

Q&A Ocean energy

Question	Answer(s)
Hi Michael, is there potential for units that could integrate offshore wind and wave energy into one?	I believe there would be potential for this with sophisticated engineering. The challenge would likely be integrating the wave units into the wind pylons and doing so may have a big impact on the structural integrity of the pylons. Would love to dive more into the feasibility of this
	Hi Angus, yes there is the potential to incorporate fixed single plane systems into the offshore wind platform dependent upon platform design used. This would reduce the generation capacity but would still add to the overall generation capacity of an offshore project. Happy to discuss further. Cheers Michael
1. how much will it cost to install wave energy for a small island nations? say for a village of 2000 people?	It would depend on a lot of different factors like the size of the unit and the platform that supports it. There is a great opportunity to integrate wave energy units into coastal and marine infrastructure i.e. sea walls and breakwaters which would reduce the costs of implementation up to 30-40%. I will ask Michael the question during Q&A time as he will have a better idea of costs for the Azura technology
Thanks Larissa, how you tested different diameter or length of blades? and how numerical models compares to your results?	
Given the average wave speed and depending on tidal cycles what is the optimum depth of the hub in the ocean to achieve optimum energy.	
how does the wave energy available in Australian coastal/ offshore environments compare to other ocean locations globally?	Australia has a great wave resource availability compared to other parts of the world due to our location and proximity to the ocean. Particularly South-Eastern Coastline Southern Coastline South-Western coastline. It has been estimated the potential wave capacity in Australia is up to 2,000 TWh per year
Interesting talk Larissa. After you estimated the turbulence characteristics did you see how much *better* will the model predict the performance of turbines?	
Can the Azura technology be used at the shoreline, for example mounted on a dock or bulkhead, or is it only feasible in off-shore applications?	Hi Brian, Short answer is yes with caveats on site optimisation and site requirements. We are currently actually looking at a number of projects. I'd be pleased to discuss further. Cheers Michael
Arguably, science and technology development comes first, but how are government regulations and permit requirements considered when trying to invent feasible solutions to harness ocean energy. It would be disappointing if feasible technologies were invented that would be ecologically unacceptable.	A really good point/ For many developers minimising any impact is paramount. Govt really don't get their heads around ocean tech so most current legislation is around the emerging offshore wind.
does the floating wave energy generators dampen wave energy at the beach?	Yes most likely. There would be potential benefits to having wave energy arrays situated close to shore that absorb some of the energy from the waves and reduce the force of the wave at the shore
This is all very interesting, thank you! I would be interested in understanding the proposed process for ongoing maintenance for each of the technologies (e.g., how to prevent or mitigate biofouling, etc.) seeing as these products are to be placed in high energy environments	Access is only required once per year. we are also looking at attached UUV tech for realtime monitoring and visual inspection coupled with NDT
Imagine being able to harvest all wave energy... We would not have any erosion problems anymore.	
Here in New Zealand proximity to the existing grid is a key factor in the feasibility for RE generation. Is this a major obstacle for wave and tidal energy?	