

Delegation to Durham Regional Council

April 24, 2024

Durham Report #2024-COW-12

2024 Annual Climate Change Progress Report

Wendy Bracken

If you're serious about addressing climate change, move away from incineration.

- Incineration is bad for climate change and should not be promoted nor increased.
- GHG emissions from the DYEC are increasing.
- Council and Durham public haven't been given a complete picture of GHG emissions. Only non-biogenic emissions. Not accounting biogenic emissions underestimates climate impact.
- Globally countries are walking back support for incineration due to climate and other adverse impacts.

GHG Emissions at the DYEC: Biogenic and Non-Biogenic

- **Biogenic Emissions** are released from burning **biomass** -the organic fraction originating from plant and animal sources, including **food scraps, wood, paper, animal waste, leather.**
- **Non-Biogenic emissions** are released from burning the fossil fuel-based fraction -natural gas, plastics, synthetic rubber, solvents- and other materials .

DYEC Greenhouse Gas Emissions: Incineration is bad for climate change

2009 Durham York Environmental Assessment (EA) Estimate

140,000 tonnes of garbage burned = **139,000 tonnes CO₂_e** emitted¹

2019 Data

140,000 tonnes of garbage burned = **159,545 tonnes CO₂_e** emitted²

2021 Data

140,435 tonnes of garbage burned = **170,950 tonnes CO₂_e** emitted^{3,4}

1. DURHAM YORK RESIDUAL WASTE STUDY, [Air Quality Assessment and Technical Study Report](#), December 4, 2009, Table 8-2, page 275

2. Durham and York Regions, [Durham York Energy Centre Environmental Screening Report](#), Dec 2021 (ESR), Section 3.8.6, Table 4, page 60, Section 4.3.2, page 94

3. [DYEC ECA 2021 Annual Report](#), Section 2.3, page 15

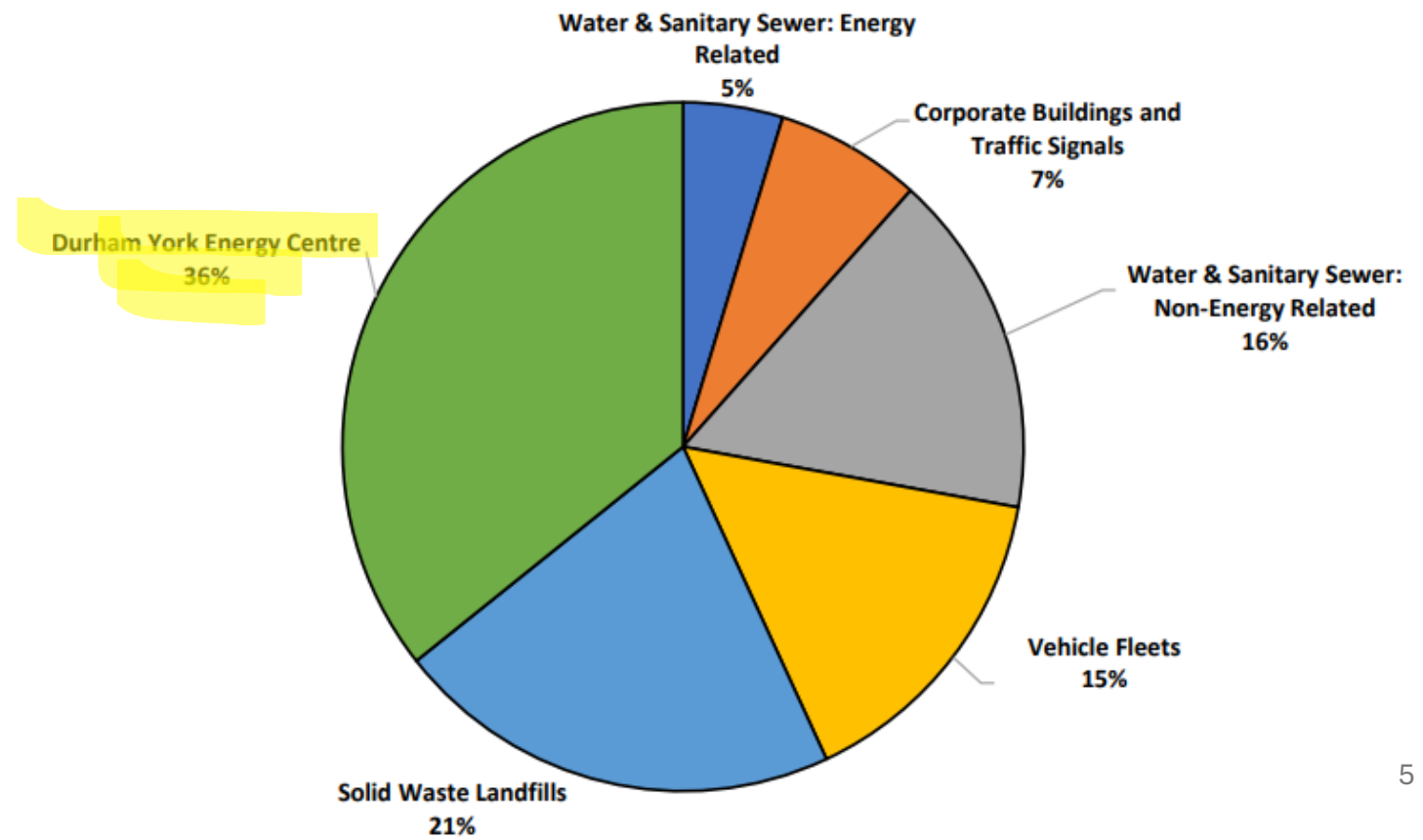
4. Ontario Ministry of Environment, Conservation and Parks, [Greenhouse Gas Emissions Reporting by Facility](#), for DYEC emissions use search term: durham york

