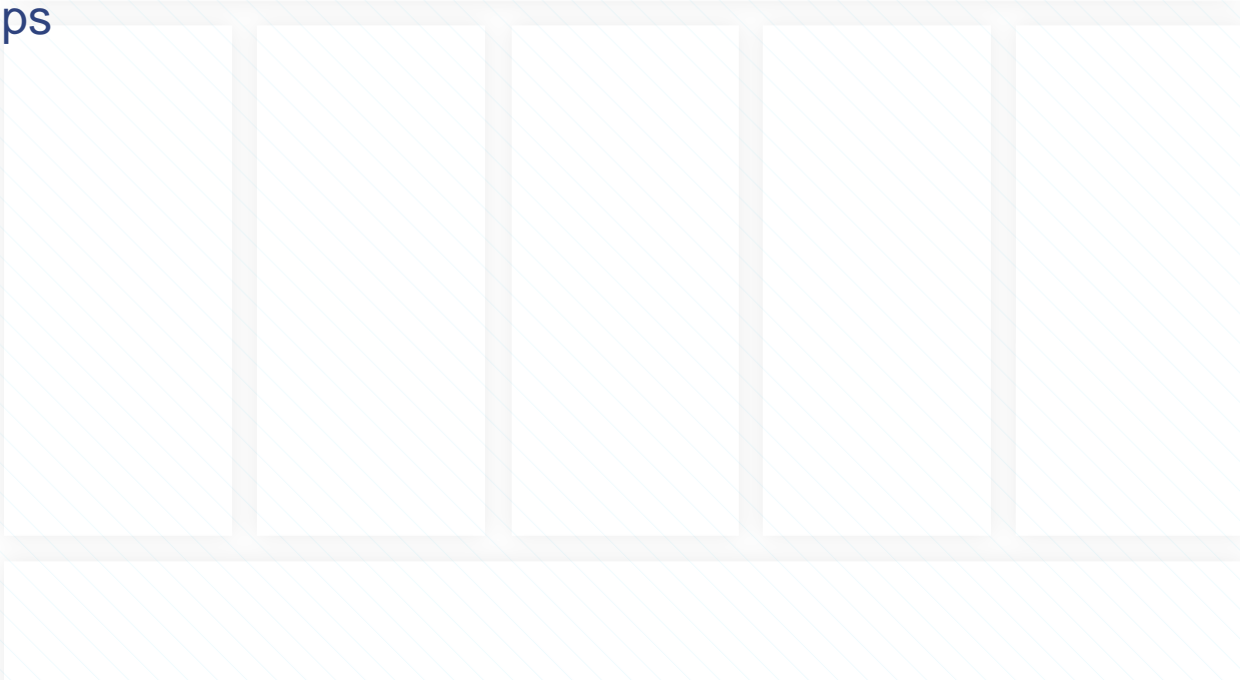# Demand Estimation Sub Committee

Review of NDM Algorithm

22nd July 2020

Objective

- Discuss DESC's UNC Section H obligation 2.2.2 to review the Supply Meter Point Demand Formula (also referred to as the NDM Algorithm) and consider Next Steps

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$_t$ = (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 1st 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"

3

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

- 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 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

- Following this meeting Xoserve agreed to take an action to produce a more detailed 'options paper' which was due to be delivered July this year, however due to the additional industry support required as a result of COVID-19 e.g. urgent UNC MODs etc, it has not been possible to progress the options paper (new target August Contract Managers meeting)

- This paper will provide a useful input to the discussions at DESC. 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 – DESC / TWG Action

- DESC/TWG need to consider how to approach this review. Reminder of Action (0404) from 27th April meeting:

  "DESC and DESC TWG members to consider and feedback to Xoserve any suggestions on the NDM Demand approach document ahead of the July DESC meetings"

- Upto now Xoserve / Joint Office has not received any feedback from DESC Members or TWG Representatives.

- We have received feedback from an observer (JB) at DESC (summarised below):

  - Recommend a clearly defined problem statement
  - From industry Users perspective clarify ideal situation vs reality
  - Review options and decide what is practical given any constraints
  - Achieved via a series of industry workshops
  - DESC can assess the options (look back to success criteria used for last review – i.e. change of Algorithm during Project Nexus)
  - Any option should be replicable, for verification and understanding and peer reviewed

Review of NDM Algorithm – Approach

- Xoserve Demand Estimation Team thoughts:

  - There is some scope for the Demand Estimation team to include this topic on this year's Adhoc Work Plan, however in reality this will need to be a combined effort across the industry

  - Draft document required for setting out the framework for review, needs to include:
    - Approach/Methodology
    - Success Criteria
    - Identify Key Stakeholders
    - Timescales
    - Industry Engagement / Consultation defined

  - Do DESC have any thoughts on how we establish the wider industry views on appetite for change vs benefits given the potential implications to core systems?
    - e.g extra meetings of DESC or Review Group ?

Review of NDM Algorithm – Next Steps

- Firstly we should formally ask if DESC wish to perform the review of the NDM algorithm during the 'off season' of 20/21 ?

- If so, do DESC wish the Demand Estimation team to draft an approach document and timetable for review ? Earliest this could be done would be early-mid September, followed by ad-hoc meeting to discuss ?

- Xoserve Demand Estimation Team continue to welcome DESC/TWG views and questions on this topic (suggest leaving existing DESC/TWG action open?)