

XOSERVE

Seasonal Normal Review 2025

Demand Estimation – October 2025



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01

Background

X Seasonal Normal Review: Background (1 of 2)

- The “Seasonal Normal Review” represents an extensive investigation into the effectiveness of the Composite Weather Variable (CWV) formula **AND** the basis for deriving the Seasonal Normal Composite Weather Variable (SNCWV)
- The responsibilities for this piece of work resides with the Demand Estimation Sub Committee (DESC), who, on behalf of the gas industry, have obligations set out in UNC Section H (see below) to ensure the CWV formula definitions remain optimised to current demand behaviours and the SNCWV values are a good benchmark of typical weather for the period they represent
- DESC’s UNC Section H obligations:
 - *“1.4.3 The Committee will, at appropriate frequencies determined by it, **review** and where appropriate **revise** (with effect from the start of a Gas Year) the **formula** by which the **Composite Weather Variable** for an LDZ will be determined.”*
 - *“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.”*

X Seasonal Normal Review: Background (2 of 2)

- Why do the CWV and SNCWV values matter?
- The CWV and SNCWV are key building blocks used in producing End User Category (EUC) Demand Models and Gas Demand Profiles, namely: Annual Load Profiles (ALPs), Daily Adjustment Factors (DAFs) and Peak Load Factors (PLFs) which are subsequently used in:
 - the calculation of daily Class 3 and 4 NDM Nominations and Allocation
 - the calculation of a Class 3 and 4 Supply Meter Point's Annual Quantity (AQ)
 - the calculation of a Class 3 and 4 Supply Meter Point's Peak Offtake Quantity (SOQ)
 - any processes which perform Class 3 and 4 NDM Read Estimation
- DESC perform their review every 5 years, this provides a period of stability for the industry across the impacted processes but also ensures the weather vs demand relationship is refreshed
- In 2024 a Seasonal Normal Review took place with the revised values taking effect from 01 October 2025 meaning the current basis 'expires' on 30 September 2030
- The latest Seasonal Normal Review concluded in late 2024, which ensured that the revised values were available for Demand Modelling performed in the Spring/Summer of 2025, which in turn produces the Gas Demand Profiles ready for Gas Year 2025/26 onwards – i.e. 01 October 2025

