

Written Testimony of Andrew Munro

On behalf of

The National Hydropower Association

Before the

U.S. House Energy and Power Subcommittee

Regarding

**The American Energy Initiative:  
Hearing on the Hydropower Regulatory Efficiency Act of 2012**

May 9, 2012



**National Hydropower Association**

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**Written testimony of the National Hydropower Association before the House Energy and Power Subcommittee regarding the Discussion Draft of the Hydropower Regulatory Efficiency Act of 2012. Presented by Andrew Munro, Past President of the National Hydropower Association, May 9, 2012.**

### **Summary of Major Points**

#### ***Hydro by the Numbers:***

- America's largest renewable (two-thirds of all U.S. renewable electricity generation)
- 7-8 percent of total U.S. electricity generation
- Employs 300,000 Americans
- Avoids 225 million metric tons of CO2 annually
- 100,000 MW – current installed capacity (including pumped storage)
- Supply chain snapshot = 2,000 U.S. companies

#### ***Hydropower's Potential:***

- 80,000 U.S. dams – just 3 percent are hydropower
- 400,000+ megawatts = total untapped U.S. potential from conventional, pumped storage and marine and hydrokinetic resources (DOE/Navigant)
- 15 percent goal of U.S. electric generation by 2030 (DOE)
- 60,000 megawatts by 2025 (Navigant)
- 12,000 megawatts at existing, non-power dams (DOE)
- 1.4 million jobs = potential American cumulative jobs by 2025 (Navigant)
- 365,000 megawatt-hours = potential from Bureau of Reclamation canals and conduits

### ***Hydropower Regulatory Efficiency Act of 2012:***

- Urge swift passage; balanced, common sense legislation supported by American Rivers and NHA.
- Finds significant untapped U.S. hydro potential and job growth opportunities.
- Requires FERC to investigate 2-year licensing for non-power dams and closed loop pumped storage.
- Increases the small hydro FERC exemption from 5 to 10 MW.
- Removes conduit projects under 5 MW from FERC jurisdiction and increases the conduit exemption to 40 MW.
- Directs the Secretary of Energy to study the technical flexibility that existing pumped storage facilities can provide to support intermittent renewable electric energy generation.

### **Introduction**

Good morning Chairman Whitfield, Ranking Member Rush and members of the Subcommittee.

I am Andrew Munro, immediate past president of the National Hydropower Association (NHA) from 2009-2011. I am also director of the customer service division at the Grant County Public Utility District (Grant PUD) located in the central region of the state of Washington.

Grant PUD is a consumer-owned utility that serves a rural, predominantly agricultural population. We own and operate significant electric generation assets, all of which are 100 percent renewable! Hydropower, small irrigation-canal hydro and wind power comprise our total combined generating capacity of 2,000 MW, with the vast majority of capacity coming

from our two hydropower projects, Priest Rapids and Wanapum Dams. These valuable renewable resources support reliable electricity delivery, clean air and significant economic benefits for millions of families and businesses throughout the Pacific Northwest.

The National Hydropower Association (NHA) is dedicated exclusively to advancing the U.S. hydropower industry, including conventional hydropower, pumped storage, conduit power and marine and hydrokinetic technologies. Hydropower is America's leading source of domestic renewable electricity and provides between 7-8 percent of total U.S. electricity generation and almost two-thirds of all renewable electricity generation.<sup>1</sup>

NHA represents nearly 200 companies from Fortune 500 corporations to family-owned businesses. Our members include public and investor-owned utilities, independent power producers, developers, equipment manufacturers, law firms and environmental and engineering companies.

Thank you for this opportunity to share with you the NHA's perspective on an important piece of legislation – the *Hydropower Regulatory Efficiency Act of 2012*. We urge the Subcommittee to proceed swiftly to mark-up the bill, and we support House passage as soon as possible. We commend the leadership shown by the cosponsors of the bipartisan legislation. I would like to personally thank and recognize a Member of this Committee from my home state – the “other Washington” – Congresswoman Cathy McMorris Rodgers.

