

April 12, 2022

Environment and Climate Change Canada
EDC-DEC@ec.gc.ca
Re: Canada's Clean Energy Standard

Dear Sirs/Mesdames;

Thank you for the opportunity to submit feedback on this standard. Zero Waste BC is a non-profit association dedicated to driving systemic change towards Zero Waste in BC. Zero Waste is defined as the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health. Our current resource consumption systems of linear take-make-waste not only create waste but also generate a huge amount of greenhouse gases which constitute some of the discharges that threaten the environment and human health. For more information on Zero Waste, please see the Zero Waste Hierarchy.¹

We appreciate the intention of this standard. In the introduction, it notes that electrification will play a key role but fails to note that Canada wastes a lot of energy and so there is significant opportunity for conservation and demand management to be key aspects of our progress. In fact, this should be a central pillar with efforts made to ensure this has primacy over new generation sources. While the provinces could lead on this, the federal government could use its levers to drive this also. We agree that clear regulatory signals are needed, but not just to decarbonize but to decrease energy use overall from all sources. Just as with material production, all energy production has a footprint that needs to be minimized. The precautionary principle should be followed when looking at burning hydrogen, small nuclear reactors and the use of CCUS. As radioactive waste is extremely long lasting, harmful and very hard to dispose of, we do not recommend pursuing that option. Developing intertie transmission between provinces and territories will be essential to the sharing of clean energy to better utilize existing resources.

Our remaining comments will focus on the questions relating to solid waste.

As greenhouse gas emissions of all types are lower when materials are not wasted and products are kept in the useful loop for longer, systems that rely on ongoing wasting of materials are counterproductive. Many actions are underway to reduce waste. For example, the Province of BC has set targets for GHGs per capita and intends to develop a Circular Economy Strategy in

¹ Zero Waste Hierarchy: <https://zerowastecanada.ca/zero-waste-hierarchy/>.

2022.² While the outcomes of this strategy development are unknown, it should aim to reduce material throughput and solid waste. In addition, the province has set targets for reducing per capita solid waste and has plans to further address plastic waste. The federal government is also looking at how to reduce waste with a specific focus on plastics³ and will be helping to develop the global plastics treaty.

Our concerns are that if using waste materials for energy is included in the Clean Energy Standard, it will counteract meaningful GHG and solid waste reductions. The Zero Waste Hierarchy is based on several guiding principles which are of note:

1. **Closed Loop Systems** -Design systems to be closed loop rather than linear in their use of resources
2. **Conservation of Energy** -More energy can be saved, and global warming impacts decreased, by reducing waste, reusing products, recycling and composting than can be produced from burning discards or recovering landfill gases.⁴
3. **Highest and Best Use** -Creating and keeping materials and products for a use as high on the hierarchy as possible and in the useful loop as long as possible. Keeping materials from being downcycled where the number of future uses or options are limited. Source separate items and materials to the extent necessary to ensure clean and marketable products and materials for reuse, recycling and composting streams.
4. **Materials Are Resources** -Preserve materials for continued use and use existing materials before harvesting virgin natural resources
5. **Minimize Discharges** -Minimize all discharges to land, water or air that threaten the environment, or human health, including climate changing gases
6. **Opportunity Costs** -Consider opportunity costs of investments and ensure investments occur as high as possible on the Hierarchy
7. **Polluter Pays** -Whoever causes environmental degradation or resource depletion should bear the “full cost” to encourage industries to internalize environmental cost and reflect them in the prices of the products
8. **Sustainable Systems** -Develop systems to be adaptable, flexible, scalable, resilient, and appropriate to local and global ecosystem limits

Looking at the use of waste to energy in particular, the most effective action to reduce emissions from solid waste is to reduce the amount of material that gets wasted. Our recent report, [A Zero Waste Agenda for BC](#), written with the Canadian Centre for Policy Alternatives, found that a zero waste strategy implemented by the BC government could not only decrease waste but also GHGs while creating green jobs. This is why the actions of the federal government, provincial governments, local governments and numerous non-governmental organizations focus on reducing solid waste.

In contrast, if waste goes to some form of incineration (such as mass burn, gasification, pyrolysis, etc.), greenhouse gases are created and the materials are lost from the system and will be replaced with new virgin materials (with their own new carbon footprint). When materials are burned, it not only released GHGs at that point, but it also wastes all of the upstream energy and

² Province of BC (2021). Roadmap to 2030. <https://cleanbc.gov.bc.ca/>.

³ Federal Government of Canada (n.d). Zero plastic waste <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/reduce-plastic-waste/canada-action.html>

⁴ Source: <http://zwia.org/standards/zw-community-principles/>, Adopted by ZWIA Board November 19,2020

associated GHGs that it took to produce the material. Energy from this type of system should not be considered “renewable” as it is a linear system that exacerbates many social and environmental challenges that we are facing and loses the materials from the useful cycle. Not only that but there are numerous forms of harmful pollution associated with these systems.⁵ Municipal solid waste should not be seen as an energy source. It is in fact dirtier than coal, when including biogenic sources.⁶ No carbon credits should be provided for burning waste and no subsidies provided to create systems that destroy materials. This would include so-called advanced recycling or chemical recycling facilities which, though not yet proven,⁷ are being proposed as an alternative to meaningfully reducing material throughput and phasing out non-recyclable materials. The concerns related to these technologies were well documented in the submission to the Ontario government.⁸ The IPCC’s report on mitigation noted “projections for increasing plastic production ... do not align with necessary emission reductions”⁹ so it is important to phase out unnecessary and hard-to-recycle plastic, not spend many years trying to find better recycling systems.

