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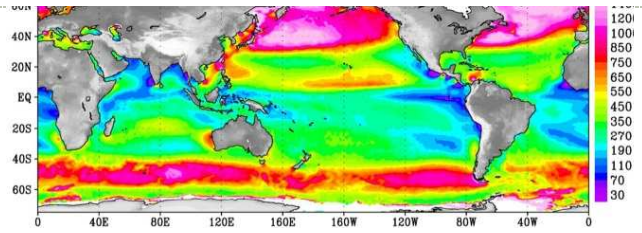

Thinking about investing in **wind farms on the high seas**? Scientists from NASA's Earth Science Division, working out of the California Jet Propulsion Lab, have used several years worth of QuikSCAT satellite data to produce wind power density maps for the ocean surface. Pictured here is the Northern Winter map. Northern Summer view is included in this link. (**A list of "Top Ten" locations** for frequent high oceanic winds on an annual average basis is presented below the fold.)

The new research identifies areas of high wind power - where winds greater than 39 knots or 45 miles per hour are common - and "*offers explanations for the physical mechanisms that produce the high winds*".

> An example of one such high-wind mechanism is located off the coast of Northern California near Cape Mendocino. The protruding land mass of the cape deflects northerly winds along the California coast, creating a local wind jet that blows year-round.

> Similar jets are formed from westerly winds blowing around Tasmania, New Zealand and Tierra del Fuego in South America, among other locations. Areas with large-scale, high wind power potential also can be found in regions of the mid-latitudes of the Atlantic and Pacific oceans, where winter storms normally track.

For access to a wide variety of the ocean surface wind frequency maps, have a look at *Global Distributions of High-wind Occurrence over the Ocean*, which is located at this link.

Table 1. Top 10 lists for frequent high winds, for (a) the annual mean, (b) DJF, and (c) JJA seasons. Red and blue colors indicate high-wind spots due to SST frontal and orographic effects, respectively. Shading indicates regions close to sea ice edges where valid wind data are relatively few.

(a) Annual

	Frequency (%)	Position	Name
1	16.4	59°N, 43°W	Cape Farewell, Greenland
2	11.6	65°S, 52°E	Enderby land, Antarctica
3	11.5	65°N, 36°W	East coast of Greenland
4	10.3	68°N, 22°W	Denmark Strait
5	10.0	55°S, 3°E	Bouvet Island, South Atlantic
6	7.9	47°S, 86°E	South Indian Ocean
7	7.6	45°S, 76°E	Northeast of Kerguelen Island, south Indian Ocean
8	7.5	56°S, 68°W	Cape Horn
9	6.9	51°N, 44°W	North Atlantic
10	5.9	43°S, 64°E	Northwest of Kerguelen Island, south Indian Ocean

Via::NASA, Ocean Wind Power Maps Reveal Possible Wind Energy Sources Image credit::NASA AND Excerpt from full table presented in "Sampe, T., and S.-P. Xie, 2007: "Mapping high sea winds from space: A global climatology" Bull. Amer. Meteor. Soc., 88, pp.1965-1978." Available in full as pdf file here.

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Ok, but I've often wondered if you could just put a fan in front of a wind turbine and generate electricity that way. Then, I wouldn't need NASA's maps. I could just do it in my back yard. lol anyone

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Mike Mapstead says:

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Mike, You are using electricity to power the fan.
Not all the elecetrical energy ends up in the wind; some generates heat. And even theoretically, you can't turn more than 59% of the energy in wind into electricity. SO it would be a net loss.

What I always wonder is how they7 transmit the power back to land? I mean, how

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