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November 16, 2014

MEMORANDUM

TO: Interested Parties

FROM: Council Staff

SUBJECT: Council's Regional Hydropower Potential Scoping Study

In August 2014, the Council released a request for proposals for a regional hydropower scoping study. The Council selected a proposal by the Northwest Hydroelectric Association (NWEHA) to perform the work with the assistance of several subcontractors. The contractor has submitted its final report to the Council – see <http://www.nwcouncil.org/energy/grac/hydro>. The results of this study will be discussed at the November 19th Generating Resources Advisory Committee (GRAC) as well as the December 9th Council Meeting.

The Council's 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 Council's last major assessment of hydropower potential was conducted during the development of its Fourth Power Plan in 1994. Since then there have been numerous regional and national studies identifying large amounts of hydropower potential. However, these studies considerations of costs, transmission constraints, environmental constraints (including the areas protected from new hydropower development as part of the Council's fish and wildlife program) and other constraints were not clearly stated. (See the background below.) The scope of the Council's study was to review and analyze these existing reports and determine if a **realistic, reasonable** assumption for hydropower potential could be determined from that work. If a realistic, reasonable potential could not be derived, the contractor was asked to recommend next steps to develop a hydropower supply curve for the Northwest.

In developing a resource strategy for the regional power plan, the Council identifies and assesses various generating resources and technology alternatives. Assumptions based on cost, availability, regional potential, and technical specifications are developed for each resource. Those assumptions are discussed and vetted by the GRAC and are

also subject to review and comment by the region's stakeholders and public at large during the development of the Council's power plan.

The results of this study, along with other sources and advisory committee input, will be used by the Council in its analysis of regional hydropower potential as part of its development of the draft Seventh Power Plan.

Background

In April 2014, the Department of Energy (DOE) released a hydropower potential assessment that identified almost 85 gigawatts of developable hydropower in new stream reaches in the United States. The largest potential was found to be in the Pacific Northwest with about 25 gigawatts identified. To put this number in perspective, the region's current hydropower nameplate capacity is around 33 gigawatts.

The DOE assessment is the latest of several studies assessing hydropower potential that have been performed at the national and regional level over the past decade. The existing studies vary in scope, objective and methodology. For example, while the 2014 DOE study focused on new stream reaches, other studies have looked at potential at existing non-powered dams, upgrades at existing hydropower facilities, and varying size, site or region-specific assessments. In addition, studies used different parameters and screens to narrow down and define hydropower potential. For example, some studies may exclude hydropower potential located solely within the region's Protected Areas, while other studies may also exclude areas in federally designated wilderness and protected areas, and other studies apparently ignored (or were not aware of) the protected areas altogether.

As a result, there is a wide range of estimates of hydropower potential for the Pacific Northwest. In addition, existing estimates are often based on physical potential and may not take into account environmental impacts or cost-effectiveness.