The University of Manchester

DIRECTORATE OF ESTATES AND FACILITIES

PROCEDURE AND INFORMATION MANUAL

EPM PM27
Monitoring & Reporting Procedure for the Greenhouse Gas Emission Trading Scheme Regulations 2012

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European Union Emissions Trading Scheme (EU ETS)

Permit Ref – UK-E-IN-11859

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Introduction

EU Directive 2003/87/EC established the EU ETS, which is a mandatory scheme covering the emission of carbon dioxide from specified activities. The University is included by virtue of the aggregated thermal input of the heating boilers etc. within the University's boundary, including the North, and Oxford Road Campus. The boundary defines the installation.

The Directive requires that all operators of installations draw up a plan for monitoring and reporting emissions of carbon dioxide. A formal procedure is required describing how fuel usage will be measured and emissions calculated.

1.0 To identify greenhouse gas sources covered by the Regulations

The Capital Projects team and Design Services Unit will inform the Mechanical and Energy Team of any replaced, modified or new equipment which will emit carbon dioxide.

2.0 The sequence and interaction of monitoring and reporting

The fiscal meter reads from the supplier invoices are entered in Systemslink software, including declared Calorific Values, via a CSV file on a monthly basis; the Energy Accountant uses this information to populate the TEC Annual Emissions Report. The University's Coherent Data Collection System imports data via AMR allowing a direct comparison to the Utility Company's readings. Where meters have been estimated for consecutive months, a manual meter read will be used to verify the estimate read by the Assistant Mechanical & Energy Engineer. The manual read is then provided to the utility company to enable accurate invoices. At the end of the year all meters are read and photographed. These can then be used where invoices are estimated, to enable accuracy. Electronic copies of invoices are stored in G Drive, G:\Estates\PSU\Mech Eng and Energy Team\Energy\DEFRA

Fuel oil data is calculated based on the quantity signed for on supplier's delivery notes and monthly dip level readings. Monthly dip level readings are entered onto the TEC spreadsheet.

All records are stored for a minimum of 10 years.

All gas meter reads are recorded at the end of each month. This is recorded on a planned maintenance sheet, with the operatives name and date that the reads were taken. The PPM sheet includes the locations of the meters. Photographs are taken of the meters on or as close to the 31st December.

All the fiscal meters in co-operation with Gazprom have been set up for automatic meter reading, as a condition of the flexible purchasing agreement. The data feeds into the University's Coherent data collection system.

3.0 Responsibilities and competence

The Principal Mechanical & Energy Engineer is responsible for the compliance with EU ETS. The Principal Mechanical & Energy Engineers Job Description calls for professional qualifications. He/She is in charge of the overall Mechanical & Energy Team. This includes Assistant Mechanical & Energy Engineers who are responsible for collating the data, meter reads and data quality checks. Invoiced data is provided by the Energy Accountant & Assistant Energy Accountant within the Estates Finance Team.

Responsibility	**Job Title**	**Notes**
	Registrar	
Approval and review	Deputy Director of Estates	Leadership on policy and procedures
Management of implementation	Senior Mechanical & Energy Engineer	Management of EU ETS compliance
Allocation of meter reading staff resource	Operations and Maintenance Group Manager	Line Manager of Maintenance Staff, Plant Operator Level
Data Entry	Energy accountant & Assistant Energy Accountant	Data entry and checking Qualified Staff with toolbox instruction
Implementation of Work Instructions	Assistant Mechanical & Energy Engineer	Data entry and checking Qualified Staff with toolbox instruction

4.0 Calculation or measurement methods

Calculations methods are based on the methodology in the EU Monitoring and Reporting Guidelines. Gas calorific values and carbon emission factors are obtained from the current UK Greenhouse Gas Inventory to support EU ETS. Density figures and conversion factors for oil are taken from the current version of Digest of UK Energy Statistics (DUKES).

5.0 Maintenance and calibration of the measurement equipment used

Maintenance and calibration of the gas measurement devices is the responsibility of the supplier. When meters fail or are replaced, the Assistant Mechanical & Energy Engineer would attend site with the supplier and a photograph would be taken on the final meter read and the new meter read.

