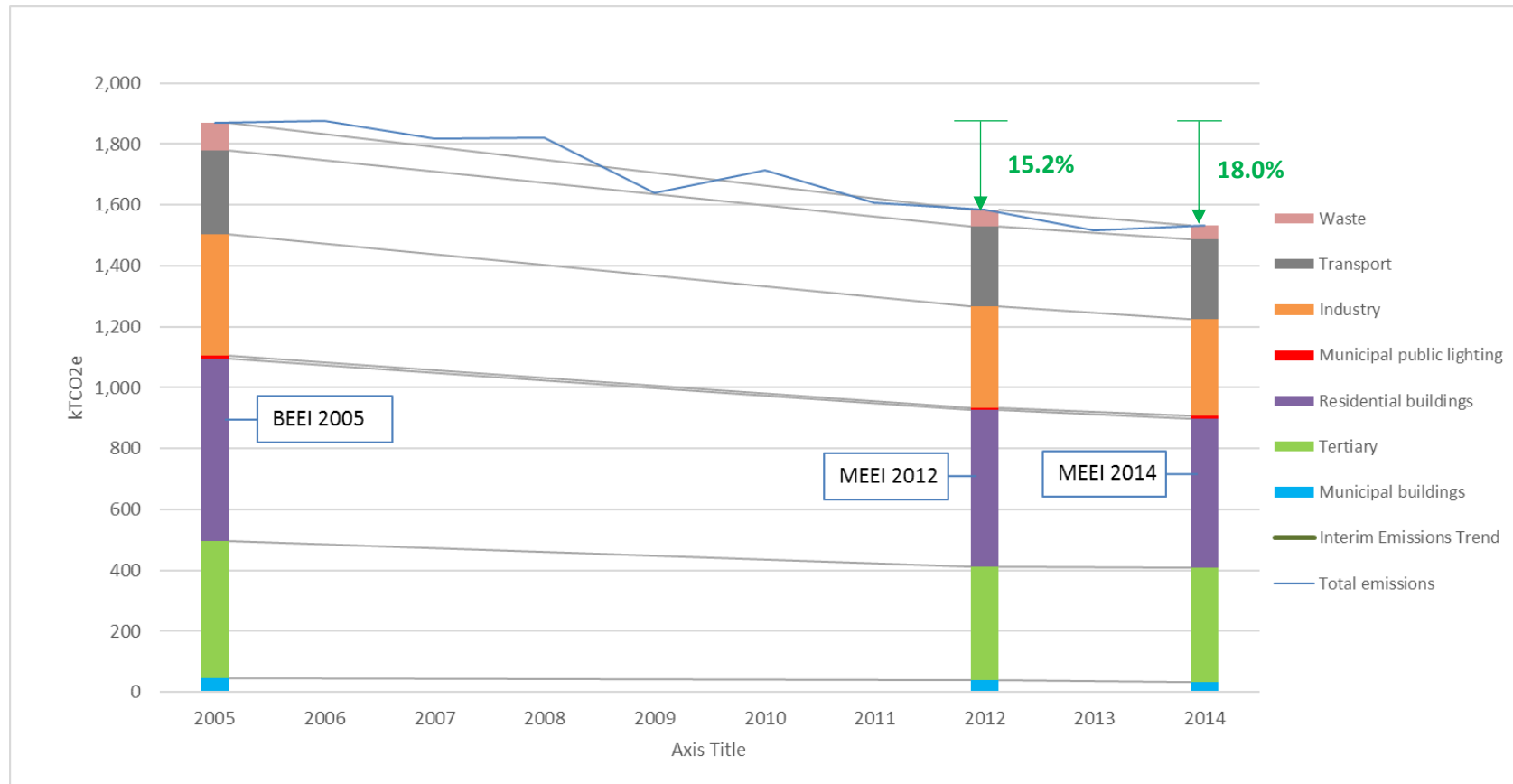


Powering Aberdeen: GHG Emissions Update

Emissions Trend 2005 – 2014

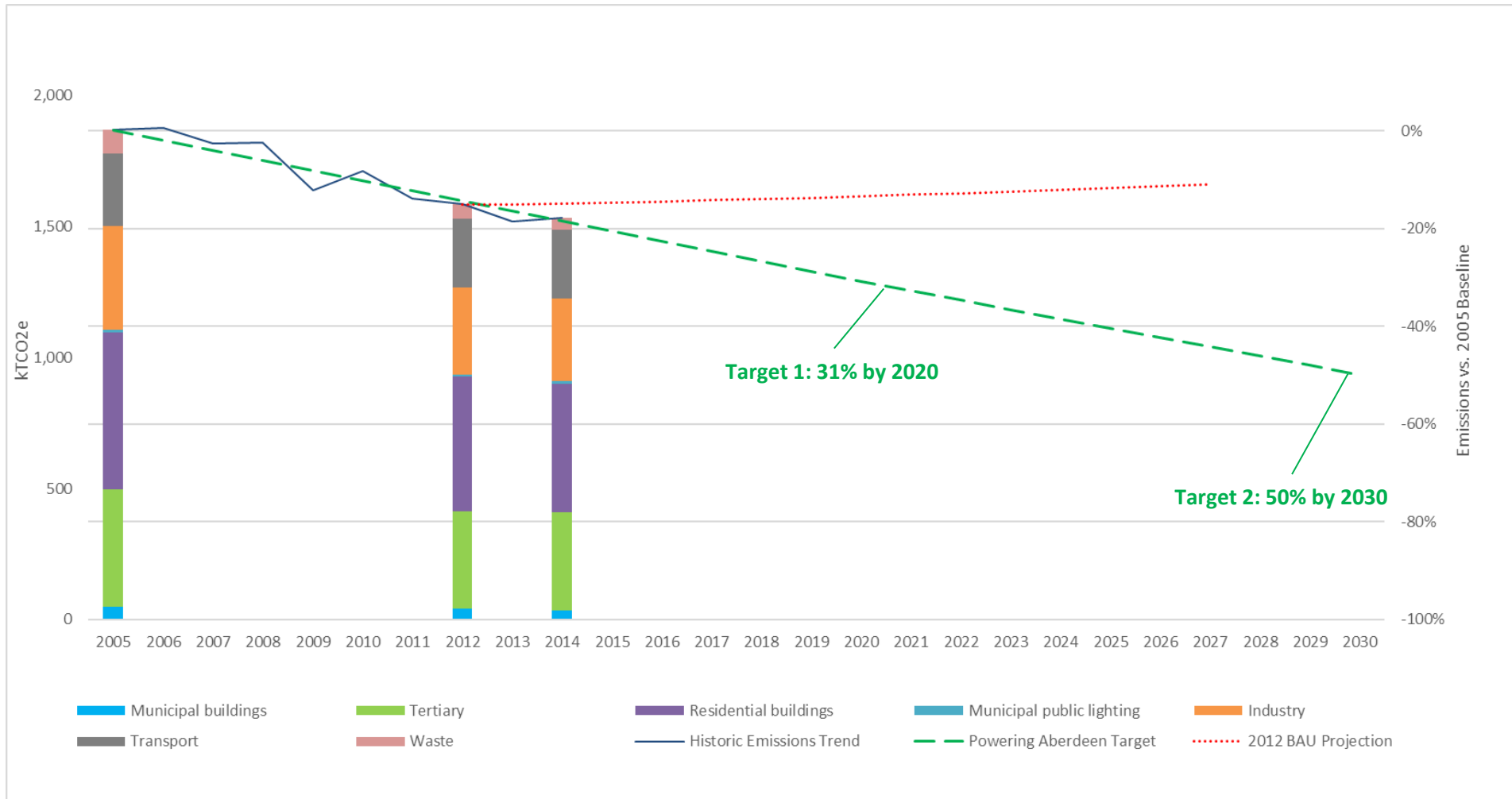
Based on the updated figures for the Powering Aberdeen GHG inventories, the city has achieved total savings of 18% between 2005 and 2014, having reduced the community-wide emissions from 1,867,497 tCO₂e to 1,532,256 tCO₂e. Between 2005 and 2012 there had been a 15.2% reduction. Chart 1 below shows the Baseline Emissions Inventory (2005) and Monitoring Emissions Inventories (2012 and 2014) broken down by sector with the overall historic emissions trend.

