

# The Institute of Man and Resources An Environmental Fable

*"... a fable about our Western commitment to environmentalism...."*

In 1975, in the midst of a worldwide oil crisis, Prince Edward Island was facing the highest energy prices in Canada. But Canada's smallest province became the talk of the nation when the government of Alex B. Campbell took a bold step: it proposed to make the Island a veritable laboratory for renewable energy. Thus was born the Institute of Man and Resources, whose mandate was to research, develop, and demonstrate systems for alternative energy and resource self-sufficiency. Most often associated with the Ark, a "bioshelter" experiment in sustainable living, the IMR attracted a mix of back-to-the-landers, committed young engineers, scientists, and ordinary citizens interested in moving the world beyond oil. The IMR also attracted considerable attention in environmental circles, nationally and even internationally.

However, within a decade, it was all over, and the Institute of Man and Resources was dead. Why did the collapse occur? How had the Institute made such a name for itself in the first place? And what is its legacy? This book chronicles the rise and fall of the Institute of Man and Resources, an important Canadian environmental group of the 1970s, and contributes to the broader literature on the history of environmentalism. Indeed, as the debate over global warming sharpens public awareness once more about the repercussions of fossil fuel use, this balanced and nuanced history seems more timely and relevant than ever.

... a first-rate history, which chronicles an important conservation/environmental institution.... Very little has been written about the institutional dynamics of the environmental movement in the 1970s, which makes this work ground-breaking and significant.

**Bill Parenteau**, Professor of History,  
University of New Brunswick

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Alan MacEachern





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**Island Studies Press  
Charlottetown  
2003**



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**For Genevieve**

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## Preface

It seems so unlikely today. For a time in the 1970s, little Prince Edward Island was the talk of national and even international energy circles. Renowned scientist and alternative energy advocate Amory Lovins said that PEI was probably the world leader in conservation and renewable energy policy.<sup>1</sup> British economist George McRobie would write in *Small is Possible*, the sequel to his associate E. F. Schumacher's *Small is Beautiful*, that the Island's Institute of Man and Resources was "one of the most carefully planned and well-structured efforts at energy and self-sufficiency in existence anywhere in the Western world."<sup>2</sup>

It all seemed just as unlikely at the time. The energy crisis of 1973–74 had affected all Canadians, but Prince Edward Islanders more than any. The Island already had the nation's highest energy prices and was completely dependent on outsiders for its oil, gasoline, and electricity. The energy crisis only worsened the situation. No one would have been surprised if PEI had focused its own energies on holding the line, pleading with Ottawa to freeze Canada's oil price. Instead, the government of Alex B. Campbell proposed to make the Island a veritable laboratory for renewable energy. A complete paradigm shift was promised, a societal turn to self-sufficiency and sustainability. As proof of its commitment, the provincial government spearheaded the 1975 creation of the Institute of Man and Resources (IMR), a privately run organization devoted to researching, developing, and demonstrating systems for alternative energy and resource self-sufficiency of use to Prince Edward Islanders. The IMR sprang energetically into action. In little more than a year, it organized a multimillion-dollar federal-provincial renewable energy agreement and raised almost \$250,000 from Canadian banks and oil companies. And while there was some truth that the Island's new energy direction was greeted with more enthusiasm in Berkeley than Borden, Islanders themselves were taking notice. The IMR's strong local presence helped PEI achieve the highest participation in alternative energy programs of any province in Canada.

But even by the time McRobie's praise was published in 1982, the Institute of Man and Resources was all but dead. It had lost political support, public attention, and funding. It shuffled through the 1980s in near-invisibility before slipping quietly under in 1990.

Why did the collapse occur? And how had the Institute made an international name for itself in the first place? This book tells the too-short history of the Institute of Man and Resources and its work to promote renewable energy on Prince Edward Island. In so doing, it also serves as a case study of Canadian responses to the energy crisis, and of the tenor of Canadian environmental thought generally in the 1970s and 80s. More broadly still, the book stands — to its author, at least — as a fable about our Western commitment to environmentalism. And, at my most optimistic, I hope it maps out the obstacles that environmental movements, and social movements, normally face in achieving their goals.



The book relies largely on two collections of sources: the Institute of Man and Resources' papers at the Provincial Archives of Prince Edward Island, and a series of interviews I conducted mostly in 1999 with the major players in the 1970s Island energy scene.<sup>3</sup> The oral interviews — signalled in the text by a switch from the past tense to the present — offered a wonderful opportunity to allow the historical actors to provide their own perspective on what was happening at the time, and, in some cases, for them to describe how their perspectives had since changed. In the 1970s, these people were back-to-the-landers, or committed young engineers, or hippies, or bureaucrats, or politicians; the interviews demonstrated how they were now different people, and how they were the same. Their lives together constitute a statement as to the meaning of environmentalism in the 1970s.

Thanks, then, to those who were willing to be interviewed: onetime IMR staffers Rob Brandon, Katherine Clough, and Malcolm Lodge, as well as David Bergmark, Rt. Hon. Alex B. Campbell, Norman Hall, the late Rt. Hon. Angus MacLean, Peter Meincke, Peter Middleton, and Don Strange. A special thanks to Institute alumni Andy Wells, Kirk Brown, and Stewart Bennie for their co-operation in providing information and submitting to interviews. Thanks to Jeannie Prinsen and Colin Duncan for their careful reading of manuscript drafts. A final thanks to Harry Baglole, Ed MacDonald, and Laurie Brinklow at the Institute of Island Studies for choosing me to take on this project, and then waiting so patiently (or so it seemed) through the manuscript's gestation.