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<sup>1</sup> [http://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.cfm?t=epmt\\_1\\_1](http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_1_1)

## **Hydropower is Part of the Solution**

My message today is simple – **Hydropower is part of the solution.**

It is possible to double sustainable hydropower capacity, preserve our environment and create over a million domestic jobs across the country. We must commit to both sustainable energy and preserving the environment. The *Hydropower Regulatory Efficiency Act* does both, which is why NHA and American Rivers support swift passage of this bipartisan legislation.

Building a sustainable energy future will require the efficient use of all climate-friendly technologies, including hydropower.

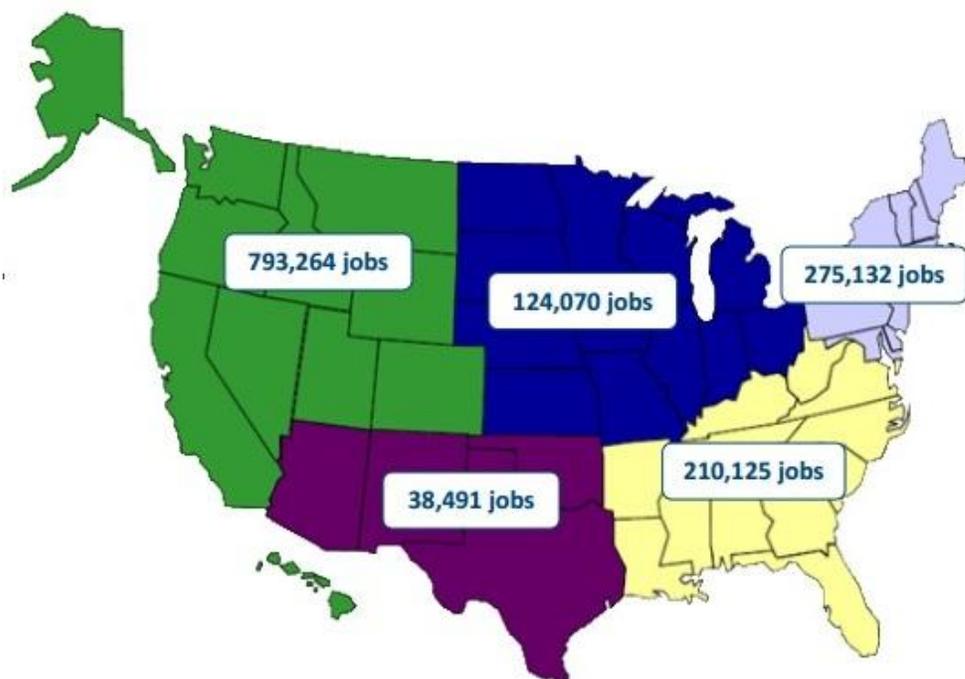
One of the myths about hydropower is that there are no new opportunities for development. In fact, the opposite is true.

Right now, there are proposed hydropower projects totaling 75,000 megawatts with pending license applications and preliminary permits filed with the Federal Energy Regulatory Commission (FERC). These projects span every sector of the waterpower industry. And while every proposed project may not be built, the list demonstrates the large universe of untapped hydropower potential that exists.<sup>2</sup>

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<sup>2</sup> FERC currently reports 581 proposed projects with pending license and license exemption applications, as well as issued and pending preliminary permits, in 47 states.

In 2009-2010, NHA commissioned a study examining the hydropower industry's growth and job-creation potential. Conducted by Navigant Consulting, the study found that the nation could add up to 60,000 megawatts of new capacity by 2025 and create 1.4 million cumulative jobs across the country<sup>3</sup> – 700,000 direct and indirect jobs in the hydropower industry and the industry supply chain with another 700,000 induced jobs across the economy as a result of the hydropower project development activity.<sup>4</sup> See NHA map below.<sup>5</sup>



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<sup>3</sup> A cumulative job is a job-year, which is defined as 1 person working full-time for 12 months.

<sup>4</sup> Job Creation Opportunities in Hydropower, Final Report, September 20, 2009. Final Report Update with state breakdowns, April 26, 2010.

