

## **2 The Heritage Contract Proposal**

### **2.1 *The Heritage Contract Proposal – What It Is***

#### 2.1.1 Introduction

This section describes the key elements of the Heritage Contract proposal, and how they would be implemented if accepted by government. It takes a functional rather than organizational approach.

BC Hydro currently owns and operates the Heritage Resources, and sells their electricity output domestically through the coordinated operation of the generation, transmission, and distribution lines of business respectively (BCH Generation, BCH Transmission and BCH Distribution). Within BCH Transmission, Grid Operations (Grid Ops) operates the transmission system separately from the rest of BC Hydro. Powerex Corp (Powerex), a BC Hydro subsidiary, markets surplus BC Hydro electricity and engages in energy trade outside the province.

This organizational structure may not remain constant over the term of the Heritage Contract. For example, the function of Grid Ops will be taken over by a new independent corporation called British Columbia Transmission Corporation (BC Transmission Corp). The Heritage Contract proposal is intended to identify the functional approach that BC Hydro will maintain over the term of the Heritage Contract while allowing enough organizational flexibility to adapt to evolving conditions. The only exception to this approach occurs in the discussion of the Heritage Contract and the Heritage Contract itself (attached at Appendix C), which necessarily refers to the respective rights and obligations of BCH Generation and BCH Distribution to be consistent with the Energy Plan. Additionally Powerex is also specifically mentioned. Nevertheless, BC Hydro believes that the Heritage Contract proposal is sufficiently robust that it can be adapted to any alternative organizational structure that might develop over the term of the Heritage Contract.

### 2.1.2 Key Components of the Heritage Contract Proposal

The proposal contains three distinct components. First, it establishes a Heritage Contract between BCH Generation and BCH Distribution that defines the amount of electricity to be supplied by BCH Generation and the payment obligations of BCH Distribution. BCH Distribution's payment obligations under the Heritage Contract would factor into future BC Hydro revenue requirement processes.

Second, the proposal includes a method for defining the computation of net income from trading activities (Trade Income). This definition provides a clear distinction between purchase and sale transactions required for domestic purposes, and those made to support trading activities. Costs and revenues are allocated so as to properly identify only the latter as Trade Income. Along with this definition of Trade Income, BC Hydro then proposes a sharing formula to allocate a portion of Trade Income for the benefit of the Heritage Beneficiaries.

Finally, the proposal recommends establishing a deferral account designed to mitigate the volatility of BC Hydro's revenue requirements that may arise from its payment obligations under the Heritage Contract or from its receipt of Trade Income (Heritage Deferral Account). The Heritage Deferral Account would replace the existing Rate Stabilization Account (RSA).

Each of these components is interdependent, and changes to one will require changes to others. Thus, the components of the proposal ought to be understood as a comprehensive package. The key components are described in further detail below, and in Chapter 3 of this volume.

### 2.1.3 Heritage Contract

The Heritage Contract defines the electricity supply obligations of BCH Generation and the payment obligations of BCH Distribution in respect of the supplied electricity. Under this contract, the full capacity of the Heritage Resources will be provided to BCH Distribution on a priority basis. BCH Generation will arrange for the marketing of any surplus capability but at all times will ensure priority is given to the needs of BCH Distribution.

The Contract will allow energy deliveries to be shaped, within the capability of the Heritage Resources, in response to BCH Distribution's changing needs. The Heritage Contract will also allow coordination with other resources under BC Hydro's control. The capacity of the Heritage Resources may be utilised to facilitate domestic energy deliveries or to provide ancillary service requirements. These provisions will ensure that the Heritage Resources can be utilized to maximize overall benefits for the Heritage Beneficiaries over time.

The energy delivery obligation under the Heritage Contract is set at a maximum of 49,000 GWh per year (Heritage Energy). This amount is representative of the reliable capability of the Heritage Resources and has been derived by examining their historical and future expected use under average water conditions. Heritage Energy will be provided at the various points of interconnection of the Heritage Resources with the BC Hydro transmission grid or at points of interconnection with other utilities.

The actual capacity, ancillary service and energy supply from the Heritage Resources (collectively, the Heritage Electricity) will be provided on the basis of the embedded costs of the Heritage Resources, including actual fuel or purchase costs required to supply Heritage Electricity. More specifically, the Heritage Contract will establish a payment obligation based on actual costs (the Heritage Payment Obligation) for BCH Distribution comprised of the following components:

cost of energy: the cost of water fees and energy purchases (gas and electricity) required to supply Heritage Electricity;

operating costs: all costs of operating and maintaining the Heritage Resources, including an allocation of corporate costs;

asset related expenses: the costs of owning the Heritage Resources including depreciation, interest, finance charges and other asset related expenses;

generation related transmission assets: all costs or payments related to any generation-related transmission required by the Heritage Resources; and

return on equity: the appropriate return on equity, currently based on Special Direction #8, on investments in Heritage Resources.

less other revenues: any revenues received from other services provided from the Heritage Resources including revenues related to Skagit Valley Treaty obligations<sup>1</sup>, revenues from provision of ancillary services to the transmission operator in respect of third party use of the transmission system, revenues from sales of surplus hydro, and other miscellaneous revenues.

