

Often Overlooked in Clean Energy Push, Hydropower Having Its Moment

August 1, 2024 by Dan McCue



Rep. Nanette Barragán, D-Calif., (right) and Inna Braverman, founder and CEO of Eco Wave Power, during the congresswoman's recent visit to the clean energy company's pilot site at AltaSea in the Port of Los Angeles.

WASHINGTON — Even advocates for hydropower admit it's not the sexiest source of renewable clean energy around.

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As America's oldest and most reliable source of power from nature, it's a sector that often gets overlooked for the shiny

baubles of wind, solar, and especially lately, green hydrogen.

Heck, of the 90,000 dams that exist in America — most Americans' idea of where hydropower comes from — only about 2,500 facilities were designed to produce any energy at all.

But a slew of new bipartisan, and, in some cases, bicameral bills promise to change all that, if not during the upcoming lame duck session, then certainly after the next Congress is seated in January.

On Tuesday, Reps. Nanette Barragán, D-Calif., and Suzanne Bonamici, D-Ore., introduced the latest of these bills, the **Marine Energy Technologies Acceleration Act**.

If enacted, the legislation would invest \$1 billion to advance the next generation of marine energy development — harnessing power from waves, tides, currents, and other water-based resources — toward full scale commercialization.

It would do so by enabling the U.S. Dept. of Energy's Waterpower Technologies Office to provide grants for demonstration projects, research and development, detailed resource potential mapping, and workforce development, while it also focuses on developing more efficient permitting processes.

"Nearly 40% of the U.S. population lives in coastal communities where marine energy resources are abundant and offer tremendous potential to power our communities with clean, renewable energy, including California," Barragán said in a written statement.

"^{A+}With the Marine Energy Technologies Acceleration Act, we can ^{a-}usher in an emerging clean energy resource to help our nation ^{goals}and our communities meet clean energy and decarbonization goals, reduce pollution and create high-paying jobs," she said.

Bonamici said the sheer scale of the climate crisis demands that Congress pursue every possible avenue for rapidly transitioning the nation to a clean energy economy.

Unfortunately, she said, the growth of the marine energy sector has been hampered by inconsistent and limited federal investment.

“The Marine Energy Technology Acceleration Act will catalyze the development of the marine energy field and support the coastal communities where technology demonstrations occur,” she said.

Barragán, a member of the House Energy and Commerce Committee, first became intrigued by the potential of marine energy after visiting the site of the upcoming wave energy demonstration project being undertaken by Eco Wave Power and Shell MRE at Altasea at the Port of Los Angeles.

The Swedish/Israeli wave energy company is moving its innovative energy conversion unit, formerly deployed in Gibraltar, to Los Angeles, with its arrival expected in September.

The system uses “floaters” to draw energy from incoming waves by converting the rising and falling motion of the waves into a clean energy generation process.

In real terms, the movement of the floaters compresses and decompresses hydraulic pistons which transmit biodegradable hydraulic fluid into land-located accumulators.

As pressure builds in the accumulators, it rotates a hydraulic motor attached to a generator, which then transfers electricity to the grid.

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The fluid, after decompression, flows back into the hydraulic fluid tank, where it is then re-used by the pistons, creating a closed circular system.

According to the company, the conversion unit can produce electricity from wave heights starting at 1.5 feet.

“The U.S. is becoming a global leader on climate initiatives, and this new federal legislation further demonstrates the U.S. leadership across the world,” said Inna Braverman, Eco Wave Power’s founder and CEO, in a written statement.

“We believe that wave energy has massive potential, and we will soon demonstrate ... that wave energy can be a significant force in combating climate change and powering our communities,” Braverman said.

The legislation is cosponsored by Reps. Ed Case, D-Hawaii, Rashida Tlaib, D-Mich., Kevin Mullin, D-Calif., Val Hoyle, D-Ore., Troy Carter, D-La., Salud Carbajal, D-Calif., and and Annie Kuster, D-N.H.

It was introduced on the same day as the annual Congressional Renewable Energy and Energy Efficiency EXPO and Policy Forum, which this year was held in the Rayburn House Office Building.

Sponsored by the Environmental and Energy Study Institute and the House and Senate Renewable Energy and Energy Efficiency Caucuses, the event, now in its 27th year, shined a spotlight on a wide range of energy-related permitting, funding and regulatory issues.

