The easy way to go green

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(PhysOrg.com) -- At last Friday's Energy Night at the MIT Museum, Dr. Keith Collins described his approach to fighting global warming with all the gusto of a really good insurance salesman. But Collins, who graduated from MIT in 1970 with a degree in political science, wasn't actually selling anything. He was just proclaiming to anyone who would listen just how easy it is to go green.

As one of the dozens of presenters at the annual event, which showcases the best in energy research, education and entrepreneurship from around MIT, Collins described a 700-square-foot house he built last year in Rockport, Maine, without any kind of a furnace, or even a fireplace. That might seem like madness or masochism in a place like New

England, but Collins has data that show otherwise: Last year, the house not only used no additional energy beyond the sunlight that fell on its roof, but Collins actually was able to sell 5,094 kilowatt-hours — about what a typical house that size would consume over six months — back to the Central Maine Power company.

"I want to let people know that solar energy is practical and affordable today, with normal construction," he told one of the many Energy Night guests who stopped to chat with him.

The key to the house's energy efficiency is super-insulation. With walls built to R-40 insulation standards, the heat given off by the people inside the house is enough to keep it warm on all but the coldest days, and then it's supplemented by a fan blowing over coils of water heated by the solar panels on the roof, which provide all the house's hot water year round. Photovoltaic panels provide all of its electricity. The extra costs of these measures, Collins explained, will be paid back through energy savings over the next 30 years. And none of it is rocket science, he explained: the idea was to use "state of the shelf" technology — that is, almost everything used in its construction is readily available on the shelves of any large building-supply store.

In one way or another, nearly every one of the several dozen posters, models and machines on display at Energy Night was, like Collins, also calling attention to some concept, small or large, of what's possible to aid the world's efforts to meet or curb its voracious appetite for energy, or to reduce or eliminate its environmental impact. Some were as modest as a replacement for a hearing-aid battery, others as large as an offshore drilling platform devoted to energy storage.

To help disseminate his message, every detail of the house's construction, and even a real-time display of its actual energy use and production, is available online. "This is my hobby and my passion,"

explained Collins, who, though he graduated nearly four decades ago, is an active member of the MIT Energy Club.

Why is he so eager to share the details of his house? "My goal," he said, "is that my grandchildren grow up in the same climate that I did."

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