Demand Estimation Sub Committee

An Introduction

Background – Demand Estimation

- Key industry processes require various types of gas demand estimation at NDM Supply Points. These processes include:
  - Daily Nominations and Allocations i.e. NDM Supply Meter Point Demand Formula
  - Determining Supply Point Capacity
  - Determining Annual Quantities (AQs)

- To achieve this estimation, each NDM Supply Point belongs to an End User Category (EUC)

- EUCs are used to categorise NDM Supply Points in an LDZ and are defined by reference to variables which are maintained on the Supply Point Register (UK Link)

- Each EUC requires an associated Demand Model which represents its gas usage characteristics e.g. weather sensitivity, consumption profile etc

- Demand Models are mathematical models which provides an estimate of gas demand for each EUC by reference to variables determined by DESC

Background – Demand Estimation cont.

- 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

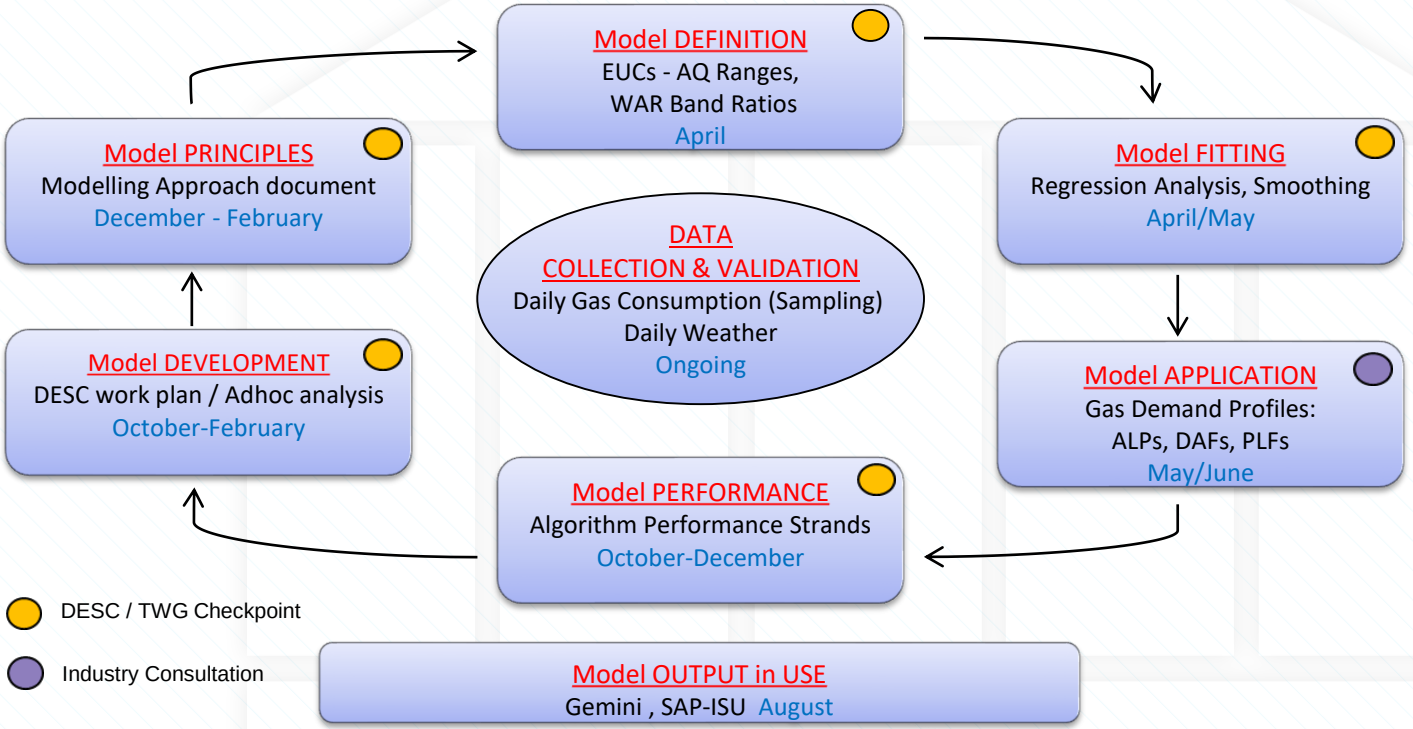
- The Modelling Approach provides an overview of the EUC definitions and how the modelling shall be performed, which DESC is asked to formally approve at its meeting in February each year

