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# Poolbeg Incinerator

## EIS Climate Chapter

### A Critique of the Poolbeg 3 Model

August 2007

# **An Analysis of the EIS Climate Chapter**

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## **Submission to the Environmental Protection Agency**

### **Waste Licence Application W0232-01**

**Applicant:** Dublin City Council

**Development:** Dublin Waste to Energy Facility  
Pigeon House Road  
Poolbeg Peninsula  
Dublin 4

**Submission by:** Joe McCarthy & Valerie Jennings

## Agenda

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- Three Poolbeg Models
  - Our Analysis
  - Findings
  - Corrected Results
  
- Assessment of the Poolbeg 3 Model

## Poolbeg Climate Models

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- Poolbeg 1
  - Published in the EIS
  
- Poolbeg 2
  - Submitted to Oral Hearing on 26<sup>th</sup> April 2007
  
- Poolbeg 3
  - Submitted to Oral Hearing on 28<sup>th</sup> May 2007

- Waste Mix
  - Sources – EPA & Dublin Waste Strategy
  - CCW and FCF
  - “Other” fraction
  
- Electricity produced
  - Incorrect MW hours used
  - CCGT Factor
  - CO2 avoided
  
- Corrected Result

- Waste Mix & Fractions
  
- Electricity Figures
  - Used directly
  - C Norgaard combustion calculation ignored
  - Without proven foundation
  
- Hours of operation
  - Uses 8000 for Electricity
  - Uses 8537 for District Heating

## Poolbeg 3

## Waste Mix & Fractions

						600000
	Waste Totals	Waste Fraction	% Dry Matter Content	Total Carbon Content (Dry)	Fossil Carbon Fraction	CO2 Emissions (Tonnes/An num)
Paper	184,800	30.8%	90%	35%	0%	
Glass	16,200	2.7%	100%	0%	0%	
Plastic	87,600	14.6%	100%	51%	100%	163,812
Ferrous	8,400	1.4%	100%			
Aluminium	6,000	1.0%	100%			
Other Metals	6,000	1.0%	100%			
Textiles	41,400	6.9%	80%	50%	50%	37,950
Organics	178,200	29.7%	40%	44%	0%	577
WEEE	4,200	0.7%	100%			
Wood	4,800	0.8%	85%	50%	0%	
Others	62,400	10.4%	80%	50%	50%	57,200
						<b>259,539</b>

## Poolbeg 3

## Correction 1 - Waste Mix & Fractions

						600000
	Waste Totals	Waste Fraction	% Dry Matter Content	Total Carbon Content (Dry)	Fossil Carbon Fraction	CO2 Emissions (Tonnes/An num)
Paper	184,800	30.8%	90%	35%	0%	
Glass	16,200	2.7%	100%	0%	0%	
Plastic	87,600	14.6%	100%	61%	100%	195,932
Ferrous	8,400	1.4%	100%			
Aluminium	6,000	1.0%	100%			
Other Metals	6,000	1.0%	100%			
Textiles	41,400	6.9%	80%	50%	50%	37,950
Organics	178,200	29.7%	40%	44%	0%	577
WEEE	4,200	0.7%	100%			
Wood	4,800	0.8%	85%	50%	0%	
Others	62,400	10.4%	80%	50%	100%	85,800
						<b>320,259</b>

**Error 60,720**



Similar analysis to Poolbeg 2

	MW (1)	Hours (2)	MWhrs	Factor	CO <sub>2</sub> Avoided
<b>Per Dr Porter</b>	59.2	8,000	473,600	0.567	<b>268,531</b>
<b>Corrected</b>	53.2	8,000	425,600	0.4	<b>170,240</b>

**Error** **98,291**

**Corrections:**

- 1. Internal electrical usage -6 MW
- 2. Planned and Forced Outages -17 days
- 3. Factor for avoided electricity

	Incineration	CO2	Electricity MW Hours	CO2 Avoided	Net
<b>Per Dr Porter</b>	600,000	259,539	473,600	268,531	<b>-8,992</b>
<b>As corrected</b>	600,000	320,259	425,600	170,240	<b>150,019</b>

