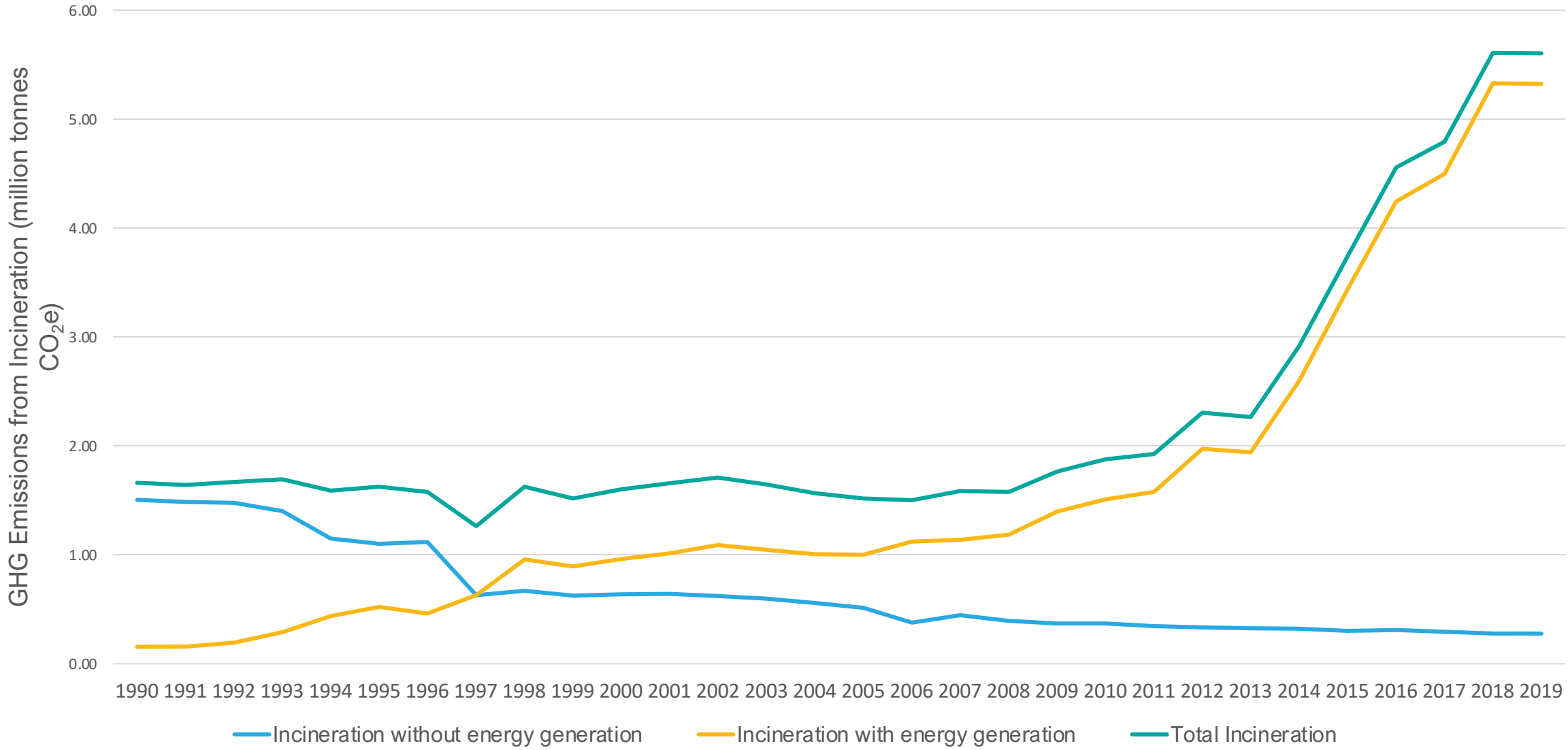
GHG Emissions Inventories

The Case for an Overhaul

15th June 2022

Dr Dominic Hogg

Waste – UK Incineration (fossil CO_2 only)



The Issue

Moving this…	From…	To…	Effect on Waste Emissions	Effect on IPPU Emissions	Effect on Energy Emissions
Aluminium	Landfill	Recycling	0	-10.0	-
Plastic	Landfill	Recycling	0	-2.5	-
Plastic	Landfill	Incineration	0	-	+2.5
Plastic	Incineration	Recycling	0	-2.5	-2.5

