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California Energy Commission

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Subject: Docket No. 12-EPIC-01 – Comments on Funding to Support the Emerging California Marine Energy Industry

Thank you for the opportunity to provide comments on the investment plan for the Electric Program Investment Charge Program (EPIC) Program. I was able to observe your hearings in Los Angeles via the well executed webcast. I am writing this as an individual in collaboration with other marine renewable energy professionals. I will focus my comments on the emerging field of marine renewable energy which includes ocean wave, tidal flow, ocean current and offshore wind energy technologies.

My name is William Toman and I have led development efforts of ocean wave, tidal flow and floating offshore wind energy projects in California over the past 5 years. While at Pacific Gas and Electric Company (PG&E), I was the program manager for the WaveConnect ocean wave energy pilot projects offshore of Humboldt and Santa Barbara Counties and was the PG&E lead for the San Francisco Bay Tidal Energy Project. I am currently directing the development of a 12 MW floating wind energy demonstration project offshore of Vandenberg Air Force Base which is in contention for ultimately \$50 million of funding from the U.S. Department of Energy's Offshore Wind Program. A California native, I am currently based in McLean, Virginia, but am in California often on marine renewable energy activities.

My numbered funding suggestions below address the needs of the entire U.S. wave and marine energy industry, which is looking to California for leadership.

As introduction to my funding suggestions:

- California is traditionally the hub of innovation, with its globally-recognized State universities. This innovation should extend to the development and use of marine renewable energy technology, given California's 840 miles of coastline with excellent ocean wave and offshore wind energy resources, and commitment to a future supplied by clean, renewable energy.
- The U.S. Navy is already a leader in wave energy research. Their primary worldwide wave energy research and engineering center is located at Port Hueneme, the Naval Facilities Engineering Command Engineering Service Center (ESC).
- The U.S. Air Force has for years taken a supportive role in hosting ocean wave and now offshore wind energy demonstration projects at Vandenberg Air Force Base.
- California's engineering industry, with more than 1,000 firms in the State, is a global leader in ocean wave energy. Among the firms active in wave energy in California are AECOM, Tetra Tech, HDR, CH2M HILL, Moffatt & Nichol and Sound & Sea Technology. California also has a strong offshore systems manufacturing industry and port facilities which can be applied to marine renewable energy.

- There has been considerable U.S. Department of Energy funding for wave energy research, including for projects in California. This can be used to leverage CEC EPIC funds.

Specific EPIC Program Funding Suggestions

Therefore, I have the following suggestions regarding use of CEC EPIC funds for support of California's ocean wave energy industry, and marine energy in general.

1. **Fund the establishment of a test and demonstration location for renewable marine technology in California.** Other states have funded such facilities (Hawaii, Oregon, Washington, New Hampshire, North Carolina and Florida). Firms with marine technology have no choice but to go to states and countries where test facilities are located. Once there, they will expand and manufacture in those areas.
2. **Fund a State office, probably within the California Energy Commission, to serve as liaison for all marine renewable energy project activities.** What is needed is to get as close to a "one-stop-shop" as possible for interested marine renewable energy project developers working in California. Safeguarding and protecting California's oceans and coastlines is paramount, but there is a mind numbing constellation of regulatory and resource management agencies whose actions need to act far more seamlessly with each other than is the case now. Having a State official "shepherd" a project developer through this myriad of State and Federal offices would tremendously aid the deployment of these technologies.
3. **Fund a survey through the California State Lands Commission of existing offshore electrical infrastructure.** The offshore cabling and associated facilities for oil facilities, power plants, ports, wastewater treatment plants and other facilities may be valuable in support of marine energy projects. Information on these facilities is very difficult to obtain. There should be an inventory of such facilities, their status and condition, and availability.
4. **Monitor and fund promising marine energy technology.** Work to ensure that the firms with marine renewable energy technologies establish and maintain their operations in California, including manufacturing.
5. **Fund "marine renewable energy" innovation clusters, linked to coastal UC, CSU and Community Colleges.** The most promising areas for these currently are in the Humboldt, San Francisco Bay, Monterey Bay, Ventura/Santa Barbara, Los Angeles/Long Beach, and San Diego areas, where there are considerable university, port, industrial and military resources to support such clusters, as well as good marine energy resources.

Thank you for the opportunity to submit these comments. I look forward to your strong support for ocean renewable energy and a bright and prosperous future in California.

Sincerely,



William J. Toman