Defra workshop on greenhouse gas reporting: conversion factors, regulation and guidance

Simon Chiva, Sarah McCusker

March 2014

Welcome

Carbon Smart

Carbon Smart

Implement change

Improving operational performance through sustainability action

Report performance

Supporting data collection, reporting and decision making

Engage people

Facilitating changes in working practices

Achieve certification

Recognition for innovation and improved performance

Agenda

Outcomes from this mornings' session

Session	Timing
Welcome and ice breaker	9:30 – 10:00
Data collection and guidance	10:00 – 10:30
Conversion factor updates and changes	10:30 – 11:00
Break	11:00 – 11:15
Carbon management - Wigan	11:15 – 11:45
Q&A / debrief	11:45 – 12:15

Today’s attendees

Introductions

- Name
- Job role
- Organisation
- Channels of reporting
- Top challenge for your organisation’s reporting
- Biggest reporting achievement to date

Data collection and best practice principles – the cornerstones of good reporting

Sarah McCusker – Carbon Smart

The maturing of carbon reporting brings new challenges

Emergence of scope 3 reporting – need to engage procurement and suppliers

Targeted or “hot spot” reporting is more common – what makes sense to stakeholders

Intra organisation comparisons, carbon budgets, process or product based reporting

Meaningful comparison with a baseline year

Increased reliability and comparability will be needed

Reporting is a really useful tool for carbon reduction programmes if it is done well

Focus –Understand your reporting boundaries, the material issues and define a strong reporting protocol

Compliance – Get help putting together the pieces and understanding complex reporting requirements and make sure you are compliant

Resources – Reporting can be an arduous and time consuming process. Make sure you have the resources you need and responsibilities are shared and understood

Timescales – Know your deadlines and leave plenty of time. Plan ahead and set milestones that take into account risks and contingency

Methodology – Ensure you are following the correct carbon reporting methodology and are applying and updating the conversion factors as required

Targeting – The key to improved performance is not only understanding your impacts but setting ambitious yet achievable targets to guide you through

Analysis – Take the time to understand the key variables and influences that affect performance to help you prioritise action

Transparency – Perfect data cannot always be a reality. It is important that you are clear about what is and is not included and any assumptions or extrapolations that have been made

Quality– If numbers do not look complete, consistent or remotely accurate go back and check the sources. Remember to restate or re-baseline if numbers have changed

Recognition – Strive to achieve both internal and external recognition for reporting best practice

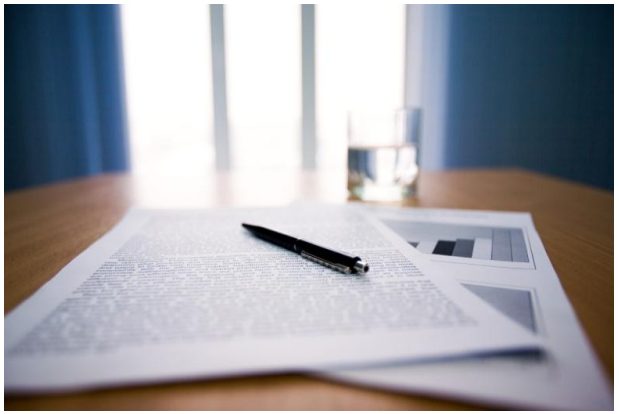
A strongly communicated reporting protocol can move data collection and reporting from best endeavour to best practice

What's in it

- Defines the baseline year and baseline organisation
- Defines the reporting process - makes a clear connection between the importance of data collection and the impact it has on end reporting
- Transparently documents organisational and operational boundaries and how these are reflected in a re baseline
- Highlight business entities and emissions sources that are considered most material; clearly documents exclusions, sets the rules for inclusion
- Defines the organisation's extrapolation and estimation methodology when data are not there

When it works

- Is jargon free, widely communicate and understood
- Gives ownership to reporting staff for different areas or levels of data collection and reporting
- Makes auditing much easier



Take time to set, adjust and communicate your boundary

Reporting may be fundamentally flawed if a clear boundary is not set from the offset. Rushing your boundary analysis on an organisational or operational basis risks:

