

# XOSERVE

Demand Estimation Sub Committee

An Introduction to Demand Estimation and DESC

Updated October 2023

A decorative graphic at the bottom of the slide consisting of numerous thin, overlapping lines radiating from a central point at the bottom, creating a starburst or lens flare effect. The lines are primarily in shades of blue and purple, with some pinkish tones, and they extend upwards towards the text.



# Background – Demand Estimation Sub-Committee

- The Demand Estimation Sub-Committee (DESC) is one of 6 sub-committees of the Uniform Network Code Committee (UNCC) [UNCC Sub Committees site](#)

“The UNC defines the rights and responsibilities for users of gas transportation systems and provides for all system users to have equal access to transportation services.”

- DESC responsibilities are covered in [Section H](#) of the Uniform Network Code (UNC)
- DESC consists of:
  - Up to 5 User Representatives as Voting Members
  - Up to 5 Transporter Representatives as Voting Members
- Voting Members are elected annually in advance of the start of each Gas Year (1st October)
- Meetings are administered by the Joint Office of Gas Transporters with content provided by the Central Data Services Provider (CDSP)

# X Demand Estimation – Glossary of Terms

- Non-Daily Metered (NDM) – of the c.25m Gas Supply Meter Points the majority are Non-Daily Metered
- Annual Quantity (AQ) – An estimate of the amount of gas (in kWh) that a supply meter point will use in the coming year under ‘seasonal normal’ weather conditions
- Winter/Annual Ratio (WAR) – The ratio of the amount of gas that a Supply Point uses in the winter months compared to its total Annual Quantity (AQ) and provides an indication of the consumption seasonality.
- Composite Weather Variable (CWV) – Is a blended measure of actual weather on a day
- End User Category (EUC) – Categorise gas consumers by their different usage patterns. Each NDM supply point belongs to an EUC.
  - For Lower consumption Bands (0 to 293 MWh pa) this includes separate EUCs for Domestic and Non-Domestic and Pre-Payment and Non-Prepayment meters
  - Higher Consumption Bands (>293 MWh pa) are grouped into 4 separate EUCs based on their Winter/Annual Consumption Ratio (WAR) which provides an indication of the consumption seasonality
- Local Distribution Zone (LDZ) - Each LDZ represents a geographical area of the country. Each LDZ is ‘owned’ by a specific gas transporter and determine the area for which they distribute gas. Here is a helpful [LDZ Map](#).

# X Background – Demand Estimation

- Key industry processes require various types of gas demand estimation for NDM Supply Meter Points. These processes include:
  - Daily Nominations and Allocations i.e. NDM Supply Meter Point Demand Formula
  - Determining Supply Point Capacity
  - Determining AQs
- Demand Models are mathematical models which provide an estimate of gas demand for each EUC by reference to gas usage characteristics e.g. weather sensitivity, consumption profile etc
- For each Gas Year, DESC will develop or revise the definitions of the EUCs for the LDZ and the Demand Models for each EUC.
  - The CDSP will then implement these decisions
- The annual process for determining the EUCs and Demand Models for the following Gas Year begins with the production of a Modelling Approach Document
- The Modelling Approach Document provides an overview of the EUC definitions and how the modelling shall be performed
  - DESC are sent a draft of the document to review and comment on in December
  - DESC is asked to formally approve at its meeting in Q1 each year

# X Demand Modelling Cycle

- The purpose of the EUC Demand Model is to represent the behaviour and reactions of the EUC Population
- The modelling cycle is typically performed over a 12 month period, although the process of Demand Estimation is continuous





# Demand Estimation – Timetable Framework

- DESC's obligation of producing a set of End User Categories and Demand Models for the next Gas Year have to be delivered within certain timescales:
- The sample data collected for analysis must include the most recent Winter period (December to March), meaning the sample data collation and validation cannot start until early April
- The Final EUCs and Demand Models must be approved and submitted to the Authority (Ofgem) and loaded to CDSP's systems by 15th August
- Between April and August:
  - Daily gas consumption data from the NDM sampling is validated and results reviewed
  - Winter: Annual Ratios (WAR) are set
  - EUC Demand Models are developed and reviewed, Model Smoothing (3-year average) is applied
  - Draft Gas Demand Profiles are produced and reviewed, industry consultation commences early June