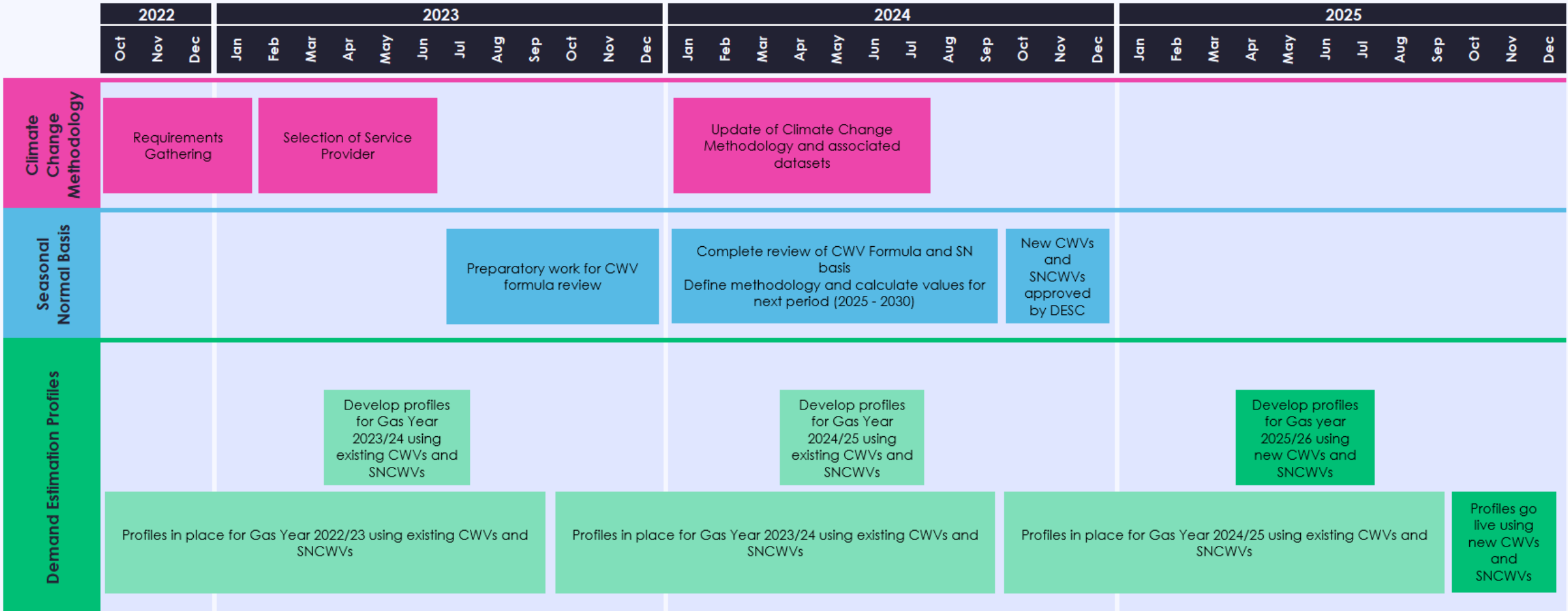
X Seasonal Normal Review 2025: Analysis

- There were **three** key phases to the Seasonal Normal Review analysis:
 - **Composite Weather Variable (CWV) Formula Optimisation**
The definitions and parameters used in the CWV formula have been freshly optimised for each LDZ using up to date views of daily NDM demand. More information on the CWV is available [here](#)
 - **Climate Change Methodology (CCM)**
Working alongside the Met Office, a set of future projections for the gas industry weather stations were derived
 - **Calculation of Seasonal Normal Composite Weather Variable (SNCWV)**
A new set of SNCWV values for each LDZ were calculated using the optimised CWV formula and CCM projections. More information on the SNCWV is available [here](#)
- The outputs from the Seasonal Normal Review 2025 are intended to be in place from 01 October 2025 to 30 September 2030



Seasonal Normal Review 2025 – High Level Timeline

- CWV/ SNCWV Review and Implementation



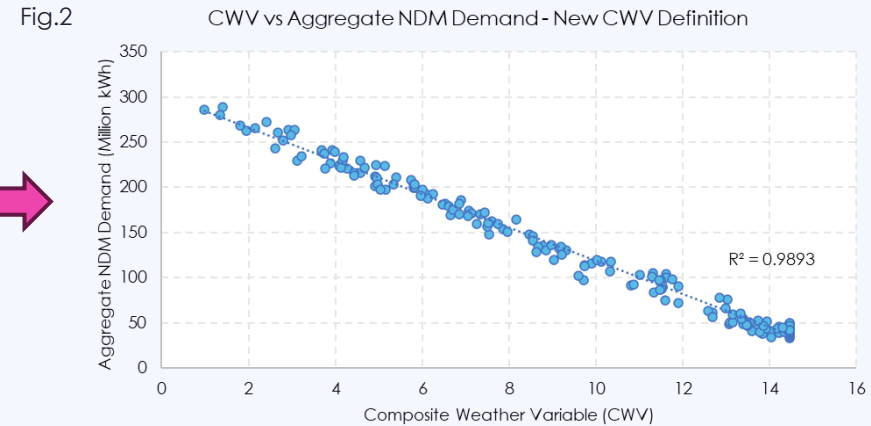
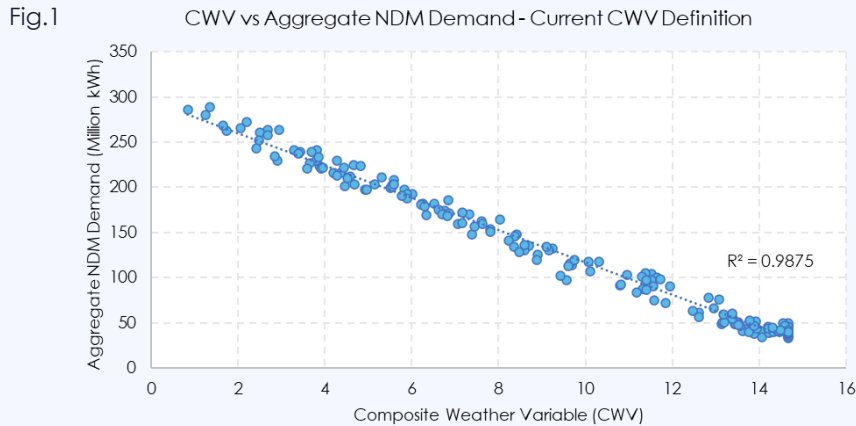


