

'Green' plan aims to cut energy costs, reduce greenhouse gas emissions in Delaware

4:35 p.m., June 7, 2007--A proposed statewide "green" initiative developed in part by John Byrne, Distinguished Professor of Public Policy and director of UD's Center for Energy and Environmental Policy, and seven of his graduate students and a postdoctoral fellow, has the potential to cut Delaware's carbon dioxide emissions to 2003 levels and save average households approximately \$1,000 a year in energy costs.

Known as the Sustainable Energy Utility (SEU), the plan would establish a state-supervised nonprofit organization dedicated to helping Delaware residents and businesses conserve energy and expand their reliance on renewable energy sources through funds initially seeded by a \$30 million bond. Citigroup has expressed its view that the program is financeable and has offered to underwrite the bond. The Delaware Senate voted 19-1 on May 10 in favor of the legislation, which is awaiting action by the House of Representatives.

According to Byrne, who, along with State Sen. Harris B. McDowell, co-chairs the 14-member SEU Task Force, the plan was initiated last spring after electricity and gasoline prices rose sharply.

"We thought about what would be an approach that could address the needs of Delaware residents and businesses, while also making improvements in our environment," Byrne said, "and what we focused on were five basic tools."

Those five tools--helping low- and moderate-income families make their homes more energy efficient; helping consumers and businesses switch to energy-efficient appliances; helping residents and businesses create "greener" home and building designs; helping households upgrade to high-efficiency "green" vehicles, such as hybrid cars; and, through the use of renewable energy options, such as solar systems, helping residents and businesses boost their reliance on customer-sited/customer-generated sustainable energy sources--could have far-reaching effects, Byrne said, and would offer Delawareans better options than they now have.

UD environmental policy graduate student Jason Houck, who has worked for the past year on the Senate Energy Transit Committee with McDowell, said that the SEU draws on initiatives that have proved successful in other states and that the task force that did the state-by-state comparative research drew from several ideas already in place elsewhere in the nation.

"There are a lot of states in the Northeast that at the policy level are working to create changes that are necessary to shift toward better environmental protection and clean energy, and Delaware has not been among the leaders," Houck said. "But it's important to begin somewhere, and what we're trying to do with the SEU is to follow the leads of other states. In the past decade, Sen. McDowell has spearheaded many efforts with energy policy, and now that we have a policy in place, it's easier to build momentum."

Rebecca Walker, an environmental policy graduate student who worked as a researcher for the SEU task force, said that in the course of preparing materials for the proposal, she'd examined measures other states had successfully implemented that seemed promising for Delaware, as well.

"I think the model we have now combines some of the best features from other states," Walker, a former resident of environmentally progressive Oregon, said. "We looked at what adjustments had been made and in what direction they'd been moving, and that really helped create a portrait of what programs are out there that will work for our state."

The SEU task force, Byrne said, "conceived of an organization that would come in and provide assistance to a citizen who wanted to upgrade to a more energy-efficient appliance or to a more energy-efficient building or home."



A home photovoltaic system provides power to the house and a solar domestic hot water system provides hot water for domestic and space heating use. Photo courtesy of the U.S. Department of Energy



Environmental policy grad students Rebecca Walker and Jason Houck (right) with by John Byrne, director of UD's Center for Energy and Environmental Policy. Photo by Greg Drew

For example, in the case of a resident's upgrading to more efficient household appliances (which due to design principles typically cost more than standard models), Byrne said the SEU would pay the difference and then ask the consumer to share 33 percent of the energy savings with the nonprofit for the next 3-5 years.

The SEU's assistance with weatherization for low- and moderate-income families and for "green" building design for new buildings, Byrne said, would follow a similar premise.

"When you upgrade a building or build a new one, it costs more to do it with green building principles than with conventional building practices," he said. "So, again, the SEU would come in and cover the difference in cost, and again the consumer would share the energy savings with the SEU."

Byrne added that for the purposes of both weatherization and green building design, a web site would be created specifically for consumers seeking SEU contractors.

A focus on 'renewables'

The fourth initiative--providing Delawareans with customer-sited renewable energy options, such as solar systems, is perhaps the most ambitious component of the SEU in that it would harness renewable energy.

