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<tr>
<td>Planned Budget for Two Years: C$365,000</td>
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<tr>
<td>Year 1: C$120,000</td>
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<tr>
<td>Year 2: C$245,000</td>
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**Strategic Priority/Subtheme**
- Climate Change / Short-lived Climate Pollution
- Green Growth / Sustainable Production and Consumption

This project is positioned under the *Climate Change: Short-lived Climate Pollution* cluster, but also has linkages to the *Green Growth: Sustainable Production and Consumption* cluster.

**How will this project address the cross-cutting themes?**

The project will address the above cross-cutting themes by:

1. Identifying opportunities and methods for reducing methane emissions from landfills by diverting and processing organic waste for beneficial uses, and
2. Raising awareness regarding best practices and policy options for promoting the diversion and processing of organic waste.

**Project Summary (including a clear statement of project goal)**

Organic waste consists of carbon-based compounds that are derived from animal and plant materials such as food waste, yard trimmings, wood waste, and paper and paperboard products. In Canada, Mexico, and the United States, organic waste is predominantly sent to landfills, where it decomposes under anaerobic conditions, contributing to the formation and release of methane gas. Methane is a short-lived climate pollutant and greenhouse gas that is over 20 times more potent than carbon dioxide and that has an atmospheric lifetime of about 12 years.\(^1\) Methane emissions from the waste sector in Canada, Mexico, and the United States represent 20,\(^2\) 6,\(^3\) and 18\(^4\) percent of total national methane emissions respectively.

According to the US EPA’s latest figures on municipal solid waste generation, recycling, and disposal for 2012 in the US, organic waste

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(including food waste, paper/paperboard, yard trimmings, and wood) accounted for about 63 percent of municipal solid waste disposed in landfills. In Canada, approximately 33 million tonnes of residential and non-residential waste was generated in 2010, of which about 76 percent (25 million tonnes) was disposed of, mostly in landfills, while about 16 percent was diverted (2.2 million tonnes of organic waste and 3.2 million tonnes of paper waste). In Mexico in 2011, about 5 percent of the total waste stream was directed to recycling or composting, with the remaining 95 percent of the waste stream disposed in landfills.

In all three countries, organic waste represents a significant component of the waste stream that can be diverted from landfills to other waste management approaches such as composting, anaerobic digestion, and other organic waste processes, which would contribute to significant reductions in short-lived climate pollutants and provide other benefits. Doing so would also reinforce ongoing efforts in support of the United Nations Framework Convention on Climate Change, to which Canada, Mexico, and the United States are parties. Diversion and processing of these wastes would also help to preserve landfill space and reduce the formation of leachate and odors at landfill sites. It is equally recognized that diverting and processing organic waste contributes to sustainable development goals, including sustainable material management and resource efficiency, with linkages to CEC priorities (i.e., green growth), other international commitments (e.g., UN 10-year framework of programmes on sustainable consumption and production patterns), and various national initiatives (e.g., US Biogas Opportunities Roadmap, Canadian Council of Ministers of the Environment work on organic waste diversion, and Mexican general policies on sustainable consumption and production, clean production, and organic waste).

The goal of this project is to identify barriers, opportunities and solutions related to increasing organic waste diversion and processing capacity in North America. The project will focus on organic waste collection/segregation, and organic waste processing (e.g., composting, anaerobic digestion, and other organic waste processing technologies). The scope will include organic wastes generated in the residential and the industrial, commercial and institutional (IC&I) sectors. Through consultations within the project working group, determinations will also be made on how to best consider organic waste from wastewater management (biosolids) or manure management when these become part of a mixed waste feedstock for anaerobic digestion or composting. The project will also complement work proposed under the North American Partnership on Food Waste Reduction and Recovery.

The proposed work is as follows:

- **Gather foundational knowledge and information to better understand the current situation for organic waste diversion and processing in North America by:**
  - Consolidating information on existing organic waste diversion programs and processing facilities in North America and select OECD countries.

