



Demand Estimation Sub Committee

Review of Ad-hoc Work Plan:

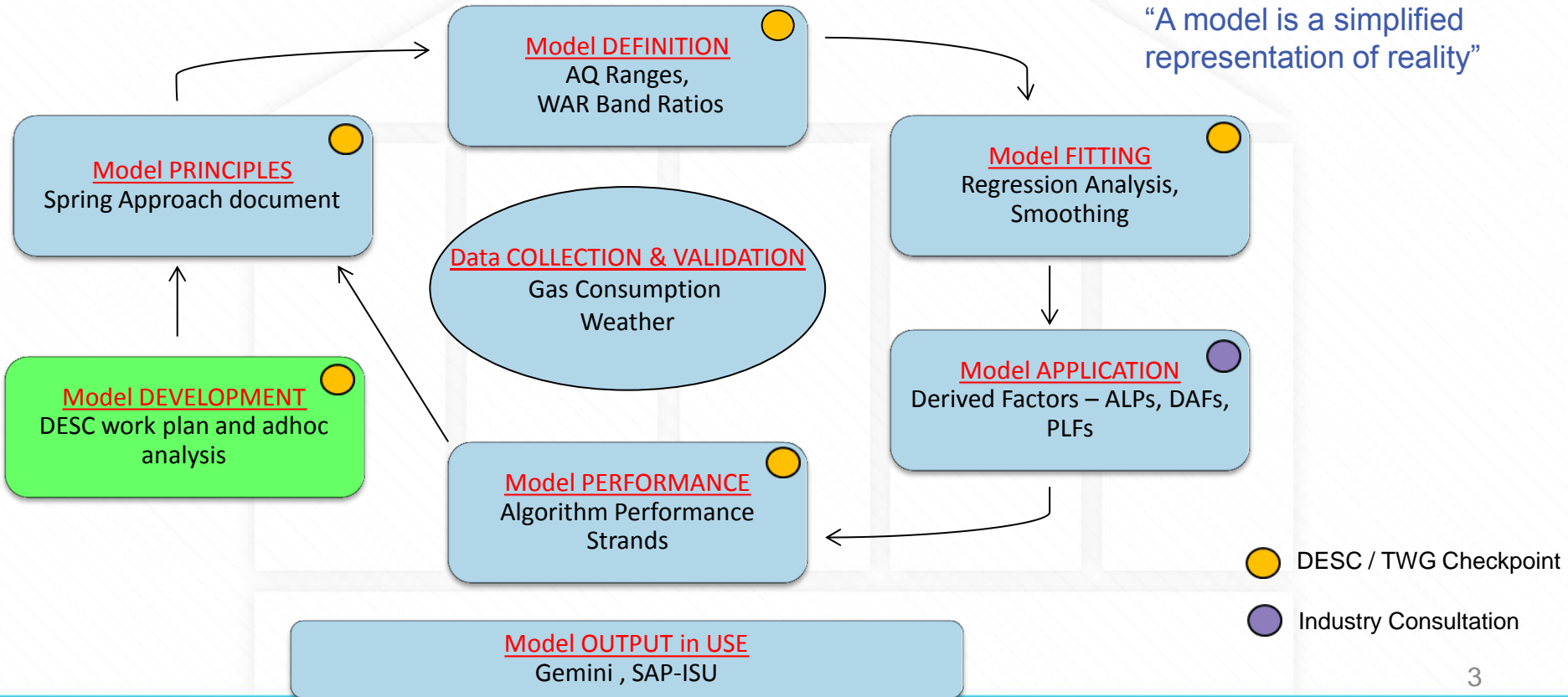
22nd July 2019

Objective:

- The process of deriving the 2019/20 EUCs and Demand Models and loading their profiles to the various systems is nearing its conclusion. All of this has been achieved during the period of March to August
- It is now time to focus on the work to be carried out during September to February
- This is an opportunity for DESC to agree which areas it would like the CDSP and the TWG to look into in order to review and improve the modelling process
- Objective of today's meeting is:
- To agree DESC's work plan for Autumn 2019 / Winter 2020

Overview: EUC & Demand Model Lifecycle

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



Background

- The areas to discuss for the upcoming Autumn / Winter period consists of:
- Standard regular work items performed year on year
- Adhoc work areas which naturally get raised through discussions at DESC or TWG and captured by Xoserve on an adhoc work plan log
- DESC have the responsibility of reviewing the list and prioritising those it wishes CDSP / TWG to focus on during the next Autumn and Winter period in addition to the standard work plan items
- The next 2 slides summarise the standard work plan items for the upcoming Autumn / Winter period and additional work identified by Xoserve

