Columbia River Treaty
Power Group

A great deal for Canada, but it's time to rebalance the Columbia River Treaty

# BRIEFING PAPER

In the late 1950s, leaders in the U.S. and Canadian governments decided they wanted a treaty to facilitate the joint development of power generation and flood control in the Columbia River Basin. By 1964, the two countries had crafted the Columbia River Treaty, a 60-year agreement with flood control protection guaranteed through 2024. Critically important to the Treaty were power provisions to share the downstream power benefits, with the U.S. set to return hydropower capacity and energy to Canada for 60 years, after which there would be an opportunity to rebalance based on value to each country of coordination operations.

Committing to a decades-long economic Treaty brought benefits and risks to both parties. Both countries wanted certainty for a lengthy period. This certainty:

- *Allowed Canada to be assured of payments offsetting the large capital investment in new dams;*
- *Meant alternative investments in US flood control would not be necessary for an extended period; and*
- *Reduced the need to build other generation.*

But the negotiators recognized that factors impacting the value of the agreement would change over time. Flood control was only paid for through 2024. Specific Treaty provisions reduce the flood control protection Canada will provide while leaving open the question of how much the US will pay for this protection. Starting in 2014, either party could have given 10-year notice to terminate the power provisions. This unilateral right for both countries was designed by the Treaty framers to allow a renegotiation based on the realization of actual benefits. Today, the value of coordinated operations has been reduced by 90%. Without a rebalancing of the power provisions of the Treaty, Canada will continue to receive an outsize benefit of electric power that moves to Canada. This lost value to the U.S. translates into $300 million a year for the U.S., depending on the value of carbon-free power.

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## A 60-Year Power Deal

The Treaty concept was relatively simple; the complexity was in the details. Negotiators started with the concept proposed by the International Joint Commission that the U.S. and Canada would share benefits resulting from the Treaty.

For power, the negotiators agreed to a formula where Canada would receive half of the additional power produced at downstream US dams from the construction of storage facilities in Canada. The U.S. would pay a Canadian Entitlement (CE) to Canada in valuable hydropower energy and capacity, based on the calculated difference in hydroelectric power capable of being generated in the U.S. with and without the use of Canadian storage. There are several advantages to Canada from the way this methodology was negotiated.

- *First, Canadian storage benefits are calculated without any deduction for the additional U.S. storage dams built after 1961.*
- *Second, the Treaty assumes that U.S. hydropower facilities will make the most effective use of streamflow for power generation (in reality, operations are significantly limited by fish protection measures that were later adopted).*
- *Third, the Treaty relied on a complicated calculation of downstream power benefits that ended up over-crediting the impact of Canadian storage and under-crediting usable power without Treaty storage. Interestingly, the approach also assumed that the U.S. would rely more on thermal generation over time — a prediction that did not come true as the region instead utilized energy efficiency and wind power as its primary new resources.*
- *Finally, it allows Canada incredible flexibility to schedule when the U.S. must send power benefits north. This flexibility is beyond what could be provided by an alternative generation source such as a natural gas fired plant. The Canadians can utilize this flexibility when prices are highest. When negotiated, this aspect of the Treaty was not particularly valuable. But in today's west coast power market dominated by non-predictable renewable resources (for which many of our states have renewable energy mandates), this is an incredibly valuable tool that substantially increases the cost to U.S. consumers of providing the CE.*

*Canadian Prime Minister John Diefenbaker (left) and US President Dwight Eisenhower sign the Columbia River Treaty in 1961.*

Due to high load growth, new thermal generation, additional U.S. storage reservoirs and transmission interconnections with California and Canada, both governments expected the Treaty calculation of U.S. power benefits would be minimal by 2024(1). Therefore, they crafted the Treaty to allow either country the option to end the Treaty power provisions after 2024, with 10 years' notice. This notice could have been issued in 2014. Since the U.S. did not provide Canada with a notice of termination at the earliest date possible, the power provision will not end by 2024 as originally contemplated by the 60-year term. As a result, the U.S. has been overpaying Canada since 2014. Without a notice of termination, those overpayments of $300 million or more will continue indefinitely.

