

# EMISSIONS REDUCTION PATHWAYS ANALYSIS

## EXECUTIVE SUMMARY

### Research objectives

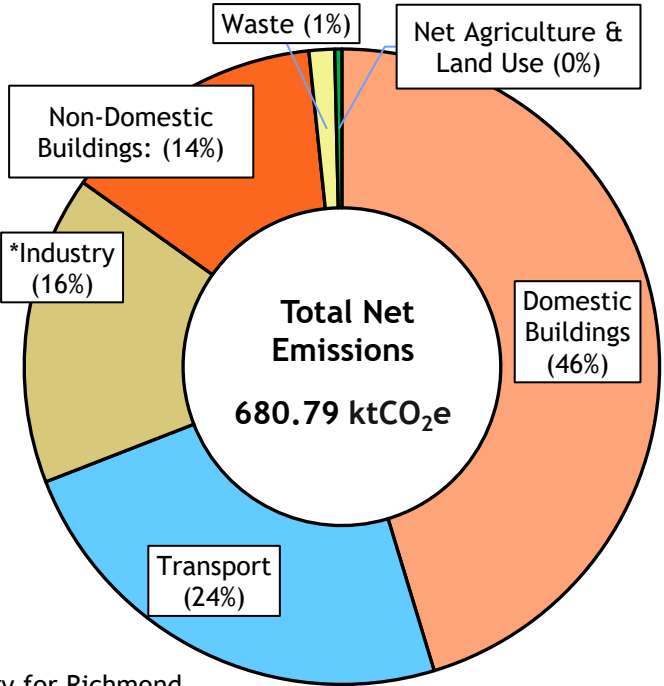
The London Borough of Richmond Upon Thames has set a **borough-wide target to be net zero by 2043**, based on analysis by the Tyndall Centre, with the intention of acting in line with the Paris Agreement. This report has been commissioned by the council to provide a roadmap towards net zero, using Anthesis' SCATTER tool to outline the scale of action and technological interventions required to achieve this. This will help the council by providing an evidence base against which it can set goals for climate action in the borough as part of its new climate action plan.

### Emissions in London Borough of Richmond Upon Thames

In 2019, the borough was responsible for net emissions totalling **680.79 ktCO<sub>2</sub>e**. The majority resulted from **domestic buildings (46%)** and **transport (24%)**, seen here in Figure a. 2019 baseline data, which aligns with the commencement of Richmond Upon Thames's current climate change strategy. Emissions from agriculture and land use amount to <1% of emissions.

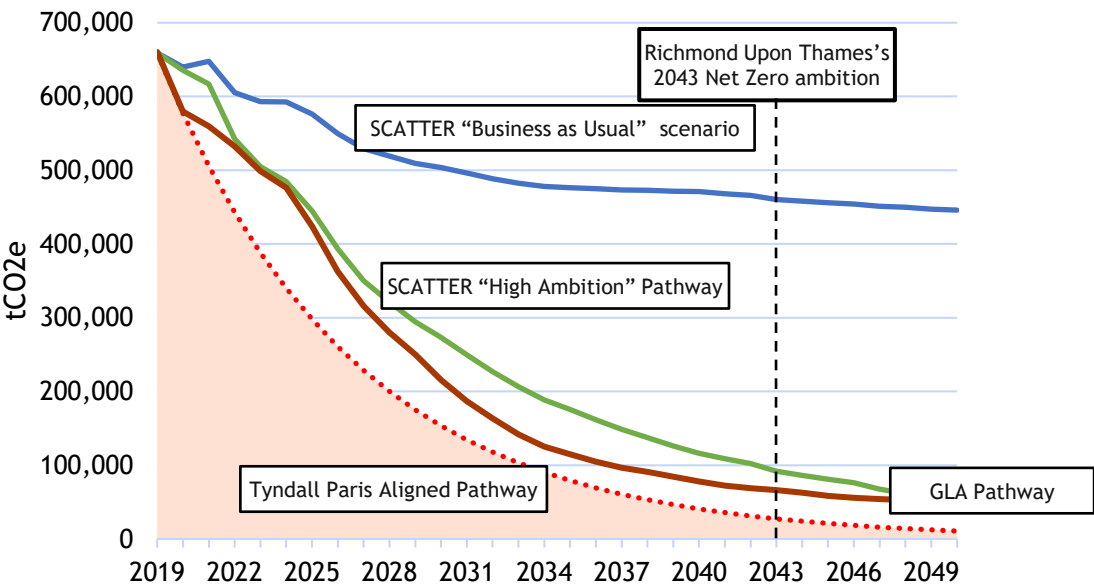
\*Industry emissions includes activities associated with industrial processes as well as emissions from space heating and hot water in industrial buildings.

