Demand Estimation Sub Committee

Seasonal Normal Review 2020:

High Level Approach to SNCWV calculation

7th October 2019

Seasonal Normal Review Meeting Timetable 2019

High Level View of Seasonal Normal Review in 2019 - Key Checkpoints

PHASE	JAN'19	FEB'19	MAR'19	APR'19	MAY'19	JUN'19	JUL'19	AUG'19	SEP'19	OCT'19	NOV'19	DEC'19
TWG REVIEW CWV and SNCWV												
Update on Seasonal Normal Review (DESC)		11th Feb										
DESC MILESTONE												
DESC to confirm plan to Review CWV and SNCWV Review				1st Apr								
TWG REVIEW OPTIONS FOR CWV FORMULA												
Update on review of CWV formula (TWG)				24th Apr								
Update on review of CWV formula (TWG)					13th May							
Update on review of CWV formula (TWG)						10th Jun						
DESC MILESTONE												
DESC define proposed CWV Formula (DESC)							8th Jul					
TWG COMPLETE CWV OPTIMISATION												
Adhoc Meetings									23rd Sep			
DESC MILESTONE												
DESC confirm parameters in CWV formula (DESC)										7th Oct		
TWG CALCULATE SNCWV												
Adhoc Meetings											?	
DESC MILESTONE												
DESC confirm SNCWV values (DESC)												9th Dec

- 8 meetings so far this year to discuss Seasonal Normal Review, another 1 (maybe 2) more required to complete the process

Overview - Milestones

- At the 10th December 2018 meeting DESC approved the following high level approach and work plan for performing this analysis - major milestones below:

- **MILESTONE:** DESC to decide whether to consider a revision to the existing **CWV** formula and confirm the template for its 'benchmark' results (1st April 2019) ✓

- **MILESTONE**: DESC define proposed **CWV** formula for next period i.e. GY 2020/21 onwards (8th July 2019) ✓

- **MILESTONE**: DESC confirm parameters for use in proposed **CWV** formula for Gas Year 2020/21 (7th October 2019):

- **MILESTONE:** DESC decide to revise existing **SNCWV** (8th July 2019) ✓

- **MILESTONE:** DESC confirm revised **SNCWV** values (9th December 2019)

Objective

- Reminder of DESC's UNC Section H obligations:
  - "1.5.3 The Committee will, at appropriate frequencies determined by it, after consultation with the Uniform Network Code Committee, review and where appropriate revise (with effect from the start of a Gas Year) the seasonal normal value (for each Day in a year) of the Composite Weather Variable for an LDZ."
- The SNCWV will require revising due to the change in CWV formula and the exercise to optimise the parameters
- Objective of Presentation:

  Review at a high level the approach to how the SNCWV shall be calculated and identify any dependencies

Current Approach to SNCWV

- In 2014, DESC procured a Climate Change Methodology (CCM) and a series of datasets for the gas industry weather stations, including future temperature projections (increments) for the period 2015 to 2025

