

September 13, 2021

Shareen Han
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Ministry of the Environment, Conservation and Parks
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Dear Shareen Han,

RE: ERO Posting 019-3544 – Amendments to O Reg 79/15 to Further Streamline the Use of Alternative Low-Carbon Fuels

This letter sets out the joint comments of Ecojustice and Wendy Bracken on this proposal. Ecojustice is Canada’s largest environmental law charity and uses the power of the law to defend nature, combat climate change, and fight for a healthy environment. Ecojustice has decades of experience advocating for strong air pollution controls in Ontario. Ms. Bracken is a resident of Clarington, has actively followed alternative fuels burning at St Marys Cement Bowmanville and served/serves as an appointed member/alternate member on the two waste advisory committees associated with the Durham-York incinerator.

According to the ERO posting, the proposed changes are meant to reduce greenhouse gas emissions from energy-intensive industries by making it “easier” for those industries to replace fossil fuels, specifically coal and petroleum coke, with other fuel materials that would otherwise go to landfills. There is no question that reducing greenhouse gas emissions is imperative in the climate crisis that is currently, and increasingly, threatening humanity.

However, we question the effectiveness of the proposed changes in accomplishing that goal. And, given the serious human health impacts associated with air pollution, we question the Ministry’s failure to take this opportunity to address the Regulation’s long-recognized shortcomings.¹

1) The Regulation should require more GHG reduction potential verification, not less

The proposed changes would reduce oversight and verification of the greenhouse gas reduction potential of alternative low-carbon fuel (ALCF) projects. Currently, facilities wanting to use ALCFs must analyze actual samples of the fuels used or proposed to be used at their facilities for their CO₂ emission intensity to demonstrate greenhouse gas reduction potential before a Director can approve the ALCF project. The proposed changes would decrease this oversight by allowing facilities to use secondary or even tertiary data sources to estimate CO₂ emission intensity. The proposal does not explain how this will reduce greenhouse gas emissions. Although using generic data will inevitably reduce the accuracy of the CO₂ emission intensity comparison that serves as a precondition for approval, the proposal does not include any safeguards (e.g., conservative estimation or monitoring requirements) to ensure that proponents do not overstate

¹ Including those described in this 2015 blog, for example: <https://cela.ca/the-alternative-fuels-environmental-three-step-one-step-forward-two-steps-back/>.

the greenhouse gas reduction potential of the proposed ALCFs. Similarly, secondary and tertiary data sources can vary widely in their quality, but the proposal includes no safeguards (e.g., criteria for weighing sources) to ensure that the data is reliable.

The St Marys Cement facility in Bowmanville demonstrates why the Regulation should require more, not less, oversight and verification of GHG reduction potential.

To complete the CO₂ intensity analysis required by the Regulation, the facility collected and analyzed samples of conventional fuels and ALCFs. The results of this analysis predicted significantly lower average CO₂ intensity values for the ALCF samples as compared to conventional fuels samples.² As a result, the report authors concluded that the study results, which were “solely based on the chemical analysis data that were obtained for the purposes of the ALCF Application,” supported the facility’s strategy to reduce GHG emissions.³

However, emission monitoring conducted during the demonstration project showed that actual CO₂ emission rates were slightly higher (1.45%) during the ALCF-burning trial compared to the post-baseline test when burning conventional fuels only.⁴ This monitoring also showed that CO₂ percentages in the kiln exhaust gas remained similar between the baseline and ALCF tests.⁵ These results appear to demonstrate that use of these particular ALCFs had a negligible impact on actual CO₂ emissions at the facility. Indeed, the report showed that CO₂ emissions from the ALCF trial fell within the baseline normal (i.e., conventional fuel burning) range, as shown in Table E-1-1 of St Marys’ Demonstration Project Summary Report (highlighting added), which is reproduced below.⁶

² Conventional fuels averaged a carbon dioxide intensity of roughly 1037.2 tonnes CO₂ per 400 tonnes of fuel burned and ALCFs (biomass, cellulosic and plastic materials) averaged a carbon dioxide intensity of 250.5 tonnes CO₂ per 400 tonnes of fuel burned. See Golder Associates, *Carbon Dioxide Emission Intensity Report: Votorantim Cimentos North America* (January 2020), online: <http://www.stmaryscement.com/Alternative%20Low%20Carbon%20Fuels%20Documents/Carbon%20Dioxide%20Emission%20Intensity%20Report%20-%20Golder%20Associates%20Ltd%20-%20January%202020.pdf> at p 12 [“CO₂ Emission Intensity Report”].

