

Wholesale Retail Code Change Proposal – Ref CPW128

Modification proposal	Wholesale Retail Code Change Proposal – Ref CPW128 – Updating Volume Validation Tolerance
Decision	The Authority has decided to approve this Change Proposal
Publication date	17 November 2022
Implementation date	12 May 2023

We are approving this Change Proposal.

CPW128 has identified that a significant number of meter reads are being incorrectly rejected due to overly restrictive Volume Validation requirements within the Central Market Operating System (CMOS). We consider the proposed solution should help resolve this issue and allow increased numbers of meter reads to be accepted into CMOS upon first submission. Through amending the Upper and Lower Volume Thresholds, a large reduction in the current read rejection rate can be expected. As a result, overall data quality should improve with fewer incorrect rejections, and the process of data entry will be more efficient.

We support adjusting the Prior Estimate Daily Volume (PEDV) calculation to improve the accuracy of validation rules. We also support the proposal to allow vacant premises to register readings of '0' (zero). Improved validation thresholds should help Retailers to identify where genuine problems exist with meters and, where necessary, prompt Retailers and Wholesalers to collaborate in finding and resolving issues as swiftly as possible. We consider that this should result in benefits for customers, as issues with meters will be identified and addressed in a timelier manner.

The ongoing reform of the Market Performance Framework (MPF) also provides an opportunity to strengthen incentives for Retailers to update CMOS with accurate data in a timely manner, and ensure metering assets are in good working order. We consider that this change proposal should support the MPF reform through increasing market confidence that the data entering CMOS is more accurate and reflective of actual meter reading activities.

We are supportive of a Post-Implementation Review (PIR) of this change proposal. We suggest that the PIR considers monitoring the unwinding of automated re-submissions that some Retailers currently employ to over-ride current validation processes. This

would avoid the distortion of market performance data from ongoing automated resubmissions. Following the implementation of this change, where readings look unusual, they should not be automatically resubmitted to CMOS. We would expect Retailers to have processes in place to review unusual reads on an ongoing basis to ensure customer bills reflect actual consumption.

The PIR could also consider customer impacts and ensure that any relaxation in rules does not result in an increase of incorrect bills for customers. Customer complaint data from CCW could also potentially feed into this ongoing monitoring.

Background

This change was proposed by Water Plus in 2020 through one of eight 'quick start' projects under the Strategic Metering Review programme focussed on identifying the root causes of a significant volume of meter read rejections. The change comprises several elements to address each reason for rejection, in addition to the correction of an anomaly which currently prevents '0' (zero) readings for vacant premises.

The issue

The Market Operator (MOSL), with support from CGI, analysed meter reading rejections across a 17-month period between 1 April 2019 and 29 September 2020. The analysis identified that the readings Retailers submit to CMOS for validation are currently incurring a 38% rejection rate. 53% of these rejections were due to meter reads failing current Upper and Lower Volume Validation Thresholds.

The Proposer suggests that the current validation thresholds are proving to be overly restrictive, resulting in an unnecessarily high rejection rate of valid meter reads.

Due to the current high rate of rejections, meter read re-submissions are sometimes automated by Retailers to override the current validation process, with 990,000 automated re-submissions received by CMOS between 1 April 2019 and 20 September 2020. Analysis identified that 12.49% of resubmissions were due to meter reads failing the Lower Volume Validation Threshold and 25.05% failing the Upper Volume Validation threshold.

Working with CGI, MOSL also conducted research to establish whether proper validation is in place and incorrect reads are not being forced through the system.

Currently, the Prior Estimate Daily Volume (PEDV) validation process only compares the current read to the one accepted previously. This method of calculation can pose problems for CMOS where significant changes in consumption occur due to, for

example, seasonal variations. It was suggested that the thresholds currently in place result in Retailers incurring time and costs engaging in activities to review incorrectly rejected reads and re-submit valid reads. This ultimately reduces Retailer focus on identifying genuinely incorrect reads and addressing potential asset issues.

