

INDUSTRY/TECHNOLOGY QUESTIONS:

1. What percentage of Mendocino County's coastal energy needs would be met by a wave power array of 10 buoys?
2. What are the energy requirements of the Mendocino coastal community?
3. How many arrays are projected off of our coast?
4. Must buoys be deployed over sandy bottoms?
5. Is depth of water a concern? What is the minimum depth? Maximum depth? What is optimal depth for deployment and why?
6. What research is being done on marine biodegradable lubricants for buoy devices? What are residual impacts of marine biodegradable lubricants?
7. What about the need of anti-fouling agents? How often would devices need to be treated?
8. What are the effects of saltwater on metals?
9. All buoys and metal wave devices will require sacrificial anodes—is it better to use aluminum or magnesium or combination alloys for marine life?
10. Is there heat generated by wave energy parks?
11. What onshore structures will be necessary for the transmission of power? What will onshore support systems look like?
12. How will the buoys be maintained?
13. Adding the capability to measure wind speed, air temperature, ocean temperature, etc. would provide a direct benefit to the local communities inland from these buoy arrays by improving weather and eco-forecasts for the region. Are there any plans to work with NOAA to add meteorological and/or oceanographic instrumentation to these buoys?
14. Would industry be willing to work with the science community on ocean observing systems?
15. How difficult will it be to dismantle and remove an array and the supporting infrastructure?
16. Since gravity makes the ocean's waves, why not study how to generate energy from gravity and leave the ocean resource alone?
17. What upgrades to Noyo Harbor would be required to service wave energy arrays? Dredging? Repairing piers? New pilings to repair piers?
18. Are there plans to hook wave power energy producing arrays to desalinization plants?
19. How much money will Finavera and Ocean Power Technology make from the "testing programs"? What is their source of funding?
20. What is PG&E's relationship with the owners of the mill site?
21. What is the carbon credit investment and federal energy investment versus tourism, fishing and environmental costs? In other words, is this a real money-maker or tax dollars being used for corporate experimentation?
22. Are any of OPT's devices deployed in the ocean?
23. Would PG&E provide a map of their proposed test area that shows precise boundary, water depths, how far offshore and includes local landmarks?
24. For the OPT's Reedsport Oregon project, what type of FERC license will OPT apply for? What kind of licensing procedures will be used (conditional, pilot project, alternative licensing procedures, or traditional licensing procedures)?
25. Are any technology developers using the "charter process" to ensure ongoing public participation?
26. What is the prospect of using the local workforce to assist with research and development? Would wave power firms consider local recruitment and training for installation/maintenance staff? In the future, could buoys be built in Fort Bragg?
27. Where else in the world is wave energy technology being investigated?

WAVE ENERGY FORUM – January 19, 2008
Summary of Questions

28. The possibility of a “public-private partnership” has been mentioned. (That could be Exxon/FERC). How do we get an official local piece of the partnership?
29. At the point of connection to the local grid, will the wave power provide a local lifeline source when all outside power is cut-off due to storms or statewide brown-outs?
30. Does industry know exactly where wave energy is the greatest along the coast? Has bathymetry been sufficiently mapped?
31. How can you avoid kelp off the Mendocino coast?
32. How does PG&E intend to study the environmental impacts of equipment placed in water? How much time is allocated for study prior to implementation?
33. How large does a wave park need to be to make enough energy for it to be economically viable?
34. After installing experimental devices in a limited area for a five-year study period, does PG&E intend to extend PG&E’s permit with FERC for 30-50 years for the entire permit area?
35. How will you evaluate impacts to the local fishing industry?
36. What is the “carbon footprint” of bringing wave energy generators online?
37. Please address the Gray’s Harbor, Washington proposal involving 28 square miles of wave arrays and wind machines?
38. What percentage of energy going past a wave energy buoy can be captured? What planned technological improvements are on the horizon? What are the differences between the AquaBuoy (Finavera) and the Power Buoy (OPT)?
39. Is OPT involved with Fairhaven OPT Ocean Power project in Humboldt County? What is the status of that project?
40. How big are the buoys?
41. When were permits given for the Oregon projects?
42. Does the buoys contain oil or hydraulic fluids? How much? What are the chances of leakage? What are the environmental consequences of a sunken unit?
43. What is the average expected life of a buoy?
44. Has the sunken Finavera AquaBouy been retrieved? If not, what are your plans to retrieve it? If so, what has been learned?
45. I have heard Finavera’s representative say before that Finavera would not put projects in areas where local communities did not want them. Is that correct?
46. There are a number of conceptual wave energy converters—how many and how thoroughly have Finavera and OPT explored the various devices?
47. How big are the ships that deploy the buoys? What are their port requirements (depth, cock size, etc)?
48. Are you planning a wind component on the wave devices?