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- Compiling existing policies, regulations, best practices, information on economic/market forces, and other factors that impact organic waste diversion and processing, from North American and select OECD countries;
- Identifying factors that have contributed to successful organic waste diversion and processing initiatives;
- Estimating current and potential reductions in short-lived climate pollutants achieved/achievable through organic waste diversion in the three countries;
- Establishing a tele-network with experts in organic waste diversion and processing in the three countries, for the duration of this project; and
- Tele-networking with the CEC project group responsible for the North American Partnership on Food Waste Reduction, for the duration of this project.

- **Identify barriers, opportunities and potential solutions related to increasing organic waste diversion, processing capacity, and associated market opportunities in North America by:**
  - Developing a white paper that identifies barriers, opportunities, and potential solutions; and
  - Conducting a series of stakeholder consultations, either via webinar or face-to-face, to validate the findings of the foundation report(s) and white paper, and to analyze the identified barriers, opportunities and potential solutions.

- **Share knowledge on organic waste diversion and processing by:**
  - Developing a clearinghouse mechanism or online information-sharing platform to communicate knowledge, policy options, best practices, and tools (in coordination with work proposed under the North American Partnership on Food Waste Reduction).

**Short-term Outcomes (at halfway point)**

- Draft report(s) to consolidate knowledge and information regarding the current situation for organic waste diversion and processing in the three countries, and identification of factors that have led to successful organic waste diversion and processing initiatives in North America and other OECD countries
- Information on the impact of organics diversion and processing (current and potential) on reducing short-lived climate pollutants
- Network of experts involved in organic waste diversion and processing in the three countries
- A draft white paper identifying barriers, opportunities and potential solutions related to increasing organic waste diversion and processing capacity in North America

**Long-term Outcomes (by the end of the project)**

- Findings and recommendations from a series of stakeholder consultations analyzing barriers, opportunities and potential solutions related to increasing organic waste diversion and processing capacity in North America
- Potential new strategic partnerships to encourage and promote increased organic waste diversion and processing in North America
- Finalization of the draft report(s) and white paper mentioned above, based in part on recommendations emerging from the stakeholder consultations
- Clearinghouse mechanism or on-line information sharing platform, hosted on the CEC website (or a volunteer stakeholder website), on organic waste diversion and processing

Longer-term, Environmental Outcome (post-project)

This project represents a first step by the CEC to undertake focused work on organic waste diversion and processing. It will enhance diversion and processing of organic waste within North American communities, businesses, and industries and ultimately reduce methane emissions from landfills. Given that organic waste may represent over two-thirds of waste disposed in landfills, diverting these wastes through composting, anaerobic digestion, and other organic waste processing technologies, in addition to source reduction, will also extend the service lives of existing landfills, offsetting the need (and associated costs) to site and construct new ones. The project will also support potential market expansion for organic waste diversion and processing technologies and services.

As a whole, the project will help Canada, Mexico, and the United States achieve international and national commitments regarding both climate change and sustainable development. Through the collaboration of experts in the three countries, the project will reduce duplication of efforts, harmonize approaches to improving organic waste reduction, diversion and processing, and contribute to the uptake of policies and best practices that can be applied in all three countries. It will also contribute important baseline information to better understand the types, quantities, and current management of organic waste in North America, and identify options for improving organic waste diversion and processing in North America. While the project will foster collaboration among communities, business, industry, and other experts with roles to play in organic waste diversion, additional CEC work may be required to address a wider spectrum of opportunities in the future.

Performance Measures (quantified SMART measures)

Performance measures/indicators are identified in the table below.

Tasks necessary to reach the environmental outcome:

1) Gather foundational knowledge and information to better understand the current situation for organic waste diversion and processing in North America.
2) Identify barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America.
3) Share knowledge on organic waste diversion and processing.

Task #1) Gather foundational knowledge and information to better understand the current situation for organic waste diversion and processing in North America.

