

## Department for Energy Security and Net Zero: Greenhouse Gas Emissions<sup>1</sup>: Midlands Engine Analysis

### Summary:

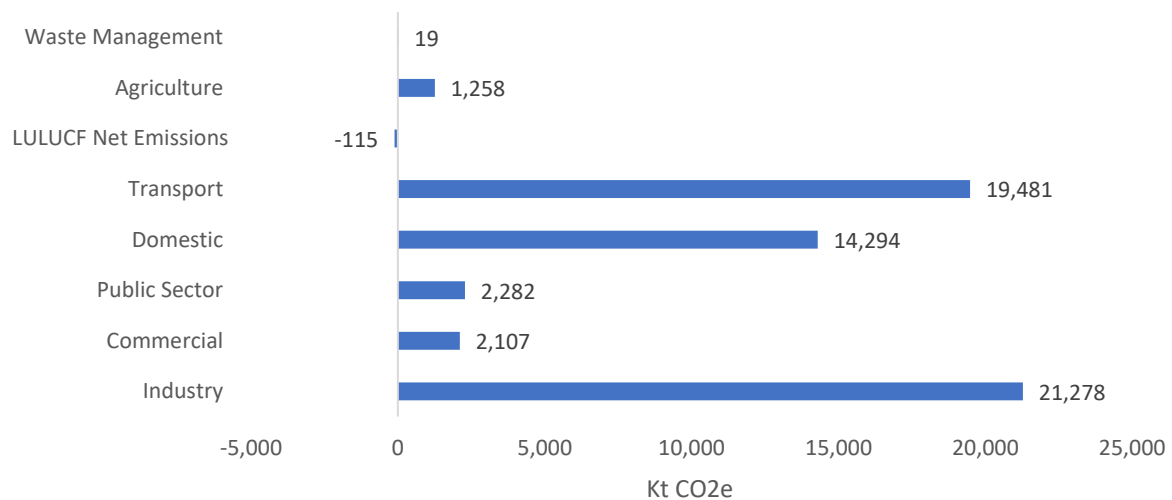
- In 2021, the Midlands Engine area produced a total of 60,602 Kt carbon dioxide (CO<sub>2</sub>e) emissions. This has increased by 4,994 Kt CO<sub>2</sub>e (+9.0%) since last year, compared to an increase of 7.4% across the UK.
- For the Midlands Engine area in 2021, 35.1% (21,278 Kt CO<sub>2</sub>e) of emissions came from the industrial sector, above the UK proportion of 25.1%. This was followed by 32.1% (19,481 Kt CO<sub>2</sub>e) of emissions from the transport sector, below the UK proportion of 34.7%.
- Emissions in the Midlands Engine area are equivalent to 5.8 tonnes CO<sub>2</sub>e per capita, vs 4.8 tonnes CO<sub>2</sub>e per capita in the UK. This has increased from 5.3 tonnes CO<sub>2</sub>e per capita in 2020 (UK also increased from 4.5 tonnes CO<sub>2</sub>e per capita).
- Emissions are equivalent to 2.2 KtCO<sub>2</sub>e per km<sup>2</sup> in the Midlands Engine area, compared to 1.3 in the UK.

### Full Briefing:

#### CO<sub>2</sub>e

- In 2021, the Midlands Engine area produced a total of 60,602 Kt carbon dioxide (CO<sub>2</sub>e) emissions. This has increased by 4,994 Kt CO<sub>2</sub>e (+9.0%) since last year, compared to an increase of 7.4% across the UK.
- In 2021, emissions in the Midlands Engine area can be split by:
  - 21,278 Kt CO<sub>2</sub>e (35.1% of total vs 25.1% in UK) in the industrial sector
  - 2,107 Kt CO<sub>2</sub>e (3.5% of total vs 5.2% in UK) in the commercial sector
  - 2,282 Kt CO<sub>2</sub>e (3.8% of total vs 4.8% in UK) in the public sector
  - 14,294 Kt CO<sub>2</sub>e (23.6% of total vs 29.0% in UK) from domestic sources
  - 19,481 Kt CO<sub>2</sub>e (32.1% of total vs 34.7% in UK) in the transport sector
  - 1,258 Kt CO<sub>2</sub>e (2.1% of total vs 2.8% in UK) in the agricultural sector
  - 19 Kt CO<sub>2</sub>e (0.0% of total vs 0.1% in UK) in the waste management sector.
  - the land use, land use change and forestry sector (LULUCF) has a negative contribution to carbon emissions, at -115 Kt CO<sub>2</sub>e (-0.2%) of the total carbon emissions in the Midlands Engine area, (across the UK this sector is also net negative at -1.8%).

