

**Presentation to CEC Wuskwatim Hearings**

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**Forests and energy**

By way of introduction to Mr. Torrie's more technical presentation, I would like to indicate some of the considerations that led me, and TREE and RCM, to this intervention.

Both TREE (Time to Respect Earth's Ecosystems) and RCM (Resource Conservation Manitoba) are concerned with issues of applied sustainability. TREE, however, as its acronym implies, has focused on forest issues. Along with most Manitobans, we share a concern for the health and sustainability of Manitoba's forest ecosystems and values. The guiding principles of both organizations are appended to this presentation.

A number of direct and indirect links exist between forests and energy production, consumption, and conservation. The Pembina Institute screening study for Manitoba Hydro considered a few of these in its comparison of land use changes and greenhouse gas emissions from alternative electricity generation technologies and fuels. However their study omitted consideration of the energy conservation alternative. Yet energy conservation clearly has implications for the mitigation of the ecological impacts of energy production and consumption.

Manitoba's northern forests have a great deal at stake from climate change mitigation efforts, since the projected impact from global warming at twice natural levels of CO<sub>2</sub> is to greatly reduce the Boreal Forest in Manitoba.<sup>1</sup> For those who care about our forests, the mitigation of greenhouse gas emissions is an important objective. And Hydro and NCN propose that Wuskwatim advancement will do that by producing additional power for export, which will displace some fossil-fuel generation in the export markets. However, from the standpoint of the forests, energy conservation is a preferred alternative. The more energy that is saved by Manitoba consumers (or produced by alternative means), the more that is available for export, *without* the impacts of new impoundment or the swath of new transmission corridors through forests entailed by new hydroelectric development. And, of course, conservation and alternative generation in markets where the base load is fossil-fueled will directly reduce GHG release. So these are primary links between TREE's concern for the forests and energy planning in Manitoba, which have led us, in partnership with RCM, to interventions before the PUB and CEC.

Another observation is that hydroelectric power, although a renewable resource, is still finite. Manitoba Hydro estimates that there are still another 5,000 MW of capacity on the Nelson River system, but when that is gone, then what? Will the head be raised at Wuskwatim to realize 350 MW of capacity? Will the Hayes River be exploited next? What is the endgame when the potential of the Nelson has been fully exploited? – Dam the remaining free-flowing rivers in Manitoba? – Burn more fossil fuel from Alberta or from more remote and sensitive sites offshore

<sup>1</sup> Manitoba and Climate Change: Investing in Our Future <http://www.cecmanitoba.ca/reports/pdf/ACF44A3.pdf>

and in the artic? Even if one were to grant, for the sake of argument, that the impacts of further development on the Burntwood/Nelson system were tolerable, the imperative to conserve remains. Growth in energy consumption, hence generation, cannot proceed forever. Nor is it too soon to contemplate the endgame, since 3,700 MW of the existing Nelson River capacity came on line in the short space of 16 years from 1974 to 1990<sup>2</sup>. A similar building binge could complete the job in a comparably short time.

### Canada vs. the OECD

We have probably all heard claims that North Americans, and Canadians in particular, are energy hogs. For example, a recent comparison of Canada's place amongst OECD countries on a variety of sustainability indicators indicated that Canada is 27th out of 29 OECD nations in terms of energy use per capita, using almost twice as much as the OECD average, and increasing per capita use at a greater rate than the average OECD increase since 1980. Canada is 28th out of 29 in energy efficiency (energy used per dollar of GDP), and 33% less energy efficient than our major trading partner the U.S. and less than half as efficient as the OECD average<sup>3</sup>. This should obviously be a matter of concern for anyone who cares about the environment and the economy and is seeking a path to sustainability. 27th  
worst

Still, it is sometimes argued that we live in a cold climate, are spread out over large distances, and have attracted energy-intensive industries, so that, regrettable as it may be because of the environmental impacts, we should resign ourselves to our standing as energy hogs. Moreover, such resignation may be further excused by the fact that our hydroelectric energy supply makes our Manitoba economy less carbon-intensive than others.

