

West Coast Hydrokinetic Energy Projects

	Latest news	Next steps	Technology description	Footprint description
California				
Del Mar Landing Project (Sonoma County Water Agency) P-13376 Study location is 14.3 sq nautical miles. Three miles off the coast of Sonoma County, in state waters. Water depths of 20-50 meters. Preliminary permit issued 7/9/2009	Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues. (No action on FERC website since January 2010). Field updated: 6/3/2010	Schedule of proposed activities due within 45 days of permit issuance.	Pilot project (5 mW or less). Looking at oscillating water column & buoy-type devices, including Pelamis.	In state waters. 14.3 square nm.
Fort Ross Project North (Sonoma County Water Agency) P-13378 Study area is 10.4 square nm. Preliminary permit issued 7/9/2009	Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues. No action on FERC website since January 2010. Field updated: 6/3/2010			10.4 square nm, in state waters.
Fort Ross South Project South (Sonoma County Water Agency) P-13377 Study area is 15.3 square nm. In state waters off Sonoma County, near Fort Ross, 20-50 m deep. Preliminary permit issued 7/9/2009	Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues. No action on FERC website since January 2010. Field updated: 6/3/2010		Pilot project (2-5 MW)	Initially 2-5 MW; eventually 40-200 MW.

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Green Wave Mendocino Wave Park P-13053 Mendocino	GreenWave submitted progress report 2/4/2010. Being assisted by Ocean Power Technology (OPT). FISH (Fishermen Interested in Safe Hydrokinetics) filed lawsuit against FERC for issuing preliminary permit for this project. GreenWave submitted progress report 5/18/2010.	GreenWave plans public meetings in the Mendocino area through June.	10-100 Pelamis or OPT devices, total capacity of 100 MW	2.5 x 6.9 miles (study area), up to 2.6 miles offshore, 120-390 feet deep.
Preliminary permit issued 5/1/09	Field updated: 6/3/2010			
Green Wave San Luis Obispo Wave Park P-13052 Morro Bay	Being assisted by Ocean Power Technology (OPT). Submitted progress report 5/18/2010.	Plans to hold meetings in the San Luis Obispo area through June.	10-100 Pelamis or OPT devices with a total capacity of 100 MW.	3.1 x 7.1 miles. 1-3.5 miles from shore, 90-360 feet deep.
Preliminary permit issued 5/7/09	Field updated: 6/3/2010			
Humboldt WaveConnect Project (PGE) P-12779 Eureka/Samoa	PGE informed public of its intent to file a license application 4/8/2010. NMFS, USFWS, CDFG, others commented 4/30. FERC asked PGE to file revised monitoring plans 4/30.	PGE will hold two meetings in Eureka on June 9 to tour and discuss the land-based facilities associated with the site.	10-20 buoys or other technology, 5 mW	10-20 buoys. 60-600 feet in depth. 2-3 miles from shore.
Preliminary permit issued 3/13/2008	Field updated: 6/3/2010			
San Francisco Bay Tidal Energy Project (Golden Gate Energy) P-12585 San Francisco Bay	The City of San Francisco compiled a notice of intervention and protest, citing environmental and process reasons. FERC granted preliminary permit. (Applicant previously had prelim permit for same site.) Applicant submitted schedule of activities 3/22/2010.	Plan to file NOI/PAD in March 2011.	60 turbines/square mile, 1000 mW	60 turbines per square mile, located on sea floor. Footprint not specified.
Preliminary permit issued 2/4/2010	Field updated: 6/3/2010			

