Canadian Energy-From-Waste Coalition

“Current Status of the Canadian Industry”

Presentation to WTERT
Columbia University, New York

17 October 2008
Agenda

- Language Matters
- A Convergence of Needs
- Organizational Background
- Lay of the Land
- Setting the Record Straight
- Progressive Public Attitudes
- Evolving Issues, Emerging Opportunities
Perception Is Everything

- **Energy-from-Waste/Waste-to-Energy**
  - “Volatile” and “Controversial” evoke unfair imagery
  - “Proven” and “Reliable” present accurate portrayal

- **Name-calling**
  - Incinerators
    - Only attempt to reduce volume of garbage
    - Usually install rudimentary pollution control equipment
  - EFW
    - Employs maximum achievable control technology (MACT)
    - Utilize high temperature to extract energy from trash
An Out-Of-Date Stereotype
A Modern EFW Facility

Canadian Energy-From-Waste Coalition
State-of-the Art Technology
Situational Imperative

- Municipalities face an unprecedented waste management crisis related to capacity shortfall and risk of a border closure
- Escalating costs of conventional fossil fuels sparking interest in alternative energy sources
- Overwhelming scientific evidence validates EFW value proposition
- Strong public opinion polling shows growing support for EFW
- EFW can enhance supply mix option and address power supply shortage
- Prudent planning dictates investigation of all options in an integrated system

Converging Needs

Canadian Energy-From-Waste Coalition
## Canadian MSW Trends

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Disposal (kg/capita)</th>
<th>Total Diversion (kg/capita)</th>
<th>Total Generation (kg/capita)</th>
<th>Diversion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>697</td>
<td>176</td>
<td>873</td>
<td>20%</td>
</tr>
<tr>
<td>1998</td>
<td>688</td>
<td>-1.31%</td>
<td>222</td>
<td>20.72%</td>
</tr>
<tr>
<td>2000</td>
<td>753</td>
<td>8.63%</td>
<td>199</td>
<td>-11.56%</td>
</tr>
<tr>
<td>2002</td>
<td>769</td>
<td>2.08%</td>
<td>212</td>
<td>6.13%</td>
</tr>
<tr>
<td>2004</td>
<td>791</td>
<td>2.78%</td>
<td>246</td>
<td>13.82%</td>
</tr>
</tbody>
</table>

**Overall Change (1996-2004)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Change</th>
<th>Annual Change</th>
<th>Total Change</th>
<th>Annual Change</th>
<th>Diversion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>11.88%</td>
<td></td>
<td>28.46%</td>
<td>15.81%</td>
</tr>
</tbody>
</table>
# EFW and Recycling

<table>
<thead>
<tr>
<th>Country</th>
<th>Diversion (per cent of total)</th>
<th>Landfill (per cent of total)</th>
<th>Incineration (per cent of total)</th>
<th>Waste per capita (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>65</td>
<td>3</td>
<td>32</td>
<td>624</td>
</tr>
<tr>
<td>Austria</td>
<td>59</td>
<td>31</td>
<td>10</td>
<td>627</td>
</tr>
<tr>
<td>Germany</td>
<td>58</td>
<td>20</td>
<td>22</td>
<td>600</td>
</tr>
<tr>
<td>Belgium</td>
<td>52</td>
<td>13</td>
<td>35</td>
<td>469</td>
</tr>
<tr>
<td>Sweden*</td>
<td>44</td>
<td>5</td>
<td>50</td>
<td>464</td>
</tr>
<tr>
<td>Denmark</td>
<td>41</td>
<td>5</td>
<td>54</td>
<td>696</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>36</td>
<td>23</td>
<td>41</td>
<td>668</td>
</tr>
<tr>
<td>Spain</td>
<td>35</td>
<td>59</td>
<td>6</td>
<td>662</td>
</tr>
<tr>
<td>Ireland</td>
<td>31</td>
<td>69</td>
<td>0</td>
<td>869</td>
</tr>
<tr>
<td>Italy</td>
<td>29</td>
<td>62</td>
<td>9</td>
<td>538</td>
</tr>
<tr>
<td>Finland</td>
<td>28</td>
<td>63</td>
<td>9</td>
<td>455</td>
</tr>
<tr>
<td>France</td>
<td>28</td>
<td>38</td>
<td>34</td>
<td>567</td>
</tr>
<tr>
<td>Canada</td>
<td>24</td>
<td>74</td>
<td>2</td>
<td>1,037</td>
</tr>
<tr>
<td>UK</td>
<td>18</td>
<td>74</td>
<td>8</td>
<td>600</td>
</tr>
<tr>
<td>Greece</td>
<td>8</td>
<td>92</td>
<td>0</td>
<td>433</td>
</tr>
<tr>
<td>Portugal</td>
<td>3</td>
<td>75</td>
<td>22</td>
<td>434</td>
</tr>
</tbody>
</table>


