

ISSUE BRIEF June 2021

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.

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.



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 or Commission) 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 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 & Regulatory Action

On June 24, Senators Maria Cantwell (D-WA) and Lisa Murkowski (R-AK) introduced S. 2306, the Maintaining and Enhancing Hydroelectric and River Restoration Act of 2021. The bill would create a 30 percent tax credit to support upgrades at existing hydroelectric dams for qualified dam safety, environmental, and grid resilience improvements. Notably, this credit would be available as a direct payment to public power utilities. The bill would also create a 30 percent tax credit for the removal of obsolete river obstructions (powered and non-powered). The dam removal provisions do not apply to federal hydropower and must be done with the consent of the dam owner. APPA appreciates the inclusion of equitable tax benefits to public power and is committed to working with the bill's sponsors to address technical issues to ensure that it functions as intended.

On March 2, House Energy & Commerce Committee Democrats introduced H.R. 1512, the Climate Leadership and Environmental Action for our Nation's (CLEAN) Future Act, the committee's comprehensive climate legislation. First released in the 116th Congress, multiple changes and additions were made from the original draft, including shifting the date for the electric sector to get to net-zero emissions from 2050 to 2035 to align with the Biden administration's goal. Importantly, hydropower generation is assigned a carbon intensity of zero, except when a new reservoir is constructed, in which case, the Environmental Protection Agency is directed to determine its carbon intensity. The legislation also includes the following provisions on hydropower:

- **Dam Safety (section 235)** – It would require that dam and project works meet FERC's dam safety requirements as a condition of licensing and direct the Commission to establish procedures for evaluating the financial health of prospective hydropower licensees. Dam safety should be a top priority for FERC and licensees, and it is common sense for the Commission only to issue a new license once it has determined a licensee meets dam safety requirements. With regards to establishing procedures to evaluate the financial health of prospective hydropower licensees, APPA believes that FERC already has sufficient authority to evaluate the financial health of licensees. Moreover, the Commission is already exploring if additional measures in this area are necessary: on January 26, 2021, FERC issued a Notice of Inquiry on Financial Assurance Measures for Hydroelectric Projects (Docket No.



RM21-9-00). Comments were due on March 29; FERC has not indicated yet what additional steps it will take.

- **Hydropower Licensing and Process Improvements (section 243)** – This section would add a new section to the FPA to improve the hydropower licensing process. FERC and federal resource agencies would be required to convene a negotiated rulemaking within 90 days of enactment that includes required participants, such as state and local government representatives, tribes, and other relevant stakeholders. The purpose of the rulemaking would be to develop a process to coordinate all necessary federal authorizations and enable FERC to make a final decision on a license not later than three years after receiving a completed license application. A voluntary option would be created to allow license applicants located within the same watershed to work as a group during the licensing process and to rely on jointly prepared watershed studies to support their individual applications for a new license. Finally, this section would give Indian tribes mandatory conditioning authority in some situations.

While APPA appreciates the inclusion of provisions aimed at reforming and streamlining the hydropower licensing process and believes they may offer some benefit, the association does not believe that these provisions go far enough to effectuate meaningful change. APPA believes that FERC should be positioned as the lead agency with the ability to establish and enforce deadlines among state and federal agencies in the licensing process and that resource agencies should be required to clearly define the objective of each mandatory condition with an accompanying rationale and disclosure of impacts in an open and transparent manner. Moreover, APPA is strongly opposed to giving Indian tribes mandatory conditioning authority, as it could create additional hurdles to licensing/relicensing.

- **Hydropower Regulatory Improvements (section 247)** – it would amend the definition of renewable energy in section 203 of the Energy Policy Act of 2005 (EPA05) to include all hydropower production (currently only “new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project” qualifies as renewable energy). It would set the goals for the federal purchase of renewable power at 25 percent in fiscal year (FY) 2022, increasing to 50 percent in FY 2032 and beyond. APPA supports this provision. As previously noted, hydropower is an important non-emitting resource and an essential generating technology needed to help achieve net-zero emissions from the power sector.

On March 3, 2021, House Energy & Commerce Committee Ranking Member Cathy McMorris Rodgers (R-WA) introduced H.R. 1588, 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. 1588 would modernize the hydropower licensing process and affirm the role of hydropower as an essential renewable resource. APPA supports Ranking Member 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, the most important being section 3005, which directs FERC in determining the term of a new license to consider project-related investments under the new license and existing licenses (i.e., credit for early action).

APPA Position

APPA supports the overall intent of S. 2306, the Maintaining and Enhancing Hydroelectric and River Restoration Act of 2021, which would create a new federal tax incentive to encourage safety, environmental, and grid resiliency upgrades for hydropower dams. We especially appreciate the inclusion of eq-



uitable tax benefits to public power utilities in the legislation and are committed to addressing technical issues in the bill to ensure that it functions as intended.

APPA strongly supports congressional action 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.

Finally, 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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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 to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ. Our association advocates and advises on electricity policy, technology, trends, training, and operations. Our members strengthen their communities by providing superior service, engaging citizens, and instilling pride in community-owned power.