



COVANTA
ENERGY
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Energy-from-Waste In Canada





Introduction to Covanta Energy

Leadership in Renewable Power Generation

- Covanta is a wholly owned subsidiary of Covanta Holding Corporation (NYSE: CVA)
- Owner and/or operator of 65 power generation assets throughout the world, including 45 EfW facilities (also WtE)
- Full-service, single source approach to the permitting, design, construction, operation and maintenance of EfW facilities
 - *More EfW permitting, design and construction experience than any other firm in North America*
 - *22 of our EfW facilities were completed with Covanta serving as the sole project developer*



Lee County EfW, Florida



Introduction to Covanta Energy

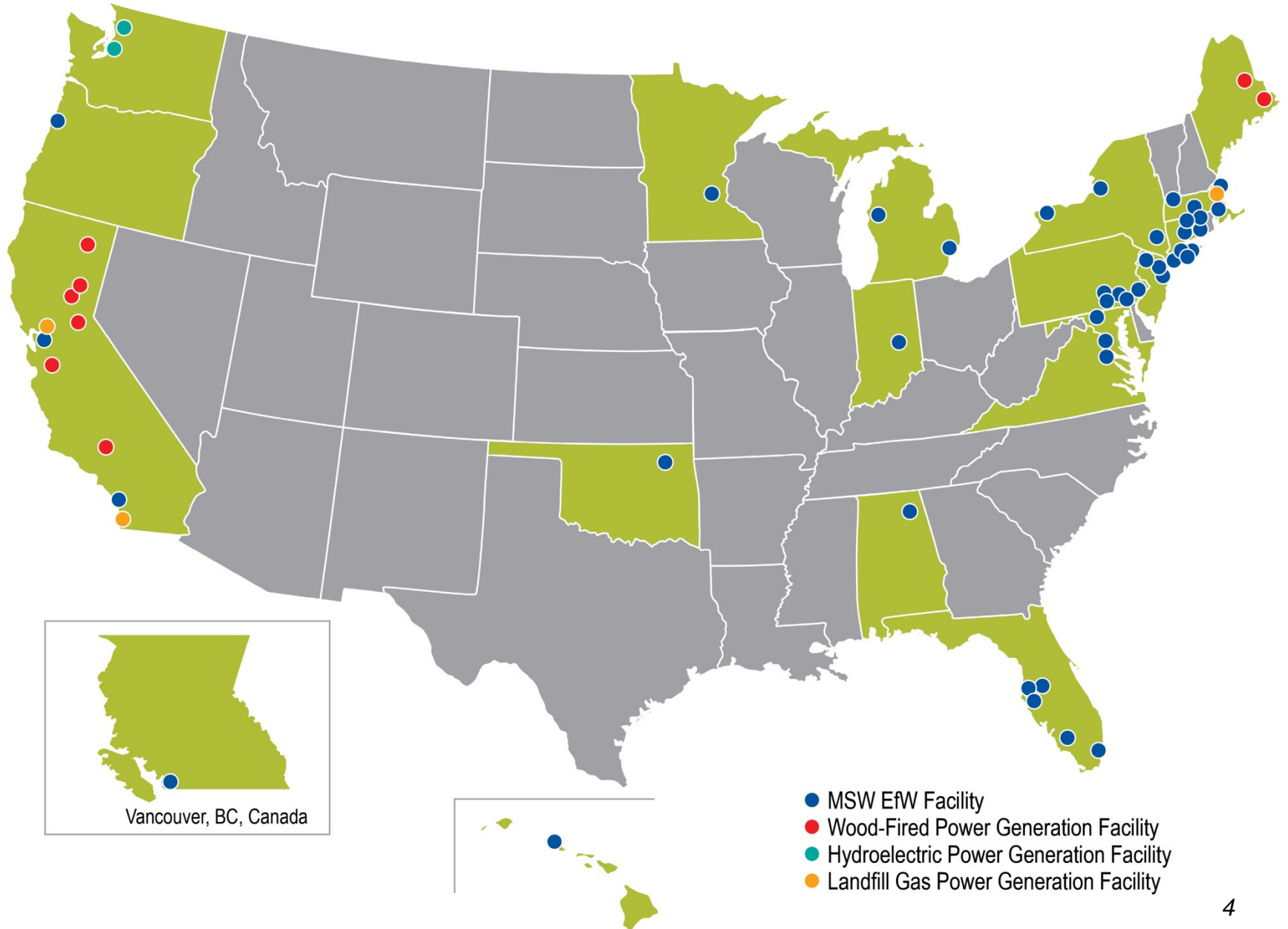
Commitment to Excellence

- Leadership in EfW
- *Portfolio annually converts more than 20 million tons of waste into more than 9 million MW hrs and 10 billion lbs of steam*
- *Produce more than 10% of U.S.'s non-hydro renewable energy*
- *Responsible for over 5% of post recycled U.S. waste disposal*
- *Recipient of more than 150 awards/citations for excellence in operational, environmental and safety performance*
- Strong corporate focus on innovation, research and development
 - *Clean World Initiative / alternative technologies / NGOs*



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Domestic Facilities





Covanta Construction Today

North America

- 600 TPD, \$115M Lee County, FL EfW Facility Expansion – Construction Complete October 2007
- 600 TPD, \$125M Hillsborough, FL EfW Facility Expansion – NTP Received in December 2006; Construction Completed in 2009
- 900 TPD, \$300M Honolulu, HI EfW Facility Expansion – Started in 2009

Europe

- 1,700 TPD, \$350M (\$EU) Dublin, Ireland – Started in 2009

Asia

- 1200 TPD and 300 TPD, \$100+M, Chengdu, China and Taixing, China – Started Q4, 2009