³ CO₂ Emission Intensity Report at p 13.

⁴ BCX Environmental Consulting, *Alternative Fuels Demonstration Project Summary Report* (May 2019), online: <http://www.stmaryscement.com/Alternative%20Low%20Carbon%20Fuels%20Documents/Demonstration%20Permit%20-%20Air%20-%20ECA%204614-826K9W.pdf> at Table E-1-1 (pdf p 698) [“Demonstration Project Report”].

⁵ *Demonstration Project Report* at pdf pp 236-348 (Appendix F to the RWDI Source Testing Report, which is Appendix C to the main report).

⁶ *Demonstration Project Report* at pdf p 698 (Table E-1-1). See also pdf p 713 (Table F-1-1) and pp 12 and 19 of the Report. Page 12 notes that “[i]f the emission rate of a contaminant is within the emission rate range for baseline/post-baseline, no statistically significant changes are expected as a result of the use of alternative fuels for this contaminant.”

Table E-1-1: Summary of Kiln Stack Emissions

Contaminant	CAS Number	Kiln Stack Emission Rate (g/s)			Alt Fuel Emissions Outside the Baseline Normal Range (Yes/No)	Statistically Significant Change in Emissions between ALT Fuel and Baseline/Post Baseline? (Yes/No)
		Baseline (Oct 2018)	Alt Fuel (Dec 2018)	Post Baseline (Dec 2018)		
Particulate						
PM	PM	2.02E+00	4.17E+00	4.12E+00	Yes	Yes
PM10	PM10	4.61E-01	5.08E-01	3.86E-01	Yes	Yes
PM2.5	PM2.5	1.84E-01	2.12E-01	1.75E-01	Yes	Yes
Combustion Gases						
NO _x	10102-44-0	8.94E+01	8.67E+01	9.73E+01	Yes	Yes
SO ₂	7446-09-5	1.37E+02	1.69E+02	1.14E+02	Yes	Yes
CO	630-08-0	1.19E+02	1.00E+02	7.49E+01	No	n/a
CO ₂	124-38-9	5.96E+04	5.59E+04	5.51E+04	No	n/a

Second, the St Marys ALCF demonstration project showed how widely ALCFs can vary in composition. Fuel sampling conducted to support the CO₂ emission intensity analysis revealed differences in carbon content between various samples of the same fuel blend.⁷ Fuel sampling conducted during the project showed that the ALCF blends used in each trial differed considerably in total halogen content and heavy metal content, among other parameters, and the reasons for this variation were “unclear.”⁸ This variation led the facility’s consultants to recommend special mitigation measures to allow for the determination of variability of the ALCFs and allow for ongoing adjustment of fuel blends. We are concerned that, without appropriate safeguards, the use of generic secondary or tertiary data may not adequately capture this variability and may lead to inflated estimates of GHG emission reduction potential.

Third, facilities like St Marys may need to burn larger amounts of ALCFs to replace the thermal output of smaller amounts of conventional fuels. St Marys proposes to burn 400 tonnes/day of ALCF with 430 tonnes/day of conventional fuel to replace 613 tonnes/day of conventional fuel only. In other words, when the ALCF is used, a total of 830 tonnes/day of material (conventional + alternative) would be burned to replace 613 tonnes/day – a 35% increase in total tonnage.⁹ In certain circumstances, such an increase could eliminate predicted GHG emissions reductions where those predictions were based solely on emission intensity.

Fourth, St Marys’ demonstration describes ALCF materials (shredded wood and plastic) being blended using a front-end loader at a processing facility prior to being sent to St Marys and that this was done “volumetrically,” based on densities observed at the processing facility to achieve a pre-determined target ratio of wood to plastic.¹⁰ Mixing procedures of materials will differ from facility to facility, resulting in variation and blends will only roughly approximate desired ratios. The proposed amendment to estimate CO₂ impact using secondary or tertiary sources depends upon calculations using theoretical ratios that will differ from what is actually

⁷ CO₂ Emission Intensity Report at p 9.

