CALIFORNIA STATE UNIVERSITY, LONG BEACH

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California Energy Commission (CEC)
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket No. 12-EPIC-01

Dear CEC,

As a research laboratory director (www.csulb.edu/depts/endo), faculty member (http://www.csulb.edu/depts/biology/), and coordinator of a statewide CSU-based environmental research network (http://www.calstate.edu/coast/eeco/), I am writing to support the development of clean energy technologies and approaches via the First Triennial Investment Plan for the Electric Program Investment Charge (EPIC) Program. I am also writing to highlight the strength of the potential partnerships with the CSU and its myriad of applicable resources, from R&D to specialized expertise to public education and outreach to state-of-the-art technologies. Through the development of the above-mentioned research network, called the Environmental Effects in Coastal Organisms (EECO) Network, I have been continuously impressed at the depth of human and technological resources available statewide through the CSU, and this Network just one of many examples of what is available if we choose to effectively take advantage.

The CSU is one of the largest, most diverse public university systems in the world. With 23 campuses and seven (7) marine laboratories spanning the entire state of California, the CSU is uniquely positioned to support the development of marine and hydrokinetic (MHK) technology and the evaluation of its performance and environmental impacts. In the latter category, the 45+ scientists in the EECO Network represent a substantial resource to the CEC and these efforts.

In 2008, the CSU established the Council on Ocean Affairs, Science and Technology (COAST) as the centralized, system-wide organization to integrate CSU marine science resources and advance knowledge of California's natural coastal and marine resources and the processes that affect them. COAST provides a single point of access through which stakeholders can access the myriad resources of the entire CSU. As part of COAST, the EECO Network operates.

The CSU can play a vital role in the key phases of applied research and technology demonstration and deployment. As research and development begin, critical pathways for prototype testing and technical validation must be established (Stages 2 and 3 of the EPIC Technology Maturation Curve). These pathways must be transparent, streamlined, cleared of hurdles and accessible to all. The seven CSU

waterfront facilities can operate as locations for marine renewable energy innovation clusters in which industry, government and universities collaboratively develop and test new MHK technologies. The CSU houses a wealth of intellectual expertise that can inform technological development and extensive infrastructure to support both laboratory and field-based testing. Our scientists have unparalleled breadth of knowledge of the biology, geology and physics of California's coastal ocean that can help inform all stages of development from R&D to technical validation in the field. Our marine labs have piers, docks and oceanfront property for immediate water access, as well as vessels ranging from intermediate to large, for offshore access including transportation of large pieces of equipment.

Much of the infrastructure necessary to carry out the vision of MHK energy sustainability is non-existent or in disrepair. This initiative provides an opportunity to reinvest in a re-invented waterfront, providing multi-use facilities, not only for the development and testing of MHK technologies, but for the development of the science necessary to understand the impacts of these systems, while training and educating a workforce capable of managing this new technology.

Three key aspects of successful, functional marine renewable energy innovation clusters are 1) durable public/private partnerships, 2) industry-specific infrastructure, and 3) a regulatory climate in which permitting is coordinated and streamlined. With sufficient funding, we can create "plug-and-play" facilities in a variety of wave, tidal and physical environments with all the necessary components for developers to test their prototypes *in-situ*. The clusters will work with industry and the regulators to obtain the necessary permits, allowing the developers to focus primarily on the science and technology. Only in this type of rich, collaborative, supportive environment will real progress be made toward MHK technologies that can support California's clean energy goals. COAST and its networks such as EECO are well prepared to accomplish these objectives to help the State realize its clean energy goals.

Furthermore, the CSU is uniquely positioned to support workforce development in clean energy technology. The CSU is the largest, most diverse and most affordable university and the largest baccalaureate degree-granting institution in the country. The CSU graduates almost 100,000 students annually who go on to live and work in California and throughout the nation. In addition, there are an array of excellent graduate programs throughout the CSU system, producing Master's and Doctoral degrees and other certifications. Ten percent of California's workforce is made up of CSU graduates and the CSU has a responsibility to serve the people and the State of California. The clusters will engage students from throughout the CSU including those in STEM, public policy, and teacher training. Involvement of both undergraduate and graduate students in the development of MHK technologies and its integration into California's energy vision will ensure a highly skilled future workforce capable of addressing complex challenges and ensuring the sustainability of our way of life for generations to come.

This is an opportunity to take advantage of the modern CSU system, which has developed into a unique position to provide the applied intellectual expertise, infrastructure and workforce base necessary to support and advance the development of MHK technology in California. COAST and its components like the EECO network are committed to forging strong partnerships to develop innovative and sustainable solutions to the challenges we currently face.

I hope you agree,

Kevin M. Kelley, Ph.D.
Professor