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Committee on Appropriations - Subcommittee on Energy and Water Development
Department of Energy (Water Power Program); Corps of Engineers; Bureau of Reclamation

The National Hydropower Association (NHA)¹ respectfully submits this statement in support of \$125 million for the U.S. Department of Energy's (DOE) Water Power Program and its research and development (R&D) activities and initiatives for Fiscal Year 2017.

In addition, NHA also strongly advocates directing significant funding to the operations and maintenance (O&M) programs of the U.S. Army Corps of Engineers (USACE) and Bureau of Reclamation (BuRec) to increase both capacity and generation at these federal hydropower facilities, as well as to those regulatory programs that fund the engagement and review of applications for non-federal hydropower development at USACE's and BuRec's water infrastructure.

Requesting \$125 million in FY 2017 funding for the DOE Water Power Program

NHA encourages funds to be directed across all water power technology sectors – hydropower, pumped storage, marine and hydrokinetic and conduit power. The DOE divides funding generally across two main technology areas: hydropower/pumped storage and marine and hydrokinetic. **For FY 2017, NHA supports funding \$45 million for the hydropower program area and \$80 million for the marine and hydrokinetic program area.**

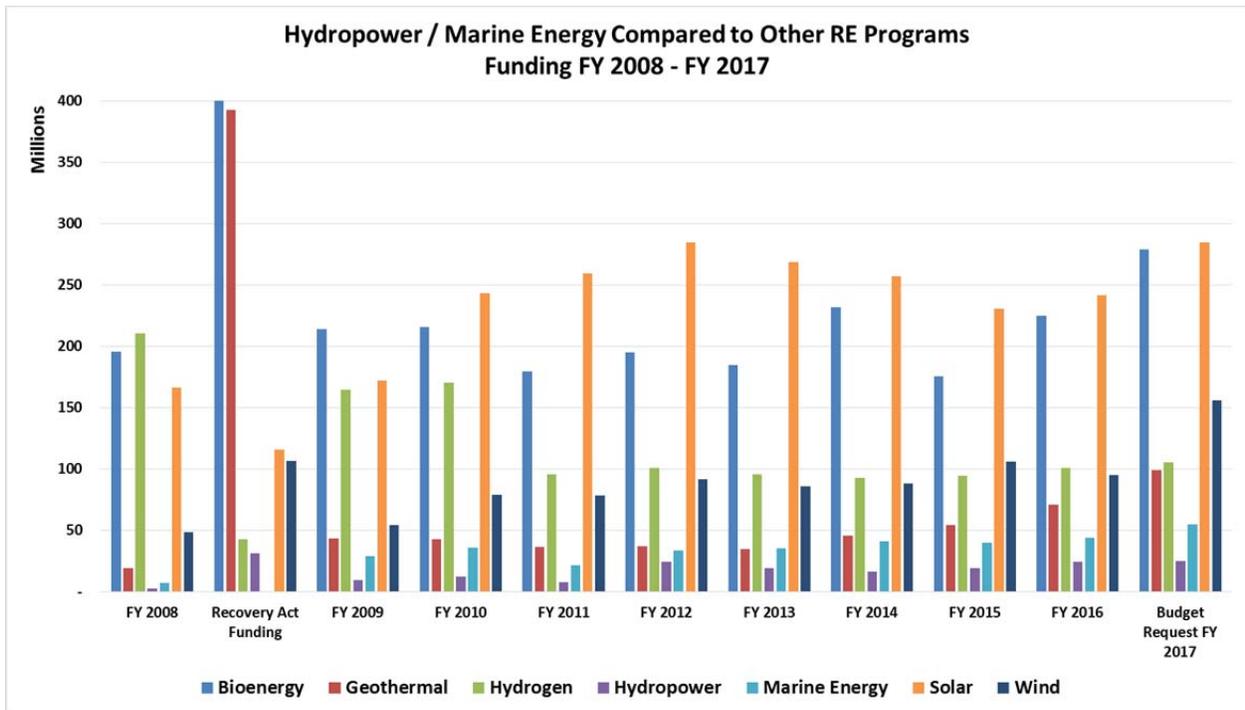
The Water Power program, which represents the single largest source of renewable electricity in the United States today, still remains one of the smallest of the Office of Energy Efficiency and Renewable Energy (EERE), particularly when compared to the funding levels for other EERE programs, such as wind and solar.

Yet, there is a growing recognition in Congress and the Administration for the need to expand our underutilized hydropower and marine energy resources and capture the substantial grid services and clean air benefits they can provide. As such, the NHA request for increased support for the DOE Water Power Program is in line with the “all-of-the-above” energy strategy supported by both Congress and the Administration. These investments will also spur domestic industries that create well-paying jobs and economic opportunities for localities.