EfW: Meeting Three Critical Global Challenges

- Creates Jobs → Typical facility creates 1,000 construction jobs (3+ years)
- Energy & Security → Renewable energy available locally
- Climate Change → One ton of trash reduces one ton of CO₂ eq.





Benefits of Waste to Energy

Economic Benefits

- Competitively priced renewable energy source
- Potential anchor for district heating steam loop/Energy Park
- Stabilize and energize the local economy
 - *Exporting to distant landfills exposes communities to price uncertainty*
 - *Local alternative for waste management*
- Construction of facility (average size) will create \$500M+ of economic activity
 - *Encourages other capital development projects*
 - *Typical facility creates 800 – 1,000 direct/indirect jobs during construction*
- Green jobs to operate and maintain
 - *High paid permanent jobs for local workforce*





Benefits of Waste to Energy

Energy Benefits

- Generating clean energy from local renewable fuel source
 - *US EPA states EfW “produces electricity with less environmental impact than almost any other source”*
- One ton of waste will produce approximately 650-700 kWhrs of electricity
 - *Fuel Diversity*
 - *Baseload power*
 - *Fuel source has continuous flow*
- Avoids energy equivalent of over 3,000,000 barrels of oil over project life (medium size plant)





Environmental Benefits

- Reducing greenhouse gas emissions
 - *Avoids a nominal one ton of CO₂ equivalent for each ton of waste processed*
- Provides sustainable waste disposal practices as part of an integrated waste management system
 - *Global community recognizes EfW as a preferred disposal alternative to landfills*
 - *EfW compliments recycling and recovers metals and energy from residual waste*
 - *Reduces volume of waste by 90%*
 - *Reduces long haul trucking of waste to distant landfills*

