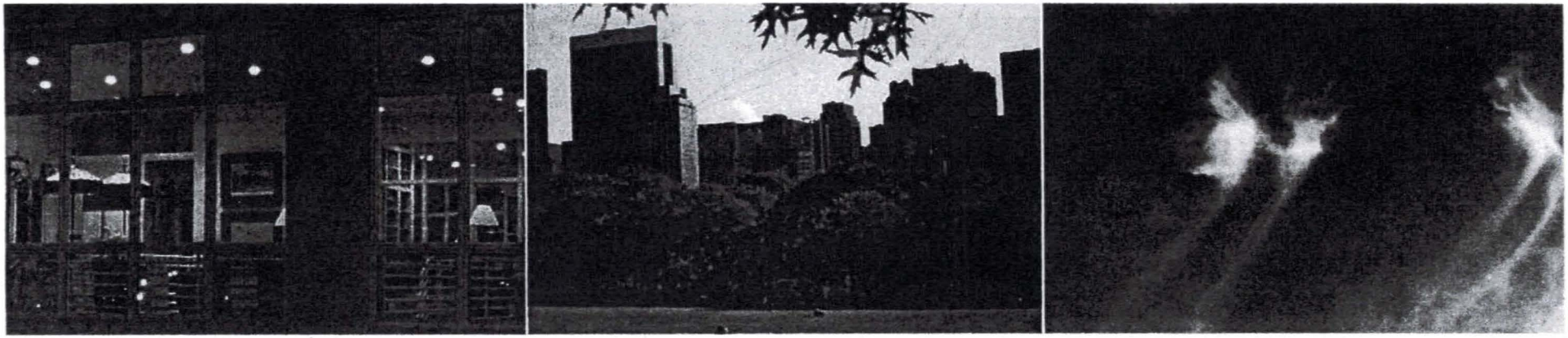
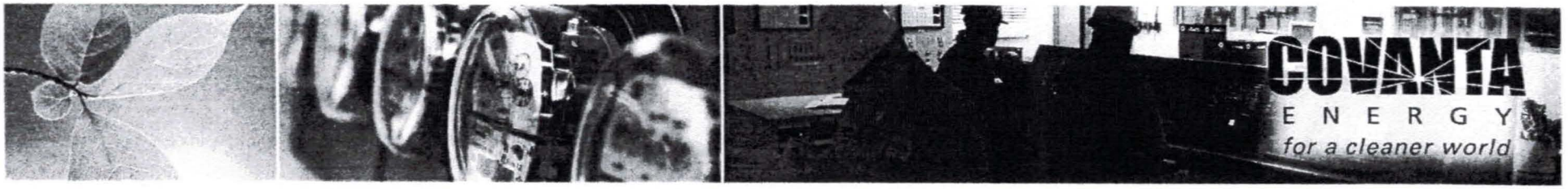
Alex/Arlington = 45 acres
RDOTPD

COVANTA
ENERGY
for a cleaner world



Energy from Waste - Virginia

Covanta Energy



Leading Producer of Energy-from-Waste

Covanta Holding Corporation (NYSE: CVA)

Largest Energy-from-Waste (EfW) operator

- *41 EfW facilities in the US*
- *North America, Asia & Europe*
- *4,000+ employees worldwide*

Virginia

- Covanta operates 2 facilities in Virginia – Alexandria and Fairfax
  - Employs 130 people with a payroll of $15 million
  - $1.9 million in local taxes, host fees and surcharges
  - Spend $79 million in the state economy
- Covanta's Renewable Power
  - Produce 113 megawatts of base load electricity
  - Enough energy to power 100,000 homes each year
- Covanta VA converts 1.40 million tons of waste per year into renewable energy
  - Avoiding the equivalent of ~ 1.40 million barrels of oil each year

Converting Waste Into Clean Renewable Power

Helps Solve Four of the Nation's Biggest Challenges

- **Clean Renewable Energy → Baseload power near the load center, with lower price than other renewable sources**
- **Climate Change → One ton of trash reduces one ton of CO_2 eq**
- **Green Jobs → New facility creates ~$1 billion in economic activity**
- **Sustainable Waste Management → Follows EPA and EU waste hierarchy**

