

May 18, 2007

The Hon.D.McGuinty
Premier of Ontario
Legislative Assembly Building
Queen's Park
Toronto, Ontario
M7A 1A1

Re: Ontario Climate Strategy

Dear Mr. Premier,

The Pembina Institute welcomes the government's decision, announced last November, to develop a climate change strategy for Ontario. In developing such a strategy, Ontario will join Quebec, Manitoba and British Columbia in establishing provincial strategies to reduce greenhouse gas (GHG) emissions.

The Pembina institute is writing to outline the key elements it believes should be included in a climate change strategy for Ontario. In order to be effective, a climate change strategy for Ontario needs to establish overall targets and timelines for GHG reductions, and include specific measures in four key areas: urban form and transportation; energy and electricity; boreal forest conservation; and adaptation. Our comments draw, in particular, on the Institute's recent work in the areas of the sustainability of urban communities¹ and the role of energy efficiency in the future of Ontario's electricity system.² Additional recommendations are made with respect to waste management, agriculture, biofuels and education.

Targets and timelines

Clear targets and timelines are essential to an effective climate change strategy.

¹ See <http://communities.pembina.org/work/smart-growth>

² See <http://energy.pembina.org/ontario/electricity>

Recommendation

1. *Ontario's climate change strategy should ensure that by 2012 Ontario's net greenhouse gas emissions are reduced in proportion to Canada's obligations under the Kyoto Protocol (i.e., a 6% reduction relative to 1990 levels).*

The Intergovernmental Panel on Climate Change (IPCC) and others have highlighted the need for large additional reductions in the longer term.³

Recommendation

2. *In order to establish a clear framework for long-term reductions, an Ontario climate change strategy should target a 25% reduction by 2020 and an 80% reduction by 2050, relative to 1990 levels.*

Transportation and Urban Form

The recent report of Working Group III of the IPCC highlighted the importance of changes in transportation patterns and urban form in reducing GHG emissions.⁴ Actions with respect to transportation and urban form are particularly important in an Ontario context.

Projected GHG growth in Ontario is almost entirely transportation related, and almost completely concentrated in the Greater Golden Horseshoe (GGH) region. This growth is driven by a combination of factors:⁵

- The dominance of low-density, poorly mixed land uses at the urban periphery, resulting in an automobile-dominant urban form that is difficult to service cost effectively with public transit.⁶

³ Matthew Bramley, *The Case for Deep Reductions* (Ottawa: Pembina Institute and David Suzuki Foundation, 2005), 16–18. Also available online at <http://climate.pembina.org/pub/536>

⁴ IPCC, *IPCC Fourth Assessment Report, Working Group III: Summary for Policymakers* (Bangkok: IPCC, 2007), 18.

⁵ Environment Canada, *National Inventory Report 1990–2004* (Ottawa: Government of Canada, 2005), 416. Also available online at http://www.ec.gc.ca/pdb/ghg/inventory_report/2004_report/2004_report_e.pdf

⁶ Even assuming progress on individual vehicle fuel efficiency, the Neptis Foundation (<http://www.neptis.org>) has projected that under business-as-usual scenarios, transportation-related GHG emissions will increase in the GGH region by 42% over the next 25 years. Increases to the numbers of cars, trips and distances-covered that flow from low-density development at the urban periphery simply overwhelm any potential gains from increased fuel efficiency. See IBI Group in association with Dillon Consulting Ltd. and in consultation with Metropole Consulting, *Toronto-Related Region Futures Study: Implications of Business-as-Usual Development* (Toronto: Neptis Foundation, 2002). Also available online at http://209.200.93.249/library/show.cfm?id=60&cat_id=23. Census data from 2006 suggests that this analysis may underestimate the problem since population growth is turning out to be even more concentrated at the periphery, in

- Shifts in the make-up of the passenger vehicle fleet from automobiles to larger and less fuel-efficient minivans and sport utility vehicles.⁷
- Increasing trade-related truck traffic in the Windsor to Quebec corridor.⁸

Reducing transportation-related GHG emissions will require a multidimensional response from the province. Changes in the location and form of urban development are needed to make transit and other less GHG emission-intense alternatives more viable and attractive. A significant strengthening of fuel economy standards for passenger vehicles and light duty trucks will also be required. California and 12 other states, as well as the provinces of British Columbia, Manitoba, Quebec and Nova Scotia, are working to establish tailpipe emission limits for greenhouse gases, effectively requiring improvements in vehicle fuel economy.

