

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 24.4 percent of domestic renewable generation and 5.5 percent of total electricity generation according to the most recent Energy Information Administration data from 2024. 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 92,000 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.

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

¹ National Inventory of Dams (army.mil).

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

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 From 2010-2022, the median duration for relicensing a hydropower facility was just under six years, and had average paperwork costs of \$3.5 million, which does not include costs of new turbines, fishways, or dam safety.⁴

In December 2025, Sen. Lisa Murkowski (R-AK) and Angus King (I-ME) introduced the Fair Licensing for Operations of Water Structures (FLOWS) Act (S. 3518). The legislation would amend the Federal Power Act to remove the requirement for hydropower projects to seek FERC approval for routine maintenance or non-substantial alterations, a process that results in months-long delays and unnecessary costs. It would also allow FERC to issue shorter-term licenses of 10 to 20 years to micro-hydrokinetic projects. APPA strongly supports the FLOWS Act.

Congressional Action

In the 118th Congress, former Representative Cathy McMorris Rodgers (R-WA) introduced H.R. 4045, the Hydropower Clean Energy Future Act. The bill would have confirmed that electricity produced from hydropower qualifies as a renewable resource for all federal programs and procurement requirements, affirmed a two-year FERC licensing process for next-generation hydropower resources, and exempted small hydropower projects (those generating 40 megawatts or less) from the FERC licensing process if they did not have a significant environmental impact. 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 and would like to see its reintroduction in the 119th Congress.

In March 2025, Representative Adrian Smith (R-NE) and Senator Maria Cantwell (D-WA) introduced the Maintaining and Enhancing Hydroelectric and River Restoration Act of 2025 (H.R. 2160/S. 1183). The legislation would create a 30 percent investment tax credit (ITC) for qualified dam safety and environmental improvements. Importantly, this credit would be available via direct pay (elective pay) to public power utilities. The hydropower ITC in the Inflation Reduction Act (P.L. 117-169) only applies to generation upgrades at hydropower facilities, not to environmental or safety upgrades necessary to maintain existing facilities, and to complete the relicensing process. Without the tax-incentive support in H.R. 2160/S. 1183, many existing hydropower dams could close, threatening the reliability of the grid and the nation's ability to achieve emission reduction goals. APPA strongly supports this legislation.

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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 55 million people that public power utilities serve and the over 100,000 people they employ.

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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).