Energy-from-Waste is a specially designed energy generation facility that uses household waste as fuel and helps solve some of society's big challenges

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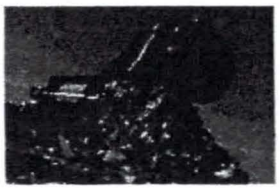
Municipal Solid Waste (MSW): 1 ton



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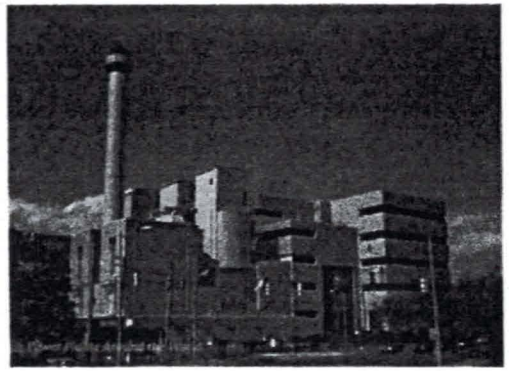
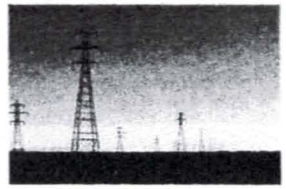


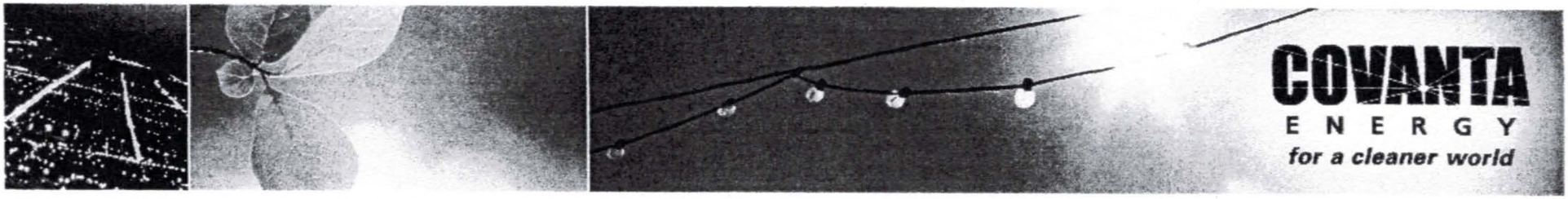
Alexandria, VA



→ **Power: 550-750 kWh**

→ **Metal: 50 lbs**

→ **Ash: 10% of original volume**



After Recycling, there are two choices:
EfW or landfill

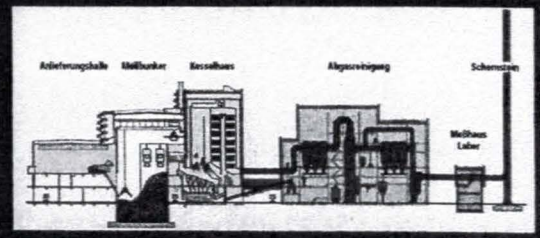
- EfW manages 1 ton of MSW in 1-hour vs. 100 years in a landfill and avoids trucking related emissions
- EfW is a process with continuous combustion controls, dedicated air pollution control systems and continuous monitoring systems. Landfills do not have any air pollution monitoring or controls.
- EfW generates more net electrical power per ton of MSW than any landfill process - 700 kWh versus 65kWh
  - EfW avoids 100 % of methane potential from landfills
- EfW enables recovery and recycling of metals