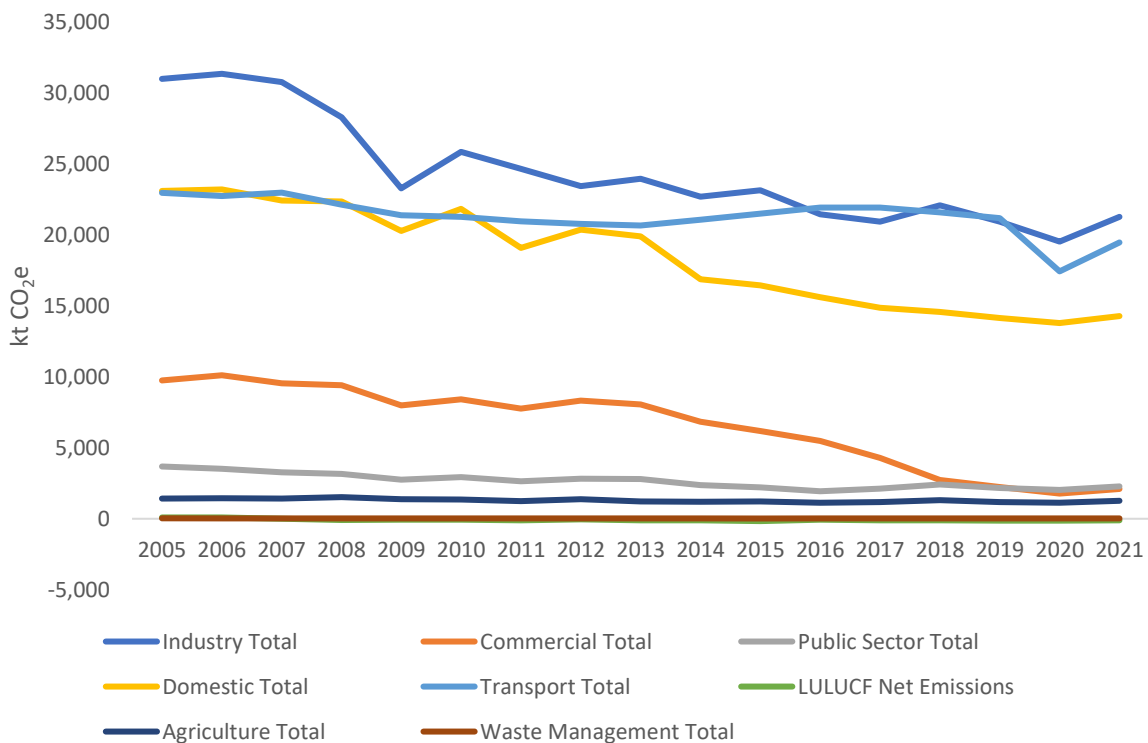
### Sectoral Breakdown of CO<sub>2</sub>e Emissions in the Midlands Engine, 2021



<sup>1</sup> Source: [Department for Energy Security and Net Zero](#) – released June 2023.