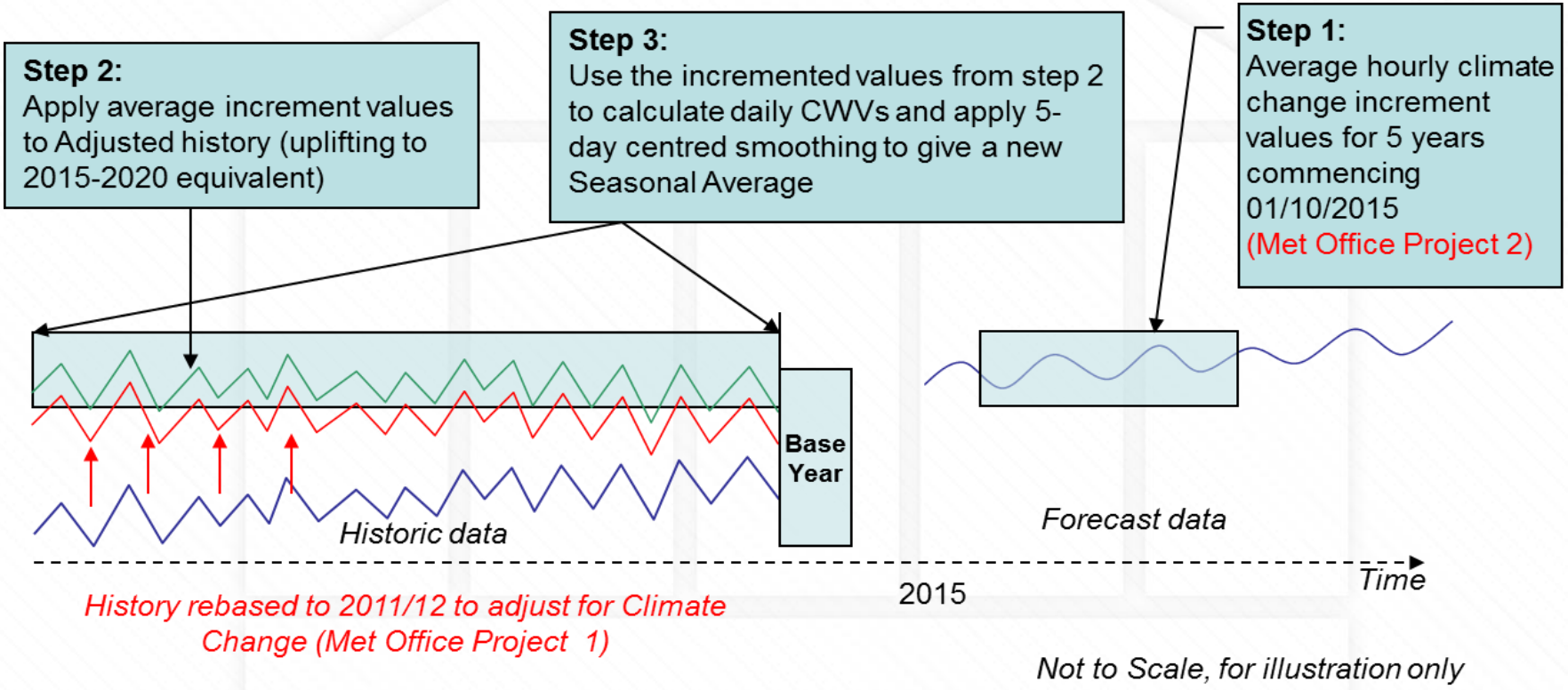
- In addition to the projections the historical weather data was adjusted to a ‘base year’ of 2011/12

- The increments along with adjusted historical weather were used to calculate a set of CWVs for the period 1st October 1960 to 30th September 2012

- Average values of CWV for each day along with a smoothing approach derived the SNCWV values we use today

Current Approach to SNCWV cont.