net greenhouse
gas Reduce

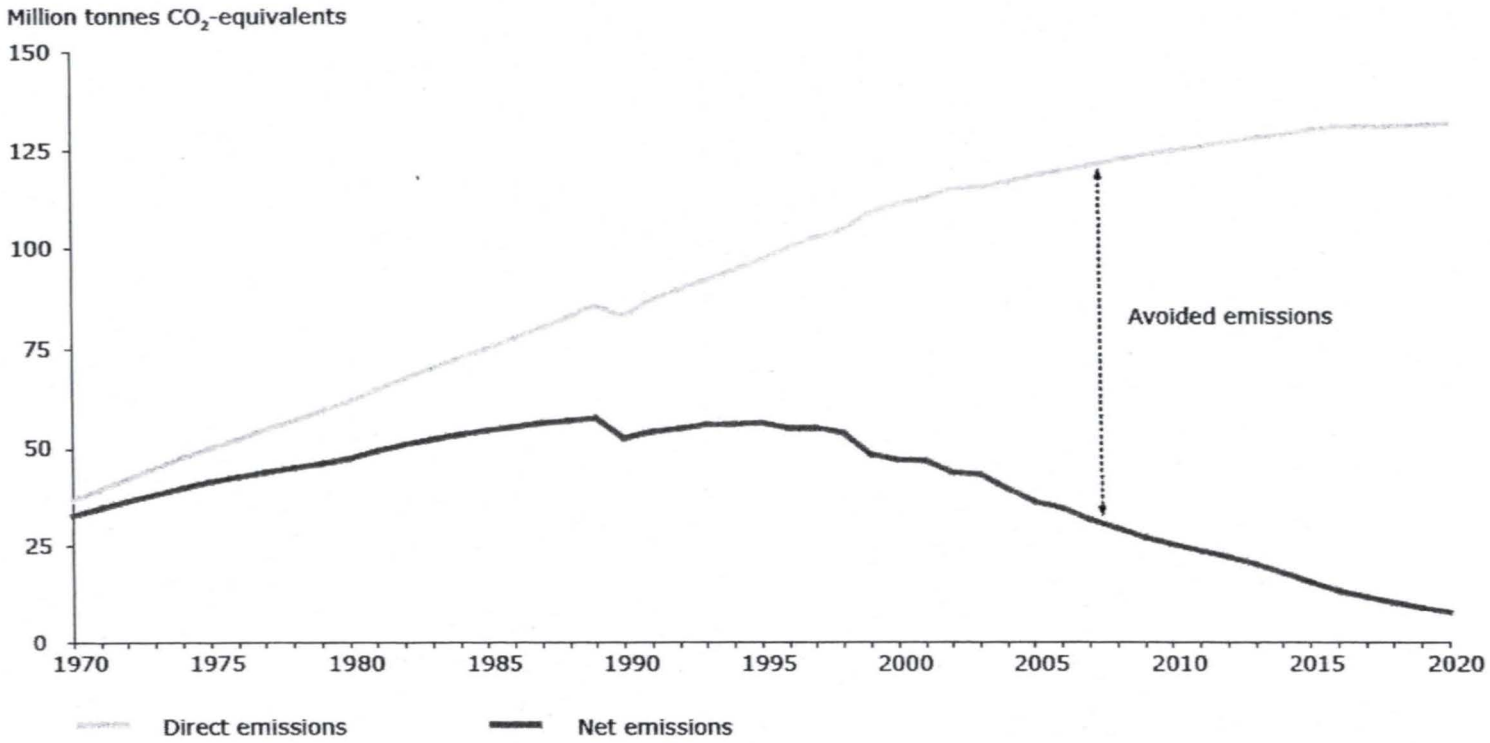
Dr. Michael Weltzin
Scientific Assistant
in the Parliamentary
Group

Incineration

- **Advantage: proven technology for many years**
- **When using a facility with the best available technology - very low environmental impact:**
  - **high efficiency in recovering of heat and electricity**
  - **low emissions**
  - **use of different by-products by producing acid and gypsum**
  - **use of ashes e.g. in the construction industry**
  - **no landfilling, only small amount of the input has to be left over to be deposited in the subsoil**
  - **potential to be developed into more decentral, flexible structures**
  - **producer responsibility leads to products free of harmful substances, like heavy metals, means future potential for much lower emissions**