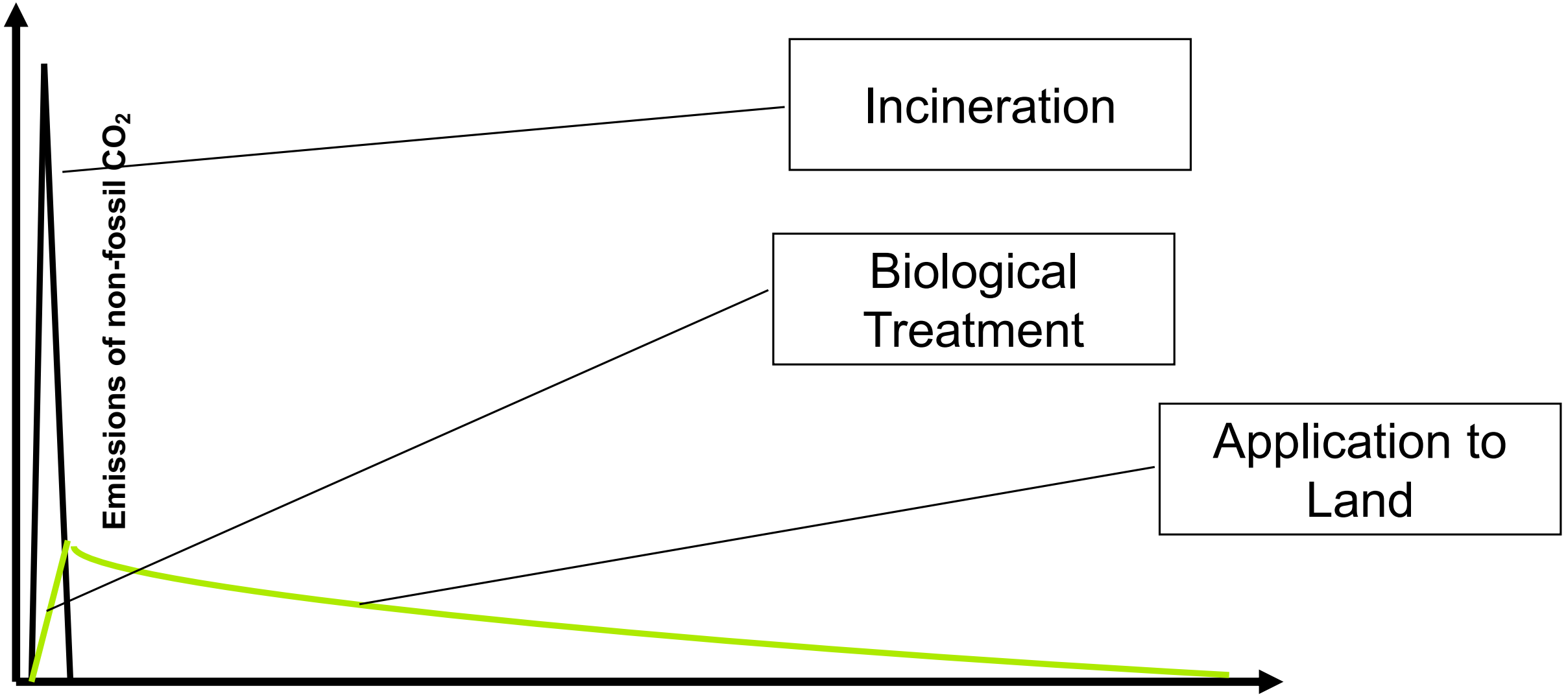
Source: Equanimator (figures are approximate)
Note: Negative numbers denote emissions reduction, positive numbers denote increased emissions

