Blue Highlands Citizens Coalition

~ Wind is a Renewable Resource...our Niagara Escarpment Landscape Isn't ~

P.O. Box 200 ~ General Delivery ~ Feversham, ON ~ N0C 1C0
Telephone: 705-446-1798 e-mail: bhcc_info@yahoo.com

March 10, 2006

SENT VIA E-MAIL

Our Energy, Our Future
900 Bay Street,
Hearst Block, 4th Floor
Toronto, Ontario
M7A 2E1

Dear Sirs/Mesdames:

Re: Supply Mix Advice Report

We wish to submit the following comments regarding the OPA's "Supply Mix Advice Report" dated December , 2005.

By way of background, the Blue Highlands Citizens Coalition is an organization of residents of The Town of the Blue Mountains and of The Municipality of Grey Highlands who have significant concerns regarding the proposed installation by Brascan Power Wind of the "Blue Highlands" wind power generation facility on and in close proximity to lands subject to the Niagara Escarpment Plan.

Our comments regarding the Supply Mix Advice Report are as follows:

1. Environmental Impact of Wind Power

The Report includes a number of assertions regarding an alleged benign environmental impact of wind power development. For example, at page 32 the Report states that wind power

has a "relatively low" environmental impact. In Table 1.2.4 on page 37, wind power is described as having a "low environmental impact".

We note that these assessments of the environmental impact of wind power development appear to have been arrived at on the basis of a weighting of various environmental categories, as specified in Table 1.2.7 on page 30. The weightings were apparently derived from a European Commission study of the life-cycle impacts of different generation options.

We are concerned by the application of the weightings arrived at by the EC life cycle impact study in the very general manner which is provided for in the Supply Mix Report. For example, a weighting of "1" was allocated to "Land Use". Presumably the EC study arrived at that weighting based on an analysis of land use impacts of existing European wind generation facilities. It is inappropriate to allocate such a weighting to wind power development in the general manner provided for in the Supply Mix Report. Put another way, it may be appropriate to allocate a low weighting to land use impacts in the context of installed European wind power generation facilities, on the basis that sound European planning and siting principles have resulted in the installation of European wind power facilities in appropriate locations and to a scale and scope of development which is compatible with surrounding landscapes. However, it is not appropriate to apply that low land use impact weighting to wind power development generally. The low impact will only result if appropriate locations are selected through sound planning and siting processes.

A good case in point is provided by the example of the proposed "Blue Highlands" wind power project. The project is proposed to be installed on the Blue Mountains west of Collingwood in a strip of land ranging from about 500 metres to about 2.5 kilometres in width and surrounded on three sides by lands subject to the Niagara Escarpment Plan. In such a location, a 50 MW wind power facility will have an obvious and adverse impact on the environmental land use planning policies of the Niagara Escarpment Plan, including the preservation of the physical attractiveness of the Niagara Escarpment landscape and of various Niagara Escarpment features. In such a context, to describe the environmental impact of wind power development as low, and to allocate to wind power development an environmental weighting of just "1" (as is done by Figure 1.2.7 of the Supply Mix Report) is obviously inappropriate.

We note that there is ample evidence of the adverse environmental impacts of inappropriately-sited wind power development. For example, in its policy regarding wind power development, the Nature Conservancy of Canada has adopted a precautionary approach, observing that while wind power is emissions free, it is not impact free. The Niagara Escarpment Commission has also taken a precautionary approach, and indeed has adopted a prohibitive policy with respect to large-scale wind power development on lands subject to the Niagara Escarpment Plan.

It is well-recognized that wind power is an emissions-free generation option. However, that fact should not, in and of itself, result in a general "low impact" label being allocated to wind power development. Indeed, inappropriately-sited wind power development may well have adverse environmental impacts which significantly outweigh the benefits. Unless due recognition is given to the potential for adverse impacts stemming from wind power development, the people of Ontario run the risk of suffering those adverse impacts under a general guise of "clean and green" wind power generation.

