

Commercial demand for heating and cooling

This sector considers the amount of heating, cooling and hot water used within commercial and non-residential buildings, such as shops, hotels, offices, and schools. In 2012, we estimate that such buildings used 402 GWh of heat for space heating and 181 GWh for water heating. We assume the demand is proportional to floor area, and this grows with resident population.

Level 1

Level 1 assumes space heating and water heating demand per square metre of commercial floor space stay constant.

Level 2

Level 2 assumes that, from 2015, space heating and water heating demand per square metre reduce at 0.15% per year (5.1% lower by 2050) and 0.2% per year (6.8% lower by 2050) respectively.

Level 3

Level 3 assumes that, from 2015, space heating and water heating demand per square metre reduce at 0.3% per year (10% lower by 2050) and 0.4% per year (13% lower by 2050) respectively.

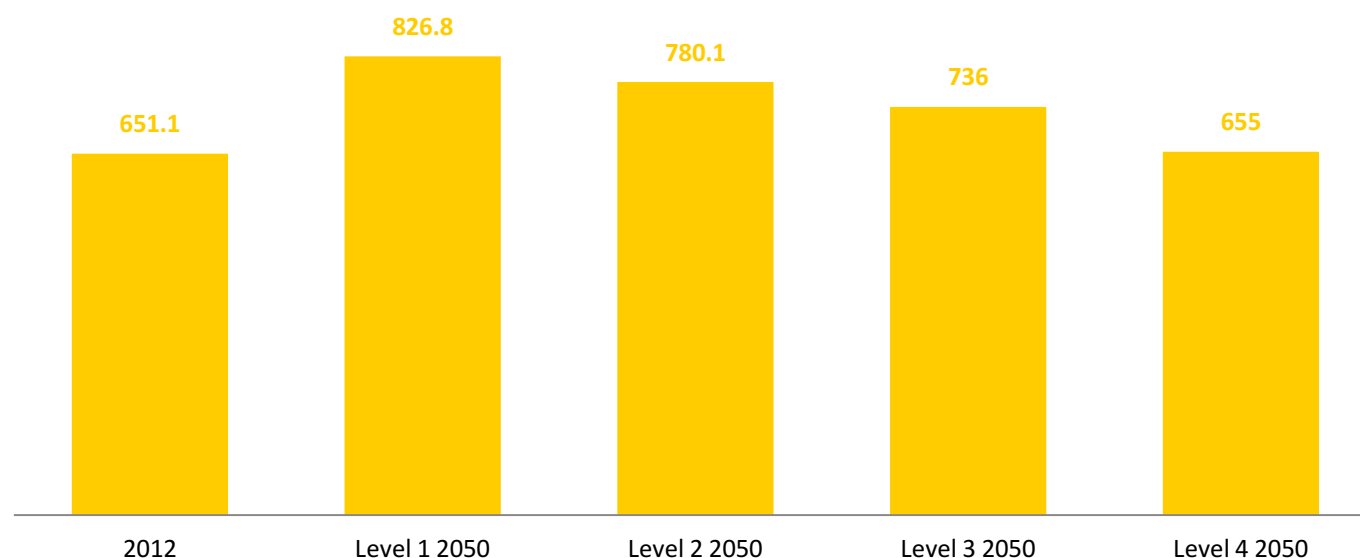
Level 4

Level 4 assumes that, from 2015, space heating and water heating demand per square metre reduce at 0.6% per year (19% lower by 2050) and 0.8% per year (25% lower by 2050) respectively.

Interaction with other choices

This lever sets the demand for the (end-use) heat, which is influenced by factors such as insulation of buildings and water cylinders, as well as behaviour. The mix of heating technologies (e.g. heat pumps, gas boilers) used to provide the heat demand is chosen with the 'Heating technology' lever. Solar hot water uptake is chosen separately as a supply option.

Note that different technologies will use different amounts of *input energy* to provide 1 kWh of *heat*. For example, gas boiler is around 85% efficient, while a heat pump provides around 3.8 kWh of heat for each kWh of electricity used.



Energy demand for commercial space and water heating, assuming Level 1 on heating technology (GWh/yr)