

Agriculture & Agri-Food

Standing Committee
House of Commons
131 Queen Street
Ottawa, Ontario K1A 0A6

May 13, 2021
Ref. No. 1000

Brief from Bruce Taylor, P.Eng, President of Enviro-Stewards Inc. to Agriculture & Agri-Food Standing Committee

Dear Committee,

Thank you for inviting me to provide witness testimony. The enclosed written brief contains insights and guidance from my 30 years in this industry to supplement my video testimony today. Attachment A contains a copy of the slidedeck presented and Attachment B provides supplemental thoughts on the questions posed to me following the presentation by committee members.

1. Background on Enviro-Stewards

Enviro-Stewards Inc. is a [Best for the World](#) classified B Corporation, recipient of Global Compact Canada's [SDG Goal award](#), and the only Canadian company to win a [Global SDG award](#).

Enviro-Stewards' sustainability engineering work for [Maple Leaf Foods](#), [Campbell Soup](#), [Southbrook Winery](#), [Andrew Peller](#), [Maple Lodge](#), [Dextran](#), [North York General Hospital](#), [50 Food & Beverage Processors](#), and [Tim Hortons](#) have each won national awards.

Enviro-Stewards also founded [the safe water project](#) in South Sudan that has won an international [globe award](#) and was featured in [B the change](#) magazine, [MEDA magazine](#), and a [TEDx talk](#).

2. Common Government Procurement Process Pitfalls

Many/most water & energy efficiency procurement programs are (unintentionally) designed to procure the least value for the funds invested. For example, our water conservation work with York Region's water conservation program identified practical & affordable measures at 60 manufacturers (including many food & beverage processors) that would reduce their water consumption by an average of 36% (see [OWWA award](#)). However, most water efficiency program requests for quote can be won with project approaches designed to find minimal practical and affordable conservation measures. As finding no savings that facilities find to be practical and

affordable is substantially less expensive to provide, such bids routinely win and everyone suffers (the facilities, the delivery program, the funder, and the environment).

As humorously illustrated on slide 6 of the presentation in attachment A, yes technically that person procured the Pegasus tattoo they requested (4 legs, 2 wings, etc.), but I'm pretty sure they will not be satisfied with the permanent ramifications.



Similarly, most public tendering for energy efficiency work is skewed towards procuring the least expensive opportunity assessments rather than the most economic & environmental benefit from the measures identified by the assessments. This leads to procuring meaningless stacks of paper to sit on your shelf rather than competitive advantage & footprint reduction for Canada's Agriculture & Agri-Food sector.

For example, Southbrook's Winery asked us to give a winery tour of the energy conservation measures we identified & implemented there. At the conclusion of the tour, a representative of Niagara-on-the-Lake tour said,

"this is amazing, I just paid for a conventional energy audit at this winery that found the next 5% electrical savings would have a 20-year payback."

As a consequence, the owner Bill had ordered solar panels instead as they had a 7- year payback. Our subsequent deeper dive at this (already LEED Gold Certified) winery found that then implemented measures that cut electricity consumption and natural gas consumption by 40% each. As a consequence, Southbrook cancelled 1/3 of their solar panels as they were no longer required (which saved 1/2 acre of vineyard from being covered with panels) and won a [national award](#).

The Southbrook example illustrates how conventional procurement not only wastes money spent on the assessments, it results in the wrong conclusions (such as 7-year payback solar panels rather than 4-month payback conservation). Essentially, for a low-cost audit, the "engineer" cannot consider anything new as it would add to the cost of providing the audit. For example, London Ontario declared a climate emergency. In order to convert from burning natural gas to electrical demand to be addressed with solar panels, they intended to purchase air to air heat pumps to pump heat from London air into their Kinsmen Arena. Perhaps this might be appropriate for some types of buildings, but the arena was already running an even more efficient heat pump to remove heat from their ice pad and then paying to get rid of that heat outside. Analysis confirmed that the amount of heat paying to be rejected on even the coldest month was greater than the amount of heat required to heat the entire arena (see [Manufacturing Automation article](#)).

Agriculture and Agri-Food's recent food loss challenge procurement had the potential to address some of these procurement shortfalls. It sought the best proposals for a set amount of funds and included outcome-based evaluation criteria. However, as outlined under food loss prevention below (Section 5), it appears to have failed to procure based on the stated criteria.

