



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

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**Re: Southern Ontario Water Consortium Submission to Reducing Litter and Waste in Our Communities:
Discussion Paper (EBR 013-4689)**

With this submission, SOWC will focus on opportunities for moving toward **net zero wastewater** in Ontario by enhancing existing anaerobic digestion capacity to process organics and generate RNG.

Preamble:

The provincial government has articulated a goal, in the recent Environment Plan, of moving toward a ban on food waste in landfills. We support moving this direction.

There is an important and timely opportunity for Ontario municipalities to lead a major shift to resource recovery from wastewater, particularly energy recovery or “net zero energy” projects. Moving in this direction provides an opportunity to make existing wastewater facilities with anaerobic digestion more efficient, increase treatment capacity (or better utilize excess capacity) and even turn them into energy generators (capturing methane and turning it into renewable natural gas, or RNG) providing a potential revenue stream for municipalities. It also provides a cost-effective option for the beneficial management of source separated organics, particularly by small- and medium-sized municipalities. Optimizing existing infrastructure (anaerobic digesters at wastewater facilities) and enhancing its capacity through the incorporation of innovative technologies can enable co-digestion of biosolids and other organics rather than establishing new stand-alone digestion facilities.

Some important steps are required by the province to support this opportunity, including reiterating its commitment to the Food and Organic Waste Framework (“Framework”), particularly Part B (Food and Organic Waste Policy Statement) which was finalized in 2018. We’re pleased to see this in the Discussion Paper. Another critical step is to **establish a minimum requirement for RNG** in natural gas (as BC has implemented). Additional specific recommendations are outlined below.

Background:

The Southern Ontario Water Consortium (SOWC) established an expert Working Group focused on “Value generation from Biosolids” in 2017. The Working Group was created with support to SOWC from the Ontario Ministry of Economic Development. The Working Group believes that Ontario has the potential to be a global leader in biosolids technologies; the right policy environment could create the necessary conditions for such a cluster, building on the existing technology companies and research expertise. A major initiative of the Working Group was the funding of two critical studies led by Prof. Wayne Parker at University of Waterloo. The first was a needs assessment to understand current practices regarding the disposition of biosolids in Ontario and opportunities for incorporating innovative technologies. The second was an analysis of the potential for



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

optimization and incorporation of innovative technologies to increase capacity of existing anaerobic digesters at Ontario wastewater treatment facilities to facilitate co-digestion. The Working Group also actively engaged in provincial consultations for the development of the Organics Framework, advocating for a specific reference to biosolids and wastewater infrastructure. We were pleased to see two important Policy Statements in the final document that address this (**6.15** and **6.16**).

SOWC and Ontario Clean Water Agency (OCWA) hosted an extremely successful engagement event in October 2017 to validate and promote opportunities for net zero energy wastewater projects. Along with technology providers and academics, participants included 18 individuals representing **13 municipalities** that have expressed interest in net zero energy wastewater. Please see a summary of this event, and the outcomes at: <https://sowc.ca/getting-to-net-zero-energy-leadership-forum-hosted-by-sowc-and-ocwa/>

One major project that was profiled at the event is of significant interest to other municipalities: the City of Stratford has partnered with OCWA and Suez Water Technologies (and was awarded \$5m through the OCE Target GHG program) to implement a net zero energy project at its wastewater facility. The project will allow Stratford to upgrade its facility, using innovative biological hydrolysis technology to optimize anaerobic digestion, which will increase its existing digester capacity and allow for the co-processing of source-separated organics. The project will drive implementation of a SSO program, and will extend the life of the city's landfill. It will also allow for the capture of methane gas for the supply of RNG to the grid (in partnership with Union Gas, for purchase by BC Fortis) when it is commissioned in 2020.

