



delivered by  correla

Demand Estimation Sub Committee

DESC Workplan Update
(October 2023 to March 2024)
4 October 23

Objective

- To provide an update on the progress of the workplan items we agreed with DESC at the July meeting
- In addition to the standard workplan items (covered on the following slides), the following adhoc workplan items were agreed at the meeting:
 - Model Smoothing Review
 - Review Day of Week Demand Behaviours
 - Review Impact of Flexible Power Generation on UIG

Autumn Winter 23/24 – Standard Workplan Items (1 of 2)

- NDM Algorithm Performance for Gas Year 2022/23 – (reported at December 2023 DESC)
 - Strand 1 – Weather Analysis
 - Strand 2 – Unidentified Gas (UIG) Analysis
 - Strand 3 – NDM Daily Demand Analysis
 - Strand 4 – Reconciliation Analysis*

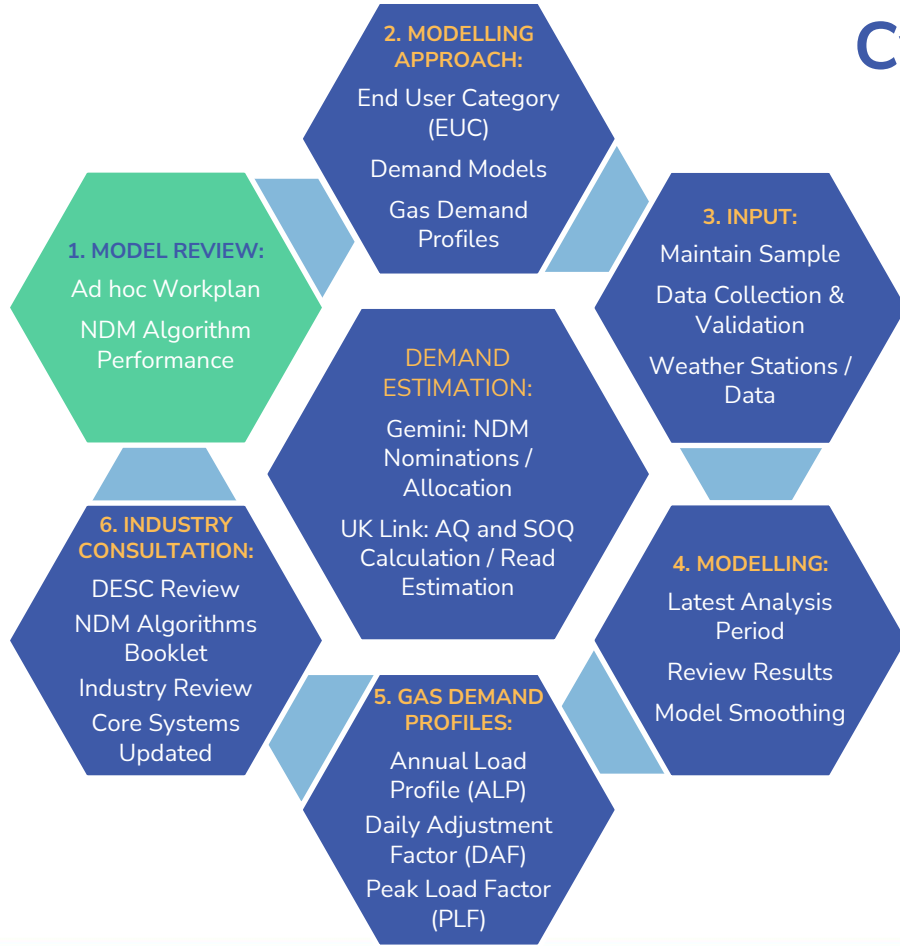
*Note: Strand 4 has not been reported on before – we intend to explore how we can use Reconciliation data to learn about the performance of the NDM Demand Profiles
- Modelling Approach 2024 – Agreement on methodology for deriving Demand Profiles for Gas Year 2024/25 – (reported at December 2023 and March 2024 DESC)
- Managing Daily Gas Consumption Data submissions – (DN's sample and MOD 654S eligible Shipper data)

Autumn Winter 23/24 – Standard Workplan Items (2 of 2)

There are a number of Weather related workplan items due to be delivered during this period

- Manage Daily Weather Data Service Provider contract as CDSP transitions from 'file format delivery' to API platform solution
- Supporting transition to a UK Link API, to poll daily weather data for Demand Estimation processes – due to go live in November
- Seasonal Normal Review 2025
 - Progress Climate Change Methodology procurement
 - Preparation of Approach and Solution for delivering CWV Formula Review

Demand Estimation Cycle



- An overview of the Demand Estimation process and output can be found [here](#)
- Annual modelling cycle of activities are represented in diagram opposite
- This presentation relates to the Model Review phase of the Demand Model cycle