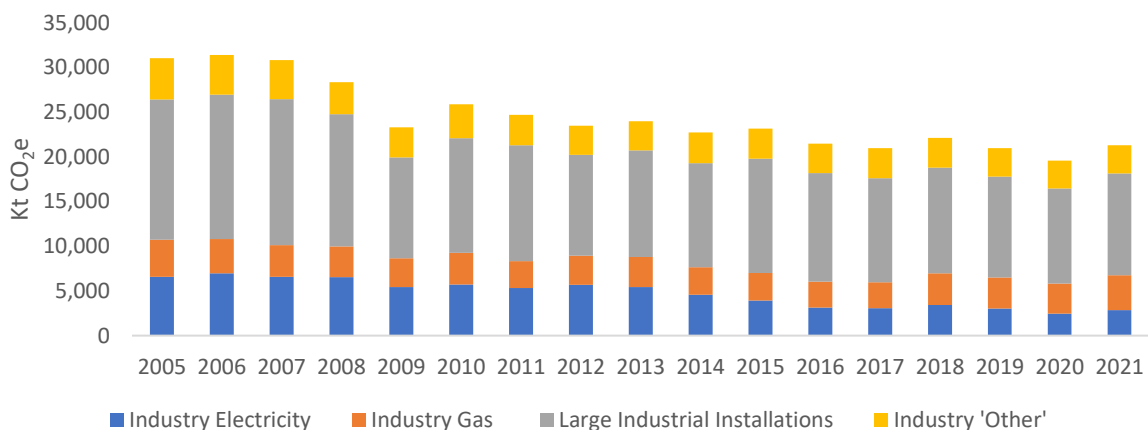
- Since 2005, total CO<sub>2</sub>e emissions have decreased by 31,487 (-34.2%) across the Midlands Engine area, the UK decreased by 39.4% during this time period.
  - The industry sector reduced its emissions by 31.4%, (UK -42.6%)
  - The commercial sector has decreased by 78.4%, (UK -76.4%)
  - The public sector has decreased by 38.1%, (UK -37.2%)
  - There was a 38.1% reduction for domestic sources, (UK -38.6%)
  - The transport emissions reduced by 15.2% during this period, (UK -17.9%)
  - The LULUCF sector reduced by 225.5%, (UK +59.7%)
  - Agricultural emissions reduced by 11.3%, (UK -4.8%)
  - Waste management emissions reduced by 42.2%, (UK -38.6%)

### Change in CO<sub>2</sub>e emissions in the Midlands Engine area, 2005 - 2021



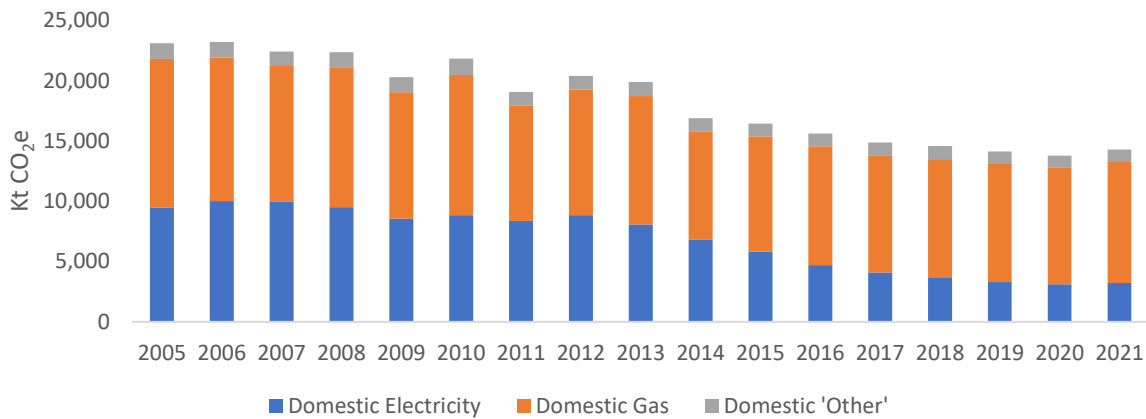
- In 2021, the Midlands Engine produced a total of 21,278 Kt CO<sub>2</sub>e emissions in the industrial sector, with 11,402 Kt CO<sub>2</sub>e (53.6%) from large industrial installations, 3,901 Kt CO<sub>2</sub>e (18.3%) of industrial emissions from gas, 3,135 Kt CO<sub>2</sub>e (14.7%) from other and 2,841 Kt CO<sub>2</sub>e (13.4%) from electricity.
- The largest decrease in industry emissions since 2005 was in electricity at -3,734 Kt CO<sub>2</sub>e (-56.8%).

