

Table 1: Site functionality referenced in the Functional Specification

Site Functionality	Regulation	Letter
<p>Acquisition and storage of gross CV from the approved CV determination device...</p> <p>...together with a flag indicating its quality/suitability for use.</p> <p>For non-continual CV determination devices, the System - CV determination device interface shall be such that only one value of each CV determination is acquired.</p>	<p>6. A public gas transporter shall-</p> <p>(a) make determinations of calorific values of the gas conveyed to him to premises, or to pipeline systems operated by public gas transporters, on the basis of samples of gas taken at such places or premise, at such times and in such manner as the Director may direct;</p> <p>(b) make such determinations at such places or premises, at such times and in such manner as the Director may direct;</p> <p>4(3) and 4A(7) In any case where, other than by reason of the interruption of the flow of gas to be sampled, apparatus provided by the public gas transporter ...fails to determine accurately, or at all, calorific values for a continuous period exceeding eight hours in any gas day or gas days, an average calorific value shall be deemed to have been determined on any such day or days by means of...</p>	<p>[Letter of Direction]</p> <p>...where a test result shows an unnormalised total outside the range 100 ± 10 mole% or that individual component concentrations are outside the permitted range for the calibration gas in use, then that calculated calorific value shall not be used to calculate the average calorific value.</p> <p>...where the record includes calorific values which are invalid, for example where the Danalyzer is outside the permitted tolerance, then the average is not to include that part of the record</p> <p>[Letter of Direction] Where there are discrete measurements of the calorific value of the gas conveyed, the average calorific value for each gas day shall be determined by aggregating the values of discrete measurements of calorific value of the gas at regular intervals, not exceeding one hour, during the gas day.</p>

Site Functionality	Regulation	Letter
Acquisition and storage of instantaneous volumetric flowrate at the time of acquisition of gross CV.		<p>[Letter of Direction]</p> <p>...where the record includes calorific values of any gas which is not gas being conveyed to premises, or to pipelines operated by other gas transporters, the calorific values reported for the conveyed gas shall be aggregated, ignoring those values reported in the period of time for which the instrument was switched from the conveyed gas supply...</p>
Initiation of daily calibration of CV determination device.		<p>[Letter of Approval]</p> <p>Gas of known and traceable component concentrations ("calibration gas") appropriate to the gas under test according to the criteria given at the time of approval of the instrument...shall be used to calibrate the instrument daily in accordance with the manufacturer's instructions.</p>

Site Functionality	Regulation	Letter
<p>Automated tests of apparatus and equipment at periods not exceeding 35 days in accordance with Regulation 6(e) of the Gas (COTE) Regulations. The facility to manually initiate tests of apparatus and equipment either by, or at the request of, the Gas Examiner. Provision of a report of results of automated or manual tests in accordance with Regulation 6(e) of the Gas (COTE) Regulations.</p>	<p>6 A public gas transporter shall-</p> <p>(e) carry out tests of apparatus and equipment provided and maintained by virtue of paragraph (c) above for conformity with the requirements of directions given under that paragraph at intervals not exceeding 35 days;</p> <p>(f) notify the results of such tests to the Director within seven days of the end of the calendar month in which the tests were completed;</p> <p>(g) make available the results of such tests carried out within the preceding twelve months, for inspection free of charge during normal office hours-</p> <p style="padding-left: 40px;">(i) by any person at an office reasonably accessible to the public; and</p> <p style="padding-left: 40px;">(ii) by a relevant licence holder at the place or premises where such tests were carried out.</p> <p>11.(2) A public gas transporter shall provide and maintain such premises, apparatus and equipment for the purpose of carrying out those tests as the Director may direct.</p> <p>11.(3) A public gas transporter shall take samples of gas at such places or premises, at such times and in the manner as the Director shall direct and provide those samples to a gas examiner appointed under section 13(1) of the Act, at such places or premises, at such times and in such manner as the Director may direct.</p>	<p>[Letter of Approval]</p> <p>On each occasion that <gas transporter> carries out a test of the apparatus and equipment under regulation 6(e) of the Gas (Calculation of Thermal Energy) Regulations 1996 or a certification test under this Schedule, <gas transporter> shall check the component concentrations for the calibration gas in use held in memory against the certified values. If any incorrect values are found, then all calibrations using those values are invalid and the apparatus is deemed to be outside the permitted tolerance since the time of the first invalid calibration. The certified component concentrations for the calibration gas in use shall be entered into the memory of the instrument, the correct entry verified, and a re-calibration carried out.</p> <p>On each occasion that any test of the apparatus and equipment is carried out the difference between the certified calorific value and the calculated calorific value shall be calculated. If this difference exceeds 0.14 MJ/m³ then the apparatus is deemed to be outside the permitted tolerance.</p>