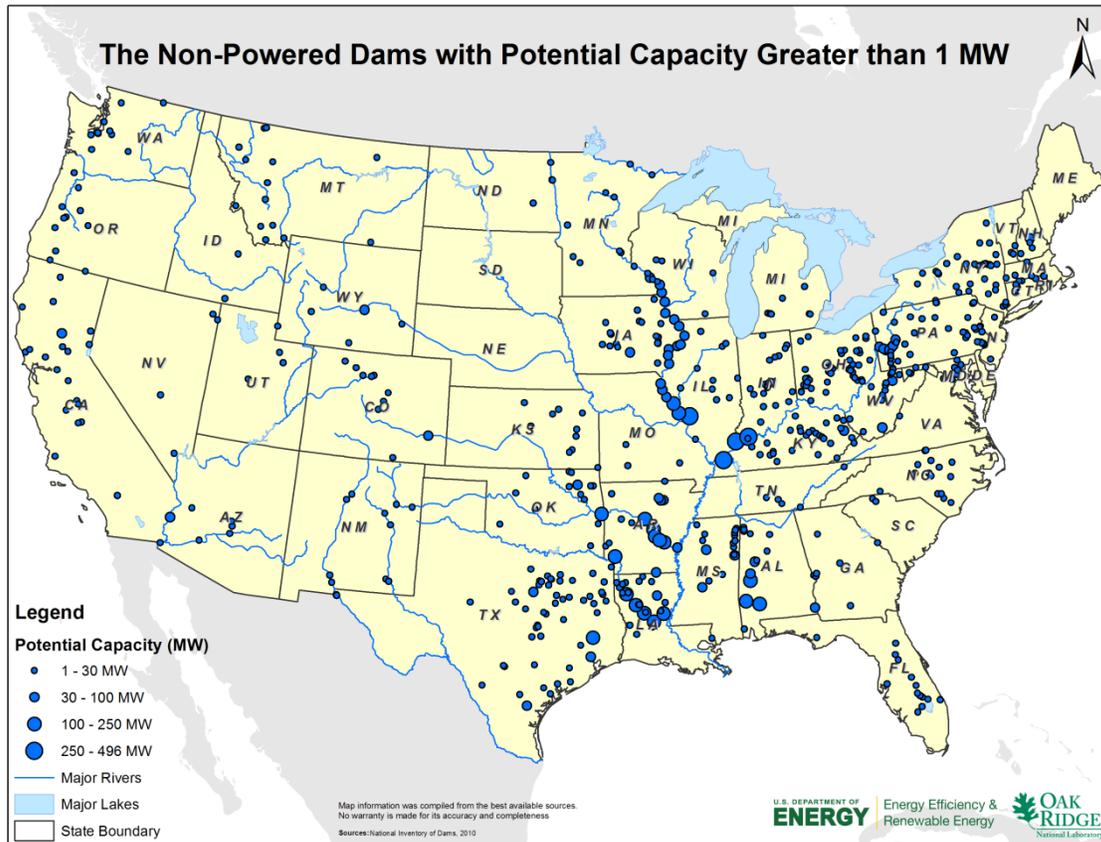
[http://hydro.org/wp-content/uploads/2010/12/NHA\\_JobsStudy\\_FinalReport.pdf](http://hydro.org/wp-content/uploads/2010/12/NHA_JobsStudy_FinalReport.pdf)

<http://hydro.org/wp-content/uploads/2011/02/NHA-Annual-Conf-Frantzis-pres-Final-7.pdf>

<sup>5</sup> <http://hydro.org/wp-content/uploads/2010/12/NHA-study-highlights5.pdf>

Think about this fact – Of the 80,000 dams in the U.S., just 3 percent generate renewable hydroelectricity; just 3 percent!

The Department of Energy and Oak Ridge National Laboratory recently released a report that identified 12,000 megawatts of new hydropower could be developed at existing non-powered dams – equivalent to increasing existing hydropower generation capacity by 15 percent. A majority of this untapped energy is concentrated in just 100 non-powered dams, which could contribute 8,000 megawatts. The top 10 non-powered dams alone could add 3,000 megawatts. Eighty one of the top 100 dams are U.S. Army Corps of Engineers (USACE) facilities.<sup>6</sup> See DOE map below.



