



Demand Estimation Sub-Committee

Seasonal Normal Review

- Updated

17th December 2014

Seasonal Normal is the gas industry benchmark of what constitutes "typical" weather conditions, and is important because Annual Quantities for Non Daily Metered sites are set at the level of consumption expected under Seasonal Normal conditions. Weather for the gas industry is expressed in terms of the Composite Weather Variable (CWV), which is an amalgamation of actual and seasonal normal weather, with various parameters determining how those items are blended and how the values are "flexed" under extreme conditions.

The periodic review of the Seasonal Normal CWV is now the responsibility of the Demand Estimation Sub-Committee (DESC). This review normally happens every 5 or so years and the current basis has been in place since 1 October 2010. The rules are set out in UNC Section H.

DESC has been working towards a new SN basis throughout 2014. UNC now includes the concept of a Climate Change Methodology and DESC has agreed a detailed approach to create a new SNCWV from the outputs from this Methodology (which was developed by the Met Office). The proposed new Seasonal Normal can be seen in graphical form in the following presentation material.

The numeric values can be found on the Xoserve website UKLink Documentation. (Folder 18, 2015_16 Gas Year, 6. SN 2015)

At a meeting on 3 December, DESC reviewed and accepted the resulting values. DESC would like to give the wider Gas Industry the opportunity to comment or ask questions on the proposed values. Comments or questions can be raised via Xoserve Demand Estimation team at

Xoserve.demand.estimate@xoserve.com, no later than midday on Friday 12 December.

This will allow DESC to review any feedback at its next meeting on Wednesday 17 December. All DESC meetings are open to any parties, and the details and materials are always published on Joint Office website.

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- The proposed new Seasonal Normal basis uses the outputs from the Weather Station Substitution Methodology (a new Gas Industry agreed weather history) for the first time.
- 50 years of actual weather history have been used, and then uplifted to be consistent with Met Office projections of the impact of Climate Change over the 5 years commencing 1 October 2015 (output from the Climate Change Methodology project)
- The CWVs have been determined using the revised parameter values, as agreed by DESC at its November meeting
- A notable feature is that the proposed values are in general a little cooler than the current basis: this is consistent with the fact that in most LDZs on one of the last five years and two of the last 10 years have been warmer than current seasonal normal, in overall “degree days” terms

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- Glossary of Terms
- Seasonal Normal Review
 - Background
 - Summary of Approach
 - Trial Phase / Production Phase
- Explanation of Results
- Final SNCWV values by LDZ
- Next Steps

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Glossary of Abbreviations

- ALP *Annual Load Profile*
- AQ *Annual Quantity*
- CCM *Climate Change Methodology*
- CWV *Composite Weather Variable*
- DESC Demand Estimation Sub-Committee
- DD Degree day – see slide 15
- EUC *End User Category*
- LDZ Local Distribution Zone
- NDM Non-Daily Metered (i.e. *Non Daily Read*)
- SNCWV *Seasonal Normal CWV*
- SNET Seasonal Normal Effective Temperature
- SOQ *System Offtake Quantity* i.e. Peak Day Load
- TWG Technical Workgroup (of DESC)
- UNC Uniform Network Code
- WAALP Weather Adjusted ALP (used in AQ calculation)

Italics = UNC Defined Term

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Seasonal Normal Review

Background

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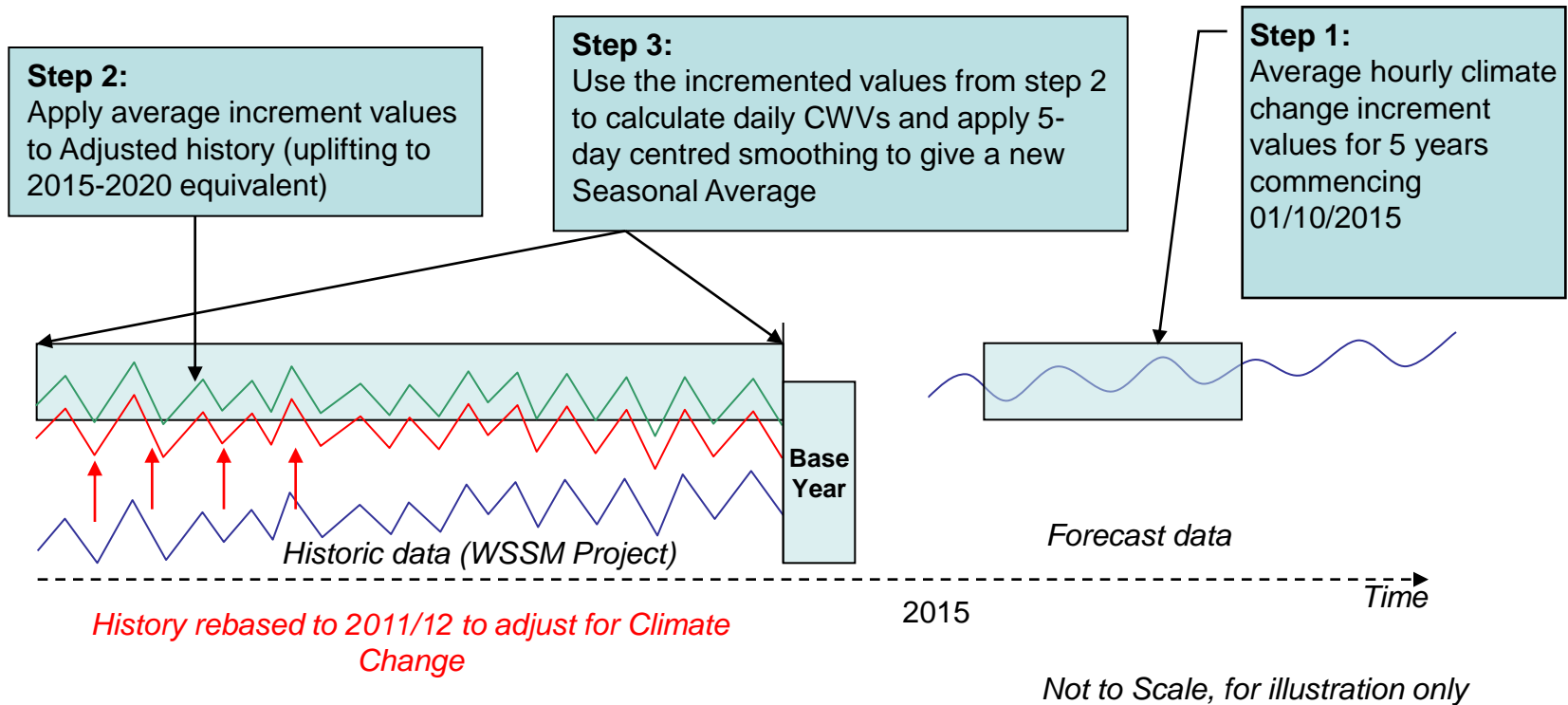
- The current Seasonal Normal Basis (SNCWV) introduced in October 2010 incorporated some outputs from Met Office EP2 Project – used estimated climate change increments
- UNC now states SNCWV should be based on output derived from ‘Climate Change Methodology’ (CCM)
- Requested outputs of CCM Project (*updated*)
 - 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 2013 agreed how the outputs will be used in defining SNCWV for G.Yr 2015 onwards

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Use of Met Office Deliverables



Outcome: a new Seasonal Normal basis for each LDZ, derived from over 50 years actual history, uplifted to be consistent with Met Office projections of the impact of Climate Change over the 5 years commencing 1 October 2015

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Key Aspects of New Seasonal Normal basis

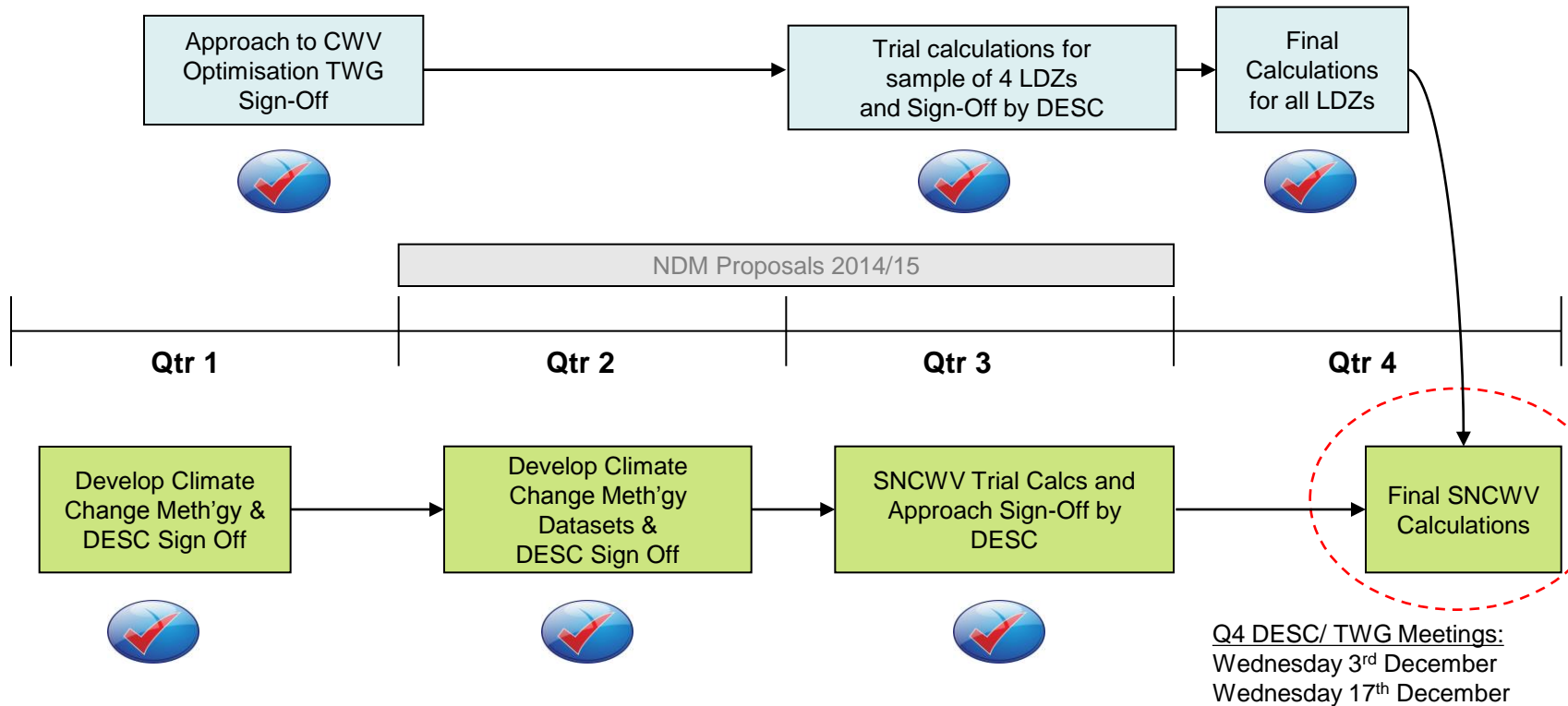
- The detailed approach document explaining the step by step process for deriving the new SNCWV can be viewed on the Joint Office website (under 3 December 2014 meeting)
- The main features of the approach are:
 - CCM temperature increments over the period 2015/16 to 2019/20 are averaged
 - Apply average increment values to CCM adjusted history (1960/61 to 2011/12)
 - Using CCM adjusted history for temperature (with increments added) and wind speed (no increments) calculate a CWV for each day in the period 1st October 1960 to 30th September 2012
 - In order to create a single CWV value for each day average the CWV values and then smooth using a 5 day centred moving average
- All source data used in the process will be available to all industry parties

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Seasonal Normal Review & CWV Optimisation Timeline



KEY:

CWV Optimisation

Derivation of SNCWV

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- A draft approach document describing how the Seasonal Normal Composite Weather Variable would be calculated was drafted and agreed during the Trial phase
- The approach was then followed using the appropriate CCM files and the **EXISTING** CWV parameters for 4 LDZs enabling some initial results to be reviewed
- The key objectives of the Trial phase were to check the approach had worked appropriately, review the likely output and agree any smoothing techniques that should be applied to the data (if necessary)
- At the DESC meeting on 15th October the approach document was formally approved. It was also agreed that a 5 day centred moving average should be applied as the smoothing technique

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- The objective of the Production Phase was to apply the approved methodology for calculating the SNCWV for all LDZs, using the appropriate data from the Climate Change Methodology project (CCM) and the recently approved set of **REVISED** CWV parameters (see slide 11)
- Although there are no decisions to make, as such, there will be a sense check necessary of the new SNCWV profiles. Therefore, for each LDZ a series of charts will be produced comparing the REVISED SNCWV with the EXISTING SNCWV
- At the end of the Production Phase TWG was asked to provide its recommendation to DESC on the new Seasonal Normal version of the CWV to be used for each LDZ with effect from 1st Oct '15
- TWG recommended the results, DESC needs to approve a revised set of SNCWVs and present to the industry by the end of the year, in readiness for AQ review 2015

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The revised parameters of each composite weather variable are as follows:

LDZ	Weather Station	I ₁	I ₂	I ₃	V ₀	V ₁	V ₂	q	W ₀	T ₀
SC	Glasgow Bishopton									
NO	Albermarle Barracks									
NW	Rostherne No 2									
NE	Nottingham Watnall									
EM	Nottingham Watnall									
WM	Birmingham Winterbourne 2 (wind speeds Coleshill)									
WN	Rostherne No 2									
WS	St. Athan									
EA	London Heathrow									
NT	London Heathrow									
SE	London Heathrow									
SO	Southampton Oceanographic Institute									
SW	Filton Weather Station									

Updated: December '15
Latest version of the CWV
parameters are available in
Appendix 12 of the current
Gas Years folder on the
secure Xoserve website

Seasonal Normal Review

Explanation of Results

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- The method used for assessing weather conditions in each gas year has been calculated using “degree days”. This is a technique which allows a quick comparison of CWV historic levels
- Degree Days – an explanation:
 - For any gas day, in any LDZ the value of degree days is given by:
degree days (on gas day t) = Threshold – CWV on gas day t
- Since CWV is defined in terms of their fit to aggregate NDM demand in each LDZ, the threshold value used is that applicable to aggregate NDM demand in each LDZ
- The choice of threshold ensures that degree day values are never negative
 - The degree day thresholds applied are provided at the end of the presentation
- The degree day bar charts for each LDZ have been displayed using a consistent scale, therefore the ‘bars’ for some of the warmer southerly LDZs will be lower down the slide

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- All data has been derived using the newly revised definitions of CWV
- Graphs are provided for each LDZ showing the current SNCWV profile and the new SNCWV profile (Results 1)
- Charts are provided for each LDZ showing the current and new SNCWV annual degree days and actual annual degree days for each year since 2004/05 (Results 2)
- % change assessment between the two profiles in degree day terms (Results 3)
- Files of data (for all LDZs) available on Xoserve secure website (UKLink Docs)
 - New SNCWV profile values (expressed for 2015/16 dates)
 - New SNET profile values (expressed for 2015/16 dates)
 - Historical daily CWVs for each LDZ: 01/10/1960 to 30/09/2014

