

Toxics Reduction through Energy Efficiency for Boilers

A white paper from the Oregon Environmental Council

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222 NW Davis Street, Suite 309

Portland, Oregon 97209

Phone: 503-222-1963

Fax: 503-222-1405

Web: <http://www.oeonline.org>

Email: info@oeonline.org

Prepared by Daniel Etra

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For copies of this report, contact:

Oregon Environmental Council
222 NW Davis St, Suite 309
Portland, OR 97209
503-222-1963
info@oeconline.org

Or on the Web at
www.oeconline.org

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1. Executive Summary

Improving energy efficiency of boilers has two primary beneficial outcomes: it lowers facility fuel costs and it reduces emissions of toxic pollutants and greenhouse gases. Based on findings from a similar study carried out by the Delta Institute in Wisconsin in 2002, the Oregon Environmental Council (OEC) set out to reduce toxic emissions in Oregon by improving the energy efficiency of boilers.

To do this, OEC partnered with Oregon State University’s Industrial Assessment Center (IAC), the Oregon Department of Energy (ODOE), the Oregon Department of Environmental Quality (DEQ), and a private consultant to offer free energy efficiency audits and tune-ups to small- to medium-sized industrial and institutional boilers in Oregon.

OEC found opportunities to increase boiler efficiency at almost every single facility visited, with substantial reductions in fuel costs, toxic pollutant emissions, and greenhouse gas emissions. Specifically, this study found that if boiler efficiency improvements were implemented at *all* participating industrial facilities, the *potential annual savings and reduced emissions* would be:

- **\$437,406 dollars of fuel cost savings**
- **29,476 metric tons of CO₂ emissions mitigated**
- **1.16 pounds of mercury emissions mitigated**

Furthermore, by offering free boiler tune-ups to participating institutional facilities, the actual savings and reduced emissions were:

- **Saved Oregon public schools a total of \$20,106**
- **Prevented 85.3 metric tons of CO₂ from being released**
- **Kept 1.40 grams of mercury out of the air and water.**