved under Commission Order No. G-46-90. The Commission believes that the new policy is simple and straight-forward and that it will substantially reduce the administration costs associated with the old policy. Even though evidence indicates the probability of increased costs to the subdivider, the Commission recognizes that the savings in expenditure on the part of B.C. Hydro are offset somewhat by the increased allowance the utility allocates to residential extensions (T. 20).

The Commission has also considered the idea advanced by the UDI that the new subdivision extension policy be phased-in over a number of years (T. 85). This proposal is not accepted by the Commission for the following reasons:

- The new policy requires less up-front capital from the developer than that required under the previous policy, and therefore will serve to lessen the impact of any premium eventually paid.
- The B.C. Hydro estimate of an average \$232 per lot increase in cost under the new policy is not considered unduly onerous in terms of the overall subdivision costs.
- The intervenors had no suggestions as to how such a proposal might be implemented.

Notwithstanding the above determination, the Commission recognizes that the UDI has raised an important concern regarding subdivision costs to developers. Since questions will undoubtedly linger as to the true financial impact of the new policy, the Commission encourages B.C Hydro and the UDI to collaborate on a method of on-going data collection and monitoring of these subdivision extension costs. The Commission is to be apprised of the development and progress of any monitoring activity on this matter.

With respect to B.C. Hydro's contribution to subdivision extension in urban areas where a municipality has mandated that electrical services be placed underground, the UDI requested (Exhibit 6) that such contributions be increased to reflect this requirement. The UDI further proposed that B.C. Hydro could consider "a two-tier rate structure differentiating between urban and rural customers utilizing different distribution systems".

The Commission considers that for reasons of equity, the current B.C. Hydro allowance which is calculated only on an overhead extension should not be changed. The Commission believes that the additional costs incurred by developers who must install underground services should appropriately be borne by the recipients of the more aesthetically pleasing and physically secure facilities.

2.3 Residential (Single Phase Secondary) Service Connection

B.C. Hydro's general philosophy is to collect the full cost from customers who use dedicated services (T. 17). B.C. Hydro's tariff proposal is to phase-in increases to this charge up to the full cost of the service over a period of six years, so as to alleviate the impact on residential construction costs. The general concept of this charge increasing eventually to the full cost of the service was not contested at the hearing. The main point at

issue on this item was the inclusion of the term full cost in the tariff rather than the dollar value of the charge. The subject of full cost as a tariff item was addressed in Section 2.1 of this Decision.

The Commission reaffirms the service connection charges as stipulated in the Application, phased-in over six years. However, the term full cost after year six will be omitted from the tariff. Therefore, the Commission approves the collection of the full cost based on the methodology of its calculation (including phase-in) as reviewed and approved by the Commission. No other method of calculation is to be used by B.C. Hydro without approval of the Commission. The rate to be charged on April 1, 1996 will be the subject of a separate application to the Commission at the appropriate time.

2.4 Reconnections

2.4.1 Examination of Issues

At present, B.C. Hydro collects a minimum charge of \$64 for a service reconnection. The charge represents B.C. Hydro's estimate of the average cost of this service as of May 1, 1990 (Exhibit 3, BCUC Question 97, page 19) and was approved by the Commission, along with other changes in Standard Tariff Charges, under Order No. G-46-90. The minimum charge had previously been set at \$10.

Intervenors questioned the fairness of an increase of 540 percent in a single step and also questioned the determination of the cost. Under cross-examination by Mr. Gathercole, B.C. Hydro acknowledged that the total procedure of disconnection and reconnection incurred an actual average cost of \$128.06 (T. 33). However, their present policy is to charge a minimum of \$64 for a reconnection.

The average costs leading up to a disconnection notice and actual disconnection were given as follows:

Office Action	\$ 67.22
Field Action	<u>60.84</u>
Total	\$128.06

Mr. Gathercole questioned B.C. Hydro's motive in raising the reconnection fee from \$10 to \$64 in one step (T. 38). He questioned whether there was any punitive intent against delinquent customers and explored the procedure for handling accounts in arrears. B.C. Hydro provided information that customers were classified according to their payment history; namely prompt, standard and poor (or green card). Each category is given a different notice period prior to a notice of disconnection. All notices do advise customers of the cost of reconnection should that be necessary.

