3.2 Pre-Payment EUC

Demand Estimation Sub Committee
14/12/2021

Provided by:

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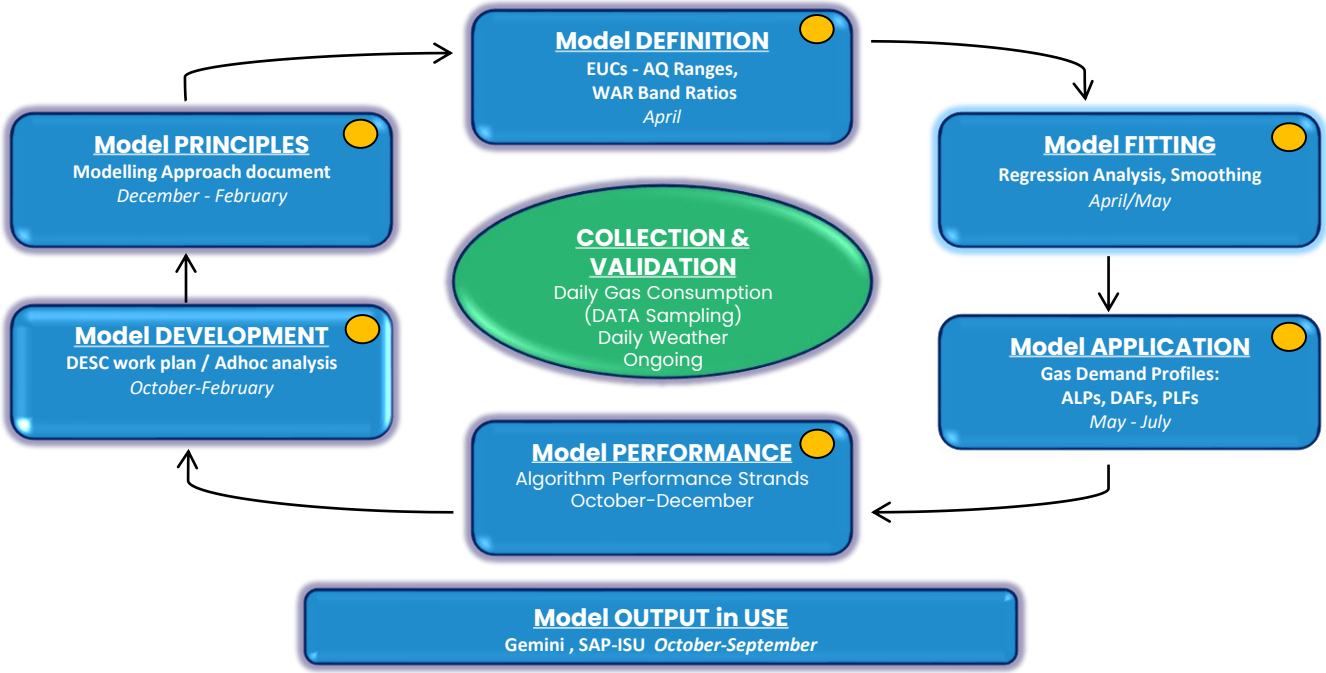
Section 1: Overview, Background and Objective

Pre-Payment EUCS - Overview



Pre-Payment EUCS - Background

- In October 2019, 8 new EUCS were introduced to allow separate profiles for Credit, Pre-Payment, Domestic and I&C sites
- Unfortunately, no data has been available for Pre-Payment sites and therefore data from MOD451AV was used
- The data in MOD451AV identified that profile of a PPM site is flatter than that with a credit meter
- This data is now 9 years old and we have never been able to test any of the Pre-Payment profiles
- Currently, there are over 2 million Pre-Payment sites in these EUC Bands

Pre-Payment EUCS - Objective

- Investigate the use of Class 3 Data as a reliable source for the Pre-Payment EUC (“01BPD”)
- Simulate UIG using a credit domestic Band 1 profile e.g. 01BND for the Pre-Payment population

Section 2: Update

Pre-Payment EUCS – Class 3 Data

- Due to insufficient numbers of Pre-Payment meter points received from the industry for Algorithm Performance, Class 3 data in UK Link was explored as a possible solution
- 6,000 potential meter points across all 13 LDZs were identified and run through the new Sample System
- 3,481 sites passed the validation and has been used to assess the performance of the Pre-Payment models (Strand 3 analysis)
- Points to consider:
    - Assignment of EUC relies heavily on data stored in UK Link being accurate and updated, specifically: Market Sector Code (MSC), Meter Mechanism and Payment Method
    - We have previously been informed 'Payment Method' is not being maintained and is only an optional field in the RGMA file

Pre-Payment EUCS – Class 3 Rejections

- The table below shows all rejections from Class 3 data collected

Rejection Reason	Count
Consecutive Zero Fail	156
Less Than 300 Records	4
WAR Band Tolerance Fail	20
AQ vs Calculated Energy Fail	15
Consecutive Zeros Post Infill	2
More than 30 Infills	24
HyDeploy	1
Summer Missing Reads	1946
Winter Missing Reads	1802