<sup>6</sup> [http://www1.eere.energy.gov/water/pdfs/npd\\_report.pdf](http://www1.eere.energy.gov/water/pdfs/npd_report.pdf)

Let me repeat: 12,000 megawatts of available, reliable, job-creating hydropower can be developed without building a single new dam. This is enough renewable energy to serve 4.5 million residential customers.<sup>7</sup>

Last month, the Bureau of Reclamation also released a new study that identified 373 existing canals and conduits that have the combined potential of generating over 365,000 megawatt-hours of additional hydropower annually – enough renewable energy to power another 35,000 households.<sup>8</sup>

### **Hydropower Supply Chain**

Hydropower currently employs 300,000 Americans, and attracts and supports significant economic opportunities across the country.

NHA recently completed a supply chain snapshot, which illustrates hydropower's significant contribution to the economic engine of our nation. Our initial supply chain review (which represents only a small fraction of NHA members), found that nearly 2,000 U.S. companies participate in the development, licensing, construction, and operation of hydropower projects across the U.S.<sup>9</sup> See NHA map below.

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<sup>7</sup> Based on 50 percent capacity factor; and average U.S. residential customer energy consumption = 11,496 kWh annually (Energy Information Administration 2010 Data).

<sup>8</sup> <http://www.usbr.gov/power/CanalReport/index.html>

<sup>9</sup> <http://hydro.org/why-hydro/available/hydropower-supply-chain-snapshot/>



### **Electric Grid Stability Benefits**

Hydropower also provides a myriad of other benefits, including managing river flow for species and habitat protection, water supply, recreation opportunities, irrigation, flood control and navigation.

And importantly, hydropower and pumped storage provide essential grid reliability and stability services, such as the ability to quickly meet changing demand in electric load, firming for intermittent variable resources, such as wind and solar, and blackstart capability in times of an outage (such as the August 2004 East Coast blackout, where hydropower projects in New York and Canada operated continuously and also served as the base for restoring power to millions of Americans).

### **Commitment to Environmental Protection**

The U.S. hydropower industry is committed to future growth that is sustainable in every way.

NHA commends the sustainable nature of the *Hydropower Regulatory Efficiency Act* because it recognizes that much of the near-term growth can be achieved by maximizing existing U.S. infrastructure.

For our part at Grant PUD, we are increasing renewable power supplies through a modernization effort at our existing hydro plants.

At our Wanapum Dam, we are installing more efficient generation equipment and environmental enhancement technologies. The advanced-design hydropower turbines and generators will boost the project's generation capacity by 12 percent, and has a fish passage survival rate of 97 percent (above our license goal of 95 percent). We also built an innovative \$35 million fish "slide" (or bypass), which studies show a fish survival rate of 99 percent for steelhead salmon. We can have fish and new sustainable hydropower.

### **The Hydropower Regulatory Efficiency Act of 2012**

The results of the recent studies cited above confirm that NHA's ambitious goal to double domestic hydropower capacity and jobs is achievable. In fact, the Department of Energy's Wind

and Waterpower program recently highlighted how waterpower technologies can provide 15 percent of the nation's electricity needs by 2030.<sup>10</sup>

However, these goals are only attainable with bipartisan leadership to promote these opportunities nationwide. Simply put, conducting business as usual will not work. The *Hydropower Regulatory Efficiency Act* is an immediate step forward that Congress can take to improve regulatory efficiency and tap into our nation's undeveloped renewable energy resources in a pro-active and balanced approach.

Crucial near-term policy changes that are needed include:

- A more efficient regulatory process with greater intergovernmental cooperation;
- Tax policies that encourage more investment in hydropower deployment;
- Re-investment in the federal hydropower system; and
- Renewed commitment to innovative R&D initiatives.

The *Hydropower Regulatory Efficiency Act* establishes a dynamic and sustainable hydropower agenda for the nation. It will advance project deployment and increase licensing efficiencies for development on non-powered dams and closed-loop pumped storage projects. It removes low-impact conduit projects from FERC jurisdiction while increasing the size of the small hydropower exemption process, thus bringing more renewable energy to the electric grid. The

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<sup>10</sup> Waterpower Fast Facts from *Water Power for a Clean Energy Future*, 2012.  
[http://www1.eere.energy.gov/water/pdfs/wp\\_accomplishments\\_brochure.pdf](http://www1.eere.energy.gov/water/pdfs/wp_accomplishments_brochure.pdf)

bill requires further assessment of the pumped storage and conduit potential in the U.S. The bill brings all of these benefits while ensuring continued environmental reviews and public participation are part of the development process.

