TORONTO **STAFF REPORT**

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To: Works Committee

From: Barry H. Gutteridge, Commissioner of Works and Emergency Services

Subject: Emissions Reduction Credit and Trading – Status Report
All Wards

Purpose:

To summarize and report on a study entitled, "Study of Emissions Trading For Smog Precursors and Greenhouse Gases" (Phase I and II), and to discuss the implications for development of a City position on emissions reduction credit and trading.

Financial Implications and Impact Statement:

There are no financial implications to the City of Toronto resulting from this report.

Recommendation:

It is recommended that this report be received for information and that the technical reports "General Analysis of Emissions Trading and Its Effects in Ontario" (May 2002) and "Environmental and Economic Effects of Emissions Trading by the City of Toronto" (December 2002) be made available for public distribution.

Background:

In 1998, the International Council for Local Environmental Initiatives (ICLEI) completed a study for the Toronto Atmospheric Fund (TAF) entitled, "Design of a Carbon Emissions Pilot Trade for Toronto". City staff participated in the consultations and worked directly on the study. City Council, at its meeting of October 3, 2000 adopted Report No 17, Clause 52 (e) of the Works Committee entitled, "Greenhouse Gas Emissions Reduction Trading" (August 30, 2000). Subsequently, City Council also adopted at its meeting of November 6, 2001 Works Committee Report No. 16, Clause 11, entitled "Emissions Trading - Status Report" (October 2, 2001). This report identified the need for a corporate emissions trading policy to be developed using a consultative stakeholder process.

In December 2002, Dewees Consulting Limited completed a study for the City of Toronto that examined the City's potential role in emissions trading from an environmental and economics perspective.

Comments:

Before summarizing the study findings, it is important to define the basic terms relating to the concept of emissions trading. Emissions "trading" refers to the act of buying and selling Emissions Reduction Credits (ERC) between entities. An ERC is a unit of emissions reduction measured in tonnes and registered as a credit in the name of the entity responsible for the reduction. ERCs have a monetary value based on supply and demand from a commodities-like market.

It is important to know that trading of ERCs does not itself reduce pollution. However, ERCs create a market incentive to reduce pollution that has been reputed to be cost-effective and more efficient than regulations alone. For the City, revenue from ERCs could be placed in a reserve fund dedicated to emissions reduction.

Overview of the Dewees Study - Phase I and II

The study was divided into two phases. The Phase I study was entitled, "General Analysis of Emissions Trading and its Effects in Ontario" (May 2002). It examined the effects of emissions trading in general, including the environmental effects and financial implications of emissions trading. The study also included a review of existing trading systems, and an analysis of a set of simplified cases involving emissions reduction projects that give rise to emissions trading opportunities. Of particular note in this study was the review of the Title IV sulphur dioxide trading system under the Clean Air Act Amendments (1990) in the U.S. In this example, emissions trading resulted in savings estimated at hundreds of millions of dollars per year compared to the same emissions reduction that would have occurred without trading.

The Phase II study was entitled, "Environmental and Economic Effects of Emissions Trading by the City of Toronto" (December 2002). It examined specific opportunities for emissions trading by the City of Toronto. Six case studies were selected to illustrate their potential for creating and registering ERCs. The six case studies were: Low-sulphur fuel (gasoline and diesel) purchase; Biodiesel purchase; Better Buildings Partnership; Waterfront Integrated Energy Concept; TAF's Home Rewards Program and Keele Valley landfill project.

The environmental and financial implications of emissions trading for these case studies were examined based on the analytical principles developed in Phase I. The analysis provided the basis for identifying several strategic policy options on emissions trading that the City should consider. Overall, the study has provided much information that will be useful to the City in the development of a City Emissions Reduction Credit Trading Policy. Detailed comments and observations on the study are appended to this report.

City Policy on Emissions Trading

While there is an inter-departmental emissions trading working group, there is currently no staff position on how the City's ERC's should be used. We do agree that City emissions reduction credit trading policy should be consistent with the work being done on the comprehensive Corporate Air Quality Strategy as part of the City's overall work on air quality improvement.

Conclusions:

Emissions reduction credit trading has become increasingly important as the Provincial and Federal governments continue to endorse its potential for improving air quality and mitigating the effects of global warming and climate change. This report identifies the development of a City policy on emissions trading as a tool that could assist staff in negotiating for ERCs and protect the City's achievements in air quality improvement. To this end, Works and Emergency Services staff, in consultation with the emissions trading working group, are drafting a City Emissions Trading Policy for staff review by the end of 2003.

