

Hydropower

Summary

Hydropower accounts for a significant portion of the nation's electricity supply and is the most abundant source of renewable energy. Because the fuel (water) that turns the turbines to make electricity in a hydroelectric plant is essentially free, the cost of operating a hydropower facility is relatively low compared to other sources. There is a huge opportunity to develop additional hydropower resources throughout the nation, much of that at existing dams. There is also a wide and growing array of hydropower technologies and projects that have the potential to further increase this reliable, low-cost, non-emitting domestic source of energy. However, realizing the full potential of the United States' hydropower assets cannot be done without modernizing the processes for licensing and relicensing projects.

Background

Hydropower makes up a large portion of the nation's source of emissions-free, renewable energy, accounting for 39.1 percent of domestic renewable generation and 6.8 percent of total electricity generation according to the most recent Energy Information Administration data from 2019. 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 approximately 80,000

dams currently have facilities that generate electricity. Analysts at the Oak Ridge National Laboratory found that 12,000 megawatts (MW) of new, emissions-free hydropower can be generated at non-powered dams throughout the country.¹ Also, there is potential to dramatically increase the hydropower output in existing municipal, industrial, and agricultural water distribution conduits/canals in the U.S. This untapped potential could significantly increase the more than 101,661 MW of hydropower capacity currently operating in the U.S.² The modernizing of existing hydroelectric generation equipment to increase its capacity is also one of the most near-term, cost-effective, and environmentally friendly means of developing additional hydropower.

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 (FPA) to give equal consideration to electric generation; fish and wildlife; water quality and supply; navigation; and 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 for the project to proceed, which FERC cannot reject regardless of cost, impact, or whether the condition is

1 Hadjerioua, Boualem. 2012. An Assessment of Energy Potential at Non-Powered Dams in the United States. Report prepared for the U.S. Department of Energy Wind and Water Power Program. Oak Ridge National Laboratory. Retrieved from https://www.energy.gov/sites/prod/files/2013/12/f5/npd_report_0.pdf

2 2019 Energy Information Administration (EIA) data

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.

Congressional Action

On June 29, 2020, Representative Cathy McMorris Rodgers (R-WA) introduced H.R. 7410, the Hydropower Clean Energy Future Act. Similar to legislation (H.R. 3043) sponsored by Representative McMorris Rodgers in the 115th Congress that was approved by the House in 2017, H.R. 7410 would modernize the hydropower licensing process and affirm the role of hydropower as an essential renewable resource. APPA supports Representative McMorris Rodgers efforts to improve the hydropower licensing process.

Several smaller, though significant, provisions aimed at streamlining the regulatory approval process for hydropower projects became law during the 115th Congress as part of S. 3021, the America's Water Infrastructure Act of 2018, in October 2018. The provisions can be found in Title III of the bill:

- **Section 3001, Modernizing Authorizations for Necessary Hydropower Approvals**—amends section 5 of the FPA to allow FERC to issue preliminary permits for up to four years (previously three years), to renew them for up to four more years (previously two years), and in extraordinary circumstances, to issue a further permit to the permittee. It also amends FPA section 13 to allow FERC to extend the deadline to commence construction of a project beyond the initial deadline of up to two years by up to eight more years (eliminating the need for individual licensees to go to Congress for case-by-case legislative extensions) and excuses licensees from paying federal agency annual charges under FPA Section 10(e) until after the deadline to commence construction.
- **Section 3002, Qualifying Conduit Hydropower Facilities**—amends FPA section 30(a) to limit challenges to “qualifying facility” status to 30 days (formerly 45 days) after FERC issues a notice that a facility qualifies for a conduit hydro exemption and allows the facilities to be up to 40 MW (the previous limit was five MW).

- **Section 3003, Promoting Hydropower Development at Existing Nonpowered Dams**—promotes hydropower development at existing non-powered dams by providing FERC with the discretion to grant exemptions from license requirements for qualifying facilities.
- **Section 3004, Closed-Loop Pumped Storage Projects**—promotes closed-loop pumped storage hydropower development by limiting FERC’s authority to only impose licensing conditions that are necessary to protect public safety or that are reasonable, economically feasible, and essential to protect fish and wildlife resources.
- **Section 3005, Consideration for Relicensing Terms**—adds new FPA Section 36 with the following subsections: (a) directs FERC in determining the term of a new license to consider project-related investments under the new license and the existing license (i.e., credit for early action); (b) gives equal weight to each, includes investments related to redevelopment; new construction; new capacity; efficiency; modernization; rehab or replacement of major equipment; safety improvements; and environmental, recreational, or other protection, mitigation, or enhancement measures; and specifies that investments under the existing license must not already have been considered by FERC in setting or extending the existing license term; and (c) on request by a licensee, requires FERC to inform the licensee whether investment under an existing license meets the criteria.

APPA Position

APPA appreciates the targeted hydropower licensing and relicensing provisions enacted as part of S. 3021 in the 115th Congress. However, the association continues to strongly encourage Congress to pass broader legislation to cut the lengthy, duplicative, and at times, contradictory regulatory processes for relicensing existing hydropower projects. Provisions that should be included in comprehensive licensing reform include: (1) requiring all resource agencies with mandatory conditions for a facility to work together under the designated schedule thereby reducing waste, improving decision-making, and reducing the potential for conflict; (2) requiring resource agencies to clearly define the objective of each mandatory condition with an accompanying rationale and disclosure of impacts in an open and transparent manner, thereby adhering to the same standard of disclosure and explanation required of the licensee and other parties submitting mandatory conditions; and (3) streamlining the multi-agency inefficiencies associated with hydropower development at federal projects.

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In addition, APPA continues to support legislation, programs, incentives, and initiatives that spur new hydropower development, including hydrokinetic, pumped storage, low-impact, constructed waterways, non-hydro dams, and the expansion of existing projects. Should Congress consider infrastructure legislation that includes an energy title, APPA strongly encourages it to include provisions preserving and promoting hydropower.

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