02

Analysis Summary

X Seasonal Normal Review 2025 - CWV Optimisation

- The goal of CWV Optimisation is to find a set of parameters which produces the best fit, on average, between CWV and an up-to-date view of recent aggregate NDM Demand. Re-optimising the parameters ensures they are more reflective of recent consumer reactions to weather. For this review DESC agreed a period of 8 Gas Years should be used – 2015/16 to 2022/23.



- CWV plotted against Aggregate NDM demand for a single Gas Year using current '2020' CWV parameters (Fig.1). An improvement in the relationship (measured by R^2) can be observed using the newly optimised parameters (Fig.2)
- A summary document describing the end-to-end CWV Optimisation process can be found on UKLinkDocs, under folder:

[18. NDM Profiling and Capacity Estimation Algorithms / 2025-26 Gas Year / 5. Seasonal Normal 2025 / 'Approach to CWV Optimisation 2025.pdf'](#)

X Seasonal Normal Review 2025 - CWV Parameters

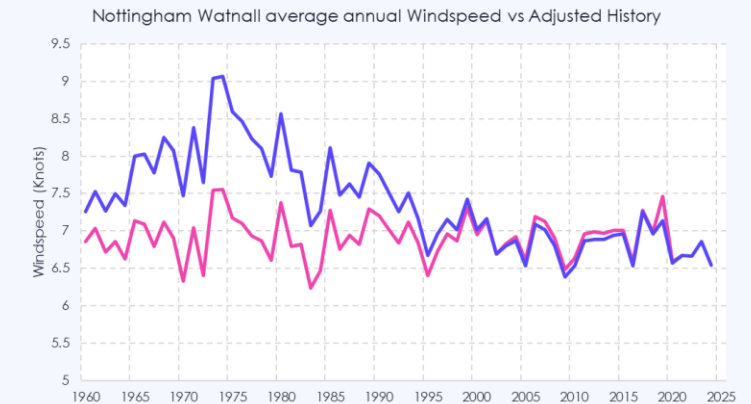
- The following parameters were approved by [DESC on 08 October 2024](#) to be used in the CWV formula effective from 01 October 2025

LDZ	y	I1	I2	I3	V0	V1	V2	q	W0	T0	S0
EA	0.442	0.720	0.012	0.065	3.774	15.312	18.901	0.391	-2.296	14.837	0.632
EM	0.437	0.683	0.009	0.049	4.222	12.832	16.490	0.446	-1.988	17.872	0.778
NE	0.429	0.669	0.009	0.024	3.063	12.853	16.624	0.454	-2.306	21.068	0.759
NO	0.494	0.661	0.009	0.130	2.388	12.240	15.320	0.477	-1.826	16.504	0.950
NT	0.496	0.724	0.014	0.078	4.995	15.256	19.309	0.439	-5.875	14.574	0.598
NW	0.469	0.634	0.008	0.227	3.041	12.513	16.192	0.479	-4.817	23.705	0.938
SC	0.476	0.661	0.010	0.138	1.173	12.672	16.119	0.497	-5.186	16.046	0.629
SE	0.426	0.756	0.006	0.141	2.658	14.182	18.640	0.373	-0.610	21.613	0.470
SO	0.434	0.698	0.014	0.090	5.000	15.213	18.028	0.427	-5.758	13.187	0.654
SW	0.440	0.626	0.009	0.162	3.982	13.511	17.044	0.355	0.511	21.866	0.802
WM	0.451	0.688	0.010	0.105	4.996	13.173	17.328	0.364	-4.105	19.128	0.751
WN	0.466	0.600	0.011	0.338	3.549	12.796	16.520	0.452	-2.910	18.139	0.861
WS	0.477	0.653	0.006	0.114	5.000	13.965	16.525	0.385	-3.815	19.590	0.958

