

# South East England Regional Assembly Regional Carbon Emission Trajectories

## Executive Summary

### Introduction

The world's climate is changing due to human activity. To help to address this, levels of carbon dioxide emissions need to be reduced dramatically.

Through the South East Plan the Regional Assembly is coordinating action to adapt to the inevitable impacts of climate change and to mitigate further Greenhouse Gas emissions. The challenge in the South East is to balance such environmental constraints with the need to deliver growth.

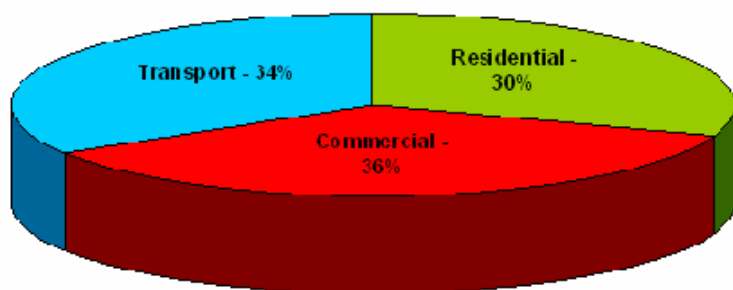
This study establishes a baseline for measuring carbon emissions in the South East. It uses carbon trajectories to explore the potential to achieve the carbon emission reduction targets set out in the South East Plan and the Climate Change Bill.

### What are Carbon Trajectories?

Carbon trajectories are a predictive tool that can, for example, enable the forecast impact of national and mitigation policies in the South East Plan to be applied at a regional level. By developing a range of scenarios for future regional growth they can be used to assess the region's potential to achieve:

- A 25% reduction by 2015 in carbon dioxide emissions below 1990 levels, in accordance with Policy CC2 in the draft South East Plan; and
- A 60% reduction by 2050 in carbon dioxide emissions below 1990 levels as set out in the Climate Change Bill.

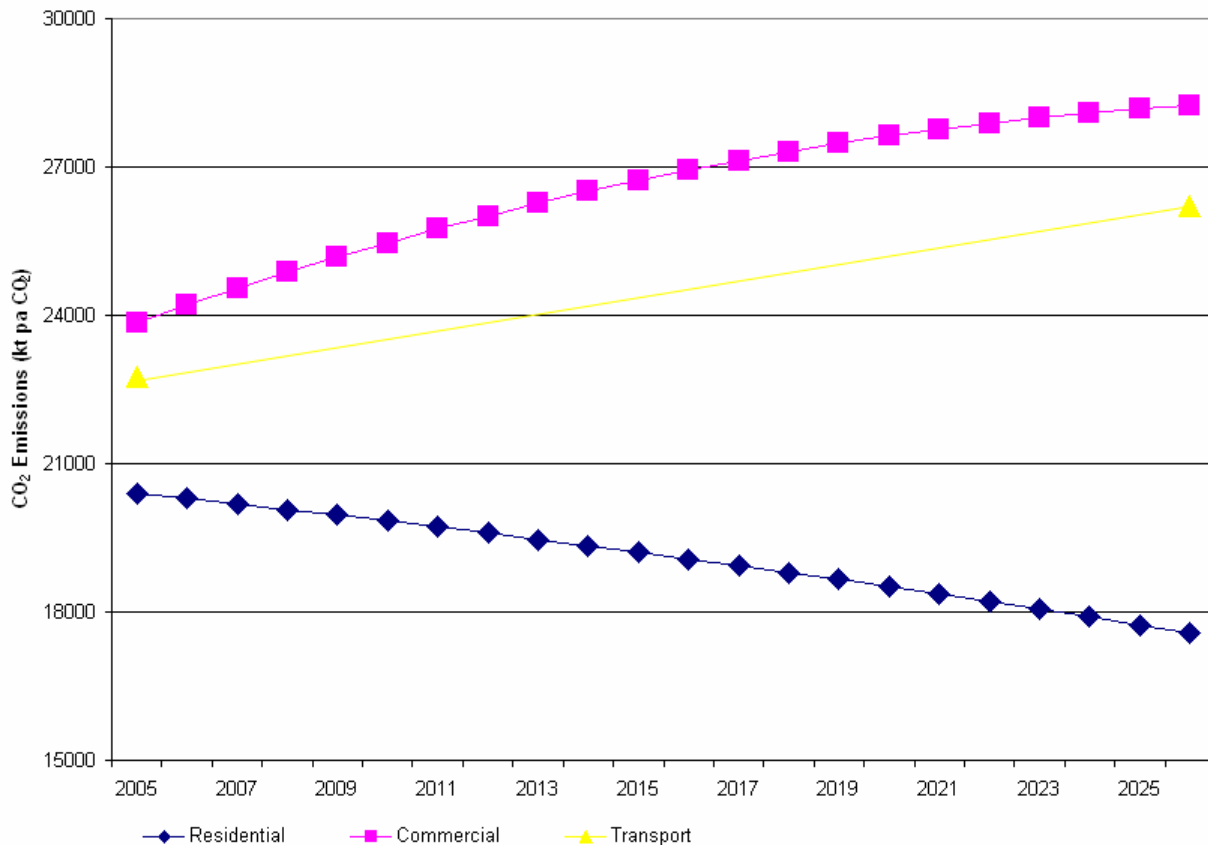
**Figure 1: South East Carbon Dioxide Emissions (2005)**



The South East has the largest 'carbon footprint' of any UK region - 67,016 kt of CO<sub>2</sub>. The emissions can be almost equally split between the transport, residential and commercial sector. By applying evidenced assumptions to this data, carbon trajectories can be developed for each sector.