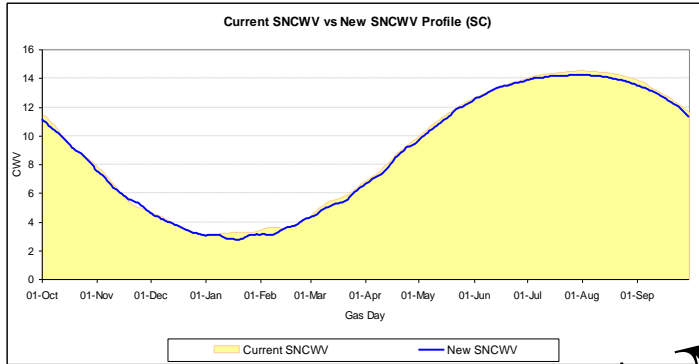
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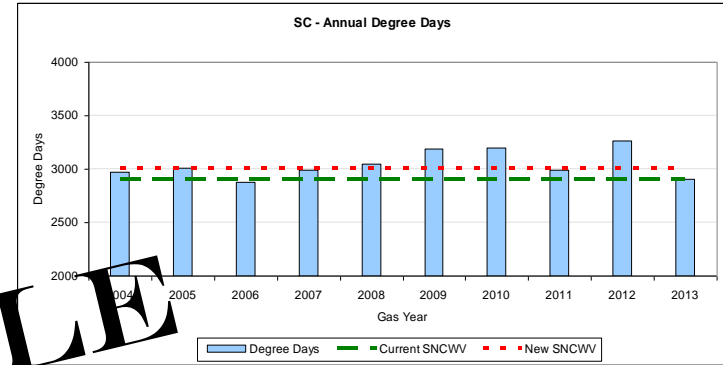
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Example of Results provided per LDZ

Results 1: SNCWV Profile Comparison



Results 2: Annual Degree Day analysis



EXAMPLE

Threshold	16.9
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Overall % change from current SNCWV		
Annual	3.6%	Colder
Dec to Feb	3.7%	Colder
Mar to May	3.1%	Colder
Jun to Aug	8.0%	Colder
Sep to Nov	2.0%	Colder

Results 3: % change summary

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for SC

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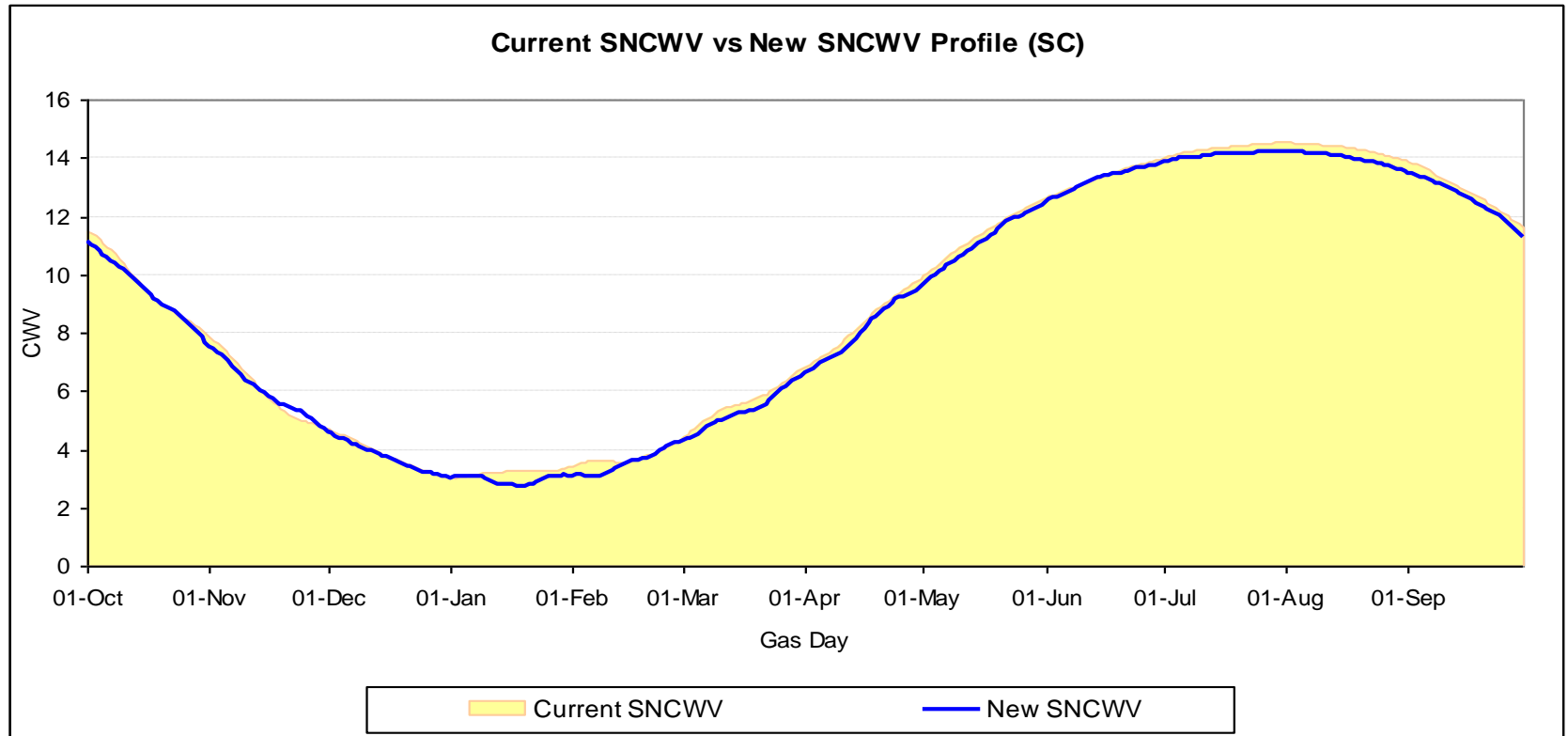
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- **Glasgow Bishopton** weather station (**03134**) used for **SC** calculations
- Source data used for increment calculations:
 - Temperature_03134_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03134_adjhist.txt and Windspeed_03134_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 11 records
 - Windspeed 1,030 records. Note this includes a significant missing period for the whole of April 1973
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: SC LDZ – SNCWV profile comparison

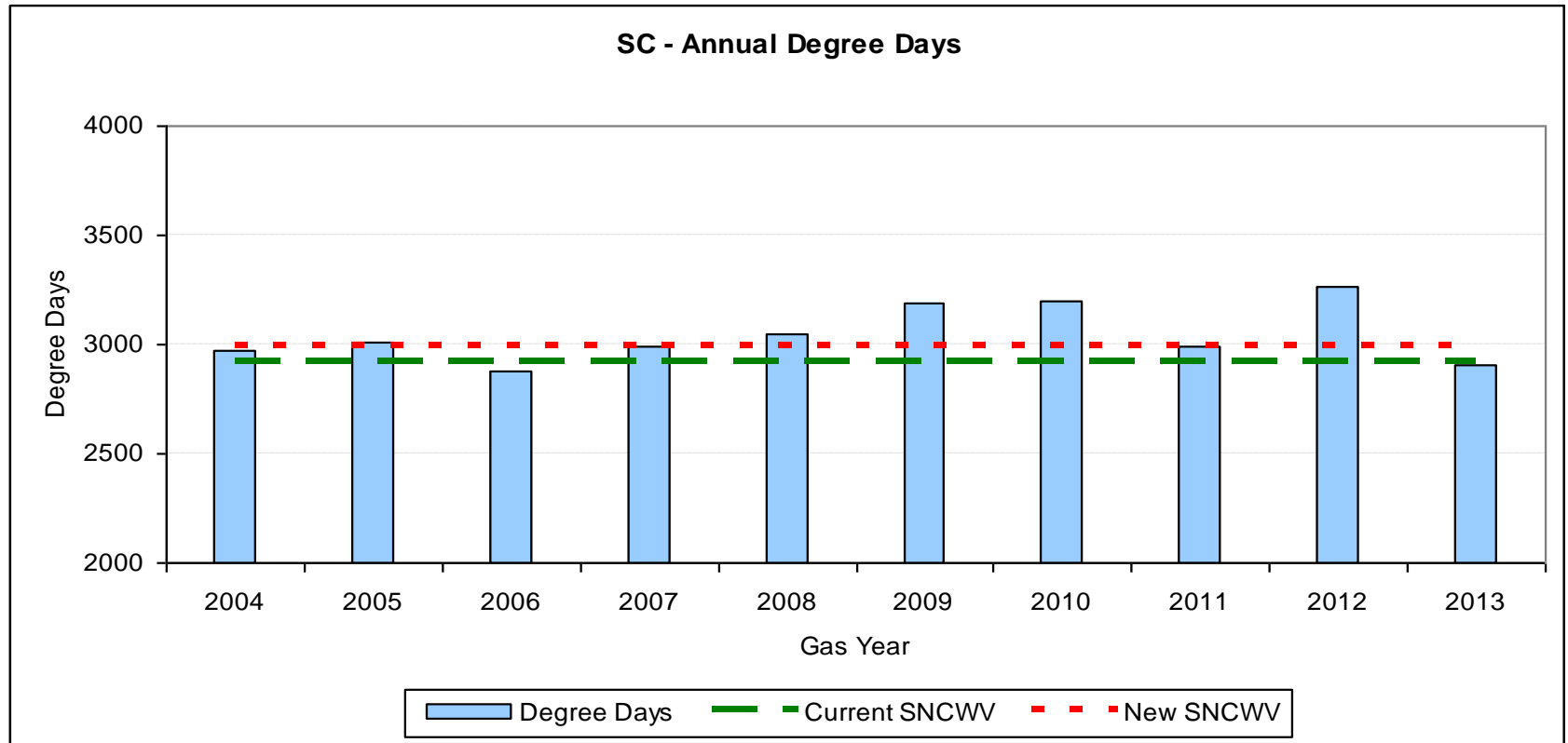


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Results 2: SC LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- Only 1 year in last 10 have been warmer than current Seasonal Normal

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Results 3: SC LDZ – % Change in SNCWV basis

DD Threshold	16.9	
Overall % change from current SNCWV		
Annual	2.6%	Colder
Dec to Feb	1.4%	Colder
Mar to May	3.1%	Colder
Jun to Aug	8.0%	Colder
Sep to Nov	2.0%	Colder

- New SNCWV approx 2.6% colder than current basis
- All 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for NO

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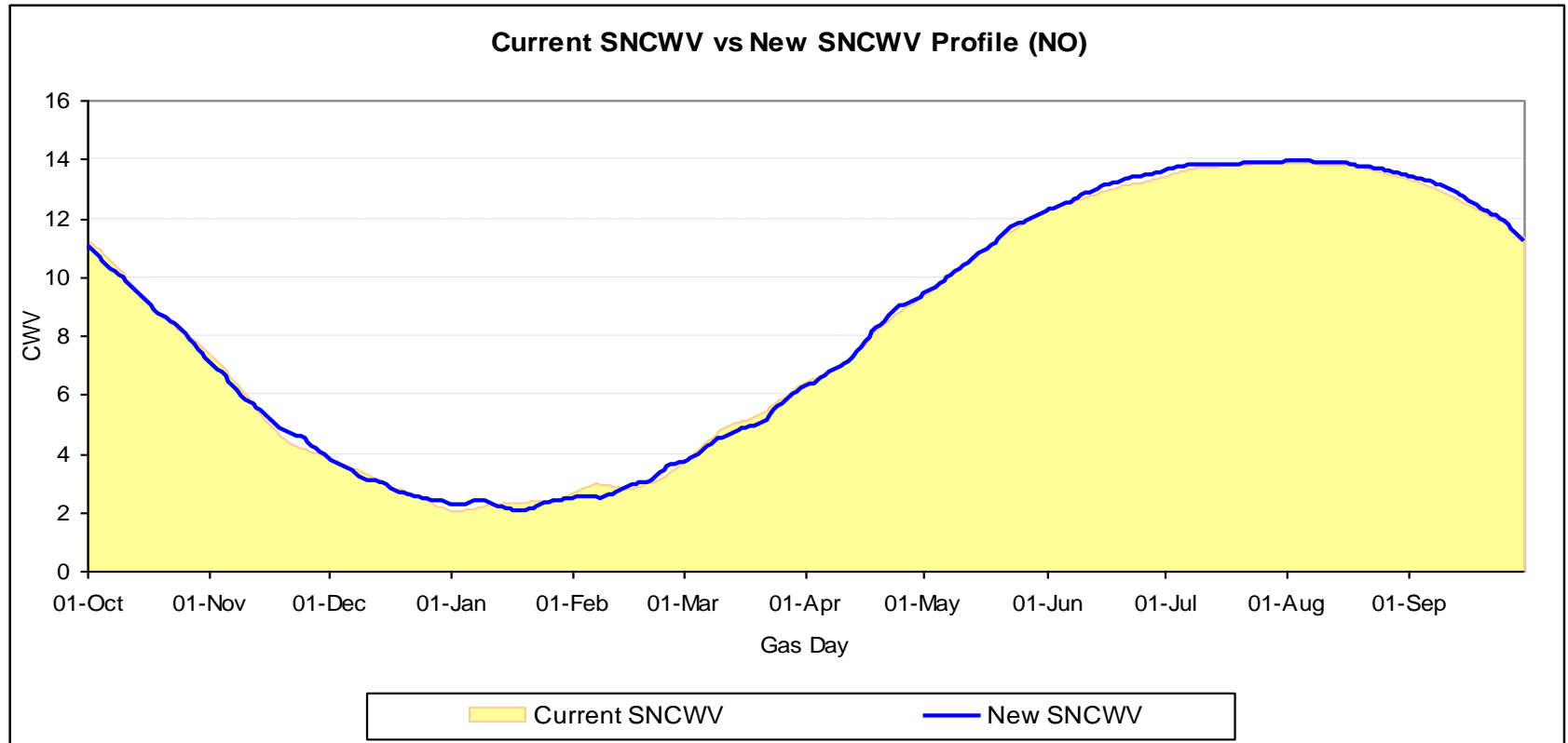
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- **Albermarle Barracks** weather station (**03238**) used for **NO** calculations
- Source data used for increment calculations:
 - Temperature_03238_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03238_adjhist.txt
 - Windspeed_03238_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 458 records
 - Windspeed 480 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: NO LDZ – SNCWV profile comparison