Figure 1: Emissions inventories (for 2005, 2012 and 2014) and the historic emissions trend for Aberdeen City 2005 – 2014



In the context of the Powering Aberdeen objectives, the progress in reducing emissions to date is at a rate consistent to meet the 2020 (31%) and 2030 (50%) targets as shown in Figure 2. The progress achieved between 2012 and 2014 also shows that the city is decoupled from the 2012 ‘business as usual’ emission projection.

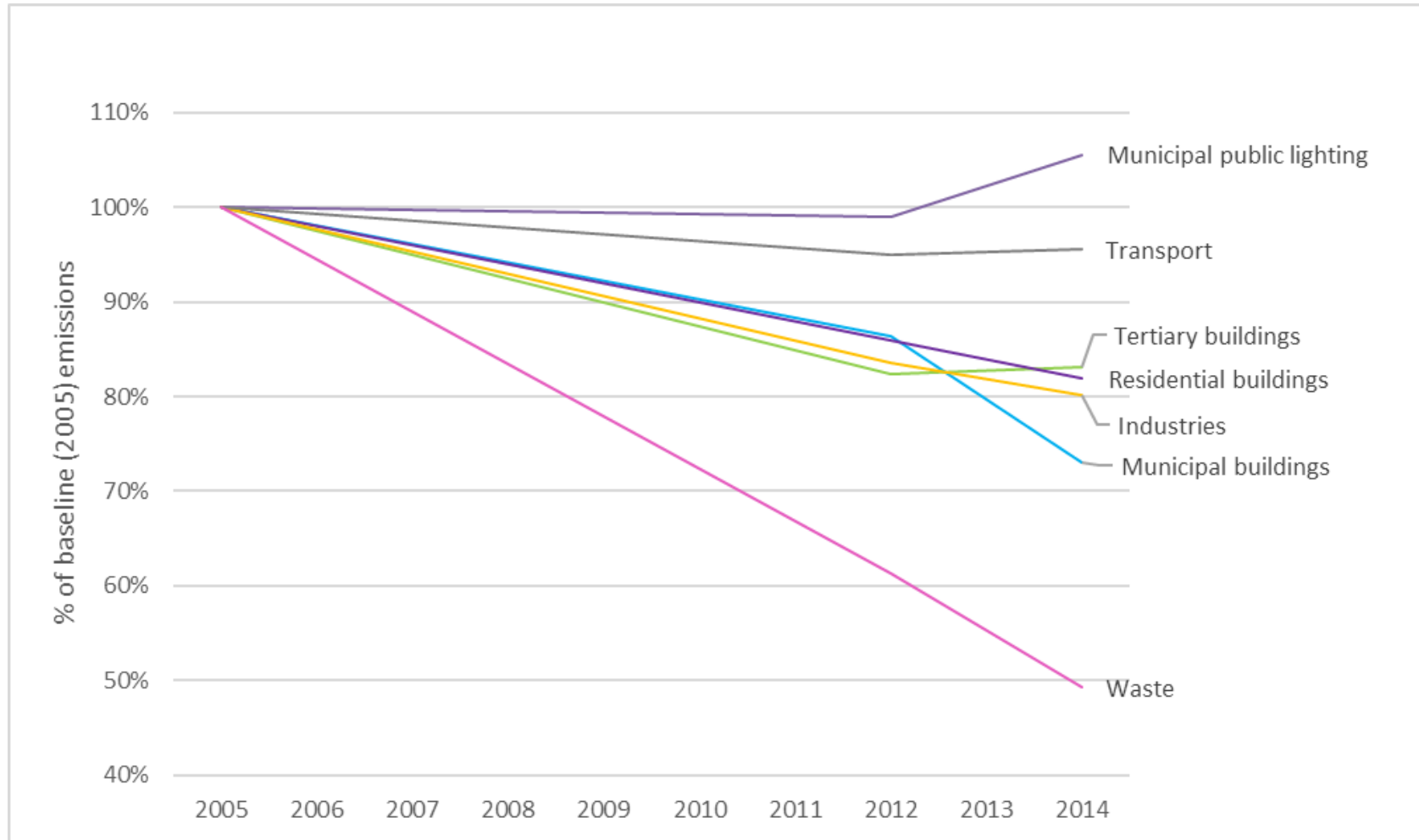
Figure 2: Emissions inventories for 2005, 2012 and 2014 against the emissions reduction profile required to meet the Powering Aberdeen targets



