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Demand Estimation Sub-Committee

25 June 2014

Consideration of Climate Change Datasets

Overview

- UNC Modification introduced concept of Climate Change Methodology – dependent on acceptance of Weather Station Substitution Methodology & datasets
- Placed obligation on Gas Transporters to procure a service to create a Methodology & associated datasets
- Xoserve appointed Met Office to deliver the service
- Climate Change Methodology signed off at 25 June 2014 DESC meeting – data preparation then started

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Summary of datasets

- 24 of 25 requested weather stations
 - Gas industry only uses 10
 - Hawarden data still under development/review
- 5 of 6 requested data items
 - Met Office recommended no further work on wind direction after initial investigations
- 3 files for each weather station & data item:
 1. *An adjusted view of historic hourly weather datasets (derived from WSSM) reflecting estimated impacts of climate change based on results from base year 2011/12*
 2. *a) Predicted hourly climatological average values for period 1st January 2012 to 30th September 2025 based on predicted impact of climate change trends for future period*
b) Predicted hourly increments values – difference between predicted hourly climatological average values (i.e. from 2a) and base year (2011/12) averages

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Objective of meeting

- Datasets published for review on June 3rd
- DESC meeting June 11th to give feedback to Met Office
- Met Office provided explanations and took 1 action
- Aspiration – obtain sign-off of datasets at today's meeting

- Next steps
 - After completion of 2014/15 algorithms, perform CWV Optimisation
 - Once new CWV parameters accepted, use CCM outputs in Seasonal Normal, as per following slides – new SN basis must be agreed by end of 2014

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Use of Climate Change Methodology Outputs in Development of Seasonal Normal CWV

Background and Agreed Approach

Background

- Current SNCWV introduced in October 2010
- Incorporated some outputs from Met Office EP2 Project – used estimated climate change increments
- Requested outputs of CCM Project (*updated*)
 - 50+ years hourly historic data adjusted for estimated impacts of climate change v base year 2011/12
 - Predicted hourly average values for Gas Years 2012 to 2025
 - Predicted hourly increments – difference between base year and forecast year
- Stakeholder meeting on Nov 25th agreed how the outputs will be used in defining SNCWV for GYr 2015 onwards

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What is CWV?

- What is the Composite Weather Variable (CWV)?
 - The CWV is a single measure of daily weather in each LDZ and is a function of effective temperature, wind speed and pseudo Seasonal Normal Effective Temperature (SNET)
- What is its purpose?
 - The CWV is defined to give a linear relationship between Monday to Thursday non holiday daily aggregate NDM demand in the LDZ and the CWV
 - The definition of the CWV includes provision for summer cut-offs and cold weather upturn during low temperature periods

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Purpose of SNCWV

- SNCWV should represent a view of 'normal' weather in an LDZ for each gas day in CWV terms
- SNCWV ensures consistency of AQs, allocation and billing across years
 - should remain in place for several years
- Aspiration for revised values for Gas Years 2015/16 onwards
 - No minimum review period specified in UNC
- Seasonal Normal values are used to determine AQ levels
 - Xoserve will start calculating AQs for October 2015 in January 2015, hence requirement for new basis to be agreed in 2014

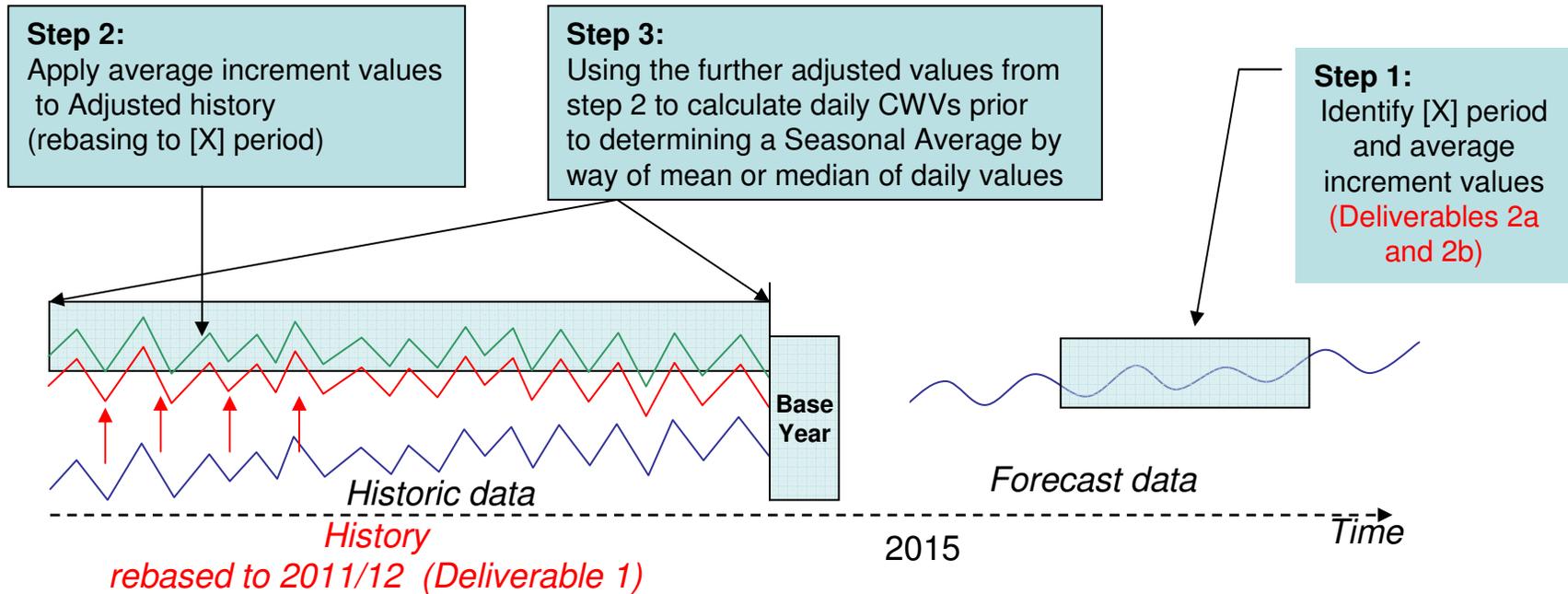
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Use of Project Deliverables

Not to Scale, for illustration only



Deliverables:

- 1) An adjusted view of historic hourly weather datasets (derived from WSSM) reflecting estimated impacts of climate change based on results from base year 2011/12
- 2)
 - a) Predicted hourly climatological average values for period 1st October 2012 to 30th September 2025 based on predicted impact of climate change trends for future period
 - b) Predicted hourly increments values – difference between predicted hourly climatological average values (i.e. from 2a) and base year (2011/12) averages

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Key Notes / Agreement of CCMSG from 25th November 2013

1. Adjusted hourly history is 01/01/60 to 30/09/12 (Data output 1)
2. Predicted Future hourly Increments 01/10/12 to 01/10/25 (Data output 2b)
 - Outputs 2a and 2b were changed so that they also cover 01/01/2012 to 30/09/2015
3. For periods 2015 to 2025 DESC will decide on [x] number of years (e.g. 1, 5, 7) and average those increment values
4. Apply hourly increments from step 4 to all years in step 1, which in effect creates a 'further adjusted' set of hourly historic values
5. Take data from step 5 and create a set of weighted daily temperatures, wind speeds and calculate [x] CWVs for long history e.g. 1960 to 2012
6. DESC to decide on whether to take an average of the CWVs or take the median as SNCWV
7. DESC to review resultant SNCWVs and consider any final smoothing approach which may be required.

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