The Change Proposal¹

The [Final Recommendation Report](#) explains that CPW128 proposes to alter the Upper and Lower Volume Validation Thresholds, as set out in Table 1. It proposes to include more previous meter readings in the PEDV to improve the reliability of the calculation. It also proposes to correct an anomaly preventing '0' (zero) consumption to be entered for vacant sites.

Table 1 sets out the current rules and proposed changes to Volume Validation Thresholds.

Table 1 – Current rules and proposed changes to Volume Validation Thresholds

	Current Threshold	Proposed Threshold
Upper Volume Validation Threshold	Up to 200% increase of consumption based upon the previous meter read	A maximum 300% increase in consumption, based upon an average consumption change calculated from 3 or 4 previous meter reads
Lower Volume Validation Threshold	Up to 20% reduction of consumption based upon the previous meter read	A minimum 1% increase in consumption, based upon an average consumption change calculated from 3 or 4 previous meter reads

The following list expands upon the reasons for the proposed change, noting where it will result in savings to Retailers and how the solution should improve the efficiency and accuracy of meter read records.

1. Increasing the Upper Volume Validation Threshold from 200% to 300%

¹ The proposal and accompanying documentation is available on the MOSL website at <https://www.mosl.co.uk/market-codes/change#scroll-track-a-change>

- 1.1m rejections and 250k resubmissions received from overstepping the 200% value during the study period of 1 April 2019 to 29 September 2020.
 - Increase to 300% will reduce rejections by 43%, saving £75k for Retailers
2. Reducing the Lower Volume Validation Threshold from 20% to 1%
 - 460,000 rejections received from under stepping the 20% value during the study period of 1 April 2019 to 29 September 2020
 - Reduction to 1% will reduce rejections by 79%, saving £37k for Retailers
 - Anything below 1% will trigger validation rules related to vacant premises
 3. Including more previous readings in the PEDV
 - Current validation based on difference between Current Daily Volume (CDV) and one Previous Daily Volume determined not to be a reliable methodology.
 - Proposal to base comparison on an average of three previous reads for bi-annual meter reads, and four previous reads for monthly meter reads.
 4. Allowing zero consumption for registered vacant premises.
 - Changes in readings that highlight vacant premises will no longer be rejected
 - If $PEDV > 0$ but $CDV < 0$, or $PEDV < 0$ but $CDV > 0$, readings will still be rejected if property occupied.

To illustrate how the proposed solution will work in practice, Table 2 sets out an example of meter reads, showing a consistent level of consumption of 100 across four consecutive months². As noted earlier, the proposed changes to the PEDV will use an increased number of reads when calculating an average for monthly and bi-annual consumption records. The updated PEDV calculation is based on the average of the last three reads for meters that are read bi-annually and the last four reads for meters that are read on a monthly basis.

Table 2 – Example of consumption based on monthly reads

Date	Displayed meter read	Consumption during the month
01/12/21	0	
01/01/22	100	100
01/02/22	200	100
01/03/22	300	100
01/04/22	400	100
Average Consumption from 4 reads		100

² This example is purely for illustrative purposes. CMOS will calculate the PEDV with average daily consumption – whereas the months in the table do not hold equal numbers of days.

The above example is for a meter that is read monthly. Every month the same amount (100) is being consumed by the customer. The meter read figure for April 2022 (400) is reflective of this gradual accrual of consumption on a month by month basis. The average consumption for the last four monthly reads therefore is 100.

Table 3 shows how this figure (100) is then used to calculate the thresholds for the next acceptable meter read, obtained at the beginning of May 2022. The table includes worked examples under the current rules and also for the proposed changes to the Upper and Lower Volume Validation Thresholds.

Table 3 – Example of thresholds for following month under existing and new rules

Threshold for 01.05.22	Next minimum meter read	Permitted minimum consumption	Next maximum meter read	Permitted maximum consumption
Current Validation Threshold	420	20	600	200
Proposed Validation Threshold	401	1	700	300

Industry consultation and assessment

Nine Wholesalers and ten Retailers responded to the Consultation. Most parties expressed support for the code change.

