

# Offtake Meter Performance Report –2024/25

Wales & West Utilities  
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# WWU Offtake Meter Performance

Wales & West Utilities (WWU) operates and maintains several exit points or offtakes from the National Transmission System (NTS) where offtake flow is measured and validated in accordance with the UNC, The Gas (Calculation of Thermal Energy) Regulations and The Gas Safety (Management) Regulations.

Report to the Performance Assurance Committee 25<sup>th</sup> July 2025.

## Requirements

1. Number and magnitude of Meter Error reports.
2. Network Meter Performance.
3. Annual ME2 Meter Validation report.

# Introduction

This document has been written to demonstrate that instrumentation and equipment associated with measurement systems for the calculation of mass, volume or energy flow rate of gas are functioning correctly. The ME2 Part 3 Work Procedure for Flow Weighted Average Calorific Value (FWACV) Offtakes is used to ensure metering equipment at the offtakes are validated and maintained correctly, thus ensuring that the complete metering system continues to perform within the uncertainty requirements.

# WWU Network

WWU operates and maintains 3 Local Distribution Zones (LDZs), each LDZ has offtake points associated with them where the gas taken from the National Transmission System (NTS) is monitored, measured, and treated before entering the LDZs.

Each offtake has either duty and standby metering streams or one duty stream. WWU uses 2 types of gas metering; ultrasonic (USM) or turbine meters and utilises gas chromatography for Calorific Value (CV) determination and Pressure, Temperature, and Density (PTZ) for volume flow correction.

| WWU Offtakes   | Southwest (SW) LDZ |         | Wales North (WN) LDZ |                 | Wales South (WS) LDZ |         |
|----------------|--------------------|---------|----------------------|-----------------|----------------------|---------|
|                | Aylesbeare         | USM x 2 | Maelor               | USM x 2         | Dowlais              | USM x 2 |
| Choakford      | Turbine x 2        |         |                      | Dyffryn Clydach | USM x 2              |         |
| Cirencester    | Turbine x 2        |         |                      | Gilwern         | USM x 2              |         |
| Coffinswell    | USM x 2            |         |                      |                 |                      |         |
| Easton Grey    | USM x 2            |         |                      |                 |                      |         |
| Evesham        | Turbine x 2        |         |                      |                 |                      |         |
| Fiddington     | USM x 2            |         |                      |                 |                      |         |
| Ilchester      | USM x 2            |         |                      |                 |                      |         |
| Kenn           | USM x 2            |         |                      |                 |                      |         |
| Littleton Drew | Turbine x 1        |         |                      |                 |                      |         |
| Pucklechurch   | Turbine x 2        |         |                      |                 |                      |         |
| Ross SW        | Turbine x 2        |         |                      |                 |                      |         |
| Seabank        | USM x 2            |         |                      |                 |                      |         |

**Table 1 – WWU Offtakes**

## ME2 Part 3 - FWACV Offtakes

The ME2 Part 3 Work Procedure sets out a number of tests and calibrations designed to ensure all aspects of flow metering such as flow computers, pressures and temperatures are setup and working within tolerances.

All sites must be validated annually with a maximum interval of twelve (12) months between validations.

## Meter Errors

The Offtake Arrangements Document (OAD) requires the Offtake metering Measurement Equipment to be operating within its “Permitted Range” as indicated in the site specific “Supplemental Agreement”. If the Measurement Equipment is found to be operating outside its Permitted Range or with a systematic bias, it is classed to be a “Fault”.

The Measurement Error Notification Guidelines only require the notification of faults which are likely to result in a systematic bias to the measured quantity. They do not cover faults associated with equipment operating outside its permitted range when the mismeasurement is of a random nature.

Systematic bias is deemed to be a bias resulting from the measurement system, leading on average to biases in measurement which results in measured values being systematically too high or too low.

## Reconciliation

On identification of a possible meter error the Distribution Network is required to supply corrected readings for reconciliation only when the fault identified has a systematic bias of over 0.1% of the total offtake flow during the period of the error. These corrected readings are supplied as part of the “Measurement Error Report (MER)” or the “Significant Measurement Error Report (SMER)”. Where a SMER will be an error estimated to exceed 30 GWh.

## Null Reports

Should the magnitude of the total error be calculated to at less than 0.1% of the total offtake flow during the period of the meter error then no reconciliation will be made for any day within the error duration and a null report written.

# Requirements

## 1. Meter Error Reports

WWU reported 5 meter errors in the period of April 2024 to March 2025. 4 errors were identified in the Southwest LDZ, and 1 error found in Wales South LDZ. 2 of these errors have been closed and did not require reconciliation as they were below the threshold of 0.1% total error.