Sector Commentaries

A by sector assessment of the emission levels in 2005, 2012 and 2014 shows the relative performance, as shown in Figure 3 below.

Figure 2: Emissions trends by sector for 2005, 2012 and 2014



- **Municipal buildings** have shown a steady decline in emissions between 2005 and 2012 which subsequently accelerated between 2012 and 2014.
- **Tertiary, industrial and residential buildings** all demonstrate savings in the range of 15-20%. According to the BEIS data, between 2012 and 2014 there has been an increase in the electricity consumption in the 'Commercial and Industrial' sector (804.5GWh to 885.8GWh), which through the modelling¹ has manifested in a marginal increase in emissions in the tertiary sector over that timeframe. It may be worth the council investigating the potential source of that additional electricity consumption (i.e. any new buildings/infrastructure that came online between 2012 and 2014).
- **Municipal public lighting** energy consumption has increased between 2012 and 2014 according to the data provided by Aberdeen City Council. Data for energy consumption prior to 2012 was not available².
- **Transport** has seen marginal reductions in emissions between 2005 and 2012 followed by a slight increase between 2012 and 2014. Petrol consumption has been in steady decline in that period while diesel use has increased.
- **Waste** emissions reduction has been significant and consistent since 2005 as the amount of municipal solid waste going to traditional landfill sites has been significantly reduced.

¹ Using GVA stats to itemise tertiary and industrial

² Note: municipal public lighting energy consumption in 2005 was assumed to be the same as 2012 due to the lack of data. The minor reduction in related GHG emissions between 2005 and 2012 is on account of the slight change in the emission factor for electricity in that time.

GHG Inventory 2005 – Baseline Emissions Inventory

Category	CO2 emissions [t]/ CO2 equivalent emissions [t]															
	Electricity	Heat or cold	Fossil fuels								Renewable energies				Total	
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels (Gas Oil)	Biofuel	Plant oil	Other biomass	Solar thermal		Geothermal
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES:																
Municipal buildings, equipment/facilities	17,700	-	21,645	-	7,444	-	-	-	-	-	-	-	-	-	-	46,788
Tertiary (non-municipal) buildings, equipment/facilities	243,840	-	130,790	-	73,802	-	-	-	2,149	-	-	-	-	-	-	450,582
Residential buildings	275,518	-	314,670	-	7,271	-	-	-	651	-	-	-	-	-	-	598,109
Municipal public lighting	8,511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,511
Industries (excluding EUETS)	207,927	-	121,187	-	64,591	-	-	-	4,629	-	-	-	-	-	-	398,335
Subtotal buildings, equipment/facilities and industries	753,496	0	588,292	0	153,108	0	0	0	5,012	0	0	0	0	0	0	1,499,908
TRANSPORT:																
Municipal fleet	0	0	0	0	0	3,470	87	0	0	623	0	0	0	0	0	4,180
Public transport	0	0	0	0	0	13,055	0	0	0	0	0	0	0	0	0	13,055
Private and commercial transport	0	0	0	0	0	114,098	143,611	0	0	0	0	0	0	0	0	257,709
Subtotal transport	0	0	0	0	0	130,623	143,698	0	0	623	0	0	0	0	0	274,944
OTHER:																
Waste																90,228
Subtotal waste																90,228
TOTAL	753,496	0	588,292	0	153,108	130,623	143,698	0	5,012	623	0	0	0	0	0	1,867,497

