

Survey: Effects of Residential Waste-to-Energy Incineration on Waste Diversion Attitudes

[This is the version sent via mail to a sample of Ontario residents and is for information only]

Instructions:

In all eight sections below, please indicate how well each statement describes your view. Please mark (☑ or ☒) ONE BOX ONLY per question. If you do not have a specific opinion please mark the middle box “neither agree nor disagree”.

Once you have completed this questionnaire please mail it in the pre-posted envelope provided.

Section A: Waste Diversion Behaviour and Beliefs

Waste diversion: comprised of a hierarchy of methods for using residential waste as a resource prior to final disposal and includes reduction/minimization, reuse, recycling, and composting. Further clarification of some aspects of this waste diversion hierarchy are as follows:

- *Waste reduction/minimization: policies by governments or companies to reduce waste in their products, or consumer decisions that involve buying less or not buying at all.*
- *Reuse of items: using an item for a purpose other than its original intended use (e.g., making old clothes into cleaning rags), or reusing for the original intended purpose by someone else (e.g. donating clothing to Goodwill; selling second hand furniture etc.)*
- *Recycling: process of changing waste material into new products to prevent the waste of potentially useful material (e.g. recycling glass bottles for making new glass products)*
- *Composting: making food waste into compost to be used as plant fertilizer*

| Waste Diversion Behaviour | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Please check ONE box per row: | Very often | Often | Sometimes | Rarely ever | Never |
| 1. I consciously minimize waste by avoiding purchases or by purchasing products with minimal packaging | <input type="checkbox"/> |
| 2. Reusable items (e.g., clothing, furniture) end up in the trash in my household rather than being repurposed or passed on to others | <input type="checkbox"/> |
| 3. Paper products that are recyclable end up in the trash bin rather than the recycling bin (e.g., blue bin) in my household | <input type="checkbox"/> |
| 4. Metal products (e.g. cans) that are recyclable end up in the trash bin rather than the recycling bin (e.g., blue bin) in my household | <input type="checkbox"/> |

| Waste Diversion Behaviour (Continued) | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Please check ONE box per row: | Very often | Often | Sometimes | Rarely ever | Never |
| 5. Plastics (e.g. food or drink containers) that are recyclable end up in the trash bin rather than the recycling bin (e.g., blue bin) in my household | <input type="checkbox"/> |
| 6. Food waste that is compostable ends up in the trash bin rather than the composting bin (e.g., green bin, personal composting system) in my household | <input type="checkbox"/> |
| 7. I go out of my way to search for a recycling bin to recycle an item | <input type="checkbox"/> |

| Rationale for Waste Diversion Behaviour | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| Please check ONE box per row: | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| 8. I am often not sure whether an item can be recycled. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. If I am not sure whether an item can be recycled I put it in the trash bin | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. If I am not sure whether an item can be recycled I put it in the recycling bin . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. I know what happens to the waste / recycle I set out for collection by my municipality. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| If sorting waste involves all of the activities in the previous tables (i.e. reduce, reuse, recycle, compost): | | | | | |
| 12. I sort my waste to minimize my environmental impact . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. I sort my waste solely because it is required by my municipality . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. I sort my waste in order to be seen as a good member of the community . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Sorting my waste is inconvenient because it takes up too much space in my home. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Rationale for Waste Diversion Behaviour (Continued) | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| If sorting waste involves all of the activities in the previous tables (i.e. reduce, reuse, recycle, compost): | | | | | |
| 16. Sorting my waste is inconvenient because it takes up too much of my time . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. I sort my waste to reduce the amount I pay for my waste pickup | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. I sort my waste to enable me to sell items (e.g. yard sales, online sales) and earn money | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section B: Waste Facility Influence on Waste Diversion Behaviour

Waste-to-Energy (WTE) or Energy-from-Waste (EfW): the process of recovering energy from waste materials such as residential waste, which can then be harnessed to produce electricity and/or heat. This section focuses on incineration, and the one that follows focuses on landfill gas.

- Incineration: the thermal combustion of waste to reduce volume prior to landfilling (the ash, comprising 20-40% of the original volume of waste, is collected after incineration and landfilled)

If you knew that the material that you did not recycle or compost would be used to create energy in a waste-to-energy facility how would this affect your waste management behaviour?

| If I know my waste will be burned in a waste-to-energy <u>incinerator</u> to produce energy (e.g., electricity)... | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 19. I would put fewer paper products that are recyclable in the recycling bin (e.g., blue bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. I would put fewer metal products that are recyclable in the recycling bin | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. I would put fewer plastic products that are recyclable in the recycling bin (e.g., blue bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. I would put less food waste that is compostable in the organic bin (e.g., green bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- *Landfill gas for energy: a process of capturing and burning methane gas emitted from decomposing waste in landfills to produce energy (electricity and / or heat).*

If you knew that your waste would be used to create electricity in a facility like this, how would this change your waste management behaviour?

