

Hydropower

- Hydropower is a reliable, low-cost, non-emitting domestic source of electricity critical to the stability of the electric grid.
- The country cannot afford to lose existing hydropower capacity without impacting reliability and making it more difficult to achieve emission reduction goals.
- The American Public Power Association (APPA) strongly supports congressional action to cut the lengthy and duplicative processes for licensing and relicensing hydropower projects.
- APPA also supports legislation creating a tax credit to support upgrades at existing hydroelectric dams for qualified dam safety and environmental improvements.

Background

Hydropower makes up a large portion of the nation’s source of emissions-free, renewable energy, accounting for 26.9 percent of domestic renewable generation and 5.7 percent of total electricity generation according to the most recent Energy Information Administration data from 2023. It is a reliable source of energy, being available most of the time, unlike some other renewable resources. Furthermore, hydroelectric generators can be started or stopped quickly, which makes them more responsive than most other energy sources for meeting demand for electricity at its “peak” or highest volume. These units also often have “black start” capability that makes them especially valuable in restoring power when there are widespread outages or disruptions on the system—this capability allows the generating units to cycle back on quickly if they have been tripped off in a power outage. Given these characteristics, hydropower plays a significant part in ensuring reliable, zero-emissions electric service at low-cost.

Most dams were built decades ago for purposes other than power generation, such as for flood control, crop irrigation, or storage of municipal water supplies. There is substantial potential for adding renewable electric generation to non-powered dams: only three percent of the country’s over 90,000 dams currently have facilities that generate electricity.¹ Analysts at the Oak Ridge National Laboratory found that 12,000 megawatts of new, emissions-free hydropower can be generated at non-powered dams throughout the country.² Also, there is the potential to dramatically increase the hydropower output in existing municipal, industrial, and agricultural water distribution conduits/canals in the U.S. Other forms of hydropower can also be developed or further developed in the U.S. as well, including pumped storage, hydrokinetic turbines, tidal, and wave technologies.

The Licensing Process

The Federal Energy Regulatory Commission (FERC) is the primary federal agency responsible for the licensing and relicensing of non-federal hydroelectric projects. In issuing a license, FERC is required under the Federal Power Act to give equal consideration to electric generation; fish and wildlife; water quality and supply; navigation; and the recreation impacts of a project.

¹ National Inventory of Dams (army.mil)

² Oak Ridge Report: Non-Powered Dam Retrofit Exemplary Design for Hydropower Applications (2022)

Resource agencies, such as the U.S. Fish and Wildlife Service, Bureau of Land Management, National Marine Fisheries Service, and others, play a significant role in the licensing process as well. These agencies can require mandatory conditions that must be met for the project to proceed, which FERC cannot reject regardless of cost, impact, or whether the condition is directly relevant to the project. In some cases, the economic impacts of these mandatory conditions have stopped the development of projects.

The current licensing process constitutes a significant impediment to the development of new hydropower facilities and the relicensing of existing facilities. This is especially true for small hydropower projects. While it is appropriate to consider the broad array of potential impacts of a hydropower project, FERC must be given more authority to weigh costs and benefits and to impose timelines for resource agencies to weigh in. Modernizing and streamlining the licensing process is urgently needed. Over 40 percent of hydropower licenses for the non-federal fleet will expire by 2035, representing over 22 gigawatts of energy.³ On average, relicensing a hydropower facility takes six years and the paperwork costs \$3.5 million, which does not include costs of new turbines, fishways, or dam safety.⁴

Congressional Action

In June 2023, Representative Cathy McMorris Rodgers (R-WA) introduced H.R. 4045, the Hydropower Clean Energy Future Act. The bill would confirm that electricity produced from hydropower qualifies as a renewable resource for all federal programs and procurement requirements and reform the FERC licensing process to protect existing hydropower resources and encourage the development of small and next-generation projects. H.R. 4045 passed the House Energy & Commerce Committee with bipartisan support in December 2023 though it did not advance any further. APPA strongly supported H.R. 4045.

In May 2023, Senators Steve Daines (R-MT) and Maria Cantwell (D-WA) introduced S. 1521, the Community & Hydropower Improvement Act. The legislation is aimed at increasing hydropower production by streamlining the permitting and licensing process, increasing tribal engagement and oversight, expediting low impact projects, promoting healthy habitat, and coordinating federal decision-making. The bill is based on work done by the “Uncommon Dialogue” effort in which the National Hydropower Association, non-governmental organizations, and tribal nations have worked together to address challenges, such as licensing/relicensing, dam safety, and valuing hydropower’s grid services. S. 1521 is an important, but modest, first step in reforming the licensing process.

In October 2023, Senators Maria Cantwell and Lisa Murkowski (R-AK) introduced S. 2994, the Maintaining and Enhancing Hydroelectric and River Restoration Act of 2023. The bill would create a 30 percent tax credit for qualified dam safety and environmental improvements. Importantly, this credit would be available as a direct payment to public power utilities. Companion legislation in the House (H.R. 6653) was introduced in December 2023 by Representatives Adrian Smith (R-NE) and Suzan DelBene (D-WA). APPA strongly supported these bills. The investment tax credit in the Inflation Reduction Act only applies to generation upgrades at hydropower facilities, not to environmental or safety upgrades necessary to maintain existing facilities and complete the relicensing process. Without the tax incentive support in S. 2994/H.R. 6653, many existing hydropower dams could close, threatening the reliability of the grid and the nation’s ability to achieve emission reduction goals. Unfortunately, this legislation did not get enacted into law.

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³ Licensing | Federal Energy Regulatory Commission ([ferc.gov](https://www.ferc.gov))

⁴ DOE U.S. Hydropower Market Report (2023 Edition); NREL/Oak Ridge Examination of the Hydropower Licensing and Federal Authorization Process (2022)

The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government and protect the interests of the more than 54 million people that public power utilities serve and the 96,000 people they employ.