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Swave Catalina Green Wave Power Project (SARA, Inc.)* P-13498 3/4 mile off west coast of Santa Catalina Island, Los Angeles County, between China Point and Ben Westin Point. Preliminary permit issued 9/15/2009	No action on FERC website since 9/15/2009 Field updated: 6/3/2010		10-40 SWAVE buoys mounted in a staggered array.	Buoys in water 225-300 feet deep. .875 nautical mile footprint. Undersea power cable to the city of Avalon. Located in essential fish habitat for groundfish, highly migratory species, and coastal pelagic species.
Oregon				
Coos Bay OPT Wave Park P-12749 Coos Bay, OR Preliminary permit issued 3/9/2007 PAD submitted	Submitted PAD 3/7/08. Filed progress report 9/03/09. Participated in various meetings; information-gathering. Applied for (subsequent) prelim permit 3/1/2010. (Old permit expiring). Various motions to intervene. Field updated: 6/3/2010		200-400 buoys, 100 mW	200-400 buoys in 3-6 rows parallel to the beach, 25-40 fm deep. Currently, 1 mile wide by 5 miles long; eventually smaller. 2.5 miles from shore.
Douglas County Project (Douglas County) P-12743 Winchester Bay Preliminary permit issued 4/6/2007 PAD submitted	Submitted six-month report 10/19/2009. Conducting wave tank modeling of different sites. Plan to file preliminary permit application (for second permit; first one expires after three years) in April 2010. However, no action on FERC website since October 2009. Field updated: 6/3/2010		One jetty-based structure	Varies from other proposed projects in that it is powered by wave-driven air currents created by infrastructure built into existing jetty; installed capacity of 3MW. Applying for 50-year license.

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Oregon Coastal Wave Energy Project (Green Wave, TIDE) P-13047 Nehalem, Rockaway, Garibaldi, Netarts, Nestucca, and Neskowin. Preliminary permit issued 5/23/2008	TIDE's partner, Columbia Energy Partners, had to withdraw. Seeking new ocean power developers. Filed 6-month progress report 5/25/10. FERC requested that TIDE file a NOI and draft license application within 30 days (as of June 3). Field updated: 6/3/2010	TIDE must file NOI/draft license application within 30 days of 6/3/2010.	Buoys, 20-180 mW (total)	N/A
Principle Power Offshore Wind Project Needs MMS lease Off Oceanside & Netarts, OR	In 2008, Tillamook Intergovernmental Development Agency and Principle Power signed MOU for phased development off offshore wind plant. 11/24/08 - signed MOU with Tillamook PUD. Principle Power acquired WindFloat technology, "a novel floating support structure for large offshore wind turbines." Conducted hazard identification study. Field updated: 6/3/2010	Need MMS lease/license. Plan to begin Phase II expansion by 2012. (Little news on this project since fall 2009).	30 wind turbines, 5 MW each	Project will begin with a single WindFloat floating turbine (243 feet); eventually plan to expand to "an entire offshore wind farm, covering 12 to 15 square miles and capable of generating 150 to 200 megawatts."
Reedsport OPT Wave Park P-12713 Reedsport	Filed "traditional" license application 2/1/2010 because prelim permit expired. Requested extension of time in issuing the 'Ready for Environmental Analysis' notice until the signed settlement agreement is filed, near the end of June. FERC denied the extension; on 6/1 FERC issued notice that application was accepted for filing. Field updated: 6/3/2010	Comments on Ready for Environmental Analysis due August 30; comments on EA due January 14, 2011	10 OPT PowerBuoys (50 mw), in 3-4 rows.	2.5 miles off the coast near Reedsport, OR. Depth: 204-225'. Footprint: 0.25 sq. miles, sandy bottom. Project would also occupy 5 acres of Federal lands in or near the Oregon Dunes Recreation Area. Each PowerBuoy would have a diameter of 36 square feet and extend about 30 feet above the water.
Preliminary permit issued PAD submitted <i>Yes (see next steps)</i>				

Washington

Thursday, June 03, 2010

FERC = Federal Energy Regulatory Commission. MMS = Minerals Management Service. MW = megawatts. nm = nautical miles. NOI = Notice of Intent. OCS = Outer Continental Shelf. PAD = Preliminary Application Document. TLP = Traditional Licensing Process. WEC = wave energy conversion device.

