
Energy from Waste Towards Sustainable Waste Management

Presentation to Council
December 16, 2010

Erin Mahoney
Commissioner Environmental Services



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Slide 1

Agenda

- ❑ York's Long Term Waste Strategy Framework
- ❑ Role of EFW
- ❑ Highlights of EFW Project
- ❑ Background
- ❑ Current Status
- ❑ Next Steps



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Slide 2

Ensuring Sustainability in Waste Management



Sustainable Natural Environment

- ❑ 4 Rs Waste Management Hierarchy
- ❑ Life-cycle comparison to weigh options

Healthy Communities

- ❑ Public health considerations are paramount
- ❑ Public acceptance and participation

Economic Vitality

- ❑ Diversification in technologies, ownership, partnering and contracting
- ❑ Managing risk exposure



Waste Management Evolving Into Resource Management



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Advancing Toward Sustainable Waste Management

No curbside
Diversion
programs



-1970

Recycling Depots
to capture bulky
recyclables



1980

2004
York Region diverts
25% from landfill



2000

2008
MOE releases paper
on Extended Producer
Responsibility



2010
EA approval of
Durham-York EFW
Facility



Blue Box
introduced



Green Bin launched
across Ontario



2007
York Region diverts
45.7% from landfill
Ranking 1st in large
urban category



2009
York Region achieves 57% diversion.
Council endorses recovery as 4th R



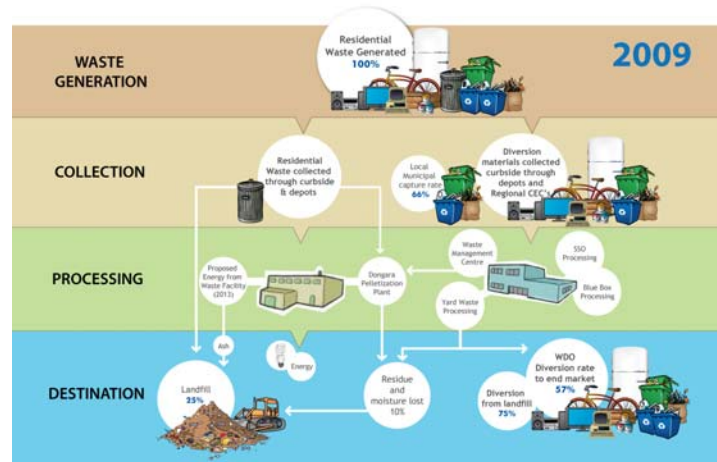
Continuous Improvement in Waste Diversion



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Slide 4

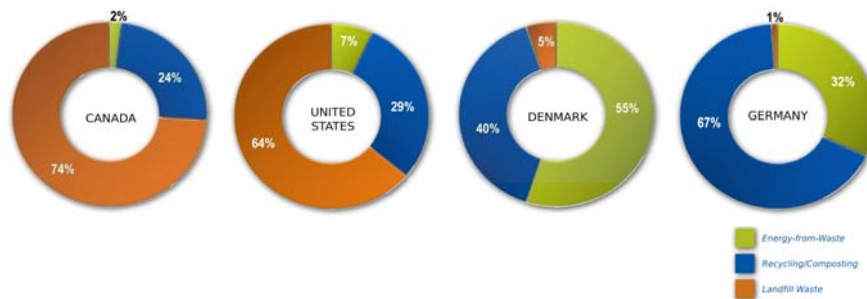
York Region's Shared Waste Management System



Integrated Waste Management System Drives Diversion Success

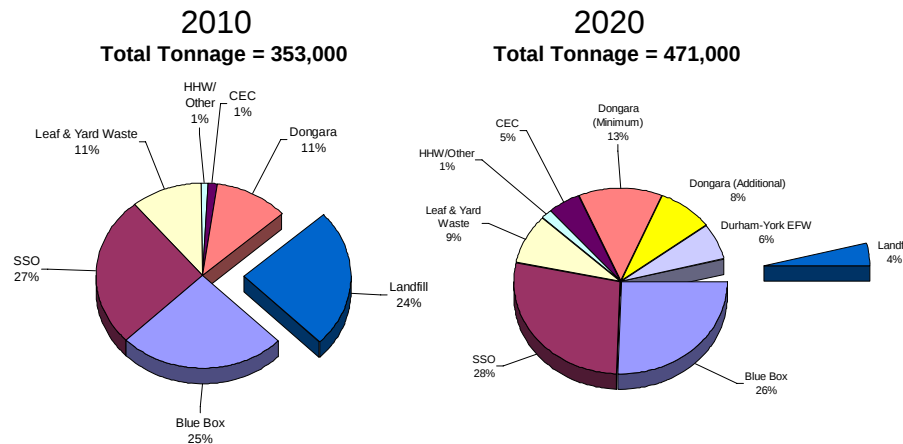
Waste Management in North America Compared with Europe

