

Downstream Power Benefits

COLUMBIA RIVER TREATY



Mica Dam, North of Revelstoke

What are downstream power benefits?

As a result of the flow regulation provided by storage in Canada under the Columbia River Treaty (CRT), additional power can be generated in the United States. This is referred to as downstream power benefits.

The downstream power benefits are the forecasted additional hydroelectric generation at power plants on the Columbia River in the U.S. that result directly from the operation of the 15.5 million acre feet of CRT storage in Canada located in the Mica, Arrow and Duncan reservoirs. It is modeled and calculated using procedures set out in the CRT, not a measured amount of power generated. The downstream power benefit is expressed as an annual energy and capacity (average and peak megawatts).

The downstream power benefits from the operation of Libby Dam accrue to the country in which the benefits occur; Canada keeps the power benefits derived in Canada and the U.S. keeps the power benefits derived in the U.S.

What is the Canadian Entitlement?

Canada's 50 per cent share of the downstream power benefits is called the Canadian Entitlement. Under the 1963 Canada-BC Agreement, these benefits are owned by the Province of BC.

The Canadian Entitlement is energy and capacity, not money. Currently, the Canadian Entitlement annually averages 475 megawatts (MW) of energy and 1,304 MW capacity. Both the energy and capacity are recalculated each year and are projected to significantly decline over time.

What happens to the Canadian Entitlement?

Powerex, BC Hydro's power trading subsidiary, markets the Canadian Entitlement in western North American markets on behalf of the Province of BC.

The Canadian Entitlement is either sold immediately to the U.S. or Alberta, purchased by BC Hydro for use within the province, or purchased by Powerex for later trading.

When the CRT was ratified in 1964, the Province of BC sold the first 30 years of its Canadian Entitlement to a consortium of utilities in the U.S. for \$254 million US. That agreement expired in phases and the Province of BC now receives the full Canadian Entitlement worth approximately \$100-120 million US annually, depending on power market prices.

What will happen in the future?

The Canadian Entitlement has no expiry date. However, if the CRT is terminated, the Canadian Entitlement ends. The provisions of the CRT can be amended at any time through mutual agreement between the parties.

A 2010 study showed that, in the future (provided the CRT remains in place) the Canadian Entitlement continues but is projected to decrease from about 490 annual average megawatts (aMW) in 2024 to a minimum of approximately 290 aMW in 2040. This decrease is due to load growth and increased thermal generation in the U.S., which are part of the formula used to calculate the value of the downstream power benefits.

However, the size of the Canadian Entitlement will depend on what new generation resources are added in the Pacific Northwest, and its value will always be related to future market prices.