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POTENTIAL FOR REDUCING CARBON EMISSIONS FROM COMMERCIAL AND PUBLIC-SECTOR BUILDINGS

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This Information Paper summarises the contribution to UK carbon (CO_2) emissions of energy use in non-domestic buildings* and outlines the savings that could be achieved in the commercial and public-sector stock, based on the potential that existed in 2007 and looking ahead to 2012, 2017 and 2022. It should therefore be of interest to policymakers and researchers in the field of climate change and carbon emission reductions.

The non-domestic building sector accounts for around 19% of total UK carbon emissions, with most generated by energy used for space heating, closely followed by lighting. The energy-saving measures considered are technologies and strategies that could be applied to existing buildings, and include 'alternative' technologies such as heat pumps and photovoltaic (PV) arrays. Interactions and overlaps between measures are also assessed. In 2007, the maximum achievable savings amounted to 25% of emissions, with 19% being saved cost-effectively. The proportion of carbon savings will fall in future years, and by 2022 the estimated maximum achievable carbon savings will account for 17% of carbon emissions, with 14% being cost-effective.

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* The non-domestic building sector consists of the commercial and public sector and industrial buildings.

INTRODUCTION

In order to combat the increase in global anthropogenic greenhouse gas (GHG) emissions, the UK government signed up to the Kyoto Protocol in 1997 with a legally binding commitment to reduce its GHG emissions by 12.5% below 1990 levels by 2008–2012[1]. This forms part of the 8% reduction agreed by the EU at the Kyoto conference. In addition to this, the UK government set itself a domestic target to reduce carbon emissions by 20% by 2010, again compared with a 1990 baseline.

More recently, The Climate Change Act 2008[2] introduced a legally binding target for the UK of at least

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