Demand Estimation Sub Committee Technical Work Group

Review of NDM Algorithm

27th April 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"

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 a recent 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' and this is due to be delivered around July this year, this will be 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 – Approach

- DESC/TWG need to consider how to approach this review. Reminder of Action (0206) from 10th February meeting:

  "DESC members (all) to review the UNC Section H requirement at paragraph 2.2.2 and consider the approach to this work"

- DESC have completed an exercise similar to this during Project Nexus requirements, when the NDM Algorithm was reviewed and changed to the current formula

- Xoserve Demand Estimation Team thoughts:

  - Draft document required for completing the review, needs to include: Approach/Methodology, Success Criteria, Key Stakeholders, Timescales, Industry Consultation etc

  - Likely to be a large piece of work which could be considered as part of the Adhoc Work Plan review in late July

Review of NDM Algorithm – Next Steps

- Xoserve Demand Estimation Team welcome DESC/TWG views and questions on this topic over the coming weeks ahead of formally discussing again at the 22nd July DESC meeting, (suggest leaving existing DESC action open)

- At the July DESC meeting the majority of the work needed for the new Gas Demand Profiles should have been completed and the M/L options paper should also be available to consider as part of the overall NDM Algorithm review