- Materiality – what will matter most to your readers
- Clarity – what will be straight forward to understand
- Timing – how much time before you include new elements or remove old
- The resources that you have – easy to waste time through over or under-collecting data

Complying with differing reporting requirements and methodologies can be a complex process

- CRC
- CDP cities
- DECC/Defra
- Internal report
- Voluntary sustainability reporting

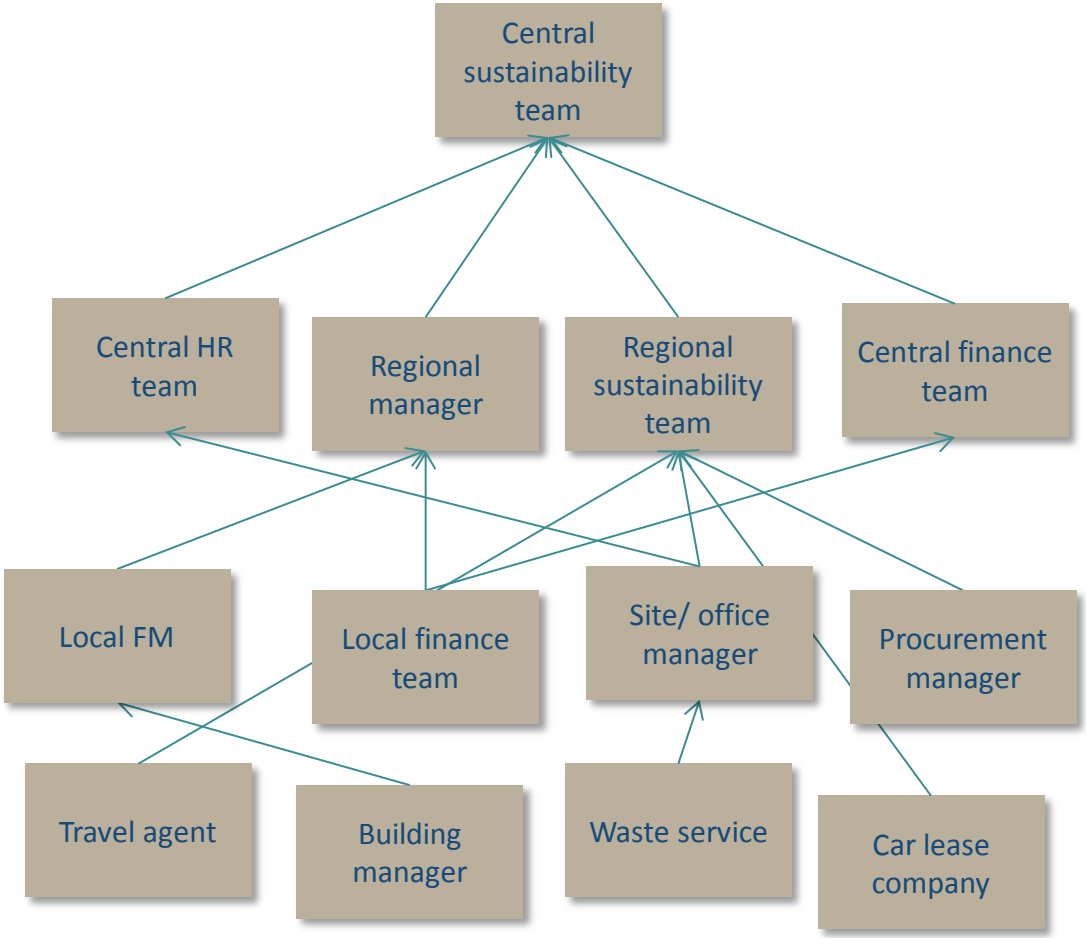
Getting people, timing and systems working is vital

