

“BPA’s analysis of the value of Snake River dams – the issues in detail”

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Bill Eastlake’s op-ed published in the *Idaho Statesman* Sept. 17, 2007, “Science, not prejudice, should be basis of policy for four Lower Snake River dams,” makes a series of misstatements about the lower Snake River dams. His conclusions seriously underestimate these dams’ significance in meeting Northwest electricity needs and the associated cost of replacing power they produce. I was on the BPA team that conducted the analysis from which Eastlake draws much of his conclusions, I hope the additional information I am providing here will help readers better understand the value of these dams.

Specifically, Eastlake appears to inadequately consider the content of both [BPA’s analysis](#) and the report produced by the NW Energy Coalition/Save Our Wild Salmon, “*Revenue Stream*,” which prompted BPA to conduct an analysis in the first place. Instead, Eastlake makes a series of statements that either mischaracterize the analysis or draw inaccurate conclusions. Below is a review of Eastlake’s statements in light of our analysis.

Capacity value errors. Eastlake contends that the capacity value used by BPA is inflated and that it could only be achieved in a “spring torrent”. One of the basic things to understand about a hydro system is that there is a difference between capacity and energy capability. Capacity is the maximum electricity the dams can produce at a given time, and it is essential to the power system’s ability to manage normal peaks in loads and to maintain reliability in extreme weather and load conditions. The capacity value of the dams is not based solely on the amount of water in the river. Instead, a dam’s capacity value is determined by the ability to use inflows in combination with water already stored behind the dam or upstream of the dam to shape energy into peak periods.

Contrary to Eastlake’s assertion, the capacity value we used in the analysis of the lower Snake River dams was based on a conservative winter scenario under low water conditions. During these low flow periods, the lower Snake River dams generally run at minimum generation most of the day, with water being conserved for peak generation during periods of peak consumer demand. As Eastlake notes, winter is when “Northwest residents need power the most” and is therefore an appropriate period to examine. The projects can in fact achieve a generation level of 3,480 megawatts under those conditions. BPA devoted a considerable portion of its analysis to the issue of capacity since the capacity attributes of hydroelectric generation are unique and difficult to replace.

Eastlake also suggests a causal link between BPA’s estimate of capacity and a “grossly inflated” replacement cost estimate for the lower Snake River dams, a claim that he does not support with details. However, our analysis shows that, even if the capacity value of the dams were *completely* discounted (a position that has no rational basis), the cost of replacement energy would still be in the range of \$300 million to \$400 million dollars annually – more than enough to demonstrate that removal of the dams would result in a significant regional cost.

Wrong attribution for average energy production metric. Eastlake criticizes the use of the average energy production in BPA’s analysis. Yet it was the NW Energy Coalition, in Eastlake’s own words, “...the well-respected regional association of businesses, organizations and utilities,” that chose this metric as the baseline for energy in its Revenue Stream report, the piece BPA responded to with its own analysis.

Inaccurate claims about replacement power costs and availability, conservation measures.

The replacement costs used in BPA's analysis are derived from the Northwest Power and Conservation Council's Fifth Power Plan. It is important to note the Council is an independent, regional organization subject to broad public review that provides guidance on the acquisition of conservation, renewables and other resources. Applying these costs, BPA then examined a broad spectrum of resources, from traditional generation to renewable wind and conservation as sources for replacement power. As a substitute for these costs, Eastlake suggests that the region turn to the replacement costs suggested by the NW Energy Coalition. However, these NW Energy Coalition estimates have serious deficiencies in pricing and methodological issues that BPA addressed in our analysis.

- The Council estimates that the supply of cost-effective conservation and renewables will not be able to meet the needs of load growth without also adding traditional generation resources. A proposal to remove the Snake River dams would only exacerbate that problem. Yet *Revenue Stream* and the NW Energy Coalition do not address this issue.
- Even if, hypothetically, there were enough cost-effective conservation and renewable resources to meet all additional regional electricity needs in the future, they would not be at the costs Eastlake quotes. Industry economists understand that as the region acquires greater levels of conservation in a given timeframe, the least expensive supplies will be exhausted and the region will need to turn to more costly measures. It is these more costly measures that would have to be employed to replace Snake generation.
- There will be capital costs associated with investments in these measures that will require debt service that needs to be accounted for.
- The full costs of resources (to utilities, consumers and taxpayers) should be accounted for, not just the utility cost.

After taking these elements into account, the Council's Fifth Power Plan supply curve for conservation suggests that Eastlake's replacement power costs for the resources he recommends are off by at least a factor of five and as much as a factor of ten.

BPA's cost estimates were extremely conservative. Eastlake attempts to discount BPA's cost estimates by arguing that BPA neglected to deduct the revenues that replacement resources could produce from their "extra energy costs". BPA did not include any energy costs except those necessary to replace the energy output of the lower Snake River dams. It is true that there would likely be a net benefit to the resource owner when these newer, more efficient resources have sufficient capability to displace other resources beyond the need to replace the production of the Snake dams. However, these benefits would largely be offset by the costs associated with producing that additional energy and the losses incurred by the displaced generators.

If a more complex set of analysis were undertaken, the ledger of items that would increase the replacement power costs far outweighs the list that would reduce them in both number and scope. Some examples:

- BPA did not include figures for the increased costs that would occur when shaping replacement energy to load using peaking resources, and BPA did not include the

customary reservation fees necessary to ensure that the generation plants have access to fuel when they need it.

- There is no adjustment to the Council's Fifth Power Plan costs to reflect higher natural gas prices and the greater likelihood of carbon taxes since that plan was published.
- The BPA analysis makes the optimistic assumption that, despite the considerable cost uncertainty associated with these investments, the region will have the good fortune of electing the *lowest* cost combination of incremental conservation, renewable resources and generation to replace the lower Snake River dams.
- There is no estimate in the BPA analysis for the transmission infrastructure necessary to maintain the reliability of the grid if the lower Snake River dams are removed, nor are there estimates for new transmission needed to connect replacement power sources to load centers. Given the existing needs for transmission infrastructure, these costs are likely to be significant.

These costs were omitted from the BPA analysis in order to ensure that the calculations were conservative. In addition it became evident early on that they were not necessary to demonstrate that the *Revenue Stream* analysis was faulty.

Finally, Eastlake fails to note a mistake BPA did make. BPA inadvertently understated the replacement power costs by \$38 million per year by subtracting the operations and maintenance costs of the Snake projects from the estimate of replacement power when *Revenue Stream* has already accounted for this benefit elsewhere in their claims of savings.

Economic Benefits. Finally, Eastlake claims that BPA did not take into account the economic benefits of a restored fishery. This is despite the fact that the two analyses of the economic benefits of fisheries that *Revenue Stream* relied upon was rejected by the Independent Economic Advisory Board (IEAB) prior to the creation of *Revenue Stream*. [IEAB](#) again rejected these analyses in its review of *Revenue Stream*. However, BPA did not remove any of the purported economic benefits offered up in the *Revenue Stream* report. Instead, BPA focused on the agency's core expertise: electricity production and marketing, which alone was more than sufficient to show that there would be a significant economic cost to the region if the lower Snake River dams were removed. Those who want a perspective on how much a correction to economic benefits might further increase the economic costs should review the IEAB report.

Conclusion. Eastlake closes his piece by calling for a fresh analysis on power replacement costs. But this does not address several factors – that the vast weight of evidence is that the costs to replace these resources has only increased; that there is no substantive evidence offered to support a revisit of the economic costs; and that the U.S. Army Corps of Engineers Environmental Impact Statement – the last comprehensive analysis on this subject – cost millions of dollars and occupied thousands of person-hours.