Site Functionality	Regulation	Letter
<p>Calculation of the daily average CV at the end of each Gas Day in the manner specified by the Letter of Direction. This will require confirmation of the quality of individual records (records are Good if the CV determination device is operating within agreed limits) and averaging of only those records that are Good and for which gas is flowing past the sample point. In addition a flag shall be stored indicating whether the resulting daily average CV is Valid (i.e. the maximum time between Good records is less than 8 hours). Gross CV values during calibration or tests of apparatus and equipment shall not be included for averaging.</p>	<p>4(3) and 4A(7) In any case where, other than by reason of the interruption of the flow of gas to be sampled, apparatus provided by the public gas transporter ...fails to determine accurately, or at all, calorific values for a continuous period exceeding eight hours in any gas day or gas days, an average calorific value shall be deemed to have been determined on any such day or days by means of...</p>	<p>[Letter of Direction]</p> <p>...where the record includes calorific values of any gas which is not gas being conveyed to premises, or to pipelines operated by other gas transporters, the calorific values reported for the conveyed gas shall be aggregated, ignoring those values reported in the period of time for which the instrument was switched from the conveyed gas supply...</p> <p>Gas of known and traceable component concentrations ("calibration gas") appropriate to the gas under test according to the criteria given at the time of approval of the instrument...shall be used to calibrate the instrument daily in accordance with the manufacturer's instructions.</p>
<p>Acquisition and storage of integrated daily volume at the end of the Gas Day.</p>	<p>3.(3) This paragraph applies....where a public gas transporter has-</p> <p>(b) provided and maintained...apparatus and equipment for recording, as such locations and with such accuracy as is requisite for the purpose of calculating daily calorific values under regulation 4A below, the volume of gas flowing past the input point or output point...</p>	
<p>In addition to local storage of individual data acquired, appropriate means of secure transfer of data to the High Pressure Metering Information System (HPMIS) owned and operated by the GT. HPMIS currently accepts data as CSV files with appropriate check sum to ensure corrupted data is identifiable and not accepted. A list of files and file structure is provided in Appendix A.</p>		

Table 2: Functionality delivered by HPMIS

HPMIS Functionality	Regulation	Letter
Individual determinations of CV to be available to gas transporter	<p>6. A public gas transporter shall-</p> <p>(a) make determinations of calorific values of the gas conveyed to him to premises, or to pipeline systems operated by public gas transporters, on the basis of samples of gas taken at such places or premise, at such times and in such manner as the Director may direct;</p> <p>(b) make such determinations at such places or premises, at such times and in such manner as the Director may direct;</p> <p>(d) make available the results of such determinations made by the transporter during the preceding 12 months, for inspection free of charge during normal office hours</p> <p style="padding-left: 40px;">(i) by any person at an office reasonably accessible to the public; and</p> <p style="padding-left: 40px;">(ii) by a relevant licence holder at the place or premises at which such determinations were made</p> <p>5. A public gas transporter shall-</p> <p>(c) send free of charge to the owner occupier of any premises to which he conveyed any gas who asks for the calculations of daily calorific values of that gas in respect of specific days, those calculations.</p>	

HPMIS Functionality	Regulation	Letter
<p>Results of 35 day tests to be available to the gas transporter, including the suitability of the calibration gas.</p> <p>This data is currently imported into HPMIS from the "35-day test" file H1234.abymmdd.Xmn</p>	<p>6 A public gas transporter shall-</p> <p>(e) carry out tests of apparatus and equipment provided and maintained by virtue of paragraph (c) above for conformity with the requirements of directions given under that paragraph at intervals not exceeding 35 days;</p> <p>(f) notify the results of such tests to the Director within seven days of the end of the calendar month in which the tests were completed;</p> <p>(g) make available the results of such tests carried out within the preceding twelve months, for inspection free of charge during normal office hours-</p> <p style="padding-left: 40px;">(i) by any person at an office reasonably accessible to the public; and</p> <p style="padding-left: 40px;">(ii) by a relevant licence holder at the place or premises where such tests were carried out.</p>	<p>[Letter of Approval]</p> <p>5. Permitted tolerance</p> <p>(a) on each occasion that <gas transporter> carries out a test of the apparatus and equipment under regulation 6(e) of the Gas (Calculation of Thermal Energy) Regulations 1996 or a certification test under this Schedule, <gas transporter> shall check the component concentrations for the calibration gas in use held in memory against the certified values. If any incorrect values are found, then all calibrations using those values are invalid and the apparatus is deemed to have been outside the permitted tolerance since the time of the first invalid calibration. The certified component concentrations for the calibration gas in use shall be entered into the memory of the instrument, the correct entry verified, and a re-calibration carried out. The logs shall be updated accordingly.</p>
<p>Results of tests by gas examiner to be available to the gas transporter</p>	<p>13. Where the Director has notified a public gas transporter of the results of tests carried out by a gas examiner of apparatus and equipment provided by the transporter or of gas conveyed by the transporter, the transporter shall make the results available for inspection free of charge during normal office hours-</p> <p style="padding-left: 40px;">i) by any person at an office reasonably accessible to the public; and</p> <p style="padding-left: 40px;">(ii) by a relevant licence holder at the place or premises where such tests were carried out.</p>	

HPMIS Functionality	Regulation	Letter
Daily calorific values and daily volumes to be available to the gas transporter	<p>5. A public gas transporter shall-</p> <p>(a) make available for inspection free of charge during normal office hours by any person the daily calorific values calculated by him during the preceding six years at an office reasonably accessible to the public.</p> <p>(b) immediately notify each relevant licence holder of the calculations of daily calorific values for each gas day; and</p> <p>(c) send free of charge to the owner occupier of any premises to which he conveyed any gas who asks for the calculations of daily calorific values of that gas in respect of specific days, those calculations.</p>	