## Chapter 1

### Energy (Potential): 1973–1976

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### Energy (Potential): 1973-1976

*The story of the Institute of Man and Resources begins, like everything, with the sun. Millions of years ago, the sun's energy poured onto plants which after dying and decomposing eventually became trapped amid layers of rock. This biomass was over time transformed into hydrocarbon compounds like petroleum, coal, and natural gas. People eventually walked the earth. They learned how to hunt and gather, light fires; some of them took to farming. In their lives they tended to use renewable energy sources: wood, water, wind, animal- and humanpower. There were a few exceptions: Aristotle tells us that the ancient Persians cooked by natural gas; the Chinese mined coal 2,000 years ago; the poorest of medieval Brits made do with coal when wood was scarce. But in the main, fossil fuels sat unused, slowly building up interest.*

*Travel forward to Great Britain in the late 1700s. Wood and charcoal shortages led to a general reliance on coal, and steam engines were invented to make use of its concentrated energy. Coal fueled the Industrial Revolution, and with its cheapening of metal production came new uses for other fossil fuels. The first commercial oil well was drilled in 1859, its crude oil later refined into kerosene for lighting, with gasoline an unfortunate waste product. The new internal combustion engines of the 1870s found an application for this gasoline, its high energy density allowing the engines to be much smaller than coal-fired steam ones. The convenience of electricity meant that more and more fossil fuel energy was harnessed to generate it.*

*Fossil fuel use soared in the twentieth century, and with it came a wealth the world had never seen before. We healed more, lived longer, communicated more, moved faster, moved farther, and for the first time in history pulled much of the population away from the brink of starvation, though the population was far larger than ever before. We tended to ignore the simple fact that fossil fuels, whatever their reserves, were most assuredly being depleted faster than the sun was creating more. And then came OPEC.*



The energy crisis was born in October 1973, when the eleven Mideast nations of the Organization of Petroleum Exporting Countries (OPEC) placed an oil embargo against the United States, Canada, and other nations that had sided with Israel in regional conflicts. They also raised the price of oil dramatically: 70 per cent in October, another 130 per cent in December. Oil which in mid-1973 had sold for \$2US per barrel was, within a couple of years, nearing \$20. Here was a cure for a century

of global energy complacency. The price of oil had been so low for so long, and the supply so constant, that countries had paid little attention to where today's oil was coming from, let alone tomorrow's. By the early 1970s, OPEC production made up 55 per cent of the world total, and fully one-third of the world's known reserves were controlled by just a few members of the Saudi royal family and the Shah of Iran. The 1973 oil embargo was lifted the following spring, but the pall it cast over global energy politics was not. And prices remained much, much higher than they had been.<sup>1</sup>

For a "crisis," the energy crisis drew a slow reaction from Canadians. There was not much real anxiety at first, as people waited for things to return to normal. When *Maclean's* magazine first covered the energy issue in a February 1974 special section, it still gave its cover story to the world of curling. But Canadians soon grew to accept that the current energy situation called into question their very way of life: they were too dependent on the Mideast. Political cartoons of the day showed Canadians tied up with pipelines, or bowing down to the east, or being robbed while staring down the gun "barrels" of djellaba-clad bandits. Ignoring the racial and racist undertones of such concern, the fact was that Canadians were beginning to wonder if they would have to revise how they purchased, perhaps even consumed, energy sources in the future. Whether such changing attitudes would lead to changing actions was another matter, of course.

For Pierre Trudeau's Liberal government in Ottawa, the energy crisis became as much a regional issue as an international one. Oil-producing Alberta could expect to profit handsomely from a rising world price, while Atlantic Canada and Quebec in particular were sure to suffer badly. Within a year of the OPEC embargo, the Trudeau government adopted a number of policies designed to balance the regions' energy positions. It imposed a tax on Western Canadian oil exports, used this tax to subsidize oil imports to the Eastern provinces, and established Petro-Canada as a national oil company. And, perhaps, most importantly, Canada set a domestic oil price significantly below the world one (with plans to move toward it gradually), ensuring Canadians would not feel the OPEC pinch quite so badly. Not surprisingly, Eastern Canada was grateful and Western Canada was furious; the price for economic nationalism was Western alienation.<sup>2</sup>

These were finger-in-the-dike measures, not directly responding to the broader questions of Canadian energy usage. The federal department of Energy, Mines, and Resources (EMR) was slow to offer significant policy alternatives. In 1973, it was a junior ministry which had just



recently evolved out of Mines and Technical Surveys; its expertise was in mining. Unprepared to deal effectively with major international or even national energy issues, EMR had to learn right alongside ordinary Canadians how to respond to the post-energy-crisis world. It was perhaps natural that, in search of a philosophy, EMR began to flirt with environmentalism. The ecology movement of the preceding decade had already asserted that humans needed to rethink their relationship with nature; the energy crisis made this seem all the more reasonable. By 1975 or so, the department was speaking in the language of the ecology movement, arguing for zero energy growth and voicing concerns about the social costs of modern energy use.<sup>3</sup>

Any number of environmental writers undoubtedly contributed to the EMR's conversion, but two deserve special mention: E. F. Schumacher and Amory Lovins. They were both gaining an international reputation for their work on energy matters. Though they made their cases in markedly different ways, both argued that energy systems needed to be dramatically simplified, and both of their strategies would be noticeable in the energy policies soon to be implemented on PEI. Schumacher was a British economist and author of the 1973 *Small is Beautiful: A Study of Economics as if People Mattered*. He argued that our modern worship of large-scale technology and production had created a fundamentally dysfunctional civilization. As we push onward in stultifying workplaces, we help to poison the planet, deplete it of its non-renewable resources, and create a soulless society in the bargain. The solution, according to Schumacher, was the transformation of work, and particularly a return to what he called "intermediate technologies" more suited to human scale. He used the example of a small plow, distinctly better than simply dragging a stick along the ground, and yet superior to giant farm machinery that draws farmers into large-scale monoculture. Schumacher called for society to return to smaller, more localized production and consumption, even reclaim 19th-century technologies when they were most appropriate for the job.<sup>4</sup>

Whereas Schumacher's work can seem decidedly antimodern in tone, Amory Lovins came to much the same sort of conclusions through ultramodern, computer-assisted mathematical study. Lovins published his first book on energy politics in 1971, at age twenty-four, but gained real notoriety with a 1976 article in the journal *Foreign Affairs*, "Energy Strategy: The Road Not Taken?"<sup>5</sup> Contrasting our society's present-day commitment to a "hard energy path" involving large, capital-intensive, non-renewable energy systems, Lovins proposed a "soft energy path" utilizing renewable, easy-to-understand, varied, and diverse energy

