



MRE01029 Read Rejection  
Exploratory Analysis  
11/05/2023

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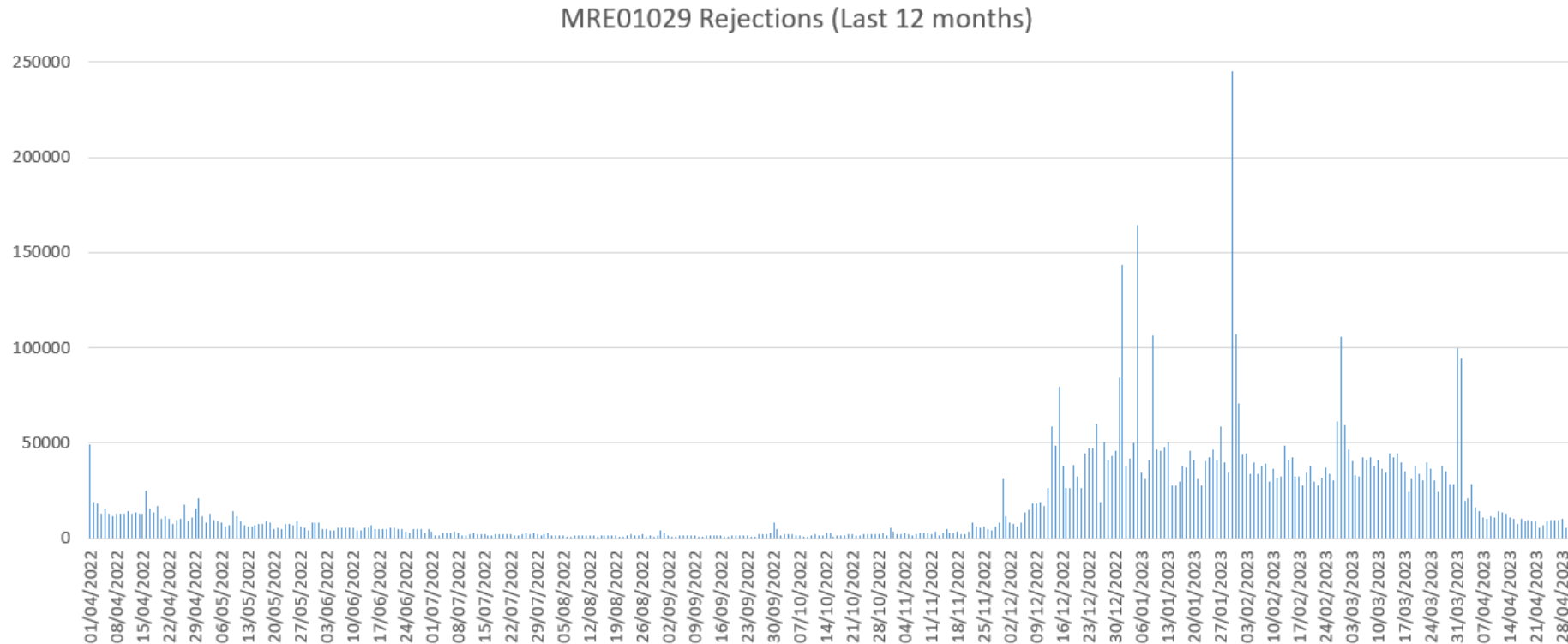
# Background

- Discussion at April CoMC meeting on observed increase in meter readings rejected due to them failing the 'inner tolerance' validation check
- It was noted that where meter readings are rejected, Shippers need to re-send the reads with the override flag in the file which is adding handling costs, greater complexity, and risk to the reads
- CDSP validates all meter readings it receives using tolerance checks against the site's AQ to ensure invalid reads are not accepted and used for AQ calculations & reconciliation processes (Class 3 & 4 MPRNs)
- UNC obligations are on the Shipper to perform the validations prior to submitting the read to the CDSP and, where confirmed the read is valid, provide confirmation in the file (via an override flag)
- Action recorded: 0402: Rejected Meter Readings: Emma Smith is to investigate DCC Enrolled Meter tolerances and report back to this Committee
- Analysis undertaken on meter readings rejected for breaching the inner tolerance validation and no override flag provided with the meter reading (MRE01029)
- Following slides provides the analysis carried out on **ALL** Class 3 and 4 Supply Meter Points

