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Ms. Gillian Charles
Energy Policy Analyst
gcharles@nwcouncil.org
Northwest Power & Conservation Council
851 SW 6th Avenue, Suite 1100
Portland, OR 97204-1348

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By Electronic Filing

Re: Conservation and Fishery Group Comments on Northwest Hydroelectric Association's Regional Hydropower Potential Scoping Study

Dear Ms. Charles:

Conservation and Fishery Groups in the Pacific Northwest appreciate the opportunity to comment on the Northwest Hydroelectric Association's (NWA) Regional Hydropower Potential Scoping Study, completed in November 2014. The NWA report includes a review of last April's study commissioned by the US Department of Energy (DOE) and conducted by the Oak Ridge National Laboratory.¹ The Northwest Power and Conservation Council's (Council) objective for this study was "to gain a better understanding of Northwest potential for new hydropower development and for upgrades to existing units, and the costs associated with that potential development." The scope of the Council's study "was to review and analyze... existing reports and determine if a realistic, reasonable assumption for hydropower potential [capacity and generation -- emphasis added] could be determined from that work."²

Conservation and Fishery Groups support the finding of the NWA report that the Oak Ridge study is unrealistically high³ and we believe the report documents a fact that conservation and fishery groups have known for decades: we have already built out all of the economically and environmentally feasible "new" conventional hydropower in the Northwest. After reviewing the NWA report, it appears there is so little potential hydropower that it may not be worth considering in future regional portfolios.⁴

Conservation and Fishery Groups, all members and partners of the Hydropower Reform Coalition,⁵ have been deeply involved in the Council's Draft Amended Fish and Wildlife Program, as well as the 2014

¹ In August, 2014 the Council hired the Northwest Hydropower Association to undertake a Regional Hydropower Scoping Study. The study can be found at www.nwcouncil.org/energy/graac/hydro

² <http://www.nwcouncil.org/media/7148577/1.pdf>

³ According to the NWA report, "the amount of capacity identified within the [DOE] assessment for the Pacific Northwest region is 25,226 MW..." (Page S-3) nearly eight times the capacity found by NWA which states that "[T]he theoretical future hydropower potential for the Northwest appears to be in the range of 3,200 MW..." (Page S-9). Thus, some 88% of the rivers listed as having hydropower potential by DOE do not.

⁴ Outside of pumped storage projects, only 400 megawatts (MW) is in capacity upgrades to existing projects, and only 200 MW is in new stream reaches and conduits. <http://www.nwcouncil.org/news/blog/regional-hydropower-potential-is-lower-than-federal-estimate/>

⁵ The Hydropower Reform Coalition is a consortium of more than 160 outdoor recreation, conservation and fishery organizations nationwide that advocate for river protection and restoration at individual hydropower dams regulated by the

Program approved in October.⁶ Throughout that involvement, Conservation and Fishery Groups provided support for the Protected Areas Program (Program). This multi-organizational letter continues that support, as eighty-eight percent of the capacity identified in the DOE report is on rivers where for the past 30 or so years, the Council has considered hydropower development to be off limits because of unacceptable impacts to fish and wildlife, as well as outdoor recreation.

Conservation and Fishery Groups also have an interest in how report information may potentially influence the Draft 7th Power Plan, now under development and which will assist in deciding how to meet future energy needs. We are especially interested in how this report will help determine the methodology used to quantify environmental costs and benefits, and how that method will be used in the Council's analysis of new resource costs.⁷ We look forward to working with the Counsel and other stakeholders in the development of the 7th Power Plan.

Overall Comments on the Report

Conservation and Fishery Groups strongly support the report's statement that "each project must be reviewed ... for its impact on water quality, quantity, fish and wildlife and habitat, as well as land use and other parameters." [Page S-2] We would add recreation to that mix of affected and important public resources. In most cases, we also support increasing hydropower generation at existing projects "that have a less significant impact on the region's rivers and stream..." [Page S-2] That includes support for generation at existing non-powered dams, conduit projects, additions to existing facilities (more power from the same water), and with tentative support for off-stream and closed-loop pumped storage projects.⁸