As noted in the Pembina Institute's *Building Sustainable Urban Communities in Ontario* report series,⁹ the province has made considerable progress in the reform of its land-use planning policies through revisions to the Planning Act, the adoption of a revised Provincial Policy Statement and the Greenbelt and Growth Plan initiatives. A climate change plan needs to follow through on the implementation of these initiatives if they are to significantly affect the way cities grow. The province needs, for example, to signal a willingness to block the development at the urban periphery that is at odds with these plans and that will further embed GHG emission-intense long-distance automobile commuting patterns.

The integration of infrastructure funding with the province's directions on land-use planning remains a significant area of weakness. The issue of the integration of infrastructure funding with land-use planning and climate change policies needs to be addressed in the province's climate change strategy. Ontario's 2007 budget reached an all-time high for spending on highways (\$1.7 billion). Many of the new projects referenced in the budget are located in the GGH region (e.g., the 404 North, 407 East and GTA East-West Corridor). They seem likely to encourage and facilitate rather than reduce long-distance automobile commuting, resulting in increases to transportation-related GHG emissions.

The province has provided major increases in transit funding, particularly since 2003, although additional stable, long-term funding will be needed to expand transit. In addition, no clear criteria

areas that are virtually impossible to service with transit, than previously thought. As a result, the increase to GHG emissions arising from business-as-usual development scenarios will be higher than 42%.

⁷ Emissions from these vehicles increased from 7,690 kt CO₂ in 1990 to 17,100 kt CO₂ in 2004. (Environment Canada, *National Inventory Report*, 416).

⁸ Emissions from heavy duty diesel vehicles rose from 7,350 kt CO₂ in 1994 to 14,700 kt CO₂ in 2004. (Environment Canada, *National Inventory Report*, 416).

⁹ See <http://communities.pembina.org/pubs?filtertext=ontario%20provincial%20progress%20report>

guiding transit capital investments have been articulated. The recent debates about the rationale for the York subway project have highlighted this issue.¹⁰

Recommendations

3. *In order to address transportation infrastructure related issues, a climate change strategy for Ontario should:*
 - *Commit to increasing immediately the portion of provincial gasoline tax revenues provided to municipalities for transit services to five cents per litre.*
 - *Commit to the assessment of the GHG emission impacts of major infrastructure investments, including the cumulative impacts of their effects on future transportation and development patterns. Projects that lead to net increases in GHG emissions should not receive provincial funding. In the case of transportation projects, those offering the highest absolute reductions in transportation-related GHGs should be given priority for investment.*
 - *Make the consideration of the cumulative effects of facility use and operations (in addition to construction impacts) on GHG emissions a standard item in the terms of reference for environmental assessments of major infrastructure projects such as highways. GHG impacts should also be considered in the assessment of alternatives to projects.*

In addition to changes in urban form and transportation patterns, improvements in vehicle fuel economy will be essential. A climate change strategy for Ontario needs to recognize that a major strengthening of U.S. vehicle fuel economy requirements is likely to follow the next U.S. federal election, particularly as fuel economy improvements are increasingly seen as not only an environmental issue but also as a question of national security. Ontario should anticipate this shift and ensure that the province's automobile sector is positioned to respond to the opportunities that it will present.

Recommendation

4. *Given the anticipated delays in the development of federal fuel efficiency standards, a climate change strategy for Ontario should commit Ontario to joining with other provinces and states, such as California, New York, British Columbia, Manitoba and Quebec, that are working to adopt tailpipe emission standards for GHGs. The strategy should also commit Ontario to ensuring that the province's transportation equipment manufacturing sectors are well positioned to take advantage of significant improvements in North American vehicle fuel economy requirements.*

¹⁰ See, for example, J. Barber, "All aboard the Wal-Mart express," *The Globe and Mail*, March 10, 2007.

