

Energy activist sees future of ocean power

By MIKE RUST
For the Emerald

Alternative energy sources can be found in the ocean waves as well as in the sun, a solar energy activist told a University audience Wednesday afternoon.

Mansur Johnson, a former college English professor who now writes and lectures on energy issues, told a crowd of about 25 people that Ocean Thermal Energy Conversion (OTEC) is part of "a vision of the future that I hope happens."

"When I was younger, I felt that just as we can't build a bridge across the ocean, we can't build collectors for solar power from coast to coast," Johnson said. "But now, with the ocean, we can do just that."

In an era of increasing gas lines and decreasing confidence in nuclear power, OTEC, which has been the subject of serious research since 1973, has become an energy source of increased consideration.

The principles of the OTEC process are not new, Johnson said. They were first described in 1881 and put into practice in 1929 when solar pioneer Georges Claude generated 22 kilowatts of power for 11 days at a site near Matanzas Bay, Cuba.

During the 1950s three OTEC plants were built at the University of California by Byrn Beorse, but it was not until the Arab oil embargo of 1973 that the federal government and private industry became seriously interested in the concept, he said.

Power 'ships' harness ocean waves

Both government and industry, Johnson claims, "are more interested in duplicating their own studies than they are in demonstrating its feasibility."

"But truth must have some power," he continued. "Because after a year of whipping them with this information they finally did something."

Help came in the form of grants from the Lockheed Corporation and the government of Hawaii to construct an OTEC unit, he said.

"It's done...it's on the line. It's putting out 50 kilowatts," Johnson said.

The principle of the OTEC process is to use the temperature differences in layers of ocean water to produce electricity. Johnson described the operation of such a plant as "simple."

Warm surface layers of sea water are brought into a plant and channeled into a vacuum where the absence of pressure causes the water to boil.

Rising vapors then turn a turbine to produce electricity while water at least 16 degrees cooler than the surface water is drawn into the plant through a pipe and used to condense the vapor.

OTEC plant "ships" would work best in warm tropical seas with deep water allowing use of the temperature differences in the water layers.

"The Gulf of Mexico would be

a good OTEC resource region," Johnson commented. "The plant could be anchored on the

bottom and a cable placed from the plant to the shore.

"There's enough potential

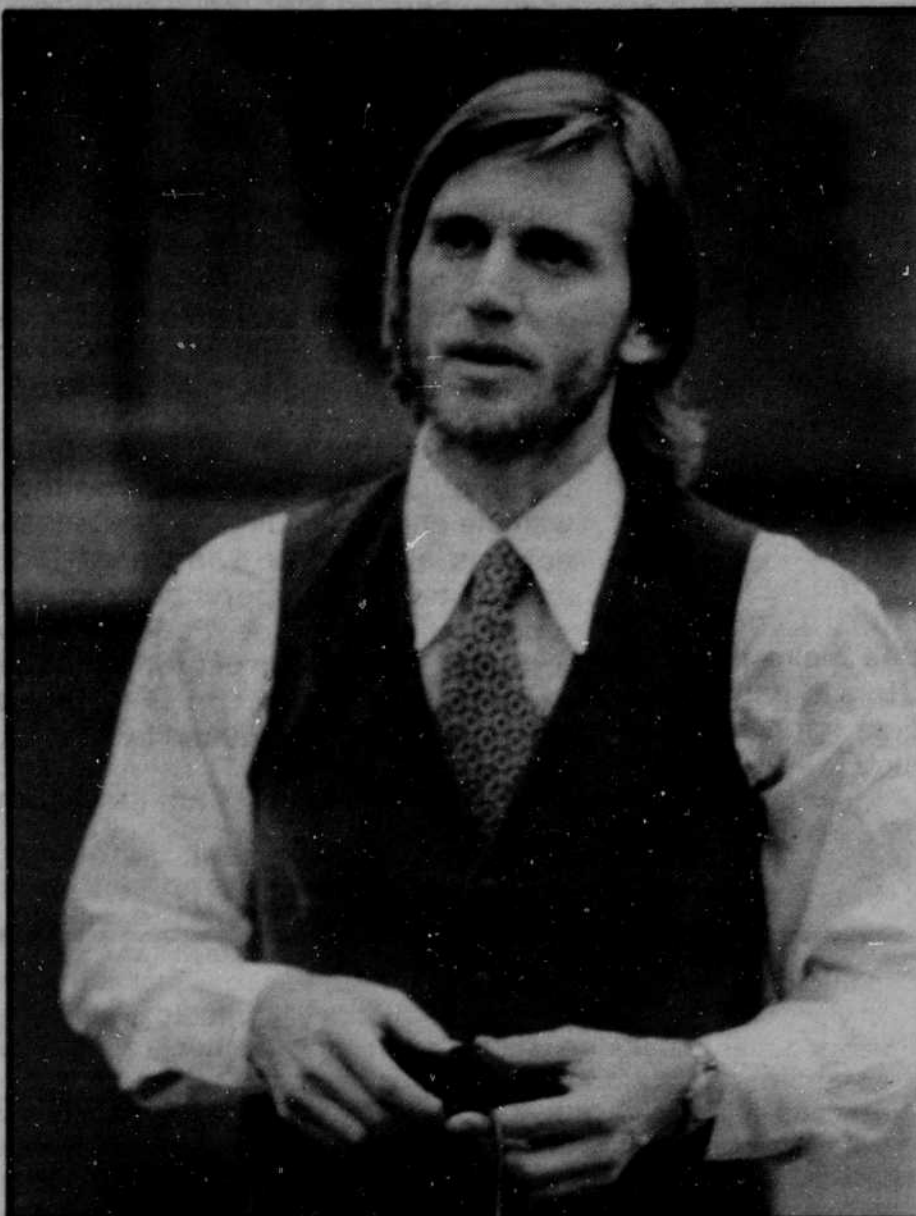


Photo by Steve Dykes

Energy activist Mansur Johnson claims Ocean Thermal Energy Conversion is a viable, non-polluting energy source that could generate enough electricity for the entire nation. OTEC is a simple process that uses temperature differences in ocean water to operate turbine generators on power plant "ships."

energy in the Gulf of Mexico to generate electricity for the entire country."

To supply OTEC energy to distant sites, Johnson believes an ammonia-producing plant could be set up on the plant ship.

Liquid ammonia produced from water and air by electrolysis could be used to bolster natural gas supplies or to produce energy in fuel cells.

"Arnie Fickett of the Electric Power Research Institute said that fuel cells can supply a large amount of the nation's energy," Johnson said. "And he represents a very conservative institution, one that advises many large corporations."

In response to a question about the dangers of transporting ammonia, Johnson pointed out that "it's dangerous, but it's not like toxic wastes that would come back to haunt us. It's no more dangerous than tankers filled with flammable oil entering Boston harbor."

Johnson pointed out that the cost of building an OTEC plant was estimated by industrial building firms last year to be half that of a nuclear plant and that both the "fuel" and "waste" are non-polluting seawater.

Johnson also said fish life in tropical waters would be aided by the drawing up of nutrient-rich cold water.

"The government has to finance at least 50 percent of the first eight plants or businesses won't consider investing," he said. "At least it won't be like nuclear power, where the government has to keep on financing it."

Corrections and Amplifications

A Wednesday Hiron's advertisement reported a 12-ounce size of lens rinse was on sale. There is no 12-ounce size; an 8-ounce size is on sale.

On page 3 of Tuesday's edition of the Emerald, it was reported that no one answered the phone in the Department of Health, P.E. and Recreation on Friday. Actually, no one answered the dean's phone. People were, however, available to answer the phone in each separate department.

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