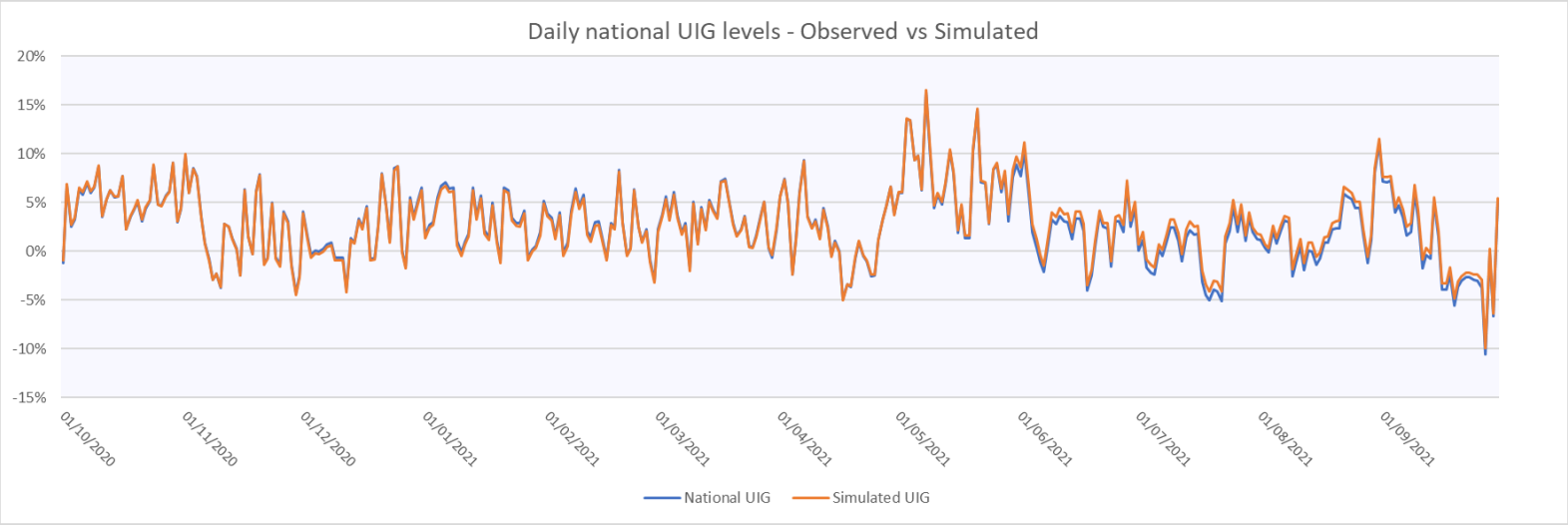
*Please note, each Meter Point can have more than 1 rejection

Section 3: UIG Simulation

Simulation of Demand Attribution profiles

- UIG can provide an indicator of EUC modelling error. If a profile was unsuitable you might expect UIG to increase (+ or -)

- Objective: To assess the current "01BPD" profile by simulating UIG levels in Gas Year 2020/21 assuming all "01BPD" EUCs had been allocated their equivalent credit meter profiles ("01BND").



- The daily national average UIG during Gas Year 2020/21 was 2.65%, this rose to 2.83% under the simulation. UIG levels during winter are very similar, however during summer the Simulated UIG is consistently above the observed daily value.

Simulation of Demand Attribution profiles conclusions

- Average daily national UIG increased slightly when 01BPD meters were allocated using equivalent credit meter profile (01BND)
- Each LDZ saw an increase in it's daily average UIG percentage
- When viewing average UIG levels alone, there is no evidence to suggest that the 01BND profile is more suitable than the current 01BPD profiles

	Observed average UIG	Simulated average UIG
EA	3.47%	3.63%
EM	1.98%	2.13%
NE	2.40%	2.52%
NO	1.94%	2.08%
NT	3.49%	3.77%
NW	2.82%	2.94%
SC	3.61%	3.79%
SE	1.42%	1.69%
SO	2.37%	2.49%
SW	2.14%	2.27%
WM	3.77%	4.05%
WN	1.90%	2.00%
WS	0.96%	1.12%

Section 4: Conclusions

Pre-Payment EUCS – Conclusions

- It appears that use of Class 3 data could be a valid source for producing a more appropriate EUC demand model
- Data in UK Link for Meter Mechanism and Payment method needs to be up to date and accurate to allow for sites to be:
  - Allocated to the correct EUC and
  - Ensure the Class 3 data used for modelling is reflective of Pre-Payment sites
- The data used from Class 3 shows that the PPM profile remains flatter than that of a standard credit meter (Strand 3 analysis)
- Running a UIG simulation with the PPM sample against a credit "01BND" profile saw an increase in it's daily UIG values. This alongside the Strand 3 analysis validates its existence.
- We still require PPM data from Shippers where possible