Source: DEFRA, 2007. 2005 Experimental Statistics on Carbon Dioxide emissions at Local Authority and Regional Level. [www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm](http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm)

**Figure 2: Trajectories of Potential Carbon Emissions in the South East (without additional measures to reduce emissions)**



This study shows that with no additional measures:

- Delivery of the national target to deliver 20% of electricity from renewable sources will have a dampening effect on the carbon emissions from the commercial and housing sector
- Carbon emissions from the residential sector will fall despite growth in the number of houses because of the increase in energy from renewable sources
- Without further measures, emissions from the commercial sector will continue to rise
- The carbon emissions from the associated transport will also grow at a similar rate

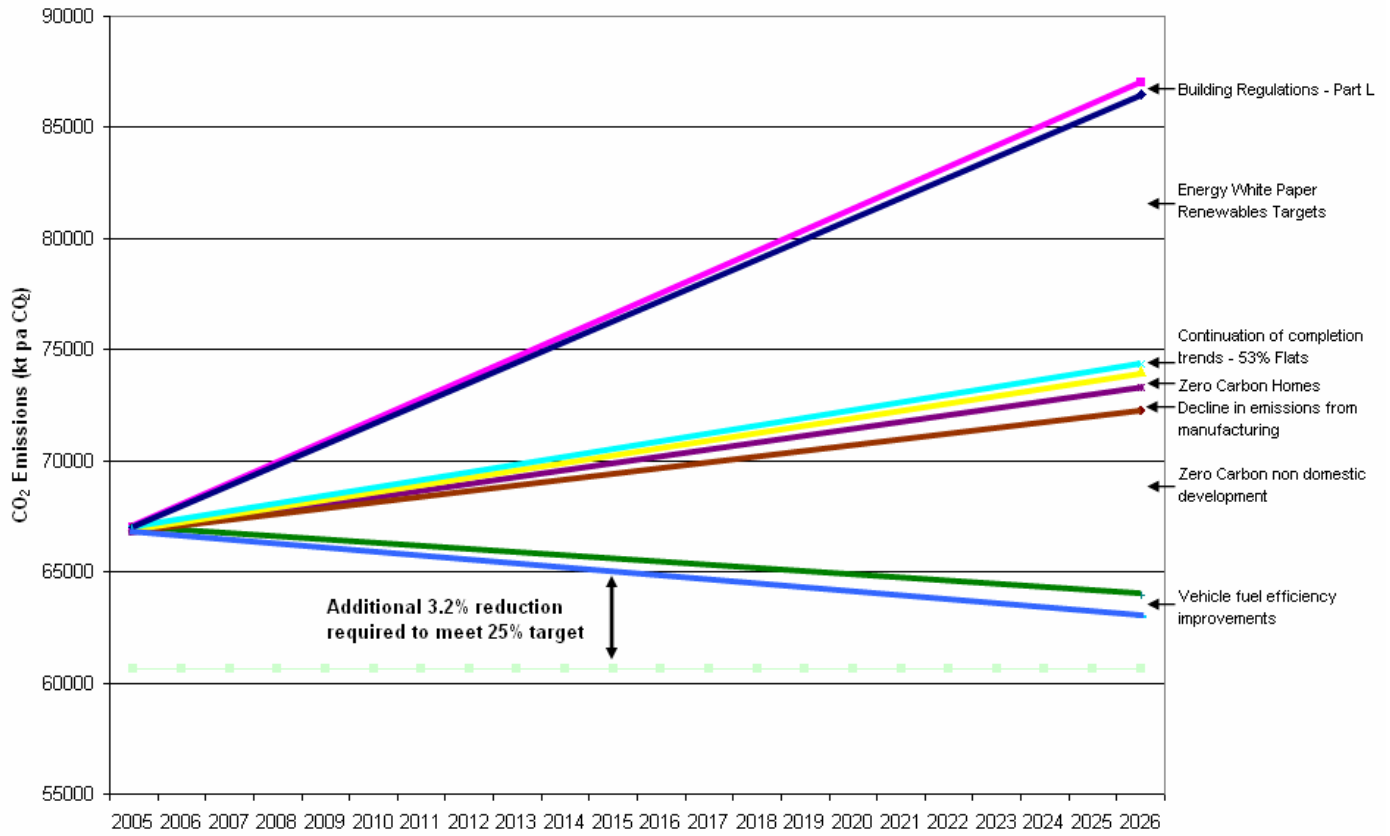
### Carbon Trajectories

To understand the effect of future policy on carbon emissions, trajectories have been developed, through this study, which determines the impact of:

- Delivery of the Energy White Paper Renewable Targets
- Different types of future housing completions
- Zero carbon homes being delivered (including improvements in, and possible non compliance with, building regulations)
- The delivery of zero carbon non domestic development
- Reduced emissions from the manufacturing sector
- Improvements in vehicle fuel efficiency.