To establish a context for future rate proceedings, BC Hydro has forecast that the cost of supplying the Heritage Electricity over the term of the Heritage Contract will average approximately \$25.30 per MWh (Forecast Heritage Reference Price) over the period 2004/05 to 2013/14, under average water conditions, exclusive of trade income. The Forecast Heritage Reference Price is based on current forecasts and on the assumption that BCH Distribution will take all the Heritage Energy. If less energy is taken the per unit "price" will be lower by virtue of a reduced cost of energy (most of the other cost components being relatively insensitive to demand), and in any event will depend on the actual cost of Heritage Electricity. The derivation of the Forecast Heritage Reference Price and other assumptions used to derive it are summarized in section 3.7 below and follows the foregoing break-out of cost components.

Some of the Heritage Payment Obligation cost components are relatively certain (operating costs, for example), while others are highly volatile (cost of energy). Similarly, management has limited control over some costs (return on equity) and greater control over others. The Heritage Contract proposal can accommodate "performance based rate-making" (PBR) mechanisms for many of the more stable and controllable cost components of the Heritage Payment Obligation.

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<sup>1</sup> Under the Skagit Valley Treaty Seattle City Light is compensated in electricity for agreeing to forego the raising of the Ross Dam, which would have flooded in the Skagit Valley in S.W. British Columbia.

#### 2.1.4 Trade Income Definition and Allocation

As part of this application, BC Hydro is proposing the use of a Trade Income definition in order to separate energy transactions required to support the domestic system and transactions for trade. This definition and the allocation issues it raises are described in detail below.

Under the Heritage Contract proposal, BC Hydro determines how the generation system will be operated to satisfy its domestic obligations and further determines how much surplus capability (import capability, capacity, etc.) is available for trade. Information on surplus capability is provided to those responsible for marketing (i.e. Powerex), who then make decisions on how, or if, they wish to use that capability for trading activities (buying and selling of energy). Information on expected inflows, expected resource availability, current and future market prices and other information is continuously shared to optimize system operation and maximize commercial return.

Under the definition of Trade Income, priority is given to domestic transactions. If BC Hydro needs to purchase electricity to satisfy its domestic obligations or to refill its reservoirs, imported energy will accrue to BC Hydro in accordance with its instructions. Similarly, if the domestic system has surplus hydro energy, BC Hydro will sell this energy to Powerex for re-sale in the market.

BC Hydro established Powerex to use the surplus capability of the system to engage in electricity trade, as well as buy electricity and gas for the purpose of facilitating sales to others. As Powerex may be involved in tons of thousands of transactions in the course of a year, transactions between Powerex and BC Hydro are not based on actual costs. Rather, transactions are based on a market index designed to reflect fair market value of the electricity provided.

Powerex pays BC Hydro for certain incremental costs associated with the use of Heritage Resources for trade, these being fuel costs and variable operating costs, and point-to-point transmission charges.

Therefore, Trade Income will include the revenues Powerex receives from sales to third parties and to BC Hydro reduced by its costs of purchasing electricity from third parties and BC Hydro, its costs for use of BC Hydro facilities (including transmission), its payments to other utilities for transmission and other services and its own operating costs.

Trade Income as defined in this proposal is forecast to be lower than trade income reported by BC Hydro in previous years. In previous years, revenue from sales of surplus hydro energy sold into the export market was included in income from trade. Under the proposed definition, surplus hydro energy would be sold to Powerex at the index price and the profit would directly reduce the Heritage Payment Obligation and thus effectively reduce BC Hydro's cost of energy. Thus Trade Income would reflect only the profit that Powerex could make relative to the market index price paid to BC Hydro. For this reason, Powerex is forecasting trade income in the range of \$75-125 million in typical future years.

The Trade Income definition focuses on variable costs of generation, rather than the embedded costs of the generation system. This gives Powerex the right pricing incentive to maximize the commercial use of BC Hydro's facilities.

To provide a contribution from trade to the embedded costs of the generation assets, BC Hydro is proposing that Trade Income, up to \$200 million per year, will accrue to the Heritage Beneficiaries. In accordance with the Terms of Reference, Trade Income above \$200 million per year will accrue to government (through BC Hydro). In addition, to ensure customers are not adversely impacted by trading activities, BC Hydro will not pass on any trading losses to customers. These latter two provisions ensure that most profits from trade will accrue to Heritage Beneficiaries, while BC Hydro's shareholder will absorb the impact of extreme adverse outcomes, and receive the benefits of windfall profits. BC Hydro expects that these extraordinary circumstances to arise, if at all, from external events such as the California power crisis in 2000-2001.

### 2.1.5 Heritage Deferral Account

Several of the cost components of the Heritage Payment Obligation and components of Trade Income are highly volatile and could vary considerably from year-to-year and from forecast amounts. In particular, the cost of energy under the Heritage Contract could easily vary by plus or minus \$300 million from forecast amounts. This is largely due to the variability of the water supply. There is a 70% probability that annual generation will fall within a range of plus or minus 5000 GWh from average conditions. Trade Income will be less volatile than under previous definitions, but could still fluctuate by plus or minus \$50 million under typical conditions, and by greater amounts in extreme years.