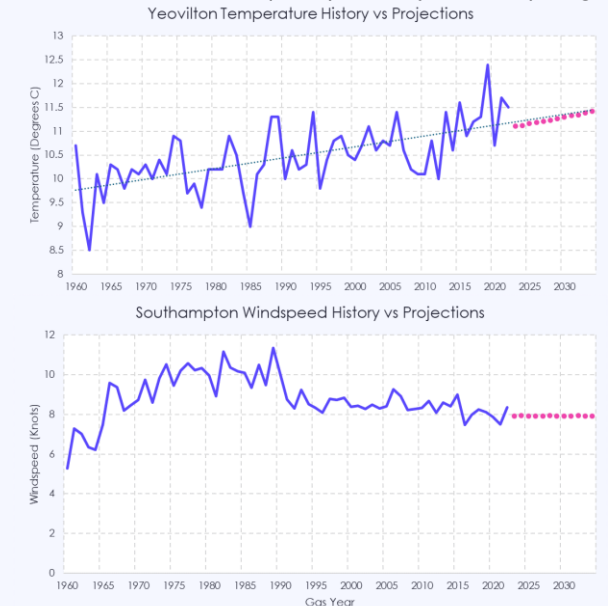
X Seasonal Normal Review 2025 - CCM Outputs

- In 2023, in preparation for a new Seasonal Normal basis, DESC confirmed that a refresh of the Climate Change Methodology (CCM), from a reputable meteorological services provider, was required to ensure that latest climatological studies were utilised to underpin the gas industry's calculations. In September 2023, the Met Office was confirmed as the preferred provider
- During the first half of 2024, the Met Office produced an updated CCM and associated datasets (in line with [DESC's Technical Requirements](#)). This was based around the studies and outputs from UKCP18 (see next slide)
- The outputs from the CCM included:
 - An adjusted history from Gas Year 1960/61 with the effects of long-term climate change removed (Fig. 1) adjusted to a common 'Base year'
 - An updated history of complete hourly observations for all weather stations, required for derivation of adjusted history
 - Projections for all relevant weather variables and weather stations up to and including Gas Year 2034/35 (Figs.2 & 3)
 - A set of increments derived from the difference between the Projections and 'Base year' level of all-weather variables
- The CCM output was approved by [DESC on 08 October 2024](#), for its use in the SNCWV calculations.

Fig.1 Actual History (Blue) vs Adjusted History (Magenta)



Figs 2 & 3 Actual History (Blue) vs Projections (Magenta)