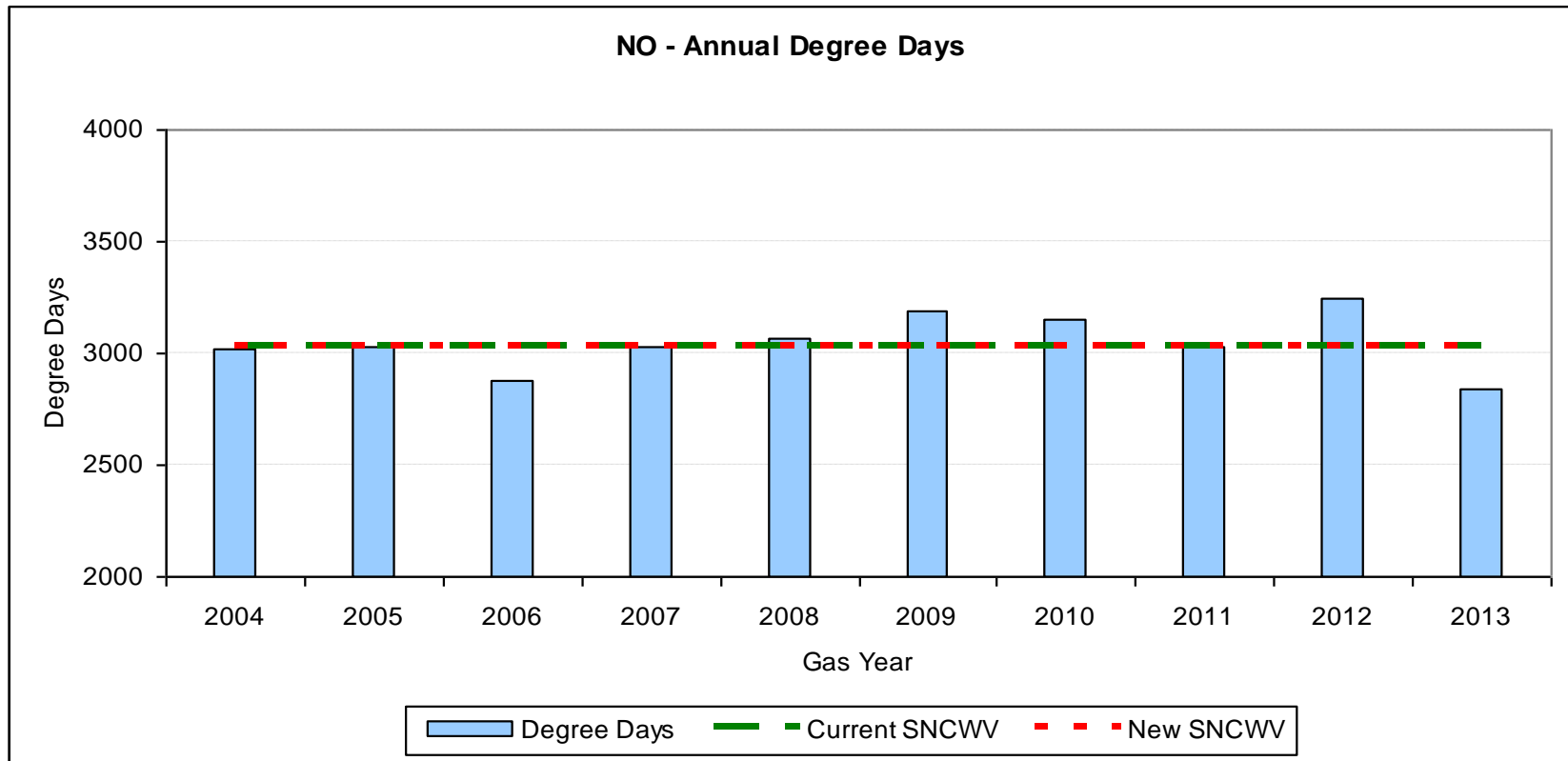


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Results 2: NO LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: NO LDZ – % Change in SNCWV basis

DD Threshold	16.6	
Overall % change from current SNCWV		
Annual	0.1%	Colder
Dec to Feb	0.3%	Colder
Mar to May	0.9%	Colder
Jun to Aug	-2.4%	Warmer
Sep to Nov	-0.4%	Warmer

- New SNCWV approx 0.1% colder than current basis
- 2 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable
(SNCWV) for NW/WN

Results Updated

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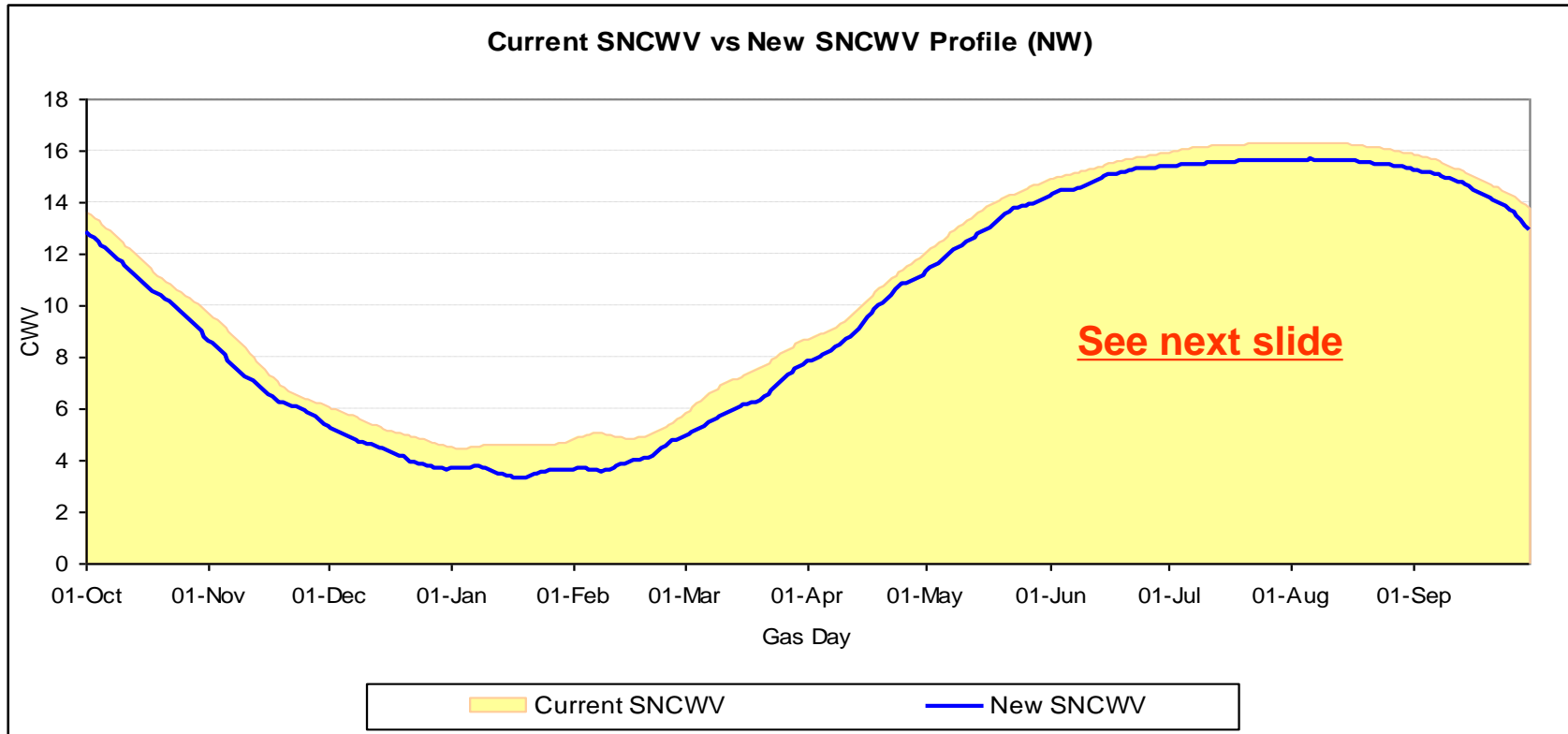


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- **Rostherne No.2** weather station (**03351**) used for **NW/WN** calculations
Note: This is a change from Manchester Hulme Library
- **New station is more rural and therefore records cooler temperatures which will naturally impact the new SNCWV calculations**
- Source data used for increment calculations:
 - Temperature_03351_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03351_adjhist.txt and Windspeed_03351_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 494 records and Windspeed 11 records
- CWVs calc'd from above data & TWG approved CWV parameters & Pseudo SNETs

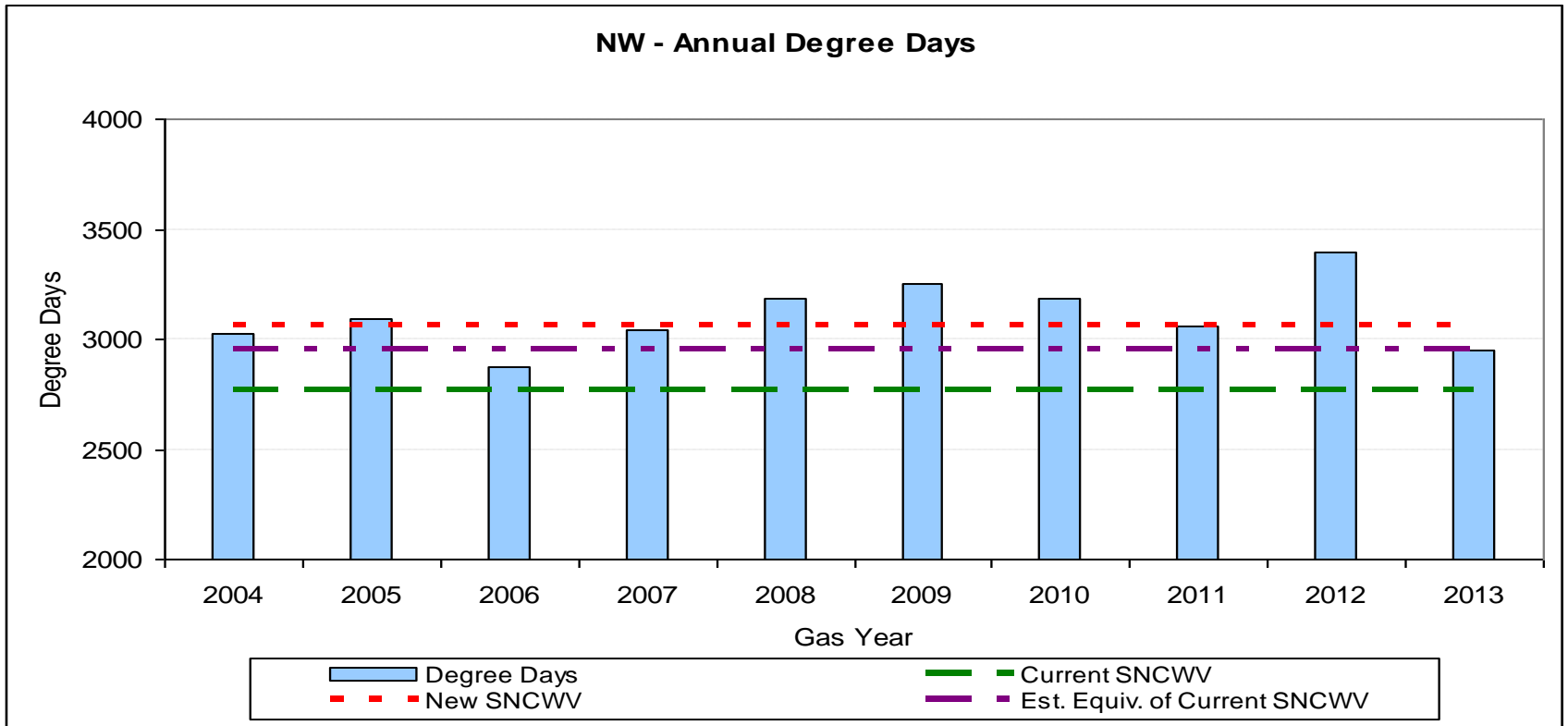
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- The comparison here displays the current SNCWV which was based on Manchester Hulme Library
- It is not surprising to observe the new SNCWV, based on rural location Rostherne No.2, at a lower level, as it is consistently cooler

- Initial results for NW / WN presented to DESC displayed the straight difference between the current SNCWV (based on Manchester Hulme Library) and the new SNCWV (based on Rostherne No.2)
- The results will have therefore included an element associated with the move to a quite different weather station
- A high level estimate of the differences between CWVs using Rostherne and Manchester Hulme library has been performed. This estimate has been applied to the current Manchester Hulme Library SNCWV in order to create an estimated equivalent of this value for Rostherne No.2
- The estimated equivalent SNCWV values have been compared with the NEW SNCWV values in order to create a more realistic likely change in seasonal normal CWV levels
- The results of this analysis can be seen on the following 2 slides



- Current SNCWV is based on Manchester Hulme Library and so not comparable with the actual weather experienced in last 10 years
- Purple line represents an estimated equivalent of the current SNCWV based on Rostherne No.2 weather station

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Results 3: NW/WN LDZ – % Change in SNCWV basis -

Updated

33

DD Threshold	18.3			
Overall % change from current SNCWV		Overall % change from Estimated current SNCWV (excl. Weather Station change)		
Annual	10.7%	Colder	3.8%	Colder

- New SNCWV approx 11% colder than current basis
- More than half of the difference is explained by use of a more rural weather station

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Results 3: NW/WN LDZ – % Change in SNCWV basis -

Updated

34

DD Threshold	18.3	
Overall % change from current SNCWV		
Annual	10.7%	Colder
Dec to Feb	7.5%	Colder
Mar to May	11.3%	Colder
Jun to Aug	26.4%	Colder
Sep to Nov	10.7%	Colder

- **As per previous slides**, these results were provided to DESC on 3rd Dec but it should be noted that the majority of % change is associated with the change in weather station

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for NE

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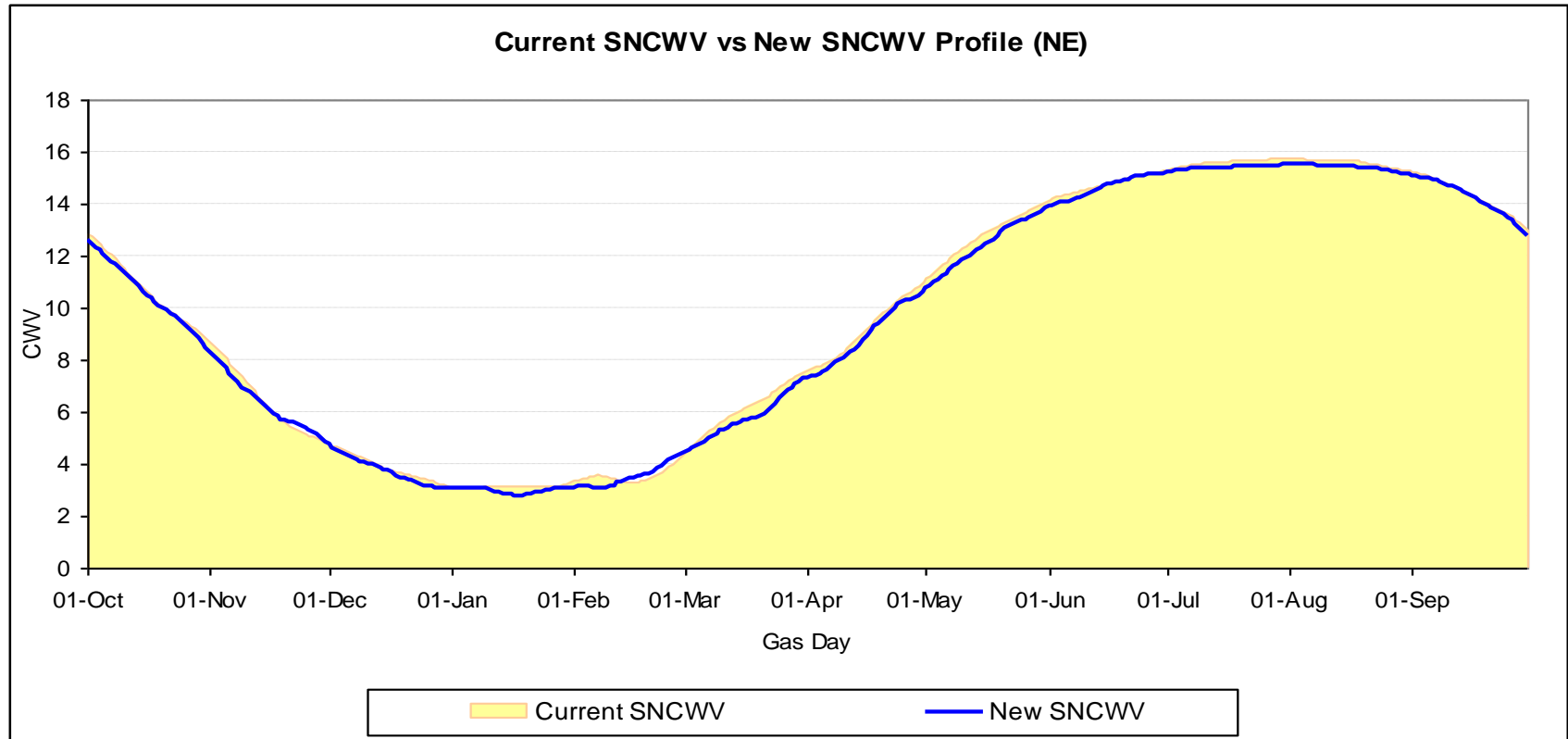
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- **Nottingham Watnall** weather station (**03354**) used for **NE** calculations
- Source data used for increment calculations:
 - Temperature_03354_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03354_adjhist.txt
 - Windspeed_03354_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 11 records
 - Windspeed 2 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: NE LDZ – SNCWV profile comparison

