

# OF SOFT ENERGY

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Generation of electricity by wind power has proved troublesome. Only one of the four planned windmills has been built (costing more than half of the Ark's total construction), and that has been plagued by technical problems. Despite reports to the contrary, no electricity has been fed into the provincial grid (in fact, no hookup yet exists), and the Ark has had to rely to an embarrassing extent on outside power. The protein-rich tilapia, the "tasty warm-water fish" that the Ark planned to raise and feed to its residents, died without a single one reaching the table.

Although John Todd has described communal life on the Ark in seductive terms ("living and working in a place where the sun, wind, architecture, and ecosystems operate in beautiful concert has affected most of us"), government officials concede that the social experiment has not worked. When a writer visited the Ark a few months ago, a group of New Alchemists had lunched not on tilapia but on local lobster, and the project's last full-time resident had just moved out with unconcealed relief. Like other full-time residents she had found the unremitting stream of visitors that the Ark has attracted to be an unscheduled and trying experience.

Yet it would be wrong to brand the Ark a failure. It has had its successes. The solar-heating systems have worked well, and the organic greenhouse has been conspicuously successful, providing vegetables for both residents and local markets throughout the year. Despite the untimely demise of the tilapia, the aquaculture experiment is now successfully raising trout, and promises to provide valuable data on new methods of fish-farming in the province.

In brief, the lessons of the Ark to date are simple ones: one cannot expect to pioneer techniques without encountering problems, and even "low-technology" systems geared to generating renewable energy on a small-scale basis require careful experimentation and development.

About 80 km from the Ark, in a historic red brick house on Charlottetown's waterfront, Andrew Wells wrestles with bigger and more urgent problems in renewable energy. As executive director of the province's Institute of Man and Resources, Wells has the responsibility for developing and promoting ways of increasing P.E.I.'s self-reliance through the careful use of its renewable resources.

Although the institute's mandate allows it to examine energy, food, shelter, and transportation, the primary focus is on energy, and it is easy to understand why. With the exception of a small amount of imported electricity, Prince Edward Island is entirely dependent for its energy on crude oil — and imported crude at that. Its vulnerability to any interruption in world oil supply is great.

Adding to the province's energy problems is the fact that its major industry, agriculture, is energy demanding to a degree unknown in most other regions. P.E.I.'s famous red soil, the pride of many a tourist brochure, is, in truth, in desperately poor heart. Depleted by decades of uninterrupted potato growing, its mineral content is so low that the nutrients have to be added. Under the best of circumstances, it takes a lot of energy to produce food. In P.E.I.'s case, it has been calculated that it takes anything from five to 20 calories of energy from petroleum-derived sources for island farms to produce a single calorie of food.

Thus, no other province in Canada has more incentive than P.E.I. to develop its renewable-energy resources. "I sometimes think", former Premier Alex Campbell has commented wryly, "we are so far behind in this province that we are ahead." As far as renewable energy is concerned, at least, he could be right.

Including its supervision of the Ark project, The Institute of Man and Resources is looking at seven areas under a federal-provincial program of renewable energy development. Priority is being given to establishing woods as an energy source. P.E.I. has about 600,000 acres of woodland — more than half the land area of the province. In normal commercial terms, most of it is useless. More than a century of "high-grading" (the practice of felling only the most valuable trees in an area and leaving the remainder) has left the province's forest with genetically degraded timber that badly needs to be cleared, but no one wants to cut it.



Wind power is an attempt at living lightly on the earth.

A program of forest clearance could provide an interim source of wood-chip fuel that would, at the same time, allow the planting of fresh strains of genetically superior trees. These in turn could form the basis of a renewable source of island energy. Such a program could also work wonders for the island's economy in terms of job creation and reduced imported energy bills. Little wonder that P.E.I. has been described as being "at the leading edge of renewable energy development in Canada."

Despite his enthusiasm for wood fuel and other renewable energy sources, however, Wells says that the chances of P.E.I. becoming self-sufficient in energy in the future are "quite remote". The need for crude oil will remain, he says, until some fluid fuel such as wood-derived methanol can be developed to replace those petroleum-based fuels that account for about 35 to 40 percent of the island's energy.

And, notwithstanding his support of the Ark, Wells has reservations about some of the aspirations of the more radical advocates of the conserver society. "I believe in the prudent use of our resources and try to conduct my own life accordingly. I worry about where some aspects of our technology are leading us.

"But, at the same time, I am concerned with another aspect of these new Thoreauvians. Most of them are middle-class, comfortably raised people who have, for one reason or another, been able to opt out of traditional jobs and who believe that other people should do the same thing. Most of the rhetoric we have heard about the conserver society has come from that kind of person, one who is able to take the time to tinker with solar collectors and wood stoves. They don't realize that most Canadians have to work long hours to feed themselves and don't have the time to devote to this kind of activity."

Wells' pragmatism finds a ready echo among federal energy planners in Ottawa. The understandable enthusiasm that members of the government's renewable energy resources branch display toward the potential of solar, wind, and biomass energy does not blind them to the fact that it will be a long time before Canada can look to renewables for a major contribution to its energy budget.

No one is more enthusiastic or more pragmatic than Dr. Harry Swain, the federal government's senior advisor in renewable resources. A most untypical civil servant, he spends a good deal of time bombarding private industry with money-making ideas in the