



May 24, 2010

The Honorable Nancy H. Sutley
Chair
Council on Environmental Quality
Executive Office of the President
Washington, DC 20503

Re: Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions

Dear Ms. Sutley:

The National Hydropower Association (NHA)¹ appreciates this opportunity to comment on the Council on Environmental Quality's "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" (Draft Guidance). As the Administration develops guidelines for federal agencies analyzing the climate and emissions-related effects of their actions in accordance with the National Environmental Policy Act (NEPA), NHA respectfully offers the following perspective from the U.S. hydropower industry.

Background

Hydropower projects operate in accordance with a suite of environmental laws and regulations, including NEPA, the Endangered Species Act, Clean Water Act, among others. NHA's hydropower project owners and operators have worked closely with federal agencies to achieve operating agreements that protect, mitigate and enhance the environmental resources potentially affected by hydropower operations. Federal agencies conduct NEPA analyses on many activities associated with hydropower projects.

In particular, the NEPA process is a central feature of the federal licensing process for hydropower projects. The Federal Energy Regulatory Commission (FERC) prepares a NEPA document, typically an environmental impact statement, when issuing initial licenses for proposed new hydropower projects or new licenses when relicensing existing hydropower projects. Licenses issued by FERC contain, among other requirements, protection, mitigation, and enhancement measures, and FERC's NEPA document informs its decisions in establishing these license measures.

¹ NHA is a non-profit national association dedicated exclusively to securing hydropower's place as a clean, renewable and reliable energy source that serves our Nation's environmental and energy policy objectives. Its membership consists of more than 170 organizations, including consumer-owned utilities, investor-owned utilities, independent power producers, equipment manufacturers, and professional organizations that provide legal, environmental and engineering services to the hydropower industry. NHA members represent over 60 percent of domestic, non-federal hydropower generation, including conventional hydropower and new technologies such as ocean, tidal and instream hydrokinetic power.

The relationships established among stakeholders (including project owners, federal and state agencies, non-governmental organizations and local citizens and governments) through the NEPA process often results in collaborative licensing agreements with meaningful environmental benefits, particularly in terms of habitat restoration, species protection, and land management activities. These efforts occur at the same time our members continue their long-standing commitment to generating hydropower – our most significant source of clean, renewable electricity.

Indeed, for over 100 years, hydropower has been the most widely employed renewable energy resource in the United States and around the world. Even as recent national policies have promoted and spurred the development of other renewable energy sources, hydropower is far and away the nation's largest renewable resource for electric generation and has long led our efforts to combat climate change and reduce greenhouse gas (GHG) emissions. Hydropower currently represents approximately 7 percent of all electricity generation in the United States, avoiding approximately 225 million metric tons of carbon emissions each year.

WHAT DEPARTMENTS AND AGENCIES SHOULD CONSIDER AS PART OF THEIR GHG EVALUATION

Because of the carbon-neutral characteristics of hydropower, as well as its technological maturity and prevalence, our success as a nation in combating climate change and reducing greenhouse gas emissions hinges directly – and significantly – on the preservation, promotion, and expansion of our hydropower resources. For these reasons, federal agencies should consider the following when evaluating the effects of their actions pursuant to NEPA analyses on greenhouse gas emissions:

- *Recognize the GHG Reduction Benefit of Hydropower Generation*

On page 5 of the Draft Guidance, CEQ addresses the treatment of “the energy requirements of a proposed action and the conservation potential of its alternatives.” CEQ goes on to state that agencies should “evaluate GHG emissions associated with energy use and mitigation opportunities and use this as a point of comparison between reasonable alternatives.”

An important additional consideration would be an evaluation of the direct and indirect effects of the *alternatives themselves* on potential GHG emissions. For example, agencies should recognize that certain federal actions contemplated in NEPA analyses for hydropower licensing or permitted activities could restrict a project's operational flexibility and thereby reduce electric generation. Imposing non-power priorities at hydropower projects – particularly those that modify flows, limit peaking capability or affect storage capacity – can reduce hydroelectric generation. As such, NEPA evaluation of GHG emissions associated with a possible direct or indirect reduction in hydropower generation must inherently consider: 1) the loss of this potential offset to existing GHG emitting resources; and 2) the realistic alternative sources of energy, which are likely to be greater GHG emitting energy sources.