OCWA is actively working with other municipalities on potential projects for co-processing biosolids and organics, including participating in two feasibility studies with municipal clients. In 2018, SOWC initiated a Municipal Working Group, for Ontario municipalities to share their interest and progress in potentially pursuing net zero energy wastewater projects and to learn from the Stratford project as it proceeds. OCWA and a dozen municipalities are actively engaged in this discussion.

These events and discussions have informed the following recommendations, which we respectfully submit to the province for consideration:

1. Fully implement the Organics Framework

The Food and Organic Waste Framework ("Framework"), particularly Part B (Food and Organic Waste Policy Statement) was finalized in 2018 with strong support from stakeholders after extensive consultation. This is the right starting point. We encourage the province to commit to continuing implementation of this Framework, recognizing the needs of different municipalities.

2. Pursue an integrated approach, including biosolids, septage and other organics in planning.

Driving beneficial management and value generation from organics should include an integrated approach. An eventual ban on landfilling organics should also require biosolids management that prioritizes beneficial use/reuse.



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

The province's Discussion Paper notes diversion rates in the IC&I sector is particularly low (17%). Co-digestion is applicable to residential source-separated organics as IC&I organics waste. In fact, IC&I sources are particularly valuable from a logistics and quality control standpoint. It is also applicable to collection from multi-unit residential and apartment buildings, and new technologies are available to utilize organics from mixed waste sources.

3. Enable and support regional approaches

Municipalities undertaking co-digestion projects must secure a long-term supply of organic materials for a project to be viable. This potential "end user" for source-separated organics must be taken into account in the implementation of the province's Organics Framework. Projections of the volume of organics to be produced from future collection programs (and an eventual ban on landfilling of food waste) and demand for processing capacity must take biosolids management into account, and maximize the capacity for anaerobic digestion at wastewater facilities before considering new infrastructure.

A regional planning approach should be encouraged and supported. This will require addressing gaps in the data related to organics (including quantifying the production of organics, the current and potential enhanced capacity for treatment, and the potential implications of a landfill ban).

Regional planning to address organics management needs will enable and support a broader assessment of current processing capacity and potential capacity gaps, and ensure that municipalities are able to consider approaches that will help them get the most out of current treatment capacity. Helping municipalities focus on opportunities for biosolids volume minimization, energy generation, or resource recovery at wastewater treatment facilities will allow them to optimize the performance and efficiency of existing treatment facilities. Upgrading existing capacity is likely to be more cost effective and have much faster timeline for approvals (and easier public acceptance) than building new stand-alone organics processing capacity.

Once wastewater treatment capacity is optimized, a regional planning approach would support consideration of centralized biosolids, septage and organics storage facilities and dedicated digester capacity on a regional basis as needed.

4. Develop a regulatory "backstop" to support local and regional initiatives

One of the barriers for small- to medium-sized municipalities implementing local projects is certainty of supply of organics. As a stepwise solution toward an eventual ban on landfilling of organics, municipalities that demonstrate leadership in creating treatment capacity should be supported with geographically-based restrictions. This could take the form of regulations that restrict cheaper, lower value options (such as landfilling) where capacity exists for the high value management of organics (including biosolids and septage) for example, within a specified distance of a processing facility.

This approach of creating geographically-based restrictions, where demonstrated capacity exists, could include collection, handling (ex. transfer stations) and/or final processing (i.e. co-digestion) facilities that are created to ensure high value end uses of organics. This would provide certainty of supply where investments are made in



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

such capacity, and would ensure an appropriate regional approach to the transition to higher value organics and biosolids processing.

5. Introduce a mandated renewable content requirement for natural gas

British Columbia has imposed 20% minimum renewable content in natural gas. As a result, utilities in that province (particularly Fortis BC) are the most active purchaser of RNG from Ontario. A minimum requirement for renewable content in Ontario would drive a domestic market and long-term market security for Ontario projects.