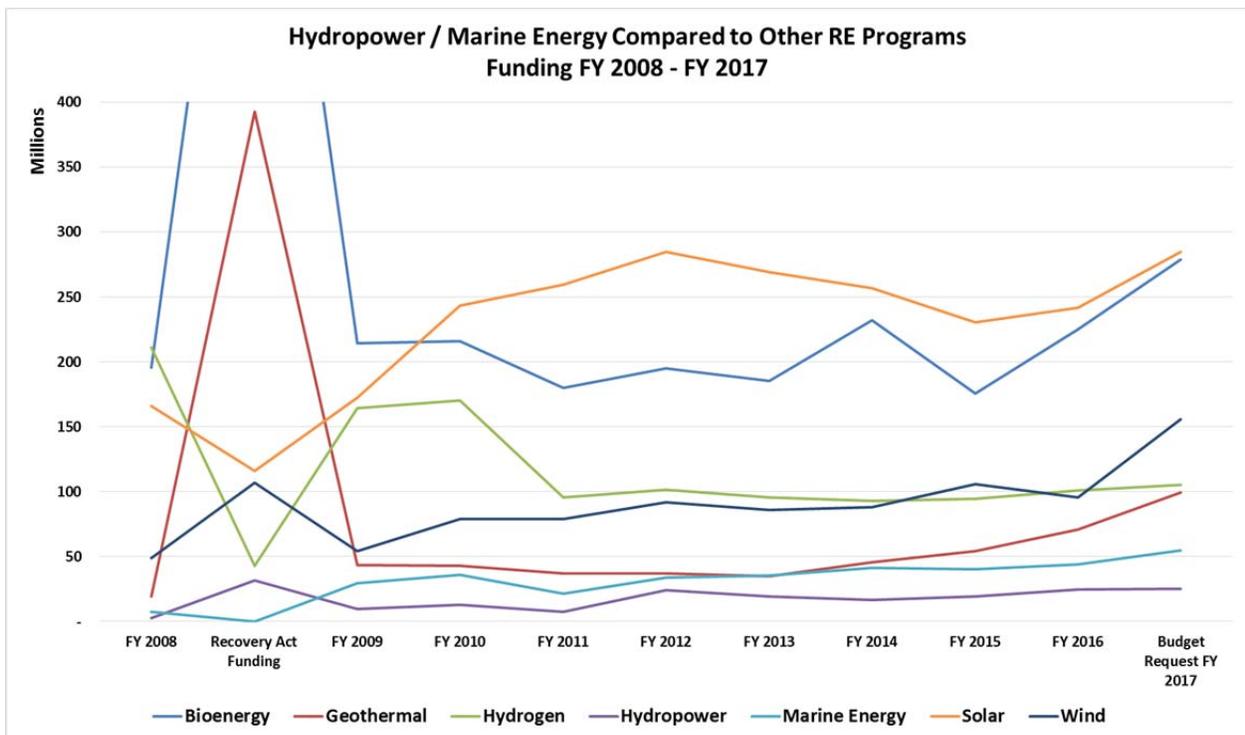
The graph that follows charts the funding levels for the EERE programs from FY 2008 through the Administration's FY 2017 funding request, including American Recovery and Reinvestment Act of 2009 (ARRA) funding.²

¹ NHA is the national association dedicated to advancing the interests of hydropower, pumped storage, conduit power and marine energy technologies. NHA's 220+ members include utilities, independent power producers, developers, equipment manufacturers and service providers. In 2014, NHA established the Marine Energy Council (MEC) in support of the ocean wave, tidal, current and ocean thermal technologies.

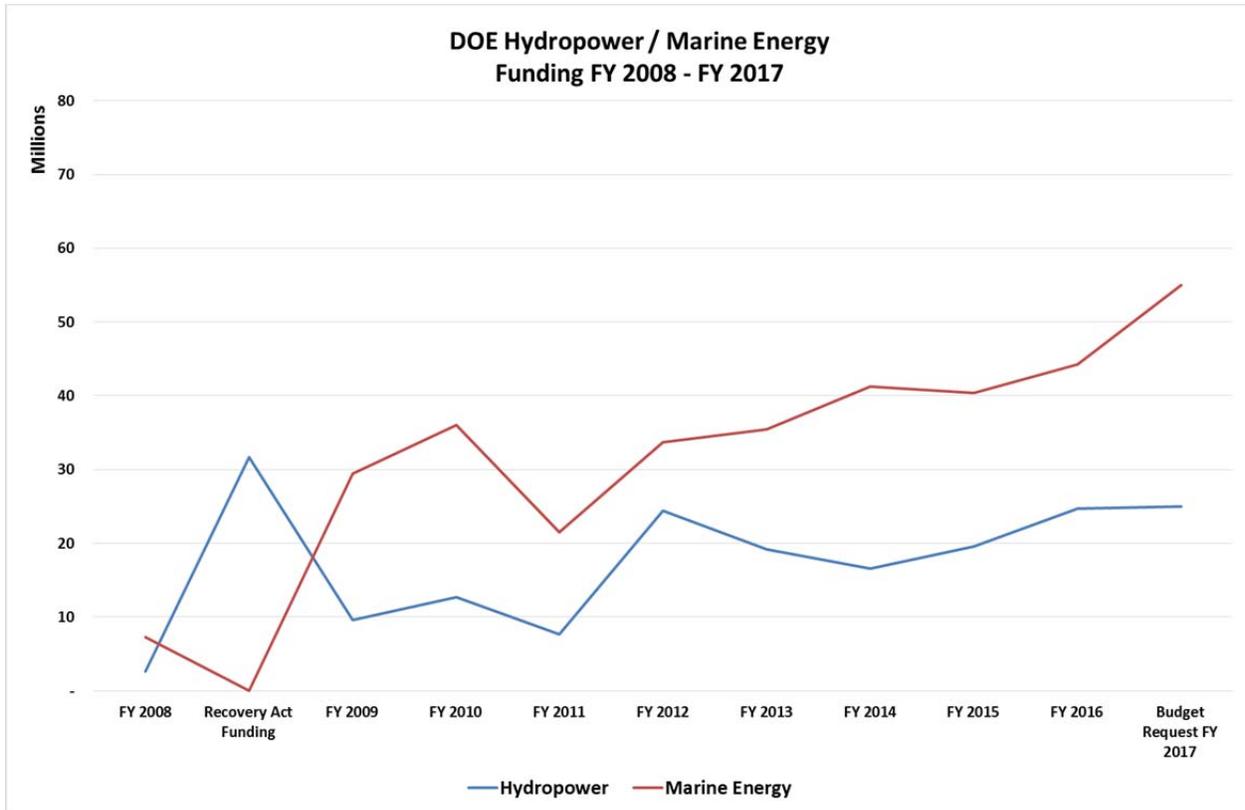
² Office of Management and Budget Annual Congressional Budget Requests