Reasonable, Realistic Estimates of Hydropower

According to the report summary, the Counsel sought to "understand if the substantial new hydropower potential identified in several recent studies (DOE and 23 others) could be used to determine a reasonable, realistic estimate of regional hydropower potential capacity and generation." [Page S-1] Rather than answering that directly, the NWA "added to the scope of work additional areas to be explored to better validate the hydropower potential that may be available..." Identifying potential is different than validating potential that may be available, and providing this information is above and beyond the Counsel's purpose (see above concerns over influence on the 7th Power Plan). However, it is clear from the report that (contrary to the DOE findings) the Pacific Northwest may not have the greatest potential for new hydropower, and developing even that small, additional power would harm remaining rivers without significantly diversifying the region's energy portfolio.

Protected Areas Program

The report is confusing in regard to the Protected Areas Program. For example, on Page S-2 the report says "Hydropower projects that require new diversions from a river or stream within protected areas, as of the new October 2014 measures for the Council's Fish and Wildlife Program, now allow an exception

Federal Energy Regulatory Commission (FERC). The Coalition enjoys an especially strong membership in the Pacific Northwest due to the value placed on our diverse, wild and beautiful river resources, as well as the intense degree of hydropower development and the considerable contribution of hydropower to the region's energy portfolio. Additional information on the Coalition at www.hydroreform.org

⁶ On September 17, 2013, Conservation and Fishery groups submitted recommendations to the Council on proposed amendments to this Program, and on July 25, 2014 additional comments were submitted on the input received by some 68 organizations, agencies and tribes, and more than 400 individuals. Conservation and Fishery Group recommendations mirrored the overwhelming support by agencies, tribes and individuals for strengthening this important Protected Areas Program which protects some 44,000 miles of Northwest streams and rivers from future hydropower development.

⁷ The Council has begun work on the 7th Power Plan and expects to approve the final plan in December 2015. The Council also expects to release a draft plan on The Methodology for Determining Quantifiable Environmental Costs and Benefits paper in the fall of 2015.

⁸ As identified in the report, most pumped storage projects remain in the planning stages and will require additional research and environmental scrutiny as they proceed.

process under which the Council may consider a project with a run-of-the-river project at a new diversion from the stream.”

“New diversions” are only addressed by the Council in its exemption language, which has been in the program all along and only relates to adding hydropower to existing non-hydropower diversion structures. Additionally, the Council’s language says nothing regarding run-of-river projects. It states that “As part of this [protected areas] strategy, the Council supports protecting streams and wildlife habitats from any hydroelectric development where the Council believes such development would have unacceptable risks to fish and wildlife.” (Emphasis Added).⁹ Additional examples of confusing or incorrect assumptions include:

- Page S-1, “Projects that require a new diversion from a river or stream are subject to the ‘protected areas’ stream reach designations of the ... Fish and Wildlife Program.”
- Page S-2, “These projects have a less significant impact on the region’s rivers and streams as they do not require a new diversion and therefore are not subject to Council review under the protected areas designation.”
- Page S-3, “The review identifies which studies contain projects that can be successfully developed without impact to the protected areas designations because they incorporate an existing diversion from the stream or do not require diversion to implement.”

All existing and proposed run-of-river projects, including new “damless” technologies require a diversion of natural river flow and as such each has or will have significant impacts on rivers and streams. Existing and proposed run-of-river projects may not require a “dam” or “weir” but each requires a diversion of water out of the river channel and so will not have less of an impact on rivers, streams and the protected areas designation. All new proposals that lie within Protected Areas, including run-of-river proposals, must be subject to Council review.

The historical record of dams on rivers negates any claim that small hydro has minimal negative impacts. Likewise, data projections from the NWA report demonstrate that the new capacity potential is far from providing a substantial positive impact. From experience, Coalition members disagree that any project that can be permitted is likely to have minimal negative impacts.

Exceptions within Protected Areas

Conservation and Fishery Groups have urged the Council to keep exceptions out of the Protected Areas Program. The NWA report references (Page S-2) an exception process where new run-of-river projects “petition for an exception... for proposed projects that will provide exceptional benefits to fish and wildlife.” This ignores another fact known for decades: If you want to provide exceptional benefits to fish and wildlife – don’t build new dams.