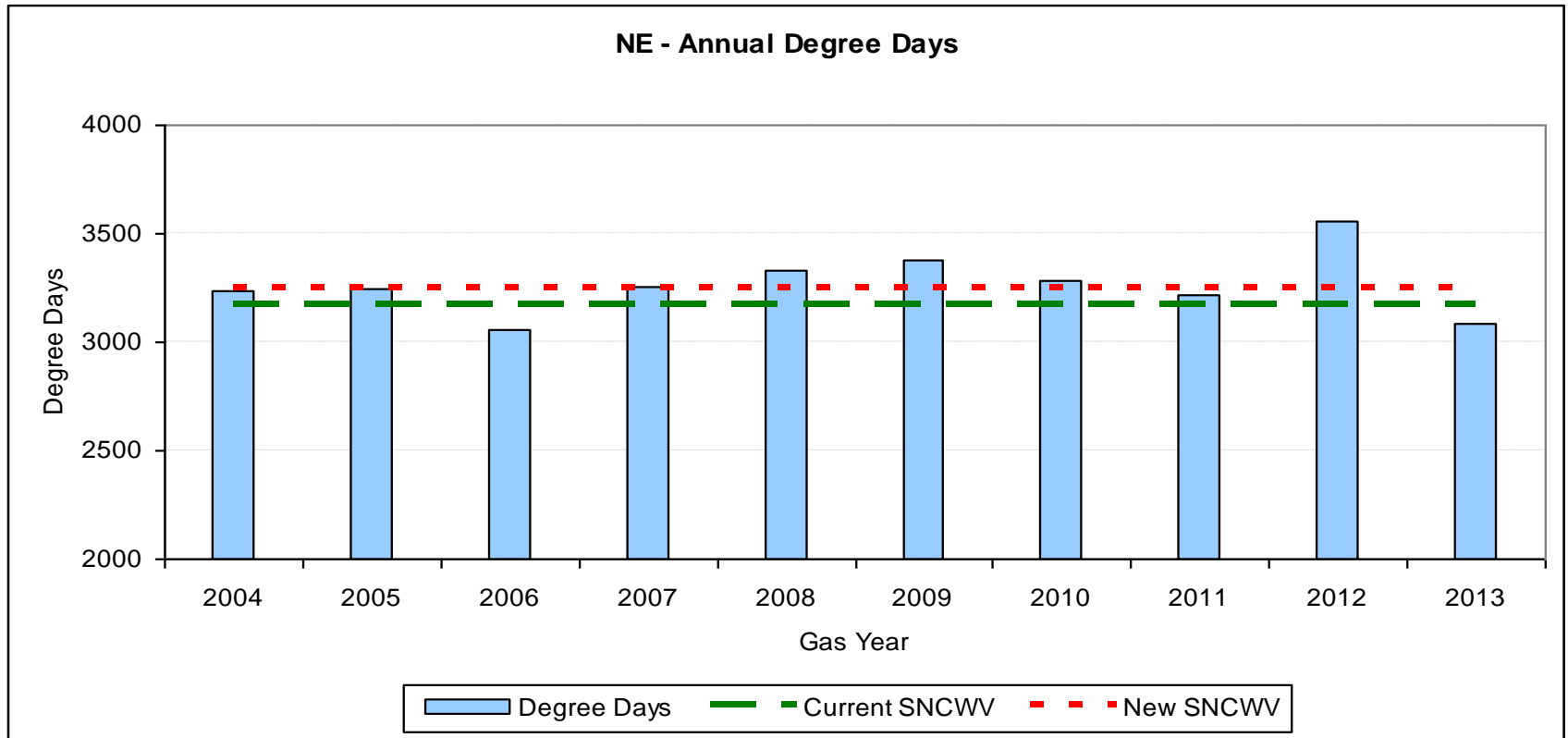


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Results 2: NE LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: NE LDZ – % Change in SNCWV basis

DD Threshold	18.4	
Overall % change from current SNCWV		
Annual	2.2%	Colder
Dec to Feb	0.8%	Colder
Mar to May	3.9%	Colder
Jun to Aug	6.0%	Colder
Sep to Nov	1.5%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for EM

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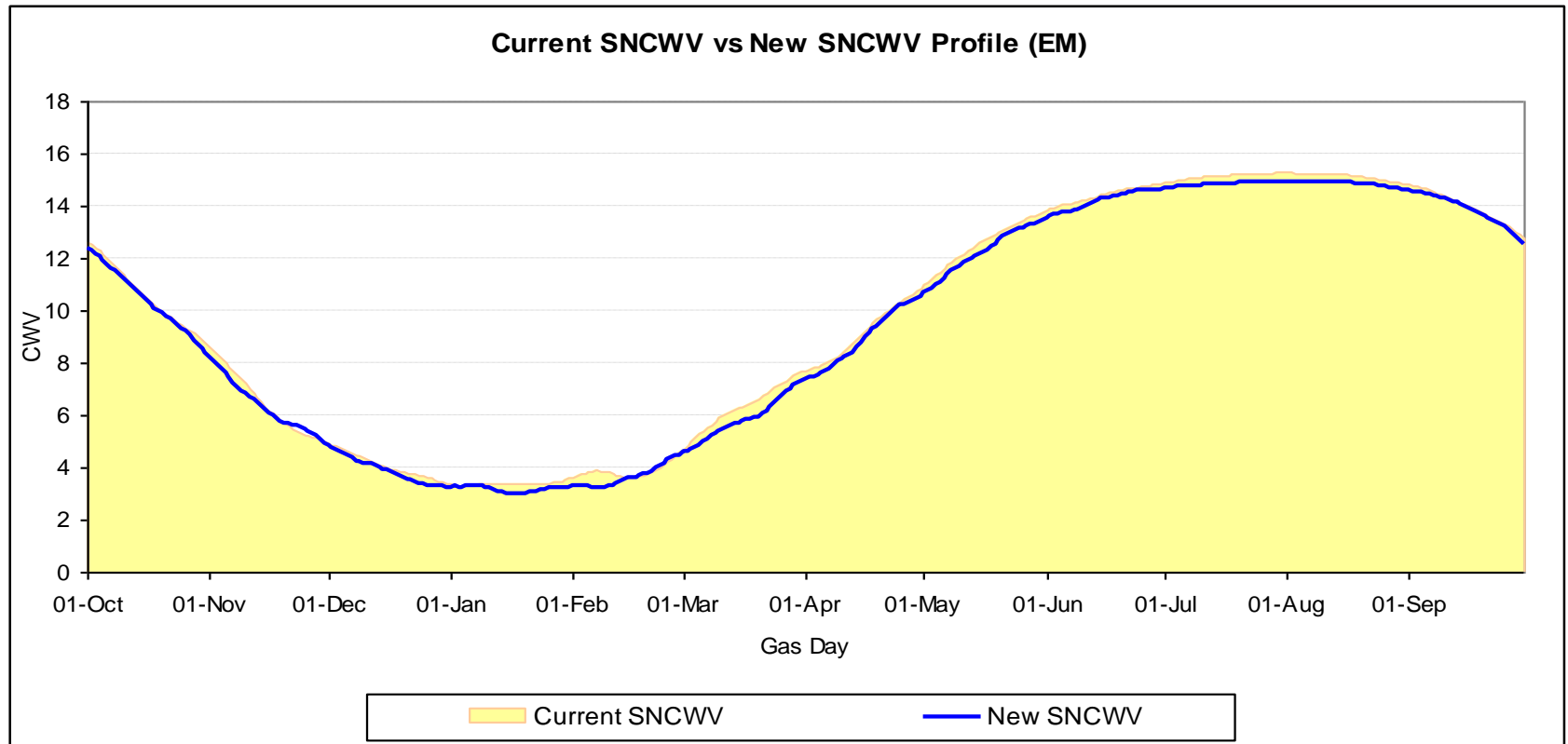
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- **Nottingham Watnall** weather station (**03354**) used for **EM** calculations
- Source data used for increment calculations:
 - Temperature_03354_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03354_adjhist.txt
 - Windspeed_03354_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 11 records
 - Windspeed 2 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: EM LDZ – SNCWV profile comparison

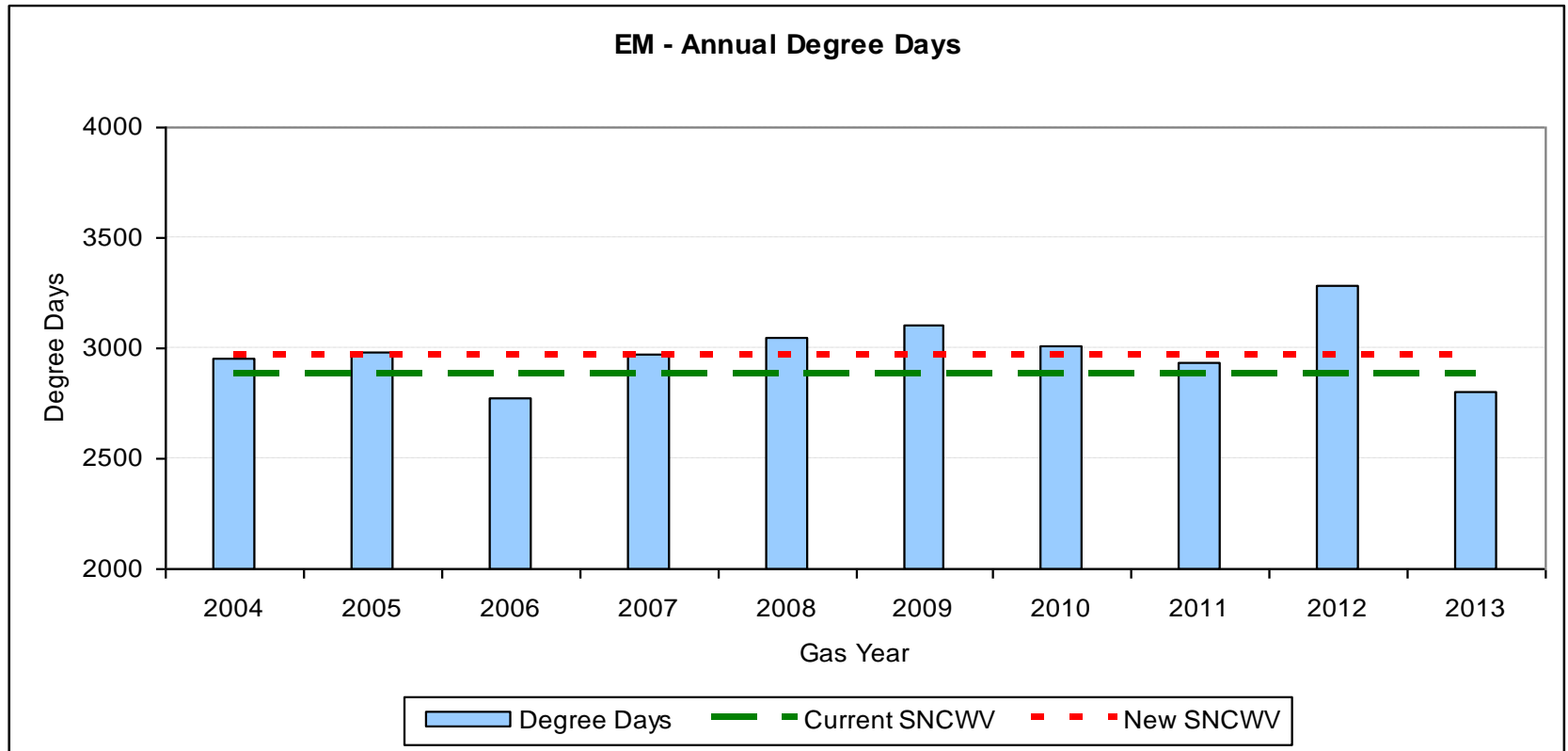


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Results 2: EM LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: EM LDZ – % Change in SNCWV basis

DD Threshold	17.5	
Overall % change from current SNCWV		
Annual	3.1%	Colder
Dec to Feb	1.6%	Colder
Mar to May	4.4%	Colder
Jun to Aug	10.4%	Colder
Sep to Nov	1.9%	Colder

