

Summary:
EBR 012-1559 - Regulation Proposal Notice
Reducing Coal Use in Energy-Intensive Industries

June 1, 2014

Type: Environmental Registry Submission

Ministry: Environment

OSPE Committee: Energy Task Force/Environment Task Force/Other

Comment Deadline: May 12, 2014

Submission Deadline: June 1, 2014

Background:

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession in Ontario. OSPE advances the professional and economic interests of our members, many of whom work in the energy and environment sectors. We are pleased to respond to this regulation proposal notice, which seeks public comments on reducing coal use in energy-intensive industries.

Comments:

The Proposal

The proposed changes would allow energy-intensive Ontario industries that currently burn coal (e.g. the cement, lime, iron and steel industries) to burn “alternative, low-carbon fuels” to supplement coal in their industrial processes, without the requirement to pass the Environmental Assessment process and without needing to obtain Environmental Compliance Approval (ECA) as waste disposal sites. The industries would still need to obtain ECAs for their air and water emissions.

“Alternative, low-carbon fuels” are defined in the EBR posting as “certain types of biomass and the residual wastes after recyclables have been separated.” The EBR proposal includes a complicated full definition of alternative, low-carbon fuels, which do not include tires. Apparently, “low carbon” refers to a reduction in Ontario’s net greenhouse gas emissions (GHGs) into the atmosphere, not to the per cent carbon in the fuel itself. “Recyclables” is not defined.

Typical examples of “alternative, low-carbon fuels” are waste oil, meat and bone meal wastes, plastic wastes, wood waste, commercial and residential demolition waste and textile and carpet wastes. “Bio-Char” (pyrolyzed wood waste) is deemed a “low carbon” alternative fuel.

Previous History

The Ontario government should be aware of its own history in promoting alternative fuels to replace coal. An understanding of the history of alternative fuels is necessary to avoid repeating the mistakes of the past.

The Ontario iron and steel industries have not shown much interest in replacing coal and coke in the basic iron smelting process, which requires high temperatures and a high fuel carbon content. Charcoal and “bio-char” are possible alternative fuels.

The Ontario cement industry has a history of attempts to burn waste fuels in Ontario cement kilns. In 1987, the Ontario government announced a new provincial policy and program to promote energy from waste facilities. Energy recovery was identified as the fourth “R” in Ontario’s “4R’s” waste management strategy. The Ontario government considered that energy from waste facilities was necessary to complement the more conventional “3R’s” and that these facilities could operate without any harmful environmental emissions. Saint Lawrence Cement prepared to test the use of Refuse-Derived Fuel (“RDF”) in its Mississauga cement kiln, and applied for approval under the *Environmental Assessment Act* (EAA). Saint Lawrence Cement’s application for EAA approval lasted many months because of opposition from environmental protest groups.

Unfortunately, the 1987 policy did not anticipate the rising tide of environmental protest in Ontario. The Ontario Waste Abatement Strategy of 1989 reduced the 4R’s to 3R’s, severely limiting the combustion of waste materials. The 1992 Amendment to Regulation 309 severely limited the combustion of waste-derived fuel in Ontario waste-derived fuel sites (e.g. cement kilns), and classified waste-derived fuel sites as waste disposal sites, while continuing to allow the operation of waste-specific incinerators.

There is some risk that the Ontario government may follow the discouraging path of the 1980s and 1990s, by encouraging the combustion of waste-derived fuels in the cement industry, only to cancel this encouragement, after campaigns by environmental groups.

Other Jurisdictions

The extent of the use of alternative fuels in the cement industry in other jurisdictions is well-documented in the report entitled *Alternative Fuel Use in the Canadian Cement Industry*, prepared for the Cement Association of Canada in 2005 by the Pembina Institute. See <http://www.cement2020.org/download/file/fid/179>.

The report claims that in 2005, in the European Union (EU), approximately 12 per cent of cement kiln coal fuel was substituted by waste derived fuels. In EU jurisdictions, the use of alternative fuels is allowed for a variety of alternative fuels.

While not based in the EU, Holcim Switzerland’s five cement plants have thermal substitution rates of between 10 and 60 per cent, using wastes including solvents, waste oil, plastic and used tires.

The environmental emissions from the use of alternative fuels are well within regulatory limits.

Benefits of the Proposed Changes

- Lower cost fuels
- Fewer bureaucratic barriers against the use of alternative fuels in the cement and steel industries
- Ontario industries more competitive against other jurisdictions
- Reduced demand for conventional fuels from outside Ontario
- Reduced greenhouse gas emissions (e.g., Ontario's cement industry released 2600 kt of CO₂ into the atmosphere in 2010. If 10 per cent of the cement industry's coal energy were replaced by refuse-derived fuel, Ontario's greenhouse gas emissions would have been 260 kt less. The reduction in methane emissions from waste landfills would also be significant.)
- Reduced landfill disposal
- Reduced need for "single purpose" incinerators

Difficulties in the Proposed Changes

The new Regulation must clearly state which "low-carbon, alternative fuels" are acceptable in Ontario. Any ambiguities in the wording of the Regulation, i.e. the meaning of the word "non-recyclable", would cause court battles between the cement industry and environmental groups, similar to what happened in the 1980s.

The new Regulation must be accompanied by successful public outreach, persuading the public that the new use of alternative fuels would be safe and beneficial to Ontario's environment and Ontario's economy.

What about Mini-Mills?

Mini-mills (electric furnace steelmakers) are leaders in the recycling sector. Mini-mills were "green" long before being green was commonplace. These mills recycle scrap cars, steel from blue box programs and steel construction scrap into useful steel products. Mini-mills use electric arc furnace technology to melt steel. The electricity used in Ontario mini-mills is generated from Ontario's coal-free electricity system; its mill steel products are therefore greener than most.

OSPE Recommendations

OSPE recommends that the Ministry of the Environment proceed with implementing the proposed Regulation to reduce coal use in energy-intensive industries. However, the Ministry of the Environment must be aware of the following potential difficulties:

1. The new Regulation must clearly state which "low-carbon, alternative fuels" are acceptable in Ontario. Any ambiguities in the wording of the Regulation, e.g. the meaning of the word "non-recyclable," would cause court battles between the cement industry and environmental groups, similar to what happened in the 1980s.



2. The new Regulation must be accompanied by successful public outreach, persuading the public that the new use of alternative fuels would be safe and beneficial to Ontario's environment and economy.
3. It is unclear whether electric arc furnace technology will be promoted as a low-carbon alternative.
4. Government programs that target high conversion cost sectors or applications must be mindful of industry affordability and job losses.
5. Ontario needs a policy mechanism to encourage our competitors to match our low-carbon achievements rather than the current policies that require Ontario sectors to over-achieve vis-à-vis sectors in competitive jurisdictions, creating cost pressures like high commercial electricity rates. That policy mechanism may include establishing an internationally accepted regime where carbon credits are available to purchasers of products that have lower manufacturing carbon footprints than the average carbon footprint of those products on the world market.