MARINE ISSUES/RESOURCE AGENCY QUESTIONS:

1. How will magnetism affect marine life?
2. Could an array of wave energy devices create an electric fence effect, keeping marine species in or out?
3. How will heat affect the ocean?
4. How are the anticipated effects of climate change and acidification of the oceans (through carbon absorption) being looked at by the resource agencies?
5. Are the impact studies flexible enough to take into consideration shifting habitats resulting from global climate changes?
6. What has been the process for evaluating impacts in Oregon? What has been learned there?
7. When will the Oregon workshop findings become available?
8. What is benthic?
9. Shouldn't the corrosiveness of metals and paints be known before you put them in salt water?
10. Are there any environmental studies being done off of Fort Bragg right now?
11. How do we get areas off of our coast designated as Marine Protected Areas (MPA)? How does the Marine Life Protection Act influence this process?
12. What's the potential for locating a wave power array within an MPA?
13. Is it necessary and desirable to site wave energy devices in one of the few major upwelling areas of the world?
14. With the State budget deficit, do the State resource agencies have enough budget to be effective? With all of the unknowns, who is responsible for filling in the knowledge gaps?
15. How can Fort Bragg establish a local marine studies collection station so that all of the environmental data captured on pilot projects will be available for future development? Could one or two marine studies graduate students possibly coordinate this data collection and analysis?
16. Most National Marine Sanctuaries prohibit installations on the seafloor- are any installations proposed in sanctuaries? If so, is an exemption required for renewable energy? If so, how can the public be sure that this exemption will not open the door to installations for oil drilling?
17. How much sound can marine mammals tolerate in the ocean?
18. What are the environmental effects resulting from the reduction in the size and energy of waves caused by wave energy devices?
19. What relationship will wave energy projects have to current efforts to designate Marine Protected Areas along the California coast?
20. What will happen to the local fishing fleet if all of the wave energy devices are deployed?
21. What are the impacts on kelp forests?
22. What is the impact of the Pacific upwelling?
23. How long will a comprehensive environmental study take?
24. What will noise and sound waves from the devices do to fish and marine mammal migration?
25. How long does it take to do a cumulative analysis?
26. How long will a baseline data study be conducted for eelgrass? Will a baseline kelp bed study be conducted? Who will be responsible for such studies?
27. Chlorine toxicity: Chlorine is released by corrosion of undersea structures, reduction of saltwater, electrical fields, and when combined with organic matter, it produces THM. What are the environmental effects of generation of chlorine by wave energy devices?
28. What effect will burying transmission lines in the ocean floor have on carbon sequestration?
29. Does Fort Bragg need a marine study station to capture the environmental study data on our coast? Alternatively, the data will be privately owned by energy companies.

REGULATORY AGENCY QUESTIONS:

1. Is one year of baseline study adequate for a 50-year license?
2. Where can public documents on wave energy be found?
3. If FERC determines there are unacceptable impacts, how fast can you get the devices out of the ocean?
4. Does adaptive management mean that there will be pre-determined mitigation requirements that include triggers for removal or adjustment of arrays, or would any perceived need for mitigation begin a protracted legal or regulatory process?
5. How large is the area which will receive the benefit of this “grid” offshore of Fort Bragg? Would the power generated be used for local energy needs?
6. How much will the environmental assessment cost?
7. What does the permitting process entail for each regulatory agency?
8. During the information-gathering/study period, will any of the agencies be collecting information regarding whether or not there are minerals and/or oil deposits in the study area?
9. At the State level, who is lead agency? How is lead agency status determined?
10. Among all of the agencies represented, who would be the lead agency that will conduct the environmental studies?
11. Why does FERC lump hydro (dams) and wave energy into statistical reports?
12. Why has FERC not followed the required process of an “Advance Notice of Proposed Rulemaking” and then a formal rule, before asserting FERC jurisdiction over near shore state waters? Does FERC intend to issue such a rule?
13. If Coastal Commission, State Lands Commission and/or FERC disagree with regard to impacts, who will have the final say? I.e., who settles conflicts between State and federal regulatory agencies?
14. How will timing conflicts between FERC’s “fast track” process, State Lands’ requirement for an EIR, and the lengthy Coastal Commission permitting process be dealt with? of renewal “if” viable?
15. Have there been occasions when FERC has over-ruled California agencies?
16. Why doesn’t FERC lease a small area for testing devices, rather than granting permits for such large tracts of ocean?
17. Should FERC be granting 50-year licenses when a new technology may fail? Why not limit it to 10 years with a possibility
18. Has FERC’s standard of “strict scrutiny” resulted in any denials preliminary permits?
19. Given FERC’s lack of a defined public participation process, how will the public be involved?
20. Will FERC give public agencies priority in issuance of permits and licenses?
21. How much will MMS charge for a lease for a wave energy project?
22. How does the Coastal Commission enforce permit denial?
23. Who is in charge of the process, FERC or MMS?
24. What is the “deal breaker”? What could come up that would make the prospect of wave energy impossible?
25. Given dire warnings about global warming, why doesn’t FERC declare an emergency, authorize immediate deployment of experimental buoys subject to not locating them in prime fishing grounds and require simultaneous studies? Isn’t this a national emergency? Couldn’t environmental laws be suspended?
26. If the wave energy technology is unsuccessful, would the permits allow for oil drilling?
27. How can local community be sure that FERC will not approve a project that is not acceptable?
28. What is FERC’s process for public input?
29. Would there be any equitable sharing of revenues for Fort Bragg and Mendocino County?