⁸ HDR Consultants, *Alternative Fuel Demonstration Project Summary Waste Report* (May 2019), online: http://www.stmaryscement.com/Alternative%20Low%20Carbon%20Fuels%20Documents/Alternative%20Fuel%20Demonstration%20Project%20Summary%20Waste%20Report%20Final%20JUNE%202019%20w%20appendices-min_2.pdf at pp 15 (Table 3-5) and 16 [“Waste Report”].

⁹ BCX Environmental Consulting, *Emission Summary and Dispersion Modelling Report in Support of an Alternative Low-Carbon Fuel Application under Ontario Regulation 79/15* (March 2020) at p 101 (Appendix F, Calculation Sheet 1 – Kiln Stack Emissions).

¹⁰ *Waste Report*, Section 3.1.2, page 10

practically achieved at individual facilities and will result in less accurate estimations of CO₂ emissions than when actual samples from individual facilities are tested.

All of this suggests that, even as currently drafted, the Regulation's CO₂ intensity analysis requirements risk overestimating the actual GHG reduction potential of ALCFs. The proposed changes, which will further reduce the quality of data that can be used in such analyses, will worsen, not improve, this risk.

To ensure that the Regulation achieves its GHG reduction objectives, it should require continuous emission monitoring and public reporting for CO₂ at any facility using ALCFs – particularly if the Ministry chooses to accept less accurate secondary and tertiary data for CO₂ emission intensity analyses. This should be required in the Regulation itself. Leaving this to the Director's discretion leads to inconsistent requirements across facilities. For example, although St Marys Cement must conduct CO₂ emission intensity sampling of the fuels it uses under its Environmental Compliance Approval, its approval does not appear to require continuous emission monitoring for CO₂ emissions from the kiln.¹¹ By contrast, Lafarge is required to conduct CO₂ monitoring at its Bath Plant cement kiln, which also uses ALCFs.¹² A clear regulatory requirement that applies to all facilities would eliminate these inconsistencies, which risk undermining certainty for industry and public confidence in the Regulation and the regulator (especially if data quality requirements are relaxed).

2) The Regulation should continue to require sulphur dioxide and nitrogen oxides monitoring

The Ministry proposes to eliminate reporting requirements for the emissions of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) for the cement sector. Although the proposal is not clear on this point, and the Ministry provided no response to our requests for clarification, the Ministry seems to also propose to eliminate current requirements to monitor such emissions using continuous emission monitoring systems or approved equivalent technology.¹³

These contaminants are associated with adverse effects on human health and the environment. To ensure that the Ministry can protect Ontarians against those effects, and that the public knows what contaminants are in the air they breathe and can hold the Ministry accountable if it fails to protect them, accurate monitoring data is needed.

This monitoring/reporting is especially important for communities like Clarington, where there is already evidence of an overburdened air shed. The Durham/York Environmental Assessment (EA) studies done for the Durham-York incinerator located in Clarington documented high burden for respiratory irritants including NO_x, SO₂, and fine particulate matter (PM_{2.5}). In fact, Health Canada recommended additional mitigation measures for some of the pollutants of concern including

¹¹ ECA 6729-BYRJEP, online: <https://www.accessenvironment.ene.gov.on.ca/instruments/0051-BN9Q3S-13.pdf>.

¹² ECA 7016-BWCJKL, online: <https://www.accessenvironment.ene.gov.on.ca/instruments/6466-BNQQ3M-14.pdf>.

¹³ *Alternative Low-Carbon Fuels*, O Reg 79/15, s 15. The proposal speaks of making these currently mandatory monitoring requirements discretionary.