3. A Practical Affordable Path to Net Zero carbon, waste, water & Beyond

Many food & beverage manufacturing facilities are committing to be carbon positive, carbon negative, carbon neutral, etc. (which have similar meanings but use opposite words). To cut through the confusion, our preference is to say climate positive. And rather than 2030, 2050 etc., we prefer to get folks there now.

For example we helped Maple Leaf Foods become the World's First Major Carbon Neutral Food Company (see [award](#)) in November 2019. And rather than costing them money, by embarking on a [prevention first](#) path to climate neutral, they have reduced their operating costs while achieving carbon neutrality. Thus, they have triple bottom line wins (operating cost savings, job protection, footprint reduction) in addition the market advantage available through credible leadership.

Most current messaging leaves the impression that carbon neutrality & beyond is expensive and likely unattainable. Government and utility programs tend to provide capital incentive funding to help implement expensive low payback measures. For example, one program we worked with offered \$2,500 for a full plant assessment to see what should be done and \$500,000 in implementation assistance. Therefore, there was no opportunity to identify practical affordable measures that would not need any implementation assistance. Alternatively, OCETA's follow-up with 27 manufacturers we worked with under their program found that 90% of them intended to implement all or most of our recommendations with or without incentives and that the average payback would be under one year.

Once reduction measures are implemented & verified, it is necessary to address the "last mile" of unavoidable emissions. For example, Enviro-Stewards has cut our own footprint by 78% per employee through conservation and chooses sustainable offsets for the remainder (Section 4 below). We are also installing a demonstration blue roof this month ([CBC article](#)) that will further reduce our remaining energy footprint, reduce flood risk (provide climate adaptation) and economically recover rainwater for our toilets and [living wall](#).

4. Allowing Climate Justice Based Carbon Credits

It is well known that the present climate crisis was primarily created by the developed world and will pose a larger difficulty for those in developing countries. It is less well known that present climate solutions are primarily designed to benefit folks in developed countries.

For example, rather than putting solar panels on our roof in Elmira, we repaired a non-functional solar system on the roof of an orphanage in South Sudan (slide 10). Because they get twice as much daylight as us, they get about twice the electrical output per panel. Furthermore, with the system operational, they were able to shut off their generator that was previously required to operate their water pump (leaving more funds for food for the children rather than fuel for the generator). Although the economic, social and environmental benefits are much greater from this approach, placing solar panels in developed countries rather than on our own roofs is not recognized by environmental certification programs.

There is currently an x-prize challenge out to find ways to sequester carbon. There is no chance that it will find a solution as stable & energy efficient as leaving carbon in coal in the first place (by conserving energy through other means). We know that regenerative agriculture can sequester carbon and improve resiliency. In addition to developing such techniques here in Canada, let's export this knowledge to developing countries that have adopted the soil stripping techniques we previously exported to them.

Another way to sequester carbon is to plant a tree. But better yet, what if we just reduced the amount of trees we cut down in the first place. The Safe Water Social Venture projects that we train & equip avoid the need to burn wood to boil water ([Woolwich Observer](#)). They could also generate water credits and carbon credits which would help make them more affordable to residents in developing countries (while saving an average family there \$1,000 in medical costs over the lifetime of the water purifier).

Amazingly, Canadian carbon frameworks do not allow for international carbon credits such as this. Therefore, we have not invested in getting them certified as there would be little market for the carbon credits generated.

5. Food Loss Prevention

As this committee is aware, 1/3 of all the food grown on earth is presently wasted (valued at \$49 billion/yr for Canada's portion). If it were a country, food loss would be the 3rd largest greenhouse gas emitter (after USA & China). It would also be the second largest consumer of potable water on the planet (second only to the water footprint of the 2/3 of food that is eaten).

Present programs emphasis organic waste management so that it does not end up in landfills where it generates methane gas during decomposition. If such programs are successful at diverting 100% of food waste from the landfill, we would still be wasting 1/3 of food, it would still be the 3rd largest GHG emitter (due to the agricultural step), and most of the \$49 billion per year would still be wasted. The only way to reduce the numbers is to keep the food in the food chain in the first place. However, even though it has the largest economic, social and environmental benefits, food loss prevention, is literally unreported in the Food Loss & Waste Reporting protocols (it only lists destinations for food wastes).

I served on the Commission for Environmental Cooperation's (CEC's) North American food loss expert panel. As food loss to the sewer is typically overlooked, we prepared a CEC case study of our work with Beau's Brewery that could improve their yield 7.4% while substantially reducing their sewer surcharges and operating costs ([CBC article](#)). The CEC subsequently asked us to prepare additional case studies for Bimbo Canada and Smithfield USA, which are available at on [CEC's website](#).