- MER\_WWU\_SW040\_Littleton Drew (04<sup>h</sup> January 24 – 18<sup>th</sup> September 24)  
Undergoing investigation.
- MER\_WWU\_SW041\_Coffinswell (11<sup>th</sup> September 24 – 01<sup>st</sup> October 24)  
Undergoing investigation.
- MER\_WWU\_SW042\_Kenn (15<sup>th</sup> September 22 – 21<sup>st</sup> November 24)  
Ultrasonic meter K-factors entered into flow computer incorrectly.
- MER\_WWU\_SW043\_Pucklechurch (09<sup>th</sup> July 24 – 18<sup>th</sup> June 25)  
Undergoing investigation.
- MER\_WWU\_WS007\_Gilwern (01<sup>st</sup> April 21 – 09<sup>th</sup> July 24)  
Ultrasonic meter K-factors entered into flow computer incorrectly.

| Site                 | Total Error (%) | Volume (mscm) | Size of Error (GWh) | Reconciliation Required | Open /Closed |
|----------------------|-----------------|---------------|---------------------|-------------------------|--------------|
| SW040 Littleton Drew | 0.085%          | 0.003         | 0.03                | N                       | Open         |
| SW041 Coffinswell    | 7.920%          | 0.096         | 1.04                | Y                       | Open         |
| SW042 Kenn           | 0.003%          | 0.016         | 0.17                | N                       | Closed       |
| SW043 Pucklechurch   | 0.136%          | 0.330         | 3.57                | Y                       | Open         |
| WS007 Gilwern        | 0.093%          | 1.076         | 12.2                | N                       | Closed       |

Table 2 - Meter Errors

## 2. Network Meter Performance

The meter performance for offtake meters within the network operated and maintained by Wales & West Utilities in 2024/25. The following table shows the effect the above reported meter errors have had to the energy delivered though each LDZ and the WWU network as a whole.

| LDZ – 2024/25      | SW      | WN    | WS      | Network Total |
|--------------------|---------|-------|---------|---------------|
| Total Energy (GWh) | 26297   | 5867  | 20488   | 52653         |
| Abs Error (GWh)    | 4.81    | 0.00  | 12.2    | 17.01         |
| % Error            | 0.0183% | 0.00% | 0.0595% | 0.0323%       |

Table 3 - Meter Performance

### 3. Annual ME2 Meter Validations

ME2 maintenance activities for the period April 2024 to March 2025 as shown in Table 4.

#### **Validation Summary**

33 individual metering streams were inspected and tested following the ME2 Maintenance Work Procedure. 6 metering streams were started slightly outside of the 12-month validation window due to scheduling constraints. 1 metering stream was started outside of the 12-month validation window due to the meter being out for recalibration.

Any ME2 functional tests that failed to meet the required test tolerances, which may indicate the measurement systems are not performing correctly were corrected/recalibrated and investigated for potential meter errors.

## Table 4 – Summary of ME2 Meter Validations – April 2023 to March 2024

| Site Name         | LDZ | Meter Type | Open Meter Error Report's | Last Validation End Date | Validation Start Date | Validation End Date | Started within 12 months of last? | Reconciliation Required? | Comments  |
|-------------------|-----|------------|---------------------------|--------------------------|-----------------------|---------------------|-----------------------------------|--------------------------|---|
| Aylesbeare (MUA)  | SW  | Ultrasonic |                           | 16/02/2024               | 17/02/2025            | 20/02/2025          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints. |
| Aylesbeare (MUB)  | SW  | Ultrasonic |                           | 16/02/2024               | 17/02/2025            | 20/02/2025          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints. |
| Choakford (MRA)   | SW  | Turbine    |                           | 20/03/2024               | 24/03/2025            | 27/03/2025          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints. |
| Choakford (MRB)   | SW  | Turbine    |                           | 20/03/2024               | 24/03/2025            | 27/03/2025          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints. |
| Cirencester (MRA) | SW  | Turbine    |                           | 15/06/2023               | 10/06/2024            | 13/06/2024          | Yes                               | No                       |   |
| Cirencester (MRB) | SW  | Turbine    |                           | 15/06/2023               | 10/06/2024            | 13/06/2024          | Yes                               | No                       |   |
| Coffinswell (MRA) | SW  | Ultrasonic | SW041                     | 20/06/2023               | 11/06/2024            | 19/06/2024          | Yes                               | No                       |   |
| Coffinswell (MRB) | SW  | Ultrasonic | SW041                     | 20/06/2023               | 11/06/2024            | 19/06/2024          | Yes                               | No                       |   |
| Dowlais (MRA)     | WS  | Ultrasonic |                           | 18/07/2023               | 16/07/2024            | 19/07/2024          | Yes                               | No                       |   |
| Dowlais (MRB)     | WS  | Ultrasonic |                           | 18/07/2023               | 16/07/2024            | 19/07/2024          | Yes                               | No                       |   |