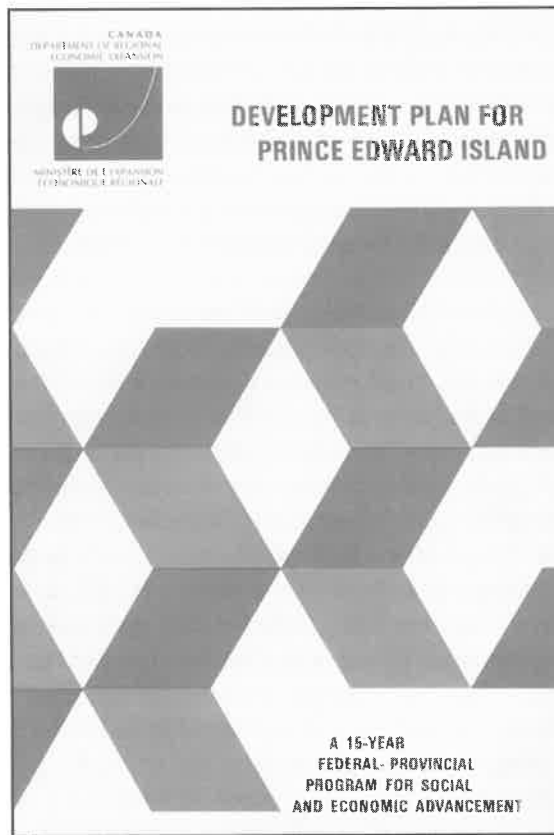
systems. Most important, we must match energy sources to our needs, and not, for example, convert energy unnecessarily to electricity for jobs best done otherwise — cutting butter with a chainsaw, as he called it. Lovins argued that North Americans were unwisely moving to greater electricity use and to nuclear power, when these were in fact much more capital-intensive and risky than simply improvements in energy efficiency that could be achieved with conservation and renewable resources.<sup>6</sup>

It is obvious that staff at EMR could interpret Schumacher's and Lovins' work as relevant to their specific concerns about Canada's foreign oil dependence. Furthermore, it also led them to see their own work as tied to much broader questions about the purpose and structure of human society. Through its department of Energy, Mines, and Resources, the Canadian government was suddenly receptive to considering altogether new policy paths. Here was the most real of problems — involving billions and billions of dollars, not to mention the utilization of huge quantities of the earth's resources — and the most provocative solutions being put forward were academic ones, largely untested, but seemingly straightforward. In other words, it was a magnificent opportunity for any group clever enough to offer to turn theory into practice. It was the government of little Prince Edward Island that first recognized this opportunity.



At first blush, PEI's interest in a "small is beautiful" philosophy was both natural and surprising. A pastoral island province with just over 100,000 residents, PEI was small and beautiful, and its economy was already more traditional and of a smaller scale than anywhere else in Canada. Moreover, of all the provinces, it had the most to gain by jettisoning a dependence on international oil: it paid by far the nation's highest energy rates. Prince Edward Island's out-of-the-way location in an oil-importing region meant it was the only province that relied completely on oil-firing for electrical generation, which in turn meant higher electrical costs. Likewise, heating oil and gasoline were significantly more expensive than elsewhere. Islanders paid about three times what Western Canadians did for energy, and with a lower per capita income.<sup>7</sup> The energy crisis further worsened this situation. By late 1974, Islanders were paying 1.5 times what they had paid for electrical power a year earlier, and twice as much for heating oil.<sup>8</sup> If any province was likely to embrace alternative energy, it was PEI.

On the other hand, the Island had been working furiously in the



PEI COLLECTION, UPEI

A Comprehensive Development Plan for Prince Edward Island, instituted in 1969.

previous few years to imitate a modern industrial society. In 1966, the thirty-three-year-old Alex B. Campbell had become premier of the province, and three years later introduced the Comprehensive Development Plan, a fifteen-year, \$725 million federal-provincial agreement to make PEI a laboratory for society-wide planning.<sup>9</sup> With over eighty programs covering everything from aquaculture to leadership development, the Plan was essentially designed to facilitate the Island's move to a modern, streamlined economy. For example, small farmers and fishermen would be assisted in moving out of their industries, making way for a tighter, more competitive marketplace.<sup>10</sup> To say that Islanders did not take well to the Plan is an understatement. It seemed designed to erase the much-vaunted "Island way of life," and they were given little say in its design and early implementation. Faced with such opposition, the Campbell government toned down its development rhetoric.

In fact, Campbell became a convert to "small is beautiful" thinking. At a National Energy Conference of 1974, he focused his comments not on Island energy woes but on limiting economic growth and limiting the disparity between rich and poor.<sup>11</sup> At a 1975 federal-provincial conference, he amazed his fellow premiers by arguing that the federal government should stop subsidizing oil prices (keeping it at an artificially low level and so dissuading Canadians from conservation or energy alternatives), knowing full well that Island consumers would suffer more than anyone.<sup>12</sup> And he followed up such rhetoric by opting PEI out of a partnership with New Brunswick in the building of the Point Lepreau nuclear power plant, though it promised lower energy costs. In speeches, Campbell outlined Amory Lovins' soft energy philosophy, and concluded,

What I am presenting to you then, is a suggestion, not for a new society, but for a new direction to our society. One that emphasizes self-reliance and involvement of our citizens rather than encouraging them to be passive consumers. It accentuates decentralization of capital and decision making, rather than intensive control. I envision a highly diversified society. I believe this is in keeping not only with our traditional values but also with our modern aspirations for a pluralistic society.

Framing his vision of PEI in Schumacherian terms, he concluded, "I am one who believes that small is not only beautiful but in the long run, more practicable."<sup>13</sup>

Here was a man who five years earlier had been preaching the virtue of a big, industrial Prince Edward Island, now calling for a small, preindustrial one. Some have interpreted this to mean Campbell was



ANDY WELLS COLLECTION

Prime Minister Lester B. Pearson, Premier Alex Campbell, and Andy Wells.

directly repudiating his own Comprehensive Development Plan. According to UPEI political scientist David Milne, for example, “The energy crisis, pollution, and a demoralized industrial sector throughout North America, together with the sobering experience of life under the plan, moved the premier away from his earlier confidence in reform and toward a conserver mentality much closer to traditional Island values.”<sup>14</sup> When I spoke to Alex Campbell at his home in the summer of 1999, he took pains to stress that this was not the case. In fact, it became clear he granted the interview to make that very point. “I’m very glad to have you ask that question,” he states, leaning forward in his chair, peering at his notes for the first time, “because I want to answer that, not only for your edification, but I may have to write something someday.” He explains, “If you take an automobile, the Development Plan would be mostly cylinders in the motor; the Institute of Man and Resources might be the clock on the dash. That’s the perspective I want you to have.” In other words, the Plan was what allowed the PEI government to get things done, even into the “small is beautiful” days. It was above all a way for PEI to get federal money — “a very flexible way of addressing economic opportunities and sharing them to some very considerable degree among the Island population,” in Campbell’s words.<sup>15</sup> It would seem the Premier could not ideologically repudiate the Plan because the Plan itself held no underlying ideology.

