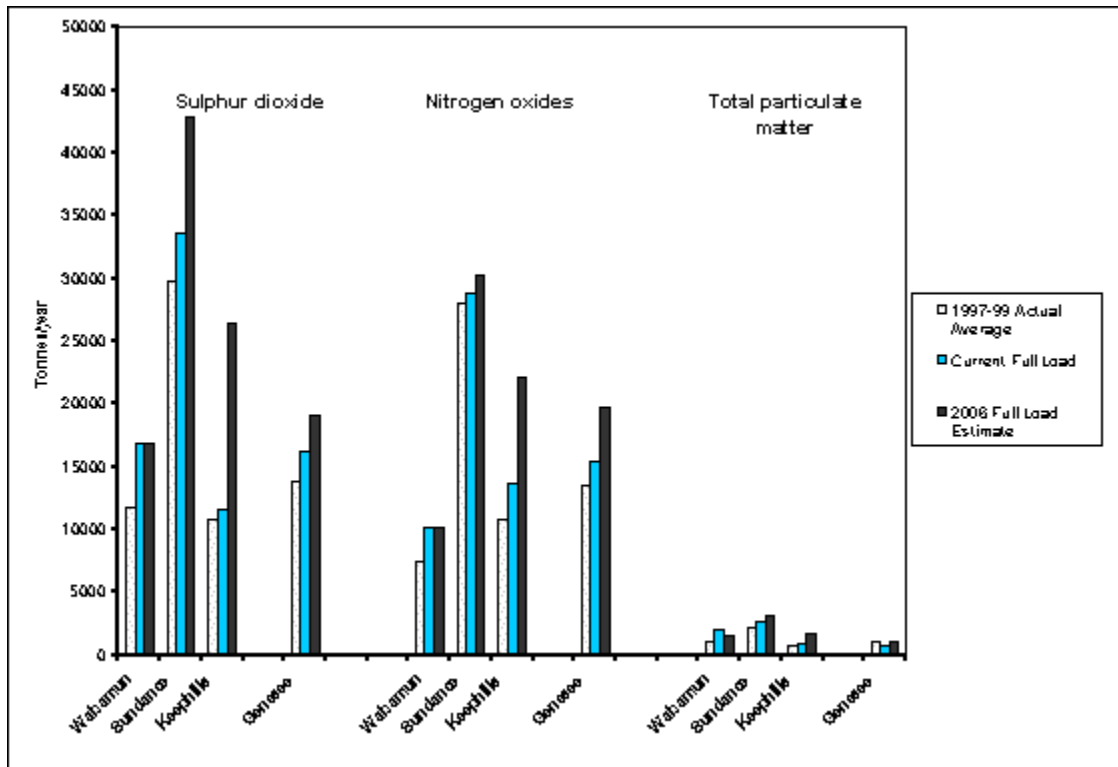


**Backgrounder**  
**October 29, 2001**

**TransAlta Keephills expansion - emissions, health & environment**

Generation capacity from power plants in the Lake Wabamun region will increase by nearly 40% if all planned expansions proceed. The chart below shows that the majority of the emissions come from TransAlta's facilities at Wabamun, Sundance and Keephills. EPCOR owns the Genesee plant. Sulphur dioxide emissions from the four sites will increase by about 34%. Forty-six percent (46%) of this increase will come from TransAlta's proposed Keephills expansion alone. Regional emissions of nitrogen oxides and particulate matter will also increase, by approximately 21% and 19%, respectively. The Keephills expansion will account for 60% of the increase in nitrogen oxides and 55% of the increase in particulate matter. These figures do not include additional emissions from mining operations.

**Emission of air pollutants from TransAlta's Wabamun, Sundance, Keephills Power Plants and from EPCOR's Genesee plants - current and future<sup>1</sup>**



**Human health costs**

There are important health concerns related to major air pollutants from coal-fired power plants:

- Fine particulate matter (such as the finest particles from fossil fuel combustion), that can be inhaled deep into the lungs, is classified as a toxic substance under the Canadian Environmental Protection Act. It increases the risk of respiratory and cardiovascular illness, even at relatively low levels.

- Nitrogen oxides contribute to the development of ground level ozone and smog.
- Sulphur dioxide creates "acid aerosols" that can irritate the respiratory system.
- Mercury is a serious pollutant with neurotoxic effects, especially on young children.

There is no 'threshold level' for particulate matter or ozone - so any increase in levels has been shown to lead to an increase in health effects.

Sulphur dioxide and nitrogen oxides are also key "acidifying emissions", contributing to the acidification of lakes and soils - a critical environmental concern.

Studies in the U.S. have estimated the indirect costs of the health and environmental effects of coal-fired generation to be between 3 and 6.5 cents per kilowatt hour<sup>2</sup>. A study conducted by the European Union estimated the cost of producing electricity from coal could double in some areas, if such "external" effects were taken into account.<sup>3</sup> A report by the Ontario Medical Association showed a strong linkage between air quality and the rate of premature deaths, hospital admissions, emergency room visits and illness.<sup>4</sup> Similar effects were found in a Massachusetts study that modeled the potential air pollution from two coal-fired power plants.<sup>5</sup>

While TransAlta's Environmental Impact Assessment (EIA) prepared for their proposed Keephills expansion suggests that there will be no effects from increased pollution, submissions to the EUB by technical experts highlight the serious flaws in TransAlta's EIA and show how such a conclusion is unsupportable and misleading.

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<sup>1</sup> Emissions for 1997-1999 are based on actual emission data, supplied by Alberta Environment. Other values are derived from data supplied in the Environmental Impact Assessment (EIA) for the Keephills facility and the EIA for EPCOR's Genesee expansion.

<sup>2</sup> Jacobson, M.Z. and G.M. Masters, 2001. "Exploiting Wind versus Coal", *Science*, Vol. 293, August 24, 2001. U.S. dollars in article are converted to Canadian \$ at 1.50 exchange rate.

<sup>3</sup> European Commission, 2001. *New research reveals the real costs of electricity in Europe*. Media release, July 20, online at <http://europa.eu.int/comm/research/press/2001/pr2007en.html> These costs do not include the cost of global warming. By comparison, the external costs of electricity production from gas are less than one-third those of coal.

<sup>4</sup> Ontario Medical Association, 2000. *The Illness Cost of Air Pollution in Ontario*; online at <http://www.oma.org/phealth/smogmain.htm#program>

<sup>5</sup> Levy, J., J.D. Spengler, D. Hlinka, and D. Sullivan. 2000. *Estimated public health impacts of criteria pollutant air emissions from the Salem Harbor and Brayton Point power plants*; online at <http://www.hsph.harvard.edu/papers/plant/plant.pdf>