Asking the right people the right questions

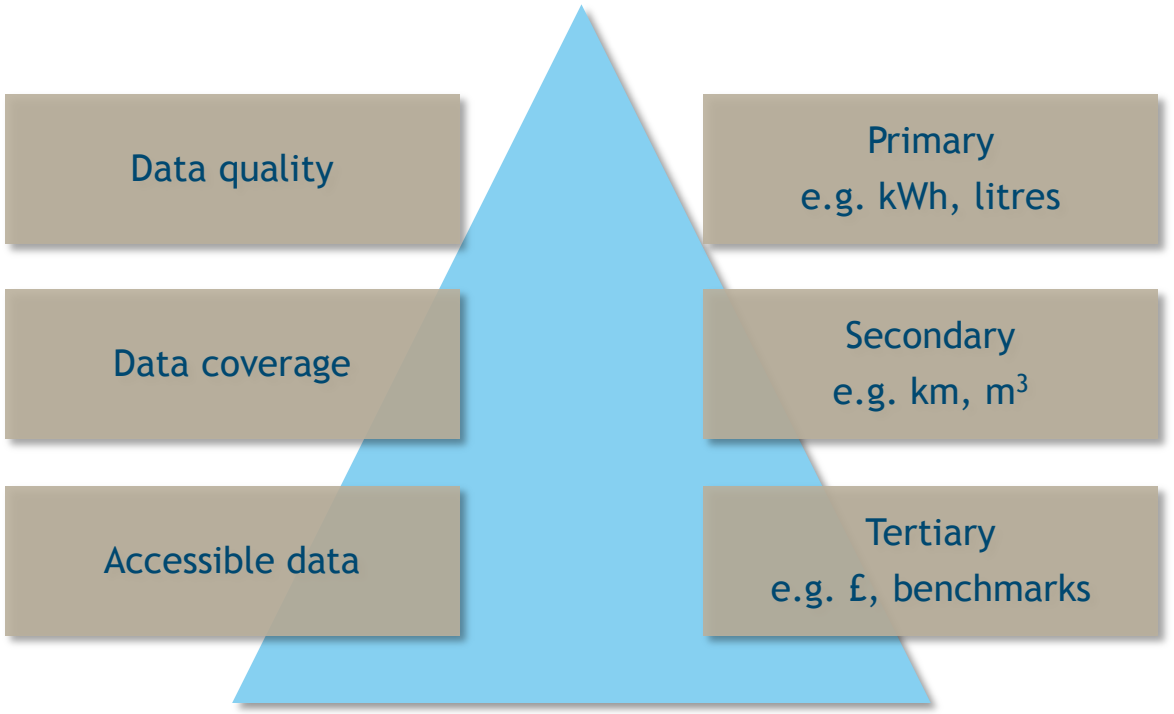
Asking the questions more frequently

Tools that fit the job

Collecting the data to meet these challenges is not quite as straightforward as financial reporting



Collecting the data you can and pushing for the data you need



Often public reports can reveal the struggle that carbon reporting requires

- **Relevance** – reporting what you can, rather than what you should. The “GRI” effect
- **Completeness** – partial reporting with no clear reasoning
- **Consistency** – large variation in a carbon footprint year-on-year or changing scope
- **Accuracy** – the ‘believability’ test catches many organisations out, no real discussion on the quality of the data
- **Transparency** – brief explanation that leaves you wondering what happened during the data collection
- **Quality –** lack of formal verification, independent audit or assurance

Verification of carbon data is growing and can improve data collection processes

Why do organisations assure their sustainability data?

- Improve credibility of sustainability data in the same manner as financial audit
- Comply with requirements of rating indices
- Inform internal management

What are the reasons they do not?

- High cost
- Lack of demand from stakeholder in their industry
- Alternatives to assurance

Discussion points: Your tips for data collection

As a group discuss some of the following questions and report back on a couple

- Where does most of your data collection effort currently go?
- What is the most critical area to apply data collection effort?
- How have you effectively engaged colleagues?
- Who is responsible for making sure data collection works?
- Would/does auditing/assurance help?

Conversion factors – changes and updates

Sarah McCusker – Carbon Smart

What's new for Defra GHG reporting in 2013/14?

Defra reporting update

1) Updated Environmental Reporting Guidelines:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/206392/pb13944-env-reporting-guidance.pdf


'PART 7

DISCLOSURES CONCERNING GREENHOUSE GAS EMISSIONS

15.—(1) This Part of this Schedule applies to the directors' report for a financial year if the company is a quoted company.

(2) The report must state the annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which that company is responsible including—

(a) the combustion of fuel; and

(b) the operation of any facility.

(3) The report must state the annual quantity of emissions in tonnes of carbon dioxide equivalent resulting from the purchase of electricity, heat, steam or cooling by the company for its own use.