Campbell’s interest in environmental matters was, like much of his thought, nurtured by his executive secretary, speechwriter, and right-hand man, Andy Wells — Machiavelli to Campbell’s Prince, in one pundit’s words.<sup>16</sup> Theirs was what Campbell calls “a remarkable relationship.”<sup>17</sup> For one thing, it was a second-generation one: when Alex’s father Thane was premier of PEI in the 1930s, Andy’s father James had been his assistant. After returning to the Island to take over the family farm in 1959, Andy Wells had worked on Alex Campbell’s winning election campaign in 1966, and soon became the premier’s closest advisor. Wells had a philosophical bent that matched Campbell’s pragmatism, a skill at behind-the-scenes politicking which nicely complemented Campbell’s public persona. When defining policy or preparing speeches, they were so in tune — Wells knowing what his premier wanted said, Campbell trusting the words handed to him — that it was difficult to know where one’s ideas ended and the other’s began. Campbell states simply, “He was my researcher and I was his voice.”<sup>18</sup> Wells remembers Campbell once referring to himself as a vessel into which Wells poured his ideas. Though he adds that the premier was joking, Wells is clearly pleased with the line.<sup>19</sup>

It was largely through Wells that the Campbell government gained an interest in environmental thought. Wells was an inveterate reader, and was drawing influence at the time from anti-technology works like Louis Mumford's *Myth of the Machine* and Schumacher's *Small is Beautiful*. He even built his own back-to-the-land project, a home in Hazelgrove heated entirely with wood.<sup>20</sup> Wells got Campbell talking about environmental ideas, and, through Campbell, got the government involved. For instance, Wells had the provincial cabinet watch a film put out by the Club of Rome, an influential group of scientists and businessmen whose 1972 book *The Limits to Growth* forecast the world running out of resources. Like Campbell, Wells thinks that the failures of the Development Plan itself were largely peripheral to the province's turn toward environmentalism, but he does believe the Plan "did consolidate some of our thinking, in its wrongheadedness, to what some of the alternatives were."<sup>21</sup> There began to germinate a sort of alternative development plan which seemed better suited to the Island's situation: one tied to no-growth rather than rapid-growth, decentralization rather than centralization, self-sufficiency rather than integration in a global economy. The energy crisis gave added impetus in this direction, and offered the province a second opportunity to promote itself as a potential laboratory for social change.

The question was what form of action PEI should take. Campbell and Wells found their answer while attending a 1974 conference on "The Uses of Smallness" in Rensselaer, New York, hosted by the Institute of Man and Science.<sup>22</sup> Campbell had been invited to speak there by Frank Davidson, an MIT engineering professor whom he had met while seeking funding for a PEI causeway.<sup>23</sup> Campbell and Wells were impressed by the wide range of scientific research going on, and started thinking that PEI would be a wonderful location to focus such research. At the same conference, they met a group of New York City-based consultants who worked at giving shape to visionary ideas. The consultants were brought back to Prince Edward Island for a two-day workshop, and by the end of it they were ready with a recommendation. They suggested that PEI set up a non-profit organization to research and demonstrate alternative energy. Campbell's government liked the idea. Ironically, what would become the Institute of Man and Resources was conceived by — and its enabling legislation essentially written by — a group of American consultants who had little more to do with it after that.

In January 1975, Premier Alex Campbell announced that his government would be creating an Institute of Man and Resources. (There had been a "Man and Resources" alternatives conference in Ottawa in

late 1973, which a group of Islanders including Wells attended, and the phrase was in the air.) The institute was envisioned as not only offering real hope for alleviating the Island's energy woes, but also helping the Island serve as an example to the rest of the planet. Campbell explained that it would "exercise a coordinating and leadership role in the execution of demonstration projects, in the dissemination of information locally, nationally, internationally, in the assembly of knowledge and the testing and evaluation of alternate energy and food production systems." In phrasing reminiscent of John F. Kennedy, Campbell said that the IMR would offer the province the chance to ignore its customary preoccupation with what Canada could do for PEI, and to focus instead on what PEI could do for Canada and the world.<sup>24</sup> To christen its commitment to energy matters, the government distributed 35,000 copies of EMR's "100 Ways to Save Energy and Money in the Home" across the Island.<sup>25</sup> The following month, Campbell presented his administration's energy policy at the First Minister's Conference on Energy. Less a speech than a manifesto, it described the new institute and declared PEI the only locale in Canada seriously investing in renewable energy.<sup>26</sup>

That spring, the Institute of Man and Resources Co. Ltd. was officially incorporated by the provincial legislature ("more for image than anything else," Wells would later say<sup>27</sup>). It was to involve itself in "the analysis, invention, adaptation and application of appropriate energy, food and crop production and living and shelter systems which are socially desirable and ecologically sustainable, and the assessment of probable impacts of such system."<sup>28</sup> Though conceived of and established by the Campbell government, the Institute was not to be a government body, but rather a private, non-profit agency relying on public and private funding plus contract work for its survival. This arm's-length arrangement was intended to assure its integrity: it could maintain its objectivity when critiquing public or private energy systems, and it would not be accused of conflicts of interest in bidding for public or private contracts. After allocating \$100,000 for start-up, with the promise that this would become an annual grant, the province left the Institute to its own devices. In truth, however, there was as of yet no real "it" — no office, no staff, no leadership — and a full year would pass before the IMR took on corporeal form.



As the Institute came into being, another project that would help make PEI the hotbed for Canadian alternative energy in the 1970s was also



GEORGE WORTON, PEI PUBLIC ARCHIVES AND RECORDS OFFICE

Consultants from Rensselaer, New York, at an historic meeting in 1974, with government, university, and private-sector representatives, out of which came the recommendation to establish an Institute of Man and Resources.

*Standing (left to right):* Andy Wells, Province of PEI; David Brooks, Energy Conservation Division, Energy, Mines, and Resources, Ottawa; Lynne Douglas, Ministry of State, Urban Affairs, Ottawa; Anco Hamming, Federation of Agriculture, PEI; name unknown; name unknown; representative from Rensselaer; representative from Rensselaer; Alex Campbell, Premier of PEI; Ian MacQuarrie, Biology Department, UPEI; Regis Duffy, Chemistry Department, UPEI; John Maloney, Minister of Development, PEI; David Catmur, Department of Agriculture, PEI; Bob Platts, President, Scanada Energy Consulting; Toby Brooks; Mr. MacEachern, Macdonald College, McGill University.

