Seasonal Normal Review Update

Wednesday 18th December 2019

Dear Customers and Industry Colleagues,

The Xoserve Demand Estimation team would like to share with you a further update on the progress of the Seasonal Normal Review, including the completion of a second industry milestone which has been achieved this month.

In October we reported on the first key milestone which was the industry approval of a revised formula for the Composite Weather Variable (CWV). We also provided some background information on what the Seasonal Normal Review is and why it is important. It would be helpful to read this in conjunction with todays update to provide the relevant context. Please find this here.

Seasonal Normal Composite Weather Variable (SNCWV)

The requirement for the industry to define a view of NORMAL weather (SNCWV) is important for calculations where 'weather correction' is necessary, this is present in three key industry processes:

Calculation of Annual Quantities (AQs)

The SNCWV plays a key part in the calculation of a Supply Point's Annual Quantity (AQ).
The AQ calculation has two components, i) the ACTUAL consumption between a pair of meter readings is calculated and ii) the ACTUAL consumption is weather corrected and 'converted' to a NORMAL annual consumption – the AQ.

Calculation of NDM Nominations and Allocations

When estimating consumption for the NDM population each day in Nominations and Allocation the calculations include the AQ as an input and a 'weather correction' for the day (the difference between ACTUAL weather (CWV) and a view of NORMAL weather (SNCWV) – referred to as the Weather Correction Factor (WCF)).

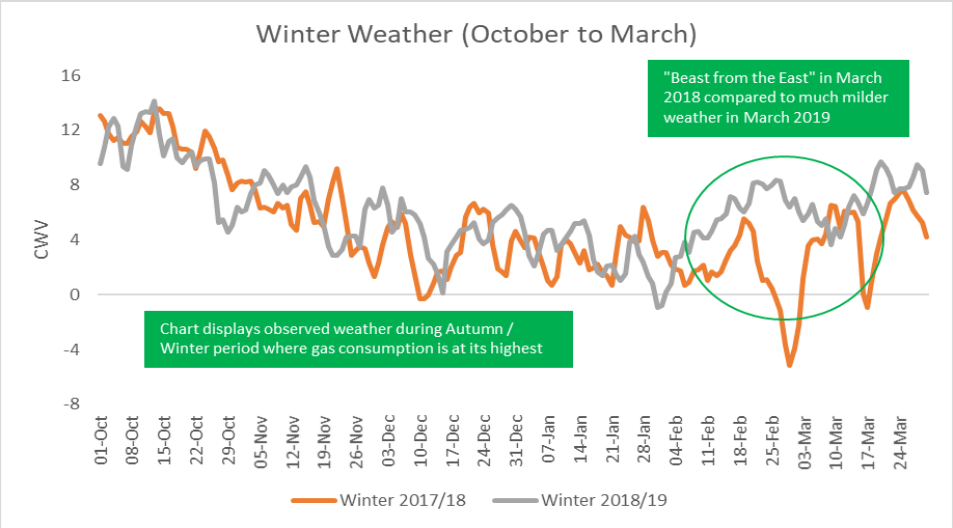
Calculation of Peak Offtake Quantity (SOQ)

When estimating PEAK gas consumption (i.e. the likely levels of gas consumption during extreme cold weather conditions) it is also important to understand the baseline level of gas consumption assuming NORMAL weather conditions. The difference between the two levels is represented by a data item called the "Peak Load Factor" which is used to calculate a Supply Point's Peak Offtake Quantity (SOQ).

Why do we need to 'weather correct'?

All industry parties, whether you are a Gas Shipper or Transporter, require a degree of certainty when making purchasing or investment decisions for the future.