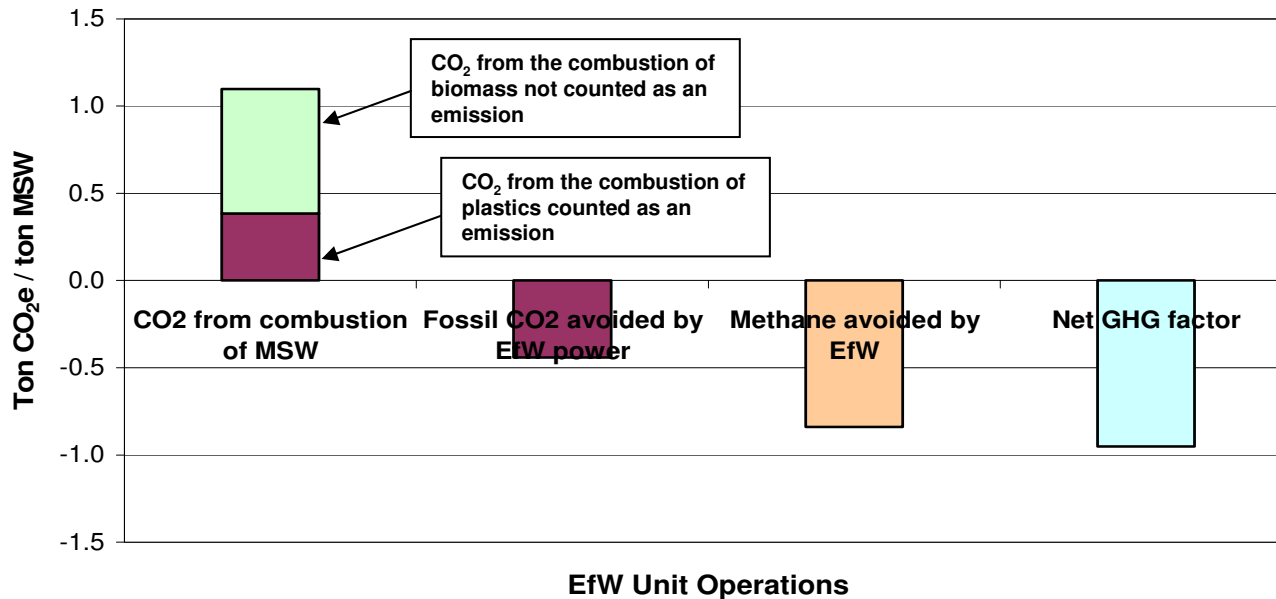




Benefits of Waste to Energy

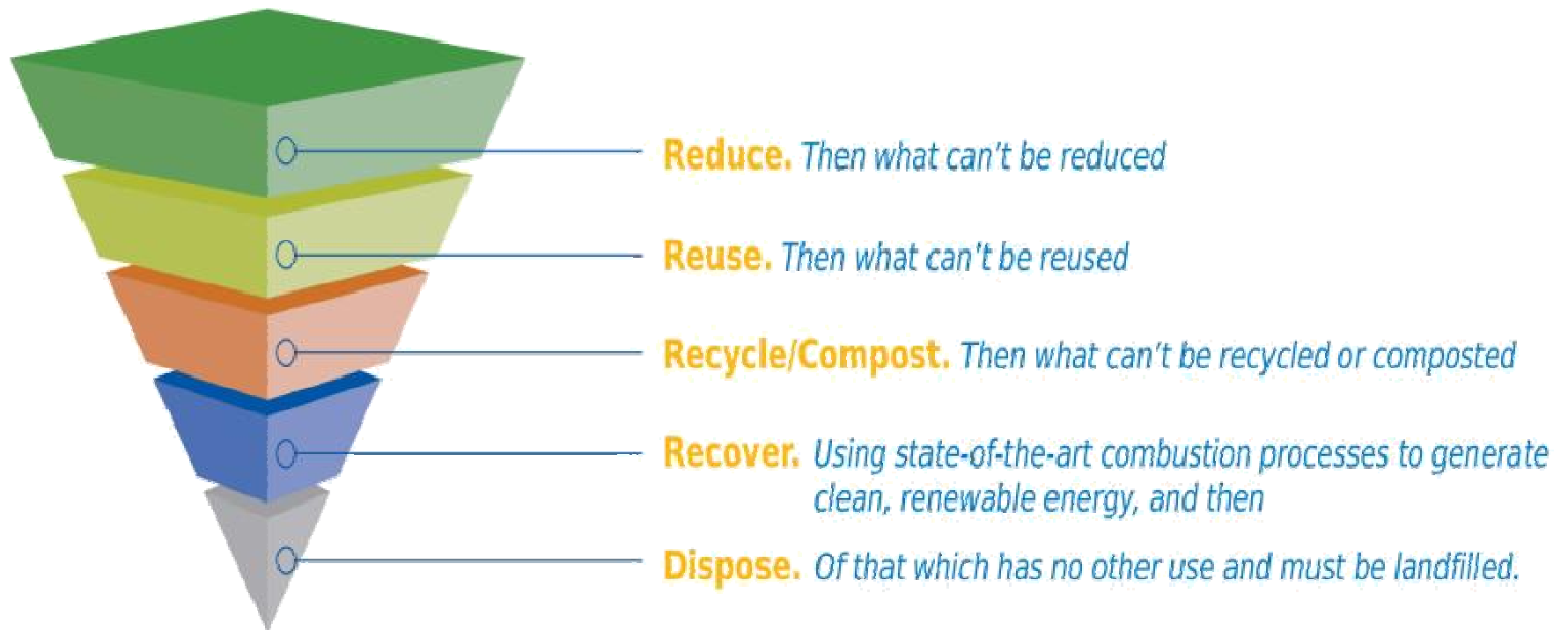
WTE – Net GHG Reducer

- World Economic Forum – WTE is listed as one of “Eight Key Renewable Energy Sectors” for the future
- EPA Study – Results indicate that WTE is far superior to landfill gas