X Seasonal Normal Review 2025 – CCM: UKCP18

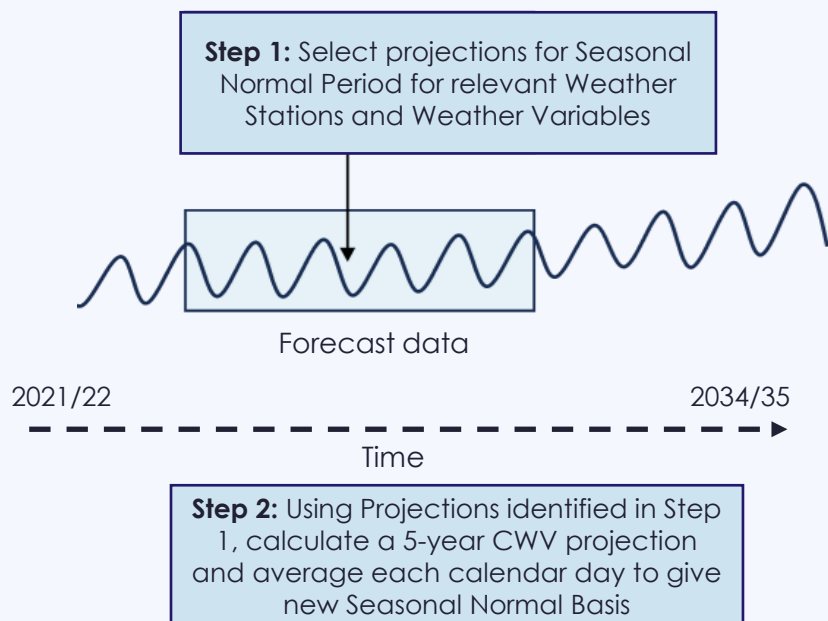
- What is UKCP18?
 - *“UKCP18, released in November 2018, is a set of climate model projections produced by the Met Office. Building on the success of UK Climate Projections 2009 (UKCP09), the UK Climate Projections 2018 delivers a major upgrade to the range of UK climate projection tools designed to help decision-makers assess their risk exposure to climate. The UKCP18 project uses cutting-edge climate science to provide updated observations and climate change projections out to 2100 in the UK and globally. The project builds upon UKCP09 to provide the most up-to-date assessment of how the climate of the UK may change over the 21st century.”*
- How has UKCP18 been used in the Climate Change Methodology (CCM)?
 - *“The UKCP18 Probabilistic Projections are used as the basis for the future projections and climate change increments in the updated CCM ... The UKCP18 Probabilistic Projections have the added benefit that any biases between the various climate models and the observations have already been adjusted during the combination process, removing the need for further processing. This makes the UKPC18 Probabilistic Projections and ideal replacement for the datasets used in the previous CCM”*
- Further information on the CCM, including all output files, can be found on UKLinkDocs here:

[18. NDM Profiling and Capacity Estimation Algorithms / Climate Change Methodology 2024 /](#)

- [1. Methodology](#) – Full CCM report produced by Met Office detailing process of creating datasets, including an overview of UKCP18 where above excerpts were taken from.
- [2. Datasets](#) - Adjusted Histories, Future Projections, and Updated Histories for all Stations/ Variables
- [3. Supporting Information](#) – Any additional information relating to the CCM Project

X Seasonal Normal Review 2025 – Calculation of SNCWV

- Following the approval of a set of re-optimised CWV parameters, and an updated set of CCM outputs, a new Seasonal Normal Basis has been calculated for each Local Distribution Zone (LDZ).
- The new Seasonal Normal Basis is targeted at Gas Years 2025/26 to 2029/30 and is derived purely from the CCM projections, as detailed in the following steps:



- **Step 1:** Identify the relevant weather variable Projections from CCM output covering period 01/10/2025 05:00 to 01/10/2030 04:00
- **Step 2:** Calculate Projected CWV values from the projected weather data obtained in Step 1 and take an average across the 5 Gas Years to give the Seasonal Normal profile for each LDZ
- A summary document describing the full calculation of the SNCWV can be found on UKLinkDocs under folder: [18. NDM Profiling and Capacity Estimation Algorithms / 2025-26 Gas Year / 5. Seasonal Normal 2025 / 'Approach to Seasonal Normal Basis 2025.pdf'](#)

X Seasonal Normal Review 2025 – SNCWV Profiles

- Across all LDZs, SNCWV profiles have generally increased across all months to account for the latest view of climate, such as warmer temperatures.
- The revised SNCWV profiles were approved by DESC at its meeting on [12 December 2024](#)
- The example in Fig.1 and Fig.2 shows LDZ 'NO' has increased significantly due to a large decrease in adjusted historical Windspeed
- A full appendix including a breakdown of the differences between the 2020 and 2025 SNCWV calculations for all LDZs is provided in accompanying appendix published to the [April 2025 DESC meeting area](#).

