Ontario Public Health Association
l'Association pour la santé publique de l'Ontario
Established/Établi 1949

Briefing Note:
Transboundary Air Pollution in Ontario

Air Quality Impacts re: Transboundary Air Pollution

On June 16, 2005, the Ministry of the Environment (MOE) released a new report, "**Transboundary Air Pollution in Ontario**", that estimates the health and environmental costs of U.S. air pollution on Ontario. It documents that:

- Of the 12 smog episode days in Ontario in 2003, 6 were due to ozone and PM2.5 combined, 5 were due to ozone alone, and 1 was due to PM2.5 alone;
- While the 1-hour maximum for ozone has come down over the last 23 years (from about 118 to 108 ppb), both the summer and winter means for ozone have gone up (from about 26 and 16 ppb respectively to about 32 and 20 respectively);
- The Canada Wide Standard (CWS) for ozone (i.e. 4th highest 8-hour Maximum, 65 ppb) was surpassed in most communities in southern Ontario between 2001 and 2003;
- The Canada Wide Standard (CWS) for fine particulate matter (PM2.5) (i.e. 98th percentile Daily Average, 30 ug/m3) was surpassed in many communities including Hamilton, Burlington, Toronto, Brampton, London, Windsor and St. Catharine's between 2001 and 2003;
- Modelling indicates that, during high ozone episodes, U.S. sources are responsible for between 84 and 99% of the ozone in the air in southwestern Ontario (see Figure 1 below);
- Modelling indicates that, when PM2.5 levels are highest, U.S. sources are responsible for greater than 49% of the PM2.5 in the air in southwestern Ontario (see Figure 2 below); and
- Modelling indicates that, on the average day, Ontario's contribution to air levels of PM2.5 are much greater than on high PM2.5 days (see Figure 3 below).

