

**Written Testimony of Kurt Johnson
On behalf of
The Colorado Small Hydro Association
Before the
U.S. House Committee on Energy & Commerce
Regarding the Hydropower Regulatory Efficiency Act of 2012**



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Testimony of Kurt Johnson, representing the Colorado Small Hydro Association, before the House Energy and Commerce Committee Energy and Power Subcommittee regarding the Hydropower Regulatory Efficiency Act of 2012

Summary of Points

- We had the right ideas about small hydro 120 years ago.
- Small hydro presents a substantial, largely-untapped opportunity for economic development in Colorado and throughout the nation.
- Colorado currently has hundreds of hydro-related jobs, a number of which could grow substantially given the right federal and state policies. Small hydro is particularly significant as an economic development opportunity for rural areas.
- In recent years, FERC has made a valiant effort to improve the accessibility of information regarding small hydro permitting requirements.
- The current permitting process for small hydro is still costly and burdensome -- serving as a barrier to more rapid small hydro development.
- ***FERC exemption applications are lengthy and time consuming to prepare.***
- Securing approval letters takes months.
- The FERC process is particularly burdensome for very small projects, where the cost of FERC compliance can potentially exceed the cost of hydro equipment.
- Colorado took a pro-active step to address this problem by working with FERC to streamline the current permitting framework in the form of a Memorandum of Understanding with FERC.
- So far, however, starting with well over 20 initial applications to the program, only two small hydro projects in Colorado have completed the FERC process through the Colorado program and four more are awaiting final FERC approval -- underscoring the need to further simplify the process for non-controversial hydro projects.
- The bill provides a brilliant solution to the problems described above -- providing a mechanism to streamline and accelerate approval for non-controversial small hydro projects.



The bill provides long-overdue, common-sense reform which will accelerate the development of small hydro – creating jobs in rural areas and leading to substantial new distributed, base-load, emissions-free renewable energy generation. I urge the Committee to support the bill and proceed to House passage as soon as possible.

Introduction

Good morning Chairman Whitfield, Ranking Member Rush and members of the Subcommittee. I am Kurt Johnson, President of the Colorado Small Hydro Association (COSHA) and Principal at Telluride Energy, a small hydro development and consulting firm located in Southwestern Colorado.

I would like to thank Colorado Representative Diana DeGette for the opportunity to be here today to talk about the Hydropower Regulatory Efficiency Act of 2012, which COSHA strongly supports. I'm very glad that Congress is actively exploring ways to accelerate development of small hydro, a renewable energy source which can provide reliable electricity without creating harmful emissions.

My main message to you today is simple: the Hydropower Regulatory Efficiency Act of 2012 provides long-overdue, common-sense reform of small hydro regulation which will be enormously beneficial to the U.S. small hydro industry, helping to create jobs -- particularly in rural areas. I urge the Committee to support the bill and proceed to House passage as soon as possible.

Key Points

We had the right ideas about small hydro 120 years ago.

We seem to have lost sight of a great idea that Nikola Tesla had 120 years ago: for generating electricity, it makes sense to harness available mechanical energy with small hydro systems wherever available -- generating distributed, reliable, renewable energy.

In 1891, the Ames Hydroelectric Generating Plant near Telluride, Colorado went online with engineering by Tesla. The 3.5-megawatt Ames hydro plant was the world's first power plant to generate, transmit and sell alternating-current electricity for commercial purposes.

In Western Colorado, the Delta-Montrose Electric Association, together with the Uncompahgre Valley Water Users Association, is currently developing a 6-megawatt hydro plant utilizing water coming through the Gunnison Tunnel, dug more than 100 years ago.

President Taft came to Western Colorado in 1909 to open the Gunnison Tunnel, the first project undertaken by the U.S. Bureau of Reclamation. Although irrigation for agriculture was the primary motivation behind the construction of the Gunnison Tunnel, the potential to generate electricity resulting from the project was noted by the media of the day. A reporter from the *New York Times* who covered President Taft's opening of the Gunnison Tunnel wrote on August 22, 1909: "The water, after it leaves the tunnel, will have 372 feet to fall, which can be used to generate electric power sufficient to light every town and every farmhouse in the Uncompahgre Valley and provide power for all kinds of commercial and industrial purposes."

In the past, small hydro was used as a generating source because it was the only choice. Over the last 120 years, many small hydro generating plants – including in the small mountain town of Ophir where I live – were simply shut down because of the advent of the modern, central station, large power plants. In the future, I hope we will return to small hydro -- not because it is the only choice, but because it is the smart choice. The bill being discussed here today will help make that future possible.