| If I know my waste that ends up in <u>landfills</u> will be used to <u>produce energy</u> (e.g., electricity)... | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 23. I would put fewer paper products that are recyclable in the recycling bin (e.g., blue bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. I would put fewer metal products that are recyclable in the recycling bin | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. I would put fewer plastic products that are recyclable in the recycling bin (e.g., blue bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. I would put less food waste that is compostable in the organic bin (e.g., green bin) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section C: Perceptions of Waste-to-Energy Incineration

| Human Safety/Health Risk (Incineration) | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 27. Incinerators pose a health threat to residents living nearby | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Incinerators pose a particular health threat to vulnerable populations like the elderly and children | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Environmental Impact (Incineration) | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | Neither agree nor disagree | DISAGREE | |
| | Strongly agree | Somewhat agree | | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 29. I am concerned that pollutants released from waste incineration will do irreversible damage to the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. I am concerned that waste incineration facilities release unpleasant odour into the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. I am confident that regulatory authorities do a good job monitoring incinerator emissions to reduce environmental impacts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. The capability of incinerators to generate energy from waste offsets the negative effects it may have on the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Incineration creates an unacceptable legacy of environmental contamination for future generations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Incinerators tend to be located <i>too close to homes</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Economic Impact (Incineration) | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | Neither agree nor disagree | DISAGREE | |
| | Strongly agree | Somewhat agree | | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 35. Waste incinerators decrease the property values in the host community | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Incinerator facilities contribute significantly to the job market in the host municipality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Incinerator facilities take away from local recycling and composting jobs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Siting and Support (Incineration) | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 38. I am in favour of communities hosting incinerators to manage their own waste | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. If there was a vote in my municipality about whether my municipality should install a waste-to-energy incinerator to manage its waste I would vote in favour . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. I would have no problem living within the vicinity of a waste-to-energy incinerator | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Incineration needs to be a key element in handling my municipality's waste problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. A key advantage of incineration is that it offers municipalities a means of managing residential waste within their own boundaries | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. I would have no problem if my municipality had an incinerator that accepted residential waste from other municipalities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section D: Perceptions of Landfills

| Human Safety/Health Risk (Landfill) | | | | | |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 44. Landfills pose a health threat to residents living nearby | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Landfills pose a particular health threat to vulnerable populations like the elderly and children | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Environmental Impact (Landfill) | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 46. I am concerned that pollutants released from landfills will do irreversible damage to the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. I am concerned that landfills release unpleasant odour into the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. I am confident that regulatory authorities do a good job monitoring landfill emissions to reduce environmental impacts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. The capability of landfill to generate energy from waste offsets the negative effects it may have on the environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Landfill creates an unacceptable legacy of environmental contamination for future generations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Landfills tend to be located <i>too</i> close to homes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Economic Impact (Landfill) | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 52. Landfill sites decrease the property values in the host community | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. Landfill facilities contribute significantly to the job market in the host municipality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 54. Landfill sites take away from local recycling and composting jobs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Siting and Support (Landfill) | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 55. I am in favour of communities hosting landfills to manage their own waste | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 56. If there was a vote in my municipality about whether my municipality should install a landfill to manage its waste I would vote in favour . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 57. I would have no problem living within the vicinity of a landfill | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. Landfills need to be a key element in handling my municipality's waste problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 59. A key advantage of landfill is that it offers municipalities a means of managing residential waste within their own boundaries | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 60. I would have no problem if my municipality had a landfill that accepted residential waste from other municipalities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section E: Waste management preferences

| 61. Rank in order your preferences for the following disposal methods as the <u>final destination</u> for waste in your municipality | | | | |
|--|--|---|--|---|
| Ranking: | Landfill <u>without</u> energy/heat recovery | Landfill <u>with</u> energy/heat recovery | Incineration <u>without</u> energy/heat recovery | Incineration <u>with</u> energy/heat recovery |
| Please rank from 1 to 4 (1 = most preferred and 4 = least preferred) write one # in each box | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 = most preferred; 4 = least preferred (Write one unique number in each box please – no repeats) | | | | |

Section F: General Environmental Views

| Environmental Views | | | | | |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| | AGREE | | | DISAGREE | |
| | Strongly agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Strongly disagree |
| Please check ONE box per row: | | | | | |
| 62. Environmental problems can only be controlled by enforcing radical changes in human behaviour and in society as a whole. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 63. Environmental problems are not running out of control, but the government should dictate clear rules about what is and what is not allowed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 64. We do not need to worry about environmental problems because in the end, these problems will always be resolved by technological solutions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 65. We do not know whether environmental problems will worsen or not | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section G: Political Worldviews

| | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 66. I generally vote for the following party in <u>federal elections</u> : | | | | | | |
| Please check ONE box per row: | Conservative | New Democratic | Liberal | Green | Other | I generally don't vote |
| Political Party | <input type="checkbox"/> |
| 67. I generally vote for the following party in <u>provincial elections</u> : | | | | | | |
| Please check ONE box per row: | Conservative | New Democratic | Liberal | Green | Other | I generally don't vote |
| Political Party | <input type="checkbox"/> |

Section H: Demographics:

| | | |
|--------------------------|--------------------------|--------------------------|
| 68. Gender | | |
| Male | Female | Prefer not to say |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | | | | |
|--|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| 69. Age | | | | | | |
| 18-24 | 25-44 | 45-64 | 65+ | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| 70. Education | | | | | | |
| Some high school | High school diploma | Some postsecondary | Postsecondary certificate, diploma or degree | Prefer not to say | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| 71. Household income (after tax) | | | | | | |
| Under \$20,000 | \$20,000-49,999 | \$50,000-79,000 | \$80,000-109,999 | \$110,000-139,999 | More than \$140,000 | Prefer not to say |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 72. How many children live in your household (please write in a number(s) or check a box) | | | | | | |
| # 5 years old and under | # 6-18 years old | N/A | Prefer not to say | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| 73. Do you <u>rent</u> or <u>own</u> your home? | | | | | | |
| Rent | Own | Prefer not to say | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| | Yes | No | Don't know | | | |
| 74. Do you live within 10km of a waste-to-energy incinerator ? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| 75. Do you live within 10km of a landfill site? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | Yes | No | Prefer not to say | | | |
| 76. Are you currently employed in the waste management sector ? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |