Financing Water Use Plans
Background paper

Background

In recognition of the importance of B.C.'s water resources and increasingly competing demands on these resources, the province of British Columbia announced the development of water use plans for large water control facilities. Guidelines for the water use plan (WUP) process were published in 1998.

A water use plan, once accepted by the comptroller of water rights and incorporated into a water license, sets out how water is to be managed at a particular facility, taking into account environmental, social and economic values of the water.

BC Hydro embarked on a program to develop water use plans for all its hydroelectric facilities in accordance with the guidelines in November 1998. Draft water use plans will be completed for BC Hydro facilities within five years.

Costs of Water Use Plans

Water use plans will incur two types of costs. First are the costs of developing the plans, including expenses of data collection, research and consultation. For the BC Hydro program, these costs are largely being borne by BC Hydro, although both the federal and provincial governments are contributing staff and other resources (e.g., through the Data Acquisition Fund) to ensure full government and regulatory participation.

Once water use plans are completed, costs will be incurred where implementation of the plans call for (i) constraints on power generation for fish, flood management, recreation or other benefits; (ii) further studies or monitoring, possibly as part of an adaptive management program; or (iii) physical works at BC Hydro's facilities. In order to meet demand, constraints on operations including the costs of monitoring and/or physical works will require BC Hydro to purchase or build replacement power.

Source of Financing for Implementing Water Use Plans

BC Hydro is licensed to use water at its facilities to generate electricity. For this right, BC Hydro pays rental fees for the water, which go into general revenue for the provincial government. Regulations under the *Water Act* provide for a remission of water rental fees when, under the direction of the comptroller of water rights, there is a reduction in power benefits in favour of non-power benefits. For example, if there is a reduction in the value of electricity produced at a particular facility resulting from either a reduction in the amount of electricity generated or a shift from higher to lower value electricity due to timing, the cost to BC Hydro will be offset by a reduction in water rental fees paid by the corporation.

Consequently, implementing the water use plan program will likely result in reduced revenues to the province and, hence, the people of British Columbia. This approach reflects government's recognition that the values held by society have changed, with growing expectations for flood management, recreation, fish and fish habitat, and First Nations issues. The reduction in water rental revenues, then, reflects the government's choice in using the rents from water control facilities and willingness to pay for additional public-policy benefits in the form of non-power values. In effect, the loss in revenue from power generation to the people of B.C. is expected to be offset by the appreciation in other values associated with water use.

A record of the cost of implementing water use plans is being kept and is called the system operations fund (SOF). The SOF is not a fund in the traditional sense of the word; namely, no specified amount of money has been set aside from which to draw as plans are completed. Rather, the provincial government has recognized costs of implementing plans through reductions in water rental payments according to the *Water Act* regulation noted above. In essence, the SOF represents an accounting mechanism to track the costs of water use plans.

Estimated Cost of Implementing Water Use Plans

The cost of implementing water use plans for all BC Hydro projects (i.e., the size of the system operations fund) will not be known until the last WUP is approved. The very nature of the process calls for collection of information, identification of a broad range of interests in how water is used at the facilities and creation of operating alternatives that help to co-manage these interests. Much is expected to be learned and creative solutions generated through the process. This work will affect the cost of each plan.

However, before committing to the water use plan program for BC Hydro, the provincial government, in consultation with BC Hydro and the federal government, undertook an initial review of the order of magnitude of costs of implementing water use plans. The intent was to inform decision-makers that the costs were consistent with expected benefits and the provincial government's broader financial responsibilities.

Four factors were considered in developing the overall cost estimate.

1st Water use plans are designed to address operational impacts and are not designed to address impacts caused by the construction of the facilities or to address historical grievances. Compensation programs on the Peace and Columbia and the new Bridge/Coastal Restoration Compensation Program to specifically address these impacts and negotiations with various First Nations on grievances are underway. The cost estimate, therefore, includes reductions in power benefits associated with incremental changes to operations and works only.

2nd Existing fisheries data and feasibility assessments were used to develop a range of flow and mitigation options to enhance fish and restore fish habitat. The preliminary cost estimate of these improvements was used to develop the overall estimate.

3rd In contrast to fisheries knowledge, much less is known about other environmental, social and economic needs associated

with water use at BC Hydro facilities. Only a very rough estimate of the cost of changes to address these values could be included.

4th The extent of operational changes in the Peace and Columbia was considered. Specifically, the cost estimate assumes incremental rather than significant change in operations in these areas.

This approach was adopted in light of:

- findings of multiple-account evaluation analysis undertaken as part of BC Hydro's 1994 Electric System Operations Review and response by government;
- pre-existing commitments in terms of facility management;
- government acknowledgment of the Peace and Columbia as working rivers with significant hydroelectric production, consistent with the government's response to the B.C. Heritage Rivers Board's 1997 nominations;
- costs of managing operations for non-power values, given the complexity and design of these hydroelectric facilities; and,
- constraints imposed by international treaty obligations, such as the Columbia River Treaty and bilateral agreements between provinces/territories.

The preliminary cost estimate for implementing water use plans for BC Hydro facilities is $50 million per year. Although rough, the estimate provided government with the comfort to approve and embark on the water use planning process, with some sense of the magnitude of costs and a general idea of the benefits for non-power values. While the $50 million per year figure does not constitute a spending target or an absolute limit on the cost of operational changes, it does represent a *notional cap* in that government expects that the outcome of all BC Hydro WUPs to have a cumulative cost of no more than $50 million per year.

A cumulative amount in excess of $50 million per year for all facilities would be outside the government's expectations and scope as originally envisioned. Costs beyond $50 million per year will require strong justification; even so, there is no guarantee that the additional amount would be available in the future.

The overall costs of individual WUPs will be tracked and the information used as a barometer on the process to provide advice to government, communities, First Nations, and interested parties on the potential long-term costs of the program and, in turn, to clarify funding desires and constraints in excess of $50 million per year.

Costs Associated with Each Facility

While the preliminary assessment offers an overall expected cost, the $50 million per year has not been pre-allocated on a facility-by-facility basis. The actual distribution of costs by facility will depend on the outcome of individual consultative processes.

Data and information gathered in developing the preliminary estimate, however, will be useful in initiating the water use plan process at the facilities. For example, the preliminary information on a range of flow and mitigation options for fish and fish habitat can be usefully combined with additional information collected for each facility water use plan. The preliminary range of fish options will assist in managing within the notional cap of $50 million per year.

Current Status of SOF: Interim Orders

Interim orders under section 39 of the *Water Act* provide for changes to operations for the immediate benefits of fish and fish habitat while water use plans are being developed at BC Hydro facilities.

The water comptroller has already directed BC Hydro to change operations at Puntledge, Campbell, Alouette, Stave/Ruskin, Salmon, Heber, Coquitlam and Cheakamus facilities. The SOF currently stands at $3.6 million per year to account for the generation lost because of these changes. ■

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