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2022_11_27 21-ESR-01 Questions for the Public_Eco Wave Power_please add distributed, CA wave energy generation as part of potent

please see attached pdf.

Please also view the November 20th, 2022 YouTube Eco Wave Power/C-NET interview. It is 4:31 minutes long.(https://www.youtube.com/watch?v=gRwzERCufFA),

Additional submitted attachment is included below.

Public Member Response to November 16th, 2022, California Energy Commission (CEC) Business Meeting Item #4: "Information Item on the Request for Information [RFI] on Investments in Clean Energy Resources for Statewide Reliability," Guidelines for the "Distributed Electricity Backup Assets [DEBA] Program." The RFI's questions for the public are posted in a pdf in the CEC 21-ESR-01 docket, November 7th, 2022 (CEC pdf # TN247317).

Questions for the Public
List of Resource types and Evaluation Attributes
The RFI seeks feedback on the following questions regarding the list of preliminary resources and qualitative and quantitative attributes by which they will be evaluated:

2. ***Are there resources that should be added to or removed from the preliminary list under each of the categories (shown in Tables 1, 2, and 3)?***

   Answer from a member of the California public, who is at this point not considered formally part of the technology, is not part of the wave generation business, is not yet an investor (and likely will not be any time soon due to extremely low income) and/or currently considered part of the formal energy expert professional field: Yes. Please add wave energy generation.

The RFI seeks feedback on the following questions for each potential resource.
1) Please provide a general overview of the resource, including the following:
a. Resource category (e.g., supply, demand) and type (e.g., solar) and scale (e.g., utility, distributed)?

Wave energy: Supply
Type: Wave
Scale: Similar to solar, distributed

2) How does the resource compare to conventional generation in terms of greenhouse gas and priority pollutant emissions?

Not counting embodied carbon, it appears (please verify) to not generate greenhouse gases and/or priority pollutant emissions. Note: I have not seen this in person. I have only heard and read about this online in Linked IN and Facebook.

3) How does the resource support reliability (e.g., supply, permanent load reduction, net peak reduction, or emergency asset?) (List all that apply.)

Wave energy supports reliability by being another potential energy generation source. Wave energy appears to be able to operate 24 hours/7 days/365 days a year, year after year, with the exception of extreme storms, which might make wave energy into a CA more consistent, reliable (baseline) energy source than most energy sources.

   a. ***How can the resource be used as an incremental on-call resource during emergencies?***

Wave energy appears dependent on tidal conditions – reliant upon earth forces – and appears to operate more like solar, therefore does not seem to be a source that one would deploy for

emergencies. However, wave energy would then be more consistent and a nice reliability "add" which could prevent some energy supply emergencies.

4) How many new MWs and MWhs can the resource provide per year, taking into account resource characteristics and known barriers between now and 2035?

Please ask Eco Wave Power for this data. There is now a November 20th, 2022 YouTube Eco Wave Power/C-NET interview. It is 4:31 minutes long. I recommend viewing it for these details. This video (https://www.youtube.com/watch?v=gRwzERCufFA), is posted on Eco Wave Power's Linked IN and on Facebook sites. According to this interview, depending on wave type and size, an Eco Wave Power floater can generate 10 kW which might power 10 houses. Overall efficiency for Eco Wave Power's complete wave energy generation system design including mechanical, hydraulic and electrical components, is projected to be 50%.

a. How is that different if used incrementally as an emergency asset during an extreme heat event?

Wave energy most probably does not differ during most heat events, though one might want to inquire with gravitational experts, since wave energy relies upon tides. I have not heard or read that gravitational forces and heat are connected, but they might be somehow. Extreme ocean storm events might be more of a problem for this technology, than extreme heat events.

5) What is the levelized cost for the resource in $/MW-yr. and $/MWh-yr. from 2023 to 2035?

Please inquire with Eco Wave Power and possibly with AltaSea, at the Port of Los Angeles, Long Beach.

6) What is the average length of time from ordering or purchasing the resource to operation? How long does that typically take in today's market? What conditions must be met to deploy the technology rapidly? (e.g., transmission interconnection, building electrification or upgrades, etc.)

Alta Sea, at the Port of Los Angeles, Long Beach has recently taken on an Eco Wave Power test pilot project. It appears so far, from an outsider's not vigilant social media post watcher, that it might take a year to construct and deploy. However, I am guessing that year as a time period. This time period can likely be shortened as an entity/jurisdiction/state learns more about this particular wave generation technology.

7) For an emerging technology, when will it be ready for deployment, and at what scale?

It appears fairly ready now, per Eco Wave Power social media posts. (Please verify with Eco Wave Power.) Easily however, I imagine improvements can be made, like any technology when it first starts.

8) Is the target customer primarily residential, commercial, agricultural or industrial?

Commercial. There may be a few residential California ocean side customers that can deploy this too. Cities might deploy this technology at breakwaters and piers. Therefore, potentially utilities with a California ocean side might consider wanting this technology to generate electricity for close by customers.