EFW technology used extensively worldwide



EFW Technology Widely Accepted Internationally in Achieving Waste Diversion Targets

Projected Diversion from Landfill



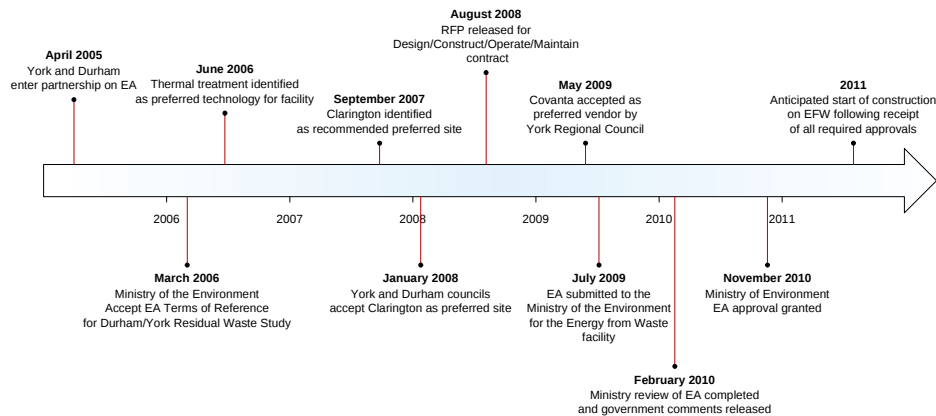
System Can Achieve Over 90% Diversion From Landfill Over Long Term



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EFW Timeline and Key Achievements to Date



Commercial Operation In Year 2014



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Durham York Energy from Waste Facility

- ❑ Proven technology processes
140,000 tonnes/year
- ❑ Power Purchase Agreement with the Province at 8 cents/kWh
- ❑ Covanta Energy to Design, Build and Operate facility
- ❑ Creates 800 jobs during construction and 44+ jobs during plant operation
- ❑ Generates 14 megawatts of renewable energy—enough to power 10,000 homes
- ❑ Diverting thousands of tonnes of metals and reducing CO₂ emissions over life of project



First EFW Facility Approved in Ontario in 22 Years



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Covanta Experience

- ❑ World's largest Energy-from-Waste operator
- ❑ 65 power generation assets including 45 EFW facilities (4,000+ employees)
- ❑ Full-service approach to facility permitting
- ❑ More EFW permitting, design, and construction experience than any other firm in North America



Lee County EFW, Ft Myers, FL

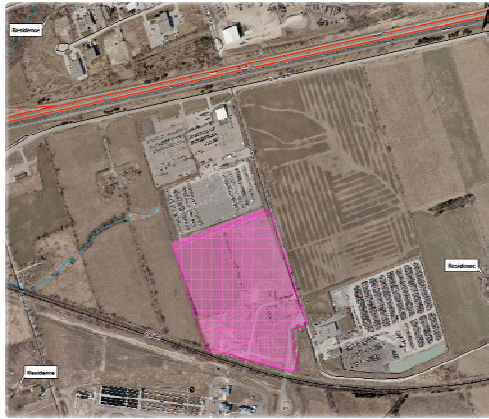
Largest Provider Of EFW Services In North America



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Compatible Land Uses Surround Clarington Site



- ❑ Wastewater Treatment Plant
- ❑ Business Park
- ❑ Light Industrial Park
- ❑ Green Space

**Site Selected Through Comprehensive Environmental Assessment
And Public Consultation Process**

Comprehensive EA Approval Conditions



25 conditions
cover wide
spectrum of
consultation and
implementation
activities

Highlights of Co-Owners Agreement

- ❑ Durham 78.6% (110,000 tonnes), York 21.4% (30,000 tonnes)
- ❑ 50/50 cost sharing of site property and land for Host Community Agreement commitments
- ❑ Cost effective oversizing of selected components to accommodate future expansion
- ❑ Regions to compensate each other if minimum tonnage commitments not fulfilled



