ESTIMATED METERED CONSUMPTION POLICY

1 Purpose

The purpose of this policy is to provide clear and transparent guidelines on the circumstances in which Scottish Water will estimate metered consumption in respect of water or sewerage services provided under the Wholesale Services Agreement, and to set out the methodology that will be used to calculate estimated consumption.

2 Background

Under Section 54(1) of the Water (Scotland) Act 1980, the register of the meter shall be evidence of the quantity of water supplied. However a number of issues can interfere with the accurate measurement of consumption, most notably when the meter stops recording, a closing read cannot be obtained, or the meter is not recording accurately. In such cases, the Central Systems reflect the consumption recorded by the meter and do not currently estimate the true consumption for the period in which the meter has not recorded accurately.

This policy sets out the approach by which Scottish Water will estimate the correct consumption to ensure that an accurate representation of consumed volume is reflected in the Central Systems.

The approach uses the same method of estimating of consumption for the period in which the meter has not recorded accurately as is used by the Central Systems for the period since the last available reading i.e. based on the actual average daily consumption during an appropriate previous meter advance.

3 Methodology

The circumstances in which Scottish Water will estimate metered consumption and the methods for doing so are set out in sections 3.1 - 3.3 below. They are based on Section 54(3a) of the Water (Scotland) Act 1980, which states that inaccurate meters are deemed to have registered incorrectly since the last occasion but one before the date of the test, and the European Union's Measuring Instruments Directive (2004/22/EC), which sets out the permissible error of indication.

3.1 Stopped Meters

Scottish Water will estimate consumption where there is evidence that the meter register has stopped recording, either due to mechanical failure or an electronic defect in the case of electromagnetic meters. A report from a Scottish Water engineer or an Accredited Entity[1] setting out the circumstance and accompanied by a photograph of the meter shall be sufficient evidence. The photograph must conform to the standards set out in Scottish Water's Meter Code of Practice. Where the meter has been replaced, Accredited Entities should retain the meter for a period of 3 months for audit purposes.

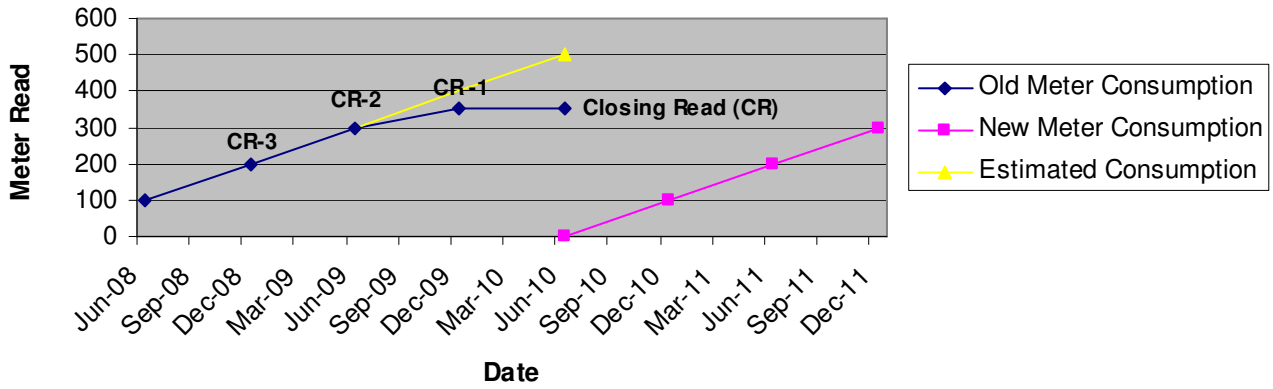
Scottish Water's estimate of metered consumption shall be based on the Average Daily Consumption (ADC) recorded at the meter for the period between the fourth and third last meter reads, i.e. between closing read minus 3 and closing read minus 2.

[1] Scottish Water is establishing accreditation arrangements governing Connections Activities and Metering Activities. Under these arrangements, Accredited Entities will be able to undertake such work, consistent with the scope of their accreditation.

Scottish Water will then estimate consumption by applying the ADC figure to the period from the third last meter read (i.e. closing read minus 2) to the date of the repair or replacement. Estimated consumption will be applied either as an adjustment to settlement volume where the meter is repaired, or as an estimated closing read to the CMA where the meter is replaced.

Figure 1 demonstrates a typical consumption profile of a stopped meter where consumption has been estimated.