Fig.1 LDZ NO SNCWV Profile, current vs new CWV definition

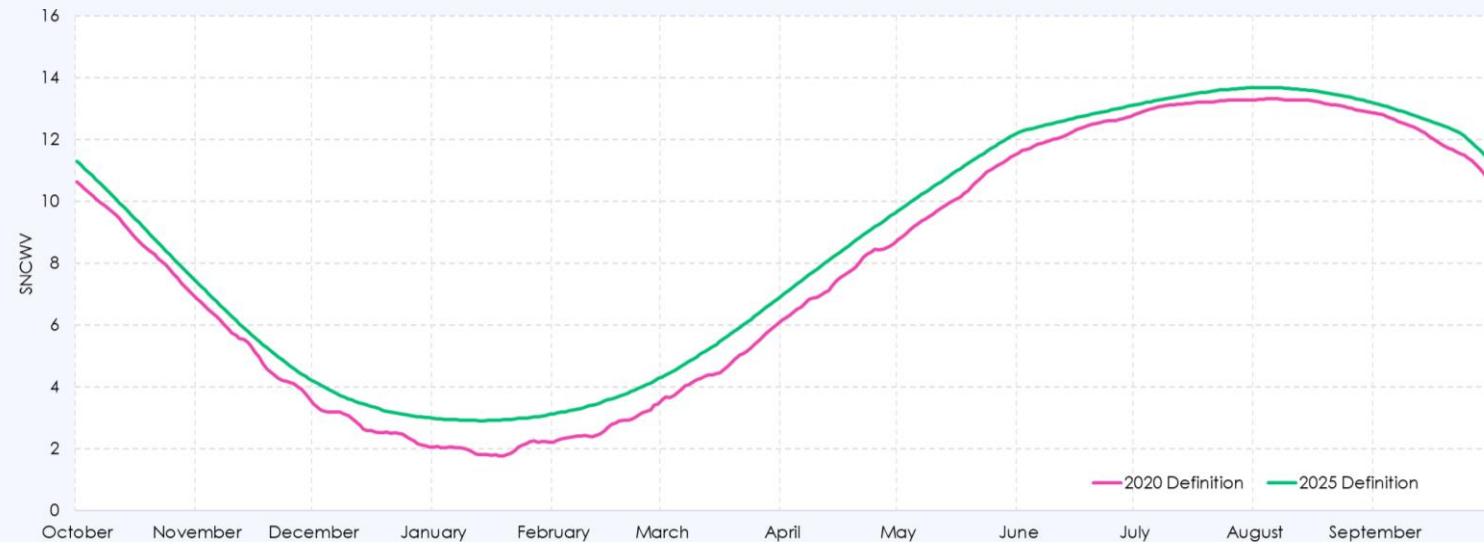


Fig.2 Breakdown of monthly input differences between 2020 and 2025 SNCWV calculations and profiles

Difference in:	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CWV Formula	0.04	0.02	0.15	0.17	0.15	0.09	0.18	0.19	0.07	0.08	0.14	0.13
Temp (deg)	0.23	0.09	-0.01	0.13	0.18	0.28	0.30	0.26	-0.01	-0.16	-0.15	0.07
Windspeed (kn)	-4.04	-4.25	-4.39	-4.63	-4.37	-4.75	-4.24	-3.96	-3.86	-3.38	-3.46	-4.09
Solar (kj/m²)	248	106	56	122	173	376	566	554	799	616	511	371
SNCWV	0.56	0.53	0.73	0.97	0.88	0.85	0.85	0.28	0.45	0.30	0.35	0.49

