

Test sites	SENEOH	BiMEP		PLOCAN	Wavec - AGUÇADOURA
Site Specifications					
Detailed Datasheet	on demand at contact@seeneoh.com	https://www.bimep.com/pages/bimep	https://www.bimep.com/pages/mutriku	http://www.plocan.eu/index.php/en/facilities http://www.plocan.eu/index.php/en/services	Not available yet
Location	Bordeaux, France	Armintza, Basque Country, Spain	Mutriku, Basque Country, Spain	Gran Canaria, Canary Islands, Spain	Aguçadoura
Number of berths	3 grid connected 1 non-grid connected	4 grid-connected	16 grid connected	2 grid connected 10 non-grid connected	1
Total testing area or width	0,07 km ²	5.2 km ²	16 chamber	23 km ²	4 km ²
Distance to land station	500 m	1.7km	onshore	2.5 km	6 km
Depth (LAT)	4-17m	50-90m	Integrated in Breakwater	10-600 m	40-50 m
Soil type	Sand & mud	Sand and rock	n.a.	Mainly fine to coarse sand	Sand and fine sand
Environmental conditions					
Environ. monitoring	1 or 2 ADCP per location Hydrophones Meteo Station Optic fibre in the cable to plug any type of sensor	1 metocean buoy	Pressure measure inside and outside the chamber and water column height measure inside the chamber	Waves: Triaxys buoy, ADCP, HF radar. Currents: ADCP, HF radar. Water quality: Multiparam-probe, Sampling + Lab analysis, Underwater vehicles, Oceanic buoy.	No data acquisition systems are installed at the site but there are several companies available to render that services

				Submarine noise: Hydrophone (fixed mount), Hydrophone (wave glider mount). Offshore wind (planned): Oceanic buoy, LIDAR Onshore wind: met stations. Marine traffic: Radar X-band.	
Average Resource	[TIDAL]	18kW/m	8 kW/m	8 kw/m [WAVE]	30 kW/m
Max. Wave height	0m No influence of wave	9.62 m (50yrs return Hs)	n.a.	5.5 m (50yrs return Hs)	10.22 m (max 3-hours mean, not actual extremes)
Max. Current speed	up to 3,5m/s on one location up to 2,4 m/s on the other locations	0.94m/s	n.a.	up to 1 m/s (surface currents - wind forced) 0.2 - 0.5 m/s (water column)	n.a.
Max tide range	5.70m	4.5m	4.5m	3 m	
Mean wind speed	Less than 2m/s 85% of the time	5.86m/s	n.a.	6.5 m/s	6.8 m/s
Max. wind speed	Wind speeds below 8m/s occur 1,7% of the time	28.40m/s	n.a.	20.4 m/s	25.3 m/s (hourly mean wind speed at 10 m, not actual extremes)

Consenting					
Authorities	Maritime Port of Bordeaux	Pre-permitted site. Just need to inform to Sub delegation of Industry, Sub delegation of Coasts and Bilbao's Captaincy	No consenting process	Ministry of Ecological Transition Ministry of Development Ministry of Science, Innovation and Universities	Direção Geral de Energia e Geologia Comissão de Coordenação do Desenvolvimento Regional - Norte Direção Geral dos Recursos Naturais, Segurança e Serviços Marítimos
Process	None The site is fully permitted and developers do not need to go through an administrative process	Generic consent for wave energy and wind energy devices. Informative file 3 months prior to deployment.	No consenting process	Developers are provided with most of the information they need for marine licence application. Generic consent for marine space occupation. Environmental permit: depending of the project	Depending on the project
Surveys	ADCPs High resolution bathymetry Acoustic	Hydrographic, geological, geotechnical, wildlife observation	Hydrographic, geological, geotechnical, wildlife observation	Bathymetry; Geology; Biodiversity; Underwater noise,; Magnetic field; Wind; Hydrodynamic: waves, marine currents, sea level; Water quality; Uses of the marine space.	Hydrographic, geological, geotechnical, wildlife observation
Infrastructure					
Rated export capacity and connection	3 slots of 100 kW each	Up to 5MVA per berth 13.2kV	Up to 20kW por chamber 450V	2 slots of 13.2 KV / 5 MW	4MVA

		Also possible up to 150 kW/690V.			
Comm.	FO and/or Wi-Fi	FO	Wi-Fi	FO and wifi	Wi-Fi
Land station	Elec. substation Offices available on demand	Elec. Substation, server room, offices	Elec. Substation, server room, offices	Elec. Substation Workshops, warehouses, offices, labs	Elec. Substation Office building
Site access	Bordeaux (3km)	Armintza (1nm) Bermeo (8nm) Bilbao (10nm)	At the port of Mutriku	Taliarte (3 km) Las Palmas de Gran Canaria (10 km)	Povoa de Varzim Port
Services					
Documents for the developer	- Test site description (environmental features, grid connexion and SCADA, nautical aspects, environmental data) - Test site user guide and requirements	- Test site description - Test site user guide - Test site requirement	- Test site description - Test site user guide - Test site requirement	Environmental characteristics Technical reports related to environmental characteristics	- Test site description - Test site user guide - Test site requirement
Internal documents	- Risk Prevention Plan - Permits/Authorizations - Standard protocol for Power Curve Assessment derived from IEC 6200-200 adapted to an estuarine environment	- Risk prevention plan - Emergency response plan	- Risk prevention plan - Emergency response plan	Permits / Authorizations Accredited Integrated Management System	Permits / Authorizations