Increases in heavy diesel emissions have been driven by a number of factors, including increased cross-border trade with the United States and widespread reliance on just-in-time delivery strategies. Other jurisdictions are making greater use of road pricing mechanisms to internalize the infrastructure and environmental costs of the use of heavy trucks for the long-distance movement of freight,¹¹ with the intention of prompting long-term shifts to more efficient and less GHG emission-intensive options.

5. *A climate change strategy for Ontario should include an initiative to work with neighbouring states and provinces on a pricing regime for the road transportation of freight to promote more efficient and less GHG emission-intensive approaches to goods movement.*

Energy and Electricity

The electricity sector and non-transportation related energy uses are a second key area of focus for an Ontario GHG reduction strategy. The completion of a phase-out of coal-fired electricity generation, for example, would make a significant contribution toward the achievement of Ontario's portion of Canada's obligations under the Kyoto Protocol.

The recent report of the IPCC¹² highlights the central role that energy efficiency and low-impact renewable energy sources will have to play in a global GHG reduction strategy. At the same time, the IPCC notes the "constraints" on reliance on nuclear energy, including concerns over cost, safety, waste management and weapons proliferation.¹³ The Pembina Institute shares these concerns about the role of nuclear energy in a climate change strategy.¹⁴

The province has undertaken a number of major initiatives with respect to energy efficiency and low-impact renewable energy sources over the past few years. These initiatives have included the conservation and renewable energy targets established through the June 2006 Supply Mix Directive to the Ontario Power Authority (OPA), the standard offer contract system for low-impact renewable energy sources, and directives on Conservation and Demand Management (CDM) to the OPA.

However, the Pembina Institute believes that progress can be made in the areas of energy efficiency and the development of low-impact renewable energy sources beyond the targets set by the June 2006 directive. In fact, the Pembina Institute notes that the OPA itself has concluded that the

¹¹ See Victoria Transport Policy Institute, TDM Online Encyclopedia, "Road pricing" at <http://www.vtpi.org/tdm/tdm35.htm>

¹² Working Group III, Intergovernmental Panel on Climate Change, *Summary for Policymakers: IPCC Fourth Assessment Report* (Bangkok: IPCC, 2007), 18. Also available online at <http://www.ipcc.ch/SPM040507.pdf>

¹³ Ibid.

¹⁴ Mark Winfield, "Nuclear Power and Climate Change," briefing note (Toronto: The Pembina Institute, May 2007). Also available online at <http://www.pembina.org/pub/1451>

economic net benefits of the \$4–5 billion expenditure on CDM activities proposed for the preliminary Integrated Power System Plan (IPSP) being developed by the OPA will be in the range of \$5–\$9 billion. These benefits would result from avoided generation and transmission infrastructure costs.¹⁵ Avoided environmental and health costs would constitute additional benefits.

These conclusions suggest that much higher levels of cost-effective savings through energy efficiency measures are possible. Similarly, since the OPA’s preliminary 2027 target for solar photovoltaic energy (40MW) will be met by a single project in southwestern Ontario,¹⁶ it once again appears that low-impact renewable energy can play a larger role in the province’s future electricity system than the OPA’s current plans anticipate.

Recommendations

6. *In order to realize the potential GHG reductions through additional improvements in energy efficiency, the province’s climate strategy should:*
 - *Increase Ontario’s short, medium and long-term targets for energy efficiency to levels that are cost-effective relative to investments in new supply.*
 - *Clarify institutional arrangements regarding energy efficiency leadership and strategy.*
 - *Consistent with the approach of leading U.S. states such as California, implement rolling three-year reviews of the energy efficiency provisions of the building code and of equipment standards under the Energy Efficiency Act.*
 - *Address training and capacity needs with respect to energy efficiency, including the training and certification of CDM program managers and staff, contractors and building tradespeople, outreach and technical assistance personnel, and building operators.*
 - *Use financial incentives to accelerate the turnover of existing energy inefficient stocks of equipment and to encourage energy efficiency improvements in buildings.*
 - *Integrate electricity and natural gas efficiency programs and measures wherever possible, and establish energy efficiency program delivery requirements and rate incentive mechanisms for gas utilities that are not currently providing energy efficiency programs.*
 - *Commit to the adoption of regulations under Bill 21, the Energy Conservation Leadership Act, requiring that public sector agencies develop energy conservation plans and that such plans include GHG reduction targets consistent with the overall GHG reduction targets identified earlier in this letter — in Recommendations 1 and 2.*