<table>
<thead>
<tr>
<th>Subtask</th>
<th>Project outputs</th>
<th>How does the subtask/output move the project towards the environmental outcome</th>
<th>Timing and Performance Measures/Indicators</th>
<th>Budget (C$) (activities)</th>
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<tbody>
<tr>
<td>1.1 Consolidate information on existing organic waste</td>
<td>A report consolidating information on existing</td>
<td>The report will contribute to developing a better</td>
<td>Year 1: Begin draft report (for use during)</td>
<td>Year 1: $79,000</td>
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<td>diversion programs and processing facilities in North America and select OECD countries.</td>
<td>organic waste diversion programs and processing facilities for residential and IC&amp;I waste in North America and select OECD countries. For organic waste diversion programs, this will include an inventory of municipal and private-sector programs with information such as diversion rates achieved, costs, and factors that have led to success. For organic waste processing facilities, this will include an inventory with information such as type of technology/process used, waste types processed (including mixing with wastes from other sources such as municipal wastewater for manure management systems), throughput values, costs and revenues, markets for products, and factors that have led to success. The report will also include an inventory of key stakeholders in North America and location maps depicting existing organic waste processing facilities in North America. The report will, to the extent practical, rely on existing studies and information; however, since organic waste diversion and processing may be more developed in Canada and the US, this task may include [consultant assistance required]</td>
<td>understanding of the current situation for organic waste diversion and processing in the three countries. It will provide information that will help establish a basis and rationale for subsequent tasks and subtasks aimed at reducing methane emissions from landfill. This work will also inform countries where limitations, gaps, and opportunities may exist with respect to increasing organic waste diversion and processing. The draft report will be consolidated for presentation during the stakeholder consultations discussed in subtask 2.2.</td>
<td>stakeholder consultations). Year 2: $20,000</td>
<td>Year 2: Complete draft report and then finalize report after stakeholder consultations. Performance Measures/Indicators: - A report is produced - Number and diversity of stakeholder sectors initially consulted - Inventories of organic waste diversion programs and processing facilities are produced - Percentage of programs and facilities identified</td>
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<tr>
<td>1.2 Compile existing policies, regulations, best practices, information on economic/market forces, and other factors that impact organic waste diversion and processing, from North American and select OECD countries. [consultant assistance required]</td>
<td>A report compiling information on existing policies, regulations, best practices, information on economic/market forces, and other factors that impact organic waste diversion and processing, from North American and select OECD countries. Will also include an inventory of key stakeholders and will identify the factors that have contributed to successful organic waste diversion and processing initiatives.</td>
<td>The study will provide baseline information on the diversity of policies, market forces and other factors that impact organic waste diversion and processing in North America and will inform the three countries where limitations, gaps and opportunities may exist. The draft report will be consolidated for presentation during the stakeholder consultations discussed in subtask 2.2.</td>
<td>Year 1: Begin draft report (for use during stakeholder consultations). Year 2: Complete draft report and then finalize report after stakeholder consultations. Performance Measures/Indicators: - A report is produced - Number and diversity of stakeholder sectors initially consulted</td>
<td>Year 1: $40,000 Year 2: $10,000</td>
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<td>1.3 Estimate current and potential reductions in short-lived climate pollutants achieved/achievable through organic waste diversion and processing in the three countries. [consultant assistance required]</td>
<td>A report examining the potential impact of organic waste diversion and processing on reducing short-lived climate pollutants in North America. Would make use of outputs from subtask 1.1 and other available information on existing and potential organic waste processing facilities. [Would make use of information on organic waste generation and diversion that</td>
<td>The report will provide information on the impact of organic waste diversion and processing on reducing short-lived climate pollutants and help establish a basis and rationale for subsequent tasks and subtasks aimed at reducing methane emissions from landfills. The draft report will be consolidated for presentation during the</td>
<td>Year 2: Draft report for use in stakeholder consultations and later finalization Performance Measures/Indicators: - A report is produced - Number and diversity of stakeholder sectors initially consulted</td>
<td>Year 1: $0 Year 2: $30,000</td>
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### 1.4 Establish a tele-network with experts in organic waste diversion and processing in the three countries, for the duration of this project.