Figure 1: Stopped Meter Replacement



3.2 Unavailable Closing Reads

A closing read is that of type F (Final), E (End) or X (Temporary Disconnection). Scottish Water will estimate consumption where it is not possible to obtain a closing meter read for the following reasons:

- Damaged meter dials
- The meter has been removed prior to Scottish Water or the Accredited Entity attending the site
- The meter is inaccessible during a Temporary Disconnection e.g. where the supply has been isolated prior to the meter due to inability to gain access to the property

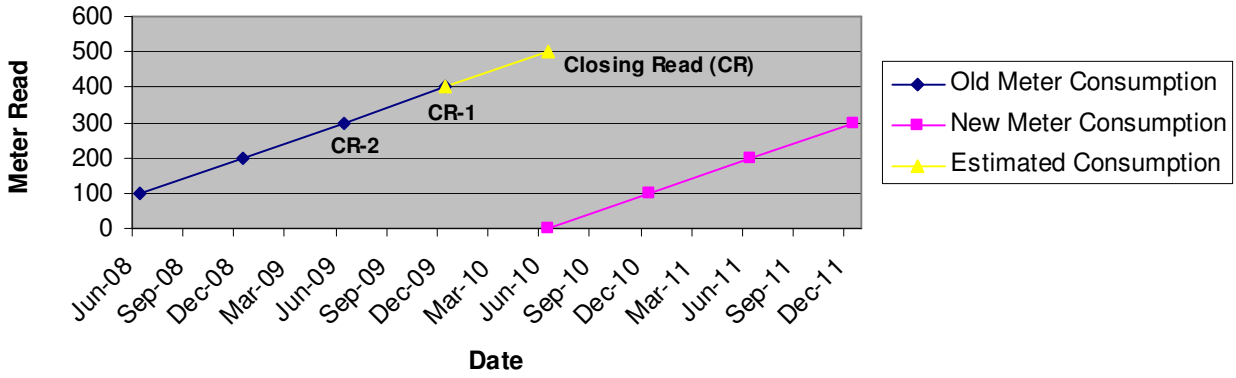
A report from a Scottish Water engineer or an Accredited Entity shall be retained as evidence whatever the scenario. Where the dials are damaged or the meter has been previously removed, a photograph shall be taken as additional evidence. The photograph must conform to the standards set out in Scottish Water's Meter Code of Practice.

The estimate of metered consumption shall be based on the ADC recorded at the meter for the period between the third and second last meter reads, i.e. between closing read minus 2 and closing read minus 1.

Scottish Water will then estimate consumption by applying the ADC figure to the period from the second last meter read (i.e. closing read minus 1) to the date of the site visit. Estimated consumption will be applied as an estimated closing read.

Figure 2 demonstrates a typical consumption profile where the closing read was unavailable.

Figure 2: Unavailable Closing Read



3.3 Under or Over Recorded Consumption

Scottish Water will estimate consumption where there is evidence that the meter has been under or over recording consumption on the basis of Section 54(3a) of the Water (Scotland) Act 1980 and the European Union's Measuring Instruments Directive (2004/22/EC). An Accuracy Test shall be carried out to ascertain whether the recorded consumption is accurate and, if not, to determine the error of indication. Scottish Water shall retain a record of the test results as evidence.

Meters shall be tested against the following flowrates (see Appendix 1 for definitions):

- Minimum (Q1)
- Transitional (Q2)
- Permanent (Q3)
- Overload (Q4).

Scottish Water shall calculate the average operational flowrate of the meter for the period from the third last meter read, i.e. closing read minus 2, to the date of the meter replacement.

Recorded consumption for settlement purposes will be amended where the error of indication exceeds:

- +/- 6% for meters whose average operational flowrate is between Q1 included and Q2 excluded
- +/- 2.5% for meters whose average operational flowrate is between Q2 included and Q4 included.

Scottish Water will amend metered consumption by the error of indication for the period from the third last meter read, i.e. closing read minus 2, to the date of the meter replacement. Estimated consumption will be applied as an adjustment to settlement volume.

Figure 3 demonstrates a typical consumption profile where a meter has failed an Accuracy Test, and is shown to have over recorded.