- New SNCWV approx 3% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for WM

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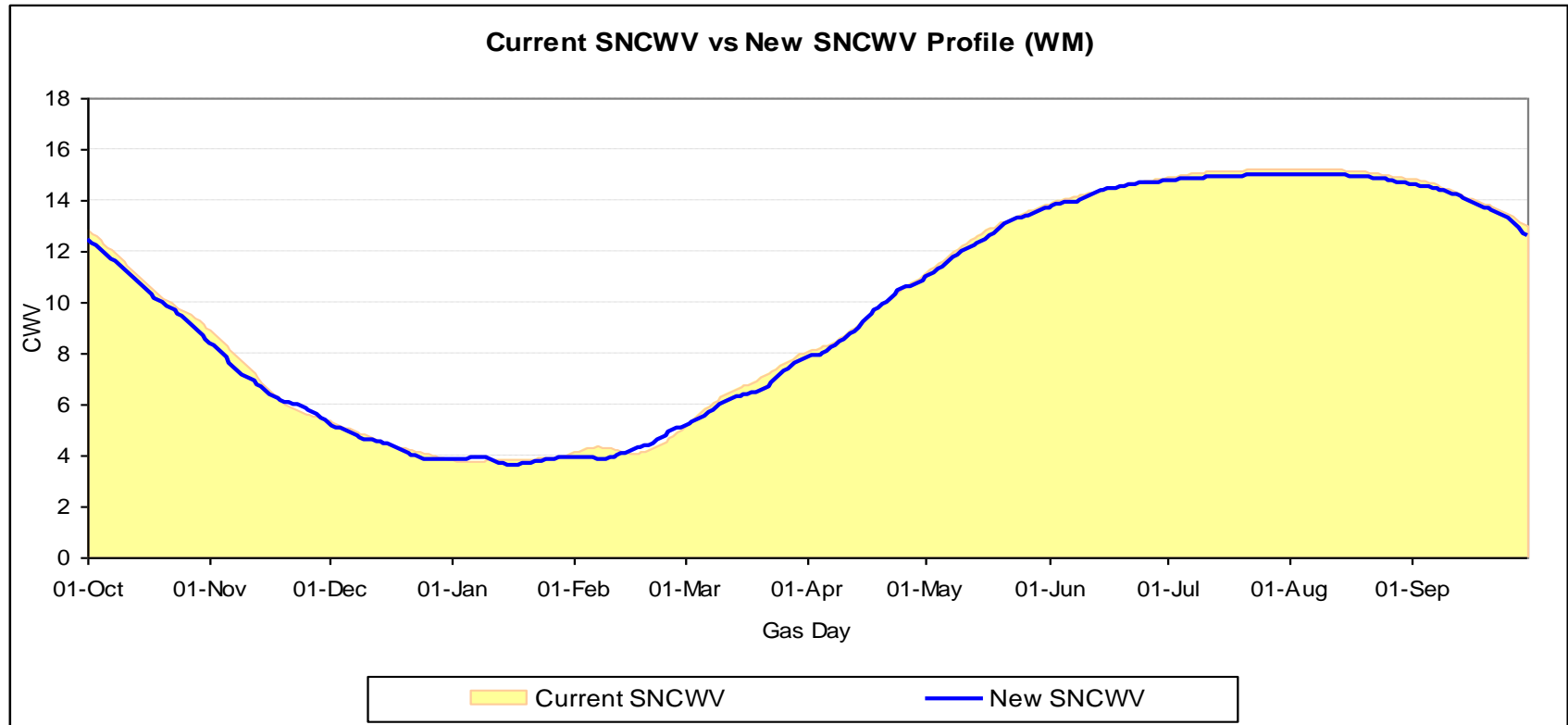
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- **Winterbourne No. 2** and **Coleshill** weather stations (**99062** and **03535**) used for **WM** calculations
- Source data used for increment calculations:
 - Temperature_99062_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_99062_adjhist.txt
 - Windspeed_03535_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 58 records and Windspeed 1 record
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: WM LDZ – SNCWV profile comparison

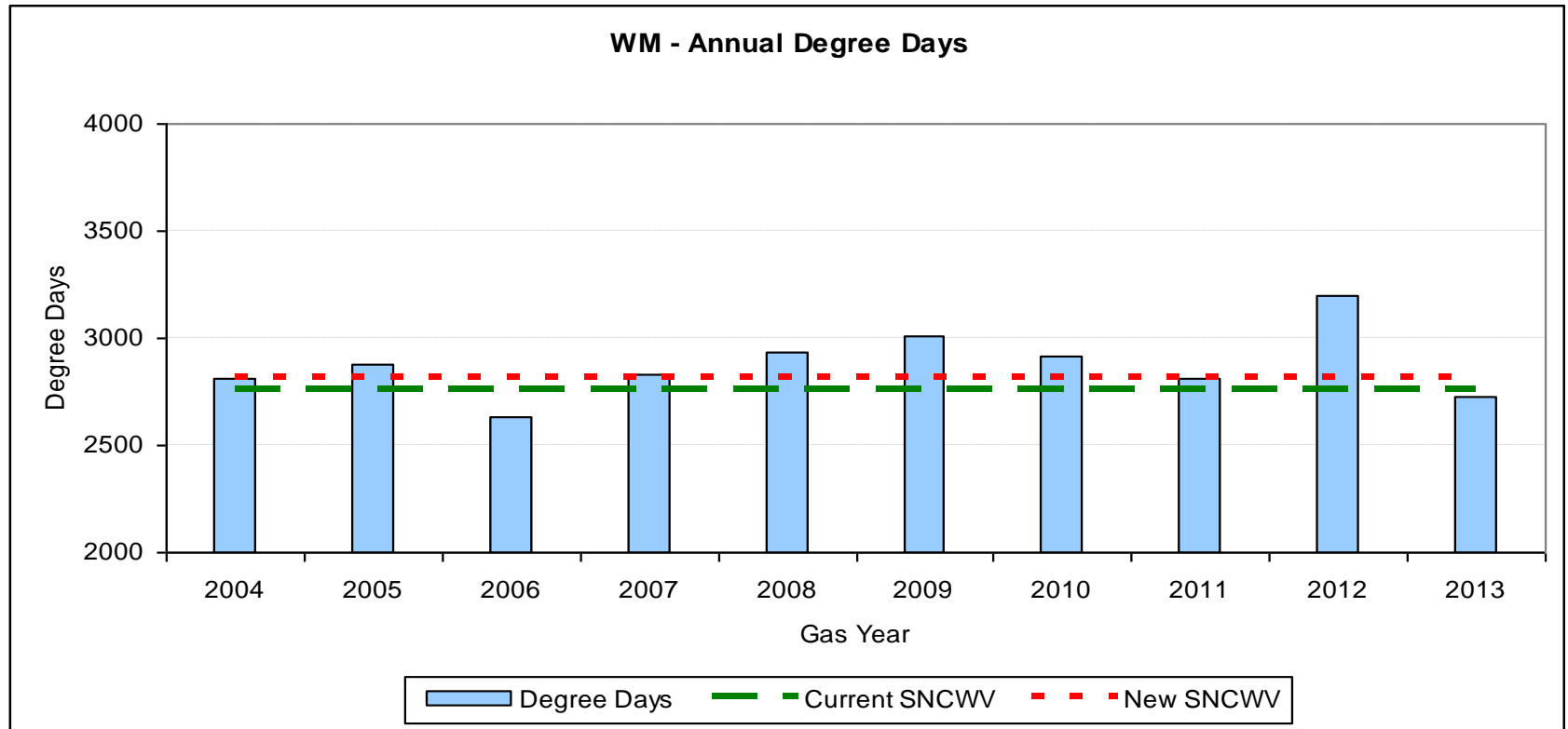


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Results 2: WM LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: WM LDZ – % Change in SNCWV basis

DD Threshold	17.4	
Overall % change from current SNCWV		
Annual	2.3%	Colder
Dec to Feb	0.6%	Colder
Mar to May	2.7%	Colder
Jun to Aug	7.3%	Colder
Sep to Nov	3.2%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for WS

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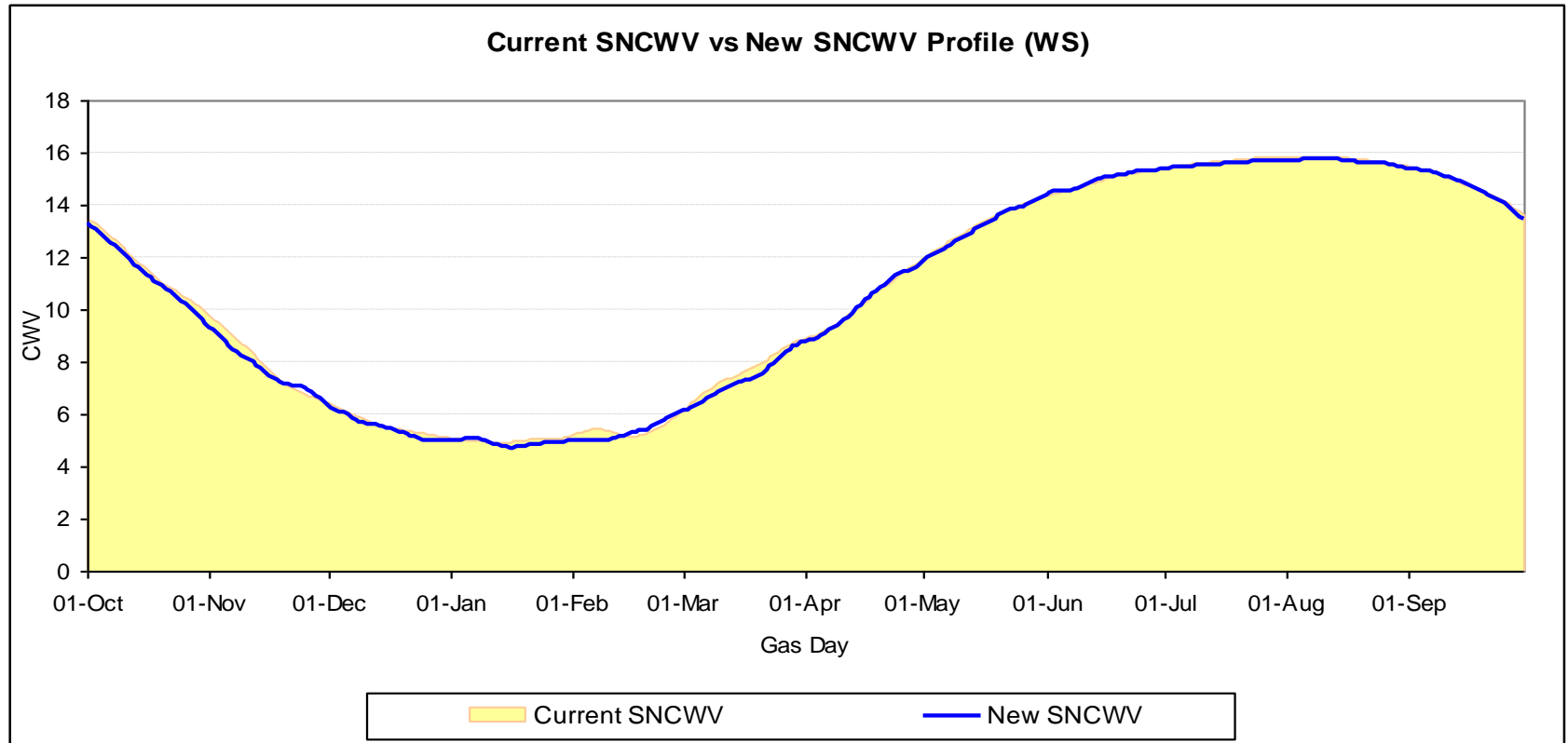
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- **St.Athan** weather station (**03716**) used for **WS** calculations
- Source data used for increment calculations:
 - Temperature_03716_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03716_adjhist.txt
 - Windspeed_03716_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 262 records
 - Windspeed 1 record
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: WS LDZ – SNCWV profile comparison

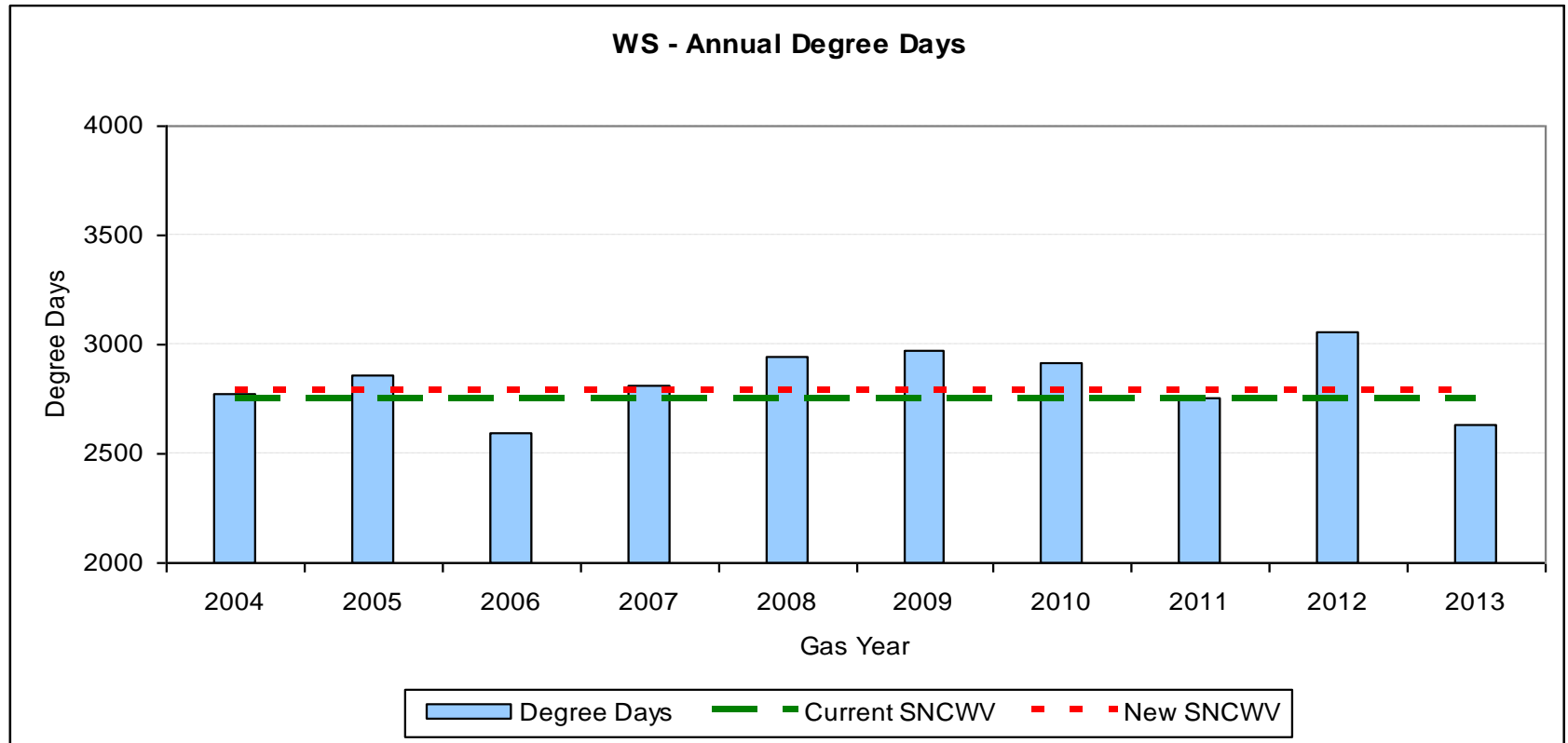


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Results 2: WS LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: WS LDZ – % Change in SNCWV basis

DD Threshold	18.2	
Overall % change from current SNCWV		
Annual	1.6%	Colder
Dec to Feb	0.9%	Colder
Mar to May	2.2%	Colder
Jun to Aug	2.3%	Colder
Sep to Nov	2.2%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for EA