B.C. Hydro justified the increase to recover full cost in one step on the basis that the account arrears resulted from a discretionary action on the part of the customer. Mr. Gathercole contended in argument that in many cases, where people were in reduced financial circumstances, the reasons for the non-payment of the account may not be discretionary. He argued that, in fairness, the increase should be phased-in as B.C. Hydro chose to do in other situations such as the service connection charge (T. 356).

Mr. Gathercole asked about B.C. Hydro policy in unusual circumstances involving people with health problems and similar situations. The witness for B.C. Hydro replied that he did not know but would check on it (T. 52). Later, in response to a question from Mr. Tovoski, the same witness replied that, in cases of real financial hardship, there were other avenues open to the customer through assistance from appropriate government agencies or by arrangements to pay the account arrears over time (T. 96).

In response to BCUC Information Request No. 99, B.C. Hydro advised that it was collecting the reconnection fee from customers who were prepared to pay the outstanding balance once B.C. Hydro personnel arrived at their premises to disconnect service. The utility has since stopped the practice since it was not incorporated in the filed tariffs. In testimony (T. 43), B.C. Hydro advised that a new tariff filing with this provision will be submitted to the Commission once the details have been worked out.

Mr. Meade (T. 66) also pursued the matter of the \$64 reconnection charge with B.C. Hydro and the perception that this charge could be applied for reasons of deterrence. B.C. Hydro countered that the utility is only interested in recovering the true costs of the reconnection action. Mr. Tovoski (T. 99) also addressed the \$64 connection charge and

proposed that B.C. Hydro focus more on communicating with delinquent customers, rather than use the disconnection weapon.

2.4.2 Conclusion

The Commission finds that the office charges leading up to a disconnection notice are common to all customers whose accounts become delinquent. These charges are recovered in the normal costs of doing business and, to some extent, from the interest charges added to accounts in arrears. On the other hand, the field costs arising from a B.C. Hydro crew visiting the customer's premises are directly attributable to the customer.

In keeping with the Commission's acceptance of the principle of full cost recovery, the current charge of \$64 for reconnection of service is confirmed. This amount covers the field expenses involved in two trips to the customer's premises, one for disconnection and the other for reconnection. It is noted that this is the charge for work performed during B.C. Hydro's regular working hours. Where work is performed outside regular working hours, B.C. Hydro is entitled to reimbursement of the additional costs incurred.

The Commission finds that in all cases it is preferable to refer to these standard charges in full cost numerical values. Therefore, the standard charges for overtime and call-out (Exhibit 2, BCUC Question 102) are also required to be specified in the tariff.

In those cases where B.C. Hydro service personnel visit a customer in response to a disconnect notice, and are paid the full amount of the outstanding account, B.C. Hydro is entitled to recover one half the field expense which would have been incurred had both a disconnection and reconnection taken place. **Accordingly, a standard charge of \$32 may be levied after Commission approval of a filed tariff.**

B.C. Hydro is also required to file amendments to Electric Tariff pages B 5 and B 19-1, removing the words "or by B.C. Hydro" which appear in the first sentence of each page. Other changes to Standard Tariff Charges covered by Commission Order No. G-46-90 stand as approved.

3.0 RESIDENTIAL SPACE HEATING CONNECTION CHARGE

3.1 Price Signals

Correct price signals are an important energy policy consideration for British Columbia both to encourage consumers to choose the most appropriate fuel for each end use and to encourage energy efficiency. The connection charge for electric space heating is a pricing component that relates to what is called the fuel choice issue.

The Commission is guided in its consideration of electricity pricing by Special Direction #3 which requires the setting of rates for B.C. Hydro to encourage conservation and the efficient use of electricity (T. 290). The Special Direction also requires, in part, that rate increases be smooth, stable and predictable as well as fair, just and reasonable.