GHG Emissions in Report #2024-COW-12 Differ from the Durham Environmental Screening Report (ESR), Dec 2021

3.2 Durham Region corporate GHG emissions inventory update:

- b. Based on preliminary estimates, 2023 corporate GHG emissions were approximately 178,000 tonnes (tCO₂e, rounded)

Figure 4: Corporate GHG Emissions by Operational Area for 2023 (Preliminary Estimate)



DYEC GHG emissions reported to Council in COW-12 are **less than half** of Total DYEC GHGs reported to Ontario.

COW-12 doesn't report DYEC biogenic GHG emissions to Council and residents at all.

The full picture is missing.

Report #2024-COW-12 reported to Durham Council & residents appears to be show Durham's share is

36% of 178,000 tonnes CO₂e = 64,800 tonnes CO₂e

BUT Total DYEC GHGs reported to Ontario is 174,544 tonnes CO₂e (in 2021); Durham's share would be

78.6% of 174,544 tonnes CO₂e = 137,192 tonnes CO₂e

Ignoring/Not Counting Biogenic Emissions Has Been Debunked by Numerous Studies

- Excerpt below from *Trash Incineration and Climate Change: Debunking EPA Misinformation*
<https://www.energyjustice.net/incineration/climate>

“Almost half of the municipal solid waste (trash) is considered to be “biogenic” –meaning that it’s ultimately made from plants such as food scraps, paper, wood, or even from animals, like leather.”

“For many years, EPA and others have assumed that CO2 released from burning the biogenic fraction should not be counted because it’s “carbon neutral” since plants and trees regrow. This has been thoroughly debunked in recent years. It depends on many flawed assumptions, such as the idea that new plants and trees are planted that wouldn’t otherwise be growing, and that this additional growth offsets incinerator CO2 emissions instantly.”

