

## Request for Proposals (RFP)

**Title:** Comprehensive Analysis of Project Evaluations for Hydropower vs. Nuclear, Wind, and Solar Generation

**Issued:** January 31, 2025

**Due Date:** February 15, 2025

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### 1. Introduction


This Request for Proposals (RFP) invites qualified organizations to submit proposals to analyse and report on relevant factors that would influence an economic evaluation of a hydropower facility compared to generation alternatives. Simple NPV analysis may fail to consider the future benefits of long-lived or perpetual assets.

These are tangible benefits that do not appear significant through a typical NPV analysis, but as competing assets are retired and replaced, the benefits of long-lived or perpetual assets such as hydropower facilities are undeniable for consumers. Within the typical lifespan of a hydro facility, all other installations would need to be completely replaced, in some cases multiple times.

### 2. Background

As energy transition efforts accelerate, policy makers need to be better informed about the risks and benefits associated with asset investment decisions, particularly when long-lived assets are concerned.

Hydropower assets are very long-lived assets, and decisions to invest in hydropower provide a source of energy for future generations, and not just current electricity consumers. This future benefit is not often discussed when projects are considered for approval, but the low cost of electricity in British Columbia, Manitoba, Québec, and Newfoundland and Labrador is predicated on hydropower resources that were developed 50 years ago (or more) and will provide low-cost energy to consumers for decades to come. Hydropower should be considered to be a perpetual asset when compared to other forms of energy production which would have to be replaced many times over a century.



### 3. Objectives

The primary objectives of this report are to:

1. Assess the traditional NPV methodologies used in evaluating renewable energy projects. Present the standard approaches used for alternative evaluation and demonstrate how future benefits do not factor significantly in an NPV analyses.
2. Present examples through case study analysis of the cost of replacements (for example current nuclear assets at end of life) compared to hydropower assets constructed at the same time or earlier.
3. Identify the key benefits and risks associated with investment in long-term assets compared to shorter-lived ones.

### 4. Scope of Work

The selected contractor will be responsible for:

1. **Literature Review.** Include a review of existing literature on NPV methodologies in renewable energy projects, focusing on hydropower, wind, and solar technologies, and battery storage.
2. **Data Collection.** Gather data on costs, revenues, operational lifespans, and residual values for hydropower, nuclear, wind, solar facilities, and battery storage.
3. **Comparative Analysis.** Through Canadian case studies and available data, perform a comparative analysis of:
  - The residual value of assets of hydropower vs. nuclear power facilities, wind and solar farms.
  - Long-term operational costs, including maintenance, decommissioning, and grid integration.
  - Economic performance metrics over at least 50 years, including NPV, Internal Rate of Return (IRR), and Levelized Cost of Energy (LCOE).
  - Comment on the value of these assets at the end of the study period and evaluate the ability of hydropower assets to continue generating electricity, as well as the cost of that energy compared to newly built assets.
4. **Stakeholder Engagement:** Interview key stakeholders in the energy sector, including developers, investors, and regulatory bodies, to gain insights into the limitations of current evaluation methodologies.

5. **Report Preparation:** Prepare a report summarizing findings, analyses, and recommendations. The report should include visual aids (charts, graphs) to enhance clarity.

## 5. Proposal Submission Requirements

Proposals must include the following:

1. **Executive Summary:** Brief overview of the proposal and understanding of the project.
2. **Company Profile:** Background information on the organization and relevant experience.
3. **Proposed Methodology:** Detailed description of the approach to be taken in conducting the analysis.
4. **Timeline:** Estimated timeline for completion of the project.
5. **Budget:** Itemized budget, including fees, expenses, and any other costs.
6. **References:** At least three references from previous clients for similar projects.

## 6. Evaluation Criteria

Proposals will be evaluated based on:

1. **Relevance and Depth of Experience:** Demonstrated understanding of renewable energy economics and NPV evaluations.
2. **Methodology:** Clarity and feasibility of the proposed approach.
3. **Cost-Effectiveness:** Reasonableness of the budget in relation to the proposed work.
4. **Timeline:** Realism of the proposed timeline for completion.

## 7. Submission Instructions

Please submit your proposal electronically to [lorena@waterpowercanada.ca](mailto:lorena@waterpowercanada.ca) by February 15, 2025.

Late submissions will not be considered. WaterPower Canada reserves the right to select any or reject all proposals at its discretion.

## 8. Additional Reference Materials

The following reports recently commissioned by WaterPower Canada should be considered when preparing the report contemplated by this RFP:

**Comparative Analysis of Electricity Generation Costs by Source, December 2023**

<https://waterpowercanada.ca/resources/comparative-analysis-of-electricity-generation-costs-by-source/>

**Hydropower Refurbishments and Redevelopments in Canada, September 2023**

<https://waterpowercanada.ca/resources/hydropower-refurbishments-and-redevelopments-in-canada/>

**Hydropower's Value to a Net-Zero Electricity Grid | A guidebook for policymakers, August 2023**

<https://waterpowercanada.ca/resources/hydropowers-value-to-a-net-zero-electricity-grid/>

## 9. Questions

Any questions regarding this RFP should be directed to [lorena@waterpowercanada.ca](mailto:lorena@waterpowercanada.ca). Responses to all questions will be shared with all interested parties.

Thank you for your interest in this project. We look forward to your proposal.

**Lorena Patterson**

President & CEO | Présidente-directrice générale



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