# CDSP / DESC Obligations and Timetable: October to September

Milestone	UNC H Ref	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	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											✓	
Climate Change Methodology * And Seasonal Normal Review **	1.4												

\* The Climate Change Methodology is reviewed when DESC deem an update is needed

\*\* CWV Formula and Seasonal Normal weather values are reviewed every 5 years



# Typical DESC Workplan: October to September

Meeting Date	Topics / Objectives	Action
October	<ul style="list-style-type: none"><li>• DESC Membership / Meeting Schedule</li><li>• NDM Algorithms Update</li><li>• DESC Ad Hoc Workplan Update</li></ul>	<ul style="list-style-type: none"><li>• Vote Required</li></ul>
December	<ul style="list-style-type: none"><li>• NDM Algorithm Performance</li><li>• NDM Sample Update</li><li>• DESC Ad Hoc Workplan Update</li><li>• Draft Modelling Approach</li><li>• DESC Survey (July to December)</li></ul>	
March	<ul style="list-style-type: none"><li>• DESC Ad Hoc Workplan Completion</li><li>• Modelling Approach Approval</li></ul>	<ul style="list-style-type: none"><li>• Vote Possible</li><li>• Vote Required</li></ul>
April	<ul style="list-style-type: none"><li>• EUC Modelling Runs and WAR Band Threshold Approval</li></ul>	<ul style="list-style-type: none"><li>• Vote Required</li></ul>
May	<ul style="list-style-type: none"><li>• Review Single Year Modelling Results</li></ul>	<ul style="list-style-type: none"><li>• Vote Required</li></ul>
July (1)	<ul style="list-style-type: none"><li>• Review DESC Representations</li></ul>	<ul style="list-style-type: none"><li>• Vote Required</li></ul>
July (2)	<ul style="list-style-type: none"><li>• Review Industry Representations and Final Approval</li><li>• Agreement of Ad Hoc Workplan</li><li>• Weather Station Review</li><li>• DESC Survey (January to June)</li></ul>	<ul style="list-style-type: none"><li>• Vote Required</li><li>• Vote Required</li></ul>

• Ongoing Projects to be discussed at all Meetings

# DESC Deliverables – High Level View

Demand Estimation Deliverable	Purpose	For Use in	DESC's Role
End User Category (EUC)	Categorising gas consumers by their different usage patterns	Demand attribution AQ calculations Capacity invoicing Read estimation	Review and approve each year
EUC Demand Model	To provide a mathematical representation of the behaviours and reactions of gas consumers for each EUC	Production of all gas demand profiles (ALP, DAF, PLF)	Create, review and approve each year
Annual Load Profile (ALP)	Estimating how consumers typically use their gas during a year	Demand attribution AQ calculations Read estimation	
Daily Adjustment Factor (DAF)	Estimating how gas consumers' usage reacts to changes in weather		
Peak Load Factor (PLF)	Understanding how gas consumers will react in the event of extremely cold weather	Capacity invoicing	
Composite Weather Variable (CWV)	Understanding and explaining the relationship between weather and gas consumption	Demand attribution AQ calculations	Review and approve every 5 years
Seasonal Normal Composite Weather Variable (SNCWV)	Defining a basis for "seasonal normal" weather	Read estimation	



# Demand Estimation – Want to Know More?

- The Demand Estimation Methodology Document is available here [NDM DEMAND ESTIMATION RULES \(gasgovernance.co.uk\)](https://www.gasgovernance.co.uk/ndm-demand-estimation-rules). This document describes the methodology which supports the estimation of NDM Daily Demand for use in the NDM Nominations and Allocations and in the determination of NDM Supply Meter Point Peak Load (SOQ).
- The Demand Estimation team can be contacted via the Customer Query Portal on the Xserve website <https://www.xserve.com/help-and-support/>
- For more information on DESC meeting dates and material, see the Joint Office DESC page <https://www.gasgovernance.co.uk/desc> and the [DESC Terms of Reference](#)
- For more information on Ofgem and the role they play in managing the energy industry see their website here [Welcome to Ofgem | Ofgem](#)
- Further Information can be found on the Demand Estimation page of the Xserve website <https://www.xserve.com/help-centre/demand-attribution>