

**Prepared testimony of Christopher Wynn,
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Introduction

Chairman Flake, Ranking Member King and Members of the Subcommittee, good afternoon and thank you for the opportunity to appear before the Senate Energy and Natural Resources' Subcommittee on Water and Power. My name is Todd Wynn and I am the Vice President of Northeast Operations at Brookfield Renewable. In that role, I oversee operations of all hydroelectric and wind facilities in Maine, New Hampshire and Massachusetts.

Brookfield Renewable is one of the largest renewable power companies in the world, as well as one of the largest independent hydropower producers in the United States. Our portfolio is comprised of 88% hydroelectric generation, with the remainder coming from wind. We operate these resources with an abiding global commitment to safety, environmental responsibility and community engagement. In the United States, we own and operate nearly 140 hydropower facilities and 7 wind farms across 13 states, including Maine, Louisiana and West Virginia. We are also an active participant in all FERC regulated markets. Our U.S. portfolio encompasses generation of approximately 14 TWh of clean, renewable and reliable capacity, enough to supply 1 million homes and making us intimately familiar with the issues and challenges of relicensing small and large hydropower facilities alike.

Today I am here to support two bills proposed by Senator King that we believe help support hydro owners and operators like Brookfield Renewable, S. 1029, The Small Dam Exemption Act, and S. 1030, the Small Dam Information Act.

Role of Hydropower

Hydropower is a proven, long-life and reliable renewable resource, providing critical, baseload power and delivering a variety of important benefits to the electric grid. As America's first indigenous renewable energy source, it contributes valuable fuel diversity and security to our domestic energy portfolio. It is also highly flexible, able to quickly ramp-up and down to support fluctuating grid demands. That flexibility is critical for reliability and helps to accommodate the increasing penetration of intermittent generation, such as wind and solar, which is becoming increasingly important in power markets across the nation. An example of this is the use of existing hydropower to pair with wind or solar generation, creating a clean, firm energy product that can be delivered directly to the electricity load-centers that require it. Given its baseload and flexible profile, hydropower is uniquely suited to provide these sorts of optimized energy solutions.

Hydropower also delivers considerable benefits to local communities, including low flow augmentation, flood control, irrigation and water supplies, as well as recreational opportunities such as fishing, swimming and boating. In many smaller or rural communities, hydro facilities are a significant community taxpayer, often providing a large percentage of municipal revenues and, in many cases, the majority of these revenues.

And while hydro power facilities appear to operate nearly self-sufficiently over many decades, they are actually a capital intensive resource, requiring continuous monitoring and reinvestment to ensure reliable, efficient and safe operation. For example, in Senator King's home state, where we operate 39 small scale facilities, we spent nearly \$16 million dollars in 2016 on regular facility maintenance and investments. This is a markedly different investment profile relative to other renewable energy sources, and it provides ongoing economic activity for host states and communities that, in turn, help stimulate local economies and sustain nearly 570 community-based jobs.

Yet despite the clear value and benefits hydropower brings to the grid, the environment and local communities, the resource is frequently an afterthought, afforded differential or discriminatory treatment under both state and federal policies. For example, right now, existing U.S. hydropower resources are not considered renewable under federal energy procurement standards. We note, however, that this concept was included in last year comprehensive energy bill and is again included in early versions of potential bills in this Congress. Existing hydropower is also typically considered a "Tier 2" resource in state Renewable Portfolio Standard programs, despite delivering an identical, if not superior, clean energy product.

In short, we believe that hydropower is an undervalued resource under existing public policies and within regional energy markets. By creating an opportunity to streamline the FERC permitting process for small hydropower assets, Senator King's Small Dam Exemption Act is an

important initial step toward better acknowledging the value and importance of these resources.

Relicensing Challenges

Although the FERC licensing process is defined as 5-6 years, a typical hydropower relicensing actually takes 8-10 years to complete. Over 500 projects nationwide will begin the relicensing process between 2016 and 2030, representing about half of all hydropower projects licensed by the Commission, and about 30 percent of the total hydropower licensed capacity under the Commission's jurisdiction.¹ The vast majority of these projects are very small, with a median installed capacity of 2.5 MW. However, the cost to relicense is not directly tied to a facility's energy output. A 1 MW project is forced to follow the same licensing process as a 1000 MW project.

The relicensing process is complex and resource intensive for all the parties involved, including the licensee, state and federal jurisdictional agencies and stakeholders. The cost of a single hydro licensing process can vary considerably, but can run to tens of millions of dollars in certain cases – and this is in addition to the significant ongoing costs of maintaining the hydropower resource itself. The single largest cost driver associated with the relicensing of a project is environmental studies, which cover an array of topics including recreation, endangered species, cultural resources, fish passage and protection of aquatic and terrestrial resources. Brookfield Renewable typically spends \$750k to \$1.5M for the entire process costs

¹ Testimony of Ann Miles, FERC, before the House Energy and Commerce Committee, Subcommittee on Energy and Power, May 13, 2015.

to relicense a single project and currently has 12 active relicensing. By 2020, that number will climb to 25 active relicensing projects. We estimate that Brookfield Renewable will incur \$3.3M to \$4.8M annually in relicensing process costs over the next five years. Additionally, a new license usually results in operating restrictions which lower generation output, while simultaneously increasing environmental enhancement costs. To that end, data compiled by the National Hydro Association since 1986 shows that relicensing project generation has declined by 10.7%ⁱ following mandated Protection, Mitigation and Enhancement Measures.

The challenge is especially acute with smaller dams and for smaller hydro operators. Small projects bring in less revenue compared to projects that generate more power, making it more difficult for small projects to absorb or recover the costs associated with licensing and any Protection, Mitigation and Enhancement Measures. The prospect of incurring relicensing process costs as well as increased operational costs and lost revenue resulting from the relicensing process, is leading some hydro operators to surrender licenses and/or decommission smaller projects. The associated reduction in capacity or project retirements reduce the country's renewable energy baseline, increase carbon and other air pollutant emissions, and eliminate the benefits these facilities deliver to the grid and local communities alike.

Providing FERC with the discretion to exempt certain small hydro projects from the relicensing process, while still providing prudent and necessary environmental oversight, is an important step towards streamlining the licensing process and recognizing the value these resources

provide. S. 1029 provides reasonable accommodation for resources that have no appreciable difference in their operations and are not within sensitive fish habitat.

We applaud Senator King's leadership on relicensing for small scale hydro and also wish to speak briefly to S. 1030, the Small Dam Information Act.

The Small Dam Information Act

While not directly impacting the majority of our portfolio, we understand S. 1030 seeks to study how requiring FERC licensing of small, non-powered dams balances with the challenges and burdens of the licensing requirements. As we noted previously in our testimony, FERC licensure can impose significant economic burdens. This is especially true for non-power producing dams, whose managers might choose to suspend ownership rather than progress through the licensing process. Such decisions have the potential to jeopardize the ecological and recreational value non-powered dams have provided to local communities and regions for generations. We understand this was an issue of particular concern for a dam manager in Senator King's home state. Again, while not directly impacting the majority of Brookfield Renewable's assets and operations, we believe understanding the barriers, costs and options available to licensed, non-power producing dams can only be helpful to policy makers and regulators who might consider future legislation on this topic.

Thank you for the opportunity to testify today and I welcome questions from the committee.

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<http://envirostewards.rutgers.edu/Lecture%20Resource%20Pages/Energy%20resources/Small%20Hydro/National%20Hydropower%20Association.htm>