

## MEASURE: Isolation of boiler plant to prevent dual-firing

Symptom	Action taken and cost	Date of action	Intended outcome	Applicability	Conditionality	Measurability	Estimated CO2 and cost impact
Dual-firing of master and backup boiler to meet peak demand.	Reworking of pipework to isolate boilers to prevent dual-firing.  There were no costs associated with this measure.	13 September 2010 to 17 September 2010	Reduction of gas used to heat water to meet peak demand particularly following weekend and overnight absence of gas use.	Likely to be applicable in any building where boilers may dual-fire unnecessarily.	Potential for differential impacts in winter and summer reflecting seasonal use of gas.	Effect of intervention can be measured, however demand for hot water reflects a number of factors and gas consumption is not necessarily a reliable gauge of the impact of the measure.	A reduction of at least 5% in gas use during months when no heating is required, for a zero investment cost.

## EVALUATION METHOD: Use of real-time data from DECC real-time energy monitor

Data gathered	Reason for metric	Known data quality issues	Graphs																																			
Gas use at 6.00am for two weeks before the measure and two weeks after	The boilers are switched off over night and at weekends and fire up initially at 6.00am.	None.	<table border="1"> <caption>Gas use at 6.00am (Estimated values)</caption> <thead> <tr> <th>Day</th> <th>W/b 30 Aug</th> <th>W/b 6 Sep</th> <th>W/b 20 Sep</th> <th>W/b 27 Sep</th> </tr> </thead> <tbody> <tr> <td>Monday</td> <td>230</td> <td>220</td> <td>160</td> <td>180</td> </tr> <tr> <td>Tuesday</td> <td>140</td> <td>140</td> <td>80</td> <td>110</td> </tr> <tr> <td>Wednesday</td> <td>190</td> <td>120</td> <td>110</td> <td>90</td> </tr> <tr> <td>Thursday</td> <td>160</td> <td>130</td> <td>100</td> <td>110</td> </tr> <tr> <td>Friday</td> <td>160</td> <td>130</td> <td>120</td> <td>90</td> </tr> </tbody> </table>	Day	W/b 30 Aug	W/b 6 Sep	W/b 20 Sep	W/b 27 Sep	Monday	230	220	160	180	Tuesday	140	140	80	110	Wednesday	190	120	110	90	Thursday	160	130	100	110	Friday	160	130	120	90					
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Total daily gas use for two weeks before the measure (w/b 30 August and w/b 6 September) and two weeks after (w/b 13 September and w/b 20 September)	The impact of the measure over a full working day should be estimated to put the early morning use into context.	Data for 30 August is atypical because the building was unoccupied for a Bank Holiday. From 30 August, adjustments to boiler timings were made to ensure continued availability of hot water in the early evening following a failure of kitchen equipment leading to greater use of domestic hot water.	<table border="1"> <caption>Total Daily Gas Use (Estimated values)</caption> <thead> <tr> <th>Day</th> <th>W/b 30 Aug</th> <th>W/b 6 Sep</th> <th>W/b 20 Sep</th> <th>W/b 27 Sep</th> </tr> </thead> <tbody> <tr> <td>Monday</td> <td>400</td> <td>600</td> <td>500</td> <td>500</td> </tr> <tr> <td>Tuesday</td> <td>500</td> <td>500</td> <td>400</td> <td>400</td> </tr> <tr> <td>Wednesday</td> <td>500</td> <td>500</td> <td>400</td> <td>400</td> </tr> <tr> <td>Thursday</td> <td>500</td> <td>500</td> <td>400</td> <td>400</td> </tr> <tr> <td>Friday</td> <td>500</td> <td>500</td> <td>400</td> <td>400</td> </tr> <tr> <td>TOTAL</td> <td>2400</td> <td>2800</td> <td>2500</td> <td>2500</td> </tr> </tbody> </table>	Day	W/b 30 Aug	W/b 6 Sep	W/b 20 Sep	W/b 27 Sep	Monday	400	600	500	500	Tuesday	500	500	400	400	Wednesday	500	500	400	400	Thursday	500	500	400	400	Friday	500	500	400	400	TOTAL	2400	2800	2500	2500
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## SUMMARY OF IMPACT: The difference in weekly gas use for w/b 20 Sept compared to w/b 6 Sept

Overall reduction (%)	CO2 savings (kg)	Energy savings (kWh)	Cost savings (£)
10.4%	53.6kg per week (2.8t per year)	290kWh per week (15,080kWh per year)	£4.50 (£234 per year)