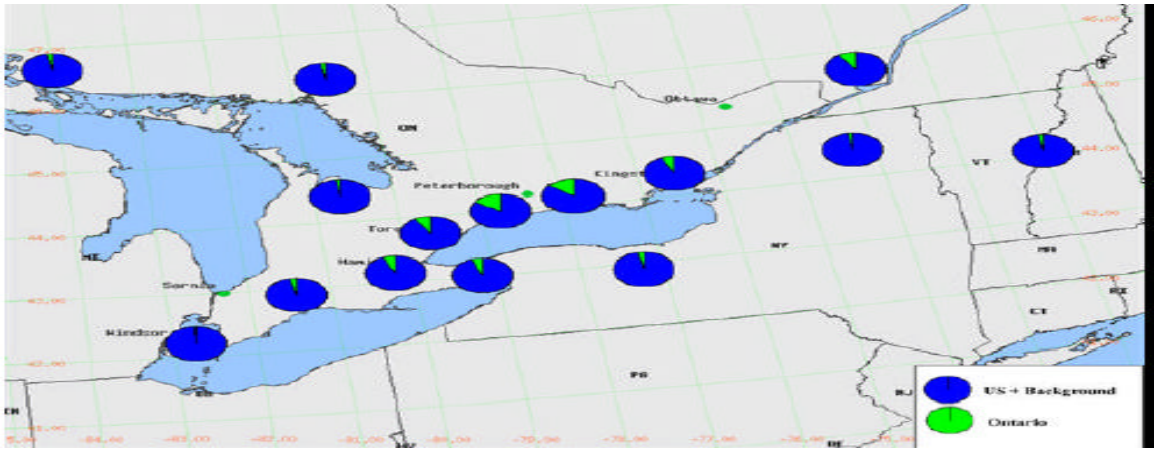

Figure 1: US Contribution to Ozone, Ontario

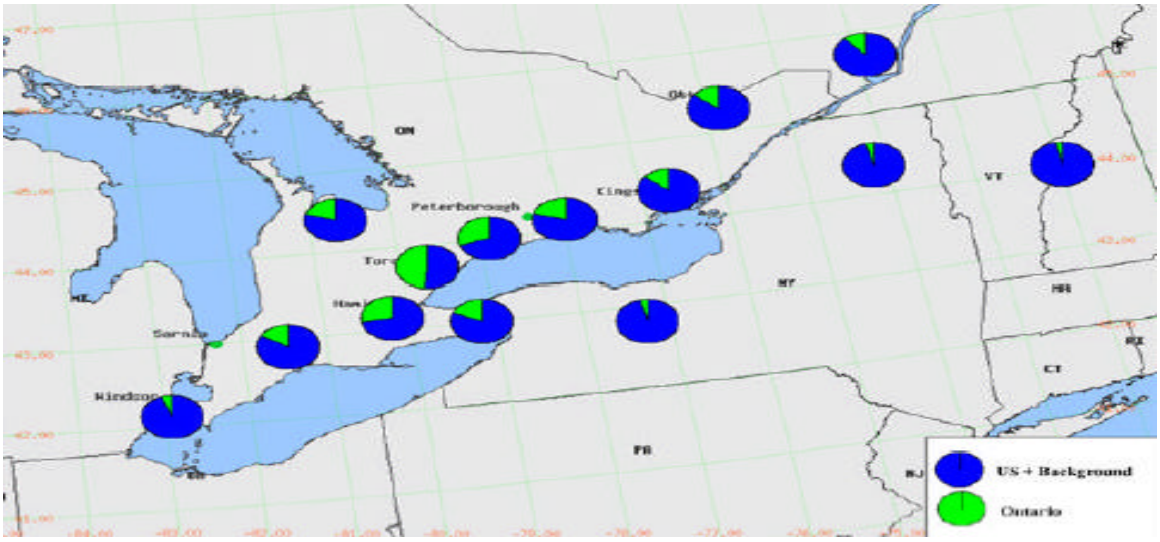

Figure 2: US Contribution to $PM_{2.5}$, Ontario, High $PM_{2.5}$ Days

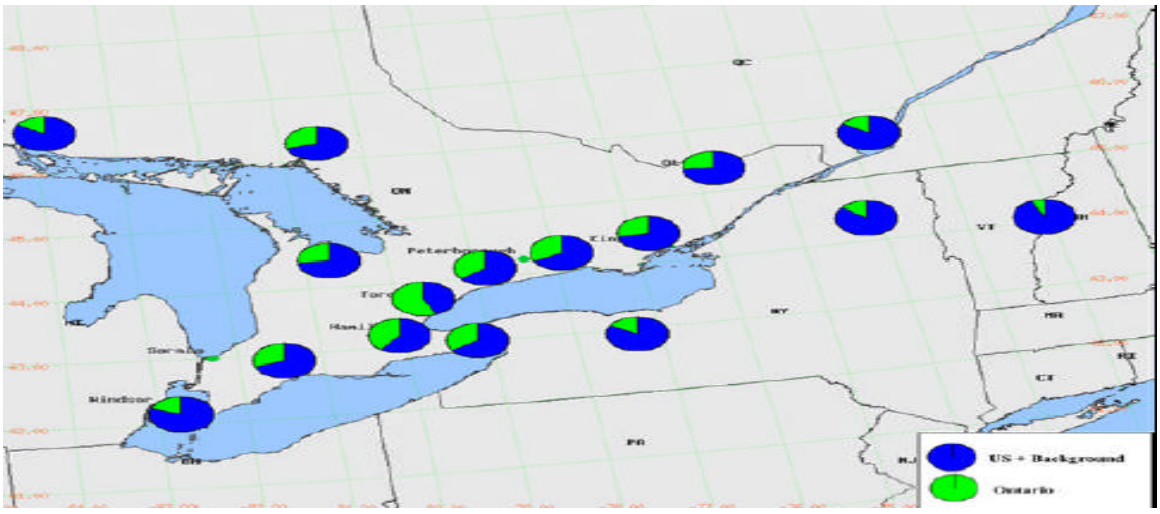

Figure 3: US Contribution to $PM_{2.5}$, Ontario, Average Day

Health Impacts & Damages re: Transboundary Air Pollution

The MOE hired DSS Management Consultants (the firm that conducts the air pollution health impacts for the Ontario Medical Association) to estimate the health impacts associated with ozone and PM2.5 in Ontario.

DSS has estimated that U.S. sources of air pollution contribute to:

- 2,751 premature deaths;
- 11,939 hospital admissions;
- 21,875 emergency room visits; and
- 4,802,045 minor illnesses each year in Ontario.

They valued these health impacts at about $3.723 billion dollars per year.
Of these health damages, over 50% are attributed to the southwestern region of Ontario which includes Windsor, the Bruce Peninsula and Long Point, and excludes Hamilton and Niagara Falls and everything east of these communities.

Emissions from U.S. Coal-Fired Power Plants

U.S. coal-fired power plants are responsible for a significant share of the air pollution that affects southwestern Ontario. Many of these plants are located in the Midwestern United States and predominantly upwind of Ontario (Can/US, 2004).

In 2002, the electrical sector in the United States was responsible for:

- 69% of the annual emissions of SO2 in the United States;
- 22% of its NOx emissions;
- 40% of its mercury emissions; and
- 39% of its greenhouse gas emissions (CEC, 2004).

While SOx and NOx emissions from US coal plants were reduced by 10 to 29% between 1995 and 2003, emissions from the heaviest emitting coal plants increased. The States with the greatest increases in emissions over the last decade (e.g. Ohio and Indiana) include states that are upwind of southern Ontario (US PIRG, 2005).

U.S. Legislation Re: Coal-Fired Power Plants

New U.S. legislation called Clean Air Interstate Rule (CAIR) became effective on May 13, 2005. It will permanently cap emissions of sulphur dioxide (SO2) & nitrogen oxide (NOx) emission in 28 eastern states & D.C. by 70% (i.e. 5 million tons) & 60% (i.e. 1.8 million tons) respectively, relative to 2003, when fully implemented in 2015.

CAIR, introduced by the U.S. EPA, gives states 2 options for compliance: reductions from coal-fired power plants; or reductions at a state level based on a plan of the state's choosing. The U.S. EPA Administrator says that CAIR will produce health & environmental benefits worth $100 billion per year. The U.S. EPA values these benefits at 25 times the cost of compliance.

The Ozone Transport Commission (OTC), which represents 13 states in mid-Atlantic and NE region of the US, feel the CAIR is “insufficient” to address power plant emissions that affect downwind states.

The current Clean Air Act includes a **“New Source Review”** requirement that can be used to require the installation of best available control technologies when older coal-fired power plant are upgraded or expanded.

The **Clear Skies Bill,** introduced by the Bush Administration, would increase the emission caps, extend the implementation period, and remove the New Source Review provisions in the current Clean Air Act, making it more difficult for the US EPA to require reductions from the heavy-emitting coal-fired power plants in the future.

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