

# xserve



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## Weather Station Closure Update

Demand Estimation Sub Committee 11.02.13



# Background

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- At the end of October 2012 Xoserve were informed of the imminent closure of Birmingham Edgbaston weather station
- Edgbaston closure was confirmed for 1<sup>st</sup> December 2012 and an initial replacement weather station of Winterbourne 2 was suggested to provide the 2 hourly temperatures going forward for use in the CWV calculation
- Analysis required to understand the correlation between Edgbaston and Winterbourne to assess any significant impacts to CWV calculation.
- Revisions to WM CWV would require analysis to derive new CWV parameters using optimisation process followed by restatement of CWV history
- Back runs for Spring modelling could not be started until process complete. WAALPs would also require re-calculating

# Results

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Analysis carried out on data set from 01/03/11 to 28/11/12 which equates to 7,668 measurements.

- 2 Hourly Temps:

Correlation between Winterbourne & Edgbaston = **0.989**

- Daily Average Temps:

Existing weightings have been applied to the 2 hourly temperatures in order to produce a daily average temperature.

Correlation between Winterbourne & Edgbaston = **0.997**

A t-test was performed to test if there was any significant difference between the Winterbourne & Edgbaston temperatures. Results suggested that there was no significant difference.

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# Results Cont...

- Daily Effective Temps:

Effective temperatures represent half of today's weighted actual temperatures and half of yesterday's effective temperature.

Correlation between Winterbourne & Edgbaston = **0.998**

- CWV vs. NDM Demand Analysis:

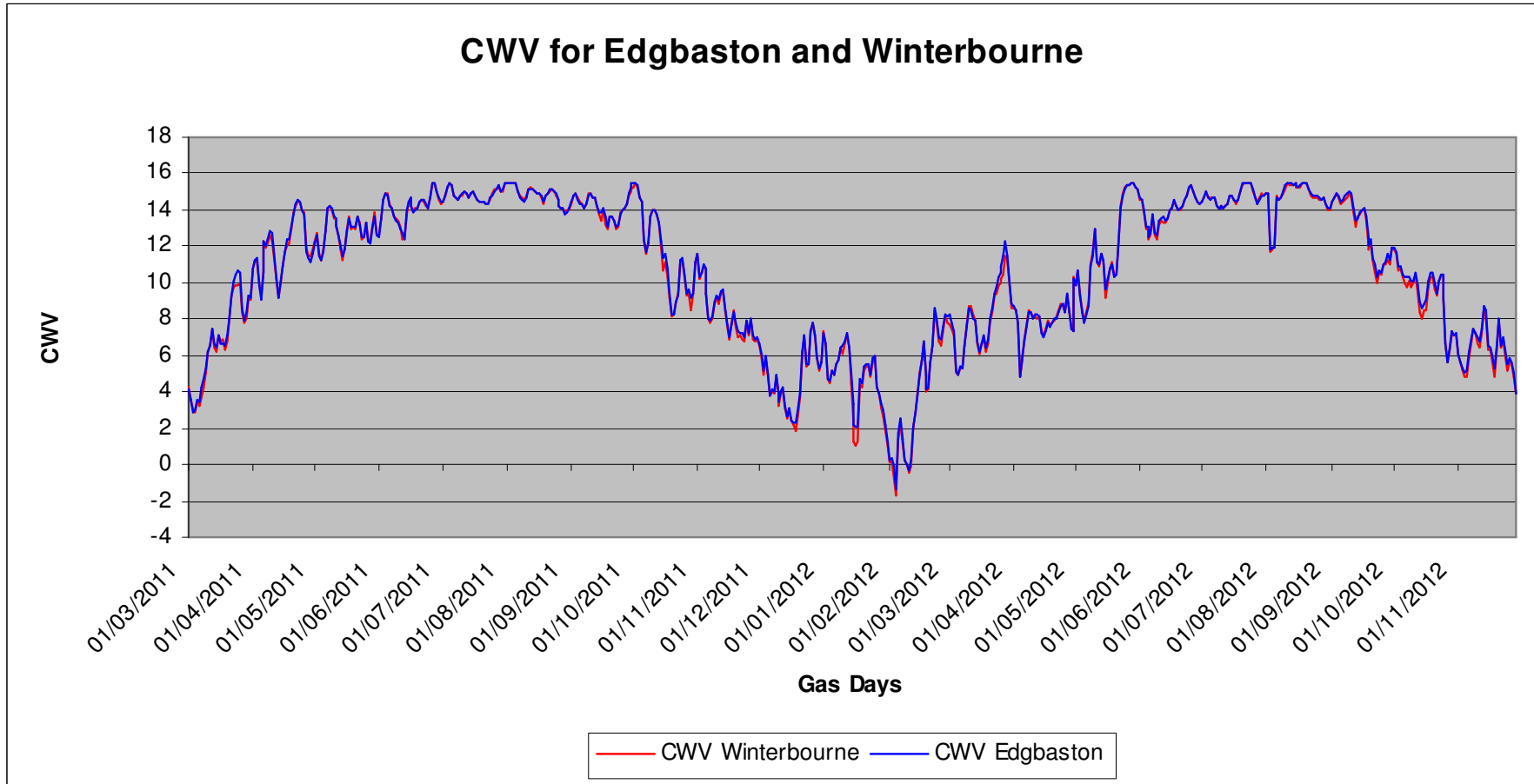
The Effective Temperature plus all the other CWV parameters and measurements were then used to derive a CWV for Edgbaston and Winterbourne

The CWVs calculated from both stations were compared to aggregate NDM demand for WM for non-holiday Monday to Thursday days (in line with CWV optimisation process)

Edgbaston CWV vs. NDM Consumption:  **$R^2 = 98.5\%$**

Winterbourne CWV vs. NDM Consumption:  **$R^2 = 98.2\%$**

# Results Cont...



# Summary

	2 Hourly Temps	Daily Average Temperature	Effective Temperature	CWV M to T All Data	CWV M to T Oct'11-Mar'12	CWV M to T Apr'12 - Sep'12
Measure	Correlation	Correlation	Correlation	R Sq.	R Sq.	R Sq.
Edgbaston	0.989	0.997	0.998	98.5%	98.3%	94.7%
Winterbourne				98.2%	98.0%	94.3%

- First four columns summarises the results at the various stages of the CWV calculation over the whole 21 month period (01/03/11 to 28/11/12)
- Final two columns summarises the results over gas year 11/12 split into Summer and Winter months
- Overall correlation very good. As expected R sq. slightly worse with Winterbourne CWV

# Conclusions

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- Analysis carried out wouldn't appear to suggest there is compelling evidence to review CWV parameters immediately
- TWG meeting 28.01.13 recommended to continue with Winterbourne 2 temperature data for WM CWV calculations with existing CWV parameter values
- The detailed analysis can be viewed on the Joint Office website located in the "28 January 2013 DESC Technical Workgroup" folder.
- DESC are asked to consider the evidence and provide a view.