BEYOND FOSSIL FUELS: CONVERTING WIND AT SEA TO LOW-COST 'GREEN' ELECTRICITY WITH COST-EFFECTIVE FLOATING WINDFARMS

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Floating Windfarm LLC is developing a new tool to significantly reduce the cost of converting wind at sea to 'green' electricity – by mounting the low-cost vertical axis wind turbines (developed and commercialized by Dr. Pao's windpower company in the 1980s) on submerged floating platforms, anchored to the sea floor (Floating-VAWTsTM), such that these low-cost wind turbines can be placed in strong wind regions at sea (usually in deeper waters) to generate more electricity per wind turbine. This will significantly reduce the cost of electricity per kWh from wind at sea (the "Cost"); as the wind is free, and the principal cost of wind-generated electricity is from the installed cost of wind turbines. To stabilize the floating-VAWTTM in a windy sea, its heavy components, such as the gear-box and generator, will be placed in a container way below the sea surface (see Fig. 1 for a conceptual picture).

To demonstrate the technical feasibility and economical viability of this new design for the floating windfarms (see Fig. 2 for a conceptual picture), Floating Windfarms LLC has signed a Letter of Intent with China's Hainan Provincial Government and the Hainan University to develop the world's first floating windfarm in the windy South China Sea, using 40 units of the Floating-VAWTsTM (the "Demo Project").

It is projected that, after the successful completion of the Demo Project, the new tool will enable the Cost to be further reduced to a level much below the cost of coal electricity, by: (1) mass producing the Floating-VAWTsTM in China; and (2) building a large number of GW-scale floating windfarms in strong wind regions at sea. Technology developments can further reduce the Cost.

Combined with the development of cost-effective energy storage facilities, the low-cost 'green' electricity from wind at sea can replace fossil fuels as the principal source of energy for many countries around the world that have rich wind energy resources at sea! This, when fully implemented, will greatly reduce the global energy, air pollution, and climate change problems. And, will make the world a cleaner, safer, and better place to live!

Fig 1. A Conceptual Picture of a Floating-VAWT $^{\mathrm{TM}}$

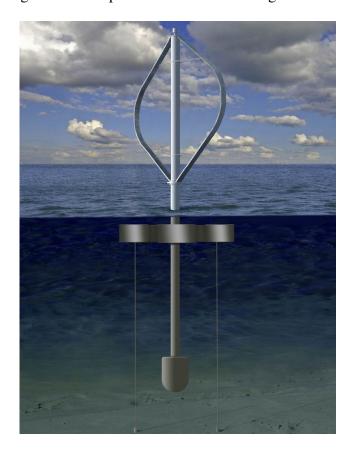


Fig 2. A Conceptual Picture of a Floating Windfarm, using Floating-VAWTs $^{\mathrm{TM}}$