Standard Work Plan – Autumn/Winter ‘19/20

- Algorithm Performance for Gas Year 2018/19
 - Produce reviews of all 3 strands of analysis, as agreed by DESC
- Spring Approach 2020 preparations (for Gas Year 2020/21)
 - Approach document approved, model re-runs and updates to modelling systems
- Seasonal Normal Review 2020
 - Complete CWV optimisation for new formula
 - Support system changes to incorporate new features of CWV formula
 - Procure weather contract for new weather variables
 - Produce SNCWV methodology and calculate new values
 - Re-state historic models on new seasonal normal basis in readiness for Spring 2020 modelling

Additional Work - 19/20

- Demand Estimation team are in the process of replacing all existing EUC modelling systems in order to be able to provide a more flexible service to DESC during next years process. This is a significant piece of work, likely to be take up all available resource until end of the year
- In addition, the introduction of MOD654 has seen a large increase in the volumes of sample data being processed for modelling purposes
- Utilising the new system, the Demand Estimation team also needs to design a better process for handling and validating all of the various data streams going forward, again a significant piece of work
- Introduction of new weather variables / contract will also require the team to design/build a process for handling in the new solution
- Overall, current work book of the Demand Estimation team is pretty full during the Autumn/Winter period

TWG Adhoc work areas log

- The DESC 'Ad-hoc Work Plan' was established in 2012 to capture any issues and ideas which arise during the year that DESC decide they may like to review at a later stage. The list of items is maintained by the CDSP
- The last review session of the list of adhoc work areas was carried out at the DESC meeting on 24th July 2018 which helped plan the Autumn/Winter '18/19 schedule of work
- The next few slides cover the work items that (i) have been raised as a potential area to investigate but as yet have not been identified as a priority and (ii) items carried forward from last year
- Are there any outstanding items which DESC feel should be looked at as a priority ?
- All "Completed" items since the TWG was established are provided as an Appendix at the end of the presentation

Adhoc Work Plan Items: OUTSTANDING

Source	Description of Work item	Estimated Effort *	Potential Approach	Next Steps	Ownership	Status
TWG 20/04/12	Consider the application of weather correction to WAR Bands	High	Analysis to assess impacts of switching approach, and system implications of making changes	To be considered at Adhoc Work Plan review meeting in July 2019	Xoserve	Awaiting Prioritisation
TWG 25/06/14	Review day of the week demand behaviours, particularly whether the modelling of Monday to Thursday demands together is still valid (Ref: E.Ons 14/15 rep – qry 1)	Medium	Statistical analysis using daily sample demands to establish if 'day of week' behaviours are consistent for Monday to Thursday	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation
TWG 25/06/14	All parties to suggest different ways that the EUC banding might be split, based on consumption levels or customer attributes, this was a post UKL replacement consideration (DE0202)	Low	Partly being addressed by potential introduction of new EUCs in bands 1 and 2 using new attributes	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation
DESC 13/02/18	Review appropriateness of current AQ boundaries for Large NDM EUCs (>2,196 MWh pa), currently requires 21 demand models for population of c.7,000 supply points	High	Detailed statistical analysis required, using daily sample data to try and identify unique end user categories i.e. consumers with specific consumption profiles and weather sensitivities	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation

Key *

High: Detailed analysis / consultation required (>10 days effort)

Medium: Moderate amount of analysis required (2 to 10 days effort)

Low: 'Quick wins' e.g. request for data / minor analysis (<2 days effort)

Adhoc Work Plan Items: OUTSTANDING

Source	Description of Work item	Estimated Effort *	Potential Approach	Next Steps	Ownership	Status
Post DESC Feb' 18 meeting (MOD 0644)	Investigate if the weather sensitivities expressed by the DAF parameter for each EUC could be enhanced to improve the performance of the demand models when there are [X%] differences observed in the WCF i.e. CWV-SNCWV	High	Using daily sample gas demand review the performance of demand models and levels of daily UiG under certain WCF conditions - e.g. is it worse when WCF differences are larger ?	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation
Post DESC Feb' 18 meeting	Review whether the treatment of EUC Cut-Offs in the approach to demand modelling is still applicable	High	Using daily sample gas demand investigate EUC models which have exhibited a CWV Cut-Off and review whether their application has improved the performance of the models.	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation
TWG 15/05/18	Following review of outliers in single year modelling results it revealed that potentially a Christmas holiday effect may have started earlier than currently modelled. TWG suggested that existing holiday code rules are reviewed to assess if they are still appropriate	High	Use daily sample data from recent years as the base for analysis Assess whether current rules which define each holiday period are valid by reviewing residuals between fitted and actual Assess effectiveness of holiday code allocation within the various holiday period rules using analysis of variance	To be considered at Adhoc Work Plan review meeting in July 2019	Any TWG party	Awaiting Prioritisation

Key *

High: Detailed analysis / consultation required (>10 days effort)

Medium: Moderate amount of analysis required (2 to 10 days effort)