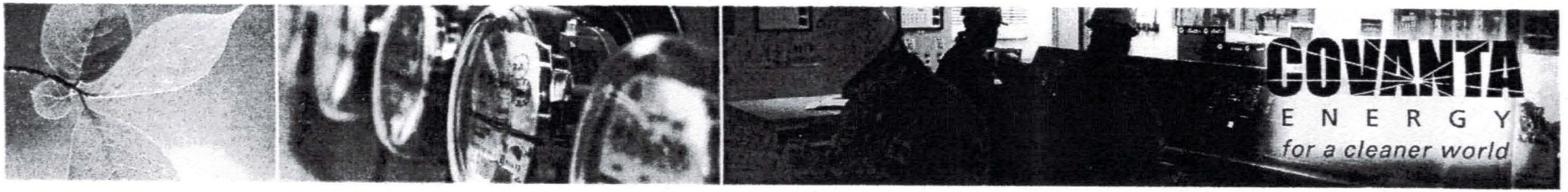
Trends and projections of greenhouse gas emissions from municipal waste in the EU



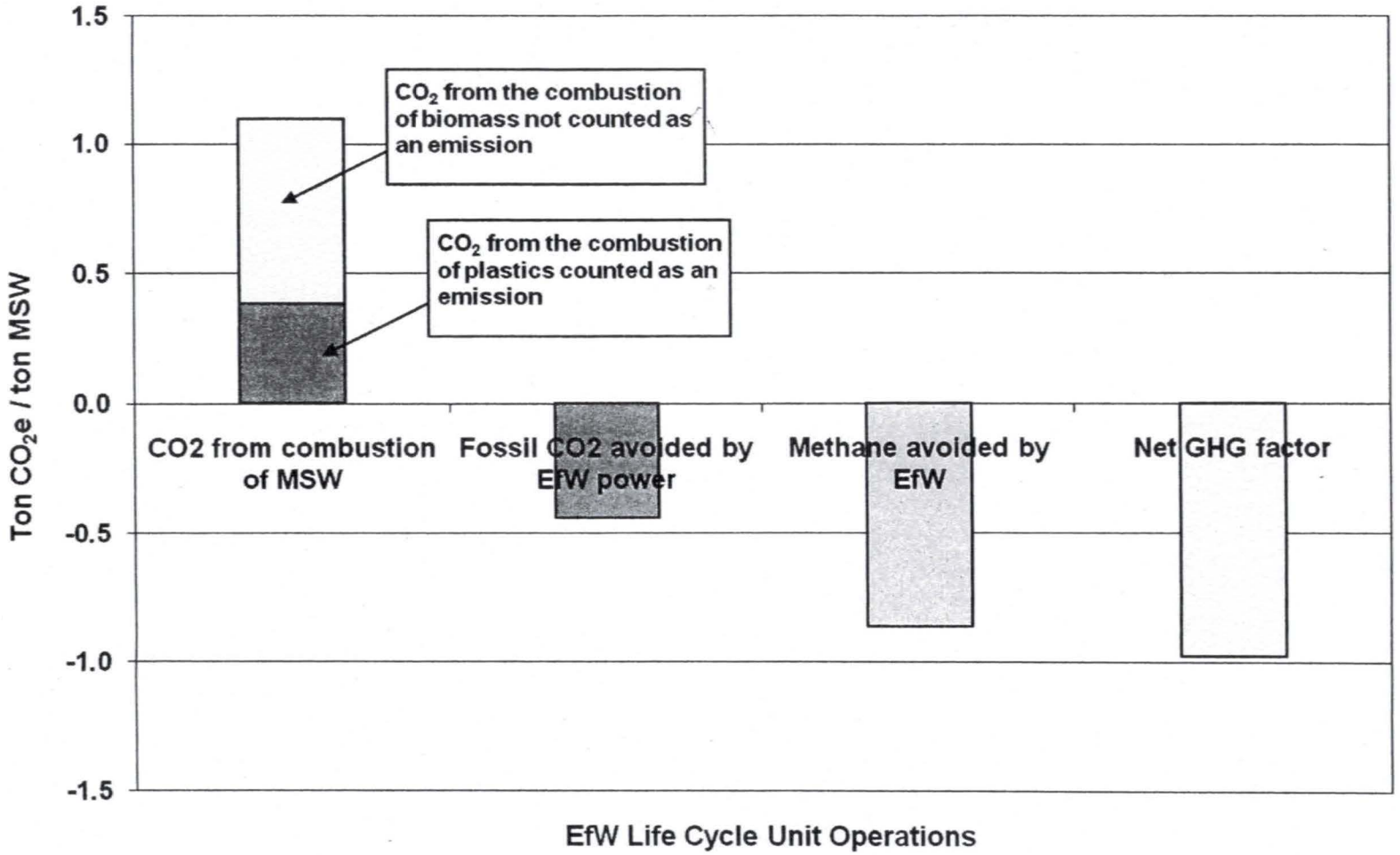
Source: ETC/RWM.

