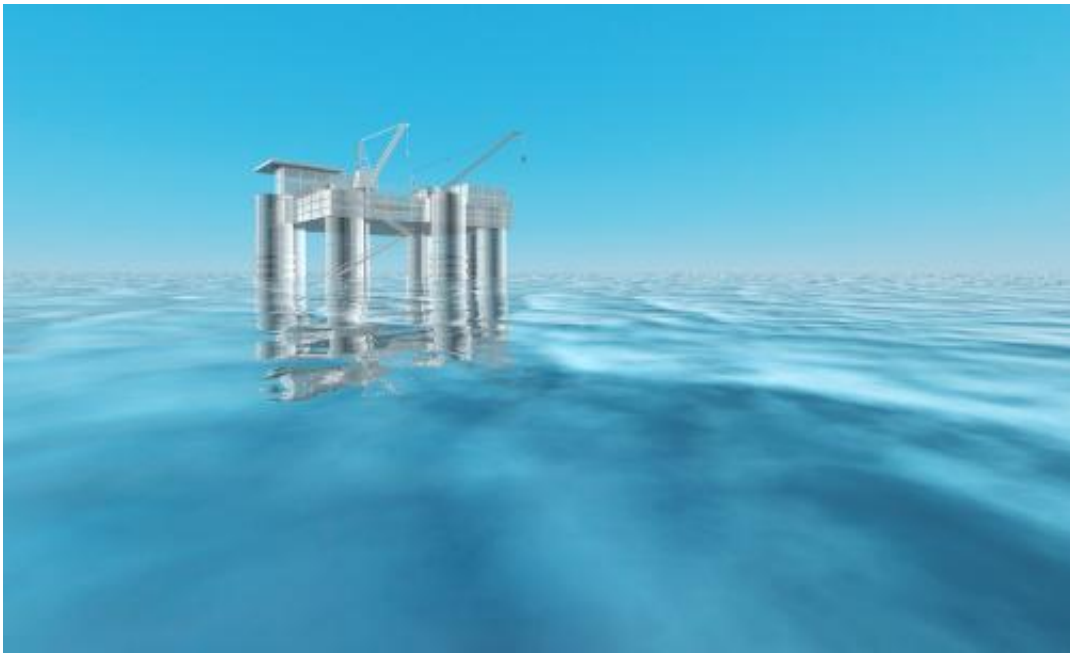
Partnership to build world's largest OTEC plant off China coast

April 24 2013, by Bob Yirka



Credit: Lockheed Martin

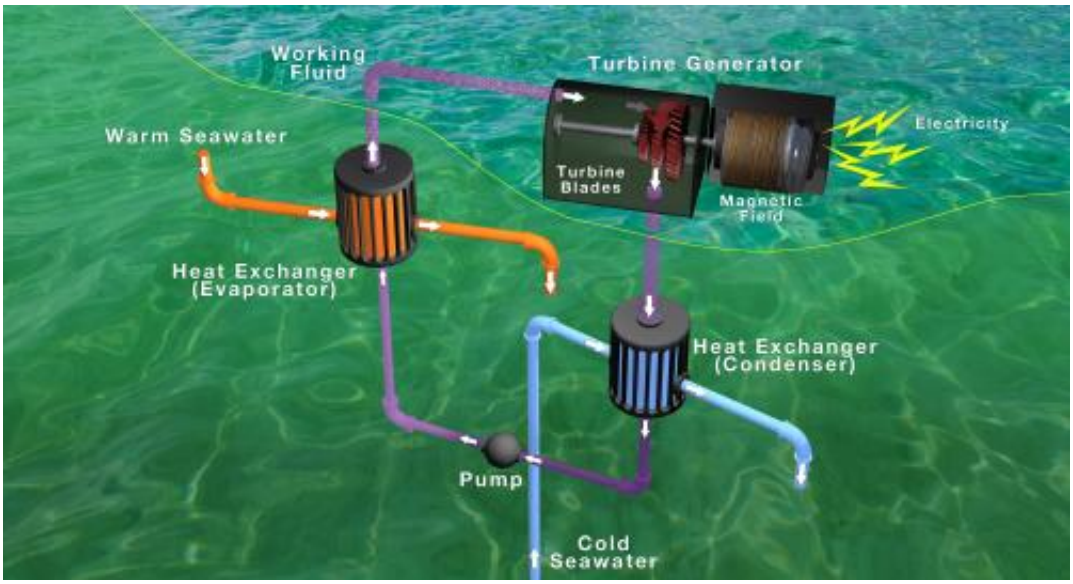
(Phys.org) —Hong Kong based Reignwood Group and U.S. aerospace company Lockheed Martin have announced plans to build an Ocean Thermal Energy Conversion (OTEC) electricity generating plant off the coast of China to power a planned resort community. Lockheed Martin is to build the facility and run it, while the Reignwood Group will be building the resort community that is to use the power generated. The new plant is expected to produce 100 percent of the power needs of the

community.

OTEC plants generate electricity by taking advantage of the difference in water temperature at different ocean depths—warm surface water is used to boil a fluid (one that has a low boiling temperature such as ammonia) that in turn drives a turbine. Cold water brought up from below cools the liquid causing it to once again liquefy allowing the process to repeat over and over. To date, few such plants have been built due to the large expense involved in transporting cold water up from below. The new plant to be built off the coast of southern China will be a pilot project designed to not only supply electricity to the new resort community, but also to serve as a learning environment, helping lead the way to more efficient, and hopefully cheaper plant designs.

The announcement comes as a surprise to some, as Lockheed Martin is more known for building aerospace components and craft, than for sea power projects. It's not such a stretch for the company however, as they have been investigating OTEC projects since the 1970's and were even awarded a contract from the U.S. Navy to build such a plant in Hawaii back in 2009. Plans for that project were scrapped however when officials with the Navy decided that the project would not be cost effective.

One of the main advantages of OTEC plants is that they are able to provide a steady, continuous flow of electricity, unlike plants that use wind or solar energy. The new plant will be the largest of its kind, able to generate up to 10 MW of electricity. As part of the announcement, Lockheed Martin says the hope is that the pilot plant will be just the first of many to come, with plant sizes ranging from 10 to 100 MW.



Credit: Lockheed Martin

The two partners on the project say they are already working on the design for the new plant and expect construction to begin as early as next year.

More information: Press release

Citation: Partnership to build world's largest OTEC plant off China coast (2013, April 24) retrieved 10 September 2024 from https://phys.org/news/2013-04-partnership-world-largest-otec-china.html