¹⁵ Ontario Power Authority, *Revised OPA Discussion Paper 3: Conservation and Demand Management* (Toronto: OPA, 2007), 32. Also available online at http://www.powerauthority.on.ca/ipsp/Page.asp?PageID=122&ContentID=4514&SiteNodeID=198&BL_ExpandID=144

¹⁶ T. Hamilton, “Ontario goes solar,” *The Toronto Star*, April 26, 2007.

7. *In order to realize potential GHG reductions through accelerated deployment of low impact renewable energy options, the province's climate change strategy should:*
 - *Expand the standard offer mechanisms for low-impact renewable energy and remove barriers to the integration of these energy sources into the electricity grid.*
 - *Establish a research and development program on energy storage and grid integration of intermittent low-impact renewable energy sources.*
8. *Ontario's climate change strategy should remove the artificial cap imposed by the Ontario Power Authority on high-efficiency combined heat and power projects and establish a combined standard offer and request for proposals program for combined heat and power projects.*
9. *Ontario's climate change strategy should commit via regulation to the phase-out of coal-fired electricity generation no later than 2011.*
10. *Ontario's climate change strategy should commit to meeting remaining electricity supply needs on the basis of a non-technology-specific open-bid process, with a minimum environmental (including GHG emission) performance requirement equivalent to that of combined cycle natural gas facilities.¹⁷ There should be no extraordinary arrangements or guarantees for particular technologies.*

Many of these directions were laid out in detail in the Pembina Institute's April 2006 report, *A Quick Start Energy Efficiency Strategy for Ontario*¹⁸ and in earlier *Power for the Future* studies.¹⁹ Currently, the Pembina Institute is developing a report on the effectiveness of the province's existing energy efficiency initiatives.

With respect to the major non-electricity emissions of GHGs, Ontario's climate change strategy should make clear the province's position that the federal government's proposed regulatory framework for air emissions, which includes proposed GHG intensity targets for heavy industry sectors and electricity generation, is inadequate. The climate change strategy should signal, in the absence of a more effective federal approach, Ontario's willingness to work with other interested provinces and U.S. states to develop a stronger system to reduce emissions from large final emitters of GHGs. Such a system should be based on absolute emission targets, an approach that is more consistent with the GHG targets and timelines that the Pembina Institute recommends Ontario adopt.

¹⁷ This requirement must be met by generating facilities themselves, not via credits or offsets.

¹⁸ <http://energy.pembina.org/pub/218>

¹⁹ M. Winfield et al., *Power for the Future: Towards a Sustainable Electricity System for Ontario* (Toronto: Pembina Institute and Canadian Environmental Law Association, 2004). Also available online at <http://energy.pembina.org/pub/166>

The Conservation of Boreal Forest

It is important that the province's climate change strategy not only reduce GHG emissions but also ensure that sequestered stocks of carbon not be re-released into the atmosphere. The province's boreal forests play a particularly important role in this context. The Pembina Institute has estimated that 47.5 billion tonnes of carbon are stored in the Canadian boreal forest,²⁰ with an additional 173 million tonnes being sequestered each year.²¹ Disturbance and exploitation of the forest can result in the release of stored carbon and a reduction in the level of net sequestration.

Recommendation

11. *A climate change strategy for Ontario should commit to an overall planning framework for the boreal forest in Ontario prior to the authorization of further development. The planning framework should ensure the continued ecological services and functions of the boreal, including carbon storage and sequestration, and also ensure that appropriate policy and economic signals are provided for the conservation of the boreal.*

Adaptation and Impacts

Given the increase in global GHG concentrations in the atmosphere that has already occurred, some climate change impacts are inevitable, even in the context of effective GHG reduction strategies. The impacts of climate change in Ontario are increasingly well understood. The anticipated impacts include:²²

- Increased incidences of severe weather.
- Accelerated deterioration of infrastructure due to weather effects.
- Smog episodes of greater intensity and frequency as a result of increased summertime temperatures.
- More severe impacts on human health and agriculture due to the combination of increased heat and smog.
- Reductions in water supply in southern Ontario from both groundwater and surface sources.