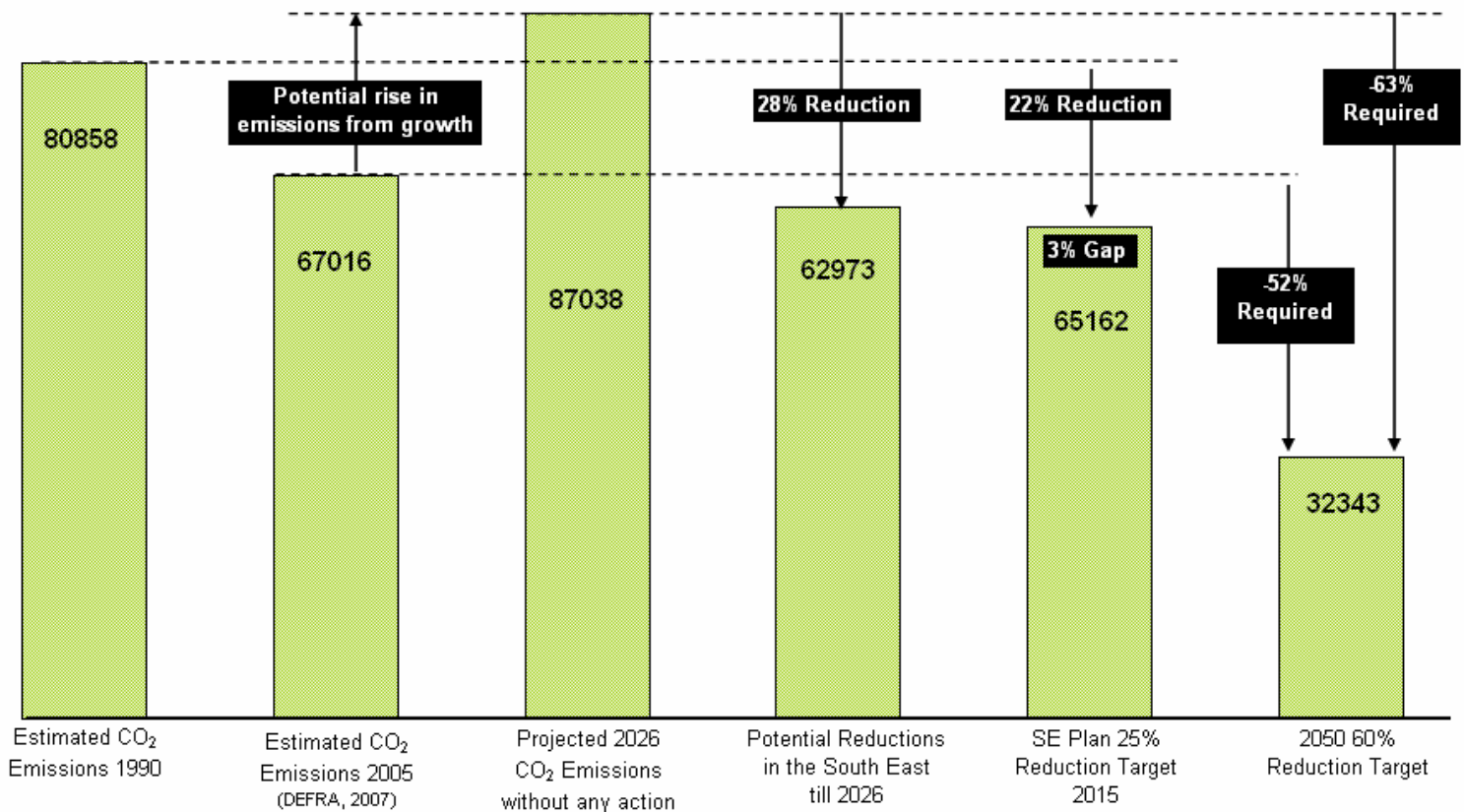
The impact of each potential policy measure and technological improvement is summarised below:

**Figure 3: Potential mitigation against rising carbon emissions**



The potential for these measures to deliver the regional and national targets is set out in the diagram below.

**Figure 4: The Potential for Additional Policy Measures to Achieve Regional National CO<sub>2</sub> Emissions Reduction Targets**



- Emissions will have to be reduced by a further 3% if the South East Plan target to cut carbon dioxide emissions by 25% (below 1990) levels by 2015 is to be achieved
- Emissions will have to be reduced by a further 52% by 2050 if the region is to meet the Government's target to reduce carbon dioxide emissions by 60% below 1990 levels.

In the long term the mitigation measures proposed nationally and within the South East Plan will do little more than offset the carbon dioxide emissions that would arise from the future growth in the region, leaving emissions marginally below current levels. Therefore additional measures will be required in the South East to meet the targets set out in the Climate Change Bill.