



Organized to educate about the ecological, cultural and economic benefits of a free-flowing Snake River & communicate technical and scientific knowledge about dam breaching within the meaning of Section 501(c)(3) of the Internal Revenue Code.

Dam Sense
289 Ocean Cove Lane
Port Angeles, WA 98363

February 3, 2021

The Honorable Maria Cantwell
511 Hart Senate Office Building
United States Senate
Washington, DC 20515

Dear Senator Cantwell,

The Clean Energy Transformation Act commits Washington to 100 percent clean electricity generation for the entire state by 2045.¹ We support an increase in renewable energy resources such as solar and wind power. Heavy reliance on hydropower, however, comes at a price. The Act's mandate to "use hydropower resources more efficiently and effectively" must be taken seriously.

The purpose of this letter is to raise awareness about the negative environmental impacts of hydropower, particularly greenhouse gas emissions from the four lower Snake River dams in Eastern Washington.

We frequently hear hydropower referred to as "clean" and "carbon-free" energy. It is not. To the contrary, hydropower:

- produces greenhouse gasses
- disrupts fish migration
- negatively affects aquatic and terrestrial species abundance and biodiversity, and
- interrupts sediment transport, a critical river function, thereby destroying habitat at the site of the dam and wetlands and marshes downstream.

¹ Policy Brief, May 2019, Gov. Inslee, [Washington Enacts Strongest Clean Electricity Standards in the Nation](#).

The first point is the subject of extensive public relations campaigns. The hydropower industry² and the U.S. Army Corps of Engineers³ have consistently tried to mislead policy makers by downplaying the scale of Greenhouse Gas emissions from reservoirs.

The belief that hydropower is a mecca in the quest for a transition to climate responsible energy is disproven by reviewing the scientific literature on the subject. Research clearly supports that the reservoirs behind hydropower dams can produce a significant amount of methane – a potent greenhouse gas (GHG) -- which seeps from organic material as it is decomposed and enters the atmosphere. Federal agencies are aware of this, as it was the U.S. Department of Energy that directly funded two studies examining methane emissions from Lower Monumental Dam Complex on the Snake River.⁴ Their conclusions point to methane ebullition as an important source of Greenhouse Gas Emissions from temperate hydropower reservoirs.

A 2016 study from Washington State University, published in *BioScience*, found that methane, which is at least 34 times more potent than another greenhouse gas, carbon dioxide, makes up 80% of the emissions from water storage reservoirs created by dams.⁵ Studies such as these have led the Intergovernmental Panel on Climate Change to consider including dams in the 2021 guidelines for national greenhouse gas inventories.⁶

The attached 2020 paper, [*The Lower Snake River Reservoirs Generate Significant Amounts of Methane, a Potent Greenhouse Gas*](#), (“Methane Paper”), an update to the 2016 paper⁷ -- using data from research papers and government reports -- Estimates that the total greenhouse gas emissions from **the four lower Snake River dams are the equivalent of 86,053 metric tons of CO2 annually**. Meaning, claims that the dams are GHG free or "carbon free" are false.

² Industry association [Northwest River Partners](#) has developed an extensive campaign dedicated to promoting hydro as “carbon free, low cost power”. They are joined by other well-funded groups such as the [National Hydropower Association](#) which claims “Hydropower is a climate-friendly energy source, generating power without producing air pollution or toxic by-products.”

³ [Columbia and Snake River Reservoirs Not Associated with High Greenhouse Gas Emissions](#), March 16, 2017.

⁴ See studies noted in footnote 6. [Pacific Northwest National Laboratory](#) is under the U.S. Dept. of Energy.

⁵ [Greenhouse gas emissions from reservoir water surfaces: a new global synthesis](#) (BioSciences, 2016); see also [Huge Methane Leaks Add Doubt on Gas as ‘Bridge’ Fuel](#) (Climate Central, April 15, 2014) (“Over a 100-year timeframe, methane is about 35 times as potent as a climate change-driving greenhouse gas than carbon dioxide, and over 20 years, it's 84 times more potent.”). Bridget Deemer, a research ecologist at the US Geologic Survey, who led the study during her prior position as a research associate at Washington State said: “Even though it’s a renewable source of energy, people should keep the greenhouse gas side of the picture in mind when making planning and policy decisions regarding dams.” [The hydropower paradox: is this energy as clean as it seems?](#) (The Guardian, Nov. 6, 2016).

⁶ [Evaluating Greenhouse Gas Emissions from Hydropower Complexes on Large Rivers in Eastern Washington](#) (Pacific Northwest National Laboratory, 2013); [Methane Ebullition in Temperate Hydropower Reservoirs and Implications for US Policy on Greenhouse Gas Emissions](#) (Pacific Northwest National Laboratory, 2017); [Hundreds of new dams could mean trouble for our climate](#) (Science, Sept. 28, 2016).

⁷ [The Lower Snake River Reservoirs Generate Significant Amounts of Methane, a Potent Greenhouse Gas](#), John Twa 2016.

To put that number in perspective, breaching (aka decommissioning) the four dams would result in the reduction of GHG emissions equivalent to the electrification of 5 Washington ferries. Yet, unlike the millions of dollars needed for ferry electrification, breaching the federally owned and operated dams comes at no direct cost to Washington taxpayers.

While there are hydropower dams in the Federal Columbia River Power System and elsewhere that provide a necessary service in the transition to clean energy, the Lower Snake River dams are of negligible importance. Because the old dams contribute to a power surplus many times more than what they produce, there is no opportunity to utilize them “more effectively or efficiently” to fulfill CETA’s requirements. Breaching them would mitigate the effects of climate change far beyond just a reduction in GHG emissions.

Breaching significantly increases access to 5500 miles of intact, high elevation cold water salmon spawning and rearing streams that are the most resistant to climate change in the lower 48 states. These streams have a huge potential to once again produce large amounts of salmon.

Governor Inslee has the opportunity to be a strategic climate leader by insisting that the U.S. Army Corps of Engineers and Bonneville Power Administration take immediate action to start breaching the lower Snake River dams. We ask you to encourage him to do so. Sharing the truth about hydropower is the only way to dispel misconceptions and ensure that we move toward a truly clean energy future.

Sincerely,

A handwritten signature in black ink that reads "Jim Waddell". The signature is fluid and cursive, with the first name "Jim" being particularly prominent.

Jim Waddell
Founder & Chairman

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