²⁰ M. Anielski and S. Wilson, *Counting Canada's Natural Capital: Assessing the Real Value of Canada's Boreal Ecosystems* (Ottawa: Pembina Institute and Canadian Boreal Initiative, 2005), 43. Also available online at <http://www.pembina.org/pub/204>

²¹ Ibid, 48.

²² Environment Canada, *The Canada Country Study: Climate Impacts and Adaptation*, Ontario Region Executive Summary, <http://www.on.ec.gc.ca/canada-country-study/intro.html>, accessed December 10, 2002. See also Q. Chiotte et al., *Towards An Adaptation Action Plan: Climate Change and Health in the Toronto-Niagara Region* (Toronto: Pollution Probe Foundation, October 2002).

- Increased risks of contamination of water sources due to extreme weather events.

In addition, there are emerging concerns regarding the impacts of vector-borne and rodent-borne diseases (e.g., West Nile virus, hantavirus and Lyme disease) as the range of potential vectors for these diseases expands northwards as a result of climate change.²³

Recommendation

12. *A climate change strategy for Ontario should include a credible, comprehensive and adequately-resourced climate adaptation strategy that:*²⁴
- *Strengthens the capacity of provincial and local public health agencies to respond to and manage the health impacts of climate change.*
 - *Incorporates consideration of the impacts of climate change into source water protection planning under the Clean Water Act, and incorporates the granting of permits to take water under the Ontario Water Resource Act.*
 - *Commits to ensuring the consideration of the implications of climate change in the planning, design and environmental assessment of major infrastructure.*

Waste Management

Waste management activities constitute approximately 4% of Ontario's GHG emissions.²⁵ Waste reduction and diversion initiatives represent the most effective approaches to reducing GHG emissions and the amounts of waste requiring disposal. Energy-from-waste projects are a particularly high GHG emission-intense waste management strategy: their GHG emissions are 33–90% higher per unit of electricity output than coal-fired plants.²⁶

Recommendation

13. *The province's strategy to achieve the 60% waste-diversion target it committed to in 2004 should be integrated into the province's overall climate change strategy. Given their high GHG emission profile, energy-from-waste projects should not form part of the province's waste management and climate change strategies.*

²³ Olivia Nugent, *A Primer on Climate Change and Human Health* (Toronto: Pollution Probe, 2004), 35–42.

²⁴ On key elements of a climate adaptation strategy, see the recommendations of the federal Commissioner for the Environment and Sustainable Development, *2006 Report to the House of Commons* (Ottawa: Minister of Supply and Services, 2006), Chapter 2. Also available online at <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20060902ce.html#ch2hd3c>

²⁵ Environment Canada, *National Inventory Report*, 416.

²⁶ See The Pembina Institute et.al., "Incineration of Municipal Solid Waste: Impact on Global Warming," fact sheet (May 2007), http://pubs.pembina.org/reports/Incineration_FS_Climate.pdf

Agriculture, Biofuels and Education — Additional Recommendations

14. *Ontario's climate change strategy should include a credible package of regulatory initiatives and financial incentives to reduce GHG emissions from agricultural sources.*
15. *Ontario's climate change strategy should recognize that biofuels have the potential to reduce greenhouse gas emissions. At the same time the strategy should commit to policies to ensure that the use of biofuels actually results in net reductions in GHG emissions (on a life cycle basis) and that the other environmental and social impacts of biofuel production are minimized.*
16. *Ontario's climate change strategy should include a long-term public education program on climate change science, impacts and solutions.*

The Pembina Institute believes that these recommendations can provide the basis for an effective climate change strategy for Ontario. The Pembina Institute would be pleased to discuss these suggestions with you, your staff or your officials.

Yours sincerely,



Marlo Reynolds, Ph.D.
Executive Director



Mark S. Winfield, Ph.D.
Director, Environmental Governance

Cc: The Hon.L.Broten, Minister of the Environment
The Hon.D. Cansfield, Minister of Transportation
The Hon.D Caplan, Minister of Public Infrastructure Renewal
The Hon. D.Duncan, Minister of Energy
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