**Error 159,011**

**Corrections:**

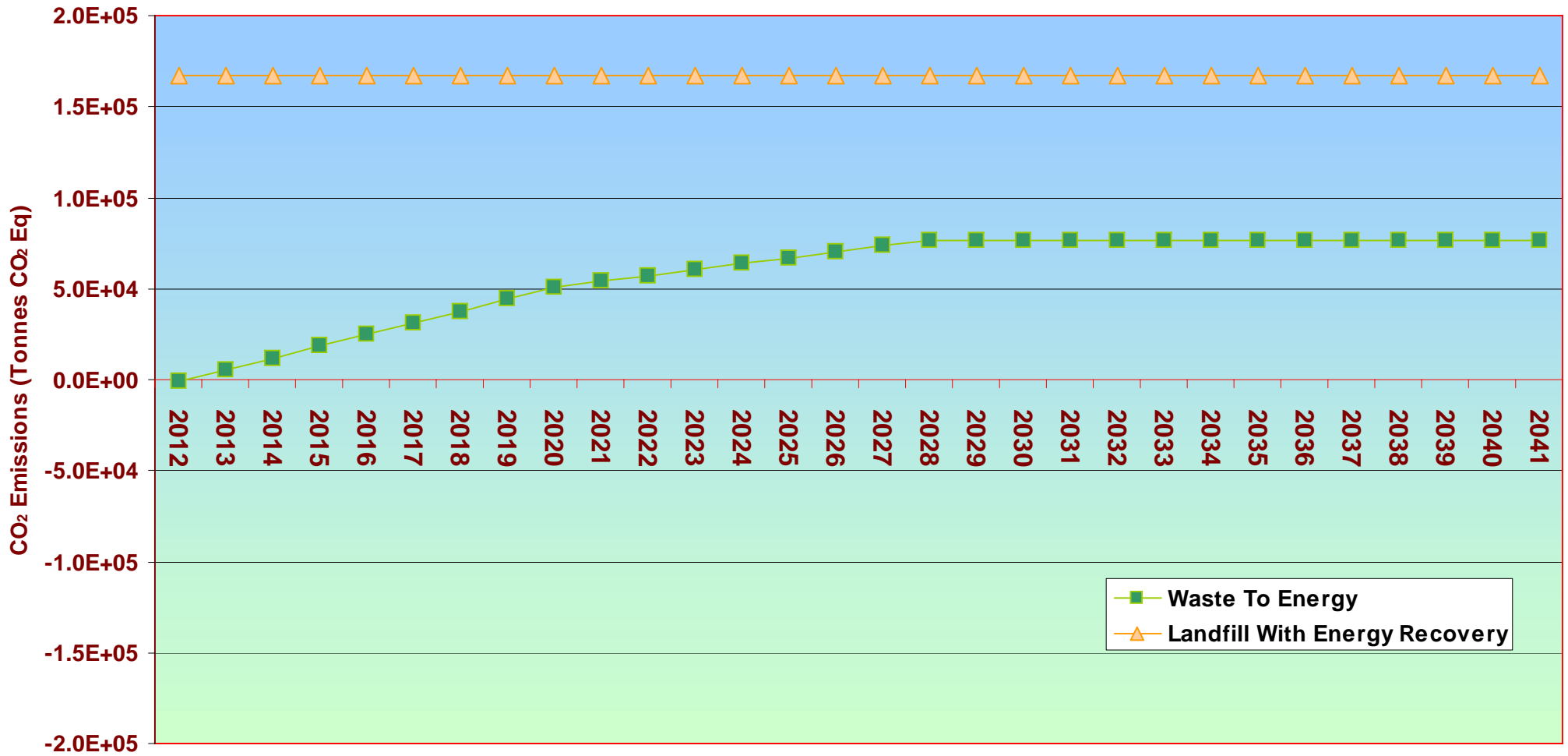
1. Waste mix
  - Plastic CCW% to 61%
  - Textile FCF 50% to 100% and
  - Other to CCW 50% and FCF 100%
  
2. Internal electrical usage
  - 6 MW
  - Planned and Forced Outages -17 days
  - Factor for avoided electricity

- Scenario 1 – Incineration v Landfilling
  - with reducing biogenic content
- Scenario 2 – Incineration v Landfilling
  - with reduced tonnage
- Scenario 3 – Incineration v Landfilling & AD
- Scenario 4 – Incineration v Landfilling & AD
  - with 50% gas capture
- Scenario 5 – Incineration v Landfilling & AD
  - with 50% gas capture and District Heating

These scenarios **cannot** be compared with those in **Poolbeg 1** or **Poolbeg 2**.  
And note that **carbon sequestration** has not been assessed.

# Poolbeg 3

# Scenario 1



# Poolbeg 3

## Poolbeg 3 - Scenario 1 - Corrected Incineration v Landfill