- **Project Description:**
  
  would be collected through the proposed North American Partnership on Food Waste Reduction, if that project proceeds.

- **Stakeholder Consultations Discussed in Subtask 2.2:**
  
  would be collected through the proposed North American Partnership on Food Waste Reduction, if that project proceeds.

- **Year 1:** Formation of a network
  - Performance Measures/Indicators:
    - Conference calls are held
    - Number and timing of conference calls
    - Number of participating stakeholder organizations during calls
  - Performance Measures/Indicators:
    - Conference calls are held
    - Number and timing of contract calls
    - Number of participating stakeholder organizations during calls

- **Year 2:** Continued networking

<table>
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<tr>
<th>Year 1</th>
<th>Year 2</th>
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### 1.5 Conduct tele-networking with the CEC inter-governmental project group responsible for the North American Partnership on Food Waste Reduction, for the duration of this project.

- **Project Description:**
  
  A network of experts involved in organic waste diversion and processing in the three countries

- **Stakeholder Consultations Discussed in Subtask 2.2:**
  
  would be collected through the proposed North American Partnership on Food Waste Reduction, if that project proceeds.

- **Year 1:** Formation of a network
  - Performance Measures/Indicators:
    - Conference calls are held
    - Number and timing of conference calls
    - Number of participating stakeholder organizations during calls
  - Performance Measures/Indicators:
    - Conference calls are held
    - Number and timing of contract calls
    - Number of participating stakeholder organizations during calls

- **Year 2:** Continued networking

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<th>Year 1</th>
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## Task #2) Identify barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America.

<table>
<thead>
<tr>
<th>Subtask</th>
<th>Project outputs</th>
<th>How does the subtask/output move the project towards the environmental outcome</th>
<th>Timing</th>
<th>Budget (C$) (activities)</th>
</tr>
</thead>
</table>
| 2.1 Identify barriers, opportunities, and potential solutions related to increasing organic waste diversion and processing in North America. [consultant assistance required] | A white paper identifying barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America. The paper will focus on relevant policy options and instruments for industry and government, outstanding needs for best practices and tools, and partnership opportunities. The paper will examine factors that are/were in place that have allowed for successful implementation of existing programs and facilities (i.e., the specific mix of policies, incentives, market factors, etc.). It will also examine the reasons why more projects have not proceeded and options that could be considered by stakeholders to increase the number and scale of organic waste diversion programs and processing facilities in North America. Case studies in each country will be highlighted. | The white paper will identify barriers, opportunities and solutions related to fostering increased organic waste diversion and processing (and supporting methane reductions at landfills) in North America. The draft paper will be discussed and validated through a series of stakeholder consultations outlined in subtask 2.2. | Year 2: Draft white paper for use in stakeholder consultations and later finalized | Year 1: $0  
Year 2: $50,000 |
### 2.2 Hold stakeholder consultations, either via webinar or face-to-face, to validate the findings of the draft foundation report(s) and white paper, and analyze barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America.

[consultant/facilitation assistance required]

| Findings and recommendations from a series of stakeholder consultations in each country, analyzing barriers, opportunities and potential solutions related to increasing organic waste diversion and processing. This may include targeted discussions with state and local governments, IC&I sector representatives, organic waste processing facility owners and operators, electrical and natural gas utilities (with respect to anaerobic digestion), technology providers, academics, non-governmental organizations, etc. The consultant will contribute to consultation design, communication, outreach, and facilitation and will report on deliberations and recommendations from the consultation events. |
| Consultations will enhance collaboration among government, industry, academia, and other experts with roles to play in organic waste diversion and processing, and provide a forum to discuss policies and analyze the barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America. |

#### Year 2: Design and deliver up to three 1-day webinars or face-to-face meetings in each country.

**Performance Measures/Indicators:**
- Stakeholder consultations are conducted
- Number of participants and diversity of stakeholder organizations
- Level and quality of stakeholder interaction
- Final report on stakeholder consultation is produced.