# MRE01029 Read Rejection Analysis

Investigation into whether there has been a significant and/or unexplained increase in MRE01029 rejections over the past year

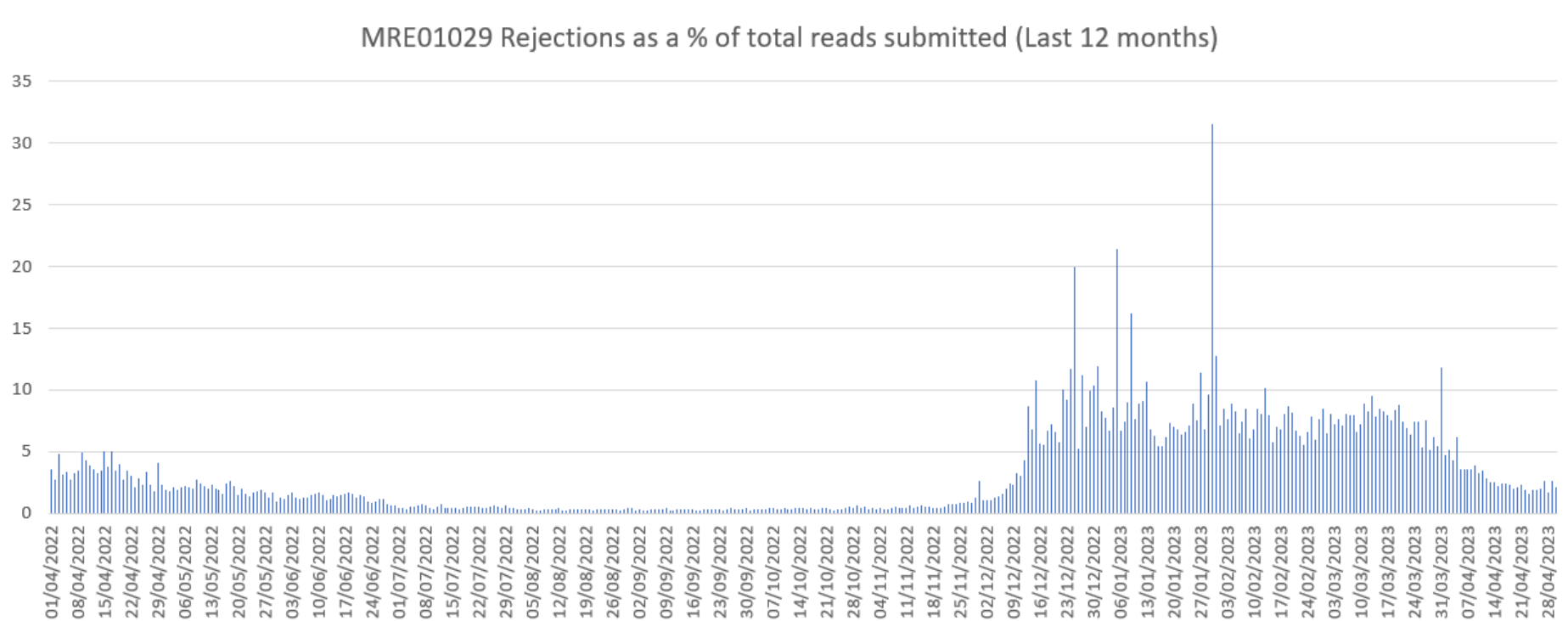
MRE01029 – “Reading breached the upper Inner tolerance value and no override flag provided.”



Plotting **all Class 3 & 4** MRE01029 rejections over the last months, it is immediately apparent that the number of rejections spikes from December 22 onwards. The largest spikes coming at the start / end of the months.