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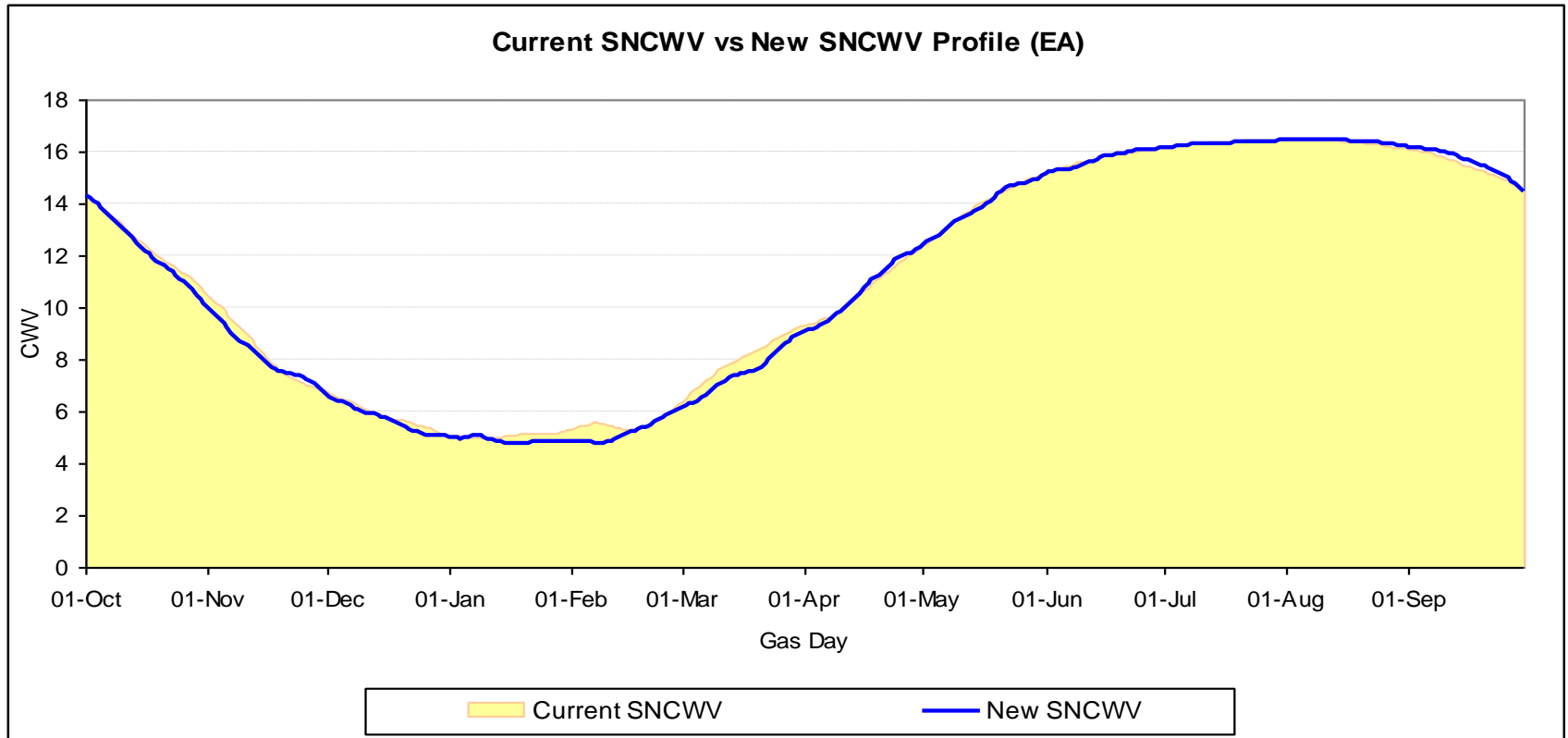
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- **London Heathrow** weather station (**03772**) used for **EA** calculations
- Source data used for increment calculations:
 - Temperature_03772_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03772_adjhist.txt
 - Windspeed_03772_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 0 records
 - Windspeed 0 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: EA LDZ – SNCWV profile comparison

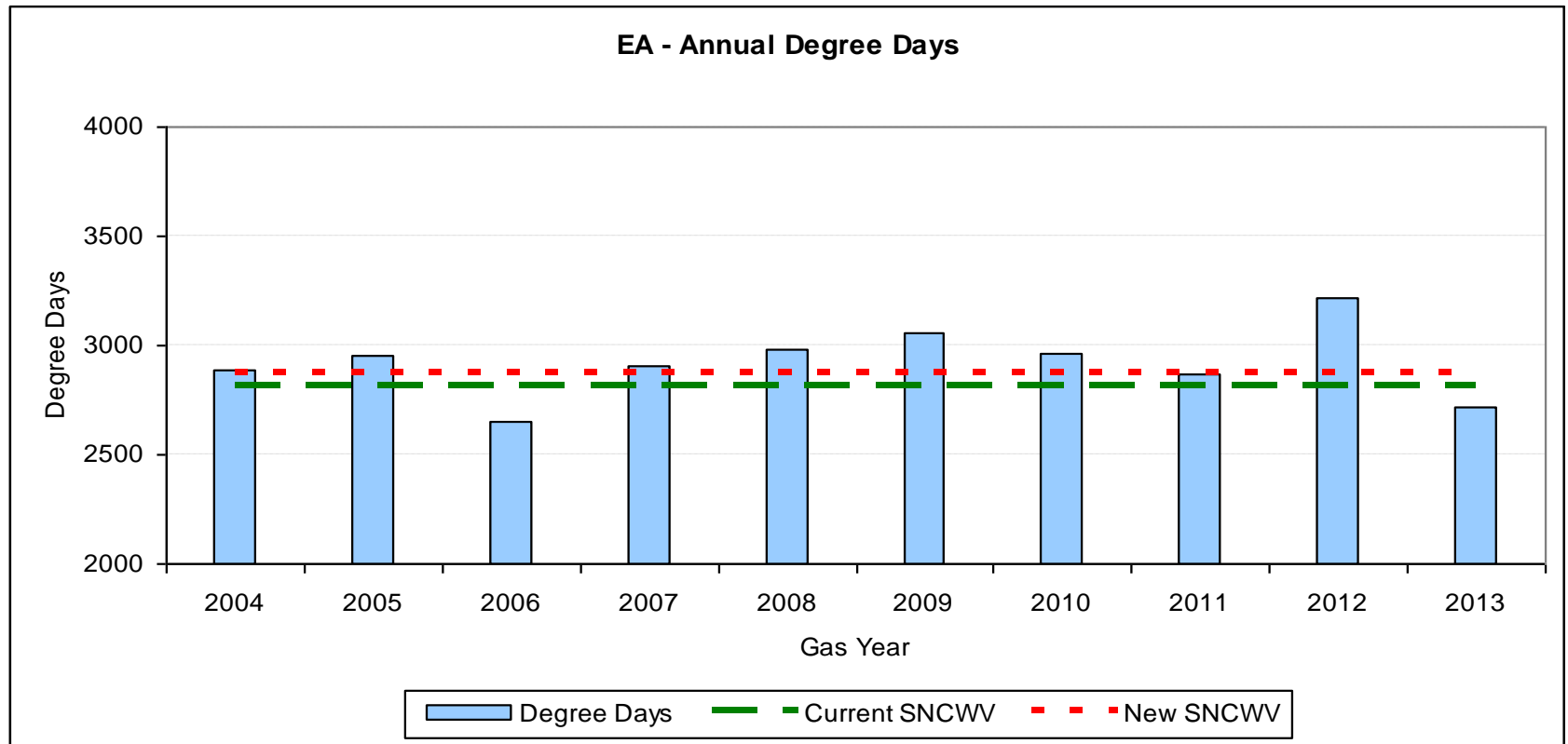


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Results 2: EA LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: EA LDZ – % Change in SNCWV basis

DD Threshold	18.9	
Overall % change from current SNCWV		
Annual	1.8%	Colder
Dec to Feb	1.8%	Colder
Mar to May	2.7%	Colder
Jun to Aug	0.9%	Colder
Sep to Nov	1.1%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for NT

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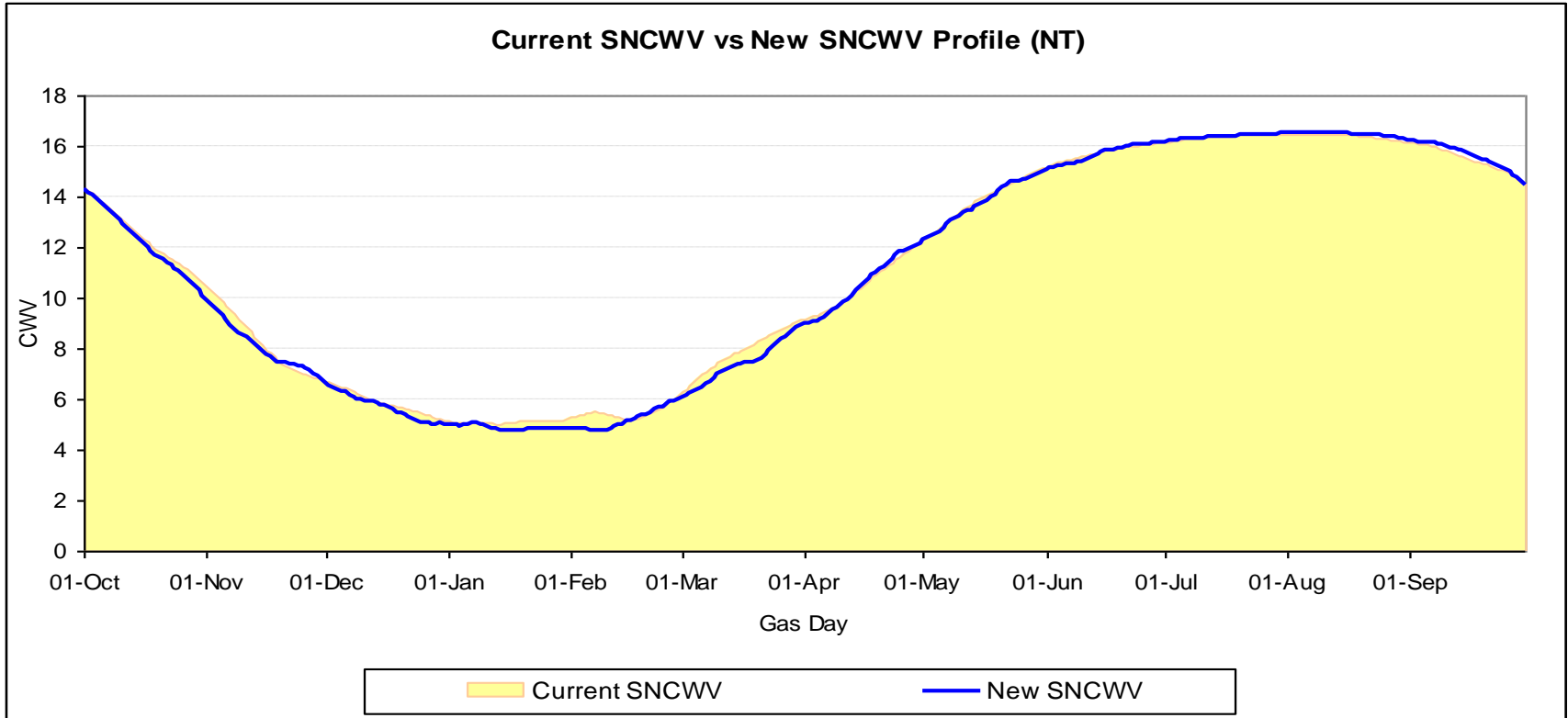
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- **London Heathrow** weather station (**03772**) used for **NT** calculations
- Source data used for increment calculations:
 - Temperature_03772_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03772_adjhist.txt
 - Windspeed_03772_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 0 records
 - Windspeed 0 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: NT LDZ – SNCWV profile comparison

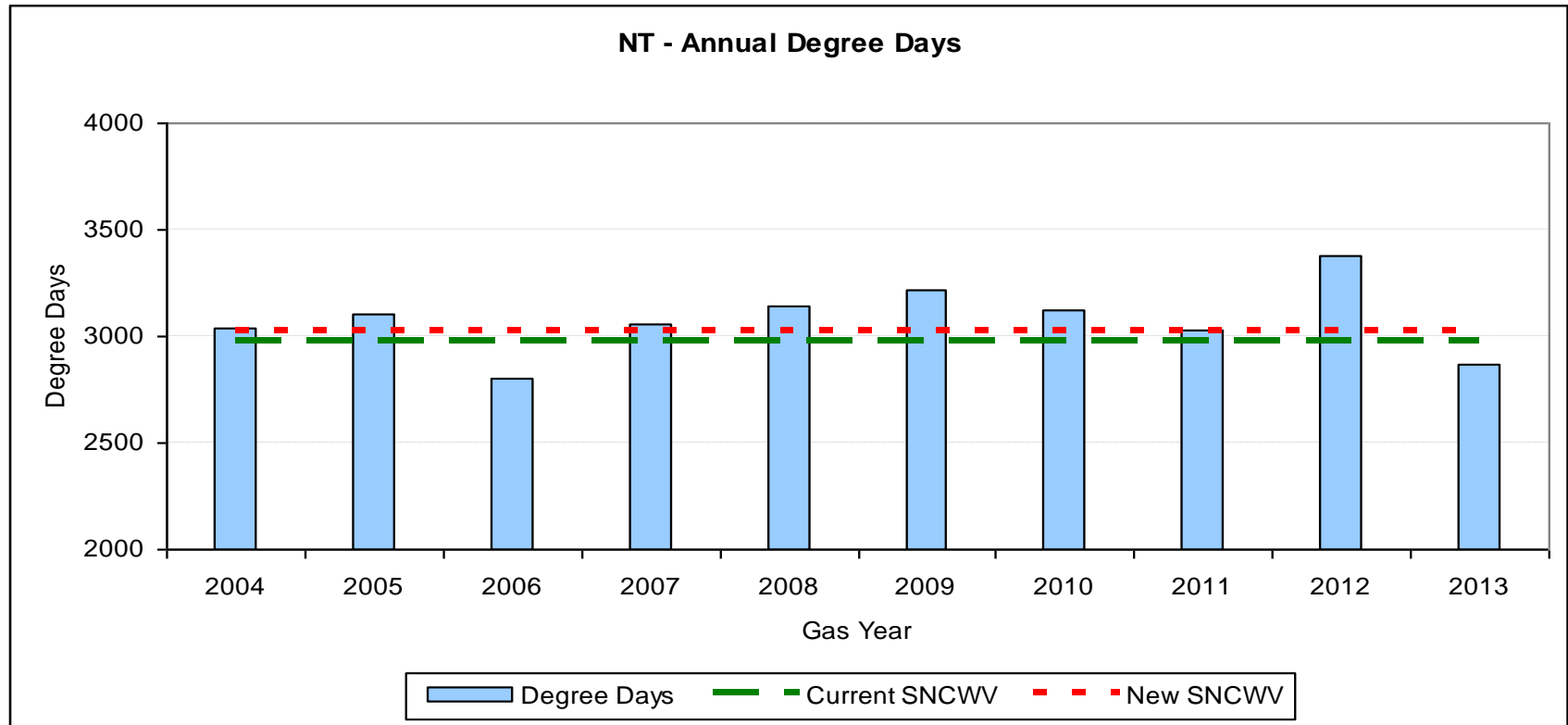


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Results 2: NT LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: NT LDZ – % Change in SNCWV basis

DD Threshold	19.3	
Overall % change from current SNCWV		
Annual	1.6%	Colder
Dec to Feb	1.6%	Colder
Mar to May	2.4%	Colder
Jun to Aug	-0.3%	Warmer
Sep to Nov	1.3%	Colder