B.C. Hydro made it plain that it views the proposed connection charge as a temporary measure. The company witness went so far as to characterize the charge as, "an anomaly in our rates" When questioned by the Commission on the relationship between the connection charge and the rate restructuring, Mr. Bond stated (T. 293):

"If the rates were in fact to go up at 7 percent the need for this sort of intervention would be lessened over time, and hopefully we would get rid of it more quickly."

B.C. Hydro expressed a concern that its customers should be protected from the harm that could be incurred if new installations of electric space heat are made without adequate knowledge of the impact of its proposed rate restructuring (T. 295). The Commission believes that, in addition to the public information opportunity afforded by the Rate Design Hearing, B.C. Hydro has a further opportunity to reduce this risk during the interval between this decision and the rate restructuring decision by utilizing its public information resources.

3.2 Correcting Market Failure

Mr. Bond made the following statement that describes the Applicant's motivation in proposing the connection charge (T.146-147):

"We believe that some segments of the new residential construction market are receiving ineffective price signals with regard to the choice between electric space heating and natural gas space heating. In areas served with natural gas, the choice of natural gas for heating will result not only in lower annual energy costs, but also in lower life cycle costs."

A study of the relative costs to the consumer over the life cycle of conventional electric and natural gas space heating services was prepared by B.C. Hydro to support its position (Exhibit 15). The study assumed that both energy forms will increase in price at the rate of inflation, and that there was no difference in repair and maintenance costs. After taking into account the higher costs of gas heating installations, the analyses indicated that, for all housing types over a 30-year time cycle, significant energy savings and net savings accrued to the consumer, by using natural gas. Mr. Holtzman of the B.C. Electrical Association was concerned (T. 233) that B.C. Hydro had not accurately estimated the cost of hydronic (hot water) heating with natural gas for apartments. He suggested that B.C. Hydro had apparently not considered the relative benefits of electric space heat in terms of the amount of living space saved and flexibility of design (T. 306).

In its Application, B.C. Hydro identified the builder/developer of residential property as the decision maker with regard to fuel choice for space heating. Mr. Bond testified that a significant portion of the townhouse and apartment markets is still being built using electricity for space heating (T. 151). He referred to the results of a June 1990 survey (Exhibit 1, Tab 5, page 1) which showed the percentage of new residences in gas service areas using electricity for space heating as follows:

- single family homes, approximately 5 percent
- row houses, 35-40 percent
- apartments, 85-90 percent

He went on to say that an updated study in May of 1991 indicated that, if anything, there was even more electric heating going in today than there was a year ago (T. 151). In response to a question from B.C. Hydro counsel as to why this should be so, Mr. Bond replied (T. 152):

"In many cases the decision maker is unaware of the cost advantages of natural gas heating. The decision maker perceives that natural gas heating is too expensive. The decision maker is not involved in paying the energy bills but is directly impacted by constructions costs, and finally, the customer preference in some cases is for electricity or aversion to natural gas.

We feel that the first three of these reasons indicated that there is an ineffective price signal in that market place and that's the reason we're applying for this connection charge."

The proximate target of the connection charge price signal is not the ultimate end-user, but the builder/developer. It is the latter who pays the connection charge in the first instance, and who attempts to recover this cost in the selling price of the housing unit to the ultimate user. B.C. Hydro intends to monitor builder/developer response to the connection charge and would consider the removal of the charge if rate restructuring can demonstrate that it is an effective replacement (T. 300). The target of the rate restructuring price signal is the ultimate end-user and B.C. Hydro would be relying upon the demands of customers to affect the fuel choice decisions of builders/developers.

In its Application, B.C. Hydro identified the market penetration of electric space heating in single family dwellings located in gas service areas as approximately 5 percent. It is clear that no market failure exists in this segment of the market. However, B.C. Hydro considers it a matter of equity to include this segment of the market in its application of the connection charge (T. 153). B.C. Hydro illustrated this by referring to housing developments that include both single family housing and row or town houses.

