

Taking Low Carbon Fuel Research from the Lab to the Industrial World *Lafarge Partners with Dalhousie University Researcher*

September 28, 2016 (Halifax, NS) - Lafarge is proud to announce a partnership with Dalhousie University researcher Dr. Mark Gibson that will allow low carbon fuel research to be tested on an industrial scale. Working under a Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant, this initiative will research the adoption of low carbon fuels in the cement industry. This continuing partnership between Lafarge Canada Inc. and Dalhousie's Faculty of Engineering will support the testing of tire derived fuel as a low carbon fuel alternative in the cement industry at the Lafarge Brookfield cement plant.

Recent laboratory studies conducted by Dr. Mark Gibson, Associate Professor in Dalhousie University's Department of Civil and Resource Engineering and his colleagues in Process Engineering and Applied Science, Dr. Michael Pegg and PhD student, Ebenezer Asamany, show that tire derived fuel has the potential to lower CO₂ emissions compared with coal derived fuel when co-fired in cement kilns.

In 2015, Dr. Gibson and his team published a report entitled *Use of scrap tires as an alternative fuel source at the Lafarge cement kiln, Brookfield, Nova Scotia*. "My students and I are very pleased to see this work enter the real world. Based on our research, we expect to see significant reductions in greenhouse gas emissions from the Brookfield cement plant and thereby help Nova Scotia move one step closer to a low carbon economy," said Dr. Gibson. "We also expect that the use of tire-derived fuel will reduce NOx emissions as well as make excellent use of scrap tires otherwise being landfilled," he added.

Lafarge Canada is committed to a low carbon economy and reducing its carbon footprint. "It is important that we work with partners in tackling the challenging problem of climate change. Dr. Gibson's team's research in recent years has been essential to our understanding of how to replace fossil fuels, like coal, with lower carbon alternatives," said Rob Cumming, Environment Director for Lafarge.

While there are a number of levers available to reduce the carbon emissions in the cement industry, the one of most relevance is the growing usage of lower carbon fuels. Thanks to different initiatives including previous work with Dalhousie's Faculty of Engineering, the Brookfield plant has reached world class status in the percentage of its fossil fuels replaced with



lower carbon fuels, in the form of front end burner injection, and is expected to reach substitution rates as high as 30% on an energy basis by the end of this year.

The project proposal will be explained in further detail at a Public Meeting planned for October 20, in Brookfield. If the demonstration shows that, as expected from the research, tires can be used safely to replace coal, Lafarge expects that about 15% of its fuel needs can be met from using approximately 450,000 scrap tires per year which is just under half of the amount of tires generated in Nova Scotia.

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Lafarge Canada Inc., a member of LafargeHolcim, is Canada's largest provider of solutions to the construction and development industry. With more than 6,000 employees across Canada, our mission is to provide construction solutions that build better cities and communities. The cities where we live, work, and raise our families along with the infrastructure that supports our communities such as roads, bridges, transportation links, water, and waste management benefit from the solutions provided by Lafarge.

Lafarge is committed to providing solutions using sustainable manufacturing practices and improving the environment in and around our operations. At locations across Canada, we have worked to reduce carbon dioxide emissions, restore wetlands for native plants and animals, and identify waste materials that can be recycled and used at our operations.