<p>| Year 1: $0 |
| Year 2: $74,000 |</p>
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<tr>
<th>Task #3) Share knowledge on organic waste diversion and processing.</th>
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<tr>
<td><strong>Subtask</strong></td>
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</table>
| 3.1 Develop a clearinghouse mechanism or on-line information-sharing platform to communicate knowledge, policy options, best practices, and tools. | A clearinghouse mechanism or on-line information-sharing platform, hosted on the CEC website (or a volunteer stakeholder website) on organic waste diversion and processing | The clearinghouse will provide a tool for governments, industry, and others to share knowledge and information to help others advance organic waste diversion and processing (and support methane reductions at landfills). | Year 2: Complete development of information clearinghouse | Year 1: $0  
Year 2: $20,000 |
| [consultant assistance required] | [This would be coordinated with a similar effort in the North American Partnership on Food Waste Reduction proposal.] | **Performance Measures/Indicators:**  
- Reports, white papers, and inventories are published  
- Number of requests to receive reports, white papers and inventories  
- Level of community and industry engagement in contributing to and updating clearinghouse | | |
| 3.2 Translate project outputs intended for public dissemination. | Translation of reports, white papers, presentations and other project outputs from tasks 1 and 2 | Translation of project outputs intended for public dissemination will support knowledge-building and raise awareness in the three countries. | Year 2: Translation of project outputs | Year 1: $0  
Year 2: $40,000 |
| | | **Performance Measures/Indicators:**  
- Documents are translated  
- Number of requests to receive translated reports, white papers and inventories | | |
Explain how this project meets the selection criteria adopted by Council in the Strategic Plan (see below)

The goal of all projects funded by the CEC will be to support the efforts of the Parties to conserve, protect and/or enhance the North American environment. The following criteria will guide the Secretariat, Working Groups, Committees, and other appropriate officials of the Parties in considering cooperative activities for Council approval under operational plans. These selection criteria do not apply for activities to be funded through the NAPECA grant program.

- How does the project contribute to achieving Council’s strategic objectives as described within the current Strategic Plan, or as related to other priorities subsequently confirmed by Council?

This project contributes to the CEC 2015–2020 Strategic Plan under the Climate Change – Short-lived Climate Pollution cluster of projects by mitigating methane emissions from landfills through organic waste diversion and processing. The project is also linked to the Green Growth - Sustainable Production and Consumption cluster of projects since project outcomes related to organic waste diversion and processing will also foster more sustainable consumption and production patterns in the three countries.

- Are the proposed objectives North American in scope? In other words, how are the proposed results relevant to protecting the environment in North America? (For example, what would Council members announce to the press at the successful completion of this project?)

Organic waste is generated and predominantly landfilled in all three countries. These wastes can account for 65 percent or more of municipal solid waste and a large majority of the methane produced from landfills. As such, significant opportunities exist to curb short-lived climate pollutants (i.e., methane emissions) through organic waste diversion and processing across North America.

This project will provide important information to better understand the current situation of organic waste diversion and processing in North America and identify barriers, opportunities and potential solutions related to increasing organic waste diversion and processing in North America. It will also develop a clearinghouse mechanism to facilitate the exchange of knowledge and information on organic waste diversion and processing in North America.

- What specific, clear and tangible results will be achieved and how will progress toward each result be measured over time? Identify performance measures to be used to indicate success at reaching all outcomes and/or performance.

Tangible results (i.e., outcomes) and performance measures are identified in the table above.

- Explain why the CEC is the most effective vehicle for the Parties to undertake the project, considering these points:

  o The value-added of doing it under the CEC cooperative work program

The CEC has not yet undertaken focused work on organic waste diversion and processing. This project represents an opportunity to target these wastes to support mutual interests related to waste diversion from landfills, reducing climate pollutants, expanding
infrastructure and markets for organic waste diversion and processing, energy generation from anaerobic digestion (biogas), and sustainable production and consumption patterns. A trilateral partnership will facilitate a coordinated and consistent approach that avoids duplication of effort and resources.