9) What are the key non-financial barriers to the development and implementation of this resource (including, but not limited to, permitting, interconnection, supply chain, customer acceptance, and alignment with policy goals)?

Probably all of these non-financial barriers currently exist to some extent in the state of California (CA). I understand per what has been said at energy expert meetings, that CA invested heavily in wave energy generation prior. Since those older investments was not considered successful, it appears that CA energy experts have not further aligned further wave energy generation policies so that these barriers can be more easily removed at this time. There is hope that the Alta Sea, Eco Wave test pilot project is/has worked on removing some of these barriers already, but that would need to be explored by California energy experts such as yourselves.

10) What are the key financial barriers to the development and implementation of this resource?

I am guessing there is significant financial investment needed to manufacture and purchase this technology as well as arrange permitting, environmental clearances, construction and maintenance. Please inquire with Eco Wave Power.

11) What types of benefits or impacts is the resource anticipated to have on low income and disadvantaged communities, and tribes, if any in terms of development and deployment?

Environmental impacts might happen where machinery is placed. For example, in the recent C-Net Eco-Wave Power interview, the interviewer inquires whether sea lions would rest on the Eco Wave Floaters. From my perspective, that is an excellent question.

Input on Distributed Electricity Backup Assets Program Design
The Distributed Electricity Backup Assets program can provide incentives for two main categories of projects:
• Efficiency upgrades, maintenance, and capacity additions to existing power generators.

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• Deployment of new zero- or low-emission technologies, including, but not limited to, fuel cells or energy storage, at existing or new facilities.
The statute also requires that all funding recipients participate as on-call emergency resources for the state during extreme events.
The RFI seeks feedback on the following questions, in addition to the information requested in the questions above, to help inform the design of the Distributed Electricity Backup Assets program and its phased development and launch:

1) ***What size of resource and what types of customers should the program target?***

   The C-Net Eco Wave Power interview video suggests that in powerful waves, a floater can produce up to 10 kW. Completely guessing, there are piers and breakwater-like structures which can allow the Eco Wave Power technology to be added. I also might guess that the cruise/shipping industry might be interested potentially in adding this resource to some areas, possibly including marine vessels, for standby power in emergencies.

2) ***What types of incentive structures and amounts are needed to accelerate the development and deployment of this resource?***

   Possibly accepting styles of advertising. Possibly, for example, giving pier commercial customers a specialized loan to consider adding floater structures. Possibly, for example, giving cities with breakwaters, incentives to add floater structures. Permitting and state policies would need to align. CEQA analysis and Environmental Impact Reports are probably a first order. Possibly blatantly supporting and securing this foreign (from Israel) woman-run, female energy expert business in California since their work might be more attacked by those, including anti-Semitic, who do not like supporting such parameters. (The subject of this paragraph is "key." I mentioned Eco Wave Power in prior California Energy Commission meetings. I notice online there almost seems fight in words instead of possible inquiry/examination of Eco Wave Power's potential to help CA with another consistent energy resource.) Though I cannot guarantee Eco Wave Power is more successful at generating wave energy than past CA wave energy investments, because Eco Wave Power showcases success in social media posts publicly, explains its technology frequently at interviews and seems now to be adopted by other nations, it seems well worth CA energy expert consideration and kind attention, at the least.

3) ***What types of conditionalities and measurement and verification requirements should the program include to ensure funded resources participate and deliver during emergency events?***

   The Eco Wave Power wave generation system appears to operate more like solar, with light more 24 hour/7day a week generation, than a kind of gas-fueled power plant.

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4) In general, please provide any specific proposal or recommendation on the design and implementation of the DEBA program.

I recommend examining the first deployments of Eco Wave Power's wave generation technology at the Alta Sea, Port of Long Beach and speaking directly with Eco Wave Power staff, possibly inviting them to speak to commissioners virtually or in-person at a California Energy Commission Business meeting.

NOTES/DISCLAIMER: I am a member of the public and cannot guarantee Eco Wave Power wave generation success at all. I am not "the expert" and cannot nor wish to pretend to be. I have not seen the technology in-person and have not been generating or examining/testing Eco Wave Power data. Also note: I, so far (!!! – I am extremely low income so this is unlikely anyways), have not invested in Eco Wave Power, except by learning about their technology via their social media posts. What I do remember quite well is how wonderful and powerful California ocean waves are as I use to body surf quite a bit. I still hope to get into ocean water again, but live inland so the idea is less possible. California has a long coast with some small and large cities. There are many breakwaters and piers. In addition, with gentle San Francisco bay waves at piers, there still might be some wave generation potential to consider. Certain areas might benefit if this technology works and can be successfully adopted. I might first target areas with marinas, breakwaters and larger waves – places such as Bodega Bay, Marina del Rey, Arcata/Eureka and Newport Beach. There is no question in my mind that waves can generate energy. Potentially a marina might want power like this for light weight demand. What seems especially considerate, is that like solar, this more shore-connected, tidal, potential distributive energy resource is something that might be maintained more easily than offshore, does not appear explosive and/or especially dangerous.