On the contrary, I believe that the more energy we consume and the less energy-efficient is our economy - for whatever reasons - the more it is incumbent upon us to ask how we can improve. Is it our *physical* climate and geography or our *social* climate of practices, policies, regulations, standards, incentives, investments, infrastructure, and performance measures that is at fault? Furthermore, the fact that we are part of a continental grid means that our consumption patterns and conservation efforts do indeed affect continental GHG emissions.

Unfortunately, in Manitoba we have had little opportunity to examine and debate questions of energy policy as a whole. As a province, we developed an array of sustainability policies through public consultation, but an energy policy was not among them. However, more recently, the Climate Change Task Force chaired by Lloyd Axworthy and Public Utility Board rate hearings have provided two windows on aspects of an energy policy. Consideration of the justification, need for, and alternatives to Wuskwatim advancement is a third such window.

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<sup>2</sup> Dates and capacities taken from [http://www.hydro.mb.ca/about\\_us/hydraulic\\_stations.shtml](http://www.hydro.mb.ca/about_us/hydraulic_stations.shtml)

<sup>3</sup> See the energy indicators in David R. Boyd. 2001. Canada vs. the OECD: An Environmental Comparison. <http://www.environmentalindicators.com/htdocs/>.

OECD = Organization for Economic Cooperation and Development a group of 29 industrialized democracies.

## **Where does Manitoba stand now?**

I have argued that concern for the environment and long-run sustainability generate a social imperative *first* for energy conservation and efficiency measures and *second* for least-impact generation options. TREE and RCM are intervening in these hearings in response to that imperative and have engaged Mr. Torrie to provide the detailed analysis. In the remainder of my introduction to his presentation, I'll make a few brief observations of my own.

### **Legislation.**

In our closing argument to our 2002 PUB intervention (found at Appendix 5 of our compiled written submissions), we pointed out that the Sustainable Development Act and the Manitoba Hydro Act provide a sound legal base and requirement to respond to the social imperatives of sustainability and efficiency in the policies and practices of Manitoba Hydro, including the promotion of the end-use efficiency of customers. Moreover Manitoba's regulatory and review bodies, like the PUB and CEC, are similarly bound. Thus Manitoba has many of the right principles in place, even if performance is sometimes spotty. The challenge is to translate those legal mandates into practice. We still have a ways to go.

### **Manitoba Hydro's corporate strategy and goals.**

A corporation steers by its goals, so it is important to get these right. We note the addition of a new corporate goal of being a leader in implementing cost-effective DSM measures. We hope that this signals a shift from the position taken by management at the 2002 PUB hearings that DSM is "not a social responsibility that we bear" (transcript, p. 4302). The Manitoba Hydro Act says otherwise when it identifies the promotion of end-use efficiency as one of its purposes.<sup>4</sup>

However there is a need to develop a suite of performance measures related to this goal. Some of the discussions through the interrogatory process have begun to identify what these might be.

There is also a need to revise the statement of purpose of the Power Smart program to include a reference to the environmental and sustainability benefits that it evokes in its advertising. The branding of Power Smart through images of children embracing nature suggests that a sustainability purpose directs energy conservation programs. However, when one turns to the corporate purpose for implementing demand-side management (DSM), one finds instead two economic objectives: "to provide alternative cost-effective methods of power supply and to minimize the total cost of energy services to customers".<sup>5</sup> There is no mention of the environmental benefits of the DSM alternative. This connection needs to be explicit. In our 2002 PUB brief we recommended that Manitoba Hydro add to the Power Smart program the explicit

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<sup>4</sup> Section 2 of the Manitoba Hydro Act:

**Purposes and objects of Act**

2 The purposes and objects of this Act are to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power . . . . [underlining added]

<sup>5</sup> Power Smart Resource Options, Executive Summary, iii, in Appendix 6 of the MH/NCN NFAAT filing.

goal of increasing the eco-efficiency for the use of energy supplied by Manitoba Hydro, i.e. increasing the ratio of benefits to ecological impacts. In practical terms, this could mean, for example, establishing a higher cost threshold for including conservation measures in the Power Smart program or attaching an environmental premium for the implementation of DSM measures. A number of states in the US use a public benefits charge on energy sales to fund conservation efforts.