(4) Sub-paragraphs (2) and (3) apply only to the extent that it is practical for the company to obtain the information in question; but where it is not practical for the company to obtain some or all of that information, the report must state what information is not included and why.

16. The directors' report must state the methodologies used to calculate the information disclosed under paragraph 15(2) and (3).

17. The directors' report must state at least one ratio which expresses the quoted company's annual emissions in relation to a quantifiable factor associated with the company's activities.

18. With the exception of the first year for which the directors' report contains the information required by paragraphs 15(2) and (3) and 17, the report must state not only the information required by paragraphs 15(2) and (3) and 17, but also that information as disclosed in the report for the preceding financial year.

19. The directors' report must state if the period for which it is reporting the information required by paragraph 15(2) and (3) is different to the period in respect of which the directors' report is prepared.

20. The following definitions apply for the purposes of this Part of this Schedule—

"emissions" means emissions into the atmosphere of a greenhouse gas as defined in section 92 of the Climate Change Act 2008(2) which are attributable to human activity;

"tonne of carbon dioxide equivalent" has the meaning given in section 93(2) of the Climate Change Act 2008."

S.I. 2008/410.

www.gov.uk/defra

Department for Environment Food & Rural Affairs

Environmental Reporting Guidelines:

Including mandatory greenhouse gas emissions reporting guidance

June 2013

2) New conversion factor repository tool...

http://www.ukconversionfactorscarbonsmart.co.uk/


Department for Environment Food & Rural Affairs

RICARDO-AEA

carbon SMART

Greenhouse Gas Conversion Factor Repository

Government conversion factors for company reporting

Welcome to the Government conversion factors for greenhouse gas reporting. These factors are suitable for use by UK based organisations of all sizes, and for international organisations reporting on UK operations.

What are greenhouse gas conversion factors?

In order to report the greenhouse gas emissions associated with an organisation's activities, users must convert 'activity data' such as distance travelled, litres of fuel used or tonnes of waste disposed into carbon emissions. This online tool provides the values that should be used for such conversions, provides step by step guidance on how to use the factors and allows users to tailor the volume and types of greenhouse gas (GHG) values they use during their reporting process.

What's new?

Conversion factor user guide

What support is available with these factors?

For new users of the conversion factors, ensure that you have first read Defra's 'Environmental reporting guidelines', then follow the informative text at the top of each conversion factor tab in the output files.

For repeat users of the conversion factors we suggest that the 'what's new' tab should be read before using the conversion factors. This tab highlights the significant changes and the consistent factors made in this update. Following the 'what's new' guidance will ensure that reporting is consistent and comparable year-on-year.

For additional support, queries can be sent to Defra's GHG reporting support team at: ghgreporting@defra.gsi.gov.uk

To start please select one of the three options below that best describes your requirements:

I want to choose my own set of carbon conversion factors

I want to see Defra's frequently used conversion factors

Just give me everything! I will look through all 4,000 factors offline (advanced)

What does this mean?

This option allows you to filter the dataset for your own needs and download only those factors that are of interest.

We recommend this mechanism as it allows users the flexibility to sift the factors by scope, fuel or activity type and by the type of data that needs conversion.

Fewer conversion factors reduces confusion and time spent on this part of reporting.

Year

Select the dataset year and click the button to continue

2013

© Crown Copyright

...and accompanying methodology paper

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224437/pb13988-emission-factor-methodology-130719.pdf

Carbon Smart worked closely with Defra and several groups of stakeholders to develop the new conversion factor tool

New online repository

The review addressed five key themes:

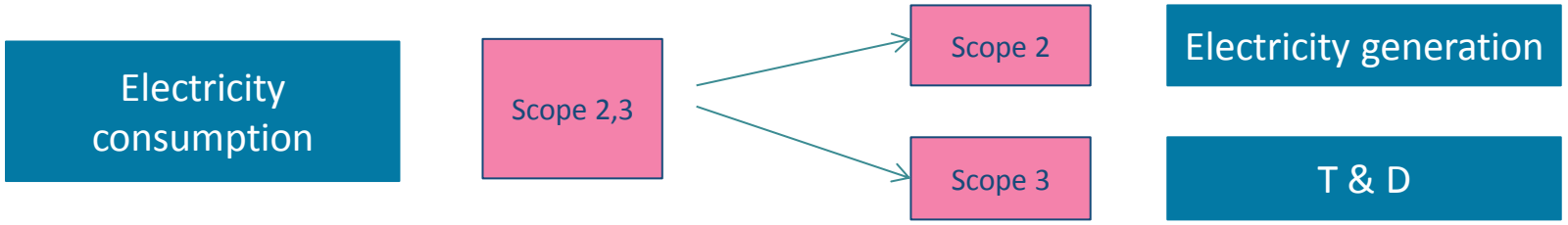
- **Complexity** - several complicated calculation procedures make the factors hard to use
- **Consistency** - users of the conversion factors commonly assume all conversion factors contain the same GHGs, align with other international conversion factor repositories and will satisfy the regulatory regimes in place in the UK currently
- **Coverage** - over 7,000 available factors with excessive granularity and scopes cause great confusion
- **Guidance** - presentation of guidance leads to confusion
- **Management** - Defra's administration of the factors

Electricity: a number of changes have been made surrounding electricity conversion factors

1. 5 year grid rolling average to 1 year grid rolling average

		2012		2013	%age change	%age change
	$kgCO_2e$/kWh generation	5 yr av. factor	1 yr av. factor	1 yr av. factor	From 5 yr. av	From 1 yr av.
Year issued	2009	0.49695	0.5033	0.49381	-1%	-2%
	2010	0.4957	0.48972	0.48531	-2%	-1%
	2011	0.48753	0.45006	0.45205	-7%	0%
	2012	0.48234	0.45747	0.46002	-5%	1%
	2013	-	-	0.44548	-	-

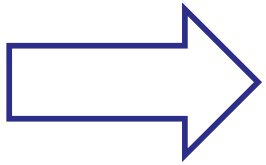
2. Spilt of electricity consumption (scope 2 + scope 3) to electricity generation (scope 2) and scope 3 (transmission and distribution)



3. Last year in which retrospective updated to electricity time series need to be applied – from next year only a number for 2014 will be published – no retrospective updates

Electricity: what does reporting look like?

Example corporate report:	
GHG emissions data for period 1st January 2011 - 31st December 2011 (tCO_2e):	
	2011
Scope 1: Natural gas	4,000
Sub-total	**4,000**
Scope 2: Electricity consumption	11,880
Scope 2: Heat and steam	2,000
Sub-total	**13,880**
Gross emissions total	**17,880**



Example corporate report:	
GHG emissions data for period 1st January 2012 - 31st December 2012 (tCO_2e):	
	2012
Scope 1: Natural gas	4,000
Sub-total	**4,000**
Scope 2: Electricity generation	11,000
Scope 2: Heat and steam	1,900
Sub-total	**12,900**
Scope 3: Transmission and distribution	980
Sub-total	**980**
Gross emissions total	**17,880**

Biofuels: introduction of ‘outside of scopes’ to forecourt fuels

Outside of scopes factors should be used to account for the direct CO_2 impact of burning biomass and biofuels. The emissions are labelled ‘outside of scopes’ because the scope 1 impact of these fuels has been determined to be a net ‘0’ (since the fuel source itself absorbs an equivalent amount of CO_2 during the growth phase as the CO_2 that is released through combustion).

Full reporting of any fuel from a biogenic source should have the ‘outside of scopes’ CO_2 value documented to ensure complete accounting for the emissions created (this is the biogenic portion of the biofuel content which is around 8% of the forecourt diesel / petrol content.