- Visual display of DESC's approach in 2014

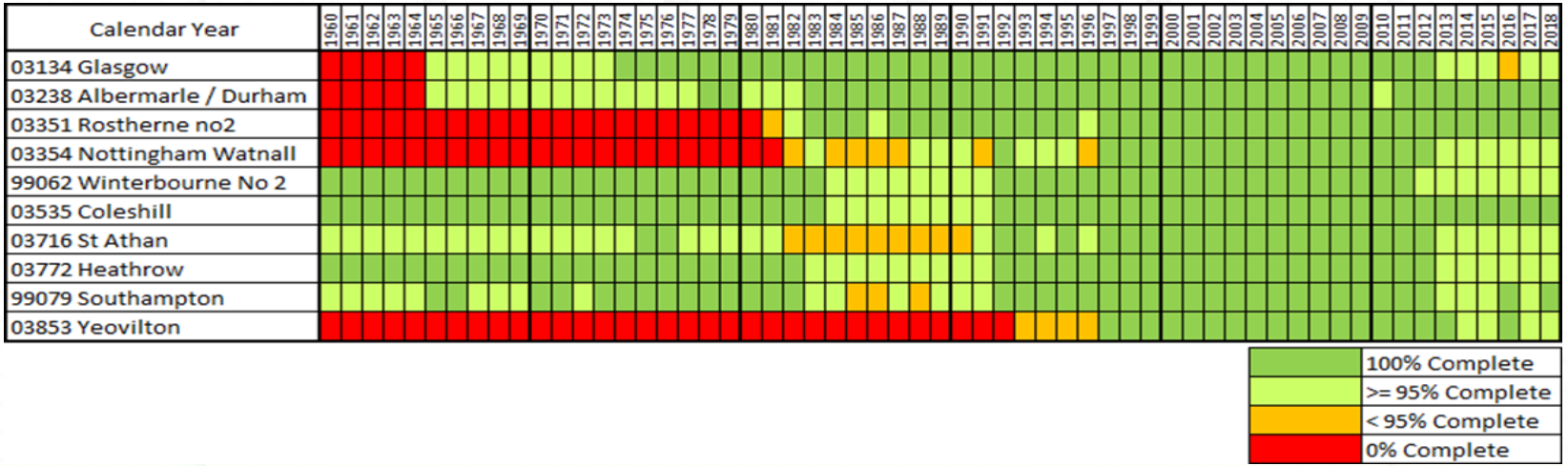


Key Points for SNCWV review

- Main focus from DESC this year has been on the review of the current definition of the CWV formula and improving its ‘fit’ to aggregate NDM demand
- Previous reviews were more focussed on the basis for deriving ‘Seasonal Normal’, hence the changes to UNC to utilise the use of a CCM and for DESC to have the responsibility for approving the final values
- DESC reviewed the CCM output in November 2017 and were satisfied it remained valid without the requirement for a fresh procurement – see results here
- The current SNCWV values have also recently been analysed at DESC in July 2019. Results confirmed it was a good benchmark of average weather in terms of ‘shape’ and ‘levels’ - see results here
- As referred to in recent correspondence, the Met Office have confirmed analysis of the current CCM would require a funded piece of analysis (impacting SN Review timetable)
- Approach for this year will propose to use the existing CCM datasets, they contain temperature projections upto 2025, which is the period the next SNCWV is likely to cover

SNCWV Data Requirements

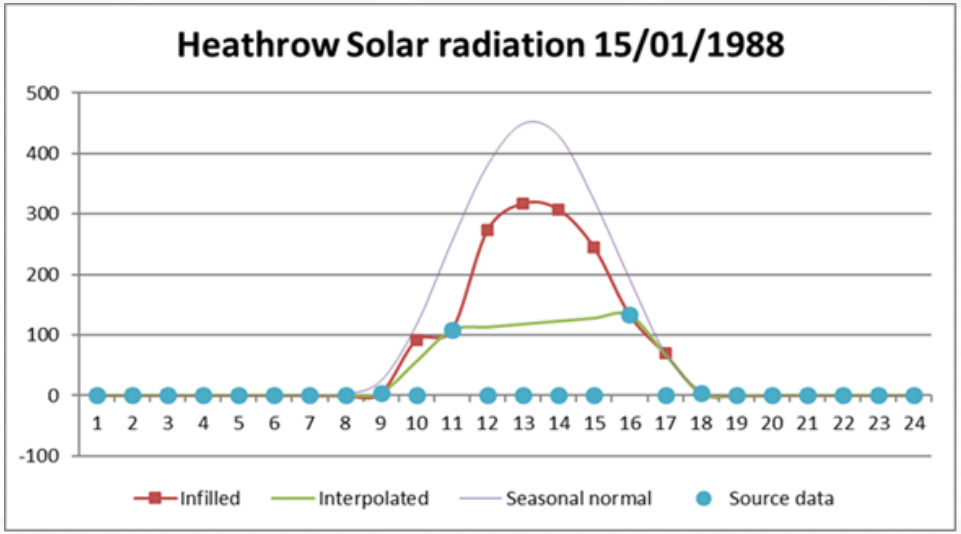
- To calculate the SNCWV in 2019, we require the following inputs:
  - An agreed definition of the CWV formula and optimised parameters ✓
  - Complete set of hourly observations for Temperature ✓, Wind Speed ✓ and Solar ✗ for the period 1960 to 2018/19
    - History of Solar observations is incomplete and will require infilling, much like we had to do in 2014 for Temperature and Wind Speed (see below)
  - CCM projections for 2020 to 2025 ✓
  - An approved methodology document for calculating the SNCWV utilising the above data ✗



Solar Radiation Infill

- As displayed in previous slide there is a combination of i) large periods of missing data (several years) and ii) short periods of missing data (hours within a day)

- We are currently working on an approach for infilling this missing data using a combination of interpolation and the seasonal normal profile (see example below)



- We shall issue a proposed infill methodology for DESC to review asap

Proposed Approach for SNCWV

- Follow similar approach to 2014 but using a different set of increments from future projections i.e. move them on to 2020-2025 period
- This could be the average of this 5 year period, the mid year or the final year (TBC)
- In addition we need to decide how to ‘rebase’ the subsequent Gas Years since the last calculation i.e. 2012/13 to 2018/19 to the 2011/12 base position
- We shall produce a proposal / schematic similar to slide 6 which will confirm how existing history and CCM datasets will be used
- We shall also prepare a detailed methodology once DESC are satisfied with the high level principles and approach

Next Steps – Seasonal Normal Review

- Setting SNCWV:
  - Prepare a draft methodology for deriving the SNCWV, including reference to an infill methodology for Solar Radiation
  - DESC approval of methodology (correspondence or ad-hoc T.Con)
  - Application of methodology and calculation of revised SNCWVs for each LDZ
  - DESC approval of SNCWVs (9th December DESC meeting)
  - UNCC approval sought