- **Any other public, private or social organizations that work on such activities**

A project subtask identifies stakeholder organizations and the roles they play in organic waste diversion and processing for beneficial uses (see last question below for a preliminary list of potential stakeholders). Part of this work will also identify and cumulate existing guidance and best practices to ensure compatibility and avoid duplication with these approaches.

- **Opportunities to cooperate and/or leverage resources with such organizations**

Engagement with stakeholder organizations is critical to producing successful outcomes under this project. Consequently, efforts will be made to identify and encourage key stakeholder organizations that have a role to play in organic waste diversion and processing to participate in and contribute to this project to the extent that they are able.

- **Does the project propose a clear timeline for implementation of the activities, including a target end date for CEC’s involvement? Where applicable, describe how the work will continue after CEC involvement ends.**

Yes. The project proposes work that will be completed within a two-year timeframe. Related work is anticipated to continue after CEC involvement ends. For example, project outcomes are anticipated to complement initiatives such as US Recovery Challenges and the US Biogas Opportunities Roadmap, as well as the Canadian Council of Ministers of the Environment work on organic waste diversion. Project outcomes can also feed into North American country contributions under the United Nations Framework Convention on Climate Change and the UN 10-year framework of programmes on sustainable consumption and production patterns, thereby raising the international profile of the guidance and on-line information-clearinghouse. It is also anticipated that organizations such as US and Canadian composting associations and the Zero Waste Council will help to promote project outcomes upon their finalization in order to further raise awareness and foster uptake of best practices.

- **Where applicable, identify with reasonable specificity:**
  - **Linkages with other relevant CEC projects, past or present, in order to create synergies, capitalize on experience, or avoid duplication**

Organic waste diversion and processing is a new area of trilateral cooperation and work for the CEC. However, this work supports two CEC Priorities under the 2015–2017 Strategic Plan, namely Climate Change (under the Short-lived Climate Pollutants subtheme) and Green Growth (under the Sustainable Production and Consumption subtheme).
The target audience, as well as its receptivity and capacity to use the information that may be produced as a result of the project

Given the global and national importance of climate change and sustainable development issues, it is anticipated that the target audience will be receptive to project outcomes. The target audience for this work includes communities, the IC&I sector, and the organic waste diversion and processing industry. Governments in the three countries are also anticipated to share and foster use of project outcomes through ongoing and/or future work programs, challenges, and other initiatives related to organic waste diversion and processing.

The beneficiaries of capacity building activities that the project may include

It is anticipated that the organic waste diversion and processing sector will also benefit from industry growth and profits from enhanced organic waste diversion and processing. Communities will benefit from cleaner air and longer lasting landfills. All will benefit from enhanced industry and community engagement to divert organic wastes from landfills.

The relevant stakeholders, with particular attention to communities, academia, NGOs and industry, and their involvement and contribution to a successful outcome

The development of the white paper and other project outputs will involve multiple stakeholder organizations, including the food industry, the composting industry, governments, NGOs, and academia. Some of the foundation work under this project will identify potential stakeholder organizations (including state and local governments, IC&I sector representatives, organic waste processors, associations, academia, and other non-government organizations) that can contribute to successful project outcomes. A preliminary list of potential stakeholder organizations is identified below:

**Mexico:**
- Semarnat
- INECC
- Asociación Mexicana de Biomasa y Biogás
- Asociación Mexicana de Energía

**United States:**
- US EPA
- Collaborators on the US Biogas Opportunities Roadmap (including USDA and DOE)
- United States National League of Cities
- US Composting Council

**Canada:**
- Environment Canada
- Canadian Council of Ministers of Environment
- Compost Council of Canada
- Federation of Canadian Municipalities
- National Research Council
- Biogas Association

**Others:**
- Solid Waste Association of North America
- Climate and Clean Air Coalition