The City of Toronto's work to date has been at the forefront of municipal policy work on emissions trading and is being sought by groups such as the Clean Air Council, Provincial and Federal Governments, and other Canadian municipalities. Accordingly it is appropriate to make the City's study available to interested parties.

Contact:

John Warren, P.Eng.
Director of Environmental Services
Tel: 416-397-4625
Fax: 416-392-1456
E-mail: john_warren@toronto.ca

Drew Shintani
Policy and Research Analyst
Tel: 416-392-5277
Fax: 416-392-1456
E-mail: dshintan@toronto.ca

William G. Crowther, P.Eng.
Executive Director, Technical Services

Barry H. Gutteridge
Commissioner, Works and Emergency Services

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List of Attachments:
Appendix A – Detailed Study Information

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Glossary of Terms

Air shed	This term is used interchangeably with air management zone. It is a conceptual zone of air that varies by pollutant and is arbitrarily defined for management purposes. The term recognizes that transboundary pollution is based on air sheds that go beyond geo-political boundaries. In terms of local air quality and regional pollutants (NO and SO2), Ontario's air shed has been defined as the Windsor to Quebec corridor by PERT. In terms of CO2, the air shed is the earth's atmosphere since the effects of CO2 are global.
Cap	The Province has set emission limits or "caps" on the electricity sector in Ontario. In the event that electricity generators cannot meet their caps, they are able to buy ERCs and apply them against their emissions to come into compliance.
CAQS	The comprehensive Corporate Air Quality Strategy is a City initiative (TAF funded) to improve air quality. It first appeared as Recommendation 21 in the Environmental Plan, which was adopted by City Council at its meeting of April 11, 12, 13, 2000.
Code	Ontario Emissions Trading Code. Issued by the Air Policy and Climate Change Branch of the Ministry of the Environment in December 2001. The Code sets the rules for emissions trading specific to nitric oxide (NO) and sulphur dioxide (SO2).
Due diligence	An entity has exercised due diligence when reasonable effort has been used to mitigate risk.
ERC	Emission Reduction Credit.
IPCC	The Intergovernmental Panel on Climate Change is a research branch of the Kyoto Protocol under the auspices of the United Nations. The IPCC provides the scientific rationale for the effects of CO2 including climate change.

PERT	The Pilot Emissions Reduction Trading project. A pilot study set up by the Province (1996) with industry to learn about emissions trading through practical experience.
Re-investment	Using revenue from the sale of ERCs and re-investing the funds into environmental initiatives that will lead to further emissions reductions.
Trading	A unit of emissions reduction measured in tonnes and registered as a credit in the name of the entity responsible for the reduction. ERCs have a monetary value based on supply and demand from a commodities-like market.

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Costs per Tonne Comparisons

Table 1 presents information taken from the Dewees study to compare cost/tonne for reducing emissions against the hypothetical market value for emission credits traded. The market value is the nominal price that a buyer is willing to pay a seller for these ERCs. At the present time, prices are believed to be low until such time that demand for credits increases. It is important to note that these prices do not represent the true cost of the reduction, which could be substantially higher.

The study goes on to develop theoretical cost thresholds that could be used to determine whether or not initiatives should be undertaken at all, by considering environmental importance (V1), financial importance (V2) and a balanced perspective (V3).

Select information from the case studies has been summarized in Table 1.

The Phase II study reviews and examines these specific City initiatives based on their cost/tonne for emissions reduced. For example, for the low-sulphur fuel purchase, the cost/tonne of SO2 reduced is $7,400. While this cost may seem expensive, additional information is required to provide context in the form of sulphur reduction costs that may have been paid by other organizations or governments as a basis for comparison. Furthermore, particulate matter (PM) is also being reduced but does not factor into the analysis because there is no market for reduction credits relating to this pollutant at this time. The ERCs resulting from this initiative are not considered to be “anyway” credits and will be discussed further in Appendix 3.

Continuing with the low-sulphur example, potential monetary values for SO2 (V2 - finance) are based on the nominal value of $200 being paid for the credits in an open, commodities-like market. If environmental concerns were the only important factor to the City (as opposed to financial), then it might undertake projects up to $1000/tonne of SO2 reduced (V1). If a balance between environment and financial concern is sought, then the City could undertake projects up to $500/tonne of SO2 reduced (V3). These values and terms will provide a theoretical framework for the City to consider when developing an ERC Corporate Policy based on environmental economics.