From: Magnus Schonning, Embassy of Sweden; Carl Lilliehöök, Waste & Recycling, Tekniska Verken AB, Linköping Sweden

*Canadian Energy-From-Waste Coalition*
Mission Statement

"The Canadian Energy-From-Waste Coalition, an organization of industry, associations, and stakeholders committed to sustainable environmental policies, stands for the promotion, adoption, and implementation of ER/EFW technology for the management of residual materials within the context of an integrated solid waste management system. Recognizing that ER/EFW technologies are compatible with proactive recycling and other diversion efforts, the coalition seeks to promote the merits of the thermal treatment of waste and garner support for waste derived fuels."
Coalition Principles

- **Social Sustainability**
  - Operate within the context of local circumstances, preserving community sustainability

- **Environmental Sustainability**
  - Reduce overall environmental burden by complementing, not competing with, recycling and diversion programs

- **Economic Sustainability**
  - Balancing costs and benefits most advantageous and acceptable to end-users, customers, and host communities
## Organizational Matrix

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>Labour</th>
<th>Emerging Tech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Industry</td>
<td>Academia</td>
</tr>
<tr>
<td>Construction</td>
<td>Diplomats</td>
<td>Engineers</td>
</tr>
<tr>
<td>Lawyers</td>
<td>Real Estate</td>
<td>Operators</td>
</tr>
</tbody>
</table>

*Canadian Energy-From-Waste Coalition*
## Membership Matrix

<table>
<thead>
<tr>
<th>Vancouver, Peel, Edmonton, Hamilton, Hamilton Utilities</th>
<th>Power Workers Union</th>
<th>AlterNRG</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE&amp;E VonRoll</td>
<td>Cement &amp; Plastics</td>
<td>WTERT</td>
</tr>
<tr>
<td>Maple Reinders</td>
<td>Sweden, Italy, Netherlands, Denmark, France, Germany, Spain</td>
<td>Golder Associates, GENI VAR, EarthTech, Willis Energy, Ramboll</td>
</tr>
<tr>
<td>Borden Ladner Gervais, Willms &amp; Shier</td>
<td>Aquilini Renewable Energy</td>
<td>Covanta, Veolia, Wheelabrator/ WMI</td>
</tr>
</tbody>
</table>
Category One: Principal Members, Owners + Operators

- Covanta, Veolia ES, Wheelabrator/WMI
  - Industry leaders assuming rightful place in an emerging market
  - Convergence of crisis and opportunity
  - Recognized multiple large municipalities with an interest
  - Provincial preference for state-of-the-art technology solution
  - Essential political role as proactive defenders of model in public forum
  - A public policy legacy for future generations
Category Two: Entrepreneurs, Associations, Investors

- Key industry associations provided kick start
  - Cement Association of Canada: Feedstock
  - Canadian Plastics Industry Association: Recovery rates
- Canada’s leading law firms
  - Borden Ladner Gervais: Energy
  - Willms & Shier: Environment
- Promoting diversified, viable, sustainable power generation
  - Power Workers Union
- Integrating technology into a long-term view
  - AlterNRG
- Carving a niche and establishing an early presence
  - Maple Reinders
- Achieving independent awareness
  - AEE VonRoll
- Driving strategy by understanding the national market
  - Aquilini Renewable Energy
Category Three: Engineers + Consultants

- Golder Associates, GENIVAR, EarthTech, Willis Energy
  - Keeping it real
  - Managing the hyperbole
  - Stay informed, up-to-date
  - Staying the course in the face of public criticism
Category Four: Municipalities

- Metro Vancouver, Peel Region, City of Edmonton, City of Hamilton, Hamilton Utilities
  - Streamlined environmental assessment
  - Opening of energy market for LDCs
  - Attain support on options, without compromising decision-making
  - Stay informed, connected
  - Accept one-way channel of communication
  - Forcing coalition into role of credible partner
Initiatives

- Organizing position
- Recruiting new members
- Raising association profile
- Building government relationships
- Engaging key stakeholders, audiences
- Developing, maintaining website
- Pursuing a standard offer program
- Educating media in national campaign
- Participating in technology peer review
A Cold Shower