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Admiralty Inlet (Snohomish PUD) P-12690 Admiralty Inlet, Puget Sound	Submitted PAD 1/31/08. Filed progress report in January 2010. In 12-09, submitted a NOI to file a Pilot License Application, draft pilot license application, and related documents. Submitted a preliminary permit application 3/2/10. (Previous permit, issued 3/2007, expired). Field updated: 6/3/2010	Waiting for second permit to be approved. "This preliminary permit application is being made to secure and maintain priority under the Federal Power Act while Snohomish PUD continues its efforts to secure a Commission license for the proposed project and explores the possibility of a future build-out of the Admiralty Inlet site."	Two 10-meter, 500 kW open-center turbines (OpenHydro Group), mounted on submerged foundations (underwater)	Bay/estuary habitat; 60-100 m deep; bottom is scoured pebbles and sand; much shipping & commercial traffic.
Preliminary permit issued 3/9/2007 PAD submitted				
Deception Pass (Snohomish PUD) P-12687 Deception Pass, Puget Sound	Submitted PAD 1/31/08. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS). Submitted preliminary permit application (for new permit; old permit expired) on March 2, 2010. Plans to move forward with Admiralty Inlet project first. Filed progress report in January 2010. Field updated: 6/3/2010	Snohomish PUD intends to pursue a pilot license to test the feasibility and impacts of a tidal energy deployment in Admiralty Inlet first, and then apply that learning to a tidal energy deployment in Deception Pass.	Turbines (type, number unknown), 3 mW	Bay/estuary habitat; 30 m deep; rocky seafloor; mainly recreational use.
Preliminary permit issued 3/1/2007 PAD submitted				
Grays Harbor Ocean Energy and Coastal Protection (Washington Wave Co.) P-13058 Grays Harbor	Submitted six-month progress report in January. No action on FERC website since January 2010. Field updated: 6/3/2010	Applicant plans to prepare NOI and PAD in spring/summer 2010.	12 oscillating water column units, 6MW (Eventually, wind turbines & buoys, 168-418 mW)	Up to 28 square miles. 1-3 miles offshore, 10-70 feet in depth. West of Ocean Shores and Westport.
Preliminary permit issued 7/31/08				

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Green Hydropower Grand Coulee Project (inland waters) P-13522 One quarter mile below Grand Coulee dam.	Applied for preliminary permit 6/19/09. FERC asked Bureau of Reclamation whether they believe a non-federal project is authorized at the site. BOR said they do not, and strongly oppose the project. FERC determined it has jurisdiction in March. BOR still says it has jurisdiction. FERC informed Green Hydropower that its application is deficient on 5/20. Field updated: 6/3/2010	G.H. has 30 days to respond to FERC's assertion that their application is deficient.	One Sea Anchor Tidal Power device	An in-stream power device pilot project; device could potentially be used in saltwater applications as well.
Guemes Channel (Snohomish PUD) P-12698 Guemes Channel, Puget Sound Preliminary permit issued 2/22/2007 PAD submitted	Submitted PAD 1/31/08. Filed progress report in January 2010. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS). No recent new activity. Field updated: 6/3/2010		Turbines (type, number unknown), 3.5 mW	Bay/estuary habitat; 15 m. deep; gravel seafloor; commercial shipping traffic.
Spieden Channel (Snohomish PUD) P-12689 Spieden Channel, Puget Sound Preliminary permit issued 2/22/2007 PAD submitted	Submitted PAD 1/31/08. Filed progress report in January 2010. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS). No recent new activity. Field updated: 6/3/2010		Turbines (type, number unknown), 8.3 mW	Bay/estuary habitat; 80 m. deep; gravel seafloor; commercial fishing use (salmon)

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DEFUNCT PROJECTS				
California				
<p>San Francisco Oceanside Wave Energy Project (City and County of S.F.) P-13779 Eight miles west of San Francisco in the "exclusion zone" of the Monterey Bay National Marine Sanctuary (the area excluded from the sanctuary), near the outfall of a waste water treatment plant (therefore minimizing project impacts). <i>Appears defunct</i></p>	<p><No change since August report.> FERC dismissed application 4/30/09 because it is on the outer continental shelf and MMS now has jurisdiction.</p> <p>Field updated: 10/5/2009</p>	<p>Applicant must get a lease from MMS first, and then apply for a FERC license.</p>	<p>Not yet determined. Looking at several fully submerged devices.</p>	
<p>Ventura Ocean Energy Project (Grays Harbor Ocean Energy) P-13309 20-25 miles off the coast, on the Outer Continental Shelf (but elsewhere in the application it says 5-10 miles offshore). Not visible from shore. <i>Appears defunct</i></p>	<p><No changes since August report.> Permit dismissed by FERC 4/17/09 because this is on the outer continental shelf and now under the jurisdiction of MMS.</p> <p>Field updated: 10/5/2009</p>	<p>Project currently on hold or defunct because of change to FERC rules. No indication on their website of pursuing project under MMS. Would have to get MMS lease and then re-apply to FERC.</p>	<p>100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology.</p>	<p>Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.</p>