### **Perverse incentives and subsidies.**

Our 2002 PUB intervention was initiated when we asked what are the implications of low electricity rates in Manitoba for energy conservation, given the general economic principle that lower costs of a product tend to increase its consumption? We sought to explore rate options that were more favorable to conservation and proposed an inverted rate for the residential sector. The PUB ordered that Hydro study inverted rates for all customer classes.

In our view, there are a number of factors that depress Manitoba's rates, such as those identified in our response to **CAC/MSOS/TREE/RCM I – NFAAT – 8**. We argued that current methods of allocating costs and the system export dividend, which are the foundation for rate-setting, are both inefficient and inequitable.

- They are energy inefficient because low-cost power encourages wastage and reduces the incentive to conserve. (This principle was uncontested at the hearings.)
- They are environmentally inefficient, because the wasted energy is unavailable to displace GHG-producing fossil fuel generation elsewhere on the continental grid, thus adding to the global environmental costs of North American electricity.
- They are economically inefficient, because (a) wasted energy is non-productive and (b) using the system export dividend to subsidize inefficient consumption makes the dividend unavailable for more productive investments (including conservation investments that would reduce both energy wastage and customer bills and increase the system export dividend to Manitoba).
- They are inequitable, because higher consuming customers grab more than their share of both (a) the benefits of low-cost resources in the system, such as Winnipeg River generation, and (b) the export dividend earned by a crown corporation and resource belonging to us all.

The point of these conclusions for the Wuskwatim hearing is that, as a part of a concerted effort to adhere to principles of sustainability and the Manitoba Hydro legislated mandate to promote efficient production, distribution and end-use of its product, we have to stop subsidizing the wastage of energy and promote the preferred alternative to Wuskwatim of energy conservation.

It is possible to stop subsidizing wastage of energy while still trying to reduce customer energy costs. Two principle ways of doing this are to redirect subsidies (a) from rates to conservation measures, and (b) from tailblock rates to initial block rates and fixed charges. It is thus possible to do this in a revenue-neutral way that will lower the bills of conservers, raise the bills of larger consumers, bring tailblock rates closer to the marginal cost of energy and thus increase the incentives and cost-effectiveness to consumers of conservation measures.

### **PowerSmart standard for new homes.**

Finally I wish to comment on the announcement of the Power Smart New Home Program, which encourages building to a new Power Smart standard. While this program is intended to increase the penetration of efficiency measures in new home construction, it is still disappointing that it falls short of the cost-effective R2000 standard.

The low interest rates of recent years have created a new housing boom. It is a failure of regulation and building standards that all of this new construction represents lost opportunities and embodied inefficiency that is not readily corrected. That will continue, although to a lesser degree, if Hydro achieves its objectives with the Power Smart New Home Program. Couldn't we do better?

Manitoba Hydro indicates that this program was "developed in consultation with industry advisory teams." Where were the conservation groups, consumer groups, and municipalities in these consultations? Builders have frequently resisted implementation of the highest conservation standards because of incremental initial costs, even though these more than pay for themselves in the long run.

With those preliminary points I'll turn the presentation over to Ralph Torrie.