X Seasonal Normal Review 2025 – Summary

- From 01 October 2025 a new Seasonal Normal basis will take effect, so what does this mean?
 - The Composite Weather Variable (CWV) formula is unchanged and remains a single value per Local Distribution Zone (LDZ) per Gas Day however it will be calculated using the new optimised parameters
 - The Seasonal Normal Composite Weather Variable (SNCWV) remains a single value per LDZ per Gas Day however the values will change using the latest set of Climate Change Methodology predictions
 - The formula for Class 3 and 4 NDM Nominations and Allocation calculations are unchanged however it will use CWVs based on the new optimised parameters and revised SNCWV values
 - ALL Rolling AQs / SOQs for Class 3 and 4 Supply Meter Points will reflect the new view of Seasonal Normal weather, either by:
 - Calculating an AQ using reads submitted during September 2025 which will refer to revised Weather Adjusted Annual Load Profiles (WAALPs) **or**
 - Applying a Seasonal Normal Ratio to existing AQ where an AQ was not calculated during September 2025
 - Note: Billing AQs / SOQs will remain unchanged and will only reflect the new Seasonal Normal basis from April 2026 (based on December 2025 snapshot)
 - Class 3 and 4 Read Estimation processes are unchanged but will refer to revised Weather Adjusted Annual Load Profiles (WAALPs)



03

Implementation

X Reminder: Why do AQs and SOQs need to change?

- An AQ represents the 'normal' annual consumption for a Supply Meter Point which has been based on a pair of meter readings. There are 2 components to the AQ calculation:
 - Part 1 is to calculate the ACTUAL consumption between Read x and Read y
 - Part 2 is to 'weather correct' the ACTUAL consumption in order to represent an annual NORMAL consumption
- The 'weather correction' element is referred to as the Weather Adjusted Annual Load Profile (WAALP). This utilises the ALP, DAF, SNCWV and CWV, all of which are impacted by the outcomes from the Seasonal Normal Review
- Where it has not been possible to calculate an AQ in time for 01 October, a Seasonal Normal Ratio is required to adjust the current AQ to ensure all Live Supply Meter Points effective from 01 October 2025 will be on the same Seasonal Normal weather basis. The SN Ratio for each EUC has been applied to those Supply Meter Points which failed to calculate in the September 2025 AQ calculation run
- SOQs, which represent the expected peak day consumption of a Supply Meter Point, are a function of the AQ and the Peak Load Factor (PLF) and so naturally also changed. The PLF can change every year depending on the Demand Model characteristics, but this year also included changes as a result of the Seasonal Normal Review.

X Seasonal Normal Review 2025 - Implementation

- Following the completion of DESC's analysis, review, and decision-making phase at the end of 2024, it is necessary to 'implement' these new values during 2025
- Although all values become effective from Gas Day 01 October 2025 there are processes such as "EUC Demand Modelling" and "AQ calculation" that require work ahead of this date, summarised below:
- EUC Demand Modelling (April to July 2025):
 - DESC/ Industry approved Gas Demand Profiles (ALPs, DAFs and PLFs) for Gas Year 2025/26, using the new CWV and SNCWV values, have been published in the following folder in the secure area on UKLinkDocs
[18. NDM Profiling and Capacity Estimation Algorithms / 2025-26 Gas Year / 3 Demand Estimation Parameters / a End User Categories and Derived Factors](#)
- AQ Calculation (July to September 2025):
 - To support AQ calculations in September 2025, revised historical ALPs and DAFs for Gas Years 2018/19 to 2024/25 incl. based on 2025 EUC Demand Models have been calculated and published to UKLinkDocs
 - Seasonal Normal CWVs (SNCWV) for Gas Years 2018/19 to 2024/25 incl. have been produced and published to UKLinkdocs
 - CWVs have been calculated off-line using new formula for Gas Year 2024/25 and published to UKLinkDocs, also periodically until the end of the Gas Year
 - Seasonal Normal Ratios have been calculated, reviewed by DESC, and published to UKLinkDocs – more information [here](#)

