Energy and HRM's Regional Plan

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Introduction

Although it contributes a small percentage to our overall economy, energy is central to almost everything we do in the western world. Every sector of our economy relies upon access to (inexpensive) energy, most notably petroleum products and electricity. In a time of rising energy costs and growing concerns over energy security (that is, ensuring security of energy supply), many national and local governments are examining alternatives to existing energy sources and ways in which energy is used (for example, see Hughes, 2005a).

Although Halifax Regional Municipality's Regional Plan acknowledges the importance of energy in one of its Principles:

> *Manage development in a way which will make the most effective use of land, energy, infrastructure, public services and facilities and considers healthy lifestyles.*[1]

the Working Draft of the Regional Municipal Planning Strategy makes little reference to energy[2]. In the next part of this Report, the energy-related sections of the Working Draft are listed and, where appropriate, are commented on.

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[1] Unless otherwise indicated, all text in italics is taken from the Working Draft of the Regional Plan.

[2] The Regional Planning Committee was made aware of energy issues on a number of occasions by the author of this Report, one of the original members of the RPC. Prior to taking sabbatical leave in the UK in August 2004, he submitted a discussion paper based upon NRCan's "Scenarios for Supply and Demand to 2025" (see NRCan, 2003 and Hughes, 2004a),

Comments

Section 1.4.2 (*Foundation Strategy*), states that "*The Foundation Strategy is the backbone of the Regional MPS*". In this section, a series of points are listed as having been used as the basis to develop the Regional MPS, including:

> • *Design and invest for energy efficiency;*

Section 2.7 (*Emissions Reduction Functional Plan*), focuses on a variety of emissions-related topics, with a recognition that most emissions are caused by anthropogenic activities:

> *These air-borne materials are largely emitted by human activities related to transportation, industry and energy production.*

Emissions reduction is also to be achieved by:

> *HRM shall improve air quality and reduce emissions by promoting compact development and active transportation, providing more public transit, using renewable energy sources, switching to lower-carbon fossil fuels (e.g. bio-diesel, and natural gas), encouraging energy efficient buildings and preserving our urban and rural forests. Examples of current successful HRM projects include the purchase of ultra-low sulfur bio-diesel fuel for Metro Transit buses, the organics composting and methane recapturing programs, the Climadapt partnership for climate adaptation, and pursuing cost effective energy conservation in HRM buildings.*

The bio-diesel described in this paragraph is a by-product of anchovy production. Although this is a sensible use of what had formerly been considered a waste product (i.e., inedible fish parts), the fact that the anchovies come from South America calls into question the long-term viability of this project. Quite simply, the bio-diesel is a by-product of a system that relies upon cheap oil for its transportation; the feedstock for the bio-diesel is viable as long as anchovies can be transported to Nova Scotia.

Similarly, the plan to switch to "*lower-carbon fossil fuels*", notably natural gas, is of concern given the state of Nova Scotia's offshore natural gas industry (Hughes, 2005b). With Sable in decline and little offshore drilling activity, the source of most natural gas destined for HRM will be from LNG tankers transshipping natural gas from suppliers in Norway or possibly North Africa (at the time of writing, Anadarko has not announced the name of the natural gas supplier it plans to partner with). Relying on this source of

natural gas is short-sighted and, in the long run, will probably prove to be an expensive venture.

The reference to "*rural forests*" is important, as these forests, if properly managed, could be a major source of energy for HRM.

Proposed policy E-34 states that, "*HRM shall develop an Emission Reduction Functional Plan which adheres to the policies of this Plan*". There are four elements associated with this plan:

1. *develop a program to reduce air pollution both within HRM business units and other organizations;*
2. *create an inventory of air pollutants and greenhouse gases;*
3. *encourage Nova Scotia Power to provide energy efficiency, renewable energy and mitigation for electricity sources which are powered by bunker fuel and coal; and*
4. *encourage the Province to provide consumer rebates for conversions to low emission wood burning appliances.*

Element 3 is confusing; it is unclear how Nova Scotia Power is *"to provide energy efficiency, renewable energy and mitigation*". A clearer and stronger argument would be to encourage Nova Scotia Power to convert their Tufts Cove generating station (thermal: natural gas and bunker C; and gas turbine) into a combined heat and power (electricity and district heating) station. When dealing with energy, the authors of the Strategy should be aware that it is how energy is used that determines how efficient it is; for example, a combined heat and power station burning coal is cleaner than a series of gas turbines burning natural gas for an all-electric community,

In element 4, it is highly unlikely that the Province of Nova Scotia will provide rebates for conversion to more efficient wood burning appliances. It may make more sense to approach FCM (the Federation of Canadian Municipalities) to lobby the Federal government for legislation to address this issue. The provincial government's inaction on energy efficiency and conservation is well known. They will not be the ones to act on this.