Excerpt Below from U.S. EPA's Science Advisory Board (SAB) Review
SAB Review of EPA's Accounting Framework for Biogenic CO2 Emissions from Stationary Sources (September 2011)

- “...the agency should consider consistency between biogenic carbon accounting and fossil fuel emissions accounting. ***Ideally both fossil fuels and biogenic feedstocks should be subject to the same emissions accounting.*** While there are no easy answers to accounting for the greenhouse gas implications of bioenergy, further consideration of the issues raised by SAB ... could result in more scientific rigor in accounting for biogenic emissions.”
- “***Carbon neutrality cannot be assumed for all biomass energy a priori (Rabl et al. 2007; Johnson 2009; Searchinger et al. 2009).***”
- <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100RNZG.PDF?Dockey=P100RNZG.PDF>

Opinion of the European Environment Agency Scientific Committee

<http://www.eea.europa.eu/about-us/governance/scientific-committee/sc-opinions/opinions-on-scientific-issues/sc-opinion-on-greenhouse-gas>


**European Environment Agency
Scientific Committee**
15 September 2011

Opinion of the EEA Scientific Committee on Greenhouse Gas Accounting in Relation to Bioenergy

Important international and European efforts are under way to account for and reduce greenhouse gas (GHG) emissions and to increase the use of renewable energy. Several European Union energy directives encourage a switch from fossil fuels to renewable energy derived from plant biomass **based on the premise that biomass combustion, regardless of the source of the biomass, would not result in carbon accumulation in the atmosphere. This mistaken assumption results in a serious accounting error.**


The paper below (June 2012) discusses the scientific background of that Opinion on bioenergy published in September 2011 by the Scientific Committee of the European Environment Agency (EEA).

<https://www.sciencedirect.com/science/article/pii/S0301421512001681>





Energy Policy

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Viewpoint

Correcting a fundamental error in greenhouse gas accounting related to bioenergy

Helmut Haberl^a  , Detlef Sprinz^b, Marc Bonazountas^c, Pierluigi Cocco^d,
Yves Desaubies^e, Mogens Henze^f, Ole Hertel^g, Richard K. Johnson^h, Ulrike Kastrupⁱ
, Pierre Laconte^j, Eckart Lange^k, Peter Novak^l, Jouni Paavola^m, Anette Reenbergⁿ,
Sybill van den Hove^o, Theo Vermeire^p, Peter Wadhams^q, Timothy Searchinger^r

Excerpt from ***Correcting a Fundamental Error in greenhouse gas accounting related to bioenergy***

Section 3. Correct greenhouse gas accounting

“Many policies consider biomass combustion as ‘carbon-neutral,’ regardless of the source of the biomass ...

they omit the carbon dioxide (CO₂) released by the burning of the biomass itself ...

This is not correct.”