The next graph presents the same information, but more clearly shows the trend lines through time for each individual renewable energy technology program.



To provide an additional level of detail, the next graph charts the funding levels for the two sub-programs in the Water Power program – hydropower/pumped storage and marine and hydrokinetic – over the same period.



NHA appreciates and is encouraged by the growing investments by Congress in the DOE’s Water Power program activities in recent years, along with the Administration’s FY 2017 budget request, which recommended total funding at a historic level - \$80 million. However, as these charts clearly indicate, the level of support is still substantially below that afforded other EERE programs, with the hydropower receiving the least funding, followed by the MHK program receiving the next lowest level of funding.

We believe one of the factors for the tremendous growth in U.S. wind and solar deployment over the last several years is the sustained investment shown by the federal government in technology R&D and market acceleration initiatives in these sectors. We believe deployment of water power resources would benefit from a similar level of federal investment.

As demonstrated in our previous appropriations statements, like wind and solar, there remains significant untapped potential across the water power technologies. For hydropower, these include: increasing efficiencies and expanding capacity at existing hydropower projects, adding generation to existing non-powered dams, new pumped storage facilities, and new stream-

reach development.³ On the MHK side, this includes ocean wave, ocean tidal, ocean thermal and in-stream hydrokinetic resources.⁴

Specific DOE Water Power program initiatives and other important federal activities

- **EPAct 2005 Section 242 hydropower production incentive** – Report language from FY 2014-2016 has included funding for this incentive designed to help bring down costs that in turn can determine the viability of a given project. NHA supports continued funding for the program, which DOE is currently in the process of implementing.⁵
- **Offshore wave energy test facility construction** – NHA supports this initiative, which will evaluate utility scale wave energy converter (WEC) performance, environmental interactions and survivability, and help meet the goal of reducing the levelized cost of energy of wave energy technologies.
- **Hydropower Fellows program** – With DOE support, the Hydropower Research Foundation (HRF) awards fellowships to masters and doctoral degree students throughout the U.S. NHA supports the program, which stimulates new student research and academic interest and careers in hydropower and pumped storage.
- **Hydropower development at federal facilities** – NHA also urges the Congress to direct support to the Army Corps of Engineers Civil Works and the Bureau of Reclamation efforts to operate, maintain, and upgrade their existing hydropower projects, as well as to add non-federal hydropower development to their existing non-powered infrastructure.⁶

Conclusion

Unlocking the energy potential of our rivers, oceans, tides and conduits by accelerating the funding for the DOE Waterpower R&D program would allow the U.S. to realize the tremendous energy and environmental benefits of these resources.

The DOE Water Power Program is an important source of support for the project developers and owners, researchers, and scientists working to advance these clean energy options. Once again, we urge Congress to support a \$125 million funding level for the program.

³ http://www1.eere.energy.gov/water/pdfs/npd_report.pdf and <http://nhaap.ornl.gov/nsd>

⁴ <http://energy.gov/eere/water/marine-and-hydrokinetic-resource-assessment-and-characterization>

⁵ NHA can report that the implementation of the Section 242 program is proceeding well. With award notices and decisions being processed and issued in a timely manner.

⁶ DOE and other studies show that 12 GW of new capacity exist at U.S. non-powered dams, including Army Corps of Engineers' dams, as well as significant growth potential at existing Bureau dams, canals and conduits.