



BOARD OF SUPERVISORS  
AGENDA LETTER

Agenda Number:

Clerk of the Board of Supervisors  
105 E. Anapamu Street, Suite 407  
Santa Barbara, CA 93101  
(805) 568-2240

Department Name: Board of Supervisors  
Department No.: 011  
For Agenda Of: 6/19/07  
Placement: Departmental  
Estimated Tme: 30 minutes  
Continued Item: No  
If Yes, date from:  
Vote Required: Majority

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**TO:** Board of Supervisors

**FROM:** Board Member(s) Supervisor Salud Carbajal, 1<sup>st</sup> District  
Contact Info: Jeremy Tittle, Executive Assistant, 1<sup>st</sup> District, 568-2186

**SUBJECT: Report on Wave Energy Pilot Project**

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**County Counsel Concurrence**

As to form: N/A

**Other Concurrence:** N/A

As to form: N/A

**Recommended Actions:**

Receive a report on the state of ocean energy technologies and the potential for a local pilot project.

**Summary Text:**

Roger Bedard, Ocean Energy Leader with the Electric Power Research Institute in Palo Alto will be giving a presentation to the Board on the state of ocean energy technologies. Mr. Bedard has been working locally with the Community Environmental Council (CEC) to explore the potential for a first of its kind wave power test facility at Platform Irene north of Point Conception which would provide for an economy of scale which would allow for a further understanding of this technology.

**Background:** Our beautiful ocean and shoreline are our region's most remarkable physical resources. Within that vast expanse of water is energy that could provide a significant part of our county's electricity needs by 2020 or earlier. Ocean power technologies are varied, but the primary types are - wave power conversion devices, which bob up and down with passing swells; tidal power devices, which use strong tidal variations to produce power; ocean current devices, which look like wind turbines and are placed below the water surface to take advantage of the power of ocean currents; and ocean thermal energy conversion devices, which extract energy from the differences in temperature between the ocean's shallow and deep waters.

The most promising ocean power technology in our region is wave power. The good news is that a recent study of California's coastline found enough wave power potential for about six hundred thousand homes in our County and Southern San Luis Obispo County. With only about 150,000

households (420,000 people) in the county today, this is obviously far more energy than we need – if the total potential were developed, which is highly unlikely.

As with all energy technologies, the key issues are availability and cost. For the most part, ocean power technologies are very young. The first commercial facilities were installed in 2000 and 2006, in Scotland and Portugal, respectively, but most projects in the water today or slated for the near future are pilot projects. While we can't expect to see the same kind of deployment over the next 10 years that we might for more advanced wind and solar power technologies, we can expect wave energy projects to begin to come online over the next two decades. However, without existing large-scale wave power facilities to point to, it is difficult to know how much such installations will cost.

Considering the various subsidies available at the state and federal level, wave power technologies could be competitive today – though a track record is needed to establish this as fact. In light of the potentially favorable economics, and with the state's strong support for renewables, it has been projected by the CEC that wave power could supply about 500 MW for our county by 2020, equivalent to about 1,500 gigawatt hours (GWh) a year. This would meet about eight percent of our total energy demand at that time. As with any technology placed in our oceans, it is important to fully consider the impacts to fish and other wildlife, as well as to commercial and recreational uses.

Performance Measure:

N/A

**Fiscal and Facilities Impacts:**

Budgeted: N/A

**Fiscal Analysis:**

N/A

**Staffing Impacts:**

**Legal Positions:**  
N/A

**FTEs:**  
N/A

**Special Instructions:**

N/A

**Attachments:**

Community Environmental Council (CEE) Draft Energy Blueprint, Ocean Energy Chapter

**Authored by:**

Jeremy Tittle

**cc:**