European Environment Agency

EEA Briefing, "Better management of municipal waste will reduce greenhouse gas emissions"



EfW is a Net Reducer of GHG



Carbon Offsets: Recognizing the Benefits

RGGI should recognize landfill methane avoidance as an offset project type.

- Voluntary Markets:

  636 tpd capital expansion Lee County EfW Facility in Ft. Myers, FL

- International / Kyoto Protocol:

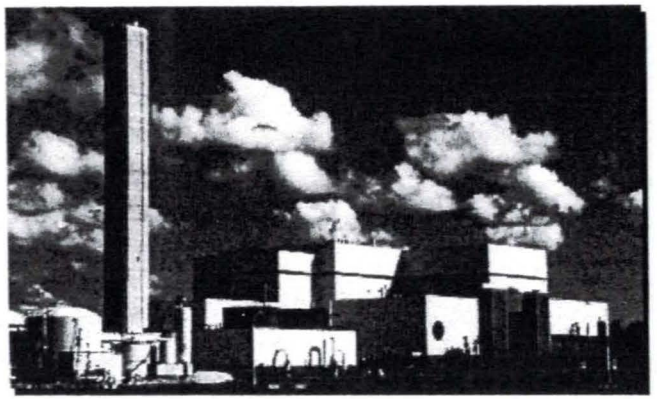
  Huzhou Nantaihu facility in China approved and registered as CDM project – Sept 2010 (AM00025)

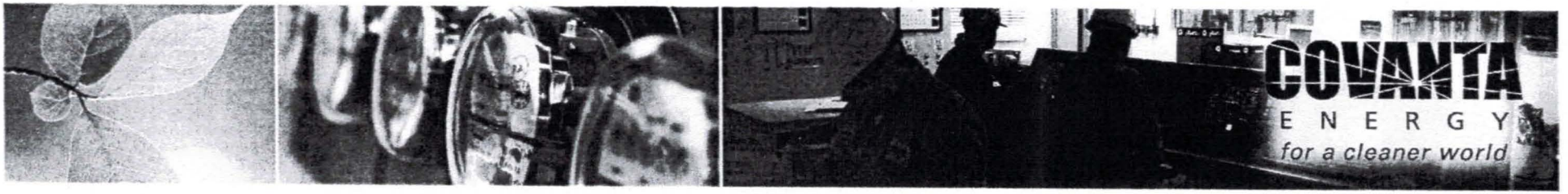
VCS { VOLUNTARY CARBON STANDARD

Project Description
Lee County Waste to Energy (WtE) Facility
2007 Capital Expansion – Unit #3