A Walmart Foundation grant (administered by CCFI & Provision Coalition) co-funded our assessments at 50 food & beverage manufacturing facilities across Canada. These assessments identified practical measures to reduce food loss at each facility by \$230,000/yr with a payback of under one year (see [Clean50 award](#)). The 50 facilities would save \$350 for every tonne of greenhouse gas that would be reduced in their supply chains (less agricultural input would be required to produce the same quantity of food). And if you placed a grocery bag beside the CN tower and another beside it, you would get to London Ontario each year with the amount of food that would be saved from just those 50 facilities.

We met with a roving subcommittee from Agriculture and Agri-Food where I recommended rolling out this program to help other manufacturers. We were informed that it would be better to submit it as an application under Agriculture & Agri-Foods' Food Loss Challenge. We submitted a proposal to work with 150 food & beverage processors across the country to identify, implement and measure the prevented food loss and associated economic, social & environmental metrics (using a first of its kind adaptable food loss measurement toolkit).

On Tuesday of this week, I received a letter informing me that our proposal was not one of the 24 proposals accepted. I would be very happy if our proposal was not accepted because there were 24 other proposal equal or superior to ours with respect to the evaluation criteria stated.

However, as outlined on slide 17, few of the selected proposals have a credible chance of securing comparable gains as those conservatively projected for the 150 facilities we would have work with. If we assume we are 1/2 as successful as we were with the 50 facilities we previously worked with and an average tax rate of 15%, Canada would have received \$25 of new tax revenue for every \$1 they would have spent on our proposal.

Similarly, over 20 years, each of the 150 participants would have retained \$19 of additional revenue for every \$1 they spent implementing the measures we recommend. This would help protect every job in those factories by improving the economic competitiveness of Canadian Food & Beverage manufacturers. It would also save 460 million meal equivalents from being lost from the food supply over the 20-year period the measures would likely be retained.

With respect to the stated evaluation criteria for the food challenge program:

1. Potential volume of food waste reduction

- Our proposed approach is potentially applicable to sectors contributing to 48% of Canada's avoidable FLW of 11.2 million tonnes (\$49.5 billion/yr)

2. Level of innovation and scalability

- No adaptable tool is presently available to measure prevented food waste across a variety of industries. Our proposed adaptable tool measures prevented food waste (which is presently unreported in frameworks)
- Our proposal included Coast to Coast rollout partners: Food Companies (MLF, Eden Valley, Wellington, Bimbo, Labatt, Agropur, Bonduelle, Nature Fresh), Academia (Humber), Industry & Sustainability Associations (HMGA, AFPA, FBC, FBO, LEN, PPG, SWR, York Econ Dev., NB Power), and a Canadian Documentary Film Company (Hemmings House) to help shift the paradigm from food waste diversion to food loss prevention

3. Environmental, social and economic benefits (by stage 3)

- 14 million kg/yr of food saved, valued at \$17 million per year
- 49,000 tonnes/yr less (embedded) GHG
- 23 million meal equivalents per year (enough for 2 meals/d for every homeless person in Canada over 20 years)

6. Recommendations

Thank you for inviting me to testify to this committee, to summarize, I would advise:

1. Focus on food loss prevention rather than more efficient ways to destroy or modify wasted food. Prevention creates the greatest economic, social and environmental benefits and has few other advocates.
2. Do not rely on waste diversion percentages as they are counter productive (if you reduce the amount of diverted food waste generated, your diversion percentage goes down rather than up). For example, Campbells' diversion percentage would have declined when we

implemented measures to avoid the loss of 938 tonnes/yr of ingredients that were previously diverted.

3. Roll out a national food loss prevention technical assistance program. The most needed element is assistance with identification & evaluation of practical conservation measures. As noted in section 2 above (procurement challenges), if this is procured using a low-cost bidding model, you would be better off not rolling out the program at all as you will merely waste money and waste the time of participating Canada's food & beverage manufacturers.
4. Consider equity and justice in the design of carbon frameworks. This could include promoting or at least allowing investments in sustainable agriculture and safe water in developing countries that are experiencing the climate challenge that developed countries are primarily responsible for generating.

Respectfully submitted,

Enviro-Stewards Inc.

A handwritten signature in black ink, appearing to read 'Bruce Taylor', is written over a light blue grid background.

Bruce Taylor, P. Eng

President