# A Forest Agenda for Manitoba

Time to Respect Earth's Ecosystems (TREE) Inc. is a group of individuals and organizations concerned about Manitoba's forest ecosystems. As part of a broader endeavour to encourage the development of a sustainable society, we wish to foster a sound understanding of forest ecosystems and human impacts on them. In particular we seek to promote the following goals with respect to Manitoba's forests:

1. **CREATION OF A SUSTAINABLE FOREST POLICY** that is ecologically sound and sensitive to the full range of forest values. Such a policy must be well-informed, must fully involve the public in its making, and must be subject to continued reassessment in the light of growing experience, knowledge and wisdom.
2. **PRESERVATION OF WILDERNESS AREAS** of sufficient variety, scope, and size to protect the full range of Manitoba's ecosystems and natural features by excluding them from all extractive or consumptive uses.
3. **PROVISION FOR SIGNIFICANT ENVIRONMENTAL ASSESSMENTS** with a much broadened scope including a thorough canvassing of alternatives; a better assessment and mitigation of long-range, cumulative, and remote impacts; significant, informed public participation; and the provision of intervenor funding.
4. **RESEARCH ON FOREST ECOSYSTEMS**, both in their natural states and as subject to human impacts and modifications, including the exploration of the many non-consumptive and consumptive values that forests support.
5. **IMPROVED FOREST DATABASES AND INVENTORIES** of flora, fauna, ecosystem types, physical features, and potential resources as well as of past, current and planned human utilization of the forests.
6. **PUBLIC EDUCATION** regarding the nature of forest ecosystems, the variety of values associated with forests, and human utilization of and impacts on forests.

We believe that these goals are worthy of support by fellow-citizens, by our forest-related industries, and by government and urge their wide adoption.

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## Mission of RCM

**Resource Conservation Manitoba** is a community resource committed to promoting ecological sustainability by developing practical alternatives for resource use through conservation and waste reduction in all aspects of our collective and individual lives.

## Fundamental Principles

- 1. RCM** believes that eliminating the unsustainable use of resources requires the adoption and implementation of a waste reduction priority which emphasizes the elimination of waste and advocates appropriate strategies that include: reduction at source, reuse, recycling and resource recovery -- in that order.
- 2. RCM** believes value and wealth exist, and can be created, outside the conventional economic system. Examples of this value and wealth are natural capital and social/organizational capital which must be incorporated into benefit-cost analysis. Decisions based on such models could constrain market-based activity in order to facilitate ecological sustainability and maintain our quality of life.
- 3. RCM** believes all sectors of society have a shared responsibility to preserve and protect our environment such that the needs of present and future generations are met.
- 4. RCM** believes that the sustainability of the natural environment requires an attitude of respect and a belief in its intrinsic value, coupled with the active conservation of life support systems, biodiversity and natural resources.
- 5. RCM** is committed to maximizing opportunities for full participation in decision-making by all Manitobans in honest, open and accessible processes.
- 6. RCM** is committed to human involvement in global ecological sustainability through education, awareness and action.

## Applied Principles

- 1. Resource conservation** replaces high resource consumption goods and service-producing technologies with low resource consumption technologies, to the greatest extent possible; replaces non-renewable energy technologies with renewable energy technologies, to the greatest extent possible; and uses appropriate scale technologies.
- 2. Polluter pays** requires that whoever causes environmental degradation or resource depletion should bear the full cost. This is intended to encourage the internalization of environmental costs and reflect them in the prices of goods and services.
- 3. Precautionary principle** acknowledges the high level of uncertainty about environmental impacts of proposed developments and calls for decision-makers to proceed with caution. The onus of proof is on the proponent to anticipate, prevent, and demonstrate the absence of significant environmental impact.

**4. Strong sustainability principle** requires society to hold the aggregate stock of natural capital constant, at a minimum, and likely requires us to increase the stock. Natural capital encompasses the entire life support system we enjoy on earth. This includes elements of species diversity, air and water quality, whole earth and ecosystems, and the waste assimilative capacity of the various global components.

**5. Pollution prevention** applies processes, practices, materials and energy that avoid or minimize the creation of pollutants and wastes.

**6. Full cost accounting using lifecycle analysis** assesses the full cost of a product, process or activity by developing models for benefit-cost analysis which incorporate the value of wealth created by non-market capital (natural or social/organizational) and adjust for its degradation and loss. This is done by measuring all inputs and impacts (in economic terms) at all stages from raw material extraction and production through distribution, consumption, discard, recycling and/or landfilling (cradle to grave).