

# Research Coast could play role in alternative energy supplies

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FORT PIERCE — Cold ocean water could one day air condition Florida buildings.

Sugarcane that uses the least amount of fertilizer and water might produce billions of gallons of ethanol in Florida.

Experts in alternative energy from solar to ocean power discussed the possibilities Monday during a forum at Indian River Community College. Local and national leaders say the Treasure Coast is poised to become a real “Research Coast,” where science at a growing number of institutions here might turn such alternative energy technologies into commercial realities.

“We can be a primary source of research. Each of the institutes brings their own variety of scientific exploration to the table,” said Larry Pelton, president of the Economic Development Council of St. Lucie County. “And we can create very imaginative ways to find sustainable energy that’s available from all sources.”

Pelton said he asked U.S. Rep. Tim Mahoney, D-Palm Beach Gardens, for money toward an alternative energy research center here that would partner organizations such as Harbor Branch Oceanographic Institute and the University of Florida.

“We have a gold mine right here,” he said.

But a key question of the day surrounded another type of green power — the cost of these alternative energy sources.

Chemical engineering Professor James R. Brenner, who is researching hydrogen fuel cell technology at the Florida Institute of Technology said cleaner energy might cost a person 30 percent more.

But Floridians could reap the financial benefits of the new technologies.

Mahoney told conference attendees he envisions Florida as a leader in ethanol that comes from plants not used for food, building an industry that creates jobs and economic recovery from recession.

“We’ve got the farmers. We’ve got the growers,” he said. “So Florida has an edge.”

Mahoney said he intends to steer money toward Treasure Coast schools to turn out future alternative energy experts.

He indicated “training will prepare workers for 3 million new ‘green’ jobs over 10 years.”

The congressman also touted congressional farm and energy bills that mandate more ethanol be blended into gas beginning in 2010 and provide more money for research.

And, he said, ethanol is as much about national security as it is about alternative energy.

“This is about being able to tell a dictator in Venezuela, whose threatening our supply of oil, that he take his oil and he can shove it,” he said.

Mary Duryea, a professor at the University of Florida’s Institute of Food and Agricultural Sciences, said research is going on right now in Fort Pierce surrounding certain plants and wood to produce ethanol.

“This will help landowners pick the best crops for energy,” she said.

But ethanol has been highly controversial surrounding its effect on the world food supply and questions about how much and the cleanliness of energy that can be produced.

“We’ve got all the technology we need right now to make electric cars,” said north Hutchinson Island resident Robert Tabor, 79, who attended the conference. “Ethanol perpetuates the internal combustion engine, which we need to get rid of.”

But there are a plethora of other energetic ideas being researched now, such as building “underwater windmills” that harness the power of the Gulf Stream.

Such technology could reduce Florida’s 98 percent reliance on imported fuel and the hunger for energy that’s growing at a rate equal to one nuclear power plant a year, said Frederick R. Driscoll, an associate professor at Florida Atlantic University’s Center of Excellence in Ocean Energy Technology in Dania Beach.

“We’re the best place to develop the technology to harness this,” he said.

But Driscoll said the key is starting with small test projects that will lead to the policies and infrastructure necessary to make ocean power work.

“How do we harness it best and how do we do it so that’s it’s in harmony with nature,” he said.

That includes safety system such as acoustic warnings for marine life and the ability to stop a turbine when a whale gets too close.

Such dangers were foremost on the mind of John Holt, a Fort Pierce resident who retired from Harbor Branch after 27 years as an engineer.

“What scares me is that we may stumble on ahead without thinking about what the consequence might be,” he said.

His former colleagues at the aquatic research institute are working on other technologies.

For example, scientists are continuing research into how aquatic organisms use enzymes to break down food for energy — which has the potential for commercial energy production.

Some of that work takes place 3,000 feet under the sea.

“If we look at new habitats we’ll find new microorganisms,” said Peter McCarthy, Harbor Branch’s head of microbiology. “We’ll find things science has never seen before.”

Some technologies, such as solar thermal water heaters, are available now.

In fact, James M. Fenton, director of the Florida Solar Energy Center, said there are several things homeowners should do before even thinking about solar panels.

One would be using compact fluorescent light bulbs. Another is using a programmable thermostat.

Next on the list is the solar thermal water heater, which after rebates from the state and federal governments, could cost about \$2,500.

Solar panels, or photovoltaics, only make sense for residents if they are refinancing or when getting a mortgage, because of the \$32,000 initial cost, Fenton said.

“Put every penny into making your home more efficient,” he said.