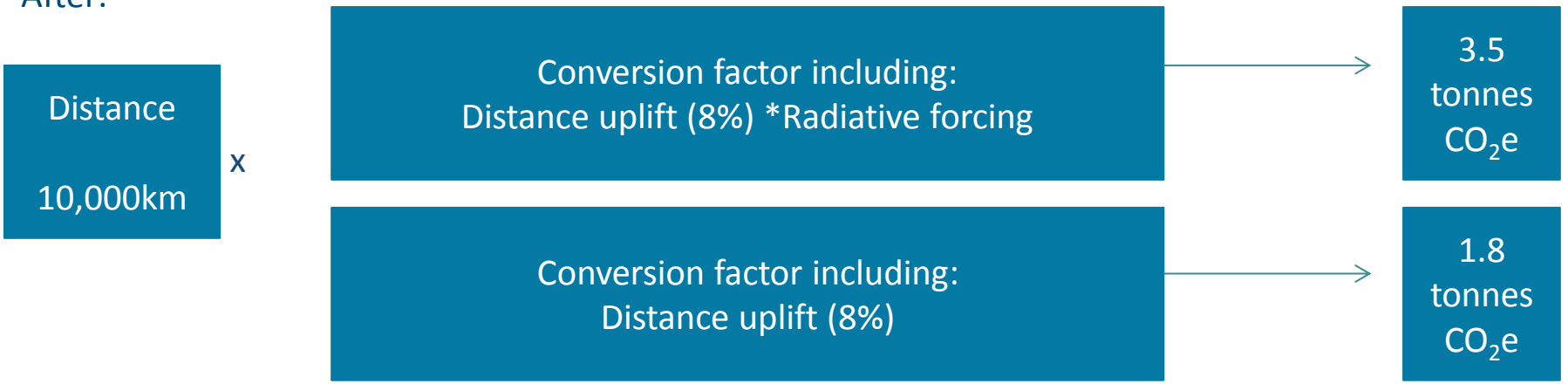
Example corporate report:	
GHG emissions data for period 1st January 2012 - 31st December 2012 (tCO_2e):	
	2013
Scope 1	4,350

Example corporate report:	
GHG emissions data for period 1st January 2013 - 31st December 2013 (tCO_2e):	
	2013
Scope 1	4,000
Gross emissions total	**4,000**
Outside of scopes	350

Flights – inclusion of distance uplift; RF optional

Before:

After:



WRI alignment: scope 3 protocol

WRI GHG protocol

Before:

Table 6j

Passenger Road Transport Conversion Factors: Motorcycles				Scope 1 OR Scope 3				Scope 3	All Scopes
				CO_2	CH_4	N_2O	Total Direct GHG	Total Indirect GHG	Grand Total GHG
Size of motorcycle	Total units travelled	Units	x	kg CO_2 per unit	kg CO_2e per unit	kg CO_2e per unit	kg CO_2e per unit	kg CO_2e per unit	kg CO_2e per unit
Small petrol motorbike (mopeds/scooters up to 125cc)		miles	x	0.13678	0.00381	0.00058	0.14117	0.02752	0.16869
		km	x	0.08499	0.00237	0.00036	0.08772	0.01710	0.10482
Medium petrol motorbike (125-500cc)		miles	x	0.16602	0.00423	0.00100	0.17125	0.03341	0.20466
		km	x	0.10316	0.00263	0.00062	0.10641	0.02076	0.12717
Large petrol motorbike (over 500cc)		miles	x	0.22087	0.00314	0.00100	0.22500	0.04443	0.26944
		km	x	0.13724	0.00195	0.00062	0.13981	0.02761	0.16742
Average petrol motorbike (unknow n engine size)		miles	x	0.18678	0.00381	0.00097	0.19156	0.03758	0.22914
		km	x	0.11606	0.00237	0.00060	0.11903	0.02335	0.14238
Total for motorcycles									

Scope 1 or 3 (direct) – depends on whether you consider this is direct emission for your organisation or not

Scope 3 (indirect) – ‘well to tank’ – the extraction, refining and transportation of the fuel to the point of combustion, not including the actual combustion of the fuel

All scopes (grand total) – the sum of the two above categories

WRI alignment: example

WRI GHG protocol

After

- Removal of ‘all scopes’
- Report motorbikes or any other assets in 4 places (no blended annotation):
  - Scope 1 - Passenger vehicles (owned or controlled by company)
  - Scope 3 – Business travel – land (for the purposes of travelling for business needs)
  - Scope 3 - Managed assets – vehicles (motorbike couriers/ leased motorbikes)
  - Scope 3 – WTT – passenger vehicles (the extraction, refining and transportation of the fuel to the point of combustion, not including the actual combustion of the fuel)

What areas have been relocated?