New Canadian Report Debunks “Climate-Friendly” Claims

<https://drive.google.com/file/d/1V5uhUcEnmnow0rKQgXDbhpwBmHLFTRNZ/view>

THE WHOLE PICTURE

Climate Impacts from Waste to Energy



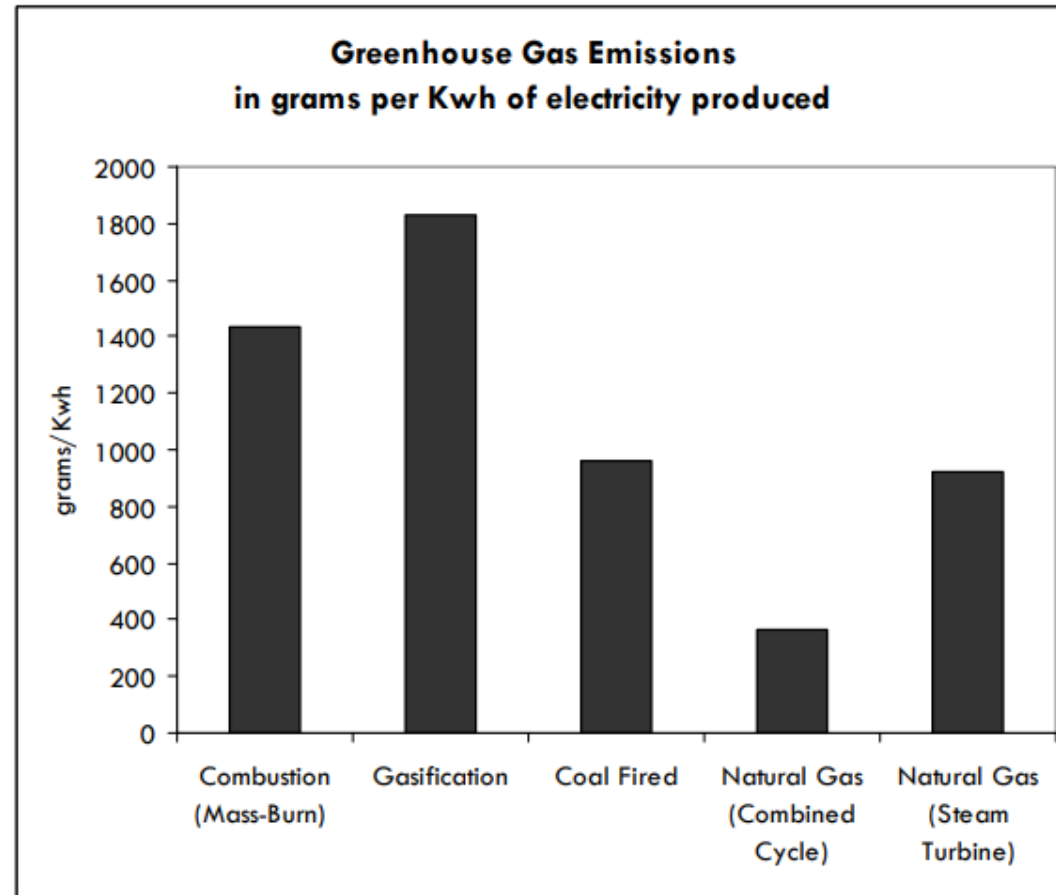
*“This study demonstrates **the need for full GHG emissions accounting (i.e., inclusion of biogenic CO₂)** and consideration of source reduction and diversion management options when conducting analyses of the potential climate change impacts of WTE”*

*“**When all GHG emissions are included, it is clear that WTE is responsible for more emissions than all other forms of waste management, including landfills.**”*

Incineration has higher GHG emissions than coal-fired plants

Incineration of Municipal Solid Waste Impact on Global Warming Fact Sheet

https://www.pembina.org/reports/Incineration_FS_Climate.pdf



Act to get full DYEC GHG accounting & reporting

Stop spending tax dollars on incineration that hurts our climate, our environment and our health

- Send back to staff for complete accounting of GHG emissions from the DYEC incinerator, proper description of all assumptions and rationale and evaluation of all assumptions
- Do your own research. Find out what is happening globally.
- Withdraw the application to increase incineration capacity.
- **Stop throwing good money after bad-** say no to district heating project tied to the incinerator. Incineration is bad on every front – district heating from it will be another ball and chain locking in Durham taxpayers for decades to this harmful facility

<https://e360.yale.edu/features/in-europe-a-backlash-is-growing-over-incinerating-garbage>

In Europe, a Backlash Is Growing Over Incinerating Garbage

For years, European countries have built “waste-to-energy” incinerators, saying new technology minimized pollution and boosted energy production. But with increasing concern about the plants’ CO₂ emissions, the EU is now withdrawing support for these trash-burning facilities.

BY BETH GARDINER • APRIL 1, 2021



For decades, Europe has poured millions of tons of its trash into incinerators each year, often under the green-sounding label “waste to energy.” Now, concerns about incineration’s outsized carbon footprint and fears it may undermine recycling are prompting European Union officials to ease their long-standing embrace of a technology that once seemed like an appealing way to make waste disappear.

Worries that incinerators sicken those who live near them – disproportionately poor, and people of color – have long dogged the industry. Wealthy nations such as Sweden and Denmark, which rely heavily on waste-to-energy plants, say their sophisticated emissions treatment systems mean such concerns are misplaced. But critics note many nations lack the resources for the best pollution-control systems. Dangerous emissions such as dioxin and particulate matter sometimes go unreported, and enforcement is often porous, environmentalists say.

