

The Technology Benchmarking Report (TBR) provides an assessment of the available methods to reduce emissions of benzo(a)pyrene, benzene, total suspended particulate matter, and sulphur dioxide from Algoma’s integrated steel manufacturing facility in Sault Ste. Marie, Ontario. This TBR is Algoma’s second iteration of such an analysis. Several options for reducing emissions have been implemented since the first TBR was completed in 2009.

As per guidance from the Ministry of Environment, Conservation and Parks (MECP), the TBR will serve to:

- Identify the key emission sources for the relevant compounds;
- Assess pollution reduction options; and
- Rank the pollution reduction options based on technical and financial feasibility.

**Generally, what are the emission reduction control technologies and best practices for reducing emissions from steel mills?**

	General Technology or Best Practice	Benzene	Benzo(a)pyrene	Particulate Matter	Sulphur Dioxide
	Electric arc furnace steelmaking	✓	✓	✓	✓
	Gas desulphurization				✓
Already installed at Algoma	Individual oven pressure control technology	✓	✓	✓	
	Leak detection and repair program	✓	✓	✓	✓
	Emissions collection and treatment systems (e.g., scrubber)	✓	✓		✓
	Dust collection systems			✓	
	Water/dust suppressant during material transfer, on roadways and stockpiles			✓	

**Looking into more detail at Algoma’s operations, which emission reduction options are most feasible for the site?**

Algoma is moving ahead with constructing two new electric arc furnaces (EAFs) to replace the existing basic oxygen steelmaking operations. An assessment of technical feasibility and cost-effectiveness was completed, considering Algoma’s current plans to transition to EAF steelmaking. The site specific emissions control options deemed technically and financially feasible are as follows:

- Replace basic oxygen steelmaking with EAF steelmaking;
- Enhanced water/dust suppressant spraying/misting at points of transfer and on stockpiles (coal, lime and raw materials);
- Enhanced water/dust suppressant spraying and/or paving of unpaved transport routes;
- Enhanced raw material handling procedures to minimize volumes of materials stored on site, stockpile design, use of enclosure for bulk material storage, additional wind break controls (e.g. planting vegetation) and de-dusting/closure of transport conveyor belts;
- Increased boilers and gas turbines maintenance;
- Increased inspection and maintenance of dust emission control equipment associated with blast furnaces (iron ore reduction process); and
- Additional controls to minimize fugitive emissions from casting at blast furnaces (e.g. covering tap-holes, runners, skimmers, ladle/hot rail cars charging).

## **What is the path forward for Algoma?**

The findings of the TBR have been included in the Action Plan for the site.

The results presented in the Emission Summary and Dispersion Model report show that compliance with the Schedule 3 standards for benzo(a)pyrene, benzene, total suspended particulate matter, as well as the future sulphur dioxide standard, will be achieved when the EAFs are in full "independent" mode in year 2029.

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