# MRE01029 Read Rejection Analysis

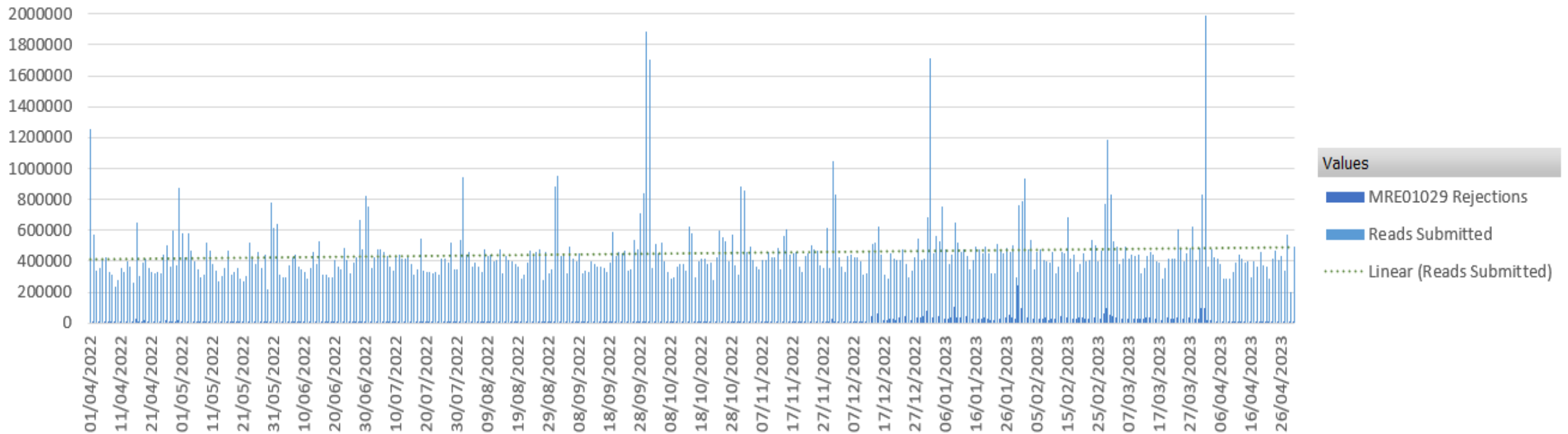
Has the increase in rejections been the result of a similar increase in total reads submitted?



The above graph suggests that, when standardised as a percentage of **total Class 3 & 4** reads submitted (excluding estimates), the number of MRE01029 rejections per reads submitted is still peaking from December 22 onwards.

# MRE01029 Read Rejection Analysis

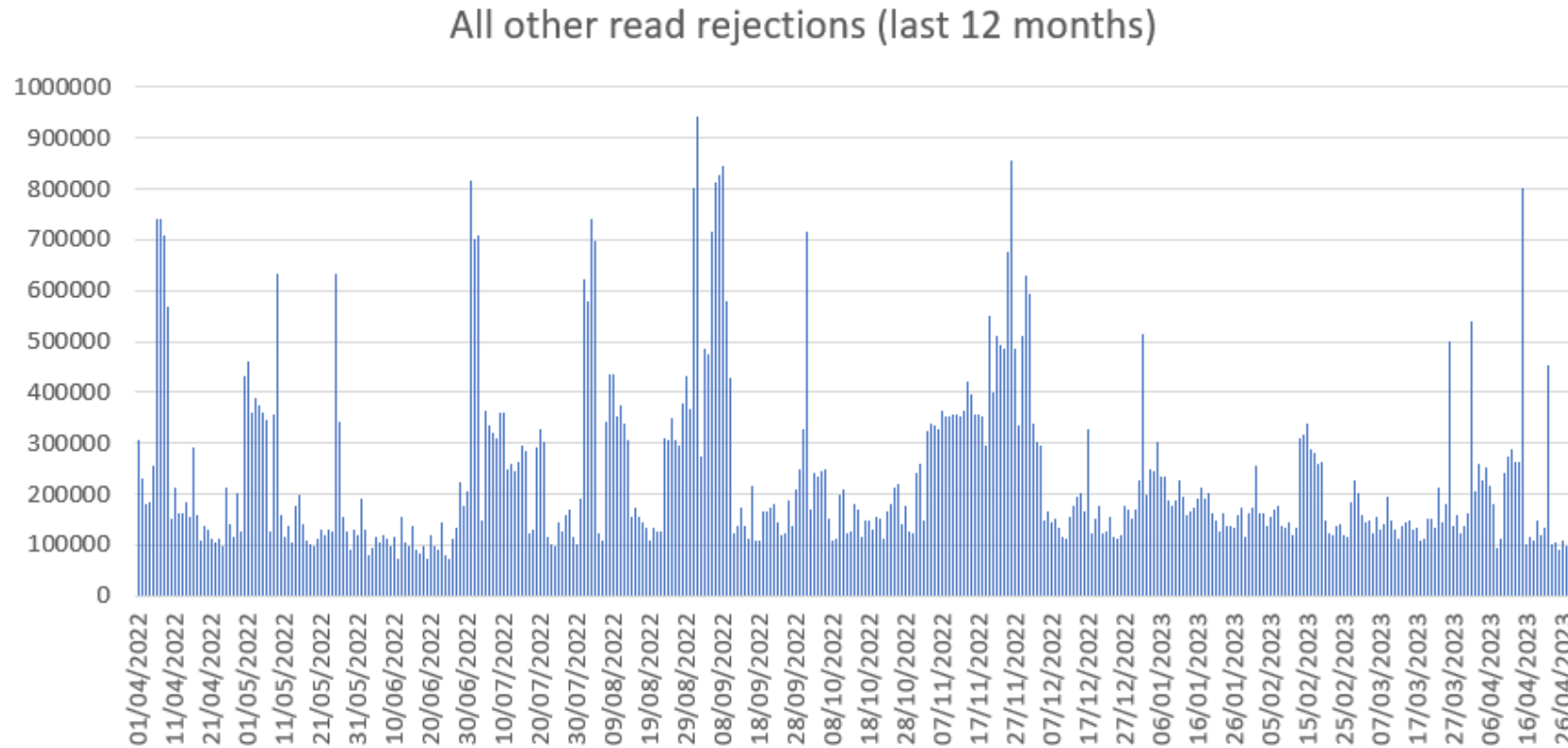
Have we seen a step change in the number of reads submitted which could be driving the increase in rejections?  
Quantity of **Class 3 and 4 reads** submitted plotted against quantity of rejections