All changes to the University boiler plant and storage is to be recorded on the G Drive. Changes which impact on the EU-ETS scheme are sent to the Regulatory Body on the requisite form and additional copies are sent to the appointed Verifier.

6.0 Reporting and record keeping

In accordance with the University's Control Procedure EP/DU/2013, the network drives are backed up on a daily basis and hard copy information is archived for a 10 year period.

An annual report will be produced, (TEC Spreadsheet) detailing the CO_2 emissions from each stationary unit, comparing actual emissions to the volume of allocations held. The report will include a record of the location of meters and stationery units, meter readings, calorific values, meter correction factors, CO_2 emission factors, data checks, interim reports and reviews. The report will comply with the requirements of the European Commission's Monitoring and Reporting Guidelines.

All manual meter reads and invoice reads are entered on a dedicated spreadsheet designed by TEC and External Verifier on a monthly basis and sent to the verifier.

The annual report will be submitted to an external verifier for scrutiny, as required by the regulations. The verifier's opinion will be submitted to the Environment Agency, as required.

7.0 Internal reviews of reported data and the quality system

The Principal Mechanical & Energy Engineer, Assistant Mechanical & Energy Engineer and Energy Account meet regularly to ensure all activities are being conducted and ensure the relevant staff are available to conclude the submission of all information. Prior to the data being verified by the external auditor an internal review of data is carried out by the relevant people. The data checking protocols incorporate article 61 from the Monitoring and Reporting Regulations which requires segregation of duties associated with the data collection process. Data is entered into the TEC spreadsheet direct from the data entered electronically via the CSV into Systemslink, this provides a visual check of the data both in

numerical and graphic format. Once the data is entered the data is checked again by viewing the target graph or report of actual use versus target emission for the “EU ETS” allocation. Variations of 5% or more from target are investigated, with particular attention being given to meter rollovers, zero readings, zero consumption and large changes in consumption patterns.

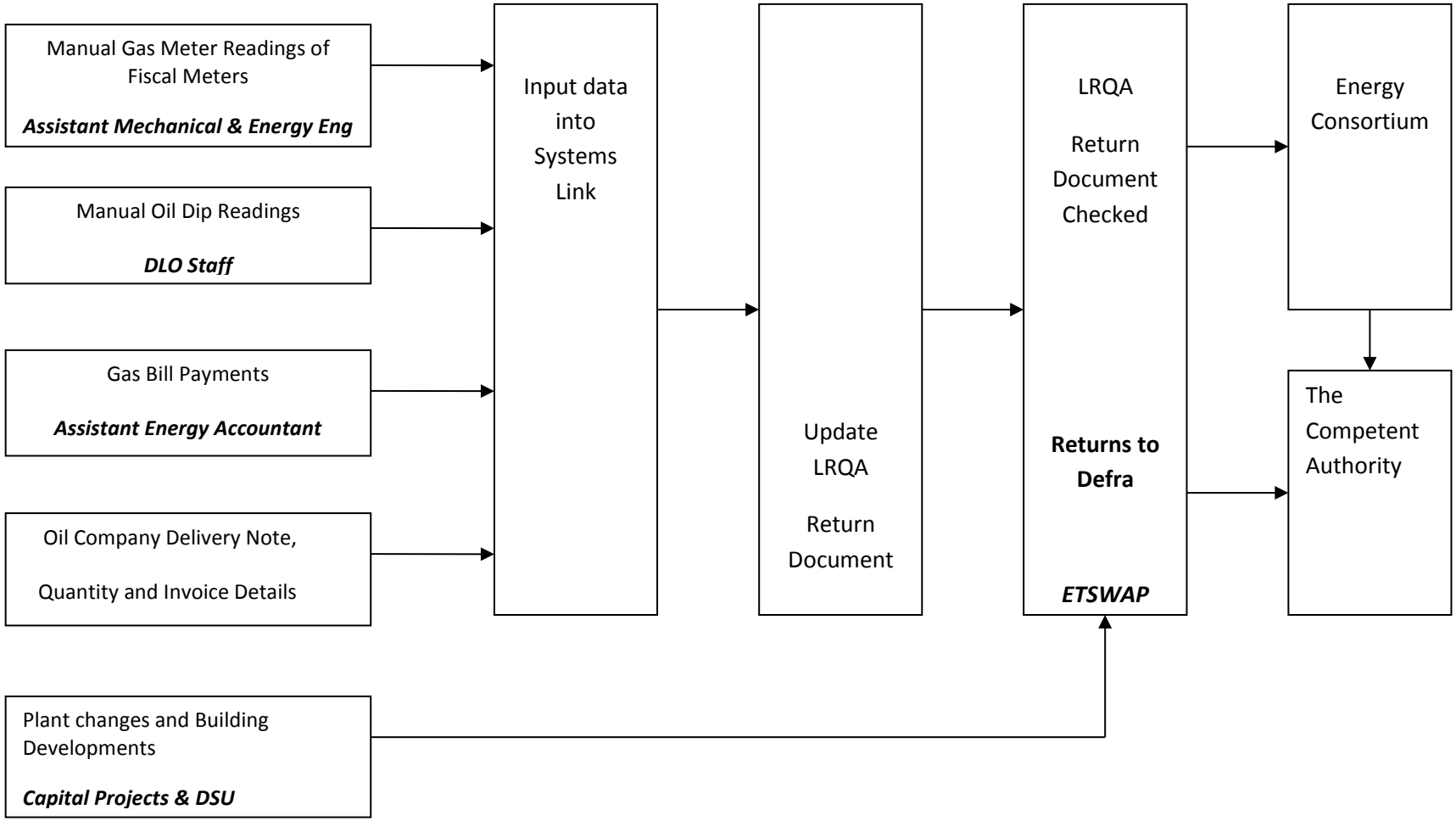
Data is checked by the following:

1. The Energy Accountant in providing management information on present and future expenditure.
2. The Energy Accountant Assistant on entering data in co-operation.
3. With the Assistant Mechanical & Energy Engineer.
4. The year-end completion of the TEC spreadsheet is checked by the Principal Mechanical & Energy Engineer.

8.0 Corrective and preventive action

If the process fails then actions will be implemented at the earliest date. Corrective actions with no cost or resource will be carried out immediately. Items with a cost or resource implication will be highlighted for consideration by a management review.

9.0 Appendix 1 – Monitoring and Reporting Flow Chart



10.0 Appendix 2 – University of Manchester 4030 - Risk Assessment Document

Hazard	Risk level without controls	Applied controls	Risk level after controls	Comments
Meter failure	High (monthly consumption unknown)	1. Use of estimates from known historic consumption 2. Transco supply replacement meter 3 use individual boiler meters	Low	Note: Transco can take some time to provide replacement
Emissions report not filed before due date	High (prosecution and fine)	1. EU ETS matters managed by competent and qualified staff with understanding of EU ETS requirements 2, 3 members of staff are able to complete the tasks	Low	Note: need good succession planning
Consecutive estimated invoices	High. monthly consumption unknown	1 Own monthly reading passed to shipper 2 Gas meters are automatically read by the supplier	Low.	...
Meter Change	High (not notified by shipper)	Checked by own staff monthly	Low.	Small problem since larger meters will need consultation
Loss of Data Due to computer failure	High. monthly consumption unknown.	Data kept on 'G' drive. Backed up by CSD every day. stored in 2 places	Low.	
Verification of invoices	High. monthly consumption unknown.	Check by competent and qualified staff with understanding of EU ETS requirements	Low.	
AR & AAR Unavailable	Medium. No control of ETS	Use of FM Finance & MA	Low.	More people are aware of ETS

	Data /Storage.	personnel to collect data		requirements
Change of personnel	Low	Make sure that a number of staff members are aware of the procedures and understand the process.	Low.	
Installation alterations unknown to energy team	Medium	1 All changes to be monitored by PSU energy technical team. 2 DSU to implement protocol to inform of all applicable changes.	Low.	