



Demand Estimation Sub Committee
EUC Modelling Approach – Spring 2018

13th February 2018

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Background and Objective

Background – Demand Estimation

- Key industry processes require various types of gas demand estimation at NDM Supply Points. These processes include:
 - Determining Supply Point Capacity
 - Daily Nominations and Allocations i.e. NDM Supply Meter Point Demand Formula
 - 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 in the Supply Point Register
- 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

- 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 document called the “Spring Approach”
- The Spring 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

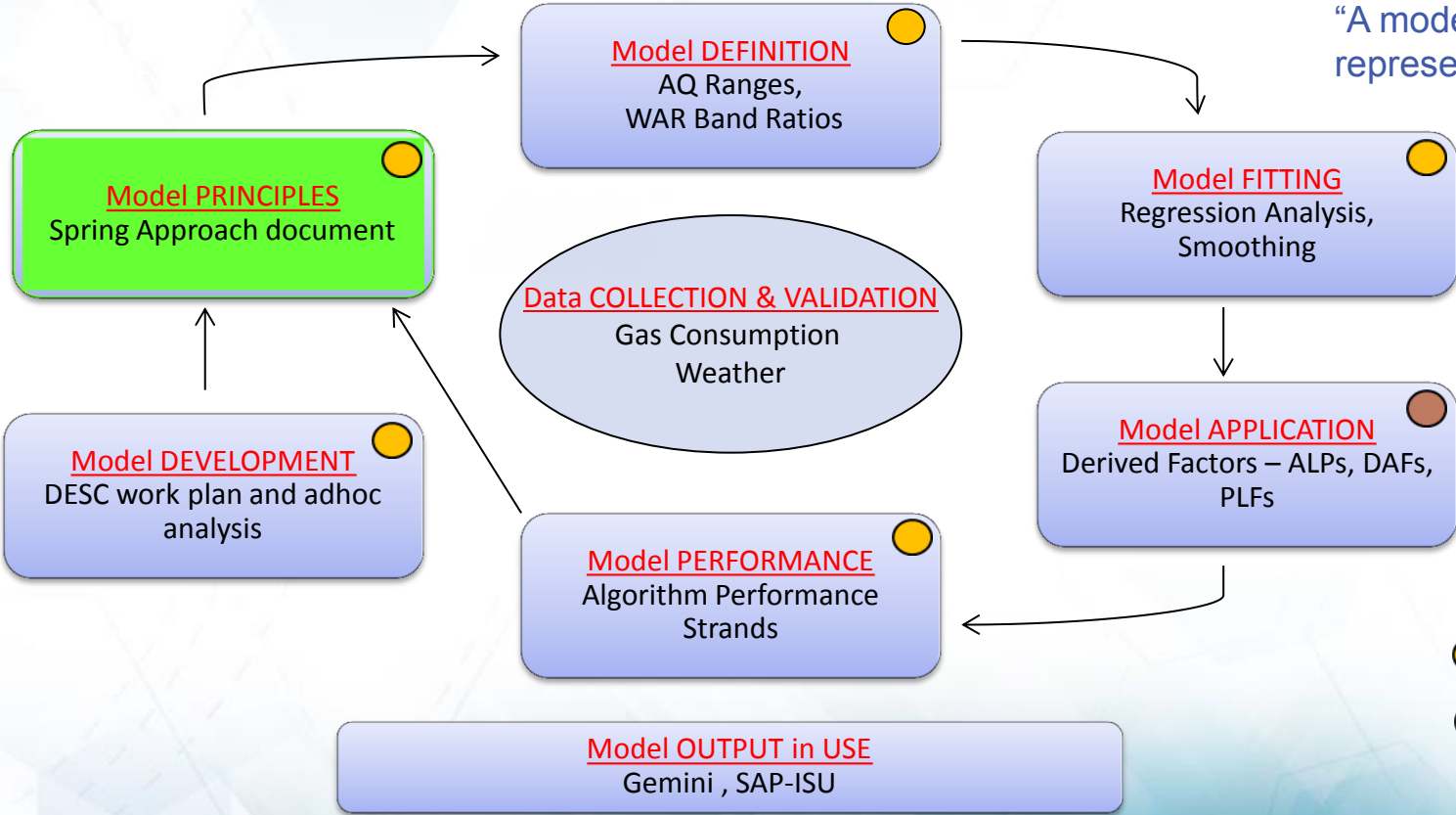
Background – Demand Modelling Framework

- DESC's obligation of producing a set of End User Categories and Demand Models for the next gas year has 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 sample data validation results are reviewed, WAR Band ratios are set, single year models are developed and reviewed, model smoothing is applied, draft Derived Factors 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

Background - EUCs and 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”



- DESC / TWG Checkpoint
- Industry Consultation

Objective – Today's Meeting

- The final objective of the “Model Principles” phase is to produce a Spring Approach document for the derivation of EUCs and Demand Models effective for Gas Year 2018/19, which is approved by DESC
- The first draft of the Spring Approach document was discussed at the December'17 DESC meeting. DESC members and TWG representatives were asked to review and provide comments (Action DESC1203)
- Objective of today's meeting is for DESC to...
 - Review any comments that have been received on the draft Spring Approach
 - Consider CDSP's views on impacts of o/s UNC Modifications to Spring Approach
 - Decide if and when DESC can approve latest version of the Spring Approach

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Impacts of UNC Modifications

Go To Presentation:
“UNC Modification Impacts Spr2018”

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Spring 2018 EUC Modelling Approach

Spring Approach 2018 – Modelling

- The latest version of the Spring Approach document for the 2018 analysis is available on the Joint Office website: “Modelling Approach Spring 2018_Draft”
- The next few slides summarise the high level modelling principles from the current version of the draft document
- Those bullets in italics and that end with (TBC) are where there may be an impact as a result of DESC / industry decisions, and so require amendment

Spring Approach 2018 – Modelling 1

- Consumption Data:
 - For Spring 2018 analysis, daily consumption will be required for the period 25th March '17 to 7th April '18 (main analysis period 1st April '17 to 31st March '18)
 - Thirty party (e.g. Shipper) supplied sample data is welcome (and needed), subject to Xoserve receiving it in the required format and it passing the standard validation criteria, see document located on DESC's homepage on the Joint Office website
 - Last Spring Xoserve pointed out that for the first time, the numbers of 01B sample sites available for modelling each LDZ dipped below 200 for the first time. We are expecting the numbers for Spring 2018 to be lower again
 - *If Shippers are able to provide us with daily consumption data for domestic 01B sites it would be very much appreciated and would ensure that robust models for the biggest sector of the NDM population can continue (TBC)*

Spring Approach 2018 – Modelling 2

- Consumption Data continued:
 - The historical LDZ aggregations plus the additional ones created in Spring 2014 will ensure several combinations are available when individual LDZ analysis is not possible
 - *Model Re-runs to be performed using approved datasets from 2015/16 and 2016/17. This is required for the model smoothing process (TBC)*
- Weather Data:
 - Weather data to be used will mainly be based on the output derived from the Weather Station Substitution Methodology (WSSM) project (up to 30th Sept 2012), UK Link and SAP-ISU data thereafter
 - The EUC demand modelling to use the CWVs and SNCWVs based on the parameters and Seasonal Normal basis effective from 1st October '15

Spring Approach 2018 – Modelling 3

- Modelling Principles:
 - *Band 01 modelled as a single band - 0 to 73.2 MWh with Domestic only sites (TBC)*
 - Band 7 & 8 consumption and WAR bands to be merged for modelling purposes only, as per DESC decision in Spring 2014
 - Holiday code rules to be the same as used in Spring '17, which for the Christmas and New Year holiday period will be those agreed by DESC in November 2011
 - Warm weather analysis in order to identify those models which exhibit 'Summer Reductions' and / or 'Cut-Offs'
 - Analysis performed to assess if 'Weekend and/or Holiday effects' are necessary
 - 3 year model smoothing applied along with existing weightings for each individual year (i.e. 33:33:34)

Spring Approach 2018 – Modelling 4

- Derived Factors (ALP, DAF and PLF):
 - The Annual Load Profile (ALP) formula remains unchanged
 - *The Daily Adjustment Factor (DAF) formula no longer requires the computations from an agg. Demand model following the implementation of UNC Modification 0432 (TBC)*
 - The Peak Load Factor (PLF) formula remains unchanged, including the methodology for deriving the estimate of peak day demand for Small NDM and Large NDM EUCs i.e. simulation
- Fall-back position:
 - *In the event the NDM proposals derived from the Spring 2018 analysis are rejected by DESC, the underlying demand models from Spring 2017 would be used - referred to as 'fall-back' proposals (UNC Section H) (TBC)*

Spring Approach 2018 – Modelling 5

- Reporting Output:
 - The NDM Algorithms Booklet summarising the end to end process will be produced
 - Parameters for all smoothed models to be published in an Appendix to the 2018 NDM Algorithms Booklet. All other model parameters to be provided in electronic form
 - The performance evaluation summary (Section 12) to reflect the review of Algorithm Performance (Strands 1 to 4) for Gas Year 2016/17
 - The location of all supporting documents and files to be published on Xoserve's secure SharePoint site (UK Link Documentation):
 - 18.NDM Profiling and Capacity Estimation Algorithms / 2018-19 Gas Year

Section 4

Interaction and Timetable

Spring Approach 2018 – Interaction

- Spring 2018 will be the 7th modelling cycle with the DESC / TWG collaborative approach to decision making and transparency
- To ensure that the correspondence during the Spring Analysis period (April to July) between Xoserve and the TWG remains productive, please ensure the TWG representative within your organisation (as displayed on the master list on the Joint Office website) is still the most appropriate contact
- Please take time to review the decision / interactions timetable (Appendix 5 of the Spring Approach document) which provides summary of the anticipated DESC / TWG involvement during the modelling cycle

Spring Approach 2018 - Timetable

High Level View of Demand Estimation Timetable 2018 - Key Checkpoints

PHASE	JAN'18	FEB'18	MAR'18	APR'18	MAY'18	JUN'18	JUL'18	AUG'18	SEP'18	OCT'18	NOV'18	DEC'18
1. MODEL PRINCIPLES												
Spring Approach 2018 Approved (DESC)		13th Feb										
2. Data COLLECTION & VALIDATION												
Sample data validated (CDSP)				13th Apr								
3. MODEL DEFINITION												
Agree Data Aggregations / WAR Band Limits (TWG)				24th Apr								
4. MODEL FITTING												
Small & Large NDM Single Year modelling review (TWG)					15th May							
5. MODEL APPLICATION												
Publication of Draft Derived Factors (CDSP)						1st June						
Derived Factors Approved for wider industry (TWG/DESC)							9th July					
Final Approval of Derived Factors (DESC)							24th July					
6. MODEL OUTPUT IN USE												
SAP-ISU and Gemini updated (CDSP)								15th Aug				
7. MODEL DEVELOPMENT												
Adhoc Work-plan approved (DESC)							24th July					
8. MODEL PERFORMANCE												
Strands 1 to 4 reviewed (DESC)												TBC

Section 5

DESC Decisions

Spring Approach 2018 – DESC Decisions

- The next phase of work is to make preparations for collecting the relevant sample data and completing the Back runs, the latter cannot be completed without agreement on the modelling approach
- Accepting that it may not be possible to get agreement today around the EUC Band 1 and 2 definitions, are DESC happy to approve the principles of the EUC Modelling approach ?
- There are no more scheduled DESC meetings until July, with this in mind how would DESC like to engage over the coming weeks/months once decisions start to be made on outstanding UNC Modifications ?