

COMMUNITY —

St. Marys Cement hosts second public meeting for alternative fuels project

By Matt Harris

St. Marys Cement hosted the second public meeting as part of the process required to introduce alternative low-carbon fuels (ALCF) as a means of generating power at their plant, fielding questions from the public in a virtual format last Thursday evening.

The meeting, which lasted under two hours, gave the public an opportunity to get up to speed on the SMC project since the last public meeting held in November 2021. Several members of the project took part in the presentation, bringing people updated information on a number of key areas including environmental impacts and compliance factors, supplementary studies and overall impact to the plant and town.

Part of the presentation focused on what will remain the same and what will change when the ALCF are introduced. One key area that will be different is the plant's projected lowering of their use of conventional fuels, allowing them to reduce greenhouse gas emissions. Corporate Environmental Manager Ruben Plaza said that by mixing less conventional fuels with the ALCFs they will be able to reduce emissions by an estimated 31 per cent.

"The reduction of carbon dioxide emissions will depend on the carbon intensity of each fuel in the blend," he said. "Under the ALCFs scenario we assessed potential ALCF feed rates and we estimated that by 33 per cent thermal replacement of conventional fuels, we can achieve up to 31 per cent reduction of carbon dioxide emissions."

Plaza added that no ALCFs will be used in the plant's kiln during either the start-up or shut-down processes, saying they will only use it during normal operations to ensure that the kiln has reached optimal temperature required by the process.

One of the questions asked during the presentation was about the amount of ALCFs being stored on site and where it would be housed. Plaza said the plan is to have only enough fuel on hand (approximately 400 tonnes) to use in case of a disruption to the supply, such as weekends.

"We are interested primarily in large sources of ALCFs with consistent quality and supply," he said. "We will implement a certification process of suppliers to validate the quality

of the material prior to approving the supplier. When the materials arrive on site, each load of material will be inspected prior to unloading within the fully-enclosed ALCF storage building. The procedure for sampling and testing the ALCFs, including frequency and analytical requirements, will be required as a condition in the permit issued by the MECP, and the results will be retained for review by the Ministry of the Environment, Conservation and Parks (MECP)."

Someone then asked about whether or not SMC would schedule the use of ALCF in the kiln for nights, but Plaza indicated that since the plant is designed to operate on a 24-hour basis they would be using the new fuels around the clock except for a few instances.

As part of the presentation, a slide that was included in the first public meeting in November that outlines examples of permitted ALCFs as well as materials that are not permitted was included. While old tires are still on the excluded list of approved materials, Plaza said that conveyor belt rubber is among the materials they are able to include. Without getting into a deeper scientific break-down of the materials, he explained its inclusion in two parts.

"Ontario Regulation 79/15, as amended by O. Reg. 824/21, includes a list of materials that are not eligible to be considered as Alternative Low Carbon Fuels (Schedule 1 of the regulation)," he said. "Schedule 1 excludes the following material as an ALCF: used tires, shredded and chipped tires and crumb rubber recovered from used, chipped or shredded tires, except for tire fluff. This means that any rubber material that is not a used/shredded/chipped tire nor crumb rubber from tires – except for tire fluff, which is a by-product of producing the crumb rubber – is eligible to be considered as an ALCF. Tires are included in Schedule 1 because there is a provincially mandated tire recycling program in Ontario, and ALCFs cannot compete with recycling."

He went on to add more about conveyor belt rubber as a viable option for ALCF use.

"It would meet all the following requirements: it's not derived from or composed of any material set out in Schedule 1 of O. Reg. 79/15; it's wholly derived from or composed of materials that are biomass or mu-

nicipal waste or a combination of both; it has a high heat value of at least 10,000 megajoules per tonne unless a fuel is wholly derived from or composed of materials that are solid biomass," he said. "In addition, the carbon dioxide emission intensity of the material needs to be lower than the carbon dioxide emission intensity of petcoke. Published literature shows this condition would be met. St. Marys Cement is currently awaiting chemical analysis results to support the carbon dioxide emission intensity calculation using primary data for the Carbon Dioxide Emission Intensity Report."

St. Marys Cement (both the local plant and the operation in Bowmanville) are among six plants in Ontario with plans to use ALCFs with the aim of reducing conventional fuel use by as much as 12 per cent (from 97 to 85 per cent). And while ALCFs remain the focus, Plaza said SMC is still investigating using hydrogen fuel in their processes as well.

"The use of hydrogen is an emerg-

ing technology, and we expect new developments in the generation and use of hydrogen in the future," he said. "We are currently reviewing a process that generates hydrogen by hydrolysis in small quantities that improves the efficiency of the flame in the kiln."

The meeting completed the first part of the second component to the process. Completing the technical studies, including an emission summary and dispersion modelling report, noise statement and traffic impact study, as well as responding to and addressing public comments needs to be completed by February 24 before the permit application preparation and submission can be handled in March. The application review by MECP is expected to take approximately one year, concluding the process by 2023.

The complete presentation can be found on the St. Marys Cement website under the Sustainability menu.



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