Source: Politico, September 17, 2020

<https://www.politico.eu/article/denmark-devilish-waste-trash-energy-incineration-recycling-dilemma/>

Denmark's 'devilish' waste dilemma

Its state-of-the-art trash incinerators are sending its climate ambitions up in smoke.

Denmark is Europe's top waste burner. Incineration accounts for about a fifth of district heating and about 5 percent of its electricity.

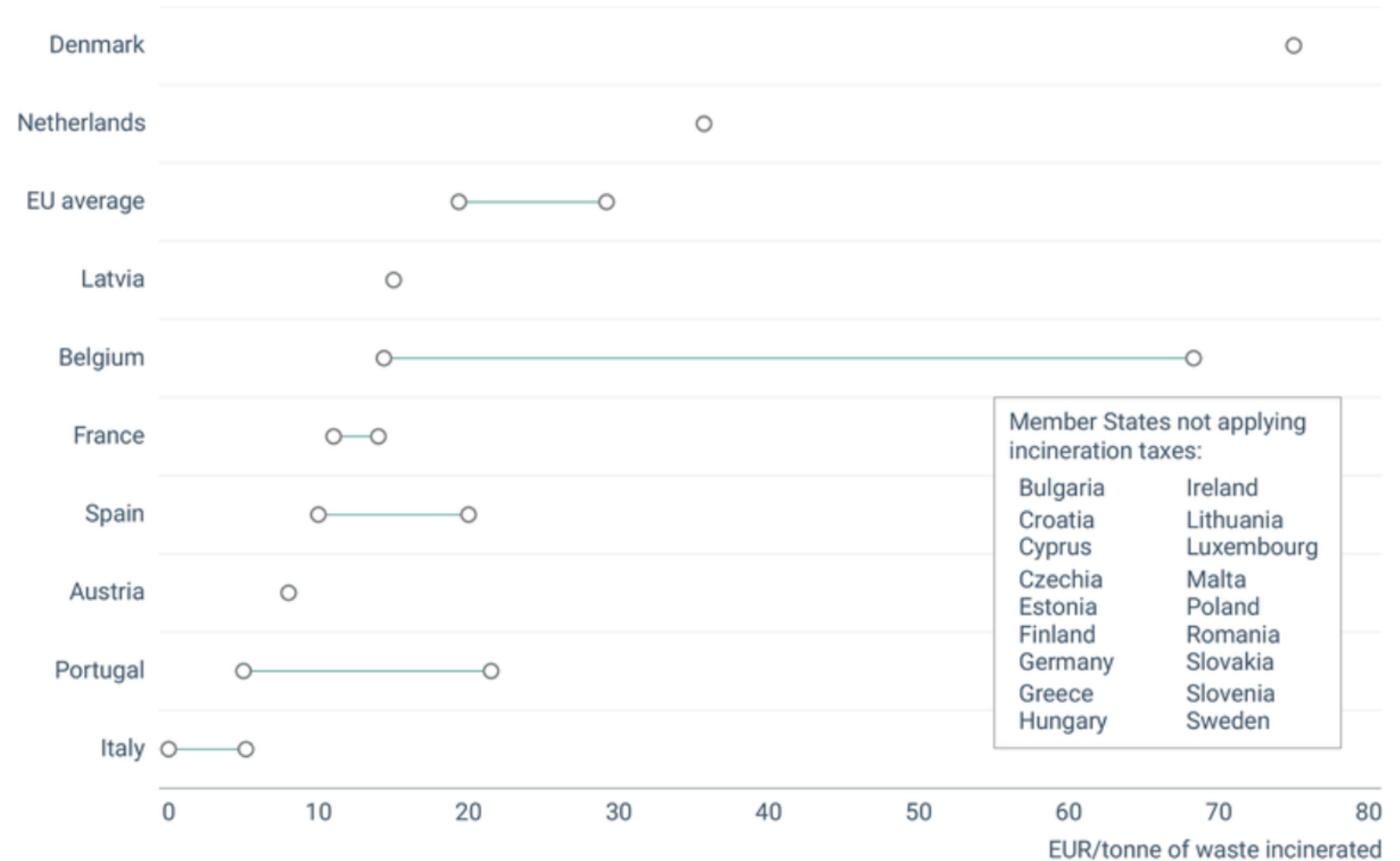
But what just a few years ago seemed like a clever way to deal with garbage has now become a problem.