There has been a slight upward trend in the last year, with notable spikes around month ends, especially when the Price Cap changes

# MRE01029 Read Rejection Analysis

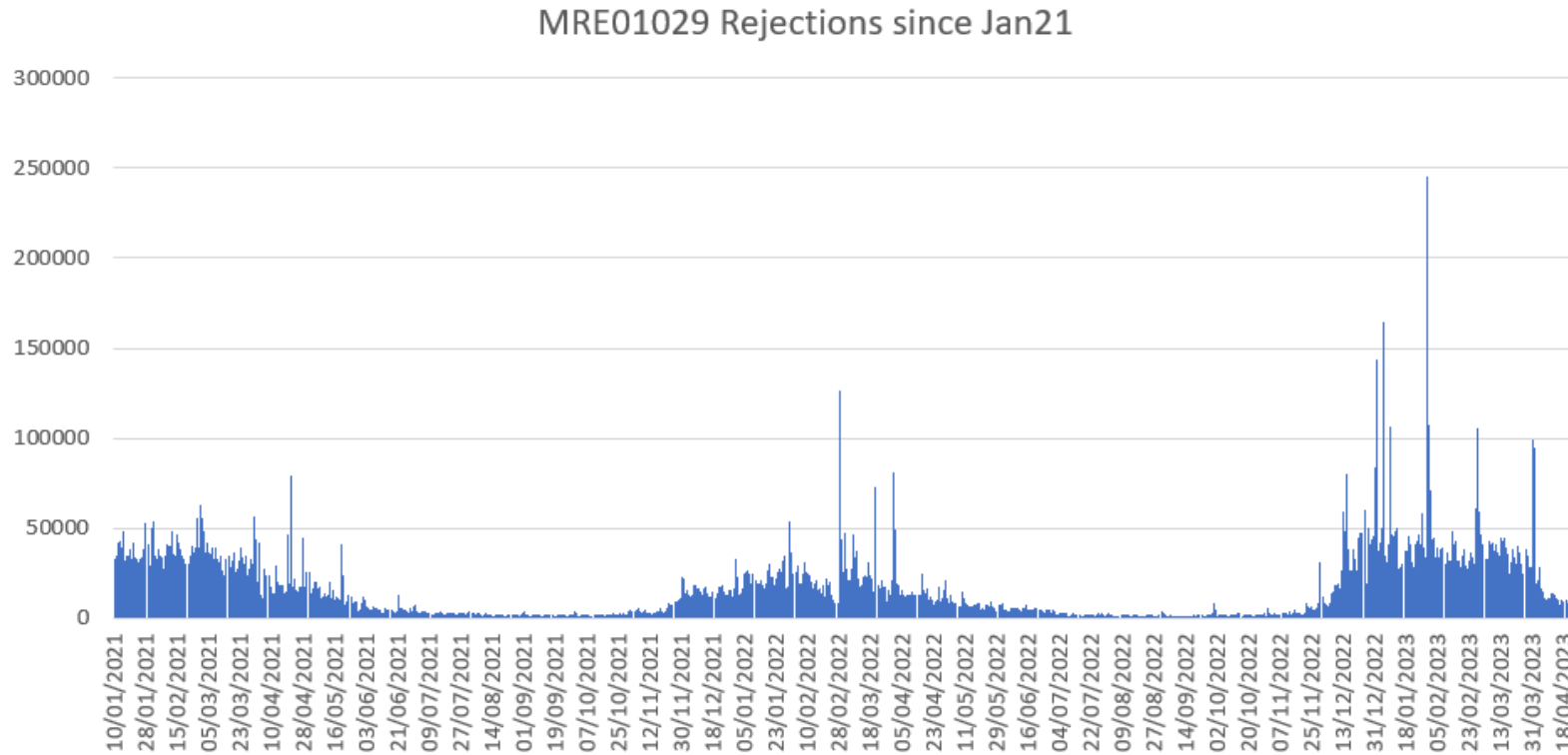
Have other read rejection types increased similarly to the pattern of MRE01029 rejections?