*Kneeling (left to right)* name unknown; name unknown; Bob Durie, Department of Environment, Ottawa; Bruce McCallum, Department of Environment, Ottawa; Hal Stevens, Rensselaer, NY; Ron Alward, Macdonald College, McGill University; Tom Connor, Deputy Minister, Department of Development, PEI; Roman Bittman, National Film Board; name unknown.

beginning. Andy Wells had become interested in the work of John Todd, an environmental guru born in Canada and living in the United States. Todd had co-founded the New Alchemy Institute in 1969, and oversaw the group's communal headquarters on a Cape Cod farm. The New Alchemists modelled themselves after alchemists of old, not in turning metals into gold, but in taking knowledge from many disciplines to achieve a more ecological understanding of how to live in the world. Drawing on such disparate influences as Buddhism, feminism, Buckminster Fuller, political protest, and E. F. Schumacher, they were unusual hybrids: part back-to-nature advocates, part environmental entrepreneurs, part academically trained scientists (Todd himself had a doctorate in comparative psychology and ethology).<sup>29</sup> The New Alchemists were primarily interested in improving food systems. One early project was what they called a "mini-ark," a self-contained greenhouse ecosystem using ecologically linked cycles to grow fish and vegetables. The ark was given its name because it was self-sustaining, biologically diverse, and a symbolic alternative to present-day practices.<sup>30</sup>

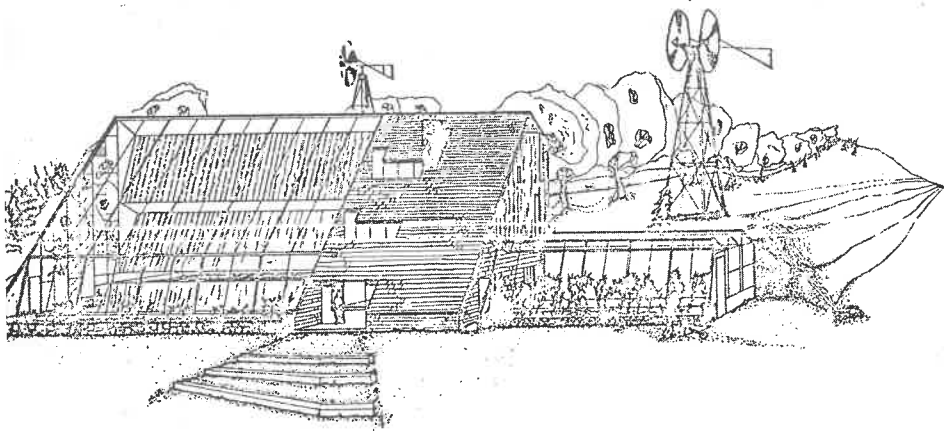
Wells travelled to an Ottawa conference where he knew Todd was speaking, and the two met and became friends. Soon, Wells was encouraging Todd to organize a project in Canada, a marriage of the New Alchemists' growing reputation in the field<sup>31</sup> and Wells' connections to the PEI and federal governments. As early as February 1974, *Canadian Magazine* was reporting in an article on Todd that he "has his eye on PEI for another New Alchemy Institute project — if he can drum up some grant money."<sup>32</sup> That money was found by way of "Habitat," the UN Conference on Human Settlements to be hosted by Canada in 1976.<sup>33</sup> Habitat, overseen in Canada by the Ministry of State for Urban Affairs, sought projects that demonstrated innovative solutions to human settlement problems. Lynne Douglas at Urban Affairs brokered a meeting in Ottawa among Wells, Todd, and members of her department. (She and Wells were subsequently to marry.) In November 1974, the New Alchemists officially proposed the building of an Ark for PEI. It would be a bioshelter serving both as a working home and as a functioning laboratory for integrated agricultural, aquacultural, and renewable energy systems.

Urban Affairs staff were enthusiastic, but Todd himself was oddly reserved about his own proposal. He worried that an Ark was too big a commitment for the New Alchemy Institute, and that PEI was too far from his New England headquarters.<sup>34</sup> Yet he also thought the Ark too small a project, when PEI offered so much environmental promise. In a twelve-page paper entitled "Weathering Collapsing Global Economic

# The New Alchemists

To Restore the Lands, Protect the Seas, And Inform the Earth's Stewards

## an ark for prince edward island



A FAMILY-SIZED FOOD, ENERGY AND HOUSING COMPLEX,  
INCLUDING INTEGRATED SOLAR, WINDMILL, GREENHOUSE,  
FISH CULTURE AND LIVING COMPONENTS

Systems: A Blueprint for PEI," Todd offered the provincial government his vision for the Island, stating, "There is little doubt that the industrial world is on a razor's edge. Because Prince Edward Island is land based, non industrial, has tillable soils and more or less owns her own lands, she is perhaps the most fortunate of all regions in the west, particularly as she does not have a large industrial population to care for." He recommended everything from the building of sailing ships (for plying the West Indian trade) to the elimination of absentee ownership. "Test New Alchemy Arks, with and without living components" was a one-sentence afterthought.<sup>35</sup> But it was the Ark, being both futuristic and domestic, ultramodern and back-to-the-land, that captured people's imagination. Urban Affairs gave the project its go-ahead in January 1975 and put up \$354,000, while the Island government provided land at Spry Point, on the Eastern end of the Island, for the bioshelter. A wire service story describing Habitat's fourteen demonstration programs listed the Ark first, stating, "Designed to be self-sufficient like the Biblical ark, it will illustrate how food, shelter and power needs of urban and rural families can be supplied in a single building."<sup>36</sup>

John Todd selected David Bergmark and Ole Hammarlund to design and build the Ark. For Bergmark, a hanger-on with the New Alchemists rather than an actual member, these were heady days. He had just graduated from the Yale Architecture School. This was his first commission. He recalls flying up from Massachusetts and being met at the Charlottetown airport by Premier Alex Campbell himself, with Andy Wells proceeding to tour him around the Island.<sup>37</sup> Though Ottawa delayed signing a contract with the New Alchemists until late in 1975, Bergmark and Hammarlund began work almost immediately.<sup>38</sup>

The Ark's birth was separate from the Institute of Man and Resources' and different in important ways — involving federal rather than provincial funds, and depending on imported rather than homegrown expertise — but the two were also related. Andy Wells helped the New Alchemists find funding and a site for the Ark, which in turn strengthened claims by the Campbell government that it was committed to alternative energy work; this could not help but bolster the Institute's reputation. In just a few years, the Institute and the Ark would be pushed into an arranged marriage, each staff complaining that their group had its own history and was being unfairly blamed for the other's shortcomings. But the fact remains that in their early days, each was buoyed by people associating one with the other. The word was getting out that exciting things were happening on PEI.