- Prior to this, DESC's Technical Workgroup (TWG) are sent a draft of the document to review and comment on

- Section H of UNC and the NDM Demand Estimation Methodology document provides more detail of the Demand Estimation process

Overview: EUC & Demand Model Lifecycle

The purpose of the EUC Demand Model is to represent the behaviour and reactions of the EUC Population



"A model is a simplified representation of reality"

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 and loaded to CDSP's systems **by 15th August**
  - In between April and August is when the 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 is applied, draft Gas Demand Profiles are produced and reviewed, followed by an industry consultation **commencing early June**
- The above explains why it is necessary to agree modelling principles and methodologies in February, as there is not time in the Spring/Summer to make fundamental modelling decisions and gain agreement from all DESC members

Demand Estimation: Typical Timetable

High Level View of Demand Estimation Meeting Timetable and Key Checkpoints

PHASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1. MODEL PRINCIPLES												
Modelling Approach Approved (DESC)		DESC Mtg.										
2. Data COLLECTION & VALIDATION												
Daily Gas Consumption Data validated (CDSP)				Internal								
3. MODEL DEFINITION												
Agree Data Aggregations / WAR Band Limits (TWG)				TWG Mtg.								
4. MODEL FITTING												
Gas Demand EUC Modelling review (TWG)					TWG Mtg.							
5. MODEL APPLICATION												
Publication of Draft Gas Demand Profiles (CDSP)						Website						
Gas Demand Profiles Approved for wider industry (TWG/DESC)							DESC Mtg.					
Final Approval of Gas Demand Profiles (DESC)							DESC Mtg.					
6. MODEL OUTPUT IN USE												
SAP-ISU and Gemini updated (CDSP)								Internal				
7. MODEL DEVELOPMENT												
Adhoc Work-plan approved (DESC)							DESC Mtg.			DESC Mtg.		
8. MODEL PERFORMANCE												
NDM Algorithm Performance - Strands 1 to 3 reviewed (DESC)												DESC Mtg.

- Delivering EUC Demand Models and Gas Demand Profiles is an annual process as set out above and includes several check points for DESC along the way

DESC Deliverables – High Level View

- DESC are responsible for delivering the following key output, including the review and maintenance of the formulas used to calculate them

Key Demand Estimation Deliverables	What is their purpose…..	For use in Industry Processes….	DESC's Role is to…
End User Category (EUC)	To provide a method for categorising consumers by their different gas usage patterns and ensure gas demand profiles are available for a wide range of consumer types	Demand Attribution Capacity Invoicing AQ calculations Read Estimation	Review and approve the EUC definitions each year
EUC Demand Model	To provide a mathematical representation of the behaviour and reactions of the gas consumers in the EUC population	The production of all key Gas Demand Profiles (ALPs, DAFs, PLFs)	Create, review and approve the EUC Demand Models each year
Annual Load Profile (ALP)	To provide a daily gas demand profile for how consumers in the EUC typically use their gas during a gas year	Demand Attribution AQ calculations Read Estimation	Create, review and approve the Annual Load Profile for the next Gas Year
Daily Adjustment Factor (DAF)	To provide a daily weather sensitivity profile for how consumers gas usage in the EUC reacts to changes in weather during a gas year	Demand Attribution AQ calculations Read Estimation	Create, review and approve the Daily Adjustment Factor for the next Gas Year
Peak Load Factor (PLF)	To provide a parameter which represents how gas consumers will react in the event of extremely cold weather in order to uderstand likely peak day gas demand levels	Capacity Invoicing	Create, review and approve the Peak Load Factor for the next Gas Year
Composite Weather Variable (CWV)	To provide a variable which can represent the relationship between weather and gas demand in order to be used as a 'building block' for the EUC Demand Model	Demand Attribution AQ calculations Read Estimation	Review and Approve the Composite Weather Variable Formula every 5 years
Seasonal Normal Composite Weather Variable (SNCWV)	To provide a view of 'seasonal normal' weather, which enable gas demand profiles and Annual Quanitities (AQs) to be represented at 'average' conditions which creates stability for industry	Demand Attribution AQ calculations Read Estimation	Review and Approve the Seasonal Normal Composite Weather Variable Formula every 5 years

Want to know more ?

- The Demand Estimation Team at Xoserve can be contacted via our regularly reviewed box account – email address below:

  xoserve.demand.estimation@xoserve.com

- All DESC meetings are co-ordinated by the Joint Office and the meeting material can be viewed on the DESC page here

- Further information, including FAQs can also be viewed on Xoserve's website here