ENERGY POLICY FROM AN ENVIRONMENTAL PERSPECTIVE: THE CORE ELEMENTS

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by Susan Holtz
Senior Researcher for Ecology Action Centre

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INTRODUCTION

Energy production and use in the world today represent a huge sector of human activity, with correspondingly extensive environmental effects. These impacts are both direct - that is, they result from the harvetsing, extraction and processing of energy resources and from emissions when energy resources are converted to use - and they are also indirect. Examples of the latter are land use changes (which may include the loss of wildlife habitat and farmland) and pollution problems caused by transmission lines, roads, airports, pipelines and other energy-dependent facilities. Human settlement patterns which are constructed around particular energy-using technologies or resource developments are another instance of these indirect environmental effects.

Both categories of impacts must be addressed if environmental concerns are to be incorporated in energy planning. But much energy-related environmental degradation can only be reduced by decisions made at the policy level. For instance, the amount of energy use is the major determinant of the overall degree of environmental stress, and particularly of indirect consequences.

Or, as another example, certain technologies cause particularly intractable environmental problems, while other options are "softer" on the environment. Aspects of policy with a bearing on levels of energy demand or support for supply technologies - for example, pricing, financing, and research and development programs - must, therefore, come under scrutiny in an environmentally sensitive review of energy. An approach that is limited to considering mitigative measures on a project-by-project basis is wholly inadequate to the task.

RECOMMENDATION 1: A COMPREHENSIVE ENVIRONMENTAL POLICY REVIEW

The single most important innovation in bringing an environmental perspective to energy planning is the requirement that environmental values must be incorporated in all areas of energy policy, from pricing to government assistance programs. Only through comprehensive and consistent policy development at this level will real reductions in environmental stress from energy use and development become possible over time.

ENVIRONMENTAL PRINCIPLES IN ENERGY POLICY

THE POLICY FRAMEWORK

The first step in developing an energy policy which incorporates an environmental perspective is to clarify what that policy should address.

Historically, energy policy has been concerned with a variety of interests. These have included the financial well-being of various energy supply industries; consumer prices for energy; the level of tax revenues and their split between federal and provincial governments (as well as the actual

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ownership of the resources in question); the balance of payments from energy projects; security of energy supplies; native land claims; and the environmental acceptability of certain projects.

Two fundamentally different approaches to arranging these elements into a framework for energy policy can be discerned. One view is to regard the core of energy policy as synonymous with the economic health of the industry sector that develops energy resources as commodities; many tax benefits and other incentive programs flow from this approach. The second perspective is to view policy in this field in terms of analying how best to provide needed services to Canadians. This latter focus permits greater consideration of all possible options, including demand reduction. It also allows a more comprehensive review of environmental and other implications in such areas as pricing, tax incentives, and so forth. Governments, however, have attempted to use both frameworks simultaneously as the focus for policy decisions. The result has been inconsistency and sometimes the cancelling of one policy goal (like improved efficiency) by another (like the "rate stabilization fund" in Nova Scotia, which kept the price of electricity artificially low).

One example of this confusion about the content of energy policy is that, considered as a "source" of energy, demand reduction has been consistently treated less favourably than conventional energy supply industries in terms of investment criteria, tax benefits, research and development, and program support, even when the amount of energy that could be supplied was comparable. And on the energy supply side, different industries often have not received the same treatment. An "uneven playing field" for various energy alternatives has been the result.

RECOMMENDATION 2: POLICY FOCUS MUST BE ON END-USE ENERGY SERVICES

An environmental perspective regards the appropriate focus of energy policy be the provision of end-use services; other considerations, such as jobs and the fate of individual energy industries, while valid topics for review, must be examined within this basic framework. Energypolicy, in other words, must first and foremost be about how to analyze, modify, and supply this country's physical requirements for energy services.

ENVIRONMENT QUALITY CRITERIA

It is vitally important that all significant environmental concerns be addressed in energy policy development. One of the most comprehensive formulations of environmental objectives is found in the conservation goals of the World Conservation Strategy, which the Canadian government endorsed in 1981. Energy policy in Canada should, in theory, already be consistent with these objectives, but to date little attention has been paid to implementing the Conservation Strategy in any sector.

