The Future of Sustainable Waste Management: Challenging the Status Quo

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Covanta Overview

**Waste Disposal**
- 45 EfW facilities
- Process ~20 million tons of waste annually

**Energy Generation**
- >1,500 MW base load electricity capacity
- Renewable energy for one million homes

**Metals Recycling**
- Recycle ~500k tons of ferrous and non-ferrous metal annually
- Five Golden Gate Bridges and over one billion aluminum beverage cans
Onondaga County, New York
“Over the past 20 years, waste-to-energy has proven it is a safe and effective technology that turns trash into electricity,” said Mark Donnelly, OCRRA executive director. “It saves natural resources and funds our community’s award-winning recycling programs, which is why OCRRA is pleased to announce a contract extension with Covanta, our long-time partner in sustainable waste solutions.”

Boston, Massachusetts
“Covanta has been a very good and reliable partner,” said Michael Dennehy, interim commissioner, Public Works. “Their generous support over the years for programs such as Boston Shines and the consistent dependable disposal options Covanta provides the City of Boston have had a positive impact on the cleanliness of Boston neighborhoods.”

Marion County, Oregon
“The new contract provides for the continuation of reliable waste disposal and extends a successful partnership between Covanta and Marion County that began in the mid-1980s,” remarked Commissioner Sam Brentano, Marion County. “The Energy-from-Waste facility coupled with innovative recycling programs has enabled Marion County to be a leader in solid waste management.”
2015 and beyond – What is next for Covanta?

Durham York Energy Centre
Waste should never be wasted – Huge opportunity for the economy and the environment

**Business as Usual**
- Recycling: 28.9%
- EfW: 7.6%
- Landfill: 63.5%

**Sustainability Scenario**
- Recycling: 65%
- EfW: 25%
- Landfill: 10%

- **Economic Benefits**
  - $130B in direct economic activity
  - 350,000 new permanent jobs

- **GHG Savings**
  - 264 million tons CO₂e
  - ≈ closing 63 coal-fired power plants

- **Energy Savings**
  - 2.2 Quadrillion BTU primary energy
  - ≈14% of our imported oil (2013)

*Source: Columbia University, 2014*
Sustainability

• Clean World Initiative
  – Industry leading performance
    – Safety
    – Reliability
    – Efficiency
  – Environmental stewardship
    – Sustainable waste management
    – Air quality
    – Water conservation
  – Investing in technology
  – Being a good neighbor
Industry leading performance

• World class safety programs
• In-house maintenance
• High boiler availability
  
  - 2010: 91.2%
  - 2011: 91.7%
  - 2012: 92.3%
  - 2013: 92.5%
  - 2014: 92.5%

• Increasing efficiency

  Since 2010
  - 24 projects implemented
  - Over 30,000 MWh saved per year
  - Enough electricity to supply 2,600 homes for a year
  - Saving 22,800 tons of GHGs (as CO₂), equivalent to pulling 4,350 cars off the road
  - 7 more projects currently under development
Environmental Stewardship

Emissions Reductions

Water Conservation
Projects to reduce in-house demand and to use grey water instead of potable water

Covanta EfW Facility Emissions as a percentage of Federal Permit Limits
Investing in technology

• Low NOx technology
  – Received Clean Air Excellence Award from the U.S. EPA

• Enhanced metal recovery
  – Recycle 500,000 tons of metal annually
    • Enough ferrous to build five Golden Gate Bridges
    • Enough non-ferrous to produce one billion aluminum beverage cans
Being a good neighbor
New York City Agreement

• 20-year waste transport and disposal contract
• CVA manages waste transportation logistics and disposal
• CVA investment for barges, railcars, containers and intermodal equipment
Durham York Energy Centre

- 140,000 tonne-per-year Energy-from-Waste Facility in Durham Region of Ontario, Canada
- Serves the Regional Municipalities of Durham and York
- Generates 17.5 megawatts of renewable energy—enough to power over 10,000 homes
- Latest technology - DYEC will be the cleanest and most efficient EfW facility in North America
Pinellas County Resource Recovery Center

- Selected to operate the facility for a 10-year term after a competitive procurement process
- We bring unique experience as the Martin GmbH technology licensee for North America
- 30-year track record designing, constructing, operating and maintaining EfW facilities using this technology
Dublin Project Overview

- Treat up to 600,000 tonnes of solid waste annually
- Renewable energy and potential for district heating
- Greenhouse gas reduction
- Economic boost
Beyond the United States
China

• Covanta Operations in China
  – Chengdu – 1,800 TPD
  – Tongxing – 1,200 TPD
  – Taixing – 350 TPD
The Circular Economy - Europe’s Plan for Zero Waste
Moving up the Waste Hierarchy

- Advanced Recycling Center
- Metals Recycling
- Ash Reuse
- Electronic Waste Recycling
- Other Services and Solutions
  - Treatment, Storage and Disposal
  - Equipment & Transfer
How do we grow as an industry?

**Policies**
- **Europe**
  - EU Landfill Directive
  - Landfill Taxes
- **China**
  - Target 30% Energy-from-Waste by 2030
  - Preferential feed-in electricity tariff
- **Kyoto**
  - Recognizes Energy-from-Waste as an eligible offset in CDM protocol
- **United States**
  - No meaningful federal sustainable waste, energy or climate policies

**Subsidies?**

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Looking Ahead
Thank You