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Table 1 - Case Studies Summary

	Low-sulphur	Biodiesel	Better Buildings	Waterfront	Home Rewards	Keele Valley
Pollutants Affected						
NO				√		
SO_2	√			√		
CO_2		√	√	√	√	√
Current Cost/tonne						
NO				TBD		
SO_2	$7,400			TBD	Free	Free
CO_2		$179 - $235	$15	TBD	N/A	N/A
Anyway Credits?	No	No	No	TBD	Yes	Yes
Price Threshold						
V1 – environment	$1000	$20	$20	TBD	$20	$20
V2 – finance	$200	$2	$2	TBD	$2	$2
V3 – balanced	$500	$10	$10	TBD	$10	$10

N/A – Not applicable because any potential ERCs are considered anyway credits in the study. See section 3 on Anyway Credits in this staff report.
TBD – To be determined.
Note – This summary table was recreated from information contained in the Dewees study - Phase II. Any ERCs illustrated in this table are subject to final determination regarding ownership. See section 5 on Ownership of Credits in this staff report.

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Additional Items

Anyway Credits

According to the study, the term "anyway credit" refers to credits that have been derived from actions that would have occurred anyway, with or without emissions trading. The study proposes an uncommon and restrictive definition of anyway credit that disqualifies ERC creation for any project that was not “motivated” by emissions trading. Applying this definition could disqualify the NO, SO2 and CO2 ERCs attributable to the Keele Valley landfill (as well as at other City landfills) that might otherwise qualify under the Province's program as well as the Kyoto Protocol. Thus, if the City did not register the same ERCs, other parties would then be in a position to register and sell the ERCs at their discretion, which would undermine the City's pollution reduction efforts. At the present time, the ownership of these ERCs is in dispute and have not been registered.

It is important to note that landfill credits represent the greatest amount of ERCs in terms of quantity and asset value to the City. Should the City choose to use these ERCs, the CO2 portion of the landfill credits would be critical in terms of the City addressing its 20% CO2 reduction target by 2005 for City-wide CO2 emissions.

The Province’s Emissions Trading Code sets out the rules for the program and is specific to nitric oxide (NO) and sulphur dioxide (SO2). Section 5.4.1 of the Code defines anyway credits under the heading of “real” as follows:

"An emission reduction is real if it results solely and specifically from the actions taken in the emission reduction project and could not occur in the absence of the emission reduction project”.

This program recognizes ERCs that were created as far back as January 2000 when the Province announced its intent to introduce its ERC program. Since the City’s registration of NO and SO2 would fall under the jurisdiction of the Province's program, it is advisable that the City use the common definition of “real” used in the Ontario Emissions Trading Code for its corporate policy to address anyway credits. With respect to CO2, the City should comply with the work being carried out under the Kyoto Protocol and in particular the standards that have been established under the Intergovernmental Panel on Climate Change. These standards are also being used under Canada’s Climate Change program and would include ERCs from projects that were required under legislation such as environmental assessment.

Voluntary Reduction Targets

In the Ontario trading program, only the electricity sector is required to meet emission limits by purchasing ERCs from other entities. It is the Province's intent to cap emissions from other sectors and it has begun industry consultations in 2003.

Ownership of Credits

The Toronto Atmospheric Fund (TAF) has been proactive on the issue of ownership and has developed a Carbon Credit Transfer Agreement for participants in their Home Rewards program. This agreement would effectively transfer ownership of any CO2 ERCs resulting from the program to TAF. It is evident that TAF has exercised due diligence in its work on ownership. However, this is not happening across the Corporation. A Corporate Policy on Emissions Trading is required to articulate the importance of acquiring ownership of ERCs and set out a mandate, protocol, templates and procedures for departments to follow.

Downwind Effects and Airshed Approach

The study discusses the potential air quality implications of the City of Toronto engaging in ERC trades. In an example from the study, if the City sold CO2 ERCs to a coal-fired electricity generator operating in Toronto's airshed it would increase the discharge of SOx, NOx , PM and air toxics at the local level because all these pollutants share a common point source. The City should be aware of transboundary effects on other municipalities based on wind direction and speed. To address the problem of transboundary pollution, the Provincial emissions trading program includes 12 U.S. states that are known to affect Ontario's air quality. The concept of an airshed approach is being reviewed as part of the work involved in developing the City's comprehensive Corporate Air Quality Strategy.

Corporate Policy on Emissions Trading

The City's purchasing policy has no clear direction on the issue of emissions credits that might be attributable to initiatives that could lead to credits. Staff tried unsuccessfully to acquire ownership of credits through the tender process for the City's low-sulphur fuel purchase. To this end, all of the City's potential ERCs, including those resulting from landfill, remain in dispute and have not been registered.

The work of the comprehensive Corporate Air Quality Strategy is related to the Emissions Trading Corporate Policy but should not delay the work being done on the policy. Since many of the same staff are working in both areas, it is unlikely that a delay would occur and more likely that both initiatives will move forward as appropriate.