

Mandatory Green House Gas Reporting from 2013



This white paper has been compiled independently By Peter Leggett, Carbon & Energy Consultant, IMServ the views expressed are those of the author and not neccessarily of IMServ

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Whilst some 2,200 organisations have been involved in the CRCEES, a new piece of legislation has arrived through which means that an anticipated c10-15,000 businesses will be required to actively participate in emission reporting year on year.

Into effect from 1 April 2013, this is a process born out of the obligations set out in EUEPBD (Energy Performance of Buildings Directive) and EUEED (Energy Efficiency Directive). The concept is to engage with 'energy consumers to reduce emissions' and this particular vehicle is designed to reflect business activity to shareholders and markets whilst promoting an organisations value of CSR (Corporate Social Responsibility) from the emissions it creates.

One of the stated targets of HM Government is to reduce 1990 emissions levels by 50% by 2025; this can only be achieved if all UK Private Sector organisations are fully involved and recognise that something reported can be reduced - and when it comes to emissions chances are that reduction in emissions is an improvement in efficiency and reduction in cost !

Who is in? What do they need to do?

This legislation is specific to any UK Private organisation listed on any of the London Stock Exchanges, including non-UK registered, AIM and private owned.

The requirement is that the Annual Report and Accounts must include a statement concerning the 6 recognised GHG's in terms of TCO2 equivalent. Such statements will be subject to normal audit processes and over time the annual statement must incorporate comparison over a number of years activity and an intensity metric.

Although the regulations apply now, some allowances are being made to organisations whose financial year is nearly passed; on this basis the first audited statements are expected for businesses with Year End from 1st January 2014 - such businesses should have already started the process of data gathering.

What are the 6 GHG`s?

The Green House Gases have long been established by science as elements that have an influence on global atmosphere quality and an impact on global heat retention. Through measurement we can reflect on the impact of these 'man-made'emissions over and above natural levels and their potential influence on temperature, weather and general health.

The reportable emissions arise from what are generally known as 'Scope 1' and 'Scope 2'; it is often easier to visualise these as either from direct business activity or purchased to support the business; the following table may assist recognition of the data gathering requirements and opportunities.

Scope 1	Scope 2
Business related	Purchased utilities
Process Fuel	Elec
Boilers	Gas
Vehicles	Oil/ LPG etc
Fugitive (process leakage)	Heat/Steam

Under Kyoto the prime 6 GHG's are as follows:

Mandatory Reporting the 6 GHGs						
CO2 Carbon	N2O Nitrous		HFCs	PFCs	SF6 Sulphur	
Dioxide	Oxide	CH4 Methane	Hydrofluorocarbons	Perfluorocarbons	hexaflouride	

Fig 2. The 6 GHG's

Whilst some gases are easily recognised, for example the purchased fuel utilities such as Electricity Gas LPG and Oil can all be converted to CO2; utilities are, for GHG, additionally broken down into other constituents. Some common conversions are in the table below.

Example common conversions (Defra 2009) kgCO2e						
			N2O Nitrous			
Example `source`	Scope	CO2 Carbon Dioxide	Oxide	CH4 Methane		
Grid Electricity 1kWh 2009	Scope 2	0.4815	0.0028	0.0003		
Forecourt Petrol 1litre	Scope 2	2.2352	0.0064	0.0034		
Forecourt Diesel 1litre	Scope 3	2.5530	0.0012	0.0183		
LPG for Boiler process 1litre	Scope 1	1.4884	0.0010	0.0023		
LPG for Office heat 1litre	Scope 2	1.4884	0.0010	0.0023		
Furnace Coal 1tonne	Scope 1	2339.0000	1.4000	42.7000		

Fig 3. Extract from Defra `GHG common conversions`

For the more complex gases, such as leakage, an organisation has to have specific knowledge of the gas type involved. For example there are a range of HVAC/AirCon gas types with a variety of emissions, each separately assessed across HFC PFC and SF6 listings within GHG conversion tools. Your organisation is expected to have captured the consequence of its business on any such emission type.

What is reported and who is responsible?

As the breadth of gases requires some specific knowledge, each organisation will have to consider its own unique data gathering and the extent to which those emissions are 'of value' to themselves and their audience. The statement in the Annual Accounts is the responsibility of the Board or Named Directors, therefore the reporting method and accuracy are likely to be challenged internally before publication.

In terms of the annualised statement, because this requires some year-to-year comparison, values and a suitable intensity metric, some caveats are also allowed. For example like-for-like portfolio may be difficult in changing structures; the full extent of HVAC/AirCon leakage may be disjointed so some estimation may be appropriate. This is also true when an organisation may have global locations and the clarity of systems and processes across borders requires specific assessment.