Several intervenors characterized B.C. Hydro's attempt to correct market failure as punitive pricing. Mr. Sashaw of the Canadian Home Builders' Association of B.C. said that the connection charge would have an adverse impact upon the affordability of residential housing (T. 196). Mr. Hayes of the Rental Housing Council of B.C. was very concerned about the impact of the proposed charge on the residential rental market (T. 219). The

Commission believes that, in attempting to correct market failure, B.C. Hydro should not force the fuel choice; in fairness that choice properly remains the prerogative of the end-user in a well informed market.

3.3 Fuel Substitution and Environmental Concerns

Both Ms. Vance, counsel for CAC, and Mr. Sandborn, Counsel for the Peace Valley Environmental Association, questioned Mr. Bond with regard to the potential environmental impacts of burning natural gas. In relation to the Applicant's proposed electric space heating charges, the market intervention, if successful, would increase natural gas consumption by 3 petajoules per year by 1996. Both, in final argument, strenuously urged the Commission to obtain more information on the questions of carbon dioxide emissions and global warming which may be exacerbated by actions to promote increased natural gas usage. Mr. Sandborn suggested that, in its decision, the Commission should consider the study being done by the Ministry of Energy, Mines and Petroleum Resources that is intended to compare the environmental impacts of natural gas as opposed to electricity (T. 407). That study is not now in evidence and the Commission does not know if it will be completed in time for the Rate Design Hearing. The Commission wishes to note these concerns and lend its support to the need to conclude the study by the Ministry as soon as possible.

Mr. Bond on behalf of B.C. Hydro said that it could not determine a consistent match of space heating demand with Burrard Thermal Plant ("Burrard") supply but to the extent that electric space heating energy is generated by Burrard. He commented that (T. 168):

"...it's much more effective, both from an environmental and a cost point of view to burn the natural gas in the home rather than to burn it in a generating plant at perhaps 35 per cent efficiency and then use the electricity to heat the home."

With reference to B.C. Hydro's "Electricity Plan 1991 Update March 1991", at pages 22 and 23 (T. 169), the Commission recognizes that Burrard represents a significant supply resource for the next 15 years. The resource mix does change over the forecast period with a dramatic increase in private sector generation. In the short-run some connection can be

drawn between electric space heat and thermal generation. However, until the generation sources of the private sector from potential power producers are better known, it is not certain if a long-run connection can be made.

To approve the Application, as submitted, would be tantamount to supporting a policy of aggressive fuel substitution from electricity to another fuel. The application of the connection charge is not a question of the desirability of fuel substitution, but rather a consideration of the most desirable way of sending a price signal to the market regarding the underlying costs of providing electric space heating service.

3.4 Cost Based Rates

3.4.1 Long-Run Incremental Cost

In its Application, B.C. Hydro tabulated estimates of the present value of its long-run incremental cost ("LRIC") of serving a new residential space heating customer. If distribution, transmission and generation are considered, the cost to serve a single family dwelling was estimated at \$9,902, the cost to serve a row house at \$8,308 and an apartment at \$6,126 (Exhibit 1, Tab 5, page 3). In the same tabulation, B.C. Hydro derived the differential between its LRIC and the estimated present value of its incremental revenue from the electric space heating service. The revenue estimate was based upon the assumption that its proposed April 1, 1991 rate increased at the rate of inflation (T. 256). Both computations were made assuming an 8 percent discount rate and a 30-year time frame. The resulting differential was \$1,184 for single family houses, \$1,014 for row housing units and \$663 for apartment units. These amounts were rounded downwards to \$1,150, \$1,000 and \$650 in arriving at the proposed space heating connection charge.

3.4.2 "Full Cost" (Variable Distribution Cost)

No attempt was made by B.C. Hydro to justify a space heating connection charge based solely upon the current total costs, that is variable costs plus a portion of the fixed cost of connecting a new customer. The full cost does not include, for example, cost of transformer, cost of pole, cost of secondary conductor, cost of primary conductor or

substation cost. These fixed cost components would be shared amongst several customers. B.C. Hydro chose to charge only the variable distribution costs in its connection charges and characterized these costs as full cost.