In October 1975, six months after the official creation of the Institute of Man and Resources, the board of directors named in the incorporation act gathered to better define the new agency's mission. This first board consisted of Premier Alex Campbell, his Executive Assistant Andy Wells, Minister of Industry and Commerce John Maloney, Deputy Minister of Development Tom Connor, Field Services Branch Director of Agriculture and Forestry David Catmur, and Leader of the Opposition Mel McQuaid. Involving McQuaid was a deliberate attempt to prove the Institute nonpartisan; for the same reason, when Campbell had moved the incorporation act, it was arranged that McQuaid second it. Still, one could not help but notice the Liberal loyalties of the rest of the board. Campbell himself now admits, "I'm fully aware that, although the intention was there to create an apolitical entity, the Institute did have its strong affiliation with the Alex Campbell government."<sup>39</sup> Confusion about the Institute's relationship with government would not go away; even in its first known document, an "Outline of Objectives, Role and Work Program," distributed at that board meeting, the Institute is mistakenly referred to as a Crown Corporation.<sup>40</sup> In any case, the board elected Maloney as Chair and Wells as Secretary. Each board member pledged to bring five candidates for membership to the next meeting, six months hence.<sup>41</sup>

The "Outline of Objectives" brought to the board's first meeting offers a keen view of the Institute's initial ambitions. There was to be a small staff of no more than five, with additional people brought in as needed. "The primary objective of the Institute of Man and Resources," according to the document, "is to assist the testing and application of alternate sources of energy and methods of production in order to reduce the province's dependence upon non-renewable resources and reduce the long-run costs of energy and production for all Prince Edward Islanders." After listing more specific ways to meet this objective, it was said, "The general approach of the Institute will be oriented toward the testing and application of available energy and production alternatives in order to determine their suitability for Prince Edward Island. The major emphasis will therefore be placed on practical adaptations of known methods rather than on research and development." The IMR was not to become just a thinktank, but was to be grounded in finding real solutions to Island problems.<sup>42</sup> To stress this, when the board discussed the outline at the following meeting, it suggested, "When reference is made to 'research,' it should be stressed that such

research would, in the main, be applied research rather than pure research. It was the view of the Board that the document should outline that in order for the Institute to become nationally and internationally relevant, the institute must first become knowledgeable and useful in the context of PEI."<sup>43</sup>

Two points about these plans are worth noting. First, though the IMR was the product of such ideas as self-sufficiency, decentralization, no growth, the conserver society, and other broad social goals, and though its incorporation act also spoke of "food and crop production and living and shelter systems," its members had chosen to focus their energies on energy. The thinking was that dependency on non-renewable sources was the most pressing specific problem the Island faced, and by dealing with it the Institute could begin to face those broader issues. Second, and related to this, the IMR's careful defining of "research" signals an understanding that their work had to be perceived as practical and immediately applicable to Islanders. It could not afford to be seen as doing work of a theoretical nature — or, for that matter, work of national or international value of only peripheral use to PEI. The repeated attempts at defining research suggested how difficult that would be.

The most immediate task was to find an executive director to run the Institute day-to-day. Some of the names bandied about included Islander Gordon MacEachern of McGill's Macdonald College, Maurice Strong of the United Nations Environment Program, University of Toronto climatologist Ken Hare, and Pollution Probe's Donald Chant.<sup>44</sup> Throughout 1975, these and others were contacted, but could not be enticed to head a new, unproven Prince Edward Island institute with uncertain funding. But, as Campbell says, "Of course, the perfect man for the job was in the Premier's office."<sup>45</sup> Andy Wells, the man behind the Institute's creation, was asked by its board early in 1976 to step in as executive director. He accepted. It is perhaps not surprising that from that day forward, opponents of the IMR considered it a gift from Campbell to his right-hand man, a playhouse for Wells' interests. The archival record makes clear, however, that the board had actively sought someone from outside, and came to Wells as something of a last resort. And as Campbell notes, "It didn't make things easier for me in the Premier's Office to have Andy Wells go out and take a job off-campus."<sup>46</sup>

Though the Institute of Man and Resources was more potential than kinetic in 1975, its existence was already beginning to affect PEI energy politics. Concerned about supply following the 1973 oil embargo, the Campbell government had with federal assistance begun work on a



ANDY WELLS COLLECTION

Amory Lovins and Bill Zimmerman on steps of Province House during Energy Days, 1976.

submarine cable to New Brunswick, so that the Island could purchase electric power from its neighbour's grid, rather than be dependent on more expensive, unreliable, local oil-fired generation.<sup>47</sup> Price remained the main issue with Islanders: they paid more than twice the national average for energy.<sup>48</sup> The PEI government now had to decide whether to invest as part owner in New Brunswick's proposed nuclear power plant at Point Lepreau. While the administration mulled over what to do, Wells publicly endorsed a move to alternative energy sources instead.<sup>49</sup> Premier Campbell himself favoured renewables, saying that small-scale energy projects using the sun and wind would return to the Island "much of the resourcefulness and wisdom of our pioneer ancestors." He was not living in the past, though; he anticipated renewables to offer substantial investment and research opportunities in the coming years.<sup>50</sup> The province ultimately entered into a temporary agreement to join Lepreau in 1975, but pulled out the same year, choosing to rely instead on conservationist initiatives to "hold the line" on oil-based energy consumption until the planned alternate energy systems were in place.<sup>51</sup> Campbell, his government, and PEI itself were staking their future at least in part on the IMR's predicted success.