Whilst a caveat could result in emissions being understated or hidden, the Mandatory Reporting aspect is expected to lead to external challenge; the annual statement is expected to be subject to normal audit investigation and once these emissions values become visible it is expected that shareholder or market questioning may drive future behaviour. From a shareholders perspective 'emissions may reflect waste' and waste doesn't provide best shareholder return.

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In terms of intensity statements the TCO2e may be meaningful in one or many terms and the method reported will have different value to different organisations; examples suggested may be like TCO2e by Turnover or Employees or Product Unit.

Where to start with data?

The complexity of an organisations structure and whether it is process, service or building driven will to an extent dictate the key areas for analysis.

In terms of Scope 2 values the key values are mostly metered utilities and for those that are in CRCEES or other emission reporting schemes the capture of prime electricity, gas, oil, or lpg data are methods already used and should be easily replicated here.

IMServ is part of Invensys plc and is a UK utility meter and data provider and therefore is able to complete regular review of core electricity and gas data through its web based energy management services portal Energy DataVision (EDV). Monthly analysis maintains control on the numbers and also helps to maintain engagement internally. Our FYE is April to March therefore our CRCEES and Mandatory Emissions years are in parallel but if our FYE had been different the monthly report step easily converts to an annualised period.

Site	Fuel Type	Status	Source Type	Start Date	Units	Quantity
London N8	electricity	Α	AMR	01-Feb-13	kWh	224.2
Buckinghamshire 1	electricity	Α	AMR	01-Feb-13	kWh	66840.6
Yorkshire A	electricity	Α	AMR	01-Feb-13	kWh	91.6
Yorkshire B	electricity	Α	AMR	01-Feb-13	kWh	33325.4
Manchester A	electricity	Α	AMR	01-Feb-13	kWh	0
Manchester B	electricity	Α	AMR	01-Feb-13	kWh	0
Glasgow 1	electricity	Α	AMR	01-Feb-13	kWh	19697
Glasgow 2	electricity	Α	AMR	01-Feb-13	kWh	687.6
Glasgow 3	electricity	Α	AMR	01-Feb-13	kWh	16883.8
Glasgow 4	electricity	Α	AMR	01-Feb-13	kWh	2822.5
Surrey 1	electricity	Α	AMR	01-Feb-13	kWh	74986.6
Surrey 2	electricity	Α	AMR	01-Feb-13	kWh	7646.8
Wiltshire 1	electricity	Α	AMR	01-Feb-13	kWh	172174.4
Wiltshire 2	electricity	Α	AMR	01-Feb-13	kWh	155235.8

Fig 4. Extract from EDV Electricity kWh Consumption (pre GHG Conversion)

The production emissions reportable in Scope 1 are unique to sites and key personnel at those locations are already involved in a systematic monthly exercise 'Environmental Performance'. This process gathers some of the waste and material analysis and a few improvements are under way with regards to how services and maintenance providers share information; for example we will be looking to enhance leakage reviews and therefore will be talking with those experts to consider how and where such emissions need to be captured through their work in both office and manufacturing locations.

A Statement in the Annual Report & Accounts

As discussed the key driver of the legislation is to have UK plcs responsible for making a public statement and through this drive its own activities and emissions downwards. The final presentation will revolve around an organisations preference but by way of example the core date could be presented either in table or graphical styles.

The organisation is allowed to caveat results shown and then expected to reflect year on year from a similar metric to avoid mis-interpretation so that the information builds over time. If the organisational structure or emissions data changes significantly then it may be appropriate to change the metric and provide suitable description accordingly to reflect change of methodology.

Concept Data Report for GHG Reporting Employees £1.100.000 12.750 Previous £1,125,000 14.320 Current TCO2e Intensity Intensity HFCs PFCs Mandatory Reporting Ву Ву Hydrofluoroca Perfluorocarb SF6 Sulphu CO2 Carbon N2O Nitrous Statement TCO2e Dioxide Oxide CH4 Methane rbons ons hexaflouride Total Turnover Employees Consumed Fuel Utilities, Previous 345,000 1,250 456 66 56 347,170 342 3.17 0.04 Year Consumed Fuel Utilities.a 333,333 1,234 500 56 44 222 335,389 3.35 0.04 Fleet Emmisions.Previous Year 757 43 _ _ _ 800 1375.00 15.94 1893.94 594 24.11 Fleet Emmisions.b 546 48 _ Fugitive Emmisions. Previous 6,333 9,012 322 654 349 795 17,465 62.98 0.73 Year 8,900 567 200 16,468 68.31 0.87 Fugitive Emmisions.c 5,678 345 778 **Previous Year** 352,090 10,305 778 720 405 1,137 365,435 3.01 0.03 Current Year 339,557 845 623 1,000 352,451 3.19 0.04 10,182 244

Fig 5. Conceptual Data Report for GHG Reporting



Fig 6. Conceptual Graphic for GHG Reporting

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Turnove

Options on intensity measures