PM_{2.5} and NO_x.¹⁴ Since that time, numerous ambient air exceedances have been recorded in Clarington for SO₂, as well as for other contaminants like particulate matter, benzo(a)pyrene, and dioxins/furans.¹⁵

Because cement kilns are major emitters of both SO₂ and NO_x, requiring continuous emission monitoring and quarterly reporting of those emissions remains very much in the public interest. For example, according to the federal National Pollutant Release Inventory, St Marys Cement has ranked among the top 25 emitters of NO_x in the country in recent years. In 2017 (the most recent year for which data is available), St Marys was the largest emitter of NO_x and the ninth-largest emitter of SO₂ in Ontario.¹⁶

During ALCF testing, SO₂ emissions at St Marys increased a statistically significant amount.¹⁷ In the October 2018 ALCF trial, SO₂ emissions were 3.65% higher than when conventional fuel alone was burned. In the December 2018 ALCF trial, SO₂ emissions were 48.2% higher than when conventional fuel alone was burned, even though the sulphur content of the ALCF was significantly lower than that of the conventional fuel.¹⁸ Although the facility's consultants hypothesized that kiln operating condition fluctuations might have caused these changes, the significance of the changes and the serious adverse effects associated with this contaminant demonstrate the continued need for continuous monitoring.

As the proposed changes also aim to promote greater flexibility in feedstock mixes, monitoring will be even more essential to understand what is coming out of a facility, as the Ministry will have reduced oversight about what is going in. The potential implications of greater feedstock flexibility extend beyond just SO₂ and NO_x. As noted above, the fuel sampling conducted as part of this project showed wide variation in contaminant levels between the alternative fuel blends used in the two trials, including in total halogen (which relates to dioxin and furan formation), total chlorine, and heavy metals levels.¹⁹ The specific reasons for the variation were "unclear," but the degree of variation led St Marys' consultants to recommend specific mitigation measures

¹⁴ Ontario Ministry of the Environment, Environmental Assessment and Approvals Branch, *Review of the Durham and York Residual Waste Study Amended Environmental Assessment* at pp 125-131 and 162-167.

¹⁵ These exceedances are documented in Ambient Air Monitoring reports found at <https://www.durhamyorkwaste.ca/en/environmental-monitoring/ambient-air.aspx>.

¹⁶ National Pollutant Release Inventory, online: https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?do=results&process=true&lang=en&opt_report_year=2017&opt_facility_name=&opt_npri_id=&opt_cas_name=11104-93-1&opt_cas_num=&opt_province=ON&opt_postal_code=&opt_urban_center=&opt_province_comm=&opt_naics6=&opt_naics3=&opt_naics4=&opt_nai6code=&opt_csic=&opt_media=all&submit=Submit and https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?do=results&process=true&lang=en&opt_report_year=2017&opt_facility_name=&opt_npri_id=&opt_cas_name=7446-09-5&opt_cas_num=&opt_province=ON&opt_postal_code=&opt_urban_center=&opt_province_comm=&opt_naics6=&opt_naics3=&opt_naics4=&opt_nai6code=&opt_csic=&opt_media=all&submit=Submit.

¹⁷ *Project Demonstration Report* at pdf p 698 (Table E-1-1).

¹⁸ BCX Environmental Consulting, *Emission Summary and Dispersion Modelling Report in Support of an Alternative Low-Carbon Fuel Application* (March 2020), Appendix F, Calculation Sheet 1 – Kiln Stack Emissions.

¹⁹ *Waste Report* at p 15 (Table 3-5).

to allow for the determination of fuel variability and ongoing adjustment of the fuel blends.²⁰ Expanded source emission, ambient, and environmental monitoring requirements for a wider range of contaminants could further mitigate the increased uncertainty about potential adverse impacts that greater feedstock flexibility will create.

Expanded monitoring could also help the Regulation accomplish its GHG emission reduction objectives. For example, at St Marys, ALCF use led to statistically significantly higher emission rates for particulate matter, PM_{2.5}, and PM₁₀ compared to conventional fuel use.²¹ These results raise questions about ultrafine particle (PM_{0.1}) emissions, which were not directly measured, but which are now being studied for their adverse contributions to climate change.²²

At a minimum, however, the Regulation should continue to require SO₂ and NO_x continuous emission monitoring; replacing these binding legislative requirements with a discretionary Director's power is unnecessary (monitoring requirements are not a barrier to greenhouse gas emissions reductions) and risks undermining transparency and public confidence in the system.