Figure 3: Meter Accuracy Test - Over Recorded Consumption

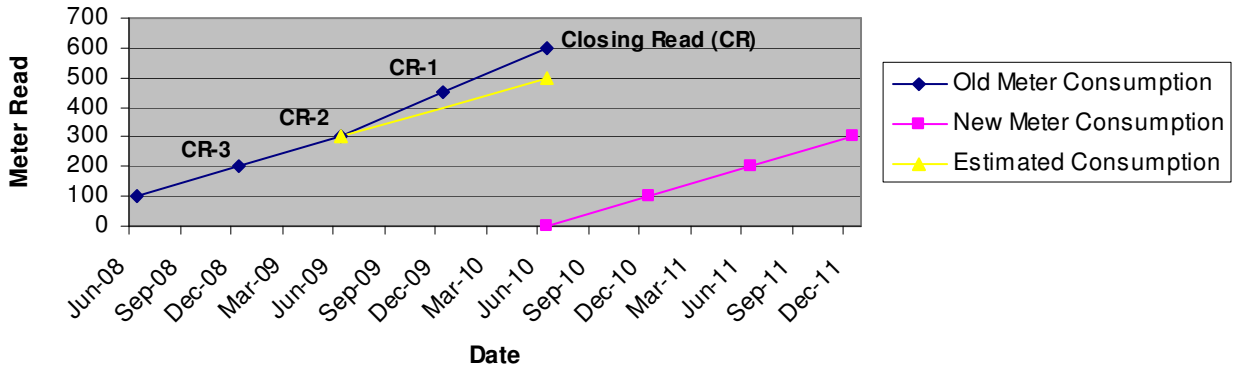
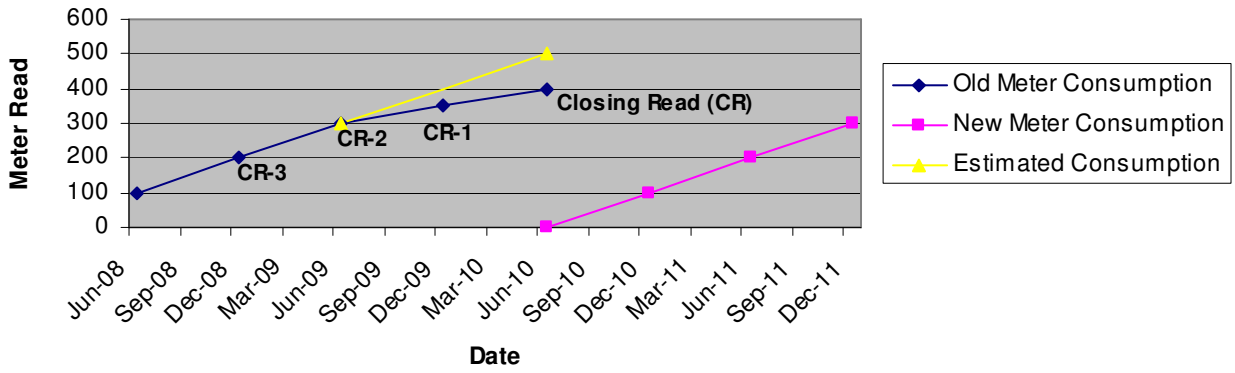


Figure 4 demonstrates a typical consumption profile where a meter has failed an Accuracy Test, and is shown to have under recorded.

Figure 4: Meter Accuracy Test - Under Recorded Consumption



4 Conditions

The following conditions and exclusions will apply to estimated metered consumption:

4.1 Scottish Water may specify alternative periods, to those specified above, for calculating Average Daily Consumption (ADC) where it considers that typical consumption is not represented, such as the same calendar period in the previous financial year.

4.2 Where the metering activity has been delayed at the request of the customer or Licensed Provider, resulting in further inaccurate reads in the Central Systems, consumption will be amended from 1 read before the date of the original request/notification.

4.3 Where a meter has limited read history, Scottish Water will calculate ADC based on reads from the previous meter at the Supply Point. Where there is no previous meter, Scottish Water will monitor consumption on the new meter by taking 2 actual meter reads, at least one month apart, and calculating the ADC between these 2 reads.

4.4 Where photographic evidence is inconclusive, the report alone from the Scottish Water engineer or Accredited Entity may be considered to be sufficient depending on a review of the evidence.

4.5 When calculating ADC, Scottish Water will use reads that are at least 3 weeks apart for monthly read meters, and at least 4 months apart for bi-annually read meters.

4.6 It is the responsibility of the Licensed Provider to monitor meter readings taken on any Supply Point registered to them and establish if any reads showing an increase or decrease in consumption are due to variations in water consumption at the premises or whether the meter could be faulty or inaccurate. The Licensed Provider should report faulty or inaccurate meters without delay to Scottish Water in accordance with the relevant Operational Code process, as outlined in both the Wholesale Services Agreement and the Market Code.

4.7 There is no limit to the number of separate occurrences on which Scottish Water can estimate metered consumption at a Supply Point, provided that one of the circumstances in Section 3 is met.

Appendix 1: Flowrate Definitions

- Minimum Flowrate (Q1)
  The lowest flowrate at which the water meter provides indications that satisfy the requirements concerning the maximum permissible errors (MPEs)

- Transitional Flowrate (Q2)
  The transitional flowrate is the flowrate value occurring between the permanent and minimum flowrates, at which the flowrate range is divided into two zones, the 'upper zone' and the 'lower zone'. Each zone has a characteristic MPE.

- Permanent Flowrate (Q3)
  The highest flowrate at which the water meter operates in a satisfactory manner under normal conditions of use, i.e. under steady or intermittent flow conditions.

- Overload Flowrate (Q4)
  The overload flowrate is the highest flowrate at which the meter operates in a satisfactory manner for a short period of time without deteriorating.