Many of the gas industry processes require a baseline view of gas consumption as a starting point for estimation, which the AQ provides. One approach to calculating an AQ could be to look back at the previous 12 months ACTUAL consumption and use that as your estimation for the next 12 months, however an AQ that is based around ACTUAL consumption alone would potentially move quite drastically from one year to the next depending on the weather experienced. Consider the chart below:



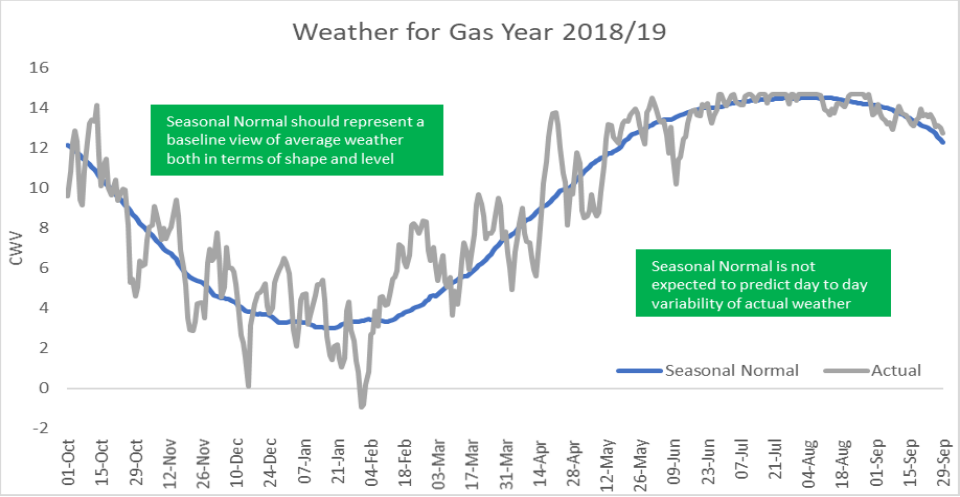
Commentary:

This chart represents the ACTUAL weather for the period 1st October 2017 to 30th September 2018 for one of our Local Distribution Zones (LDZs) and the ACTUAL weather for the period 1st October 2018 to 31st March 2019.

Notice how different the weather is from Winter 2017/18 to Winter 2018/19 and consequently how much different the annual consumption prediction would be if we based an AQ on purely ACTUAL consumption only.

This is why there is a component of the AQ calculation that converts ACTUAL to NORMAL consumption, this is referred to as the Weather Adjusted Annual Load Profile (WAALP) and is described in Section H of UNC 3.2.1

The chart below provides an example of the variability of ACTUAL weather versus the stability of NORMAL weather for an example LDZ.



In short, weather correction using the SNCWV provides stability for the industry and a benchmark for comparing ACTUAL weather with NORMAL weather.