The Issue

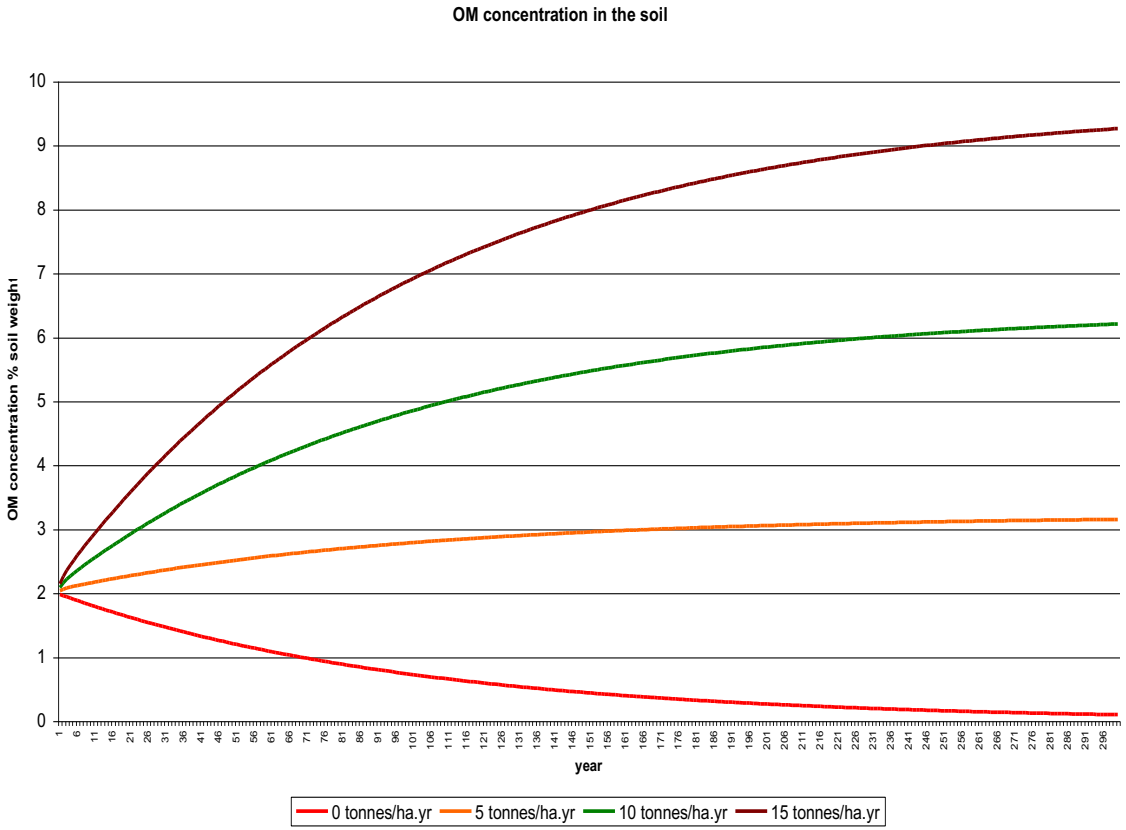
	Primary production	Secondary production	Scenario description	t CO_2 eq.
Global impact	**5 tonnes CO_2 eq.**	**1 tonne CO_2 eq.**	**ACTUAL GLOBAL IMPACT**	**-4**
Inventory impact	Domestic	Overseas	Primary Production Increases Exports to Compensate for Reduced Domestic Demand	0
	Domestic	Overseas	Primary Production Falls in Line with Reduced Domestic Demand; Secondary re-imported	-5
	Overseas	Domestic	Secondary Production Increases in Line with Increased Availability of Secondary Material	+1
	Overseas	Domestic	Secondary Producer Reduces Demand for Imported Recycled Material	0
	Domestic	Domestic	Demand Switches from Primary Materials (declines) to Secondary Materials (increases)	-4
	Domestic	Domestic	Primary Production Remains Constant as Secondary Production Increases (one or other may export more at margin)	+1
	Domestic	Domestic	Primary Production Remains Constant and Secondary Production Remains Constant (reduced import of secondary raw material)	0
	Domestic	Domestic	Primary Production Falls and Secondary Production Remains Constant (reduced import of secondary raw material)	-5