Biomass was another question for consideration. In terms of food loss and waste, a study for Canada, US and Mexico showed that Canadians waste significant amounts of edible food (up to 110 kg/person/year of food loss and waste and it is 396 kg/person/year when pre-harvest and consumer stages of loss are included).¹⁰ This waste not only generates GHGs at all stages, it is also has footprints for water use, cropland use, fertilizer use, energy used, landfill space used, tipping fees paid, market value loss, loss of biodiversity and calories lost. It is also a significant opportunity for reduction. This form of biomass should not be considered as a fuel for cogeneration unless under specific programs that have source separated collection and anaerobic digestion followed by composting with the end product used to amend soil. Similarly composting is the preferred option for yard and garden waste. A recent presentation by King County mapped out many different circular economy businesses that are needed to use clean wood supplies as material resources rather than energy.¹¹ Energy from biomass sourced from municipal solid waste materials should not be included in the Clean Energy Standard as there are

⁵ GAIA (2021). Extinguishing waste-to-energy incineration myths. <https://www.eco-business.com/press-releases/extinguishing-waste-to-energy-incineration-myths-2/#:~:text=A%20report%20released%20by%20GAIA%20found%20that%20waste,thus%20disrupting%20their%20livelihood%20and%20source%20of%20income>.

⁶ Institute for Local Self Reliance (2008). Stop Trashing the Climate. <https://ilsr.org/stop-trashing-the-climate/>

⁷ Eunomia (2020). Chemical Recycling State of Play. <https://chemtrust.org/wp-content/uploads/Chemical-Recycling-Eunomia.pdf>

⁸ Environmental Defense Fund (2022). Joint submission from environmental groups on EA requirements for “advanced recycling” facilities. <https://environmentaldefence.ca/wp-content/uploads/2022/02/Joint-submission-from-environmental-group-on-EA.pdf>

⁹ IPCC (2022). Climate Change 2022 -Mitigation of Climate Change. Page 11-51. https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf.

¹⁰ Commission for Environmental Cooperation (2017). Characterization and Management of Food Loss and Waste in North America. <http://www.cec.org/files/documents/publications/11772-characterization-and-management-food-loss-and-waste-in-north-america-en.pdf>

¹¹ Coast Waste Management Association Webinar -February 25, 2022. Building Action for Managing CD&R Waste.

higher and better uses of the materials. All biomass emissions need to be counted as all emissions impact the atmosphere. Some of the biomass carbon sources are not replenished within one year (such as wood), whereas biomass of annual crops would be if the crops grow again the next year. In addition, encouraging the burning of organics also means that the nutrients are lost from the nutrient cycle and are not used to fertilize soil.

It is important to ensure that a Clean Energy Standard does not incentivize ongoing unsustainable levels of waste, nor end up generating infrastructure and systems that rely on ongoing unsustainable levels of waste. This has played out in the past for waste to energy systems where local governments may have signed contracts or built systems that, in times of lower waste production, higher and better uses of materials such as recycling were discouraged in order to continue to provide sufficient feedstock to the facilities. It is also important to ensure that there is not a deterrent to creating systems and infrastructure for higher and better uses of materials, in particular plastics, wood and organics that make up the key energy components of waste.

Opportunity cost is another factor. Greenhouse gas emissions may be able to be reduced more cost effectively by investing in zero waste and circular economy programs than in waste to energy. Waste to energy systems are extremely expensive and result in fewer programs to decrease waste and the associated emissions and impacts. Many are only experimental and take years to develop, if ever. The City of Ottawa and its pursuit of plasmification is a suitable cautionary tale¹² but there are many.

As burning waste for energy is not sustainable, cost effective, nor lower carbon, we recommend that the Clean Energy Standard not include any form of solid waste to energy. This should also apply to cogeneration units by 2035 or sooner. The benefits of including these in the standard is that there will be an incentive to have a cleaner energy supply but if not included, it will create loopholes where dirtier forms of energy will persist or even thrive. There are few existing waste to energy systems presently so implementing this with enough notice should not be a challenge, however if the standard is not clear, it leaves room for these kinds of facilities to proliferate which will then be far harder to manage as many new “magic box” technologies are constantly being proposed to local governments and others.

Affordability is a key consideration but needs to be looked at in a broader context. Energy should cost more, and materials should cost more so that we conserve them. Pricing them appropriately will lead to better decision making by all users, especially the most wasteful. To address affordability for those who will truly be challenged by this, other measures such as affordable housing, income supports, living wages, guaranteed incomes, pharmacare, day care, low cost or free transit, etc. are better places to take action and should be done in a comprehensive, holistic way using an equity lens. When looking at energy costs without also looking at the costs related

¹² Ottawa Citizen (2020). Ottawa severs ties with Plasco as company files for creditor protection. <https://ottawacitizen.com/news/local-news/plasco-energy-group-files-for-creditor-protection/>



to the broader impact that also costs society (such a climate change and many other environmental, economic and social aspects), we fail to ensure the true costs are internalized into the price of the product so that appropriate and well-informed decisions can be made across society and business.

We would like to thank ECCC for the opportunity to submit input on this standard. Please feel free to contact us if you have any questions or wish more references for research on this area.

Sincerely,
Sue Maxwell
Chair,
ZWBC