



Challenge Synopsis:

In late November 2019, Maple Leaf Foods (Maple Leaf) announced that we had become the first major food company in the world to be carbon neutral. We are also one of just three animal protein companies globally and the only food company in Canada to set science-based GHG emissions targets (SBTs) that are aligned with the goals of the Paris Agreement on Climate Change. SBTs require that we reduce our emissions even as we grow.

Maple Leaf includes scope 1, 2 and a portion of our scope 3 emissions are part of our carbon neutral program. A significant portion of our Scope 1 GHG emissions (45% as of 2019) stem from manure management at our owned barns. Mitigation solutions are essential for us to decarbonize and reach our SBTs. Further, our Scope 3 sources (78.4% as of 2019), are significantly weighted to our contract pork producers, therefore Maple Leaf is very interested in options for emission reduction projects with supply chain partners as well.

Challenge Statement:

Maple Leaf Foods is looking to pilot a technology that is capable of sequestering methane off-gas emissions generated by animal manure lagoons and utilizing it for electricity or heat production on-farm (e.g. utilization within our barns). Technologies that can generate value-added products (e.g. treated water, fertilizer, etc.) from the manure will also be considered.

Context:

Anaerobic digesters (AD) are a well-established technology that are used to both manage organic waste material and produce bioenergy. In Canada, they are most commonly deployed to handle large quantities of municipal green bin organic waste. On-farm usage of anaerobic digestion (and similar technologies) has been proven in Europe and the southern United States but remains quite low in Canada, especially in our prairie provinces (Alberta, Saskatchewan, and Manitoba).

The current practice on-farm is the use of manure or waste lagoons, which are low-tech and low-cost, but have environmental impacts. Manure lagoons are large, open pits with impermeable liners that are dug into the ground to hold organic animal waste that is generated on farm. Lagoons are low cost and require little maintenance, making it an easy option for farmers to incorporate into their activities. However, over time, lagoons are prone to leaks and as they are often uncovered, are a major source of methane emissions as the manure decomposes prior to being utilized as organic fertilizer for local crops. The emissions mitigation technology would be installed prior to depositing manure into the lagoons so that any generated off-gas is avoided and captured rather than released as GHG emissions.

Response Criteria:

- A technology that is capable of sequestering methane off-gas emissions generated by animal (i.e. hog) manure and utilizing it for electricity and/or heat production that can be consumed at a farm site. Technologies that can generate value-added products from the manure (e.g. treated water, fertilizer, etc.) will also be considered.
- Capable of handling the waste of 10,000-15,000 hogs per year (i.e. roughly 900-1100 m³ annual volume).
- Capable of handling the high liquid content found in hog manure.
- Capable of operating in a cold climate while requiring minimal auxiliary draw for unit heating.
- Minimal maintenance requirements for farmers.
- Low cost.

The Opportunity:

- Potential to pitch your technology (if selected) to one of Canada's largest and most sustainable protein producers
- Meet new customers and enter new markets with your product

About Maple Leaf Foods:

Maple Leaf Foods Inc. is a leading consumer protein company, making high quality, innovative products under national brands including Maple Leaf®, Maple Leaf Prime®, Maple Leaf® Natural Selections®, Schneiders®, Schneiders® Country Naturals®, Mina® and Lightlife™. The Company employs approximately 13,000 people and does business in North America and Asia. The Company is headquartered in Mississauga, Ontario and its shares trade on the Toronto Stock Exchange (MFI).

In 2019, Maple Leaf Foods became the World's First Major Carbon Neutral Food Company and is the only food company in Canada to adopt science-based emissions targets that are aligned with the goals of the Paris Agreement on Climate Change.

***Only non-confidential information should be included in your response ***