2. Cost of Wind Power

The Supply Mix Report observes, at page 12, that both "consumers and businesses place significant emphasis on the impact of supply choices on electricity prices and the provincial economy generally". On page 12, the Report notes that the vast majority of consumers in Ontario rank rate stability as "highly important". The Supply Mix Report also observes, at page 20, that the price of wind power is "relatively high". The relatively high cost of wind power is confirmed by the content of Figure 1.2.9 on page 34.

We are, nevertheless, concerned that the Supply Mix Report does not set out a full consideration of the cost of wind power. We are also concerned that the data regarding the true cost of wind power development is not consistent with other credible studies of the cost of generating electricity.

By way of example, the Royal Academy of Engineering has commissioned a study of the comparative costs of generating electricity from a number of available technologies. A commentary relating to that study is attached as Appendix A. As is clear from Figure 1 on page 2 of that commentary, the costs of wind power, whether generated onshore or offshore, is significantly higher, on a relative basis, than the cost differential which is suggested by the

http://www.raeng.org.uk/news/publications/list/reports/Cost_Generation_Commentary.pdf

Supply Options Report. For example, the Royal Academy of Engineering study indicates that onshore wind power is approximately 2.5 times as expensive as nuclear power, and that offshore wind power is nearly three times as expensive as nuclear power. The Supply Options Report, on the other hand, indicates that wind power is only about 25% more expensive than nuclear power. Such discrepancies in information are not helpful to Ontarians as they consider the economic ramifications of various supply options.

The Supply Options Report is also deficient in that it does not address the additional, or "hidden" costs of wind power stemming from the fact that because wind power is an intermittent power source, wind power installations must always be supported by appropriate backup generation capacity to ensure power supply during those periods when the wind is not blowing or when the wind is blowing at sub-optimal speeds. The Royal Academy of Engineering study takes due note of this cost issue, and addresses the issue in its presentation of the cost of wind power. Ontarians need to be aware of this issue so as to ensure a full understanding of the true cost of wind power.

Another cost-related issue which the Supply Mix Report fails to address is the relative inefficiency of wind power in respect of its use of transmission and distribution infrastructure. Ontario's grid is expensive to maintain, and new distribution and transmission capacity is expensive to build. The relatively low efficiency of wind-powered turbines, which typically does not exceed 30% and is often lower, means that grid capacity allocated to wind-generated power distribution is similarly inefficient. The economic ramifications of those inefficiencies are not addressed by the Supply Mix Report. Unless and until those inefficiencies are identified for, and understood by, Ontarians, the Province's residents cannot make informed and responsible decisions regarding the viability of wind power as a viable generation option.

3. The Reliability of Wind Power

The Supply Mix Report notes on page 12 that "the vast majority of consumers in Ontario rank availability [and] reliability of supply...as highly important". Notwithstanding that observation, however, and notwithstanding the inherent unreliability of wind power as a secure power source, the Report goes on to recommend that 15% of Ontario power generation be contributed by wind power by 2025.

The Supply Mix Report does not provide adequate analysis and evidence that indeed wind power can make such a significant contribution to Ontario's future supply mix. On the other hand, there is ample evidence in support of the proposition that such a significant reliance on wind power as a generation option will not come close to addressing the desire on the part of Ontarians for available and reliable power supply which the Supply Mix Report identifies.

In particular, the E.ON Netz GmbH "Wind Report 2004" which is attached as Appendix
http://www.eon-energie.de/bestellsystem/frameset_eng.php?choosenBu=eonnetz&choosenProfile=&choosenId=&target_only=
D provides stark evidence of the reliability and availability risks associated with placing such a heavy reliance upon wind power as a generation option. E.ON Netz manages the transmission grid in Schleswig-Holstein and Lower Saxony, about a third of Germany, hosting 6,250 MW of Germany's 14,250 MW installed wind-generating capacity. The E.ON Netz report observes that in 2004 (i) average fed-in capacity was less than one-sixth of the installed wind power capacity, and (ii) during more than half the year, the wind power fed in was less than 11% of the installed wind power capacity. These figures compare very unfavourably to the oft-cited efficiency factor of wind turbines of about 30%, and give rise to serious and credible concerns as to the availability and reliability of wind power to Ontario consumers.