GHG Inventory 2012 – Monitoring Emissions Inventory 1

Category	CO2 emissions [t]/ CO2 equivalent emissions [t]															
	Electricity	Heat or cold	Fossil fuels								Renewable energies				Total	
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels (Gas Oil)	Biofuel	Plant oil	Other biomass	Solar thermal		Geothermal
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES:																
Municipal buildings, equipment/facilities	21,351	0	16,682	0	2,407	0	0	0	0	0	0	0	0	0	0	40,440
Tertiary (non-municipal) buildings, equipment/facilities	209,170	18,162	98,721	0	42,768	0	0	0	2,571	0	0	0	0	0	0	371,392
Residential buildings	239,742	5,381	261,760	0	6,103	0	0	0	806	0	0	0	0	0	0	513,792
Municipal public lighting	8,422	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,422
Industries (excluding EUETS)	193,777	0	97,009	0	37,974	0	0	0	4,679	0	0	0	0	0	0	333,438
Subtotal buildings, equipment/facilities and industries	672,461	23,544	474,172	-	89,252	-	-	-	5,471.78	-	-	-	-	-	-	1,264,901
TRANSPORT:																
Municipal fleet	-	-	-	-	-	3,470	87	-	-	623	-	-	-	-	-	4,180
Public transport Stagecoach	-	-	-	-	-	13,055	-	-	-	-	-	-	-	-	-	13,055
Private and commercial transport	-	-	-	-	-	137,126	106,588	-	-	-	-	-	-	-	-	243,714
Subtotal transport	-	-	-	-	-	153,651	106,676	-	-	623	-	-	-	-	-	260,949
OTHER:																
Waste																55,325
Subtotal waste																55,325
TOTAL	672,461	23,544	474,172	-	89,252	153,651	106,676	-	5,471.78	623	-	-	-	-	-	1,581,175

GHG Inventory 2014 – Monitoring Emissions Inventory 2

Category	CO2 emissions [t]/ CO2 equivalent emissions [t]															
	Electricity	Heat or cold	Fossil fuels								Renewable energies				Total	
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels (Gas Oil)	Biofuel	Plant oil	Other biomass	Solar thermal		Geothermal
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES:																
Municipal buildings, equipment/facilities	19,014	0	13,669	0	1,496	0	0	0	0	0	0	0	0	0	0	34,179
Tertiary (non-municipal) buildings, equipment/facilities	239,756	8,040	77,312	0	46,275	0	0	0	3,001	0	0	0	0	0	0	374,383
Residential buildings	232,164	2,482	248,828	0	5,964	0	0	0	595	0	0	0	0	0	0	490,034
Municipal public lighting	8,986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,986
Industries (excluding EUETS)	204,992	0	72,073	0	37,843	0	0	0	2,543	0	0	0	0	0	0	317,451
Subtotal buildings, equipment/facilities and industries	704,913	10,521	411,882	-	91,577	-	-	-	5,907	-	-	-	-	-	-	1,224,801
TRANSPORT:																
Municipal fleet	-	-	-	-	-	3,523	77	-	-	230	-	-	-	-	-	3,830
Public transport Stagecoach	-	-	-	-	-	12,687	-	-	-	-	-	-	-	-	-	12,687
Private and commercial transport	-	-	-	-	-	147,516	98,738	-	-	-	-	-	-	-	-	246,254
Subtotal transport	-	-	-	-	-	163,726	98,815	-	-	230	-	-	-	-	-	262,771
OTHER:																
Waste															44,451	
Subtotal waste															44,451	
TOTAL	704,913	10,521	411,882	-	91,577	163,726	98,815	-	5,906.62	230	-	-	-	-	-	1,532,256