All respondents supported a review of both Upper and Lower Volume Validation Thresholds. The majority agreed with the proposed increase to the Upper Volume Validation Threshold from 200% to 300%, and the reduction of the Lower Threshold from 20% to 1%. Retailers reported that the existing thresholds are too restrictive and result in the rejection of readings, for example, where there are seasonal variations in consumption. It was suggested that the current thresholds were a driver for Retailers employing auto-resubmission processes.

The majority of respondents agreed that the PEDV calculation should be updated to include three previous readings for bi-annually read meters and four previous readings for monthly read meters. It was generally considered that the updated calculation would provide an improved consideration of changes in consumption driven by seasonal usage and possible COVID-19 related impacts. It was suggested that future code modifications could be raised to further increase the number of reads included in the PEDV calculation, but the proposer considered that more time would be needed to incorporate this additional complexity in the proposed solution.

The correction of the anomaly to validate readings of '0' on vacant properties was supported by all respondents. It was suggested that this change would provide better visibility of genuinely vacant properties in the market.

As noted above, several respondents highlighted ways that the proposed solution could be refined or improved upon.

A respondent suggested that the solution could instead focus on developing a more robust and accurate calculation of Yearly Volume Estimate (YVE). In response, the Proposer noted that YVE should be considered as a last resort measure, not as a standard analysis tool for comparison and validation of present readings due to its limited accuracy.

There was a suggestion that the Lower Volume Validation Threshold could be reduced to zero. In this context, the Metering Committee suggested that looking at data submissions on a SPID basis, rather than per meter, could have merit. This would allow for fluctuations within a business site and trigger an alert when a reading of 0m³ was entered. It was suggested that this would then indicate a vacant site, which would be cause for rejection and intervention rather than a singular vacant meter. It was noted that this would also require further data and analysis as well as different tolerance rules for CMOS to consider based on consumption profiles. The Proposer considered that occupied sites with zero consumption should currently remain as a read rejection to ensure that Trading Parties are prompted to investigate that the asset is in working order.

A further suggestion for refining the proposed solution included implementing a de-minimis for Upper and Lower Volume Thresholds. The Metering Committee noted that a potential improvement to the accuracy of meter readings could be to combine a comparison of Estimated Daily Volume (EDV) and percentage change volume, as some Trading Parties currently do. It was suggested that this could also reduce the number of re-reads submitted to CMOS. The Proposer noted that further analysis and additional costs would be required to determine the market benefit of taking forward this suggestion, which would risk delaying implementation of the proposed solution.

The inclusion of an override flag to bypass validation was also suggested. The Proposer considered that such a flag could be automated by Retailers and therefore would not deliver benefit. The Proposer also noted that the resubmission option would remain available to Retailers, therefore an override flag is not necessary.

The Customer Representative (CCW) recognised that this is an issue that needs to be addressed and noted that any delays caused in updating CMOS can result in the delayed billing of customers. CCW considered that customers who are likely to see a particular benefit from the proposed changes are those with significant seasonal

variation in usage. However, CCW recommended that further analysis is carried out to ensure that no genuinely invalid reads are submitted to CMOS as a result of the relaxation of the Upper and Lower Volume Validation Thresholds.

Code Change Committee recommendation

The Code Change Committee (CCC) considered this Change Proposal at its meeting on 29 March 2022 and recommended, by unanimous decision, that the Authority approve this proposal. The recommended date of implementation is 12 May 2023.

Some concerns were raised by CCC Members about the priority attached to this change. It was suggested that Retailers' internal meter reading validation processes for billing should already be ensuring that customers are not adversely impacted. It was noted that the Metering Committee considers the priority given to this change to be justified based on the research carried out which has shown that, whilst reads are passing internal validation processes, the current CMOS thresholds are more restrictive and therefore still incorrectly rejecting many valid reads. Some doubts were raised that CPW128 would improve market data, but it was agreed that the Proposal would remove inefficiencies.