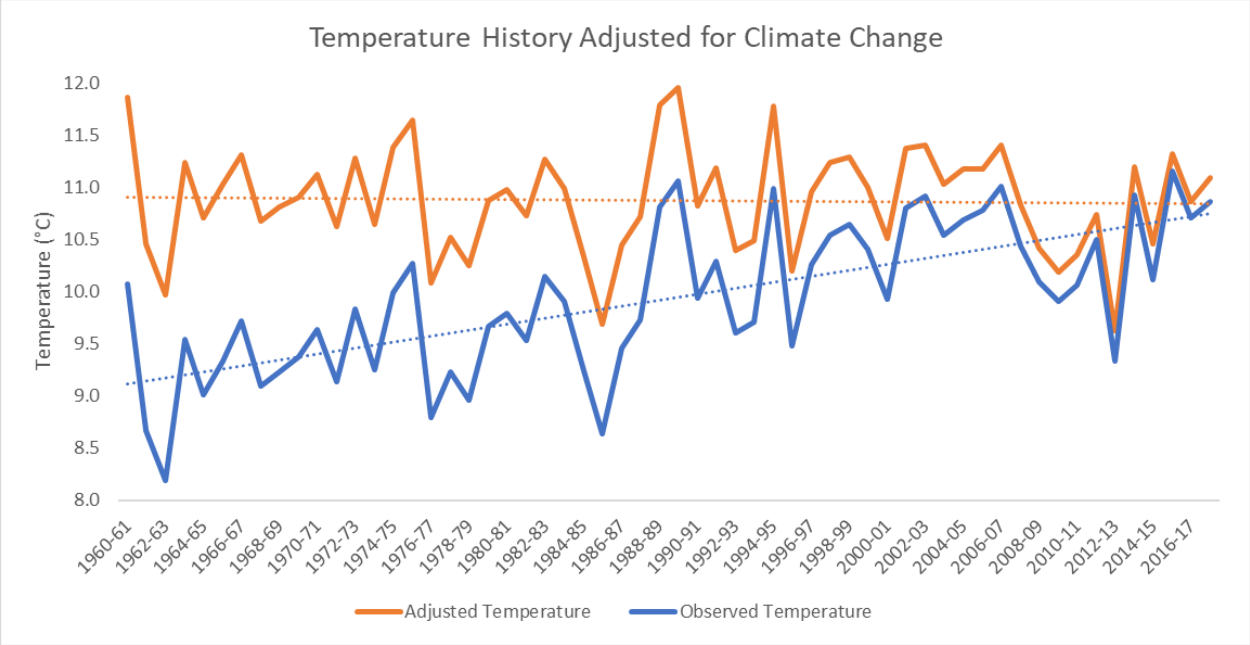
Who decides what is NORMAL weather?

The Demand Estimation Sub Committee (DESC) ultimately has the responsibility to review whether the existing basis of NORMAL weather is still relevant and appropriate, in line with their obligations in Section H of the UNC (1.5.3). However, there is clearly Meteorological expertise needed here to understand historical and future weather patterns which should help inform DESC's decision making.

In 2013 the industry procured services from the Met Office to perform analysis which assessed the impacts of Climate Change, the output from this analysis supported the last review of Seasonal Normal in 2014. The output from the Met Office work produced predictions of expected average weather as far as 2025. Following analysis to confirm the 2013 Met Office analysis remained relevant, this output has been used in the calculations of the new SNCWV.

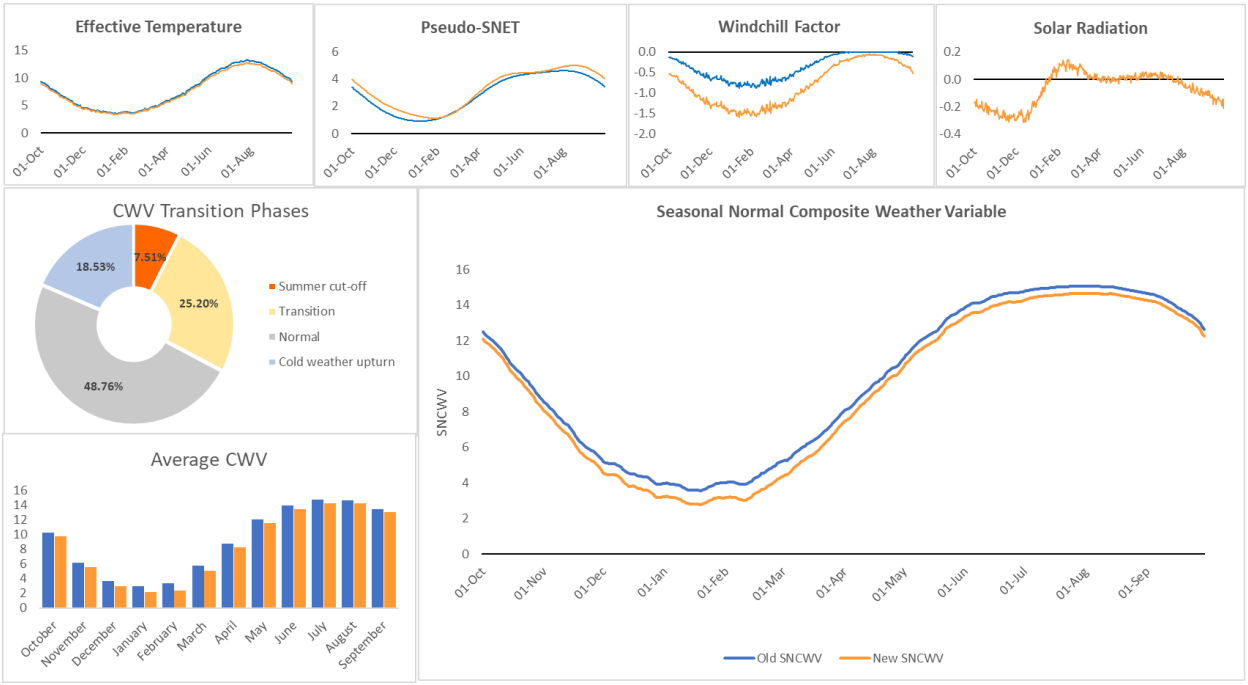
The chart below shows the gas industry weather history using ACTUAL temperatures (back to 1960) and an adjusted version, after taking into account the impacts of Climate Change.