Criteria based on these objectives should be used in reviewing all options for energy planning and development, and should include all stages, from extraction or harvesting through processing, production and transmission to end use conversion, and finally, to waste processing and shut-down. It must be recognized that these environmental goals are, in a physical sense, absolute constraints on human activities. In specifics, this will mean that some projects and technologies will be allowed to proceed. On the other hand, these criteria are not intended to rule out all new economic development; innovation can be welcome and useful. Also important to develop will be mechanisms for public input and dispute resolution to deal with the different interpretations

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of these criteria that will be certain to arise in actual situations.

RECOMMENDATION 3: WORLD CONSERVATION STRATEGY OBJECTIVES

In general terms, then, Canada must adopt an energy policy that is consistent with the World Conservation Strategy (to which this country is already formally committed). The environmental objectives of the strategy are as follows:

* the maintenance of essential ecological processes and life-support systems;
* the preservation of genetic diversity; and
* the sustainable utilization of species and ecosystems.

These objectives must be the guiding environmental criteria for energy policy.

HUMAN VALUES

In analyzing the demand for energy services such as heat, mobility, and electro-mechanical power, it must always be remembered that these requirements have their ultimate origins in fundamental human needs. Thus, a values oriented critique of the ways - and the alternatives - by which societies and institutions satisfy these needs is appropriate as a starting point for energy policy analysis. Specific projects and technologies have social, political, and economic implications, and these and other human dimensions of energy may also legitimately constrain an energy-related project or (when constraint with environmental goals) provide reasons to promote it.

RECOMMENDATION 4: CENTRALITY OF HUMAN NEEDS AND VALUES

Energy is profoundly tied to human and global survival, and energy policy must be rooted in - and explicitly concerned about - human needs; policy considerations must include a respect for basic values such as healthy human communities and human dignity, both in Canada and abroad.

SPECIFIC PRIORITIES AND PROPOSED MECHANISMS FOR REACHING ENVIRONMENTAL OBJECTIVES IN ENERGY POLICY

Implicit in this section is an approach that, for environmental reasons, places demand reduction ahead of increasing energy supply through any forms of energy or specific technologies. By far the greatest attention should be directed to this side of the energy equation. When we do turn to the supply side, however, and try to apply criteria based on Conservation Strategy objectives and human needs, we come up with a hierarchy of options. In refining these further, when government investment and other support is being considered, specific assessment mechanisms must be developed to ensure that all options are evaluated and are fairly assessed. In particular, the same decision criteria must apply to all options (including demand reduction).

As well, certain individual projects may not be acceptable because of local environmental impacts (certain hydro dams, for instance), or specific technological, social, political, or economic concerns. Consequently, there must be the opportunity for public involvement in energy decision-making at all levels.

RECOMMENDATION 5: THE PRIORITY OF ENERGY CONSERVATION

Efficiency improvements and other means of demand reduction must be given priority in all areas of energy policy. Specifically, this goal must be pursued in program development, financing, pricing, and other aspects of

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policy. Not only does demand reduction lessen environmental stress more than any other option, it also has permanent, widely shared economic benefits for individuals and all regions of the country. By minimizing demand, we also create resilience to economic and supply disruptions.

RECOMMENDATION 6: LEGISLATED PRIORITIES FOR GOVERNMENT SUPPORT

The federal government can show leadership in incorporating environmental concerns into energy policy by creating enabling legislation for an Energy Policy Act that would require a priority ranking for program, investment, and other support for the best options in terms of environmental criteria.

The priority list should be as follows:

* end-use reduction and energy efficiency improvements;
* co-generation and waste heat utilization (i.e., for uses external to the plant, such as district heating);
* renewable sources, excluding mega-project scale sources, and resources of high fuel conversion efficiency;
* other resources.

It should be noted that all specific projects should still be subject to site-specific assessment.

RECOMMENDATION 7: PUBLIC PARTICIPATION AND COMPREHENSIVE ASSESSMENT

Any proposal for energy development must explicitly set out why and how that project is more beneficial environmentally and socially than any other development, or the "no-go option; as well, it should demonstrate that it is the most economically efficient way to achieve its benefits. Public participation in such project review and assessment is vital.

MANITOBA ENVIRONMENTAL NETWORK
P.O. BOX 3125
WINNIPEG, MANITOBA
R3C 4E6