B.C. Hydro explained (T. 279 and Exhibit 2), that its full cost of connecting a single family dwelling space heating service is \$127 greater than the full costs of \$267 for a basic service connection, \$130 greater for a row house and no greater for an apartment unit. This is primarily the cost of upgrading from a 100 amp service to a 200 amp service. A larger system transformer, conductor and extra breakers must be installed (Exhibit 2). This added cost is \$127 for a single family dwelling. So, if only the costs directly attributable to the space heating service were considered, the total cost of connection would be \$267 plus \$127, or approximately \$400.

3.5 Conclusion

The Commission finds that the space heating connection charge as applied for is neither justified nor desirable. The Commission agrees, however, that a price signal regarding the underlying cost of space heating service is needed at this time but concludes that the magnitude of the proposed charge is such that it is punitive. The Commission has accepted B.C. Hydro's concept of full cost in the standard charges for basic connection service and other services and sees no compelling reason to adopt a different concept of full cost for the electric space heating service.

The proposed increases in rates, due to their magnitude and temporary nature (T. 290-295), cannot be considered to be smooth or predictable. The latter characteristic of rates is lacking in that potential increases in charges for use (rate design) may well render these proposed charges prematurely redundant. The exemption of Quality Plus homes or those heated with a heat pump is considered to be unduly discriminatory or at least to be conferring an undue preference on a segment of the market. The Commission believes that the availability of natural gas is independent of the fact that electric space heating service is subsidized by other revenue classes (T. 157). In addition, while the Commission understands the charge is proposed for single family homes for reasons of equity alone, it is seriously concerned that the charge would be imposed on a large market segment where market failure is not occurring.

The basis of the space heating connection charge should be recovery of full costs and, as such, should be applicable in all areas within the B.C. Hydro service territory, the availability of natural gas notwithstanding. The definition of electric space heating for purposes of the connection charge (T. 148) as space heating loads greater than 2,000 watts for a single family dwelling, 1,500 watts for a row house and 1,000 watts for an apartment, obviates the need for specific exemptions of Quality Plus homes and homes with heat pumps. B.C. Hydro has established an energy efficiency target for space heating in its identification of the specific wattages, thus enabling not only heat pumps and Quality Plus homes to meet the target, but other energy efficiency technologies as well.

The Commission concludes that the matter of fuel choice for space heating is best accomplished through a combination of initiatives directed toward customers. The price signal information for the space heating end-use is best delivered in two parts, a connection charge and a charge for usage. Charge for usage is the subject of the rate restructuring hearing. Other important information components concerning life cycle cost comparisons, supply-side efficiency and environmental impacts of fuel choice are appropriately within the consumer education purpose of Power Smart. The Quality Plus homes program is another complementary initiative as is the effort that B.C. Hydro has invested, together with the Ministry, in proposed changes to the B.C. Building Code. In fact, lack of relevant information, incentives and supportive building standards are probably the major contributors to what B.C. Hydro describes as market failure.

For the reasons given, the Commission rejects the Application for electric space heating connection charges. If B.C. Hydro wishes to pursue an up-front charge in addition to or in lieu of recovery in rates, then the Commission believes that such an application should be non-discriminatory and compatible with a full cost approach. Inasmuch as the Application contained exclusions, the Commission, at this time, is unable to approve any alternate charges without providing for appropriate evidence and notice to those who may be adversely affected.

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DATED at the City of Vancouver, in the Province of British Columbia, this day of
July, 1991.

