Electrification of cooking

Currently all lighting and most appliances are powered by electricity; for cooking there is a choice between gas and electricity. In 2007, 40% of commercial cooking and 37% of domestic cooking were gas-powered, with the rest being electrified.

In the 2050 Calculator the lighting and appliance sector's future energy use is determined by two factors: electrification (described here) and demand and efficiency (described on another page). The changes here represent different choices rather than an increasing scale of effort. They cannot be compared with the Levels 1-4 in other sectors and have therefore been labelled as Trajectories A and B instead.

Trajectory A

Trajectory A assumes that in 2050 the cooking technology mix remains the same as in 2007; 40% of commercial cooking and 37% of domestic cooking is by gas and the rest is by electricity.

Trajectory B

Trajectory B assumes that in 2050 all commercial and domestic cooking is electrified. Gas hobs and ovens have been replaced with traditional electric, induction or microwave alternatives.

Interaction with other choices

The 2050 Calculator allows biogas to be used to replace natural gas in cooking. This option can be chosen by dedicating land to biocrops and then choosing to turn those biocrops into gaseous fuel. However biogas is very limited in quantity and there are many other competing uses for biofuels across the transport, heating and electricity generation sectors.

Figure 1. Trajectory A assumes that the current mix of electric and gas cooking continues. This picture is of a 1934 gas oven. Photo © Arpington

Figure 2. An electric induction hob. Photo © Eric1980

The choice around the electrification of cooking is assumed not to influence cooking energy demand.