The above graph demonstrates that there doesn't appear to be any similar pattern to the MRE01029 rejections (Class 3 & 4 reads).

# MRE01029 Read Rejection Analysis

If we go back further, could we see a pattern of seasonality in the number of rejections?



When the analysis period is widened, it is apparent there is a seasonality of read rejection MRE01029 peaking during the winter and spring months. It is possible to explain this behaviour through winter consumption patterns...

# UNC Read Validation Tolerances – Classes 3 and 4

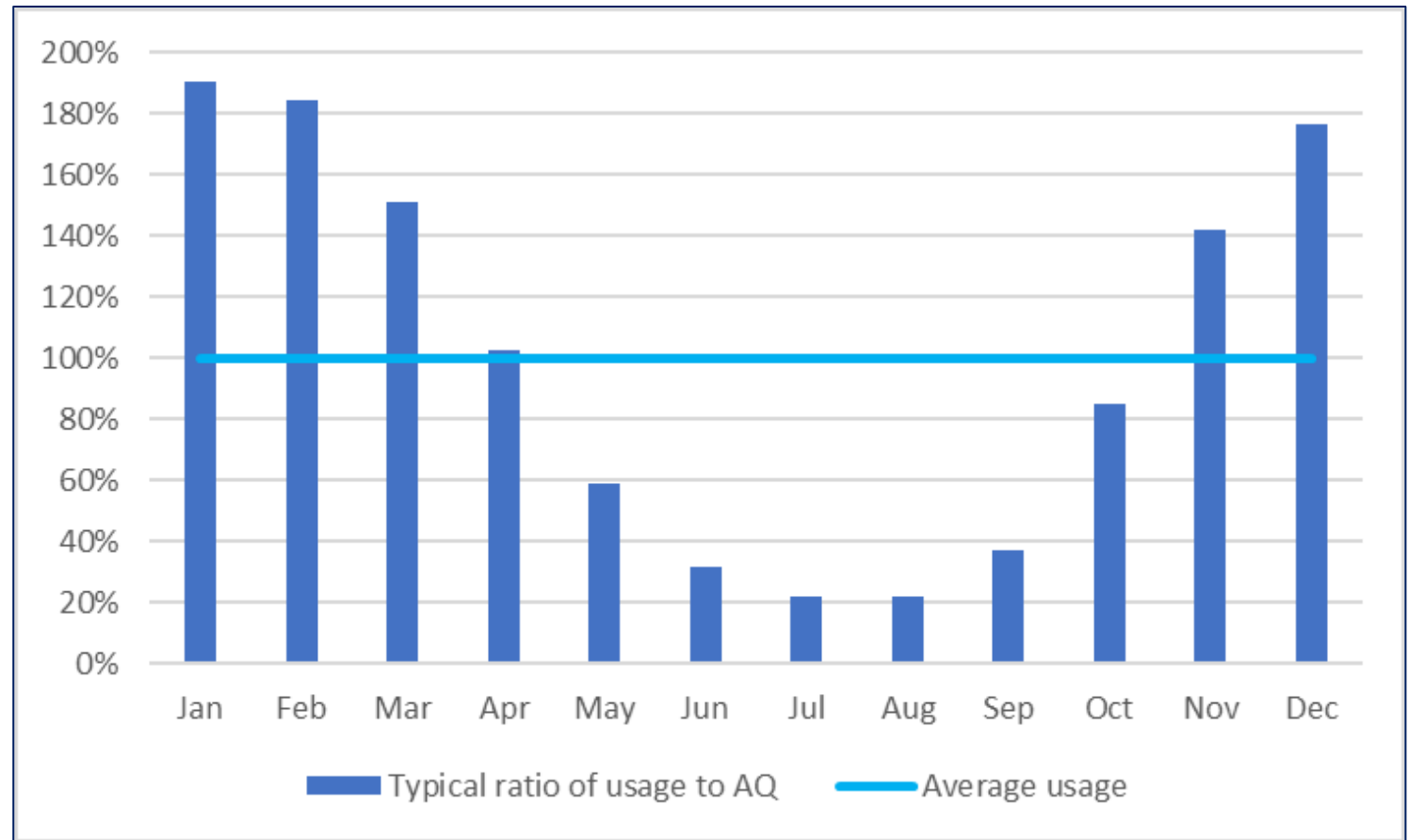
Lower AQ Band (kWh)	Upper AQ Band (kWh)	Tolerances where read will be accepted	Tolerances where a Read will be Accepted if Submitted within Override Flag (Inner Tolerance)	Outer Tolerance Where Read will be Rejected (Market Breaker)
1	1	0% - 2,000,000% of AQ/365 x no. of days	2,000,001% - 7,000,000 % of AQ/365 x no. of days	> 7,000,000% of AQ/365 x no. of days
2	100	0% - 20,000% of AQ/365 x no. of days	20,001% - 45,000 % of AQ/365 x no. of days	> 45,000% of AQ/365 x no. of days
101	200	0% - 10,000% of AQ/365 x no. of days	10,001% - 25,000% of AQ/365 x no. of days	> 25,000% of AQ/365 x no. of days