X Seasonal Normal CWV Implementation: Key Milestones

Milestone	Lead	Status	When
Pre-Requirement: DESC Approval of Climate Change Methodology (CCM) Output	DESC	Complete	8 Oct '24
Pre-Requirement: DESC Approval of revised CWV Formula parameters	DESC	Complete	8 Oct '24
Pre-Requirement: DESC Approval of new SNCWV values for October 2025	CDSP	Complete	12 Dec '24
Publish CWV optimisation methodology and SNCWV calculation process documents	CDSP	Complete	28 Jan '25
Review indicative impacts to EUC Demand Modelling Profiles	DESC	Complete	28 Jan'25
Communication of DESC decisions, impacts to Industry processes and estimated timelines	CDSP	Complete	Jan-Mar '25
Perform EUC Demand Modelling for Gas Year 2025/26 using new CWV / SNCWV definitions	CDSP	Complete	Apr-Jun '25
DESC Consultation and Industry Approval of Gas Year 2025/26 Demand Profiles	DESC	Complete	Jun-Jul '25
Restate Historical Demand Profiles using latest Demand Models and calculate EUC Ratios	CDSP	Complete	Jul '25
Publication of Historical Demand Profiles and EUC Ratios	CDSP	Complete	Aug' 25
Gas Year 2025/26 Demand Profiles on new Seasonal Normal Basis Go-Live	CDSP	Complete	Sep-Oct '25

X Supporting Information available to Industry (1 of 2)

- Xoserve have published re-stated parameters, to support customers who wish to replicate values contained in Xoserve systems, on the secure area of Xoserve's website - UK Link Secured Documentation* - in '**5 Seasonal Normal 2025**' in the following location:

18. NDM Profiling and Capacity Algorithms

2025-26 Gas Year

1 Modelling Approach

2 Demand Estimation Sample Data

3 Demand Estimation Parameters

4 NDM Algorithms Booklet

5 Seasonal Normal 2025

- *Links to secured area and access request form can be found [here](#)

1. Annual Load Profile (ALP) and Daily Adjustment Factor (DAF)

- Files: [SN25_ALPDAF\[YY YY+1\].txt](#) – Restated Annual Load Profiles (ALP) and Daily Adjustment Factors (DAF) for Gas Years 2018/29 to 2024/25

Note: The ALPDAF file for Gas Year 2025/26 is located in Folder 3. Demand Estimation Parameters / a. End User Categories and Derived Factors

2. Seasonal Normal Composite Weather Variable (SNCWV)

- Files: [SN25_SNCWV\[YY YY+1\].txt](#) – New Seasonal Normal Composite Weather Variable (SNCWV) profiles for Gas Years 2018/29 to 2024/25
- File: [SNCWV25.txt](#) – New SNCWV profiles for Gas Year 2025/26

3. Composite Weather Variable (CWV)

- File: [SN25_CWV6024.txt](#) - Recalculated CWV history - Gas Years 1960/61 to 2023/24 incl.
- File: [SN25_CWV2425.txt](#) - Recalculated CWV history for Gas Year 2024/25

4. Seasonal Normal Ratios

- File: [SN25_AQ_Conversion_Factors.xlsx](#) – Approved EUC Seasonal Normal Ratios

'Read Me' document [SN25_ReadMe.pdf](#) provides instructions on interpreting above files

X Supporting Information available to Industry (2 of 2)

- In addition to the files referenced on the previous slide, the following data and information is also available in “Folder 5. Seasonal Normal 2025”:
 - Doc: [Approach to CWV Optimisation 2025.pdf](#) – Summary document describing CWV Optimisation Process
 - Doc: [Approach to Seasonal Normal Basis 2025.pdf](#) – Summary document describing SNCWV calculation
 - File: [SNET25.txt](#) – Revised Pseudo Seasonal Normal Effective Temperature (Pseudo-SNET) for Gas Year 2025/26
 - File: [SNES25.txt](#) – Revised Pseudo Seasonal Normal Effective Solar (Pseudo-SNES) for Gas Year 2025/26
 - File: [Effective Temperature_300925.txt](#) – ‘Seed’ Effective Temperatures for Gas Day 30 September 2025 on the new Seasonal Normal Basis
- Finally, if you have any questions on the Seasonal Normal Review 2025 process, these can be directed to the Demand Estimation team by raising a ‘Help and Support’ request via the Xoserve website [here](#)