



# RAND's Northwest Energy Report

OVERVIEW

## Wild Salmon and Clean Energy: A Vision of the Future for the Pacific Northwest

An analysis of a new report by RAND

### Introduction

In the Northwest, unlike elsewhere in the country, hydroelectric power is the dominant energy source. Dams, however, are primarily responsible for the dramatic decline of numerous wild salmon populations, particularly in the Snake River. Today, Snake River salmon runs are a shadow of what they

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once were, and this treasured cultural icon and economic mainstay continues to spiral towards extinction. Scientists have concluded that removing the four federal dams on the lower Snake River is the single most effective action that could be taken to restore the river's wild salmon and steelhead. The debate over whether the dams should be removed will continue in the region. Many of the questions about lower Snake River dam removal have focused on the economic impacts, particularly the effect of hydroelectric generation loss on the regional economy: Will lower Snake River dam removal damage or help the economy? How will the Northwest continue to meet its energy needs without adversely effecting the environment?

RAND, an independent, internationally renowned, non-profit research and analysis firm, has released a landmark report<sup>1</sup> that begins to answer these

important questions. The report takes a look at the economic and employment costs and benefits of lower Snake River dam removal and alternative energy potential in the Northwest. The results show a clear path for the Northwest: economic prosperity, clean energy, healthy rivers, **and** abundant wild salmon.

### The Findings

RAND's analysis describes strategies to meet future energy needs in the Northwest by diversifying the energy portfolio, and preventing over-reliance on environmentally harmful sources of power such as hydroelectric dams and natural gas. Using a macroeconomic input-output model with baseline data from the U.S. Department of Energy, the report takes a look at what might happen to regional economic and employment levels if:

- **The lower Snake River dams were removed and their energy production replaced with combinations of energy efficiency and renewable energy, or**
- **Twenty percent of all projected new natural gas-fired electricity production was replaced with different combinations of energy efficiency measures, wind and solar power.**

The results overwhelmingly demonstrate that taking bold steps to diversify the region's energy mix can help save endangered salmon, stabilize energy prices, improve reliability, and create jobs.

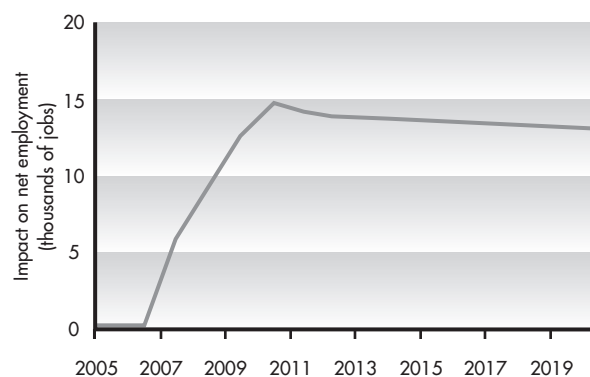
RAND's analysis shows that:

- **Removing the four lower Snake River dams can positively influence the Northwest's economy.** Replacing the energy produced by the dams with low-cost energy efficiency will create nearly **15,000 long-term jobs** and **will not impede economic growth.** (see table 1)
- **The Northwest will experience the same level of economic growth if efficiency measures and renewable energy meet a significant portion of future energy load instead of natural gas.** This economic and employment outlook improves as renewable and efficiency technologies improve and as the Northwest invests more in local production of these technologies. This path could **reduce future carbon dioxide emissions by nearly 47,000 kilotons.**

The bright economic picture displayed in RAND's report is based on conservative assumptions. RAND's analysis does not consider the substantial economic costs of increased air pollution or salmon extinction. Similarly, the report does not incorporate all the economic and employment benefits of sustainable wild salmon populations, a healthy, free-flowing lower Snake River and a high quality of life. RAND also cautiously estimated the cost of introducing renewable technologies like wind and solar power to the market and did not take into account a recent decision by Vestas Wind Systems, one of the world's largest wind turbine manufacturers, to invest in the Pacific Northwest.<sup>3</sup>

**In practice, the economic and employment benefits of this new vision for an energy future will be even greater than RAND's report outlines.**

**TABLE 1:** Impacts on Net Employment of Replacing the Four Lower Snake River Dams with Low-Cost Energy Efficiency<sup>2</sup>



## Conclusion

If left unchanged, the current energy path of the Pacific Northwest could leave the region dependent on hydroelectric power and natural gas to meet its energy needs. The economic, environmental, and social impacts of this path could be catastrophic: unreliable energy costs and supplies, salmon extinction, and increased air pollution. RAND's new report reveals that the Northwest will be best served by diversifying its energy portfolio through investments in energy efficiency and clean, renewable technologies. Just as importantly, the report shows that removing the four lower Snake River dams to save wild salmon and steelhead can benefit the region's economy without harming its energy supply.

<sup>1</sup> Pernin, Christopher G., Mark A. Bernstein, et al., *Generating Electric Power in the Pacific Northwest: Implications of Alternative Technologies*, Santa Monica, Calif.: RAND, MR-1604-PCT, 2002.

<sup>2</sup> Adapted from Pernin, Bernstein, et al. The graph assumes a cost of 1.5 cents/kWh for energy efficiency.

<sup>3</sup> See "Wind firm picks Portland," *The Oregonian*, April 4, 2002 (A1).

