



## Energy Use in UK Homes

Source: United Kingdom housing energy fact file 2013, DECC

	Energy consumption by use	% total housing energy consumption	% by appliances	
Space heating	279.6	61.9%	Boiler	80%
Water heating	82.6	18.3%		
Lighting	14.0	3.1%	Lighting	3%
Appliances	62.8	13.9%	Appliances	14%
Cooking	12.8	2.8%	Cooking	3%

Two thirds of energy bills from heating and hot water referenced in 'The Fuel Poverty Statistics Methodology and User Manual', DECC, 2014 as: "In England in 2012, on average, around 55% of a modelled household bill was from space heating costs, 30% from lighting and appliance usage, 11% from water heating and 4% from cooking costs."

## Average fuel bills

Source: United Kingdom housing energy fact file 2013, DECC

	Last year recorded	Average last 5 years
Average gas bill	£493 (2011)	£560
Average electricity bill	£556 (2012)	£575

Note: gas bills are based on homes with gas heating only.

## Home heating

Source: United Kingdom housing energy fact file 2013, DECC

	UK homes
Gas central heating	22,978,000
Oil central heating	1,073,000
Total	24,051,000



### Proportion of homes without heating controls

Source: Data from the Energy Follow-up Survey (EFUS) to the English House Condition Survey, reported in 'How heating controls affect domestic energy demand: A Rapid Evidence Assessment', DECC (January 2014)

Homes with a central timer	97%
Homes with room thermostat	77%
Homes with TRVs	66%
Homes with TRVs, timer and thermostat	49%

### Derived data:

		Numbers of homes (based on UK total with oil or gas central heating)
Homes with no room thermostat	23%	5,531,730
Homes without TRVs	34%	8,177,340
Homes without TRVs or room thermostat or both	48%*	11,544,480
Homes with no temperature controls	6%	1,443,060

\*Could be 48 – 51% depending on where the 3% of homes without a central timer fall.

### Energy savings from controls

University of Salford tests run in the energy house, a traditional end terrace built inside an environmental chamber with a conventional gas fired central heating system.

Tests run for a 24 hour period at an average winter outside temperature of 5degC. On/off times as used in the SAP calculation methodology.

Tests with thermo-mechanical room thermostat and TRVs (June 2013):

	Cost (24 hours)	Kg CO2	% savings
Test with no external boiler controls	£5.31	22.99	-
Test with room thermostat only	£4.68	20.22	11.95%
Test with room thermostat and TRVs	£3.15	13.60	40.67%

Tests with TPI room thermostat and TRVs (June 2014):

	Cost (24 hours)	Kg CO2	% savings
--	-----------------	--------	-----------



Test with no external boiler controls	£6.46	27.67	-
Test with room thermostat only	£4.37	18.73	32.67%
Test with room thermostat and TRVs	£3.02	12.93	53.49%

**Estimated financial savings from controls based on Salford test data**

Test results			Estimated cost effectiveness of controls <sup>1</sup>		
Tests carried out	24 hr heating cost <sup>2</sup>	Reduced cost from controls	Type of upgrade	Potential annual saving <sup>3</sup>	Estimated payback
1 - No temperature control	£5.31	0%		-	-
2 – Control by room thermostat only	£4.68	12.0%	Install a room thermostat	£120.49	18 months
3 – Control by room thermostat + TRVs	£3.15	40.7%	Install a room thermostat and TRVs	£409.86	15 months
			Install TRVs to a system with an existing room thermostat	£289.37	14 months
			Install TRVs when replacing boiler (in addition to a room thermostat)	£289.37	9 months

<sup>1</sup> Based on savings in the test house and cost of measures if installed into a similar house.



**Control  
your home**

## Data and Statistics for Heating Controls

[controlyourhome.org.uk](http://controlyourhome.org.uk)

2 Based on British Gas Clear & Simple cash / card payment (4.274p per kWh gas, 12.797p per kWh electric) not including standing charge (24.439p per day gas, 15.979p per day electric) - Prices taken on 07/05/2013 from: <http://www.britishgas.co.uk/products-and-services/gas-and-electricity/our-energy-tariffs/clear-and-simple/clear-and-simple-rates.html>

3 Figures are based on a heating season of 243 days, with 100% of the savings in December, January and February, 75% of the savings in March, April, November and 50% in October and September. Paybacks are calculated using installation costs calculated by TACMA for the Green deal call for evidence in March 2011. The measure 'TRVs at time of boiler replacement' assumes that the system is already drained down.

### Estimates of overall UK savings potential from heating controls

Source: 'Evidence review assessing the potential energy savings from the increased application of heating controls in residential properties across the European Union' Paula Own Consulting for eu.bac (European Building Automation and Controls), May 2014

	Annual savings in 2030	Cumulative savings by 2030
Potential energy savings	21,076 GWh	255,879 GWh
Potential financial savings	£ 1,038 million	£11,185 million
Potential carbon dioxide savings	4.4 MtCO <sub>2</sub>	53.7 MtCO <sub>2</sub>

Based on the estimated savings from the additional installation of controls as the result of a reasonable set of policy interventions compared to a business as usual approach.