201	500	0% - 4,000% of AQ/365 x no. of days	4,001% - 55,000 % of AQ/365 x no. of days	> 55,000% of AQ/365 x no. of days
501	1,000	0% - 2,000% of AQ/365 x no. of days	2,001% - 25,000 % of AQ/365 x no. of days	> 25,000 % of AQ/365 x no. of days
1,001	5,000	0% - 400% of AQ/365 x no. of days	401% - 7,000 % of AQ/365 x no. of days	> 7,000% of AQ/365 x no. of days
5,001	10,000	0% - 200% of AQ/365 x no. of days	201% - 2,000 % of AQ/365 x no. of days	> 2,000% of AQ/365 x no. of days
10,001	20,000	0% - 150% of AQ/365 x no. of days	151% - 1,100 % of AQ/365 x no. of days	> 1,100% of AQ/365 x no. of days
20,001	73,200	0% - 300% of AQ/365 x no. of days	301% - 1,100 % of AQ/365 x no. of days	> 1,100% of AQ/365 x no. of days
73,201	732,000	0% - 250% of AQ/365 x no. of days	251% - 1,000 % of AQ/365 x no. of days	> 1,000% of AQ/365 x no. of days
732,001	2,196,000	0% - 200% of AQ/365 x no. of days	201% - 1,000% of AQ/365 x no. of days	> 1,000% of AQ/365 x no. of days

Reads triggering a consumption above the Inner Tolerance will be rejected unless accompanied by an “Override flag”  
 Reads above the Outer Tolerance will always be rejected