| Site Name             | LDZ | Meter Type | Open Meter Error Report's | Last Validation End Date | Validation Start Date | Validation End Date | Started within 12 months of last? | Reconciliation Required? | Comments  |
|-----------------------|-----|------------|---------------------------|--------------------------|-----------------------|---------------------|-----------------------------------|--------------------------|---|
| Dyffryn Clydach (MRA) | WS  | Ultrasonic |                           | 01/08/2023               | 25/07/2024            | 01/08/2024          | Yes                               | No                       |   |
| Dyffryn Clydach (MRB) | WS  | Ultrasonic |                           | 01/08/2023               | 25/07/2024            | 01/08/2024          | Yes                               | No                       |   |
| Easton Grey (MUA)     | SW  | Ultrasonic |                           | 06/03/2024               | 05/03/2025            | 07/03/2025          | Yes                               | No                       |   |
| Easton Grey (MUB)     | SW  | Ultrasonic |                           | 06/03/2024               | 05/03/2025            | 07/03/2025          | Yes                               | No                       |   |
| Evesham (MRA)         | SW  | Turbine    |                           | 14/04/2023               | 16/04/2024            | 18/04/2024          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints.                                   |
| Evesham (MRB)         | SW  | Turbine    |                           | 14/04/2023               | 16/04/2024            | 18/04/2024          | Overdue                           | No                       | Slight delay starting validation due to scheduling constraints.                                   |
| Fiddington (MUA)      | SW  | Ultrasonic |                           | 24/08/2023               | 05/08/2024            | 30/08/2024          | Yes                               | No                       |   |
| Fiddington (MUB)      | SW  | Ultrasonic |                           | 24/08/2023               | 05/08/2024            | 30/08/2024          | Yes                               | No                       |   |
| Gilwern (MUA)         | WS  | Ultrasonic |                           | 24/05/2023               | 20/05/2024            | 28/08/2024          | Yes                               | No                       | Stream 1 was scheduled for removal on 9th July for recalibration and was reinstalled 28th August. |
| Gilwern (MUB)         | WS  | Ultrasonic |                           | 24/05/2023               | 08/07/2024            | 08/07/2024          | Overdue                           | No                       | Stream 2 was removed on 21st May, recalibrated and reinstalled on 8th July.                       |
| Ilchester (MUA)       | SW  | Ultrasonic |                           | 18/05/2023               | 13/05/2024            | 21/05/2024          | Yes                               | No                       |   |
| Ilchester (MUB)       | SW  | Ultrasonic |                           | 18/05/2023               | 13/05/2024            | 21/05/2024          | Yes                               | No                       |   |
| Kenn (MRA)            | SW  | Ultrasonic |                           | 26/07/2023               | 25/07/2024            | 31/07/2024          | Yes                               | No                       |   |

| Site Name            | LDZ | Meter Type | Open Meter Error Report's | Last Validation End Date | Validation Start Date | Validation End Date | Started within 12 months of last? | Reconciliation Required? | Comments |
|----------------------|-----|------------|---------------------------|--------------------------|-----------------------|---------------------|-----------------------------------|--------------------------|----------|
| Kenn (MRB)           | SW  | Ultrasonic |                           | 26/07/2023               | 25/07/2024            | 31/07/2024          | Yes                               | No                       |          |
| Littleton Drew (MRA) | SW  | Turbine    | SW040                     | 31/07/2023               | 17/07/2024            | 30/07/2024          | Yes                               | No                       |          |
| Maelor (MUA)         | WN  | Ultrasonic |                           | 07/09/2023               | 07/09/2024            | 07/09/2024          | Yes                               | No                       |          |
| Maelor (MUB)         | WN  | Ultrasonic |                           | 07/09/2023               | 07/09/2024            | 07/09/2024          | Yes                               | No                       |          |
| Pucklechurch (MRA)   | SW  | Turbine    | SW043                     | 13/10/2023               | 01/10/2024            | 31/10/2024          | Yes                               | No                       |          |
| Pucklechurch (MRB)   | SW  | Turbine    | SW043                     | 13/10/2023               | 01/10/2024            | 31/10/2024          | Yes                               | No                       |          |
| Ross (SW) (MRA)      | SW  | Turbine    |                           | 11/05/2023               | 07/05/2024            | 29/05/2024          | Yes                               | No                       |          |
| Ross (SW) (MRB)      | SW  | Turbine    |                           | 11/05/2023               | 07/05/2024            | 29/05/2024          | Yes                               | No                       |          |
| Seabank (MUA)        | SW  | Ultrasonic |                           | 27/09/2023               | 05/09/2024            | 12/09/2024          | Yes                               | No                       |          |
| Seabank (MUB)        | SW  | Ultrasonic |                           | 27/09/2023               | 05/09/2024            | 12/09/2024          | Yes                               | No                       |          |