10500 Buckingham Road
Ft. Myers, FL

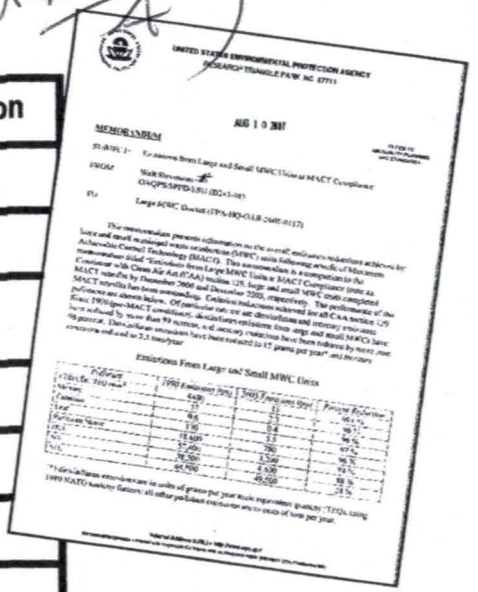
August 2009

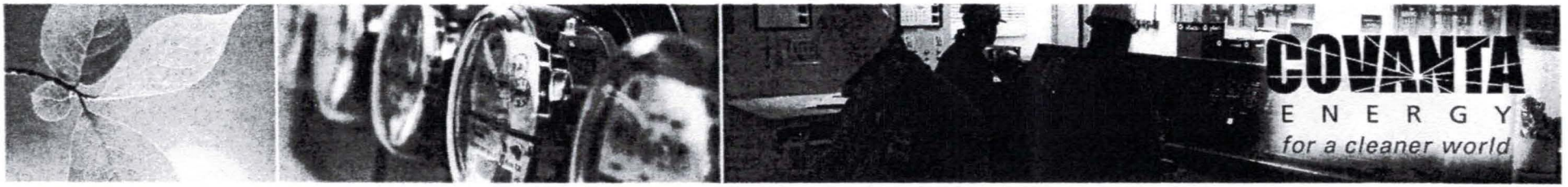




"The performance of the MACT retrofits have been outstanding."

Pollutant	1990 Emissions (tpy)	2005 Emissions (tpy)	Percent Reduction
CDD/CDF, TEQ basis*	4400	15	99+%
Mercury	57	2.3	96%
Cadmium	9.6	0.4	96%
Lead	170	5.5	97%
Particulate Matter	18,600	780	96%
HC1	57,400	3,200	94%
SO_2	38,300	4,600	88%
NO_x	64,900	49,500	24%

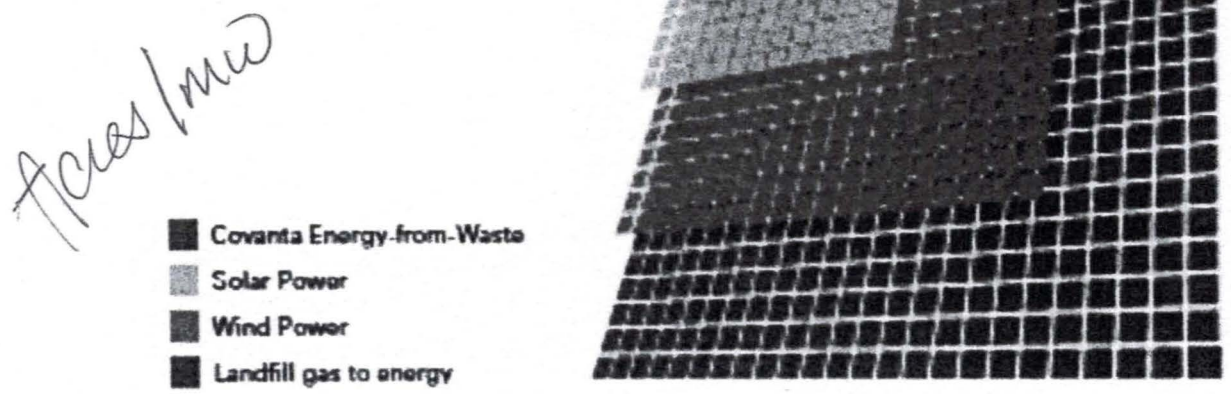


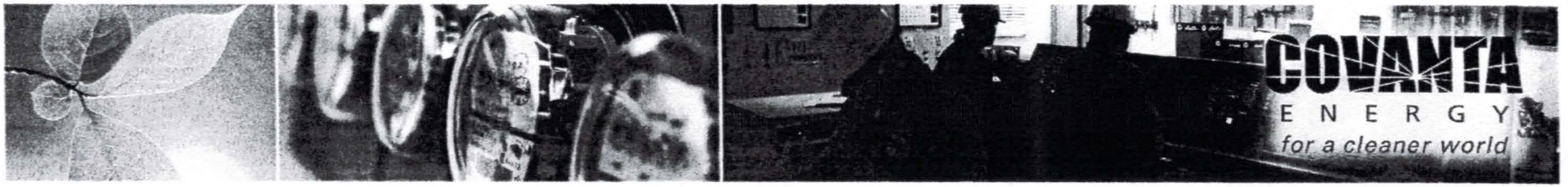


Energy-from-Waste Is Land Dense

Energy-from-Waste uses less land per megawatt than other renewable energy sources.