***Revenues and Base Facility Costs Shared
in Proportion to Capacity Ownership***



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York Region Total Project Budget Authority

EFW Facility Construction	\$54,300,000
Host Community Agreement	\$3,400,000
Owner's Consultant	\$1,500,000
Purchase 50% of Site Property	\$2,000,000
Oversizing	\$5,100,000
MOE Conditions of Approval	\$2,000,000
Total Capital Budget Authority	\$68,300,000

Environmental Leadership and Investment in Sustainability



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EFW Operating Financial Summary

Gross Annual Operating Costs	\$14,665,000
Electricity Revenue	(\$8,590,400)
Recovered Metal Revenue	(\$258,825)
Net Annual Operating Cost	\$5,815,775

Net Operating Cost per tonne (2009 Dollars)	\$41.54
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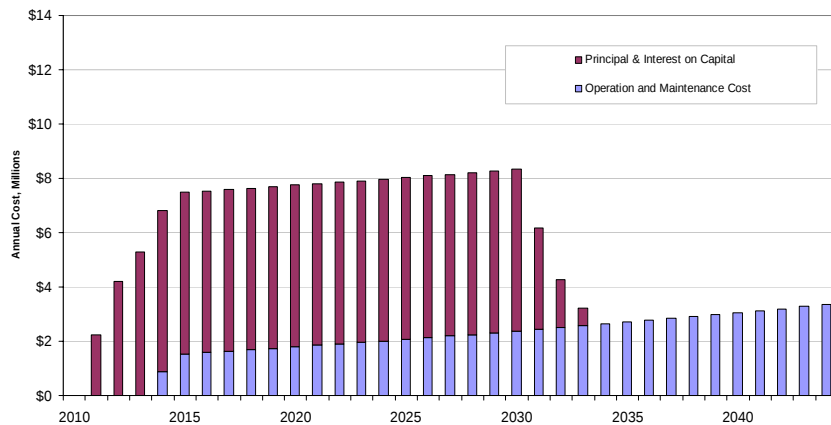
Facility Revenue Reduces Operating Cost By 60%



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York's share of Capital Investment, Debt Repayment and Operating Cost



Operation And Maintenance Fee Includes 25% For Preventative Maintenance And Major Component Replacement



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Comparison of Waste Management Cost Projections

Waste Management Option (Unit Costs 2010 to 2035)	2010 Tonnes	2020 Tonnes (During Capital Repayment)		2035 Tonnes (After Capital Repayment)	
		Without EFW	With EFW	Without EFW	With EFW
Blue Box (\$24 to \$40/tonne)	89,000	121,000	121,000	150,000	150,000
Source Separated Organics (\$154 to \$253/tonne)	92,000	130,000	130,000	162,000	162,000
Leaf and Yard Waste (\$67 to \$110/tonne)	39,000	41,000	41,000	51,000	51,000
HHW and Other (\$604 to \$991/tonne)	4,000	7,000	7,000	9,000	9,000
CEC Diversion (\$153 to \$251/tonne)	4,000	24,000	24,000	24,000	24,000
Waste to Landfill (\$96 to \$157/tonne)	85,000	88,000	58,000	122,000	92,000
Waste to Dongara (\$123 to \$202/tonne)	40,000	60,000	60,000	60,000	60,000
Waste to Durham-York EFW (NA, \$312 to \$154/tonne)	0	0	30,000	0	30,000
Projected Annual Waste Management Cost	\$35,000,000	\$60,000,000	\$66,000,000	\$99,000,000	\$99,000,000
Blended Unit Cost Per Tonne	\$99	\$127	\$140	\$171	\$171
Annual Taxpayer Impact per Household	\$123	\$158	\$174	\$200	\$200

*Assumes future extension of existing waste disposal contracts

**Investment in EFW Provides Diversification
at No Additional Long-Term Cost**



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EFW is Key Part of Diverse Sustainable Waste Management System

- ❑ Reduce our annual greenhouse gas emissions
- ❑ Increases diversion from landfill post 2014
- ❑ Generate enough electricity to power 10,000 homes
- ❑ Recover additional metals not captured by our blue box program
- ❑ Provide a local, publicly owned, long-term waste resource recovery solution



Positions York as Leader In Sustainable Waste Management



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Slide 18