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DEFUNCT PROJECTS				
California				
Centerville OPT Wave Energy Park P-13075 Eureka	Permit surrendered 5/29/09 "to focus on Coos Bay & Reedsport projects."		40-80 buoys, 20 mW	7.025 square miles, 2.5 miles offshore.
<i>Defunct</i>	6/27/2008	Field updated: 8/13/2009		
Fairhaven OPT Wave Power Project P-12780 Eureka	Competing application in same location chosen over this one.		40-80 buoys, 20+ mW	.5 mile wide by 4 miles long (n/s), 22-26 fm
<i>Defunct</i>		Field updated: 3/27/2008		
Humboldt County Wave Project (PGE) P-12753 Trinidad	Preliminary permit surrendered.		Unspecified; 100 mW	Research area: 8 square miles; final size between 2-3 square miles. 20-40 fm (120-240 feet). 2-4 miles off shore
<i>Defunct</i>		Field updated: 3/19/2009		
Mendocino Wave Energy Project (Chevron) P-12806 Fort Bragg	Application withdrawn 8/31/07. Apparently the "lengthy approval process" in California led Chevron to pursue an opportunity in Alaska instead.		Pelamis machines, 2-60 mW	Unknown
<i>Defunct</i>		Field updated: 1/15/2008		

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Mendocino WaveConnect Project (PGE) P-12781 Fort Bragg	According to NMFS, PG&E plans to cancel this project because the harbor was determined to be unsuitable (too dangerous) to barge big machinery back and forth.		Buoys or other technology, 40 mW	Research area: 68 square miles. 60-600 feet in depth. 0.5 to 6 miles from shore.
<i>Defunct</i>	3/13/2008	Field updated: 5/21/2009		
San Francisco Ocean Energy Project (Grays Harbor Ocean Energy) P-13308 20-30 miles off the coast, west of San Francisco, on the Outer Continental Shelf, within the boundaries of the Gulf of the Farallones NMS. Not visible from shore.	Permit dismissed by FERC 4/17/09 because this is on the outer continental shelf and now under the jurisdiction of MMS.	Would continue under the jurisdiction of MMS, but MMS cannot issue leases in marine sanctuaries. "There will be no project unless the Sanctuary managers decide to allow it and develop their own regulatory system, which seems unlikely."	100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology.	Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.
<i>Defunct</i>	Field updated: 8/13/2009			
Sonoma Coast Hydrokinetic Energy (Sonoma Co.) P-13076 Sonoma Co.	Rejected - area too large, technology not specified.		?	N/A
<i>Defunct</i>	Field updated:			
Oregon				
Columbia River project (Oregon Tidal Energy Co.) P-12672 Lower Columbia River	Preliminary permit surrendered - "insufficient development potential exists for either a full development or tidal project."		TISECs	River bottom.
<i>Defunct</i>	Field updated: 3/27/2008			

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Coos County Wave Project (Finavera) P-12752 Bandon <i>Defunct</i>	Permit cancelled 6/26/08 because no progress report or PAD was filed. Field updated: 6/3/2010		Buoys, 100-300 mW	5.5 square mile water footprint, 1.6 miles e/w by 3.4 miles n/s.
4/26/2007				
Florence Wave Park Project (Energetech) P-12793 Florence <i>Defunct</i>	Proposal withdrawn - no reason given. Field updated: 3/27/2008		Oscillating water column technology, 10 mW	Each structure's footprint is 35x15 meters, not counting cables. Structures extend 7 meters above water and 15 below.
Lincoln County Wave Energy Research & Demonstration Center (Lincoln Co.) P-12727 Lincoln County <i>Defunct</i>	Dismissed by FERC Field updated: 5/5/2008		Various.	Unknown
Newport OPT Wave Park P-12750 Newport/ Waldport <i>Defunct</i>	Preliminary permit surrendered 4/15/2009 in order to focus on Coos Bay and Reedsport projects. Field updated: 5/21/2009		200-400 buoys, 100+ mW	200-400 buoys in 3-6 rows parallel to the beach. 3.5 miles wide (e/w) by 5 miles long (n/s); eventually as little as 0.4 miles by 3.1 miles, 20-35 fm, 3-6 miles off coast of Lincoln County