As expected, you can see that the older years have been adjusted more for the impacts of Climate Change than the more recent years. This 'adjustment' allows for subsequent calculations to be done on a comparable basis.



Milestone 2: Seasonal Normal Composite Weather Variable (SNCWV) Basis Review and Revision (H.1.5.3)

During Q4 of 2019 and following the decision of DESC to revise the CWV formula definitions there has been significant analysis and calculations following an agreed methodology in order to produce a revised set of SNCWVs. The visual below is an example of the type of results DESC have been reviewing when considering the proposed SNCWV values.



As a result of this analysis the proposed set of SNCWV values for each LDZ were unanimously approved by DESC members at its meeting on 9th December. The full set of results are available here

The new SNCWV values will take effect on 1st October 2020, however they will be needed before this date for certain calculations – this is explained further in Next Steps.

Milestone	Status	Date
SNCWV Basis Review and Revision	Complete	9th December 2019

Next Steps

Although the new CWV formula and SNCWV values do not 'take effect' until 1st October 2020, they will in fact be used much earlier than this date. This is explained in the summary below:

Future Milestones:

- In Q1 of 2020 the Demand Estimation team at Xoserve shall be re-stating this year's demand models (approved in the Summer of 2019 and currently 'in play' for Gas Year 2019/20) using the new CWV history and SNCWV values. This exercise shall provide the first view of the likely impacts to the 'levels' of AQ and SOQ when calculated later in the year. These will be presented at DESC and will be included in future industry updates.
- In Q2 of 2020 the Demand Estimation team at Xoserve and DESC shall be performing the annual activity of deriving new gas consumption profiles for Gas Year 2020/21. This extensive analysis will be performed using the new CWV history and SNCWV values.
- In Q3 of 2020 the demand models which produce the new gas consumption profiles for Gas Year 2020/21 will be used to produce a revised set of historic WAALPS in readiness for the September AQ calculation job which will be calculating AQs for 1st October 2020.

  In addition, a set of Seasonal Normal Ratios will be produced to be applied to all those Supply Meter Points which do not have an AQ calculated in September 2020. This ensures that all AQs effective on 1st October are on the same Seasonal Normal basis.

Data Available Now:

The new history of ACTUAL CWVs (Gas Year 1960/61 to 2018/19) and the approved set of SNCWVs (Gas Year 2020/21) are available to parties of the UNC on the secure area of Xoserve's website.

Location: 18.NDM Profiling and Capacity Estimation Algorithms / 2020-21 Gas Year / 5 Seasonal Normal 2020

Further Information

If you have any questions or comments on any aspect of the Seasonal Normal Review, please contact us at Xoserve.demand.estimation@xoserve.com

Kind regards

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