### Industry sub sector emissions, 2005-2021



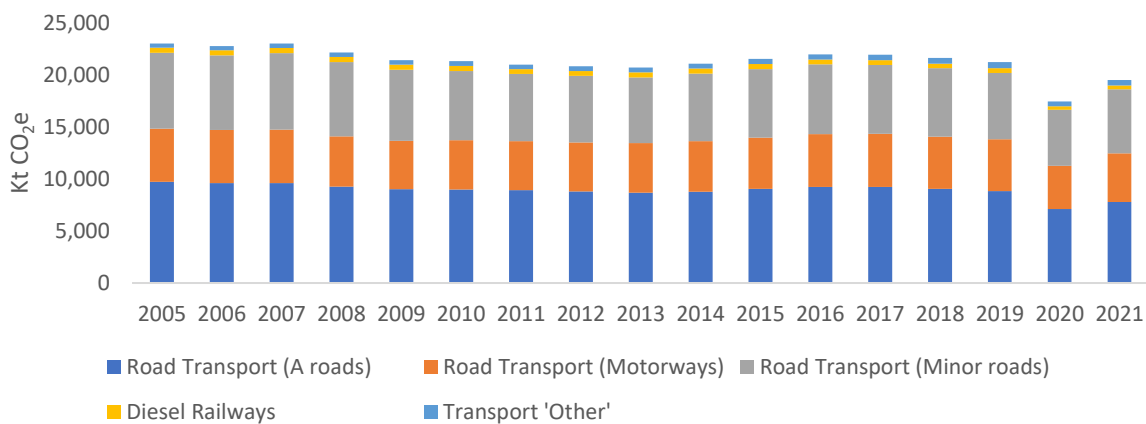
- In 2021, the Midlands Engine produced a total of 14,294 Kt CO<sub>2</sub>e emissions in the domestic sector, with 10,052 Kt CO<sub>2</sub>e (70.3%) of domestic emissions from gas, 3,218 Kt CO<sub>2</sub>e (22.5%) from electricity and 1,024 Kt CO<sub>2</sub>e (7.2%) from other.
- The largest decrease in domestic emissions since 2005 was in electricity at -6,253 Kt CO<sub>2</sub>e (-66.0%).

### Domestic sub sector emissions, 2005-2021



- In 2021, the Midlands Engine area produced a total of 19,481 Kt CO<sub>2</sub>e emissions in the transport sector, with 7,775 Kt CO<sub>2</sub>e (39.9%) from Road Transport (A roads), 6,163 Kt CO<sub>2</sub>e (31.6%) of transport emissions from Road Transport (Minor roads), 4,661 Kt CO<sub>2</sub>e (23.9%) from Road Transport (Motorways), 500 Kt CO<sub>2</sub>e (2.6%) from other, and 382 Kt CO<sub>2</sub>e (2.0%) from diesel railways.
- The largest decrease in transport emissions since 2005 was seen in diesel railways at -106 Kt CO<sub>2</sub>e (-21.7%). Other increased in this period by 110 Kt CO<sub>2</sub>e (+28.3%).

### Transport sub sector emissions, 2005-2021



### Methane

- In 2021, the Midlands Engine produced a total of 7,847 kt CO<sub>2</sub>e of methane emissions. This has decreased by 104 kt CO<sub>2</sub>e (-1.3%) since last year, compared to a decrease of 0.8% across the UK. Since 2005, methane emissions reduced by 1,669 kt CO<sub>2</sub>e (-17.5%, UK -43.4%)

### Nitrous Oxide

- In 2021, the Midlands Engine area produced a total of 2,924 kt CO<sub>2</sub>e of nitrous oxide emissions. This has increased by 159 kt CO<sub>2</sub>e (+5.7%) since last year, compared to an increase of 2.4% across the UK. Since 2005, nitrous oxide emissions reduced by 190 kt CO<sub>2</sub>e (-6.1%, UK -17.3%)