“Today, we import waste with a high content of plastic in order to [use the excess] capacity at the incineration plants, with increasing CO2 emission as a result” — Dan Jørgensen, Denmark's climate minister

As a result, Denmark intends to reduce its incineration capacity by 30 percent over the next decade under a June agreement to restructure the country's waste management. To cut overcapacity, it will need to close seven incinerators. The deal also includes plans to introduce a recycling system with 10 different streams of waste (glass, paper, textiles, etc.) and to slash the amount of garbage it imports.

“The process of burning trash is inherently polluting — you can put state-of-the-art pollution controls on an incinerator, but that doesn't make the facility clean,” said Jens Peter Mortensen, a waste expert at the Danish Society for Nature Conservation.

Overview of taxes on the incineration of municipal waste used in EU Member States, 2023



Source: European Environmental Agency

<https://www.eea.europa.eu/data-and-maps/figures/overview-of-taxes-on-the>

<https://www.recycling-magazine.com/2023/10/05/german-co2-tax-will-soon-change-european-waste-streams/#:~:text=The%20emissions%20from%20waste%20incineration,depending%20on%20certain%20content%20factors>

German CO2-tax will soon change European waste streams


The national BEHG-taxation on CO2 emissions brings new costs to the German EfW-industry from early next year.

05.10.2023

The new, national CO2-tax announced for the German EfW market will come into force from the 1. January 2024. The emissions from waste incineration will be subject to a CO2 tax that amounts to €40/t in 2024, and will increase to €50/t in 2025. The CO2 tax, which is charged to the incinerator, is paid on top of the existing incineration fee.

The new tax will be charged depending on certain content factors. The most important are the calorific value and the percentage of biogenic content in the waste, which is defined by given waste code numbers.

Scottish government institutes incineration moratorium

 **EUWID** + 28 June 2022 | Ann Kühlers | ⌚ ~ 2 min

 Bookmark



The Scottish government has issued a moratorium on waste incineration. In a mid-June statement, Circular Economy Minister Lorna Slater said that the government had accepted all twelve recommendations from an **independent review of waste incineration** released last month, among them that no further planning permission for incineration facilities be granted. A similar moratorium is already in place in Wales.

Ms Slater said, "By putting in place sensible measures to limit and gradually reduce Scotland's incineration capacity, we can make sure we can manage our waste today, while ensuring our future waste infrastructure aligns with our climate targets."

<https://www.euwid-recycling.com/news/policy/scottish-government-institutes-incineration-moratorium-290622/>

Permits for new waste to energy plants in England on hold

EUWID+ 08 April 2024 | Ann Kühlers | ⌚ ~ 3 min

Bookmark



The Environment Agency has been directed not to issue any determinations on new waste to energy plants until 24 May.

The UK's minister responsible for waste incineration has ordered a "temporary pause" on the determination of environmental permits for new facilities. In a letter to the chief executive of the Environment Agency, Minister of State Mark Spencer explained that establishing a moratorium "for a short period lasting until 24 May 2024" would give officials at the Department for Environment, Food and Rural Affairs (Defra) time "to lead a piece of work considering the role of waste incineration in

the management of residual wastes in England". It was possible that the pause could be lifted earlier, Mr Spencer wrote.

<https://www.euwid-recycling.com/news/policy/england-hold-issued-on-environmental-permits-for-new-wte-plants/>