U.S. House Subcommittee on Energy and Power

Discussion Drafts Addressing Hydropower Regulatory Modernization and FERC Process Coordination under the Natural Gas Act.

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Written Testimony of

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Executive Summary

- Cube Hydro Partners' current portfolio of hydropower generation assets consists of 13 hydropower facilities that comprise over 106 MWs. The company is committed to developing, owning and operating hydropower facilities across the United States and is actively pursuing the potential development of new hydropower projects on existing infrastructure. This is a tremendous opportunity. A recent study by the Oak Ridge National Laboratories cites the potential to bring more than 12,000 MW of new renewable energy onto the grid at existing non-powered dams while creating hundreds of thousands of new jobs and mitigating 40 million tons of greenhouse gas emissions annually.
- The length, expense and uncertainty of hydro licensing significantly disadvantage its development. Licensing can extend for nearly a decade, and such a protracted and uncertain regulatory process hampers investment by increasing regulatory, financial, and implementation risks, thus driving up the cost of new hydropower at existing dams.
- In the hydropower sector, securing development, construction and project financing is extremely challenging. The length of the licensing the process makes the investment financially too risky. Time is money. These licenses and permits contribute to development costs being 25-30% of the overall project cost. We experienced these immense regulatory challenges first-hand while developing the 6 MW Mahoning Creek Project in Pennsylvania.
- To facilitate hydropower development, regulatory processes should be streamlined to provide developers and investors with added certainty. Removing duplication in the process and placing a single agency in charge of managing the entire approval process is needed.
- The Federal Energy Regulatory Commission (FERC) should also consider a "use it or lose it" approach to permitting and licensing so facilitate successful hydropower development.

Introduction

Good morning, Chairman Whitfield, Ranking Member Rush, and distinguished members of the Subcommittee. My name is John Collins, and I am the Managing Director of Business Development for Cube Hydro Partners, a small woman-led business that has hydropower operating assets in five states. The company also engages in new hydropower development through the building of new hydropower facilities at existing dams.

I have over 25 years of experience in the energy industry, including previous experience in the development of over 3,500 MW of merchant power natural gas-fired plants during my career at Constellation Energy. I spent over 22 years with Constellation Energy Group in various leadership positions, including Chief Risk Officer, Chief Financial Officer, and Senior Vice President of Integration.

I am pleased to have the opportunity to appear before you this morning to discuss the importance of modernizing and improving the hydropower licensing and relicensing process to make it more efficient and transparent, while supporting the environmental protections.

Cube Hydro Partners' Commitment to Clean, Renewable Hydropower Development

Cube Hydro Partners is committed to developing and owning hydropower facilities across the United States, and we are actively pursuing the potential development of new hydropower projects in North America. Our current portfolio of hydropower generation assets consists of 13 hydropower facilities that comprise over 106 MWs. This includes the 6 MW Mahoning Creek Hydroelectric Project, located in Western Pennsylvania, which we completed construction of and commenced commercial operations in December 2013. The Mahoning Creek Project was the first new hydroelectric project built in Pennsylvania in more than 25 years at a U.S. Army Corps of Engineer (USACE) dam (and post-Hurricane Katrina). The project

created approximately 100 new jobs during construction and is a clean, carbon-free electricity resource located at existing infrastructure that provides more than 20,000 MWhs to families and businesses each year. Although the end result is a success story, Cube Hydro Partners faced immense regulatory challenges in getting to this point. We are here today to support, in principle, many of the proposals in the draft legislation which eliminate duplication and streamline the regulatory process because the challenges we faced—detailed later in this testimony—are pervasive within our industry and often result in abandonment of good, feasible projects. Cube Hydro Partners believes that the legislative improvements embodied in the draft bills are desperately needed to create a regulatory environment that supports more success stories like ours.

Cube Hydro Partners currently holds preliminary permits for 5 possible hydroelectric development projects, comprising approximately 24 MW with an expected 100,000 MWhs of annual generation. The development of new hydropower generation is an important part of our overall business strategy and is an important component of meeting our country's goal of a less carbon intensive economy. In our experience, our customers greatly value new, reliable and clean hydropower—and we believe the American people also value these principles. The draft bills under discussion today, if enacted, would go a long way to increasing our reliance on domestic, renewable resources and moving our economy forward in an environmentally responsible manner.

Growth Potential for Hydropower

Because hydroelectric power is a clean, renewable, baseload energy that helps to stabilize our electric grid and is a resource that is highly valued by electric grid operators, as well as

electric customers. Hydro has the benefit of being a baseload resource – rather than variable wind or solar – which provides more stability to the electric grid. Hydropower also provides other ancillary services to the grid such as regulation, spinning reserves and black start capability that can be used to help integrate other renewable resources.