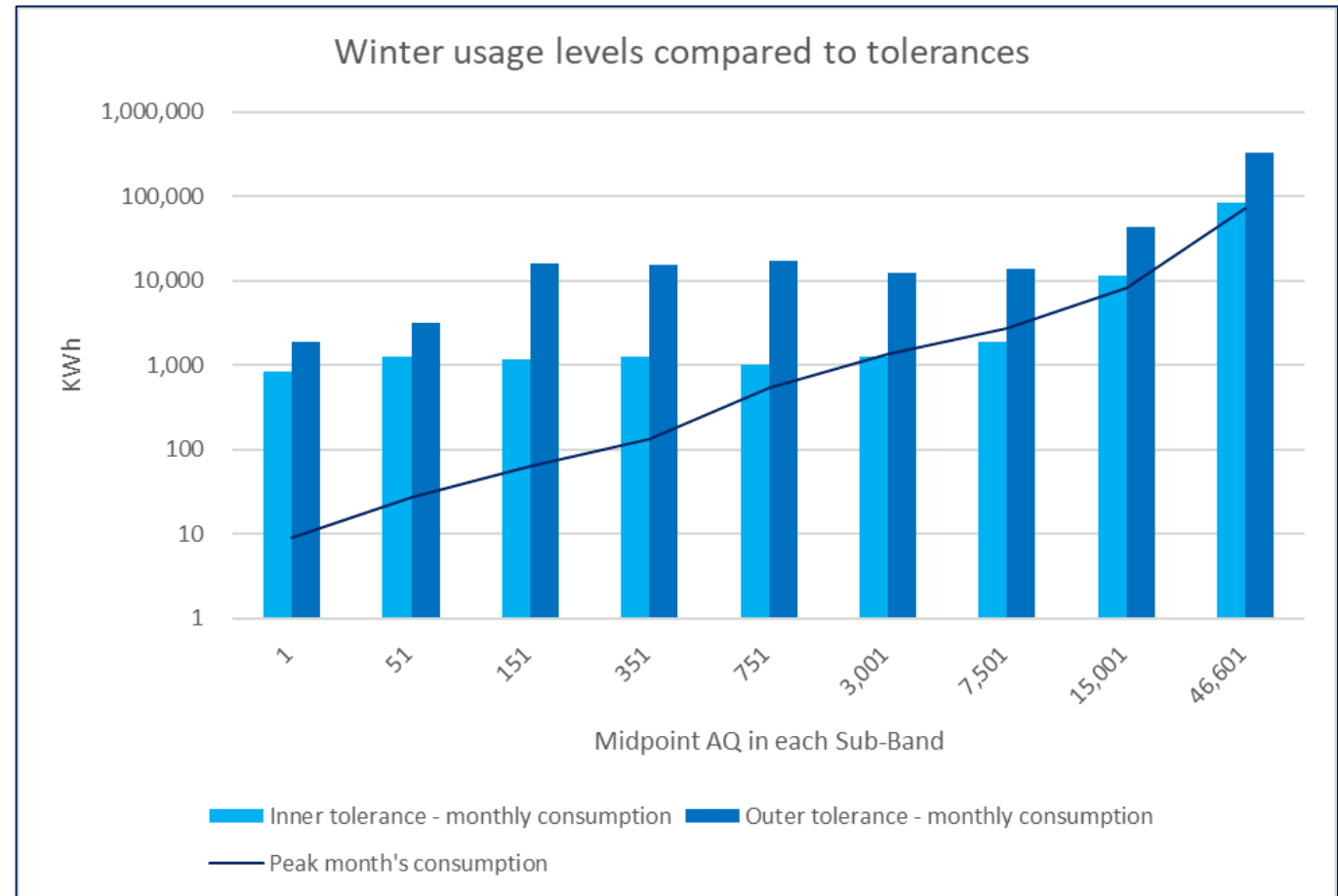
# Typical Domestic Gas Usage Pattern

- A typical domestic customer would use almost 10x as much gas in midwinter compared to a midsummer day – even under Seasonal Normal conditions
- In cold weather the usage would be even higher



## Comparison of Tolerances to Seasonal Usage

- Tolerances for lower sub-Bands were set very high to allow for understated AQs
- Inner tolerance of 150% of AQ/365 x no. of days for the 10,000-20,000 KWh Band means that for 5 to 6 months of the year a “typical” consumption could easily fail the Inner Tolerance
- Graph uses logarithmic scale, compares tolerances to a daily usage level of 180% of the AQ in any read period within SSP market – shows that AQs of 2,000 kWh and above have very little “leeway”



# Observations

- There has been a seasonal pattern of MRE01029 rejections for at least the last three years
- Read submission levels are quite similar to a year ago
- The average Domestic site sits in the 10,000 to 20,000 KWh AQ sub-Band
- For sites in that sub-Band which are read annually, the 150% of AQ/365 x no. of days is unlikely to be triggered if the AQ is accurate
- With more sites being read monthly instead of annually, the Inner Tolerance will catch many more sites in the winter months – this is consistent with the ongoing seasonal pattern of rejections

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