- EfW facilities require an average of 0.7 acres/MW
- Landfill gas 27 acres/MW
- Solar requires 8 acres/MW
- Wind requires 18 acres/MW



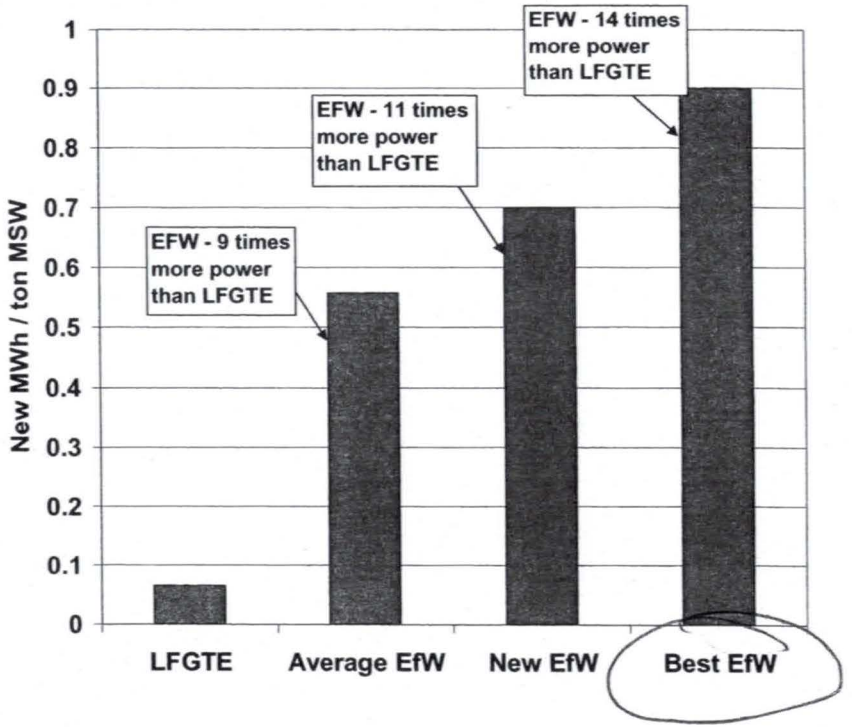


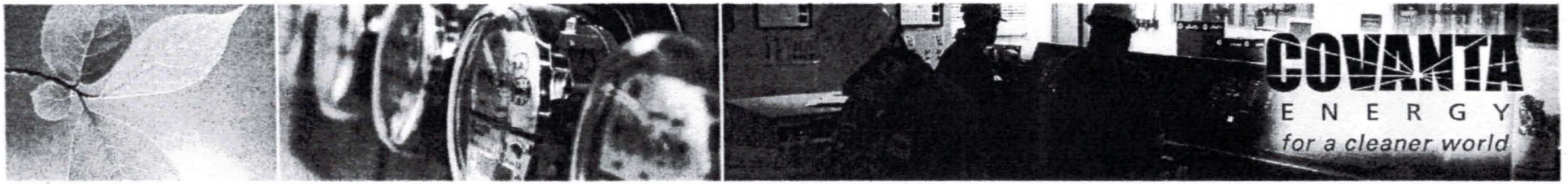
Renewable Energy

EfW facilities produces 9 to 14 times the energy per ton compared to landfills.

- U.S. EPA states that Energy-from-Waste (EfW) "produces electricity with less environmental impact than almost any other source"

- 25 States and the federal government defined EfW as renewable including MD
  - **EfW compliments other renewable sources – 24/7**
  - **One ton of waste ~ ¼ ton of coal**
  - **One ton of waste ~ 1 barrel of oil**





Thank you