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Aerospace engineers are working to make ocean wave energy the nation's newest source of green power by applying the physics of wind turbines to the sea.

Former U.S. Air Force Academy scientists took over Texas A&M University's wave tank recently to test the idea that if air can produce affordable electricity, so can ocean water.

For decades, researchers have sought ways to turn the energy in ocean waves into electricity -- economically and with minimal impact to marine environments. But as other forms of renewable energy have flourished, commercial power from ocean waves hasn't made it onto U.S. grids.

"Ocean wave energy is decades behind wind. But with all the resource in the ocean, it's much more attractive," said Stefan Siegel, who led the testing at Texas A&M.

"The wind doesn't always blow. The sun doesn't always shine. But ocean waves, they are always there."

Siegel's Colorado-based startup, Atargis Energy Corp., developed a device using components similar to airplane wings or wind turbine blades. Incoming waves rotate the two wings around a central axis. The movement activates generators connected to the device, transforming the mechanical energy into electricity.

The prototype, about one-tenth the size of a full-scale device, produced 370 watts during testing at Texas A&M, Siegel said. He hopes that with design improvements, a full-scale version will churn out 5 megawatts in the ocean, enough to power 3,000 to 4,000 U.S. homes. However, the wave tank testing revealed design weaknesses that Atargis must address to make its device ocean-ready, Siegel said.

With the results of the Texas A&M testing, the Atargis team plans to make design improvements in a larger model, including blades that better conform to various wave patterns. By 2014, Atargis hopes to test in the open ocean.

Siegel acknowledged that ocean wave technology development has a long way to go.

"The engineering issues are huge," he said. "It's much more difficult than getting an airplane in the air."

Electricity Pricing Areas – Aug, 2012

On-Peak	Per kWh
West Hub	\$.04409
NI Hub	\$.03866

ComEd Average Day Ahead LMP Electric Price

Time Period	Average per Kwh
Aug, 2011	\$.04064
Sep, 2011	\$.03058
Oct, 2011	\$.02968
Nov, 2011	\$.02816
Dec, 2011	\$.02971
Jan, 2012	\$.03043
Feb, 2012	\$.02963
Mar, 2012	\$.02894
April, 2012	\$.02659
May, 2012	\$.02816
June, 2012	\$.03089
July, 2012	\$.04303
Aug 1 thru Aug 6	\$.03907

Extended Temperature Forecast:

Chicago Area

	Tue	Wed	Thu	Fri	Sat
High	93	83	77	78	81
Low	71	68	65	64	65

