



California Energy Commission
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California Energy Commission
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12-EPIC-01
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Re: Docket No. 12-EPIC-01

October 2, 2012

On behalf of the California State University (CSU) Council on Ocean Affairs, Science and Technology (COAST), I am pleased to submit comments to the California Energy Commission on the Electric Program Investment Charge (EPIC) Proposed 2012-14 Triennial Investment Plan.

I am the Director of COAST, the CSU's system-wide organization for marine and coastal related research and education. COAST integrates the resources of the 23 CSU campuses to promote interdisciplinary, multi-campus collaborations that advance our knowledge of California's natural coastal and marine resources and the processes that affect them. 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 applied research and development and technology demonstration and deployment of clean energy technologies in the marine environment.

We applaud California's leadership in the development of clean energy technologies and the envisioned transition from fossil fuels to renewable sources of energy. The Investment Plan reflects ambitious goals of reducing greenhouse gases, making 33% of the State's energy portfolio renewables, encouraging CA-based technology development and in-state investment, streamlining projects and avoiding duplication. We are confident that California will lead the rest of the nation forward along the pathway to clean, sustainable energy sources.

In my current position I have participated in the California Marine Renewable Energy Working Group and this has expanded my interest in and knowledge of the complex topic of marine renewable energy greatly. I feel very strongly, both professionally and personally, that responsible marine renewable energy technologies should be an important component of California's future energy strategy. We are very pleased to see the inclusion of both marine renewable energy and offshore wind energy development in the Triennial Investment Plan. The CSU can play a critical role in areas related to offshore energy generation and its potential environmental impacts on marine species and habitats (S4.4, S4.5, S5.2, S5.3).

We envision a series of **Marine Renewable Energy Technology Development & Testing Centers** (similar to the Centers described in S10.2) established along the coast of California at

the CSU's waterfront facilities. The Centers will bring together industry, government and universities to support 1) pre-commercial renewable ocean energy technology development including environmental impact assessment (Applied R&D) and 2) installation and operation of pre-commercial renewable ocean energy technologies at demonstration scales and in environmentally relevant conditions (Technology Demonstration and Deployment).

The Centers will work with industry and regulators to develop pre-permitted field testing, verification and demonstration infrastructure. Specifically, they will provide **“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*, thus allowing the developers to focus primarily on the science and technology.

The CSU's seven (7) waterfront facilities (http://www.calstate.edu/coast/programs-assets/resources_map.shtml) are ideal locations for siting these Centers. 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 knowledge of the biology, geology and physics of California's coastal ocean that can inform technology development and determine the effects of energy generation on marine species and habitats. Our piers, docks and oceanfront property provide immediate water access, and our research vessels range from intermediate size for near shore transit to large, ocean-going ships for offshore access, including transportation of large pieces of equipment.

The envisioned Centers are critical to **progression along the energy research innovation pipeline** for the development of offshore wind energy generation and wave energy conversion technology. They will support lab and field testing, pilot scale testing, full-scale demonstration and deployment, and workforce development. Partnerships with academic researchers will facilitate access to the **environmental data needed for the environmental permitting process**. These data will make a significant contribution to the developing Marine Geospatial Data Portal.

Locating the Centers at the CSU marine facilities will **reduce costs by capitalizing on existing infrastructure** and human resources. Upgrades to existing infrastructure and additional infrastructure will be necessary and will ultimately benefit California. Investment in the CSU is a demonstrated mechanism to successfully reinvest in and grow the State of California: for every \$1 invested, the CSU generates \$5.43 for California's economy.

The CSU is also uniquely positioned to support **workforce development in clean energy technology** (S15). 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. 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 undergraduate and graduate students from throughout the CSU in the development of marine renewable energy technologies, thus ensuring the creation of a highly skilled future workforce capable of addressing complex challenges and ensuring the sustainability of our way of life for generations to come.

We stress the need for transparent, open competition for available funds as EPIC program investments are made. All interested parties should have the opportunity and ample time to submit competitive proposals for independent third party review. We feel strongly that transparency and equity of opportunity are critical to the overall success of EPIC and will ultimately benefit the citizens of California.

Thank you again for including marine renewable energy strategies in the Investment Plan. This type of forward thinking is critical to our state's ability to successfully meet growing energy demand with clean, sustainable approaches.

Thank you in advance for your consideration of these comments,

A handwritten signature in cursive script that reads "Krista Kamer". The signature is written in black ink and is positioned above the printed name and title.

Krista Kamer, Ph.D.
Director