To mitigate this annual volatility on BC Hydro's revenue requirement, BC Hydro is proposing a Heritage Deferral Account as a replacement for the RSA. In contrast to the existing RSA, the proposed Heritage Deferral Account would allow both positive and negative balances.

Initially, all differences between the Heritage Payment Obligation and forecast Heritage Payment Obligation used to calculate BC Hydro's revenue requirement would accrue to the Heritage Deferral Account. This can be adjusted to accommodate any possible PBR mechanisms in the future. The Heritage Deferral Account is described in more detail in section 3.5, below.

### 2.1.6 Summary of Heritage Contract Proposal

The Heritage Contract proposal contains a number of features to ensure that the full benefit of the Heritage Resources accrue to the Heritage Beneficiaries. The proposed payment mechanism ensures that BC Hydro revenue requirements will not increase as a direct result of the Heritage Contract proposal. The Energy Plan announced the end of BC Hydro's statutory rate freeze, effective April 1, 2003. Increases in costs since the current BC Hydro rates were established almost 10 years ago will likely make a rate adjustment necessary in 2004. However, such adjustment would be required with or without the Heritage Contract proposal.

The Heritage Electricity supply obligation ensures that the Heritage Beneficiaries will continue to have priority access to Heritage Resources and continue to benefit from the

flexibility of those resources, allowing BC Hydro to shape overall supplies to meet overall demand. Because the contract calls for the flow-through of actual gas and electricity purchase costs required to satisfy Heritage Beneficiaries' use of Heritage Electricity, BCH Distribution is not obligated to take all of the Heritage Electricity. If energy is acquired from other sources, or if demands on the system are temporarily reduced, and, as a result, the need for Heritage Electricity is reduced, Heritage Beneficiaries will benefit from any reductions in the variable cost to supply demand. These features also allow the greatest flexibility for minimizing the cost of meeting future demand from a wide range of potential resources.

BC Hydro's Heritage Contract proposal differs in a number of material ways from the model used in Quebec (referred to in the Energy Plan). For example, Hydro Quebec's generating arm is required to provide a fixed quantity of energy at a fixed price. The advantage of this model is its simplicity. However, in the Hydro Quebec model the fixed quantity (165,000 MWh) is less than the average system capability. Because the Terms of Reference require the Heritage Contract to be based on average water, the direct application of the Hydro Quebec model to BC Hydro would impose greater costs on the Heritage Beneficiaries.

By contrast, BC Hydro's Heritage Contract proposal reflects the circumstances of BC Hydro's system by maximizing the value of the Heritage Resources and ensuring that those resources will continue to be utilized to provide maximum value to the Heritage Beneficiaries.

## **2.2 The Heritage Contract Proposal – How It Would Work**

In this section BC Hydro describes how the Heritage Contract proposal would work, starting from the time of filing a revenue requirement application in 2004, through to the end of the Heritage Contract.

### **2.2.1 2004/05 Revenue Requirement Application**

The Terms of Reference contemplate BC Hydro filing a revenue requirement application on or before March 31, 2004. BC Hydro will seek interim rate adjustments effective at that time. BC Hydro anticipates using a test period commencing in 2004/05.

A fundamental component of the revenue requirement will be a forecast of the Heritage Payment Obligation. That forecast will be different than set out in section 3.7 as it will be updated to reflect new information regarding forecast cost components of the Heritage Payment Obligation in the test period (such as cost of energy). The other significant component of the revenue requirement application that is related to the Heritage Contract will be a forecast of Trade Income (trade income is different than sales of surplus hydro energy, which is a component of the Heritage Payment Obligation – see section 3.3).

### **2.2.2 Revenue Requirements Forward From 2005/06**

After the 2004/05 revenue requirement has been determined, BC Hydro anticipates that any changes in rates would be applied on a prorata basis, across all rate schedules. However, BC Hydro intends to file a rate design application that would lead to final rates reflecting an improved rate design by the end of 2004/05.

If at the end of a fiscal year the Heritage Payment Obligation was less than the forecast Heritage Payment Obligation approved in the revenue requirement, the difference would be credited to the Heritage Deferral Account. If the actual Heritage Payment Obligation was greater than the forecast Heritage Payment Obligation, the difference would be debited from the Heritage Deferral Account. Similarly any differences between forecast

and actual Trade Income would accrue to the Heritage Deferral Account, subject to the \$200 million ceiling and \$0 floor.

Over time, the Heritage Deferral Account may accrue a large positive or negative balance. BC Hydro proposes that the account balance be cleared through rates, on application and with the approval of the Commission. This flexibility would allow BC Hydro and ratepayers to offset proposed rate increases or decreases that arise for other reasons. In each subsequent revenue requirement filing, BC Hydro will provide an updated forecast of the expected Heritage Payment Obligation for the test period.