## Flood Control Forever — With a Catch

Flood control was fundamental to the Treaty. In return for Canada building dam storage capacity, the U.S. paid $64.4 million for the use of 8.45-million-acre feet of storage for the first 60 years of the Treaty. This amount helped amortize the cost of the Canadian dams (which were completed in 1973) although the flood control payments are only a small fraction of the overall U.S. payments to Canada.

The lump sum was discounted at an interest rate favorable to Canada, making it more valuable than the total payments the country would have received had it accepted annual payments in perpetuity(2).

In return, Canada provided primary flood control storage for the U.S.

U.S. negotiators were disinclined to pay for flood control in perpetuity when the alternative would be to build projects in the U.S. that would be fully paid for after 50 years of operation. Meanwhile, Canadian negotiators did not want to provide the service past 2024 without more payments. A compromise ensued. In 2024, the Treaty will revert to "on-call" status, where U.S. reservoirs are drained and filled for flood control first before Canadian reservoirs assist. The Canadians are required to provide this called-upon assistance but are to be paid their opportunity cost, which is not defined in the Treaty.

This crucial change occurs in 2024 and is not dependent on any other aspect of the Treaty. It is unclear what flood control benefit the U.S. will receive or how much the U.S. will need to pay for this new flood control regime. Regardless of whether the CE is terminated or not, the U.S. will get less flood control protection from Canada without changing U.S. operations or negotiating a new payment structure. Under the terms of the Treaty, the U.S. will have paid Canada about half a billion in 2020 dollars for flood control. By contrast, the U.S. will pay Canada more than 10 times that amount for power payments. The power component has always been recognized as the most significant element of the agreement.

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*1 Determination of Canadian Downstream Power Entitlement, Technical Report, Work Group No. 1, Nov. 1963.*

*2 Testimony of Gordon MacNabb before the Second Session of the Twenty-Sixth Canadian Parliament House of Commons Standing Committee on External Affairs, May 21, 1964; pages 1416-1417.*

*3 "The Columbia River Treaty and Protocol, A Presentation," April 1964, pages 100 - 106.*

*4 The Columbia River Agreement by H.L. Keenleyside, Chairman, British Columbia Hydro and Power Authority. An address to the Advertising and Sales Bureau of the Vancouver Board of Trade, February 10, 1064. Page 16.*

## Canadian Officials Touted Success

When the Treaty was enacted in 1964, a Canadian governmental report gave a very favorable assessment of its value to Canada(3). The United States was obligated to pay for Canadian storage dams and "all construction costs are paid as they occur and all operating and maintenance costs of the storage are fully covered."

Regarding power value, the report explained that U.S. payments to Canada "are not only reasonable but are guaranteed, whereas the actual amount of the product sold is dependent upon a number of future and undefinable conditions." It went on to say that "Canada's costs under the Treaty are … exceeded by the Treaty benefits even under a most critical standard of analysis." Hugh Keenleyside, former Chair of B.C. Hydro said in 1964, "I am satisfied that this Columbia agreement is the most profitable single, international, commercial transaction in the history of our country."(4)

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> *-Hugh Keenleyside, former Chair of BC Hydro*

The U.S. consciously agreed to aspects of Treaty implementation that provided very favorable outcomes to Canada during its 60-year term. These choices were entered into as necessary to secure the entire agreement. But the highly favorable concessions to Canada, and the fact that the U.S. would now have fully paid off capital on its own domestic sources of generation had it pursued alternatives, suggest that a "reset" after 2024 is the most rational outcome.

The Columbia River Treaty is an agreement that made sense for the era in which it was negotiated, but it represents a set of trade-offs and assumptions that no longer hold true. U.S. commitments to compensate Canada, above and beyond the three Treaty dams, will be complete in 2024 as envisioned by both countries. Rebalancing the power provisions would provide a fresh opportunity to examine mutually beneficial agreements to optimize the Canadian and U.S. hydropower systems. These opportunities should be studied in the context of projected changes to the Pacific Northwest electricity supply, carbon reduction goals, transmission capacity increases, and other potential factors relevant for increasing bilateral coordination. Much has changed, particularly with respect to how the electric power system in the west operates today as compared against power planning in the 1960's.

Modernizing the Treaty makes sense given the changes that have occurred but can only happen if the existing Treaty power transfers are modified so both countries are operating from a level playing field. Otherwise, it is unlikely that progress will be made — leaving Northwest electric ratepayers to forfeit renewable energy unless Canada sells it back to the US market.