- New SNCWV approx 2% colder than current basis
- 3 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for SE

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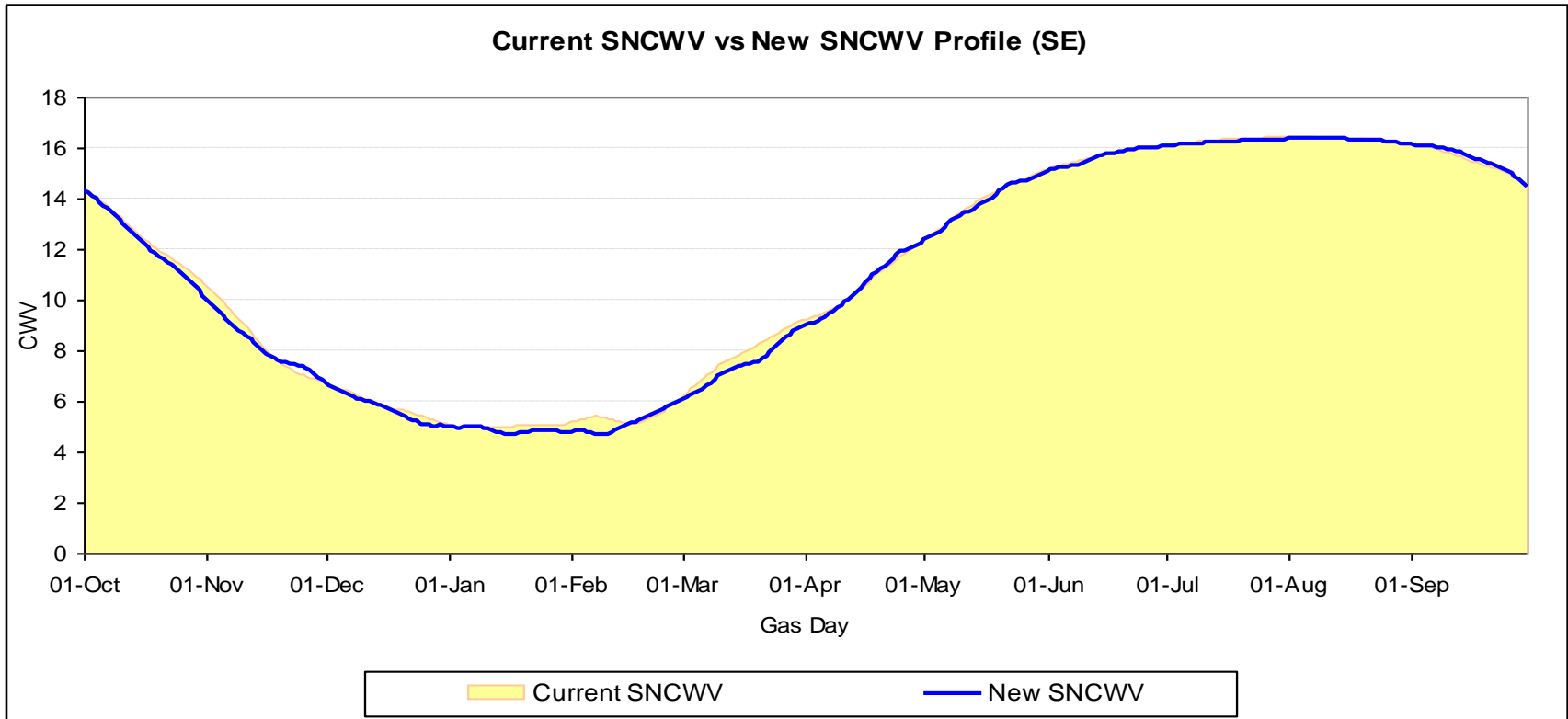
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- **London Heathrow** weather station (**03772**) used for **SE** calculations
- Source data used for increment calculations:
 - Temperature_03772_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03772_adjhist.txt
 - Windspeed_03772_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 0 records
 - Windspeed 0 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: SE LDZ – SNCWV profile comparison

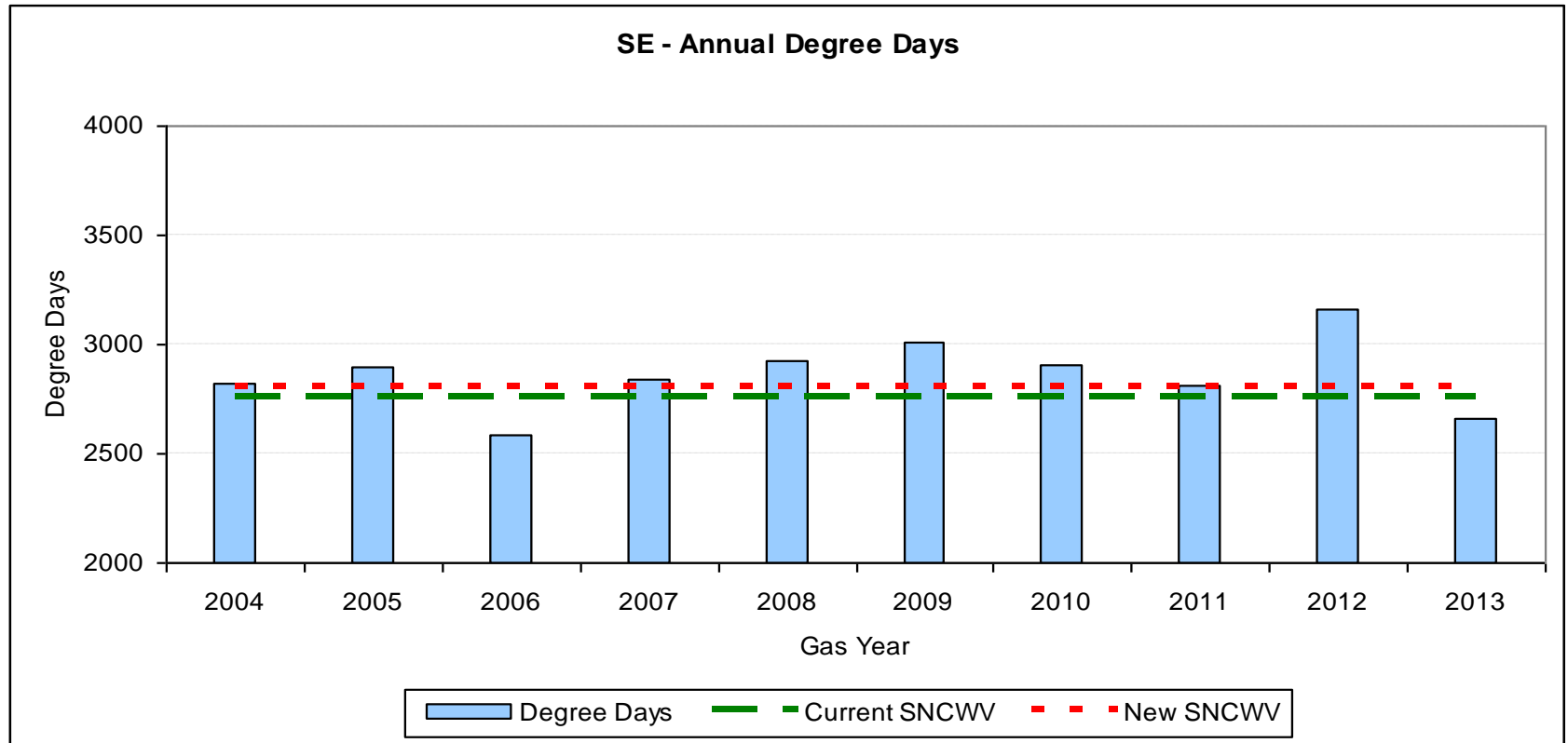


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Results 2: SE LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: SE LDZ – % Change in SNCWV basis

DD Threshold	18.7	
Overall % change from current SNCWV		
Annual	1.9%	Colder
Dec to Feb	1.5%	Colder
Mar to May	2.7%	Colder
Jun to Aug	2.8%	Colder
Sep to Nov	1.5%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for SO

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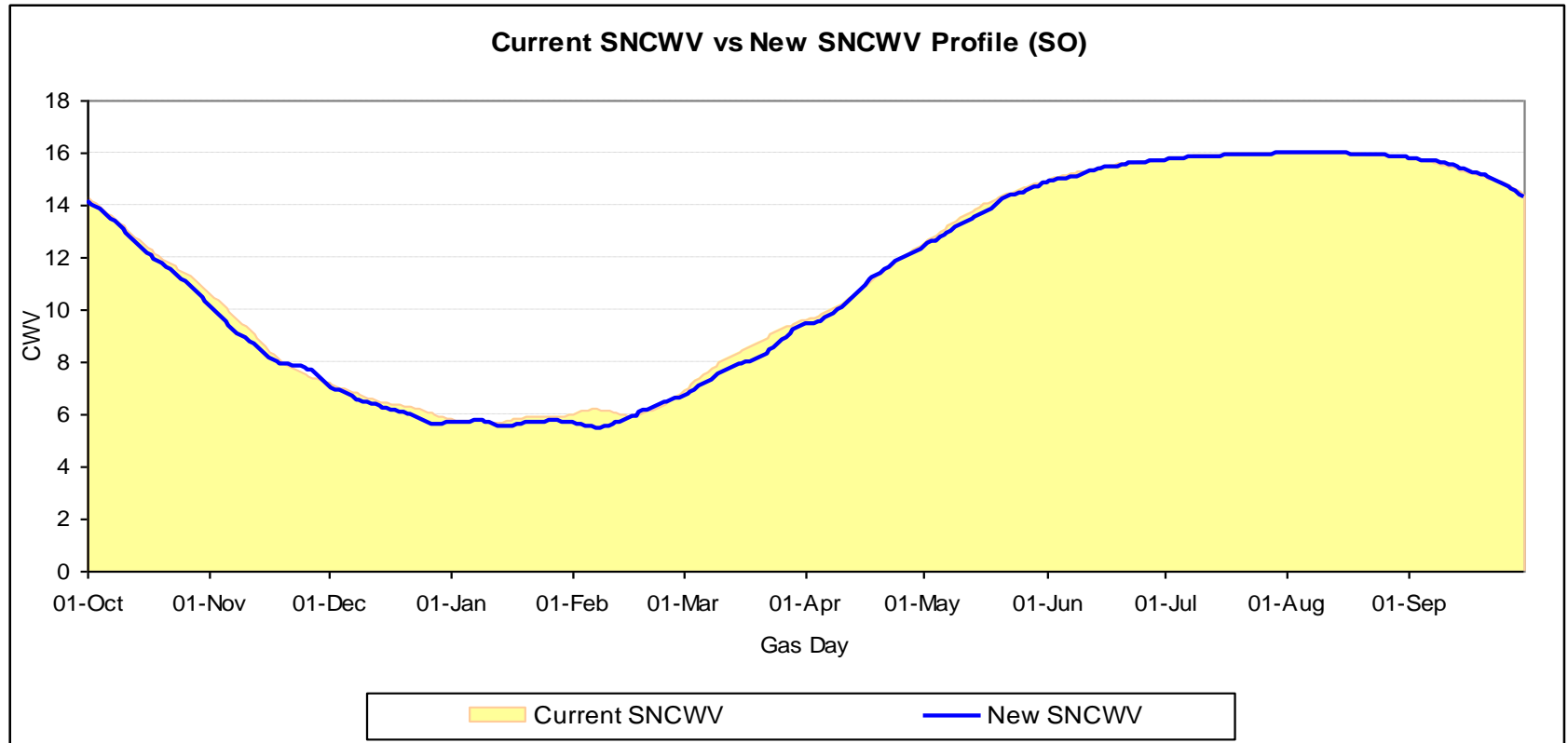
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- **Southampton Oceanographic Institute** weather station (**99079**) used for **SO** calculations
- Source data used for increment calculations:
 - Temperature_99079_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_99079_adjhist.txt and Windspeed_99079_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 17,542 records – Large gaps between 1968 and 1970, however 3 hourly reads still present
 - Windspeed 3 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: SO LDZ – SNCWV profile comparison

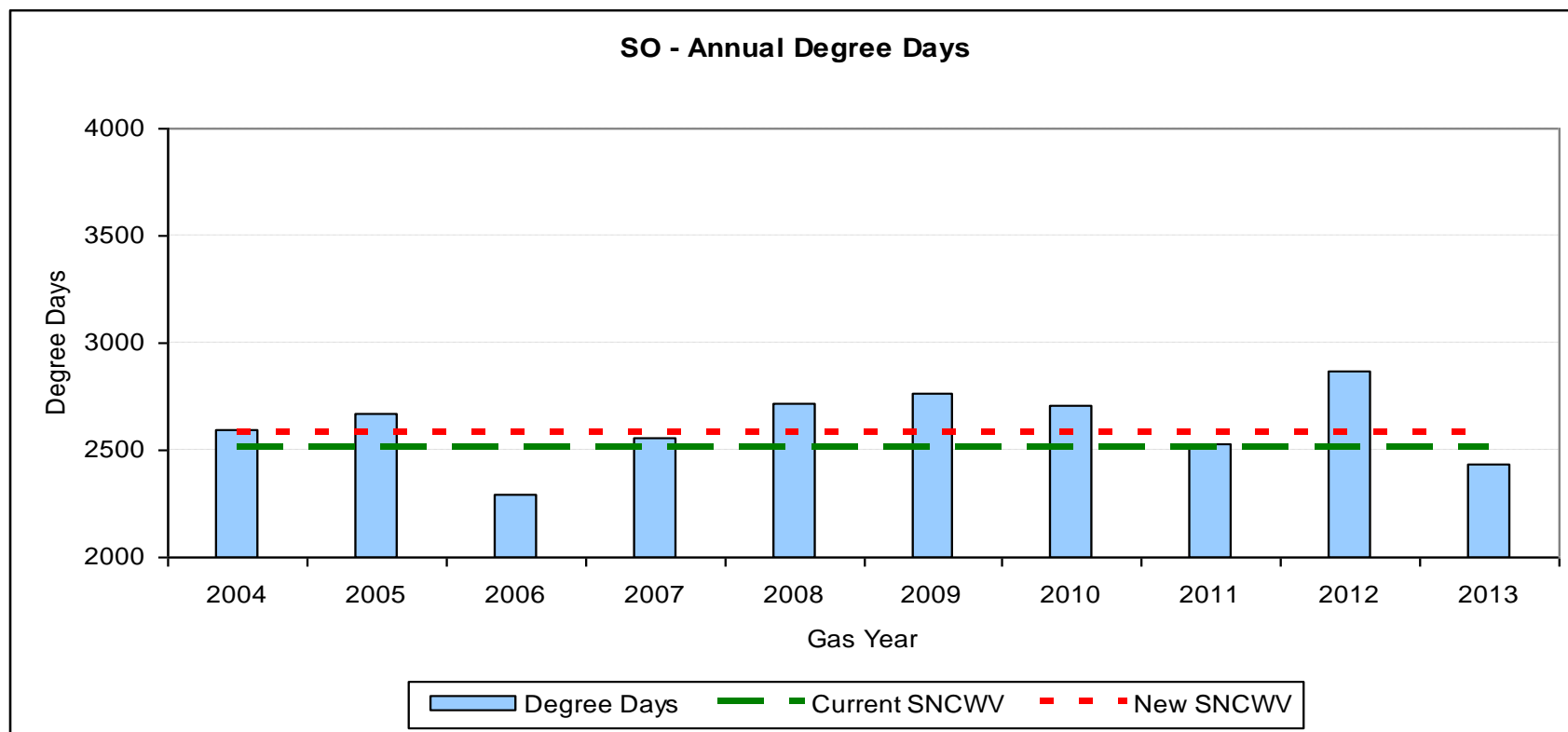


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Results 2: SO LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: SO LDZ – % Change in SNCWV basis