The province demonstrated its commitment to alternative energy in its holding of Energy Days, a four-day Legislative hearing into energy matters in the spring of 1976.<sup>52</sup> Televised live on the local CBC station, Energy Days brought in a wide variety of energy experts and had them discuss with legislators the best options for PEI's future. The hearings provided the Island government with great national exposure, and served as a coming-out party for the Institute of Man and Resources, which organized and hosted the event. Though ostensibly neutral in its presentation of energy choices, Energy Days had a structure that made perfectly clear where the Institute believed the Island's future lay. Day 1 outlined the current energy situation on the Island. Day 2 began with discussion of public utility issues, in particular Maritime Electric's role as the monopoly supplier of electricity. The afternoon turned to nuclear power, with two of the three speakers discussing its hazards and its costs. Day 3 looked at energy alternatives, with speakers presenting on solar, wind, wood, biomass, and coal energy. Day 4 examined what was called "energy futures" — potential social and political ramifications of alternative energy paths — and brought in the hearings' biggest speakers: soft energy path theorist Amory Lovins; E. F. Schumacher's associate at the Intermediate Technology Development Group, George McRobie; and the New Alchemy Institute's John Todd. One could not help but see this program as a chronology, leading from a present

threatened by a dependence on electricity fueled by non-renewables, to a better future based on small-scale, locally produced renewable energy. This was noted by Tom Richardson, an expert on electrical generation and advisor to the PEI government on energy matters, who grouched about speaking on Day 2: was electricity not likely to be an important part of the Island's future?<sup>53</sup>

The Energy Days transcript provides a revealing early glimpse at how alternative energy enthusiasts envisioned PEI — and how Islanders in turn would receive alternative energy. The speakers from away were truly impressed with the provincial government's progressivism, and envisioned the tight Island community as a perfect petri dish for the application of a small-is-beautiful philosophy. When asked if he thought a cultural sea change was needed for renewable resources to be adopted, Amory Lovins stated he thought Energy Days itself was a sign such a sea change was under way: "You really are in the lead within Canada and I think compared with nearly all countries." He also said,

Your experiment here is already attracting much interest in the rest of Canada and the rest of the world. I have been in many countries recently where people stood up and asked, "What is happening in Prince Edward Island, how is that going? We are very interested in it; we want to learn from it." I think your influence on this continent and others can be much greater than you realize.<sup>54</sup>

Many of the legislators did not respond well to such flattery, regardless of its sincerity. On reading the Energy Days transcript, one is struck by the legislators' constant skepticism toward energy alternatives and conservation, whether it be using waste wood for electrical generation, car-pooling, or installing solar panels.<sup>55</sup> When Lovins gave a particularly rose-coloured reply about the Island's role in changing global opinion, Premier Campbell himself interjected, "I think the question is still valid, however, because certainly Prince Edward Island is not going to change the world or cause the governing authorities of the United States to change their ways." Upbeat, Lovins asked, "Why not?"<sup>56</sup>

The problem with such statements was that they encouraged a notion that alternative energy enthusiasts were not so much interested in the Island's actual inhabitants as they were in the potential for realizing a utopian vision by way of a grand experiment. To be sure, some of the negativism at Energy Days was simply evidence of partisan politics being played in the Legislature. It was also no doubt rooted in

sincere concern that neither citizens nor government could afford the short-term capital costs on which these long-term solutions depended. And some probably held the belief that the Island was too traditional a society to direct such changes. Alongside all this, however, there seems to have been simple distrust of visionary pronouncements.

Energy Days had been a kind of religious retreat for those affiliated with the Institute, and they left the meetings with a spirit of revival. Responding to congratulations from his friend Alistair Gillespie, the Minister of Energy, Mines, and Resources, Premier Campbell said, "We are unprepared to deal with the overwhelming national interest in the subject" and noted that the Institute was receiving dozens of phone calls daily.<sup>57</sup> The national press had paid attention, and Lovins and McRobie were acting as international boosters of the Institute's work.<sup>58</sup> Perhaps Wells and Campbell can be forgiven the trace of cockiness that crept into their interviews in these the IMR's salad days. In a speech at the Farm Centre, Wells mused, "In a way I feel the oil cartels have done us a service because they have focused our attention on an increasingly difficult problem."<sup>59</sup> When Premier Campbell was asked if he was disappointed that Prime Minister Trudeau had turned down the notion of an Island energy subsidy, he replied, "not really... Personally, I believe energy subsidies would be a waste of public funds."<sup>60</sup> The Island would stake its future on renewable resources, not handouts.

The province knew, though, that this was the time to profit by its growing reputation. Just prior to Energy Days, EMR had announced it would put \$10 million toward energy research and development in Canada. So, in the letter to Gillespie mentioned above, the Premier suggested that the feds get involved in funding the Institute's work.<sup>61</sup> Campbell's government was assisted in designing this strategy by Peter Middleton, the onetime head of Pollution Probe's Toronto branch and now heading a consulting firm which specialized in energy and environmental matters. Middleton had helped develop EMR's federal/provincial program strategy, had attended Energy Days, and knew that EMR Minister Gillespie and Premier Campbell were friends. He recognized this as a golden opportunity. He urged the Institute, "The climate for obtaining Federal assistance related to renewable energy could hardly be more favourable."<sup>62</sup> And there was "unanimous and in many cases enthusiastic" interest in using PEI as a demonstration area. This was based on a number of factors: 1) PEI's own desire to play this role; 2) its adequate and diverse resource base; 3) its "Islandness" making for a good test case; 4) its existing high energy costs; and 5) the low political cost to the federal government of failure, since relatively little money

and few seats would be involved. Middleton did warn that the province must approach the federal government in the right way, making sure not to base its case in any way on the province's economic need. "A major consideration in speeding the allocation of new money to PEI," he stressed, "will be the careful distinction between the aims, objectives and implementation of the energy development program and those of existing agreements under DREE [Department of Regional Economic Expansion]." The consultant concluded that the energy crisis had been an ill wind blowing PEI some good. "For whatever combination of laudable — or not so laudable — reasons," he wrote, "the time is ripe for an initiative from the Island."<sup>63</sup> It is worth remembering that, at that moment, Andy Wells still constituted the IMR's entire staff, and that it had not actually done anything except host Energy Days.

Yet there was already concern about the direction the IMR was taking. Board member Tom Connor, Deputy Minister of the provincial Department of Development, was distressed that it was allowing itself to be so quickly pigeonholed as an energy body. The Institute had been born with social goals in mind, and should be involved in health, food production, and shelter "independent of the question of renewable energy.... In summary, I have interpreted the mandate of the Institute of Man and Resources broadly as being concerned with man's resources, their conservation, their renewal, and their utilization in his behalf to provide food, shelter, and personal well being."<sup>64</sup> This was true, but at the moment it was energy that held the public's and governments' attention. And it was unlikely the Institute would have a national or international impact if it tried to achieve too much. Improving the world's energy scene was a sufficiently large task for the present.