Small hydro presents a substantial, largely-untapped opportunity for economic development in Colorado and throughout the nation.

Small hydro frequently takes advantage of existing infrastructure, including dams, pipelines and irrigation canals.

Colorado -- and the nation -- has substantial untapped small hydro opportunity at existing dams. The Colorado Dam Safety Branch oversees a total of about 2,900 dams with 1,937 dams of jurisdictional size. Of these, about 1,819 are non-federal dams.

In March of 2011, the Bureau of Reclamation released a report highlighting hydro development opportunities at existing Reclamation dams. In April of 2012, Oak Ridge National Laboratory released a report analyzing the potential for hydro development at existing non-powered dams across the nation. Both reports identified substantial untapped hydro generation opportunities at existing dams.

There is also substantial opportunity for hydro development at existing canals, which can potentially be cost-effectively retrofitted with hydro. Reclamation recently completed an assessment of hydro potential in Reclamation-owned canals which can serve as a model for broader national conduit assessment as is called for in the bill.

There are also opportunities for small hydro development utilizing existing pipelines. Bob Risch, mayor of the mountain community of Ouray, Colorado realized that an abandoned water supply pipeline created an opportunity to save money for the city and offset the electricity load for the city-owned Hot Springs Pools. With a grant from the Colorado Governor's Energy office, in 2010 Ouray completed installation of a 20-kW hydro system.

For many mountain towns, the municipal water system consists of a pipeline high up a mountainside that carries water down to a water treatment plant. The water system typically must install pressure-reducing valves that can sometimes be profitably retrofitted with small hydro.

The town of Orchard City, Colorado budgeted \$200,000 in their 2012 capital budget to install hydro generation which could also serve as a pressure reduction mechanism for a municipal water treatment plant. They contacted me requesting assistance with the project -- in effect seeking to just replace one type of valve which dissipates excess pressure while yielding no

useful benefit – and replacing it with a hydro system which would be able to capture that mechanical energy and put it to good use -- generating electricity to offset the electricity consumption of the adjacent water treatment plant. Construction, however, will likely not take place in 2012 because the city would need to first secure a conduit exemption from FERC in order to build the project.

Colorado currently has hundreds of hydro-related jobs, a number of which could grow substantially given the right federal and state policies. Small hydro is particularly significant as an economic development opportunity for rural areas.

Organizations active in the Colorado Small Hydro Association include consultants and project developers (including my company, Telluride Energy), engineers, lawyers, financiers, environmental consultants, construction companies and equipment manufacturers. Small hydro project opportunities are typically located in rural areas, which are particularly in need of economic development. Small hydro project construction creates job opportunities for tradespeople including concrete workers, plumbers, carpenters, welders and electricians. Following project construction, electricity sales from a hydro plant can create an ongoing revenue stream for farmers, ranchers, municipalities and water districts – providing funds which can be used to maintain and improve aging water infrastructure.

In recent years, FERC has made a valiant effort to improve the accessibility of information regarding small hydro permitting requirements.

In December 2009, FERC held a public conference to solicit input from small-hydro developers about how to make the permitting process easier. FERC subsequently published updated small-hydro permitting information on its website, including templates to simplify the process and FERC has also held permitting process webinars to explain their requirements. These efforts are greatly appreciated by developers, but underlying problems remain.

The current permitting process for small hydro is still costly and burdensome -- serving as a barrier to more rapid small hydro development.

Under current guidelines, small hydro projects can receive either a 5 MW Exemption or Conduit Exemption. But the term “exemption” is misleading. Once a project receives an exemption, it does not need to go through that process again (unlike licensed projects that must be relicensed every 30-50 years). However, it is not an exemption from the original permitting regulatory process and it does not provide an exemption from what are still very onerous paperwork requirements.

FERC exemption applications are lengthy and time consuming to prepare.

A typical exemption application for a small hydro system may be on the order of 100 pages, including all the necessary explanatory text, diagrams, maps, letters and appendixes. Gathering all the necessary information and compiling it can take months, requiring expensive consulting assistance from engineers, attorneys, professionally licensed surveyors and environmental consultants.

Securing approval letters takes months.

