

Weather Station Substitution Methodology

Technical Requirements

Introduction

This document represents the ~~first-final~~ draft of the Demand Estimation Sub-Committee's ("DESC's") technical requirements which will be used as the central reference point before entering the tender phase for the Weather Station Substitution Methodology. This document should be as clear and detailed as possible to ensure the final Methodology is likely to be accepted by DESC.

The document is split into two main sections (i) requirements for the methodology itself and (ii) requirements for the historic dataset which is also seen as a key deliverable from this work.

This should represent all of the latest discussions up to and including the DESC meeting on ~~March 5th. There will be a further opportunity to discuss this at DESC on April 4th 2012. The draft requirements will be published for final review by DESC members.~~ These requirements must be accepted by DESC before the formal procurement activity can commence. It is expected that this acceptance will be provided via email by all DESC members, rather than at a formal DESC meeting.

Development of Weather Station Substitution Methodology

- The Service Provider will be required to develop a "Weather Station Substitution Methodology" ("the Methodology") as described in Uniform Network Code (Section H1.4.4 and Transition Document IIC 11.5.3). This Methodology will be applied by the GB Gas Industry in future whenever a Weather Station currently used in Demand Estimation closes and is replaced by another station, to adjust the data from the first (closed) weather station in order to create a seamless and consistent dataset.
- The Service Provider must deliver a written Methodology to be applied in the event of a weather station closure, which includes a description of the required ~~data items~~variables for the calculation, the sources of those ~~data items~~variables and formula/method to be applied in such circumstances. ~~All data items~~The Methodology should be ~~readily available~~applicable and practicable for all GB weather stations.
- The Methodology must describe the decision-making process to be applied when substituting Weather Stations and the outputs from the substitution.
- The Methodology must include a definitive set of rules for filling in any gaps in the data history for either the closed or replacement weather station(s).
- The Service Provider must provide documentary evidence to support the chosen methodology, including details of any other potential approaches which have been considered but disregarded.
- The Methodology delivered by the Service Provider to Xoserve must then be approved by the Demand Estimation Sub-Committee prior to its use by the GB Gas Industry.

Revised Historic Dataset

- The Service Provider will be required to provide a revised historic dataset of GB weather data, to which the Methodology and the gap filling rules (described above) have been applied.
- Content of dataset:
 - For each current GB weather station listed below:

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- Hourly data, wherever available, for all data items
- ~~• At least [50] gas years of history for all variables~~
- History for all data items from 1 January 1960
- Data up to end of previous complete gas year (ends on a “gas year” runs from 1 October to 30 September each year)
- List of data items required, if available
 - Temperature in °C
 - Wind speed in meters per second
 - Wind direction in ° (from 0 to 359°, specifying which compass point is represented by 0)
 - Cloud cover (rating ~~40~~ to ~~89~~)
 - Solar radiation in lumenjoules per cm² (or other specified measure)
 - ~~Humidity~~Relative humidity in %
 - Precipitation in millimetres
- The nature of each individual measurement should be indicated, as one of the following:
 - Observed
 - Substituted (using the “Weather Station Substitution Methodology”)
 - Filled in (using the gap filling rules described above)
 - Not available
- Disclosure of dataset:
 - The dataset must be licensed for disclosure by Xoserve to all UNC parties on request (Gas Shippers and Transporters)
- List of required current GB Weather stations
 - Aberdeen (~~Dyce~~) 03091
 - Aberporth (~~West Wales~~) 03502
 - Albemarle (~~Newcastle~~) 03238
 - Aviemore 03063
 - Benson 03658
 - Bristol (~~Filton~~) 03628
 - Charlwood (~~Gatwick~~) 03769
 - Church Fenton (~~Leeds~~) 03355
 - Coleshill (~~Birmingham~~) 03535
 - Edgbaston (~~Birmingham~~) 99028
 - Edinburgh (~~Gogarbank~~) 03166
 - Glasgow (~~Bishopton~~) 03134
 - Heathrow (~~London~~) 03772

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- Linton-on-Ouse 03266
 - Manchester (~~Hulme Library~~) 99029
 - Marham (~~Norwich~~) 03482
 - Plymouth 03827
 - Rhyl 03313
 - Southampton (~~Oceanography Centre~~) 99079
 - St Athan (~~Cardiff~~) 03716
 - Watnall (~~Nottingham~~) 03354
 - Wattisham 03591
 - Woodford (~~Manchester~~) 03348
 - Yeovilton 03853
- Potential additional weather stations – depending on incremental cost
 - Lerwick 03005
 - Stornoway 03026