**Figure a:** SCATTER 2019 emissions inventory for Richmond Upon Thames's Scope 1 & 2 emissions, shown by sector.  
*Note: Percentages may not sum to 100% due to rounding.*



### Emissions Reduction Pathways

Emissions reduction pathways illustrate how the borough's carbon emissions may change over time depending on differing levels of local and national action. Figure b below shows four possible pathways for the borough. The High Ambition pathway, in green, assumes Richmond Upon Thames goes significantly beyond national policy and that action is not hindered by any funding or national policy constraints. The interventions detailed in the report, and the associated impact milestones, are based on the borough implementing the High Ambition Pathway. Even with these interventions, 66 ktCO<sub>2</sub>e emissions remain in the energy system at 2043, therefore it is important to consider options to go beyond the SCATTER High Ambition pathway.



**Figure b:** Emissions reductions pathways for Richmond Upon Thames. The outputs of this report focus on the implementation of the High Ambition Pathway. The GLA pathway is presented for context.

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### Emissions Reduction Measures

The High Ambition Pathway sets out recommendations for action across several areas:



#### Buildings

- 1.1 Improving energy efficiency
- 1.2 Reducing gas heating systems
- 1.3 Low carbon and energy efficient cooking, lighting and appliances



#### Waste

- 4.1 Reducing the quantity of waste
- 4.2 Increasing the recycling rate



#### Transport

- 2.1 Travelling shorter distances
- 2.2 Driving less
- 2.3 Switching to electric vehicles
- 2.4 Improving freight emissions



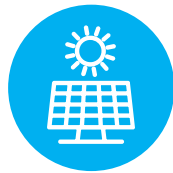
#### Natural Environment

- 5.1 Increased tree coverage & tree planting
- 5.2 Land use management
- 5.3 Livestock management



#### Industry

- 3.1 Shifting away from fossil fuels
- 3.2 More efficient processes



#### Energy Supply

- 6.1 Increase solar photovoltaic (PV) capacity

For each sector and its interventions, we provide potential **carbon savings** at given intervals, along with a summary of the practical milestones which stakeholders across the borough would need to achieve in implementing the intervention. The indicators are intended to demonstrate an ambitious but achievable level of action. **Council views** on the practical considerations around their implementation are provided. Anticipated **co-benefits** (i.e. benefits beyond carbon savings) are also detailed. To support the council in prioritising next steps, commentary is given around the **current policy and strategic context** as it relates to the intervention, and the anticipated **costs and funding availability**.

### Key Findings

- If Richmond Upon Thames successfully implements the High Ambition pathway, there would be an **86% reduction in emissions by 2043**, compared to the 2019 baseline.
- The cumulative investment required to achieve the high ambition pathway would be in excess of **£2.1 billion between now and 2043**, although a portion of this could be offset by savings in operational expenditure.
- To go beyond the reductions achieved through the High Ambition pathway, and achieve net zero, the council can explore deploying decarbonisation interventions at a **faster rate** than outlined in SCATTER, and **new innovations** not modelled by SCATTER. **Carbon offsets** can also be explored. For example, the council is participating in Anthesis' Area Based Insetting (ABI) initiative. The pathway does not account for potential shortcomings in supporting policy or finance, and the borough is dependent on national policy support.

### Recommended next steps

To achieve net zero, stakeholders in Richmond Upon Thames should pursue all the opportunities presented in this report. Stakeholders may seek to prioritise certain areas for immediate action. This could be done along long two axes:

- 1) The **potential impacts** of the interventions, with a focus on carbon impact and co-benefits. Based on this, priority action areas will include domestic building retrofit, decarbonising domestic heating, transportation related interventions, and local Solar PV
- 2) Stakeholders' **ability to implement the actions**, considering costs and funding, policy, and the council's ability to influence action. On the latter point, the council should use its unique role in the borough as an "enabler" of action, such as in lobbying national government.

**The council should review these findings to determine on which basis to prioritise action and consider this in the development of its action plan.**