

Offshore floating solar plant linked with offshore wind in world first

[Joshua S Hill \(https://reneweconomy.com.au/author/joshua-hill/\)](https://reneweconomy.com.au/author/joshua-hill/) 7 November 2022

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The world's first commercial offshore floating solar PV power plant has been commissioned off the east of China and is also the world's first floating PV plant to be integrated with offshore wind.

Installed off the eastern Chinese province of Shandong, the floating PV plant was commissioned last week by the world's largest PV asset owner, China's State Power Investment Corporation (SPIC).

The two floating PV arrays boast an installed capacity of just 0.5MW and are connected to the transformer on a SPIC-owned wind turbine. The newly commissioned floating PV system thus delivers power to the grid through the wind farm's existing submarine cable.

Designed by Norwegian solar technology developer Ocean Sun, the floating PV plant (FPV) is the company's contribution towards revolutionising floating solar power production.

Using a thin polymer membrane to float customised PV modules, Ocean Sun's floating PV plant delivers a number of benefits (<https://oceansun.no/the-innovation/>) over other floating solar options. Utilising the overall lowest material usage of any floating PV system, the

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Installation of the system is also billed as being simple, safe, and quick, and increases efficiency from direct water cooling. Ocean Sun also claims that its floating PV system has been proven robust in high wind, waves, and strong currents.

Before the demonstration pilot can be called a success, though, the floating system will first need to prove itself through a whole typhoon season.

Børge Bjørneklett, CEO and founder of Ocean Sun, explained earlier this year (<https://oceansun.no/ocean-sun-has-signed-a-technology-license-agreement-for-0-5-mwp-offshore-pilot-in-haiyang-shandong-china/>) that the waters off Shandong Province “see annual typhoons with challenging sea state, and all involved parties are aware of the risks. In all circumstances, Ocean Sun will improve our product with learnings from this exposed site.”

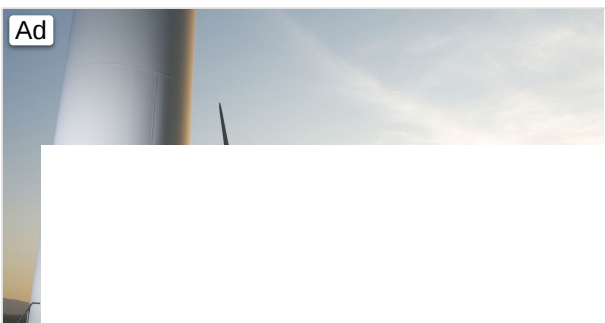
Once the pilot project has shown its robustness through an entire typhoon season, there are plans to connect the remaining wind turbines off the Shandong coast with floating PV systems. Upon completion, a total of 20MWp of floating solar would be connected to the grid some time during 2023.



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“The successful project funded by SPIC and constructed using the Ocean Sun solution shows how the common goal of reducing greenhouse CO2 emissions will be achieved with development across borders.

“We are excited to continue working closely with SPIC through the Ocean Sun team based in China.”

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[lan](#) • 15 hours ago

If you had a choice, which surely China has plenty of would you put solar panels in 1.sunny desert areas ,

2. On already built out land such as factory and house rooftops
3. On the ocean?

The ocean seems to be the best place. There is the tiny risk of Typhoons, corrosion, waves. Off shore sites are a little difficult to get to for maintenance, oceans often have cloudy conditions, floating structures are a little more tricky to build and maintain than rooftops and land-based foundations and probably a tad more expensive. Apart from those minor details one would certainly choose this option. After all land based solar is so yesterday and boring;)

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[Be](#) [lan](#) • 13 minutes ago

It's worth a try if just to conclusively prove it's a terrible idea!

Why not just put it where the cable comes ashore.

Good luck!

It's good to experiment even though this one makes me laugh. Maybe it will work. I really doubt it.



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The marine environment is not so benign as you might otherwise imagine.

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Craig Fryer → REDataCollector • 26 minutes ago

Reading it again, I think Ian is being sarcastic.

^ | v • Reply • Share >

sola → Ian • 14 hours ago • edited

Those details are not so minor.

Marine operations are much more expensive than land based ones (equipment, staff).

These floating PV arrays must prove to be very low maintenance to be worth it.

Apart from that, they may prove nicely synergistic with the wind towers. The plant will be able to produce in low wind conditions as well. In many land climates wind and solar are complements. Hopefully, this is true for many offshore climates too.

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