Stated another way, less electricity generated by hydropower projects will necessitate more electric generation from other resources. In most cases, in order to replicate hydropower's firm

capacity and load balancing characteristics, the substitute resource is likely to be thermal generation that emits GHGs. Before recommending a NEPA alternative, the federal action agency should clearly identify the likely effects its decision will have on net production of GHG emissions.

- *Recognize the role of hydropower in integrating variable renewable resources*

In addition to generating clean, renewable electricity, hydropower facilitates the ability to integrate, stabilize and firm other, more intermittent and variable renewable energy resources, such as wind and solar, and therefore bring additional renewable electric power to the transmission grid. Conventional hydropower and pumped storage hydro plants have several advantages as complementary resources to wind and solar generation.

Hydropower provides energy storage, load balancing, frequency control, and incremental and decremental reserves. While the flexibility of hydropower projects is not unlimited, conventional hydropower and pumped storage facilities are able to quickly respond to electric system fluctuations, providing a solution to “absorb” or “smooth out” the peaks and valleys seen in output from variable renewable resources.

As discussed above, federal actions can restrict the operational flexibility of hydropower projects, thereby limiting the capacity integrate, stabilize and firm other renewables. In fact, loss or reduction of peaking operation has been a common trend for hydroelectric projects during the FERC relicensing process. While every relicensing process has unique issues to address and may require changes in project operations, the system-wide loss of flexibility has consequences on hydropower’s role as an enabler of wind and solar integration to the electric grid. NEPA analyses should consider the indirect effects on GHG emissions due to constraints imposed on hydropower resources, such as potentially decreasing development and integration of wind and solar resources, and the corresponding increased use of GHG emitting sources of energy.

CONSIDERATION OF CURRENT OR PROJECTED EFFECTS OF CLIMATE CHANGE ON PROPOSALS FOR AGENCY ACTION

Federal agencies should consider the following when evaluating the effects of climate change on a project proposal:

- *Climate Change Modeling Has Yet to Achieve the Ability to Forecast Potential Impacts at the Project Level*

On page 7 of the Draft Guidance, CEQ provides an example relevant to the hydroelectric industry; specifically: “[I]f a proposed project requires the use of significant quantities of water, changes in water availability associated with climate change may need to be discussed in greater detail than other consequences of climate change.”

Certainly, hydroelectric projects are dependent on the availability of water. Project owners and operators annually forecast water availability based on snowpack, long-term precipitation

averages and runoff predictions. Seasonal forecasting for hydropower generation is a fairly accurate exercise, but long-term predictions remain elusive. Current climate models only have the capability to suggest wider regional impacts, possibly characterized to a specific river basin, but not yet at a project-specific level. A “project-by-project” evaluation of climate change impacts on individual hydropower facilities is not possible at this time, considering the limited resolution capacity of existing models. Climate change effects on temperature, stream flow and precipitation patterns are likely to be characterized at the regional level and interpolated to a more localized level, if possible.

Appropriately, the Draft Guidance recognizes that “there are limitations and variability in the capacity of climate models to reliably project potential changes at the regional, local, or project level” (Draft Guidance, page 8.). Further, the Draft Guidance acknowledges that “action agencies need not undertake exorbitant research or analysis of projected climate change impacts in the project area or on the project itself, but may instead summarize and incorporate by reference the relevant scientific literature” (Draft Guidance, page 8). NHA agrees. Lead agencies analyzing potential impacts of climate change on stream flow and precipitation patterns at hydropower projects would best utilize scientific resources by relying on regional research programs.

Conclusion

NHA appreciates this opportunity to offer input on this document. If there are future opportunities to comment as the draft is further developed and its potential application to our members’ projects becomes more well defined, we may provide additional input. Please do not hesitate to contact us with comments or questions.

Sincerely,

A handwritten signature in cursive script that reads "Linda Church Ciocci".

Linda Church Ciocci
Executive Director