CDSP / DESC Obligations and Timetable: October 2023 to September 2024

Milestone	UNC H Ref	2023			2024									
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
DESC Membership confirmed	1.12	✓		✓										
NDM Sampling: Data Collection and Validation	1.6	✓						✓						
NDM Algorithm Performance for Gas Year 2022/23	1.8			✓									✓	
DESC Adhoc Workplan	1.7	✓		✓			✓					✓		
DESC Modelling Approach – EUCs and Demand Models	1.7			✓			✓							
Single Year EUC Demand Modelling	1.7								✓					
Model Smoothing and Draft Gas Demand Profiles	1.7										✓			
Industry Consultation	1.8										✓	✓		
Gas Demand Profiles finalised and Core systems updated	1.9												✓	
Seasonal Normal Review 2025	1.4	✓		✓			✓		✓		✓			

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- Ad Hoc Workplan Updates
 - Model Smoothing Review Approach
 - Review Day of Week Demand Behaviours Approach
 - Review the Impact of Flexible Power Generation sites on NDM Modelling Error
- The following Standard Workplan items are to be covered at the December DESC
 - NDM Algorithm Performance
 - Modelling Approach

NDM Sample Update

- The latest deadline for eligible Shippers* submitting daily gas consumption data for a sample of their portfolio, to support the NDM Algorithm Performance Strand 3 process, is close of play Friday 6th October
 - * *eligible Shippers as per UNC Modification 0654S and explained further [here](#)*
- Following reporting at Performance Assurance Committee (PAC) and follow ups by the PAFA, eligible Shippers have been engaged to encourage submissions. Following recent interactions with the Demand Estimation Team, and submissions received to date we are expecting a healthy number of supply points to be available for Strand 3 Analysis
- The transition to a new NDM sample Service Provider for Cadent, Northern Gas Networks and Wales & West Utilities, managed by the CDSP is going well. Since it's implementation in April 2023 the number of 'contributing' sites in the DN's sample has increased (more details to follow in December)
 - Note: These sites will not be useful for Demand Estimation purposes until we have 12m daily history

Weather Data API Update

- The objectives are:
 - Manage Daily Weather Data Service Provider (WSP) contract as CDSP transitions from 'file format delivery' to API Platform solution
 - Support the transition to a UK Link API, to poll daily weather data for Demand Estimation processes
- An updated contract on new API terms between CDSP and WSP is currently being processed – due to take effect once the move to API in UK Link is implemented
- No changes expected to the Actual CWV calculation. If any customers are calculating Forecast CWVs to compare to CDSP data, there may be some slight differences due to the timings at which the new solution is polling the API compared to current forecast schedule
- Following testing and a 'Dual Running' phase scheduled in October, the implementation in UK Link is due to take place in early November 2023

4.0 DESC Workplan Update

AD HOC WORKPLAN

Ad Hoc Workplan Items

- The following items were agreed at the July DESC for this year's Ad Hoc workplan
 - Review of Model Smoothing Approach
 - Review of Day of Week Modelling Approach
 - Review Impact of Flexible Power Generation sites on NDM Modelling Error
- The above were topic areas raised during this year's process of creating demand models for Gas Year 2023/24
- Since July, we have agreed the objective for each topic area, an approach, how the results will be assessed and when we will present back to DESC
- We welcome DESC views on the interpretation we have applied prior to the detailed analysis commencing

Review of Model Smoothing Approach

- The primary objective is to assess whether the current model smoothing approach continues to reduce Volatility in the Demand Model and subsequent Gas Demand profiles year on year
 - In addition, Predictability and Trend analysis will also be considered
- CWV intercepts give the weather sensitivity of the model and will be compared for different single year and smoothed models
 - For assessing Volatility and Predictability observe the differences between CWV intercepts visually by comparing the spread of the data using bin ranges
 - For assessing Trends compare the movement in CWV intercepts between each single year
- CWV intercepts will be compared to see if there is a significant difference between forecast weather sensitivities for smoothed and single year models, comparing the range of values and using the Root Mean Square (RMS) as an indication of volatility
- Results will be presented at March DESC

Review of Day of Week Modelling Approach

- The primary objective is to determine if the current grouping of Monday to Thursday non-holidays for baseline modelling purposes is still appropriate
 - An additional objective is to review the different weekend rules for domestic and non-domestic EUCs
- The algorithm performance process will be used to see where the day of week consumption patterns no longer conform to the current modelling rules/assumptions
 - This information will then be used to devise new rules for testing
 - The test rules will be used to 'remodel' previous years and then the revised output can be tested to see if the algorithm performance and UIG is improved
- Any new rules would need to improve the algorithm performance (R^2) and UIG over the period being tested in order to be adopted. As changing the 'Monday to Thursday non-holiday rule' could require development, improvements would need to be significant
- Results will be presented at March DESC

Review of Impact of Flexible Generation Sites on NDM Modelling Accuracy

- The primary objective is to investigate the impact of Flexible Power Generation Sites on the accuracy of NDM Demand Estimation for the relevant EUCs
- The approach is to identify them and their materiality (based on supply point numbers and Annual Quantity) and where possible obtain daily energy to assess their usage against current approach to profiles
 - The investigations will require the support of the Distribution Networks to identify the relevant Supply Meter Points (3 of 4 DN's have replied so far) and once identified potentially DESC Shippers to provide daily gas consumption data
- In order for DESC to provide an assessment of the NDM modelling error (and subsequent temporary UIG) caused by this category of usage, use 'complete' daily consumption data to calculate an aggregated demand against the profile (similar to Algorithm Performance).
- Results will be presented at December and March DESC meetings