Setting the Record Straight

Canadian Energy-From-Waste Coalition
Public Opinion

• Research shows 83% of Canadians support EFW technologies, up from 67% only four years ago
• Canadians understand that EFW can help preserve natural resources and reflects a preferred disposal option
• Among those who approve of facilities being built, more than half (58%) would also approve construction of such a facility in their immediate community
Using ‘Waste to Energy Facility’ Increases Approval 5 points Nationally…+11 Points in Quebec and +10 in BC…From 2004: Up 16 Points…

2008: 83%  2006: 78%  2004: 67%

<table>
<thead>
<tr>
<th>Year</th>
<th>BC</th>
<th>AB</th>
<th>SK/MB</th>
<th>ON</th>
<th>QUE</th>
<th>ATL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>83%</td>
<td>79%</td>
<td>84%</td>
<td>81%</td>
<td>91%</td>
<td>74%</td>
</tr>
<tr>
<td>2006</td>
<td>73%</td>
<td>75%</td>
<td>73%</td>
<td>81%</td>
<td>80%</td>
<td>69%</td>
</tr>
<tr>
<td>2004</td>
<td>60%</td>
<td>69%</td>
<td>67%</td>
<td>68%</td>
<td>69%</td>
<td>64%</td>
</tr>
</tbody>
</table>

NOTE: In the 2008 wave, ‘waste to energy facility’ replaced ‘incinerator’ in questionnaire.

Thinking about this and the other options available, do you approve or disapprove of waste to energy facilities being used for garbage disposal and management in your province?  Is that strongly or somewhat? Base: 2004 All respondents N=1,806, 2006 N=2,750, 2008 N=1,652

Source: Waste Management Inc. (Research by IPSOS Reid)

Canadian Energy-From-Waste Coalition
Most Effective Message to Move to “More Likely to Approve” is Burning Waste Saves Natural Resources and a Modern Facility is Less Hazardous to its Neighbors than a Landfill...

- Burning waste produces energy for heat and power, saving natural resources: 26% Much more likely to approve, 31% Somewhat more likely to approve, 15% No impact

- A modern waste to energy facility is less hazardous to its neighbours, in terms of cancer risk, than a modern landfill: 21% Much more likely to approve, 28% Somewhat more likely to approve, 18% No impact

- Burning waste means less goes to landfill: 17% Much more likely to approve, 25% Somewhat more likely to approve, 22% No impact

- Burning waste helps to reduce pollutant emissions and preserve resources: 16% Much more likely to approve, 23% Somewhat more likely to approve, 20% No impact

- 85-90% of waste can be burned: 16% Much more likely to approve, 20% Somewhat more likely to approve, 21% No impact

**NOTE:** In the 2008 wave, ‘waste to energy facility’ replaced ‘incinerator’ and ‘burning’ replaced ‘incineration’ in questionnaire.

I am now going to read you some things that may be said about waste to energy facilities. Please tell me whether after hearing each statement you are more or less likely to approve of waste to energy facilities being used for garbage disposal and management, or whether the statement has no impact on your opinion? Base: Do not approve/don't know of incinerators being used for garbage disposal N=278

**Source:** Waste Management Inc. (Research by IPSOS Reid)

*Canadian Energy-From-Waste Coalition*
Among those who Approve of EFW Facilities being Built, More than Half (58%) Would also Approve the Construction of such a Facility in their Immediate Community...

How would you feel about a waste to energy facility being built in your immediate community? Would you strongly approve, somewhat approve, somewhat disapprove, or strongly disapprove? Base: All respondents that said ‘Strongly Approve’ or ‘Somewhat Approve’ at Q15 2008 N=1,375

Source: Waste Management Inc. (Research by IPSOS Reid)

Canadian Energy-From-Waste Coalition
A Sustainable Solution...

- Solid **public support for proven** technologies
- Municipalities can **manage waste and generate energy locally**, in their own backyard
- Potential for **distributed generation**, district heating/cooling
- Regional operations offer **economies-of-scale** consistent with Smart Growth planning policies
- Tough emissions standards with **transparent reporting**, including on-line and on-site disclosure
- **Stringent regulations** assure accountability and responsible operations
- **Performance measures** to guide improvements and investments
Communities Considering EFW

- Durham-York Region (1.1 million)
- Hamilton (500,000)
- Peel Region (600,000)
- Sault-Ste. Marie (70,000)
- Ottawa (1 million)
- Dufferin County (60,000)
- Edmonton (1 million)
- Montreal (1.8 million)
- Metro Vancouver (1.5 million)
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