DD Threshold	18.2	
Overall % change from current SNCWV		
Annual	2.4%	Colder
Dec to Feb	1.8%	Colder
Mar to May	3.7%	Colder
Jun to Aug	2.5%	Colder
Sep to Nov	2.2%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Seasonal Normal Composite Weather Variable (SNCWV) for SW

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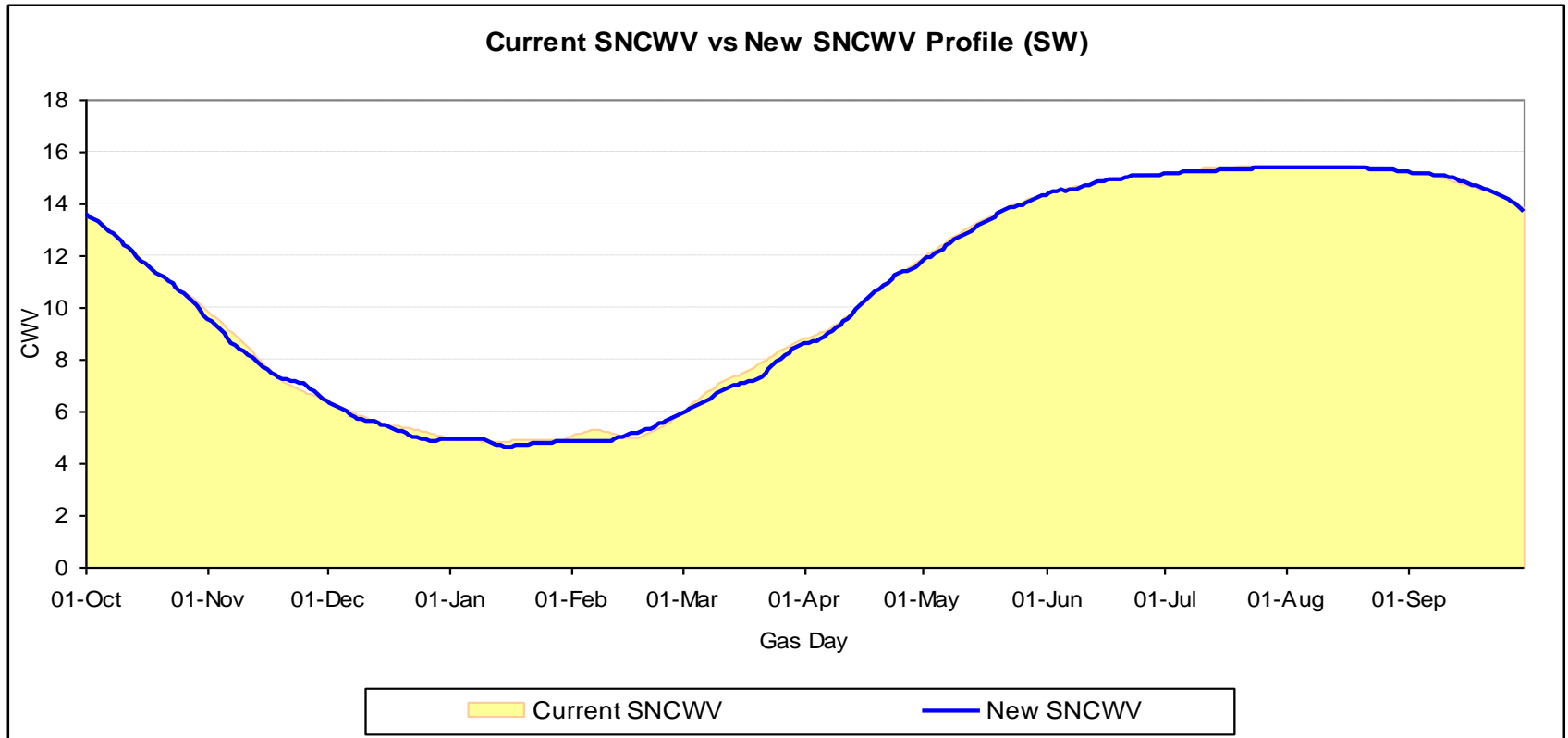
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- **Filton** weather station (**03628**) used for **SW** calculations
- Source data used for increment calculations:
 - Temperature_03628_increment_2012_2025.txt
- Source data used for representing historical data series:
 - Temperature_03628_adjhist.txt
 - Windspeed_03628_adjhist.txt
 - Agreed in-filling methodology used for gaps in data series – in-filled data to be published on UK Link Docs asap
 - Temperature 30 records
 - Windspeed 4 records
- CWVs calculated using above data and TWG approved CWV parameters and Pseudo SNETs

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Results 1: SW LDZ – SNCWV profile comparison

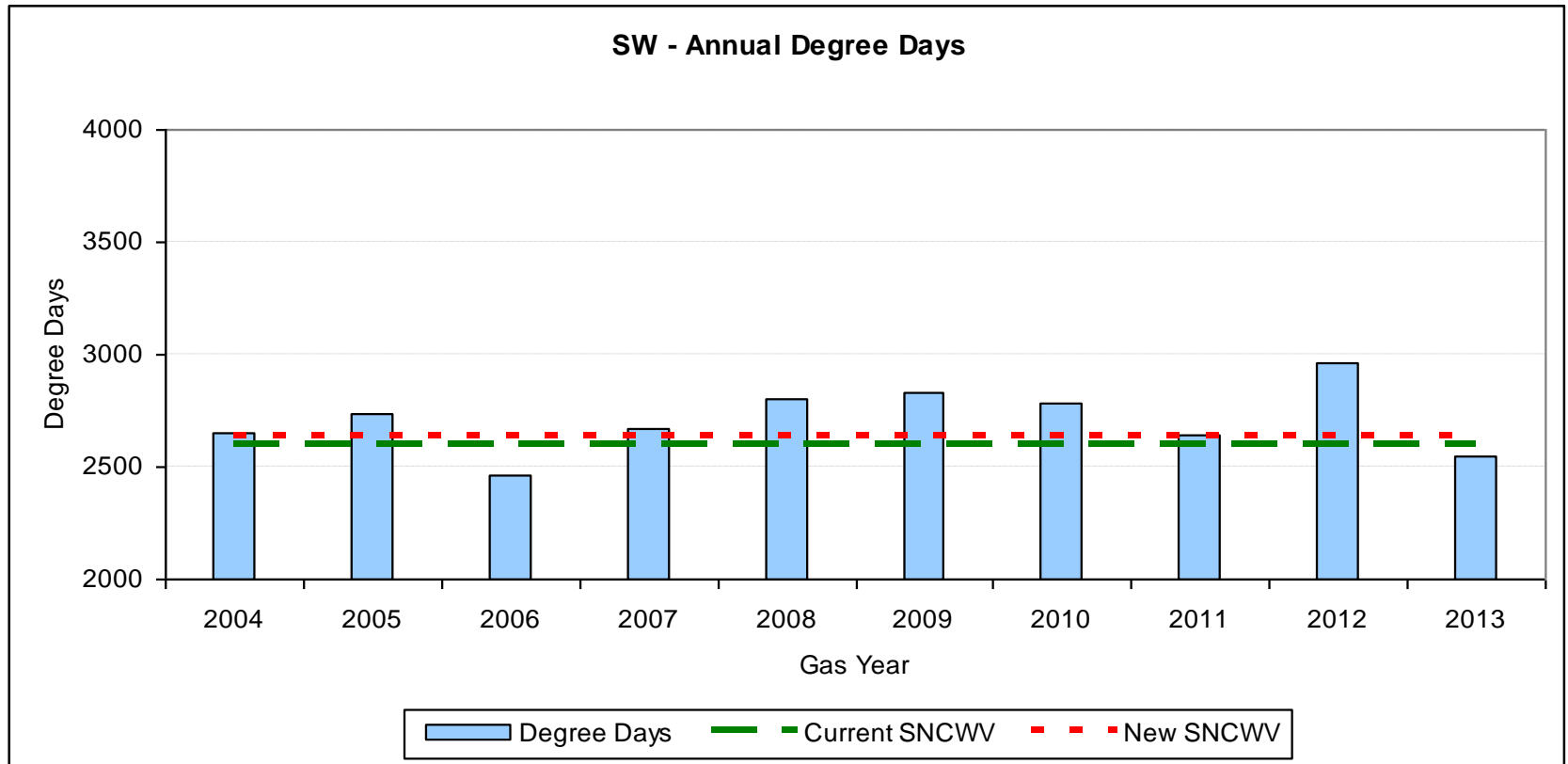


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Results 2: SW LDZ – Degree Day Analysis



- Low bars = Warmer weather; High bars = Colder weather
- 2 years in last 10 have been warmer than current Seasonal Normal

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Results 3: SW LDZ – % Change in SNCWV basis

DD Threshold	17.7	
Overall % change from current SNCWV		
Annual	1.6%	Colder
Dec to Feb	1.0%	Colder
Mar to May	2.9%	Colder
Jun to Aug	3.0%	Colder
Sep to Nov	0.6%	Colder

- New SNCWV approx 2% colder than current basis
- 4 quarters for new SNCWV are colder than current basis

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Seasonal Normal Review

Summary

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New Seasonal Normal Basis Profiles

- Majority of LDZs show a clear difference in February where the new profiles become cooler, possibly linked to the meteorological phenomena known as the Buchan spell
- The new SNCWV profiles are all cooler (and for the majority of quarters) than the current seasonal normal basis suggesting the existing basis may have been too warm
- Coldest days of profiles now in third week of January for most LDZs (SE and SO it is in early February). This has changed from current basis where coldest days were mainly in the first two weeks of the year
- Shape of EUC ALP profiles will be different especially where the SNCWV profile has changed significantly from the current seasonal normal shape

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Overall % change by LDZ

LDZCODE	AggThresh	% change from current SN basis
SC	16.9	2.6%
NO	16.6	0.1%
NW	18.3	10.7%
NE	18.4	2.2%
EM	17.5	3.1%
WM	17.4	2.3%
WN	18.3	10.7%
WS	18.2	1.6%
EA	18.9	1.8%
NT	19.3	1.6%
SE	18.7	1.9%
SO	18.2	2.4%
SW	17.7	1.6%
Avge		3.3%
Avge (less NW/WN)		1.9%

- Averages provided excl. NW/WN figures
- Note: The change in weather station for NW/WN has impacted their results i.e. location of new station being more rural (and therefore cooler) - **see slide 31 for more details**

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Overall % change by Quarter by LDZ

LDZCODE	Dec to Feb	Mar to May	Jun to Aug	Sep to Nov
SC	1.4%	3.1%	8.0%	2.0%
NO	0.3%	0.9%	-2.4%	-0.4%
NW	7.5%	11.3%	26.4%	10.7%
NE	0.8%	3.9%	6.0%	1.5%
EM	1.6%	4.4%	10.4%	1.9%
WM	0.6%	2.7%	7.3%	3.2%
WN	7.5%	11.3%	26.4%	10.7%
WS	0.9%	2.2%	2.3%	2.2%
EA	1.8%	2.7%	0.9%	1.1%
NT	1.6%	2.4%	-0.3%	1.3%
SE	1.5%	2.7%	2.8%	1.5%
SO	1.8%	3.7%	2.5%	2.2%
SW	1.0%	2.9%	3.0%	0.6%
Avge	2.2%	4.2%	7.2%	3.0%
Avge (less NW/WN)	1.2%	2.9%	3.7%	1.6%

Note: The change in weather station for NW/WN has impacted their results i.e. location of new station being more rural (and therefore cooler) - **see slide 31 for more details**

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Extent of change in Seasonal Normal Basis (AQ)

- Overall % cooling is approx 2% nationally
- Annual aggregate NDM AQ changes have been:
 - 2.5% (reduction) in 2014/15
 - 0.7% (reduction) in 2013/14
 - 5.8% (reduction) in 2012/13
 - 1.0% (reduction) in 2011/12
- The past 4 years has seen an average reduction of 2.5% in aggregate NDM AQ. This effect is as a result of general demand reduction. Irrespective of the seasonal normal basis change, it is not unreasonable to assume a further reduction in 2015/16 (statistics suggest this could be 2.5%)
- Overall, therefore, the above suggests minimal change in the overall NDMAQ levels in 2015/16

Note: The change in weather station for NW/WN will not translate fully into an AQ increase, as additional weather correction due to a cooler weather history will partly offset the increase.

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Extent of change in Seasonal Normal Basis (SOQ)

- At the last Seasonal Normal review (performed in 2009), the new AQs (effective from 2010) reduced by approx 9%, part related to change in Seasonal Normal basis and part related to demand reduction
- The SOQs, however, only moved by the % related to demand reduction because the Load Factors flexed to effectively 'cancel out' the % reduction in Seasonal Normal terms. The weather history in 2009 was also consistent with previous reviews
- This time round there has been a complete update to the weather history used in the demand estimation process. The 1 in 20 peak demand simulations, which are a key input to the Load Factor calculations, will be compiled using:
 - a) a new weather history (WSSM)
 - b) a reduced period of weather (54 years [1960-] instead of 84 years [1928-])
- Due to this change in data it is not possible at this stage to assess the likely changes in SOQ levels until the 1 in 20 peak demand simulations are run. This output will become available during Spring 2015

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Seasonal Normal Review

Next Steps

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Next Steps 2014: Industry Communication

- At DESC meeting on 3 December 2014, members accepted the revised SNCWV values
- Communication to be issued during w/c 8th December '14 welcoming wider industry comments with comments to be received no later than 12th December '14
- Xoserve have satisfied this requirement by publishing the SNCWVs on the secure area of Xoserve's website (UK Link Docs) which all Users are able to access and by updating this presentation as an explanatory document
- DESC T.Con scheduled for 17th December '14 to discuss any comments received and finalise the SNCWVs for use in 2015 AQ calculations and Demand Estimation modelling

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- Work to be done in **Jan/Feb/Mar 2015:**
 - Spring 2014 NDM analysis reworked using new CWVs and SNCWVs
 - Additionally do back-runs of individual years' EUC models using new CWVs and SNCWVs required for spring 2015 NDM analysis
 - Produce revised WAALPs for all EUCs from 01/10/2011 onwards using new CWVs and SNCWVs – required for 2015 AQ review
 - Produce AQ factors for each EUC (applied when Aqs fail to calculate for 2015)
- Work to be done in **Apr/May/June 2015:**
 - Spring 2015 NDM analysis (using new CWVs and SNCWVs)
 - Continue with off-line production of revised WAALPs

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