A CCC member questioned if the proposal would implement a disproportionately larger decrease in the Lower Volume Validation Threshold (20% to 1%) in comparison to the change in the Upper Volume Validation Threshold (200% to 300%). It was explained that a large proportion of the market comprises low consumption customers and these are more likely to be impacted by an adapted lower threshold. It was also noted that leak detection would be diminished if the Upper Threshold was increased further.

The CCC also queried if more than four historical meter reads could be used for validation. It was suggested that increasing the number of historical reads would provide unnecessary complexity for little consequential improvement in accuracy, as older reads may distort data if consumption had significantly changed over a longer time period.

A Post Implementation Review (PIR) has been proposed alongside this Change Proposal. As part of the PIR process, the CCC agreed that the Metering Committee should be consulted in determining whether the change delivers the intended impact.

Our decision and reasons for our decision

We have considered the issues raised by the Change Proposal and the supporting documentation provided in the Panel's Final Report and have decided to approve this Change Proposal. We have concluded that the implementation of this Change Proposal will better facilitate the principles and objectives of the Wholesale Retail Code, detailed

in Schedule 1 Part 1 Objectives, Principles and Definitions, and is consistent with our statutory duties.

We think that this code change will further the **Primary Principle** as it will protect and promote the interests of existing and future customers through improving the accuracy and efficiency of billing. It will also enable the early identification of faulty meters, fixing leaks, and subsequently mitigate the risk of billing shocks to customers.

Additionally, this code change will further the **efficiency** and **transparency and clarity principles**, through allowing increased numbers of valid meter reads to enter CMOS on first submission. This should provide the market with a clearer understanding of actual consumption while also identifying where genuine issues with assets exist.

This code change should also support **the simple, cost effective and secure principle** by simplifying the process for Retailers to input meter reads into CMOS. The solution should significantly reduce the need for Retailers to review and resubmit valid meter reads that would have otherwise been rejected under the previous validation thresholds. We consider that this should in turn result in cost savings for Retailers.

We are aware that the ongoing reform of the MPF may strengthen incentives focussed on ensuring that accurate data is entered into CMOS in a timely manner. We consider that this Change Proposal should support the MPF reform through giving the market confidence that the data entering CMOS is more accurate and reflective of actual meter reading activities.

We note that the responses to the consultation identified a range of suggestions on how the proposed solution could be further refined. Any future plans to improve or refine this solution should appropriately consider these suggestions. However, we are sympathetic to the views expressed by one respondent to the consultation who noted 'that there should be no rush of delivering a solution, instead the committee should ensure the delivered product is the right one'. From an efficiency and resourcing perspective, it is preferable that proposed solutions are optimal in design from the outset and have been developed having considered all potential options and do not require further substantive revisions.

We are supportive of the proposal to undertake a PIR of this Change Proposal. We understand that some Retailers currently have automated meter read resubmission processes in place. In developing the PIR, consideration should be given to monitoring the unwinding of these automated processes. Fewer unjustified read rejections are likely to occur due to the new validation rules. Therefore, read rejections under the new rules are more likely to be genuinely incorrect or require further review and investigation. We expect Retailers to update their systems to reflect this change and it would be concerning if automated meter read re-submissions continue post

implementation and subsequently distort market performance data or the new PEDV calculation.

We also consider that there is scope for the PIR to consider customer impacts following the implementation of this solution. We agree with CCW that, with the relaxation of the validation thresholds, there is the need to ensure that no genuinely invalid reads are submitted or forced into CMOS. It may be possible for the PIR to draw upon CCW complaints data to measure the customer impact of this change.

Decision notice

In accordance with 6.3.7 of the Market Arrangements Code, the Authority approves this Change Proposal.

Dan Mason
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