On January 11, the Senate Energy and Natural Resources Committee held a hearing to examine opportunities and challenges for maintaining existing hydropower capacity, expanding hydropower at non-powered dams, and increasing pumped storage hydropower. Chairman Joe Manchin (D-WV) highlighted the importance of hydropower as part of the Nation's all-of-the-above energy portfolio and grid reliability. Witnesses included: Jennifer Garson, Acting Director, Water Power Technologies Office (WPTO), U.S. Department of Energy; Camille Touton, Commissioner, Bureau of Reclamation; Malcom Woolf, President and CEO, National Hydropower Association; and Scott Corwin, Executive Director, Northwest Public Power Association (NWPPA) comprised of over 150 consumer-owned electric utilities in the Western United States and British Columbia.

Machin declared, "Hydropower is one of the oldest sources of power generation in the country, and until 2019, it was also the largest source of renewable generation. In 2020, hydropower provided over 7% of the total U.S. electricity generation, coming in fifth behind natural gas, nuclear, coal, and wind. Unlike most other renewable energy resources, hydropower generation provides baseload electricity. It's also flexible which means that the generation capacity is available when we need it, and it has the ability to respond to changing grid conditions and adjust output accordingly. That makes hydropower unique and valuable for maintaining grid reliability as more intermittent resources come online."

Garson testified, "The [WPTO] vision…is a U.S. hydropower and pumped-storage industry that modernizes and safely maintains existing assets; responsibly develops new low-impact hydropower; supports grid reliability and integration of other energy resources; promotes environmental sustainability; and supports energy-water systems resilience." She said hydropower can be the keystone to a fully decarbonized power system by 2035…" through modernization, adapting to changing needs, and "meeting the challenges of climate change head-on."

Commissioner Touton addressed efforts to protect the existing federal hydropower investment and promote new hydropower development, as well as challenges due to "drought, reduced runoff conditions, and low reservoir elevations. For context, the average Reclamation hydroelectric plant is now over sixty years old. To ensure the continued reliability, efficiency, and safety of our aging hydropower assets, Reclamation's operation, maintenance, and replacement program continually looks for opportunities to upgrade and modernize our assets…. Reclamation has replaced 35 turbines since 2009, …allowing for an additional 340-million-kilowatt hours of annual generation. During that same period, Reclamation uprated six generators, increasing generating capacity by approximately 40,000 kilowatts…. Reclamation also protects the existing federal hydropower investment through technological innovation. Reclamation has developed computer-based unit dispatch optimization systems which…have been deployed…allowing for over 100,000 megawatt-hours in incremental generation, annually…."

She added, "Our hydropower system…faces tremendous challenges due to the historic drought facing the West." In the Colorado River Basin, Lakes Mead and Powell have reached their "lowest levels since initial filling decades ago. As the elevation of Lake Mead has dropped…, the effectiveness of the existing turbines producing hydropower at Hoover Dam has been reduced…. [T]here is a relatively high probability of a 0.5 percent to 2.5 percent reduction in hydropower generation from year to year over the next 5 years…. Moving upstream…, hydropower production at Glen Canyon Dam faces even more significant challenges as production has dropped about 16 percent and its capacity has decreased about 20 percent since the year 2000…. Most recently, the December 2021 24-month study showed a decrease of forecasted inflow in the spring into Lake Powell, the reservoir behind Glen Canyon Dam, by 1.5 million acre-feet." Lake Powell could drop below a designated target elevation of 3,525 feet by next month, just 35 feet above the minimum power production pool elevation of 3,490 feet.

Chairman Manchin and the witnesses addressed permitting delays that limit private sector investments in hydropower – including in development at non-powered dams and new pumped storage systems. Woolf said, "You've got so many 'cooks in the kitchen' – none of which have ultimate authority to issue permits. But there is tremendous interest in pumped storage. There are over 50 gigawatts in the pipeline. But no new pumped storage has been built in over 20 years in this country. We're not going to be able to keep the lights on with just wind, solar, or batteries; we need long duration energy storage, which is what pumped storage is so great at providing."

Lastly, Corwin declared, “Hydropower plays a large role in many of our member’s service territories, and it is prominent in many rural communities in the West that face economic challenges. A foundation of the Northwest region’s energy supply, hydropower is a vital component of our nation’s clean energy generation portfolio. Still only 7% of energy capacity nationally, hydropower provides 25% of the capacity in Alaska, almost 60% of the capacity in the Northwest generally, and almost 90% of the capacity used by our members who have contracts with the federal power marketing administrations….” He testified that NWPPA urges Congress and the States to recognize all hydropower, including existing hydropower, as a renewable resource, and support efforts to modernize hydropower licensing by designating FERC as the lead agency for purposes of coordinating all federal authorizations, as well as reducing the time required for the hydropower licensing process.”