WAVE ENERGY FORUM – January 19, 2008
Summary of Questions

30. Has FERC prepared a map showing the project locations for the nearly 100 wave energy projects proposed around the U.S.? If so, where is it available?
31. Who will have oversight over wave energy after the studies, as projects are deployed or expanded?
32. At what point will an EIR be prepared?
33. Are Canada and Mexico “open development areas” or do they agree to enforce the U.S. agenda?
34. Is it true that FERC gives “first applicant” for pilot projects an advantage?
35. If Section 388 does not apply to National Marine Sanctuaries, why does FERC’s map on display at this Forum showing potential sites include areas of the southern Sonoma coast that are inside the National Marine Sanctuary?
36. With 14 pending permits on the table, is there an “indemnification” clause related to environmental impacts, if disintegration of the arrays occurred?
37. Are there regulations in place for electro-magnetic toleration?
38. If a 50 year license is granted to a wave company that 10 years in to it, turns out to be incapable of scaling up to be practical and get a real payback; can they still hold the license for 40 years? Can they re-sell or transfer the license? Can they hold hostage an entire area of sea coast?
39. How many wave energy devices could be placed on the Fort Bragg coast?
40. Would the federal government (FERC) consider eminent domain to override State and local control over a wave power generating facility?
41. If multiple applicants apply for a FERC permit, how does FERC decide who gets approved? Does the first applicant have priority?
42. Why has FERC allowed so many permits to be filed without time for public comment or regional input?
43. Can we obtain full disclosure from FERC of all players in a permit application, including “silent partners”?
44. If the City of Fort Bragg and Mendocino County use their land use authority to deny permits for land based support for wave energy facilities, would that affect the ultimate disposition of wave energy projects off of the Mendocino coast?
45. Could citizens wrest control from corporations and establish energy co-ops to deploy wave energy devices?
46. Are there ownership/partnership opportunities for public agencies such as the City of Fort Bragg, and/or the Northern California Power Agency that Ukiah and Healdsburg belong to?
47. Do FERC and MMS have specific obligations to try to avoid sensitive fishing areas when licensing wave projects?
48. Does FERC’s fast-tracking of pilot project licenses shut out viable competitors?
49. How would a wave energy farm “enhance fish and wildlife and beneficial public uses” as stated in FERC’s powerpoint presentation? How would wave energy be beneficial to fishermen and tourism? How would we be compensated for our losses?
50. Who is FERC? How are the members appointed? By whom? Who are they responsible to? How are their decisions made? What document(s) give them their authority?
51. How do FERC projects relate to the National Environmental Policy Act?
52. FERC is setting a policy that prohibits “construction” but allows testing devices, which involves constructing and deploying devices in the water. How does FERC define “construction”?
53. Do any of the regulatory agencies have a process whereby local businesses get bid preferences or other local incentives?
54. Don’t the benefits of 100 MW of power outweigh impacts? Isn’t ¾ of a square mile a miniscule part of the Pacific shore?
55. Would decommissioning involve removal of all apparatus from the water?

WAVE ENERGY FORUM – January 19, 2008
Summary of Questions

56. How will the regulatory agencies ensure the safety of mariners traveling in the vicinity of the wave energy arrays at night and in the fog?
57. Will the permit area be totally closed to fishing or only the test area?
58. “Park” suggested limited use and controlled access in the area. Will this be monitored?
59. What will happen to the apparatus when the “testing” is completed?
60. How can you study a technology that has such vast potential impacts? Will volunteers be needed?