Proposed policy EC-6 states that "*HRM shall support the implementation of the Urban Streetscape Design Guidelines to address opportunities for public space, architectural features and structures which enhance the desirability of the Capital District as an economic and cultural centre of HRM*". One of the elements of this policy states:

> *k) techniques for energy reduction, including district heating and solar access opportunities.*

First, this element should not be restricted to the Capital District, as much of the new development in HRM will be occurring outside this area. Second, by-laws should be enacted that, starting immediately, require all buildings in new developments to be designed so as to maximize their solar gain, thereby helping reduce their conventional energy usage. Third, district heating should be utilized where there is sufficient thermal density, such as downtown Dartmouth and peninsular Halifax.

Sections 8.4 (*Wind-Generated Electricity*) and 8.7 (*Wind Energy Functional Plan*) deal with wind energy and its installation in HRM. The opening sentence in section 8.7 states:

> *Environment Canada wind assessments for HRM have identified favourable conditions for the operation of wind turbines in several coastal and upland locations.*

There are no doubt areas of HRM that could host one or more wind turbines; however, the wind assessments in question (from Environment Canada) should not be taken as the basis for any such programme. Proper assessments should be conducted before any turbines are installed.

The next sentence in section 8.7 claims that:

> *Other siting requirements such as access to NSPI's transmission grid and local demand for electricity have lead NSPI to designate HRM as a suitable location for the construction of wind turbines.*

This is a complete misinterpretation (or perhaps misrepresentation) of NSPI's two RFPs for renewables issued in 2004: under 2MW (NSPI, 2004a) and 100 GWh (NSPI, 2004b). The under 2MW proposal divided the province into three "locational impact regions", based upon transmission loss factors; HRM happened to be in the central region, where there was no locational financial penalty (or gain). Neither of these RFPs stated what

type of renewable energy was to be used; in fact, in the under 2MW proposal, there was at least one successful biomass submission.

Policy proposal SW-31 states:

> *With federal, provincial and industry partners HRM shall support the development of an economically and environmentally sustainable wind turbine industry through the development of a Wind Energy Generation Master plan for the HRM.*

This is pure fantasy. First, the provincial government's Electricity Act will do next to nothing to encourage wind development in the province (Hughes, 2004b). Second, Nova Scotia is too small a market to develop and sustain a "*wind turbine industry*" (local construction firms will have the opportunity to build foundations and towers; however, the parts of the turbine used for the generation of electricity will be built under controlled conditions in the supplier's manufacturing facilities) (Boira-Segarra, 2005). Finally, HRM should not be hitching itself to wind energy alone, as there are other viable sources of renewable energy, such as biomass and solar, that should also be pursued.

Summary

The Working Draft of the Regional Municipal Planning Strategy covers a great deal of important material but fails to adequately address the twin problems of energy usage and energy security. Ideally, a new principle should be added to the Regional Plan, specifically dealing with energy; however, since the principles were developed about two years ago, it is unlikely that this will take place.

The Regional Plan is a 25 year document – one can say with confidence that over the next 25 years there will be significant changes in the way we obtain energy and how we use it. The Regional Plan and recent actions by HRM staff and council do not bode well for HRM's future energy security, consider:

- Natural gas is to be installed at the Dartmouth Sportsplex on the pretext that this will save money, reduce greenhouse gas emissions, and act as an anchor for other natural gas projects in Dartmouth. In the short-term, this is true; however, given that this project will be relying on imported natural gas (potentially from unstable regions of

the world), a safer bet would be to make the Sportsplex part of a district heating system.

A Dartmouth district heating system could operate with Nova Scotia Power's Tufts Cove as the heat source for the project. Granted, at present NSP appears to be a less-than-willing partner for such a project; however, if they were able to obtain emissions credits for such a project, they would probably show more interest.

- Staff recommending a "fast ferry" from Bedford (Mill Cove) into Halifax and downplaying the potential of a commuter rail system from Sackville into Halifax. This is an extremely short-sighted view of our energy future, if for no other reason than a rail service can run on electricity that can be generated from any number of sources (biomass, solar, wind, coal) whereas the ferry will probably run on a fossil fuel.

The Regional Plan must take a stronger stand on the energy security of HRM. Failure to do so will mean that the Plan will be outdated long before 2030.

References

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