Part of the exemption application process involves securing agency concurrence letters from a wide variety of federal and state agencies as well as relevant tribes. For example, below is a list of entities that might need to provide support letters for a small hydro project in Southwest Colorado:

- U.S. Forest Service
- Local County Government
- Colorado Historical Society
- American Rivers
- Colorado Division of Wildlife
- Trout Unlimited
- Colorado Department of Public Health and Environment
- Colorado Department of Water Resources
- National Park Service
- Ute Tribe

The problem is, agencies can be unfamiliar with hydro, unfamiliar with hydro developers, unfamiliar with FERC requirements, and not necessarily incentivized to respond expeditiously to someone interested in securing an agency letter in order to secure a FERC exemption for a small hydro project.

The FERC process is particularly burdensome for very small projects, where the cost of FERC compliance can potentially exceed the cost of hydro equipment.

The resources needed to obtain a hydropower permit or exemption from FERC represent a particularly disproportionate burden for the developers of small projects – stifling development both in Colorado and nationwide. According to the Colorado Governor’s Energy Office, in the past 35 years, only 26 federal permits have been issued for hydropower projects in Colorado. Hiring consultants to complete FERC small hydro exemptions for the smallest projects may typically cost somewhere between \$10,000 and \$30,000. \$10,000 is more than the total hydro equipment installation cost for a typical small (1-2 kilowatt) residential micro-hydro system.

Colorado took a pro-active step to address this problem by working with FERC to streamline the current permitting framework in the form of a Memorandum of Understanding with FERC.

In August of 2010, the Colorado Governor’s Energy Office (GEO) signed a Memorandum of Understanding with FERC to create a FERC streamlining program for Colorado small hydro projects. GEO’s Small Hydro Permitting Process was designed to assist developers of small, low-impact hydropower projects in applying for a FERC permit. Projects that qualified for the program were required to use existing infrastructure and have very low potential impacts on the environment.

The GEO’s contractor pre-screened projects to comply with a specific set of conditions. These conditions ensured that the candidate projects utilized an existing infrastructure for which hydropower is an incidental use, without increasing current water diversion. Additionally,

projects that adversely affect water quality, wildlife or cultural resources were excluded from the program.

GEO submitted the applications that successfully completed the program to FERC, together with the agencies' letters of approval. For projects submitted through the state's process, FERC agreed to waive the 1st and 2nd stages of consultation. These two stages, which focus on engaging stakeholders in the permitting process and delineating the studies necessary to support the application, can be time consuming. Within 30 days of receipt, FERC agreed to notify the state if the application is accepted. When FERC accepted an application, it declared the project ready for environmental analysis and solicited comments, recommendations, and terms and conditions from relevant agencies and the general public, who had 30 days for filing responses.

So far, however, starting with well over 20 initial applications to the program, only two small hydro projects in Colorado have completed the FERC process through the Colorado program and four more are awaiting final FERC approval -- underscoring the need to further simplify the process for non-controversial hydro projects.

Notwithstanding the commendable efforts of government and contractor staff in the Colorado-FERC pilot program, the underlying problem remains: the process is simply too costly and time consuming for non-controversial small hydro projects. The primary beneficiaries of the current regulatory requirements are the consultants paid to help comply with them. In addition to all the expense, the time required to complete the FERC applications is substantial. FERC may be able to complete an exemption within 60 days of receipt of a completed application – but that comes on top of all the time required to compile the application.

The Hydropower Regulatory Efficiency Act of 2012

The bill provides a brilliant solution to the problems described above -- providing a mechanism to streamline and accelerate approval for non-controversial small hydro projects.

Through the 45 day public noticing process, the bill provides an opportunity for public involvement as needed and provides a way to make sure that a proposed small hydro project is indeed non-controversial and consistent with environmental protection requirements. The process called for in the bill also frees up FERC staff to focus on hydro projects for which there may be potential issues of concern -- as opposed to processing paperwork for non-controversial small projects.

The bill will also expedite opportunities for incidental hydro utilizing available pressure in existing pipelines.

There is a widespread lack of understanding regarding how much energy is consumed in moving water through pipelines – energy which could be captured and/or recaptured with rapidly emerging pipeline hydro technologies. There are hundreds of thousands of pressure reduction valves in water systems nationwide. With the right policies in place, many of these could be cost-effectively retrofitted with small hydro, supporting a burgeoning industry of technology companies seeking to exploit this largely-untapped energy resource.

Conclusion

If we are going to succeed at implementing an “all-of the-above” domestic energy strategy, we need to dramatically step up the pace of utilizing the massive, currently-untapped resource of small hydro. The bill provides long-overdue, common-sense reform which will accelerate the development of small hydro – creating jobs in rural areas and leading to substantial new distributed, base-load, emissions-free renewable energy generation. ***I urge the Committee to support the bill and proceed to House passage as soon as possible.***