6. Provide dedicated funding for co-digestion projects

Optimizing and upgrading wastewater facilities to accommodate capacity for co-digestion, and planning and building complementary regional collection and waste handling capacity is likely to be less expensive and faster to secure environmental and other approvals compared to creating new stand-alone digestion capacity for organics. It is likely that there will be a need for both approaches, but maximizing the former creates an opportunity for cost savings and faster time to market. It also presents potential for ongoing revenue through RNG sales and innovative partnership and potential investment by the private sector while maintaining control and ownership by municipalities.

The Stratford project is an excellent example of the innovative business models that can be applied to these types of projects. The city and OCWA are creating a Municipal Services Corporation to own and manage the new project. These two public agencies will also share revenues from the sale of RNG until costs are recovered. The payback period is expected to be about 4 years from start-up. The project cost is \$15.5 million, including investments from OWCA and Suez. The project is also partially funded through the Ontario Centres of Excellence TargetGHG Program. Without the TargetGHG investment, the payback period is estimated to be 9 years.

The innovative financial model and business partnership may provide a template for other municipal projects. While protecting public ownership and management, it also would attract private investment particularly by technology providers, utilities and waste management companies.

An infrastructure fund tailored to co-digestion at wastewater facilities (including related facilities for pre-processing or handling) would create the opportunity for municipal leadership while attracting matching public and private investment. It would drive a new market for innovative approaches while optimizing the use of existing infrastructure and driving high value end products from source-separated organics and biosolids.

7. Predictability of environmental approvals

As noted above, environmental and other approvals for upgrading existing facilities are expected to be much faster than for a new build. But there are specific actions the province could take to ensure the process is as efficient and effective as possible.



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

Environmental Assessment (EA): The Stratford project has completed its Class EA. It was required to solicit written confirmation from the Municipal Engineers Association that the project should be a Schedule A. This is an important precedent that should be communicated (and extended) to other similar projects.

Environmental Compliance Approval (ECA): Co-digestion projects require an amendment to the existing municipal ECA for the wastewater facility. The Stratford ECA amendment has been given priority review status by MECP as an “innovative technology” project. A commitment to similarly expediting ECA amendments, and the continued facilitation by Partnerships Branch, for facility upgrades for co-digestion would benefit other similar projects. We are pleased to note the commitment articulated in the province’s Discussion Paper to “consider an alternative or streamlined environmental approvals path for proven technologies that recover value from waste.” Such a streamlined review should be available for co-digestion projects in particular.

8. Recognize and promote beneficial end products

Anaerobic digestion produces two main end products: digestate and biogas. Digestate is subject to a comprehensive regulatory framework. Regarding biogas, a recent interpretation has been made by MECP that renewable natural gas (RNG) generated as a result of the anaerobic digestion of organic wastes is considered a waste and therefore subject to requirements in both Part V of the EPA and R.R.O. 1990, Reg. 347 (General – Waste Management). While it is understood that the recent interpretation of biogas as a waste may be correct in terms of the current regulatory framework, it is evident that this position may inhibit future anaerobic digestion projects that support the current government mandate regarding food and organic waste and RNG.

Two options are recommended:

Option 1: Amend s. 3 of Reg. 347 to include biogas that is injected into a natural gas pipeline as a material that is exempt from Part V of the EPA and Reg 347 requirements (consistent with the existing exemption for digestate generated from anaerobic digestion that is destined for agricultural land application).

Option 2: Immediately create a policy that clarifies the intention of the government is to support food and organic waste diversion from landfill and generation of RNG through anaerobic digestion and therefore exempts from Part V of the EPA and Reg 347 any biogas that is injected into the natural gas pipeline.

Conclusion:

We would be happy to work with the MECP to develop the above ideas and recommendations further. In addition, we would be happy to work with MECP to clarify the approvals requirements for co-digestion projects and share the precedent and lessons learned from the Stratford project as it progresses.

Thank you,

A handwritten signature in black ink, appearing to read "Brenda Lucas", written in a cursive style.

Brenda Lucas, Executive Director
Southern Ontario Water Consortium