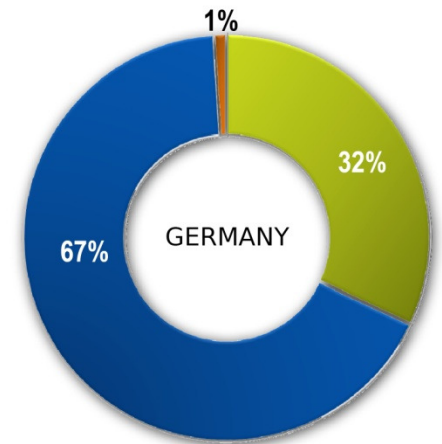
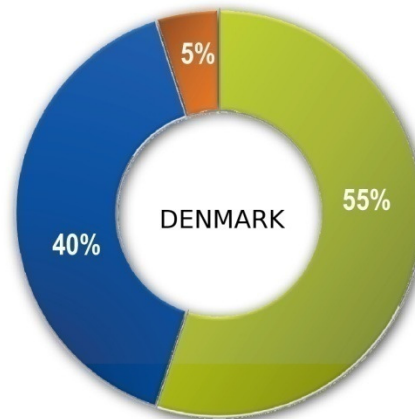
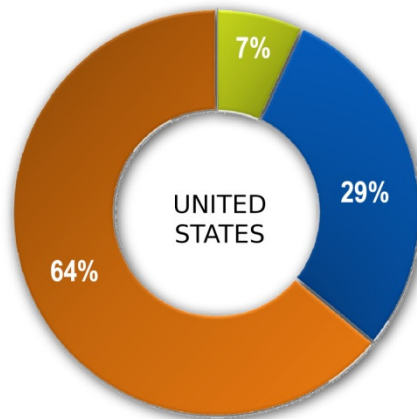
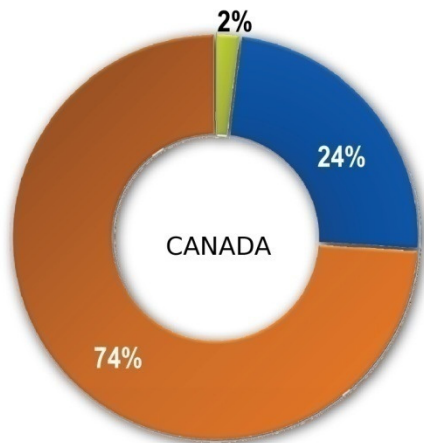
Solid Waste Management Hierarchy





What a contrast

- EfW is used extensively worldwide
 - *Nearly 800 EfW facilities: ~140 million tons/year*