That risk is magnified here. Only six months ago, the Ministry publicly promised to maintain these monitoring requirements for the cement sector even though it was cancelling a related emissions trading program.²³ At that time, the Ministry specifically considered whether to remove the requirements because of the cancellation. It decided not to do so and promised it would not. Now, in this posting, the Ministry appears to be proposing to eliminate the monitoring requirements for the same reason it previously rejected: because that emissions trading program was cancelled.

If the Ministry now does, in fact, propose to remove those requirements so soon after promising not to do so, its unexplained reversal risks significantly undermining the public's trust in the regulation and in the Ministry.

3) The Regulation should maintain current public consultation opportunities

The two previous concerns also illustrate the important role public consultation can play in ALCF proposals. There are many factors to consider, many pollutants of concern, and some communities have unique and sensitive concerns. The material can be difficult to digest, and public consultation is essential so that questions can be answered directly by a proponent that wants to change its ALCF use. Timely public consultation also gives the proponent an opportunity to address public concerns before finalizing applications for approval.

²⁰ *Waste Report* at p 16.

²¹ *Demonstration Project Report* at pdf p 698 (Table E-1-1).

²² Kwon, HS, Ryu, MH & Carlsten, C, "Ultrafine particles: unique physicochemical properties relevant to health and disease" (2020) *Exp Mol Med* **52**, 318–328, online: <https://www.nature.com/articles/s12276-020-0405-1>.

²³ <https://ero.ontario.ca/notice/019-1233>: "Ontario is also proposing to make an administrative amendment to *O. Reg. 79/15 - Alternative Low Carbon Fuels* to preserve the requirement in that regulation for the cement sector to monitor NO_x and SO₂ emissions on an annual basis using a continuous emissions monitoring system or an approved method." ... "Therefore, these amendments were made to maintain this monitoring and reporting requirement in the ALCF regulation."

Unfortunately, the Ministry proposes to eliminate public consultation requirements that currently apply when a proponent wants to add new ALCFs or increase the quantity of previously approved ALCFs. This would significantly weaken public oversight and participation, even if a minimum 30-day public commenting period would still occur through the Environmental Registry. The Regulation sets out detailed and prescriptive consultation requirements, including specific notice and information requirements.²⁴ These requirements far exceed the cursory amount of information that is typically provided in Registry postings, and require far broader notice be given to ensure that the people most likely to be affected, including those who may not be able to access the Registry, receive actual notice of the proposal.

Our experience with this very proposal demonstrates one way that Registry consultation falls short of the Regulation's current consultation requirements. We asked for copies of the information supporting the proposal on August 3, 2021. We did not receive any response until August 31, 2021, after following up on our original request. The August 31, 2021 response provided no substantive information and simply acknowledged that the Ministry had received the request and was working on a response. We did not receive a substantive response before the September 13, 2021 deadline. Although we asked the Ministry to extend the comment period so that we could receive and review the requested information before commenting, the Ministry did not substantively respond to our request before the deadline. Unfortunately, in our experience, barriers to accessing supporting information – either at all or in a timely manner – arise far too often with Registry postings.

We do not agree that the Ministry should eliminate public meetings at all; public meetings are not a barrier to greenhouse gas emissions reductions. However, if the Ministry intends to eliminate the public meeting requirements and replace them with consultation through the Registry, it should at least amend the regulation (or the *Classification of Proposals for Instruments* regulation under the *Environmental Bill of Rights*) to continue to require the proponent to (1) publish the same notices currently required under the regulation about the proposal and (2) publish on the Registry the same information currently required under section 7(3). Without access to key supporting information, such as that currently required by section 7(3) of the Regulation, the public's ability to scrutinize and participate effectively in decision-making will be significantly impaired. Fulsome public participation leads to better environmental outcomes; undermining effective public participation risks further undermining the Regulation's GHG emission reduction objective.

Sincerely,

Ian Miron
Barrister & Solicitor
Ecojustice Canada

Wendy Bracken

²⁴ *Alternative Low-Carbon Fuels*, O Reg 79/15, ss 6-8.