Because of Delmarva Power's current practice of buying renewable energy credits (RECs) to meet its legal requirement to generate a portion of its power from renewables, Byrne explained, electricity derived from the sun and other renewable energy sources can pay Delawareans as much as 25 cents per kilowatt hour compared to 15 cents per kilowatt hour consumers now pay for electricity derived from conventional fossil fuels.

"With the initiative, the SEU would pay for 50 percent of the renewable energy system's initial cost," Byrne said. "Then for every kilowatt hour that you the customer generate, the electric company would give you 25 cents for the REC, so you'd get a revenue flow from having the system." The SEU, he added, would then take 25 percent of that REC value.

In this approach, there are no new taxes, no hikes in electricity or other energy prices, and no need to pay for a government bureaucracy, while Delaware gains all of the economic and environmental benefits of sustainable energy.

As fossil fuels become less readily available and prices continue to rise, Byrne said he believes the financial--and environmental--rewards of sustainable energy have far-reaching potential. "There's a growing consensus that energy efficiency and renewables are our best economic and environmental choice," he said.

A trial "green" house

While the SEU is waiting for approval, some Delaware residents have lobbied hard for other "green" initiatives, such as Newark's Green Energy Incentive, enacted Jan. 1 of this year, and have given unqualified support to SEU.

Steven Hegedus, an associate scientist at UD's Institute for Energy Conversion (IEC), is one University colleague and Delaware resident who has taken a particular interest in conservation measures.

"I think the SEU is a really valuable idea," Hegedus, who recently had a solar system installed in his home, said. "I've been working with solar energy for 25 years at the IEC and talking about it and lecturing about it, so I figured I should put my money where my mouth is. Our



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moderate-sized solar system now provides 75 percent of our electricity and our monthly electricity bill has been between \$6 and \$8, compared to [former bills of] \$40-\$60.”

by using less energy through advanced design or construction.

As satisfying as the dollar savings are, however, Hegedus was quick to add that his decision to install the system was influenced to a large degree by his desire to conserve energy. For even with the 50 percent rebate he received under Newark's Green Energy Incentive and the Federal tax credit of \$2,000, the system and its installation cost him \$8,000.

“Most days we are making much more electricity than we use,” Hegedus said, “so we're putting it out into the grid, and that's a little bit less electricity that the utility company has to make and transmit upstate from the Indian River plant. But just putting renewable energy on a house or in a utility district really only makes sense if it's coupled with conservation measures. You have to reduce your intake and then be smart about how you're getting your energy.”

To address this, Hegedus also stopped using a clothes dryer years ago, wrapped his hot water tank with insulation and switched to all-fluorescent lighting.

Now living with meters on his kitchen wall that reflect exactly how much electricity he and his family are using--and generating--Hegedus said that he's become a much more conscious consumer.

“By generating the electricity where it's being used--either in a residence or on a commercial rooftop or in a school--you are saving the transmission and distribution of that electricity from a distant power plant,” Hegedus said. “That saves energy from being lost in transmission and saves wear and tear on the distribution and transmission system, which is getting to be fairly antiquated and fragile. When you start making your own electricity and you have a meter that shows how much you're using and how much you're making, you also become very aware of your energy usage, because it's staring you in the face. That makes you a very aware consumer.”

The bottom line



With the SEU in place, Byrne said he anticipates that consumers tired of paying high energy bills and eager for change will be a driving force behind new ideas.

“The SEU has the potential to become much bigger,” Byrne said. “All kinds of new ideas are going to come forward--new ideas where we would find different ways to reduce our energy use and reduce our pollution.”

So many new ideas, Byrne added, that Citigroup, when presented with the initial bond proposal, said that the amount was too small. “We had originally written the bond for \$23 million,” Byrne said, “and Citigroup said it should be increased to \$30 million at the minimum,

because they think there are so many new ideas like this that would work, and they believe that people are going to participate very strongly.

“Another very important thing that will happen out of the SEU is its environmental benefits,” Byrne emphasized, “because when we reduce our energy use, we cut back on the greenhouse gases that contribute to global warming.”

As a member of the Intergovernmental Panel on Climate Change (IPCC), a science body advising the United Nations on the dangers of global warming, Byrne said that the SEU has the potential, during its first seven years in place, to cut carbon dioxide emissions in Delaware back to 2003 levels. “That's a big change for us to actually reduce reducing our emissions,” he said.

Article by Becca Hutchinson