Conservation and Fishery Groups do not agree that new dams will offer exceptional benefits that will trump the overall protections to Northwest rivers and streams already provided by the Protected Areas Program (only 12.4% of the potential identified in the DOE study lies outside of protected areas).

ADDITIONAL COMMENTS

Hydropower as Renewable Energy -- The report says that “The various hydropower technologies provide a renewable resource without fuel and without greenhouse gas emissions.” (Page S-4) While the water (fuel) used by hydropower dams is renewable, “claiming that hydropower is a benign alternative to fossil fuels is false.”¹⁰ Certainly not all of the hydropower technologies in the NWA report are equal in terms

⁹ Page 52, prepublication version of the Council’s Fish and Wildlife Program.

¹⁰ Hydroelectric power’s dirty little secret revealed. www.newscientist.com/article/dn7046-hydroelectric-powers-dirty-secret-revealed.html#.VKslVYvF98E

of emissions or how these projects will affect other water quality and quantity issues. Recent reports on greenhouse gas emissions from hydropower reservoirs show significant amounts of carbon dioxide and methane and new research suggests that methane emitted from man-made reservoirs may be much higher than 20% of all man-made methane emissions.¹¹ Run-of-river projects without significant reservoirs still require diverting water out of the river or stream bed and produce impacts to fish, wildlife and recreational use. Setting this record straight is important as the NWA report references a formula by the Hydropower Analysis Center that shows the environmental and cost benefit associated with hydropower generation in avoiding emissions from greenhouse gases generated by fossil fuel resources. [Page S-12]

Long Project Life -- The report states that “developing a comparison among generation projects needs to take into account the long project life [of hydropower dams].” [Page S-12] While true that some facilities in the region have operated for over 100 years, comparing among generation projects without including capital investment in facilities, ongoing operations and maintenance, relicensing and new investment in environmental protection, mitigation, and enhancement measures is unrealistic. The NWA statement does not factor in these expenditures over the life of those projects. For example, Snoqualmie Falls has twice built a new powerhouse over its 100 year history while the Rocky Reach Hydro Project on the Columbia added generators in 1969, completed a major powerhouse upgrade that started in 1995, and installed a first-of-its-kind fish bypass system in 2003. The fish bypass upgrade cost approximately \$107 million.¹² Any comparison must also include the growing number of hydropower projects that have been removed because they were no longer safe, economic or environmentally sound. The Pacific Northwest has been a leader with dam removal being studied or undertaken on more than 80 rivers in Alaska, Montana, Oregon and Washington.¹³

Disadvantages – As well as listing the long life, reduced emissions, ability to balance other renewable resources, and the non-fluctuating fuel costs of hydro generation, the report must address as well the disadvantages of hydro. This is especially important when comparing new hydropower proposals which face large and increasing capital expenses and investment, a long-term downward trend in open market prices and value, greater environmental scrutiny, and in many cases insurmountable economic infeasibility. Run-of-river projects, where the NWA report finds the most “new potential” are greatly susceptible to these disadvantages. In addition, without storage capacity, a run-of-river project’s generation is not dispatchable (able to ramp generation up and down), and thus cannot effectively back up intermittent wind and solar projects.

Tidal and Wave Energy Projects – Page 4-1 lists current studies on the potential for tidal and wave energy resources. Conservation and Fishery Groups recommend adding Hydrokinetic Energy Projects and Recreation, a Guide to Assessing Impacts, December 10, 2010. The guide is available online at www.hydroreform.org/hydroguide/hydrokinetic-recreation.

Process for Communicating with Proposing Developers – On Page S-7 the NWA report recommends a return to an earlier process that requires Council staff talking to the proposing developer to help assist in verifying which projects may be viable in the near future and whether they can meet regulatory requirements and cost-effectiveness. Conservation and Fishery Groups believe this demonstrates that currently there is a need to determine which projects are actually viable, and we would strongly support such a process.