John G. McIntyre, Chairman

W. M. Swanson, Q.C., Commissioner

Ken L. Hall, Commissioner

IN THE MATTER OF the Utilities Commission
Act, S.B.C. 1980, c. 60, as amended

and

IN THE MATTER OF Applications by
British Columbia Hydro and Power Authority

BEFORE:	J.G. McIntyre,)	
	Chairman;)	
	W.M. Swanson, Q.C.)	July 31, 1991
	Commissioner; and)	
	K.L. Hall,)	
	Commissioner)	

O R D E R

WHEREAS:

- A. By Application dated April 10, 1990, amended June 7, 1990, British Columbia Hydro and Power Authority ("B.C. Hydro") applied to the Commission for amendments to its Electric Tariff respecting Terms and Conditions, Standard Charges for Service, and Definitions relating to the Distribution Extension and Service Connection Policies ("the Amendments"); and
- B. By Commission Order No. G-46-90 dated June 15, 1990; the Commission approved the said Amendments; and
- C. By Application made July 19, 1990 the British Columbia Public Interest Advocacy Centre [representing the Consumers' Association of Canada (B.C. Branch), B.C. Old Age Pensioners' Organization, Council of Senior Citizens' Organizations, Federated Anti-Poverty Groups of B.C. and the Senior Citizens' Association] requested the Commission to reconsider and rescind the said Order on the grounds that inadequate notice was given of the hearing of the Application, and further to direct the holding of a public hearing; and
- D. Commission Order No. G-83-90 required that the fundamental changes proposed in B.C. Hydro's April 10 and June 7, 1990 Application to amend its Distribution Extension and Service Connection Policies be heard in conjunction with its Rate Design Application; and

- E. On January 15, 1991, B.C. Hydro filed with the Commission an Application for Rate Design of its Electric Tariffs, as required by Commission Decision and Order No. G-31-90 dated April 30, 1990 and Order No. G-95-90 dated November 30, 1990; and
- F. As part of its Rate Design Application, B.C. Hydro asked for an Order to apply a connection charge to new installations of residential electric space heating; and
- G. After argument on a Request for Adjournment was heard on June 5, 1991, the Commission determined that the issues of Distribution Extension Policy and the Residential Space Heating Connection Charge should proceed; and
- H. The Commission has considered the issues and evidence adduced, all as set forth in the Decision accompanying this Order.

NOW THEREFORE the Commission, for the reasons stated in the Decision, orders as follows:

1. That, except as stated in the Reasons for Decision, the Amendments approved by Order No. G-46-90 be reaffirmed.
2. B.C. Hydro is ordered to file revisions to its electric tariff as required in the Reasons for Decision to:
 - a. specify the standard charges for Overtime and Callout Reconnections.
 - b. incorporate a standard charge of \$32 in those cases where B.C. Hydro service personnel visit a customer in response to a disconnect notice, and are paid the full amount of the outstanding account.
 - c. to remove the words "or by B.C Hydro" which appear in the first sentence of pages B 5 and B 19-1.
3. That the Application for Residential Electric Space Heating Connection Charges be rejected.

DATED at the City of Vancouver, in the Province of British Columbia, this day of July, 1991.

BY ORDER

John G. McIntyre
Chairman

/ssc

IN THE MATTER OF
the Utilities Commission Act,
S.B.C. 1980, c. 60, as amended

and

IN THE MATTER OF
Applications by
British Columbia Hydro and Power Authority
Distribution Extension Policy
Residential Electric Space Heating Connection Charge

DECISION

July 31, 1991

Before:

J.G. McIntyre, Chairman
W.M. Swanson, Q.C., Commissioner
K.L. Hall, Commissioner

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ORDER NO. G-75-91

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D. ERICKSON M. ENSER D. EATON	Urban Development Institute, Pacific Region
B. HOLTZMAN K. NEIL	B.C. Electrical Association
S. MEADE	Himself
R. TOVOSKI	Himself
<hr/>	
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ALLWEST COURT REPORTERS LTD.	Court Reporters & Hearing Officer

LIST OF EXHIBITS

	<u>Exhibit No.</u>
British Columbia Hydro and Power Authority, January 1991 Rate Design Application, Volume I	1
British Columbia Hydro and Power Authority, January 1991 Rate Design Application, Volume II	2
British Columbia Hydro and Power Authority, January 1991 Rate Design Application, Volume III	3
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