Project Considerations

- Estimated construction cost - \$250M to \$500M
- Estimated staffing – 50 to 85 professionals (construction, hauling and ancillary employee increase not counted)
- Estimated site acreage – 15 acres minimum
- Estimated power production – 355K MWh/YR
 - *Referenced at 1,500 TPD / 650 KWh/T*
- Estimated lead time:
 - *2 to 3 years permitting and project development*
 - *34 to 40 months construction schedule to commercial operation*

Preliminary Architectural Rendering of EfW Facility



“Modern incineration technology is remarkably clean and each plant can be put to use generating electricity for thousands of homes.”

“Durham Leads on Trash Incineration,” The Toronto Star, August 2007

Durham/York EfW Project

Project Overview

- DBO: state-of-the-art Energy-from-Waste (EfW) facility in Clarington, ONT
- Using proven Martin GmbH® combustion technology to process 140,000 tonnes/year
- Guaranteeing to meet the most stringent environmental standards
- Creating 800 direct/indirect jobs during construction and 44+ operation/plant/administrative positions
- Generating 17.5 megawatts (gross) of renewable energy—enough to power 12,000 to 15,000 homes
- Diverting several thousand tons of metals over life of project

Preliminary Architectural Rendering of EfW Facility



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"Durham Leads on Trash Incineration," The Toronto Star, August 2007

Durham/York EfW Project

Project Overview

- Durham and York supplying the MSW
- Committed to 70% waste diversion targets by 2014
- Strong political champion, Durham Regional Chair
- Followed detailed and laborious planning process with full E.A review, ToR, and multiple stakeholder involvement/outreach
- Public procurement process 2008-2010
- CVA awarded 2009
- Awaiting EA approval
- Submit CofAs – end of '10
- NTP July '11

Preliminary Architectural Rendering of EfW Facility

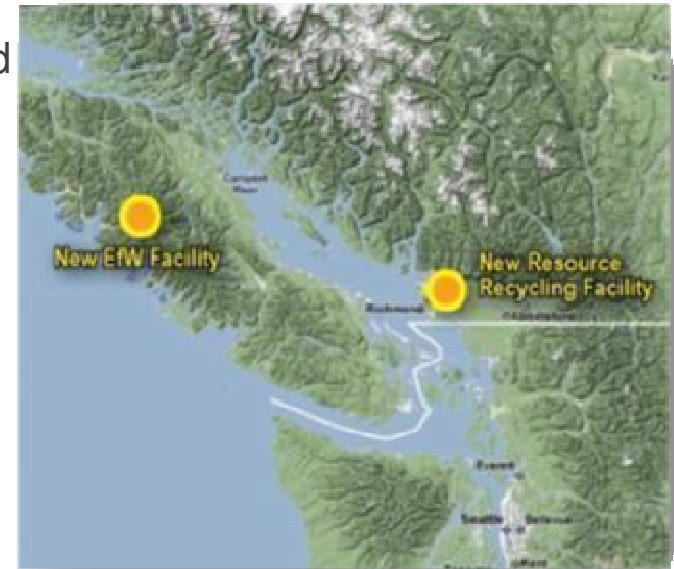


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Gold River Power Project

- Located in Gold River, BC on northern Vancouver Island
- Thermal Power Plant on site of former Gold River Pulp and Paper Mill (closed in 1998)
- Property, permits and assets acquired by GIE in 2003
- Permits issued in 2004 - 2005
- BC Hydro awarded GIE a 40-year Power Purchase Agreement un 2006 Open Call for power (90MW)
- Plant design capacity up to 700,000 TPY
- CVA acquired development rights in March 2008
- In-region and out-of-region waste disposal debates this summer by Metro Vancouver board
- Awaiting waste disposal tender from Metro Vancouver





Thank you.

Joey Neuhoff
973-882-7079
jneuhoff@covantaenergy.com

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Benefits of Waste to Energy

International Acceptance of EfW

• 780 EfW facilities worldwide—140M tons per year processed