Comments of the Bonneville Environmental Foundation (BEF)¹⁴ – Conservation and Fishery Groups support many of the comments submitted by the Foundation, and join BEF in “agreeing that there can be

¹¹ www.climatecentral.org/news/hydropower-as-major-methane-emitter-18246

¹² www.chelanpud.org/juvenile-fish-passage.html

¹³ <http://www.hydroreform.org/news/2011/01/03/hydropower-reform-coalition-special-report-restore-dam-removal-in-the-pacific-northwest>

¹⁴ <http://www.nwcouncil.org/media/7148540/council-bef-memo.pdf>

an increased role for hydro in the region's energy future and projects done correctly can provide energy, economic, environmental and climate benefits." We also agree with BEF's need to "express a reservation with the implicit premise that new projects need only avoid protected areas to be presumed environmentally acceptable. In fact, most streams in the PNW, in and out of protected areas, are water quality and quantity constrained. Interacting characteristics of low flows and excessively high temperatures should be considered limiting conditions wherever stream biota may be at risk, or where such at-risk biota are downstream of a potential project near enough that it could create additional stress through water diversion, even if the diversion is temporary and the flows are returned to the stream even downstream of the at-risk biota."

We construe BEF comments to offer strong support for Conservation and Fishery Group concerns over the adverse impacts of all diversions, including run-of-river projects (diversion is temporary and the flows are returned), on stream and river health. And we believe that the NWA report supports our long-held opinion that new hydropower technology and not new conventional dams offer the best hope for providing energy, economic, environmental and climate benefits. We also see BEF comments as providing strong support for previous Conservation and Fishery Group requests to the Council to anticipate and address expected changes to Pacific Northwest rivers and headwater streams due to climate change.

We would modify BEF comments regarding Hydro's "added value of being a somewhat dispatchable resource, [and producing] no greenhouse gases." Only pumped and conventional (reservoir) storage dams provide support for other renewable resources. Run-of-river, as well as irrigation and canal generation will not provide the ability to store and release dispatchable water. We address hydropower reservoirs and greenhouse gas above.

Thank you for considering our comments on the NWA Regional Hydropower Potential Scoping Study. If you have questions or would like additional information, please contact Rich Bowers, Hydropower Reform Coalition Coordinator at 360-303-9625, or at Rich@hydroreform.org

Sincerely,

Rick McGuire, President
Alpine Lakes Protection Society
rckmcguire@gmail.com

Michael Garrity, Washington State Conservation
Director
American Rivers
mgarrity@amrivers.org

Thomas O'Keefe, Pacific Northwest
Stewardship Director
American Whitewater
okeefe@americanwhitewater.org>

Stuart Rick Gillespie, Vice President, Secretary
Columbia River Bioregional Educational Project
rickg@columbiana.org

Jere Gillespie, President
Columbiana
j.columbiana@gmail.com

Mitch Friedman, Executive Director
Conservation Northwest
mitch@conservationnw.org

Patricia A. Sumption, President
Friends of the Green River
patsump@juno.com

Pat Arnold, President
Friends of the White Salmon River
greenpastures@gorge.net

Darilyn Parry Brown, Executive Director
Hells Canyon Preservation Council
darilyn@hellscanyon.org

Rich Bowers, Western Region Coordinator
Hydropower Reform Coalition
Rich@hydroreform.org

Kevin Lewis, Conservation Director
Idaho Rivers United
kevin@idahorivers.org

Joseph Vaile, Executive Director

Klamath Siskiyou Wildlands Center
joseph@kswild.org

Mike Petersen, Executive Director
The Lands Council
mpetersen@landscouncil.org

Connie Gallant, President
Olympic Forest Coalition
cg@conniegallant.com

Dan Morse, Conservation Director
Oregon Natural Desert Association
dmorse@onda.org

Greg Haller, Conservation Director
Pacific Rivers Council
greg@pacificrivers.org

Joseph Bogaard, Executive Director
Save Our Wild Salmon Coalition
Seattle, WA
joseph@wildsalmon.org

Dan Ritzman, Alaska Program Director
Sierra Club
dan.ritzman@sierraclub.org

Stan Vejtasa, Conservation Chair
Umpqua Valley Audubon Society
svejtasa@gmail.com

Tom Uniack, Conservation Director
Washington Wild
tom@wawild.org

John DeVoe, Executive Director
WaterWatch of Oregon
john@waterwatch.org

Jonathan Stumpf, President
Wild Steelhead Coalition
jonathanstumpf@gmail.com

Andrea Matzke, Executive Director
Wild Washington Rivers
andrea@wildwarivers.org