NHA believes the *Hydropower Regulatory Efficiency Act of 2012* contains balanced and common-sense provisions, achieved through outreach to government agencies, the environmental community and other stakeholders. I will now highlight some of the provisions of particular interest to NHA and the hydropower industry.

### **2-Year Licensing Pilot**

Section 6 would promote development at existing non-powered dams and closed-loop pumped storage by requiring FERC to investigate a 2-year pilot licensing process for these projects.

NHA and the industry appreciate the work of Congress, FERC, and other agencies and stakeholders on past improvements to the regulatory environment for hydropower development. For example, the consensus provisions contained in EAct of 2005 and the 2003 integrated licensing process (ILP). However, the hydropower regulatory process remains considerably longer than that of other energy resources, such as wind or natural gas. The ILP is structured to be completed in 5 to 5.5 years followed by the time needed for construction, while the development timeline for wind and natural gas projects can be as short as 18-24 months.

At a time when project developers are competing for a limited pool of investor funding, or utilities are seeking the most efficient investment for their customers and shareholders, hydropower project development is put at a competitive disadvantage. Section 6 attempts to address this disparity. It does not mandate a 2-year process, but requires FERC to examine the possibility and move forward with a pilot process or report back to Congress if such a process is deemed not practical. However, NHA believes a 2-year process is possible and improvements can be made while maintaining environmental standards and resource protection.

### **Small Hydro and Conduit Projects**

Sections 3 and 4 of the bill assist small conventional projects and conduit power facilities.

Section 3 would increase the FERC small hydropower exemption process to 10 MW. Currently, only projects under 5 MW qualify. This would double the scope of the exemption. Section 4 would remove conduit projects under 5 MW from FERC jurisdiction and also allow any conduit projects under 40 MW to use the FERC conduit exemption process.

NHA believes there is significant growth potential in the small hydro/conduit power sectors of the industry and we have witnessed numerous towns and counties across the country re-examine the feasibility of retrofitting their local dam infrastructure or invest in irrigation power projects and other conduit applications. The proposed regulatory improvements provide these low impact projects the ability to more efficiently navigate the licensing process. Due to the lack of economies of scale with smaller projects, the licensing costs serve as a financial disincentive to pursue these facilities.

## **Grid Stability and Resource Studies**

Section 7 of the bill directs the Department of Energy to conduct a study of pumped storage opportunities to support intermittent renewable electricity generation and provide grid reliability benefits. A second study is directed for a national conduit power potential assessment.

An often untold story of renewable energy growth in Europe is the fact that the load balancing and other grid services needed to integrate these resources (while maintaining a reliable power system) are being provided by hydropower resources – and in particular pumped storage projects. Analyzing opportunities to increase services from pumped storage projects here in the United States will help to address a system operations concern that has increased in recent years.

For conduit potential, there has never been a comprehensive national report developed. The recent Bureau of Reclamation study is an excellent start, but opportunities exist beyond irrigation conduits, including within commercial buildings, as well as wastewater treatment facilities that should be studied and analyzed.

The *Hydropower Regulatory Efficiency Act* is good policy that appropriately recognizes the vital role of hydropower as an affordable, reliable, available and sustainable domestic energy source that has much more to contribute to our nation's electricity supply.

## **Conclusion – Hydropower is Part of the Solution**

In closing, I wish to particularly acknowledge the collaboration demonstrated by two organizations appearing before you today in support of the bill. Over the past several years, American Rivers and the National Hydropower Association have mutually and purposely called upon our respective organizations to demonstrate leadership together in an effort to move our country forward on sustainable energy policy.

Our organizations have jointly supported hydropower technologies in renewable energy and tax policies. The *Hydropower Regulatory Efficiency Act of 2012* also supports the mutual goal to increase sustainable hydropower growth. Hydropower is an important part of the solution and NHA urges you to move swiftly in passing this bipartisan bill. NHA also hopes our groups' collaboration on this bill leads to additional opportunities to work together with Congress and stakeholders to address further challenges to the growth of hydropower resources.

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