



## **Demand Estimation Sub Committee**

### Review of NDM Algorithm

5<sup>th</sup> October 2020

# Objective

- Review latest developments in relation to DESC's UNC Section H obligation 2.2.2 to review the Supply Meter Point Demand Formula (also referred to as the NDM Algorithm)

# Review of NDM Algorithm - Background

- The main DESC obligations are defined in Section H of UNC
- Paragraph 2.2.1 describes the current formula for determining Supply Meter Point Demand
  - Supply Meter Point Demand<sub>t</sub> =  $(AQ/365) * ALP_t * (1 + [DAF_t * WCF_t])$

The above calculation is used daily in Gemini for NDM Nominations and Allocations

- This formula became effective from 1<sup>st</sup> June 2017 following the implementation of UNC Modification 0432 (Project Nexus – Gas Demand Estimation, Allocation, Settlement and Reconciliation Reform)
- Paragraph 2.2.2 was added as part of the 0432 updates to Section H and states the following:

*“The operation of the formula in paragraph 2.2.1 shall be reviewed by the Committee [DESC] every three (3) years”*

# Review of NDM Algorithm – Background cont.

- The UNC obligation to review every 3 years is new and has not been carried out formally since its introduction as part of UNC Modification 0432
- At the end of September 2020 a third complete Gas Year under the new regime will have been completed i.e. Gas Years 2017/18, 2018/19 and 2019/20
- The current formula is now a stand alone ‘bottom up’ estimate of NDM demand and is no longer the balancing figure (a role now taken up by Unidentified Gas (UiG)), meaning its accuracy/performance is more open to scrutiny and review
- Analysis completed by the UiG Task Force has focussed on the performance of the NDM Algorithm and has provided findings which suggest an approach which utilises ‘Machine Learning’ could offer improvements to the daily estimation of NDM demand

Examples below:

- Findings 13.2.5 [here](#) and 13.2.6 [here](#)

# Review of NDM Algorithm – Industry Discussions Update

- Although DESC have the obligation to review the Supply Meter Point Demand Formula, there is already a wider industry interest in the possible use of Machine Learning as a result of the findings and recommendations presented by the UiG Task Force
- At the April 2020 DSC Contract Managers meeting high level slides were presented which considered how Machine Learning (M/L) could be used by the industry, including Pros and Cons of full scale M/L and/or a partial M/L approach – see these slides [here](#)
- At the September 2020 DSC Contract Managers meeting a more detailed look at how M/L could be utilised was presented and discussed – see the paper [here](#). The options range from ‘Do Nothing’ to ‘Continual Machine Learning’
- It is clear that the implications of any change to the existing arrangements clearly need to involve the wider industry and so it is important for DESC to keep all interested parties informed and consulted

# Review of NDM Algorithm – How to Proceed ?

- Within the spectrum of options available, there will be some that DESC alone could implement where updates are only required to the UNC related Demand Estimation Methodology document. There will be other options that would require a UNC Modification and therefore require industry wide support
- Prior to DESC embarking too far down a particular approach it would seem sensible to explore the wider industry appetite for change in this area and any potential ‘red lines’ e.g.
  - How important is transparency ?
  - How embedded are some of the NDM Algorithm parameters in customer’s systems ?
  - How do we see the future of the NDM sector ?
- The Joint Office have offered to work with the CDSP to support a consultation process on this topic and set out a framework which ensures DESC maintain the responsibility for reviewing and approving any revisions to the NDM Algorithm. Any proposal will also allow industry participants to contribute to discussions and therefore ensure any subsequent recommendations that require UNC Modifications are likely to be approved

# Review of NDM Algorithm – Next Steps

- The Joint Office and CDSP shall work closely to initiate a consultation on the future of the NDM Algorithm and supporting processes
- Any consultation should not stop DESC exploring how the current EUC Demand Modelling approach can be improved, indeed it has been doing this in the past 2 years with additional EUCs introduced in Gas Year 2019/20 and changes to the CWV formula from Gas Year 2020/21. Discussions on the modelling approach for Gas Year 2021/22 will commence at our next DESC meeting in December
- Finally, it is always important to remember that any formula for calculating NDM demand is only as good as the data that is used within it and so the whole industry has a responsibility for ensuring all data held on the Supply Point Register (UK Link) is as upto date as possible e.g. meter read submission, AQ calculations, address and asset details. Following the implementation of MOD654S, ensuring all eligible parties provide sample data for training and testing the models will also continue to be important

# \*\* New Slide – NDM Algorithm Consultation \*\*

- The Joint Office and CDSP propose the following approach:
  - CDSP to initiate an ‘early consultation’ to assist DESC in understanding the wider industry views on the future of the NDM Algorithm/Sector. This approach should help confirm the scope and therefore avoid wasted effort
    - The consultation will be based on a number of questions to tease out the required information. DESC members welcome to assist with setting of questions
  - CDSP to host ‘Launch event’ scheduled at the time of publication of questions
  - All industry sectors provided with 3-4 weeks to provide responses to questions
  - Analysis of responses and Conclusions to be published and reviewed at DESC and Distribution Work Group with an aim to complete this by the end of the year
  - Once the early consultation has completed and we hopefully have a better understanding we can look at Next Steps which is likely to lead to an Industry Review Group to establish options and implementation plan