Low: 'Quick wins' e.g. request for data / minor analysis (<2 days effort)

CDSP Recommendations

- CDSP recommends the following work areas should be focused on over the Autumn '19 / Winter '20 period:
 - Algorithm Performance for Gas Year 2018/19
 - Spring Approach 2020 preparations (for Gas Year 2020/21)
 - Seasonal Normal Review 2020
 - Implement upgrades to CDSP's modelling processes / systems which develop Demand Estimation deliverables
 - Implement changes to CDSP's sample data handling processes
 - Implement changes to CDSP's weather data handling processes

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
<i>DESC 13/02/18 (MOD 0644)</i>	<i>Part 1: Establish whether any additional weather data items (excl. temperature and wind speed) have a consistent relationship to daily gas demand Part 2: In the event that relationships exist, investigate possibilities of how this could be defined and incorporated into the CWV formula</i>	<i>Completed Summer 2019 – New CWV Formula defined for 2020/21</i>

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
XOS 13/07/16	<i>Support to UK Link replacement, including ongoing simulation of UiG levels</i>	<i>Completed – New Regime implemented. UiG Monitoring now part of Standard Work plan</i>
XOS 13/07/16	<i>Establish process for Algorithm Performance measures for ‘new world’ algorithm</i>	<i>Completed – First delivery of Strands 1 to 4 presented to DESC DESC Meetings 21/11/2017, 19/12/2017, 13/02/2018</i>
XOS 13/07/16	<i>Update to modelling systems to accommodate new UK Link data structure (Spring 2018)</i>	<i>Completed – Spring 2018</i>

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
DESC 30/07/14	<i>TWG to explore options for measuring Algorithm Performance in the Post UK Link replacement world.</i>	<i>Completed - DESC TWG Meeting 16/09/2015</i>
TWG 27/04/15	<i>TWG proposed that list of data aggregations for modelling should be reviewed in advance of Spring analysis to see what might be preferred/substituted</i>	<i>Completed - DESC TWG Meeting 17/11/2015</i>
DESC 21/05/14	<i>DESC and Xoserve to work together to establish a process of using Shipper consumption data to boost data available to modelling. Target Date October 2014 to assist Algorithm performance</i>	<i>Completed - DESC TWG Meeting 17/11/2015</i>
XOS 06/07/15	<i>Review of contents of NDM Booklet and modelling supporting files</i>	<i>Completed - Summer 2016</i>

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
<i>DESC 13/11/13</i>	<i>Perform another review of Model Smoothing methodology in Autumn 2014 (following results presented in Autumn 2013)</i>	<i>Superseded. DESC agreed not to do this in 2014</i>
<i>TWG 23/05/12</i>	<i>Further consideration given to parameters / tests used for defining Warm Weather Cut off models</i>	<i>Completed - DESC Meeting 15/02/2017</i>
<i>TWG 26/06/13</i>	<i>Review actual sample consumption versus summer profiles in order to try and improve allocation process during summer months (linked to above)</i>	<i>Completed - DESC Meeting 15/02/2017</i>

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
TWG Dec'12	<i>Analysis to understand relationship between Birmingham Edgbaston and Winterbourne following announcement of Edgbaston closure</i>	<i>Completed - DESC TWG Meeting 28/01/2013</i>
TWG 24/04/13	<i>Review current LDZ aggregations used for EUC modelling and agree any potential new groupings. Followed by system updates and testing</i>	<i>Completed - DESC TWG Meeting 27/11/2013</i>
TWG 20/04/12	<i>Review of 'spike' validation rules applied to sample data during Spring (and Autumn) analysis</i>	<i>Completed - DESC TWG Meeting 12/02/2014</i>
XOS 15/05/13	<i>Windows 7 and Microsoft Office 2010 upgrades</i>	<i>Completed - Winter 14/15</i>

Adhoc Work Plan Items: COMPLETED

Source	Description	Status
TWG 20/04/12	<i>Review of appropriateness of current EUC definitions for Small and Large NDM</i>	<i>Completed - DESC TWG Meeting 15/01/2014</i>
TWG 20/04/12	<i>Investigate possibility of providing TWG with data during the Spring analysis WAR Band definitions review</i>	<i>Completed - Spring 2013 Analysis</i>
TWG 15/08/12	<i>Complete analysis and investigations into Options A,C and E in order to conclude views on final algorithm to take forward</i>	<i>Completed - DESC TWG Meeting 19/03/2013</i>
TWG 15/08/12	<i>'Maintenance work' on EUC modelling system / processes following first run through of annual cycle – including re-write of systems, updates to existing ones and documentation updates</i>	<i>Completed - Winter 12/13</i>
TWG 15/08/12	<i>Prepare for impacts of weather station change at Hulme Library impacting NW and WN LDZs</i>	<i>Completed - DESC Meeting 08/10/2013</i>