Although hydropower development is site-specific meaning, certain conditions of potential energy relative to development cost must be present at any potential site, there remain strong growth opportunities for hydropower in the U.S. In the lower 48 states, the majority of this potential has the added benefit of being located at existing dams, which are in operation for a specific purpose, such as flood control, water supply for surrounding communities, recreation and navigation. The National Hydropower Association, for example, has estimated that of the approximately 80,000 dams in the U.S., only 3 percent produce electricity. This is not to say that each dam meets the specific conditions required to feasibly develop hydropower, but according to a 2012 Department of Energy report, adding power to non-powered dams has the potential to add up to 12,000 MW of new renewable energy capacity — enough to power nearly 4 million American homes. Eighty-one of the top 100 non-powered dams are owned by the U.S. Army Corps of Engineers (USACE), and could produce thousands of additional MWs. If we retrofit these dams with hydropower and upgraded and modernized the USACE owned and operated fleet, we estimate that we could produce enough incremental clean electricity to supply the electricity demand of the US federal government. The opportunities are tremendous.

Hydropower Is Disadvantaged by Regulatory Processes

The licensing of hydroelectric power generation is governed by the Federal Power Act (FPA), which was originally enacted nearly 100 years ago for the express purpose of

encouraging development through a single regulatory body, instead of a cadre of federal and state authorities, which at the time stymied development. While the FPA provided for inputs and considerations of other regulators, Congress at the time understood the need for the regulatory regime to operate under a single, consistent license regime administered by a single agency.

Of course, much has happened since the original passage of the FPA. Modern environmental requirements, such as the Clean Water Act and Endangered Species Act understandably require the involvement of regulatory agencies in addition to the Federal Energy Regulatory Commission (FERC) in the hydropower licensing process. These inputs are necessary in our modern regulatory regime, and the hydropower industry has done its part to protect, mitigate damages to, and enhance aquatic and terrestrial resources that we all value. Nonetheless, the licensing approval process has been hindered by the current regulatory and licensing processes, resulting in unnecessary delays and numerous approvals by other federal and state resource agencies. These regulatory process costs would be much better served supporting on-the-ground environmental enhancements, or in the hands of families and businesses that are required to pay for their electric service.

Ten years ago, with the passage of the Energy Policy Act of 2005 (EPAct 2005), Congress reached a significant compromise that was intended to address many of these problems and promote hydropower development in a manner that protects non-developmental resources. EPAct 2005 contemplated greater input by license applicants—relying upon their expertise in managing and developing their projects—in crafting solutions to critical environmental management objectives. The Act promoted greater certainty in key factual issues justifying environmental measures, which often undermine project economics, through trial-type hearings.

And it charged all resource agencies to exercise their considerable authorities in a manner that equally considers both developmental and non-developmental values.

Unfortunately, in real life, many of the contemplated efficiencies and trade-offs either have not been implemented or are not producing the intended results of promoting new hydropower development. The length, expense and uncertainty of the hydropower licensing and approval processes continue to place hydropower at a significant disadvantage compared to other renewable resources. The FERC licensing process can take up to a decade to complete, which often just leads to the next required federal permit or approval. These lengthy, protracted and uncertain regulatory processes unquestionably hamper investment by increasing regulatory risks, financial risks, and implementation risks, thus driving up the cost of new hydropower, and making it much less attractive for investment.

For new project developers like Cube Hydro Partners, securing financing—money to pay for all the work required before the first shovel even hits the ground—is an essential part of our business. And although all energy projects face this same challenge, hydropower licensing and permitting requirements place this resource at a distinct and significant disadvantage. Factors such as a 10-year approval process for licenses and permits, and permitting costs can be as much as 25 to 30 percent of the overall cost of the project which often times make the financial investment too risky. Investors are simply—and understandably—unwilling in many cases to take the risk, for the following reasons:

- *Time Value of Money*. The lengthy process itself adds additional costs to the project. It would be helpful to limit the time that a developer has to file a preliminary application document (PAD) to a maximum of three years. This "use it or lose" provision would allow developers who are serious about the process to have

opportunities to build at non-powered dams. Currently entities can collect permits and tie them up for eight years before they even break ground on a project.

- *Delayed Income Stream*. The high up-front costs for hydropower, together with the lengthy licensing and permitting processes, delay a revenue source, and recapture on investment, for many years.
- *Views of Investors.* Developers are facing significant financial challenges to find investors who are willing to invest in hydropower, due to the high cost, regulatory risks, and delayed return on investment. While investors do consider the merits of hydropower (e.g., low fuel costs, low operational costs over time), investors also weigh the shorter term risks when deciding where to invest capital.
- *Power Purchase Agreements*. Regulatory uncertainty and the ever-present risk of project delays make it difficult to acquire power purchase agreements (PPA) for the sale of power from the plant, as potential off-takers are reluctant to sign up for long-term agreements for uncertain projects. The failure to obtain a PPA, in turn, inhibits a developer's ability to obtain project financing creating a vicious cycle that has caught many proposed hydropower projects.

