



UIG Task Force
**13.1.3: Accuracy of NDM Algorithm - Holiday
Factor Analysis**

Summary of Findings

Area & Ref #	Accuracy of NDM Algorithm (Including EUC Definitions) - Holiday Factor analysis (Ref 13.1.3)
UIG Hypothesis	All NDM sites Class 3 and 4 are assigned gas using a standard algorithm, on the basis of their assigned End User Category. If the demand model does not properly account for demand changes on during holiday periods then the resulting error will contribute to UIG.
Data Tree References	UIG, Gas Day, WAALP

Findings Status	Closed
UIG Impact Peak Volatility %	N/A
UIG Impact Annual Average %	N/A
Confidence in Percentages	HIGH

Findings

The NDM algorithm is very sensitive to changes in weather as expressed in the Composite Weather Variable (CWV). Applying a CWV correction to UIG in an attempt to identify any underlying trends which were being masked by weather suggested that the NDM algorithm may not have been reacting to demand changes over holiday periods.

We undertook further analysis into whether or not the current model caters correctly for changes in gas consumption during holidays. We identified that the initial holiday trend was a residual effect of higher demand due to colder weather coinciding with the holiday periods in the year initially analysed. The deeper analysis revealed that the demand estimation model aligns with the changes in input energy during this period and therefore is modelling the necessary alteration in consumption during holiday periods.

This highlights why it is important that consumption patterns during holiday periods need to be correctly anticipated so that the NDM Allocation will be as accurate as possible. Not considering the effects that holiday periods will have on actual gas usage will result in increased levels and UIG volatility.

Approach to analysis

We tested to see if UIG (after trying to remove the effects of CWV variance) contained a significant bias towards (larger) values at holidays - specifically Christmas and Easter. To reduce weather dependence, the comparison was carried out with a week before and a week after each holiday period. This comparison was carried out for all 6 models trained on one year of data and tested on the remaining 5 years.