In June 1976, the IMR sent the federal government an "Invitation to Participate" in its development, the title a sign of the agency's confidence. The document explained that the agency had been created to develop the Island's resources in ways that would benefit both the province and the nation as a whole. It read, "The Institute is not a 'think tank'; it will not produce major policy studies. The Institute is a focus for action in the search for and adoption of alternative paths of resource development." Neither was it a central planning agency, though it would organize public and private resource work across the Island.<sup>65</sup> The invitation then detailed why Canada should participate, centring its argument on the Institute's ability to test and choose resource systems for the Island, and thus also contribute to national decision-making about these systems. It was suggested that Canada give a start-up contribution of \$140,000, and plan to follow up with longer-term part-

nerships.<sup>66</sup>

Though the Institute expressed interest in signing a number of federal-provincial agreements, realistically its goal was to make a deal on energy. EMR Minister Gillespie responded favourably to PEI's invitation,<sup>67</sup> and so, through the summer of 1976, Canada and Prince Edward Island worked out the form that an agreement on renewable energy development would take. Consultant Peter Middleton deserves much of the credit for keeping the process moving forward. At one point, at an impasse in talks, the proposal was thrown in the wastebasket; Middleton literally had to pull it out. By the end of the process, he recalls, he was drafting for both Minister Gillespie and Premier Campbell their mutual correspondence — "I was negotiating with myself," he says laughing.<sup>68</sup>

The province proposed to implement six programs:

1. Develop wood as an energy source;
2. Determine wind power potential;
3. Develop solar heating;
4. Reduce energy demand;
5. Determine low head hydraulic power potential;
6. Develop low energy community concept.<sup>69</sup>

The four programs devoted to wood, wind, solar, and hydraulic (that is, small-scale hydroelectric) power would involve the province developing and testing feasible energy alternatives, and in so doing would assist all Canadians. The other two looked more conceptually to changing how citizens used energy, in particular electricity. To fulfill these activities, PEI sought a federal contribution of \$3.2 million for the first year alone, and noted that following years would demand similar budgets. Wood energy promised to be the most ambitious program and also the most expensive, at \$1.4 million.

That fall, a Canada-PEI Agreement on Renewable Energy Development — the first of its kind in Canada — was finalized, having as its foundation all six of the programs PEI had proposed, and also including funding for the running of the Ark project. The three-year deal signed early in 1977 was designed "to study and develop renewable energy resources within the Province of Prince Edward Island." It would see the Canadian government provide \$3 million up front, and PEI pay an equal amount "in the form of capital expenditure or in kind" during the life of the agreement.<sup>70</sup> The Institute of Man and Resources, which had not been mentioned in the original proposal, was to act as the agent



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Opening of the Ark September 1976, (left to right) John Todd, Margaret Trudeau, and Prime Minister Trudeau.

of the agreement for both governments. It would even be responsible for contracting with the New Alchemy Institute<sup>71</sup> to manage the Ark. A management committee consisting of two federal and two provincial representatives would oversee the Institute's handling of the agreement, but this would not be so restrictive. In return, the agency now had very considerable funds guaranteed over the next three years to begin operations in earnest. Effectively, the agreement solidified the IMR as a viable new player in Canadian energy politics.

In one sense, though, the agreement fundamentally reshaped what the IMR was about. Whereas it had been created with visions of effecting widespread social change, it was now committed to maintaining quite tightly defined technical projects on energy. Perhaps this was a natural compromise in its evolution from theory to practice. Yet, depending so much on the energy agreement for its financial existence meant not only that the Institute would have difficulty moving into other fields, but also that it would be vulnerable to international energy matters completely beyond its control.



The summer of 1976 was a fine time to be on PEI and interested in alternative energy. Besides the plans being finalized for the federal-provincial agreement, on a sunny Sunday afternoon in September the Ark was opened in Spry Point. Ground had been broken about a year earlier, and the building closed in over the winter. David Bergmark calls the final few months of building "quite extraordinary." He and co-architect Ole Hammarlund oversaw the work of hundreds of volunteers who pitched in to help on the project: New Alchemists up from Cape Cod, locals curious about this thing that had landed in their community, tourists who stumbled upon the scene. As the opening approached, people were working day and night.<sup>72</sup> Just an hour before the opening ceremony, landscaping was completed and the Hydrowind began pumping electricity. Prime Minister Trudeau swooped in by helicopter, and told the three hundred people assembled that the Ark was a fine example of "living lightly on the earth." Todd spoke of how natural it was that Maritime Canadians would be the first to explore self-sustaining, renewable energy systems: "Here where the sea and the land and the wind and the sky come together there is a sense of place and there is a sense of the past. There is a sense of what we have and our own limits. Perhaps it's through the sense of place and past that we can begin to design and create for the 21st century."<sup>73</sup> After Trudeau flew off, the party continued into the night.

But even amid such jubilation, there was skepticism. Angus MacLean, Conservative Member of Parliament at the time, was standing with three of Alex Campbell's deputy ministers the moment Trudeau's helicopter set down. A frightened cormorant took off nearby, and one of the men asked what kind of bird it was. Another glumly replied, "Probably an albatross."<sup>74</sup> In his *Eastern Graphic* editorial, Jim MacNeill noted that Trudeau's helicopters burned seventy-five gallons of fuel per hour, and that two had been flown from Ottawa solely to bring the Prime Minister from Charlottetown to remote Spry Point.<sup>75</sup> This was an easy, cynical point to make, but it did underscore that a stated change in environmental attitudes did not necessarily lead to changing behaviours.

The fact was that the Institute of Man and Resources and the Ark were both promising alternative energy enterprises, but neither had yet actually accomplished anything — other than drawing in a remarkable amount of federal and provincial aid. *The Guardian* editor reviewed a speech by Alex Campbell on renewable energy, in which the Premier said, "Here we can stop the spread of centralization, remove many of the social and political factors leading to individual and regional alienation, lessen our dependence on faceless and uncaring bureaucrats and bureaucracies, and once again provide some real understanding and meaning to our place and role in society." The editor offered a dose of caution:

This sounds like an ideal situation — almost Utopian — but one must wonder how alternate energy sources when they become practical enough to meet society's requirements can bring that situation about. Will new energy resources lead to decentralization, a reduction in social problems, less regional alienation and smaller bureaucracies? ... [L]et's not have the politicians pull the plug on society's present technological apparatus before new methods are guaranteed — winter nights get awful dark and cold.<sup>76</sup>

## Chapter 2

### Energy (Kinetic): 1977–1978