Cube Hydro Partners greatly appreciates the support and hard work of federal and state employees in assisting with hydropower development efforts. We understand and are committed to responsible environmental stewardship. But the system is not working—for both the developers and the regulatory employees. In too many cases, the investment risk has become too high, making it difficult or impossible to continue with the project long-term. Too many good

projects have collapsed under the weight of an outmoded, inefficient, and expensive regulatory process.

The effects of the process can easily be seen in the numbers: according information we analyzed from FERC's database, between 2010 and 2013, 358 preliminary permits for the development of hydropower projects were issued for a total of approximately 60,000 MW. During that time period, only 27 new FERC licenses were issued for a total of 143 MWs, and only 11 projects were placed into service for a total of 60 MWs. And while proposed projects fail for any number of reasons, the attrition rate is alarming.

The view from the ground: A Case Study on the Mahoning Creek Project

Cube Hydro Partners' experience in developing the Mahoning Creek Project (Project) provides a telling example of the effects and challenges of today's licensing scheme. The overall regulatory approval process for the Project spanned almost 10 years from the date the preliminary permit application was submitted in October 2004 to the date the project received its final federal and state permits in March 2013. Given the length of time and the uncertainty of receiving the final license and permits, it was extremely difficult for the Project to secure a PPA with a third party to sell the plant's output, as any contracting party would want assurances that the Project will actually get built and have some idea of when they can expect to begin to receive power generated from the plant. Furthermore, while the FERC license for the Project was issued in March 2011, that license did not settle the regulatory risks associated with developing the project, as the Project still required approval from USACE and agencies of the Commonwealth of Pennsylvania. These final approvals and resulting permits, which included additional environmental requirements, were not received until March 2013.

During this lengthy process of receiving final regulatory approvals, the market for electricity changed dramatically, which resulted in further financial challenges. By the time the Project received its final permits, electricity prices had decreased significantly, which further magnified the financial risk of the Project and made it even more challenging to find a long-term buyer for the plant's generation. In fact, Cube Hydro Partners was unable to finalize the PPA until May 2013 when the plant was under construction.

Need for Improvement

In Cube Hydro Partners' view, problems like those experienced at Mahoning Creek Project (which was at a risk of abandonment during the process) — and many more like it across the U.S. — can and should be avoided in the future. To do this, FERC should be empowered to establish and enforce an overall schedule for all required authorizations under federal law for hydropower development. Federal and state resource agencies should cooperate in the environmental review to eliminate redundancies and provide developers and investors with added certainty. The careful balance of managing developmental and environmental values achieved in EPAct 2005 should be restored.

The draft bills under consideration today could fix these problems and go a long way to promoting our nation's largest source of clean, renewable energy — by a large margin. Removing duplication and implementing schedule discipline would save time and money. Requiring accountability is an essential attribute of efficient management and good government. Empowering FERC to manage the entire process and remove uncertainties and conflicts in license requirements would reduce risks and promote investment.

Cube Hydro Partners faced numerous and considerable challenges while completing the Mahoning Creek Project. As the United States continues to increase our reliance on domestic, renewable energy resources, future hydropower developers — including Cube Hydro Partners — should not be subjected to a process that itself stymies development. Cube Hydro believes that the legislation under consideration by this Subcommittee could greatly improve the process. We are particularly supportive of the provisions that would:

- Minimize duplication of studies in license proceedings;
- Simplify the regulatory process for smaller projects;
- Authorize new studies only when FERC determines that additional data is necessary;
- Weigh the cost-benefit analysis of licensing requirements
- Implement a "use it or lose" provision for submitting a PAD within three years, thus establishing and enforcing project timelines.

These, and other initiatives, would help to simplify licensing requirements and facilitate hydropower project development. We believe that hydropower is an important U.S. infrastructure and providing the ability to invest private capital to upgrade, modernize and stabilize this resource is critical to maintaining the currently installed base which is the largest of any renewable in the U.S. In our view, the legislation before the committee is about accountability in administering laws which make the production of renewable hydroelectricity possible, while properly balancing the environmental interests of stakeholders.

It should also be noted that the hydropower industry has a large number of small business operators and developers. The current regulatory regime does not take into account the disproportionate financial costs that small hydro operators and developers incur. While

Congress implemented some changes two years ago to streamline very small hydro projects from some regulatory oversight, much more needs to be done.

Conclusion

Hydroelectric power is a clean, renewable, baseload energy that helps to stabilize our electric grid. There is strong growth opportunity for hydropower in the U.S., primarily at existing infrastructure. Federal policies should be adopted to encourage the development of this vast resource, and a modernization of the FERC licensing process is needed to do so.

Cube Hydro Partners believes the draft legislative proposals under consideration by the Subcommittee committee today are a reasoned, and responsible, modernization of federal licensing legislation to allow for increased development of this important resource.

I thank the Subcommittee for this opportunity to testify on hydropower's role in meeting our nation's energy and economic objectives and look forward to answering your questions.