Washington

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Agate Passage (Snohomish PUD) P-12691 Agate Passage, Puget Sound <i>Defunct</i> PAD submitted	Surrendered preliminary permit 10/07/08 Field updated: 5/21/2009	Defunct	Turbines (type, number unknown), 0.4 mW	Bay/estuary habitat; 10 m. deep; sand/gravel floor; used by pleasure craft
Green Hydropower Chief Joseph Project (inland waters) P-13525 Just below Chief Joseph dam near Highway 17 bridge (salmon habitat) <i>Defunct</i>	Applied for preliminary permit 6/19/09. Application withdrawn January 2010. Field updated: 10/5/2009		One Sea Anchor Tidal Power device	An in-stream power device pilot project; device could potentially be used in saltwater applications as well. In salmon habitat.
Green Hydropower Rocky Reach Project (inland waters) P-13534 On the Columbia River just below the Rocky Reach dam. (Salmon habitat) <i>Defunct</i>	Application for preliminary permit submitted 7/07/09. Revised application submitted 8/17/09. Motion to intervene by WDFW. Application withdrawn Jan 2010. Field updated: 10/5/2009		One Sea Anchor Tidal Power device	An in-stream power device pilot project; device could potentially be used in saltwater applications as well. In salmon habitat.
Makah Bay Offshore Wave Energy Pilot Project (Finavera) DI02-3 Makah Bay (Neah Bay) <i>Defunct</i>	Five-year license issued December 21, 2007. Finavera withdrew project in order to focus on wind energy. Field updated: 2/11/2009		1 buoy, 1 mW	60x240 feet at ocean surface; 625x450 feet at ocean floor. Sandy bottom with rocky outcroppings.
Rich Passage (Snohomish PUD) P-12688 Rich Passage, Puget Sound <i>Defunct</i> PAD submitted	Surrendered preliminary permit 10/7/08. Field updated: 5/21/2009	Defunct.	Turbines (type, number unknown), 1.4 mW	Bay/estuary habitat; 15-22 m deep; gravel seafloor; commercial & naval traffic.

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San Juan Channel (Snohomish PUD) P-12692 San Juan Channel, Puget Sound <i>Defunct</i> 2/22/2007 PAD submitted	Surrendered permit for this site - not feasible. Field updated: 10/5/2009	Plan to submit draft license application in January 2010.	Turbines (type, number unknown), 6.8 mW	Bay/estuary habitat; 135+ m. deep; gravel seafloor; commercial fishing use (salmon)
Tacoma Narrows (Tacoma Power) P-12612 Tacoma Narrows, Puget Sound <i>Defunct</i>	Doing feasibility studies. Issued progress report 7/30/08. Found that tidal power in Tacoma Narrows may not be economically or technically feasible at this time. Independent analysis underway, but permit will probably expire with no further action. Field updated: 2/18/2009	Prelim permit issued 2/22/06; expressed intent to use pilot process; but now looks unfeasible.	Up to 64 turbines, 1-20 mW	In estuary (HAPC). Footprint unknown.
Willapa Bay Tidal Energy Plant Water Power Project (Natural Currents) P-12729 Willapa Bay <i>Defunct</i>	Permit canceled because applicant did not file NOI and draft permit application. Field updated: 8/13/2009		1-3 turbines (Red Hawk-2), 1-2 mW	825 meters SSW of State Road 105, 365 m offshore. Footprint unknown. Estuarine habitat. Aiming for installation in 2010.

DEFUNCT PROJECTS