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When it came to hydropower, two themes dominated the discussion — that it is incredibly reliable and a key to regional resilience in the face of extreme grid events, and that it often

takes a back seat
to other
renewable and
non-renewable
forms of energy
when it comes to
its regulatory and
investment needs.

Hoping to change
the latter is the

National
Hydropower
Association,

which sponsored a
booth at this year's gathering.

Sydney Rovner, program assistant, and
Brittney May, legislative affairs manager, of
the National Hydropower Association. (Photo
by Dan McCue)

There, a big concern was the current state of the facility licensing
and relicensing process. Currently, the licenses for 459
hydropower facilities, representing 17 GWs of power, will expire
by 2035.

On average, representatives of the association said Tuesday, the
relicensing of a hydropower facility takes about seven years and
the paperwork alone costs \$3.5 million.

Those obstacles and a host of others have led a growing number
of facility operators to shut or at least consider shutting their
plants, and surrendering their licenses.

From 2010–2022, the association reps said, the industry saw a
total of 65 license surrenders. Since then, an additional 24
licenses have been surrendered, signaling the emergence of an
accelerated trend.

A recent poll of hydropower owners found that over one-third were “actively considering” decommissioning their operations.

“Long story short, despite a national agenda geared toward a clean energy future, we’re losing ground,” one of the women at the booth told The Well News.

In light of this, the association is pushing for the passage of the H.R. 4045, the **Hydropower Clean Energy Future Act** and S. 1521, the **Community and Hydropower Improvement Act**.

Though slightly different, the association said both would improve licensing and relicensing procedures at the Federal Energy Regulatory Commission by reducing timelines for projects that have lower environmental impacts and would limit license conditions for project effects.

Another area the association hopes Congress will act on is the preservation and enhancement of existing hydropower facilities.

Though lawmakers
on the Hill
included tax
credits for new
hydropower
projects in the
Inflation
Reduction Act,
they didn’t address
the maintenance
needs for the
nation’s existing
hydropower fleet,
which currently
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The exhibitor’s hall at the annual
Congressional Renewable Energy and
Energy Efficiency EXPO and Policy Forum.
(Photo by Dan McCue)

provides a total 102 GW of clean energy to the grid.

“As we speak, most hydropower facilities in the U.S. are over 50 years old and in pretty significant need of updates to ensure safety, maintain efficiency, and continue to build up the overall resilience of the grid,” one of the women at the association’s booth said.

To address the issue, the trade group is urging Congress to support the Maintaining and Enhancing Hydroelectricity and River Restoration Act (H.R. 6653 and S 2994), a bipartisan and bicameral bill that would create a new 30% investment tax credit to incentivize environmental improvements and dam safety upgrades at existing hydropower facilities.

The bill would also create a 30% investment tax credit to remove obsolete river obstructions, with dam owners’ consent.

“The lack of policy support for new investments at existing hydropower facilities really does threaten a critical source of clean energy,” the woman said. “That’s why we attend events like this. We’re trying to elbow our way back into the conversation.”

At just that moment, Kelly Rogers, manager of Policy and Communications for the National Hydropower Association, returned to the booth from one of the expo’s seminars.

“I’m the marine energy person,” Rogers said with a smile. “It’s an emerging technology, covering everything from wave and tidal energy to drawing power from ocean currents and thermal gradients,” she said.

“It’s an area where there are a lot of opportunities right now,” she added.

The National Renewable Energy Laboratory estimates total marine energy resources in the U.S. to be about 2,300 terawatt hours per year, or roughly 56% of all electricity generated across the nation.

According to the association, utilizing just one-tenth of these resources equals 5.6% of total electricity generation and could power over 22 million homes.

In addition, the Energy Department's Water Power Technologies Offices has estimated that up to 50GW of marine energy capacity could be added in the U.S. by 2050.

To get there, the Hydropower Association is urging Congress to support bills like the Marine Energy Technologies Acceleration Act and other legislation that would grow federal investments in the research and development of new marine energy technologies and establish "a continuum" of loan and grant funding to help the private sector create a robust map for commercialization.

The group is also urging the federal government to set national marine energy deployment targets of 50 MW by 2025, 500 MW by 2030, and 1 GW by 2035, and to establish a task force to explore any regulatory barriers and improvements needed to license and deploy more marine energy projects.

Dan can be reached at dan@thewellnews.com and at <https://twitter.com/DanMcCue>

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