We also note the inherent difficulty, in the context of Ontario's (and particularly southern Ontario's) topography and climate, in implementing a complementary wind and water power generation system. The desirability of such a complementary system is noted at page 64 of the Supply Mix Report, which refers to an incorporation of wind and waterpower and suggests an investigation of "how they can be collected together in an optimal way". Unfortunately, however, the Supply Mix Report does not provide any evidence that indeed such a complementary system is, as a practical matter, a real possibility. Indeed, many of the observations in the Supply Mix Report support the opposite conclusion. For example, the Report correctly observes that although Ontario is shifting to a summer peak power consumption pattern from a winter peak power consumption pattern, the summer period offers the lowest potential for both water power generation *and* wind power generation.

We also note the generally flat terrain in southern Ontario, which offers very few opportunities for the type of water/wind complementary generation system which is referred to in the Supply Mix Report.

Thus we are concerned that the Supply Mix Report does not adequately address the significant availability and reliability issues presented by wind power development in the Ontario

context. Indeed, those issues appear to have been largely ignored by the Report. Given the Report's own observation as to the high importance which Ontarians place on the reliability and availability of their electricity supply, a much more detailed analysis of the ability of wind power to satisfy those critical concerns is essential.

4. Land Use Planning Issues

The Supply Mix Report deals with local land use planning issues in only a cursory fashion. Indeed, the Supply Mix Report observes at page 36 that issues relating to land use planning and local acceptability "tend to arise around specific projects and therefore cannot be adequately addressed in the more general averages that underpin analysis of supply mix". In what local residents may well consider to be an ominous tone, the Report also observes at page 36 that "policies weighted towards overall provincial needs and priorities, in addition to those responding to local needs, can go a long way in reducing risks to electricity supply and reliability". That ominous tone is perhaps manifesting itself by way of the Government's proposed Section 23 of Bill 51, which would have the effect of exempting various undertakings relating to energy generation from the *Planning Act* approval process.

We believe that the land use planning issue is of paramount importance to the question of an appropriate supply mix for Ontario's electricity generation system. In particular, unless appropriate attention is paid to relevant and credible land use planning issues which arise in the context of different supply options, an inefficient allocation of scarce resources will result. In particular, unless the land use planning issues which arise in respect of different supply mix options are fully considered and appropriately addressed at not just a policy level but also at a specific implementation level, undue developer, investor, local resident and Government attention will be focused on the resolution of legitimate land use issues which arise from project proposals which are made in the absence of sound land use planning policies and guidelines. Appropriate policies and guidelines will serve to support responsible and defensible project proposals while also avoiding inappropriate development proposals.

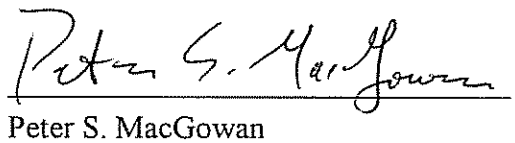
The proposed Blue Highlands wind power project serves as a valid illustration of this point. The competing environmental and land use planning issues which arise in the context of such a proposed project (*e.g.*, Niagara Escarpment landscape protection versus emissions-free electricity generation) are bound to give rise to significant controversy, at both the local and the provincial level. Such controversy is obviously not helpful to the implementation of the

Government's stated policy favouring the development of renewable energy sources. The development of appropriate and balanced land use planning policies is obviously helpful in avoiding such controversies. Good projects should be encouraged, and bad projects should be discouraged. The absence of any meaningful analysis and consideration in the Supply Mix Report of the different land use planning issues which arise in the context of different generation options is a critical missing link in the ability of Ontarians to assess the viability of those different options.

Thank you for the opportunity to submit these comments.

Yours very truly,

BLUE HIGHLANDS CITIZENS COALITION

By: 

Name: Peter S. MacGowan

EXHIBIT A

THE COST OF GENERATING ELECTRICITY
A COMMENTARY
ON A STUDY CARRIED OUT BY PB POWER FOR
THE ROYAL ACADEMY OF ENGINEERING

See attached.

EXHIBIT B

"WIND REPORT 2004"
E.ON NETZ GMBH

See attached.