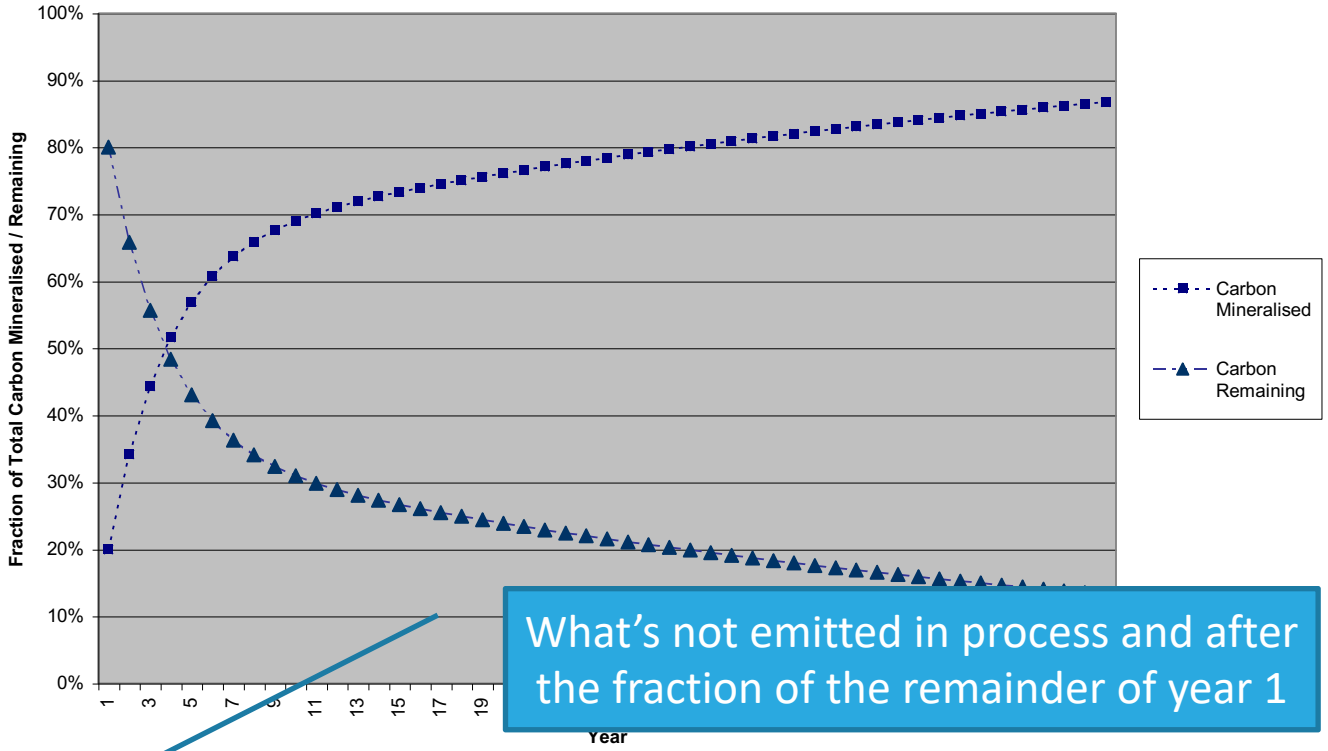
Note: Negative numbers denote emissions reduction, positive numbers denote increased emissions

Waste – Timing of Non-fossil CO_2 Emissions from Processes



Possible approach to accounting (if not directly captured under soil C)





What's not emitted in process and after the fraction of the remainder of year 1

Emissions linked to CO_2 mineralized in the year 2

Emissions linked to CO_2 mineralized in the year 3

If not 'picked up' in Agriculture / LULUCF (by relevant surveying of pools of soil carbon)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7		
Incineration	0	0	0	0	0	0	0	0	0
Composting	-0.8	+0.05	+0.05	+0.04	+0.04	+0.03	…	…	…

Summary

Why not report ‘incineration’ (and AD) under ‘waste’ (whether or not there is energy generated)?

Why not use memorandum items to ensure the effect of better waste management is reflected in the ‘waste’ section (even if secondary material is exported)?

If soil C build-up is not captured under existing measurement protocols, then why not use the ‘initially sequestered, but then emitted’ approach?

Source: IPCC Sixth Assessment

The Bigger Picture

‘Waste’ gives us a window onto wider problems

Move away from GWP100 to a metric that a) reflects impact and b) is not affected by arbitrary time period

- Reflect properly the impact of short- and long-lived climate pollutants (how else can we know when we’ve reached stopped planetary warming?)

Stop pretending non-fossil CO_2 doesn’t warm the planet (account for all CO_2)

- Time matters, and we should include all sources and sinks

Move to a consumption basis

- Minimise the extent to which ‘meeting an inventory-based’ target is inconsistent with addressing the problem
- Basis for targets is more aligned with principles of climate justice

Source: IPCC Sixth Assessment

Thanks

dominic@dominichogg.com

Born at 0.2 degrees C above 1800 temperature levels….