Very detailed guidance on methodological points has been moved to the 2013 methodology paper

A number of annexes have been moved to the new Environmental Reporting Guidelines:

Annex subject	Annex under 2012 conversion factors	New location in 2013 Environmental Reporting Guidelines
CHP	Annex 2	Annex D
Process emissions	Annex 4	Annex B
Refrigerant and air con	Annex 8	Annex C
Supply chain	Annex 13	Annex E

Other overarching details

Calculations and years

Activity data * CF = kg carbon equivalent
= ÷ 1000 > tonnes carbon equivalent

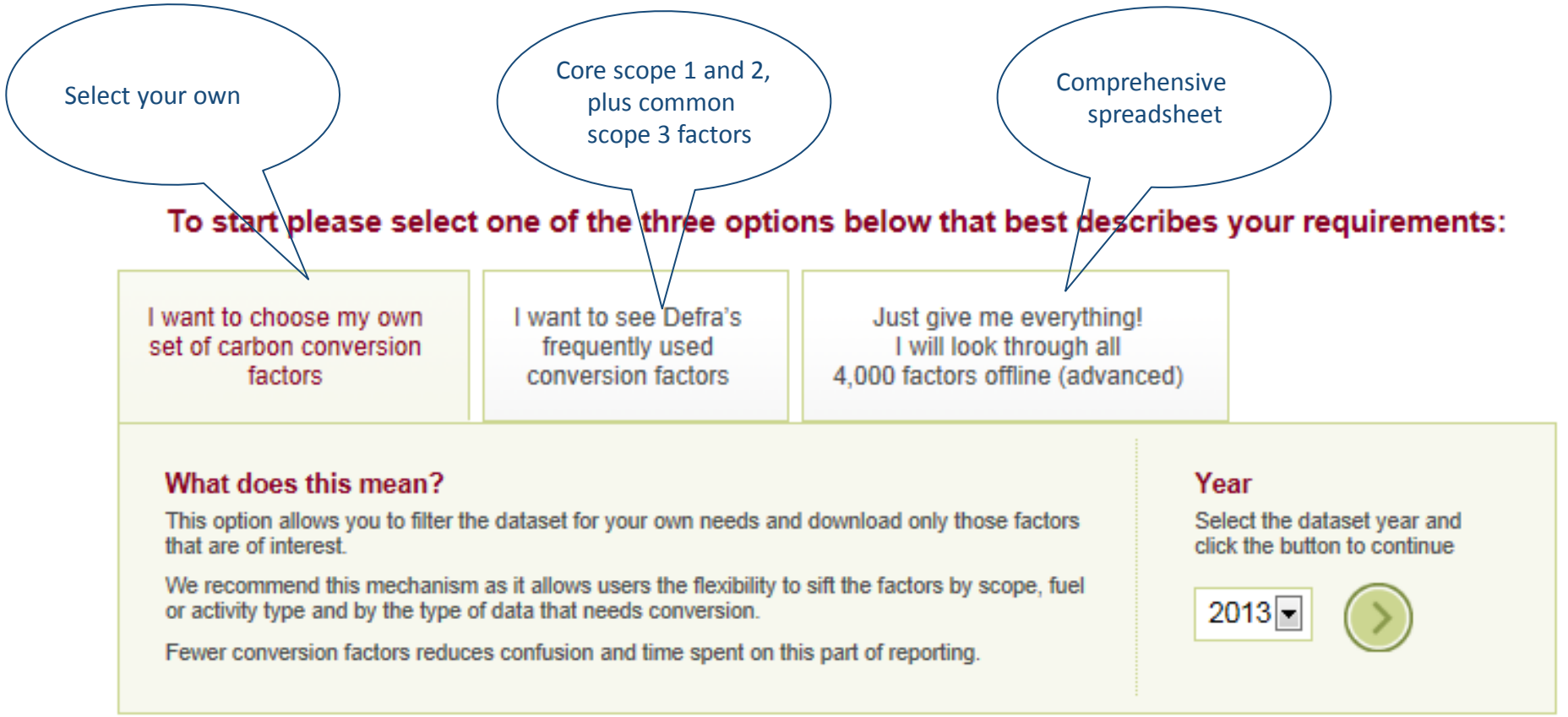
Factors have been renamed as the year they were issued and to be used for reporting

How does it work?

Demo

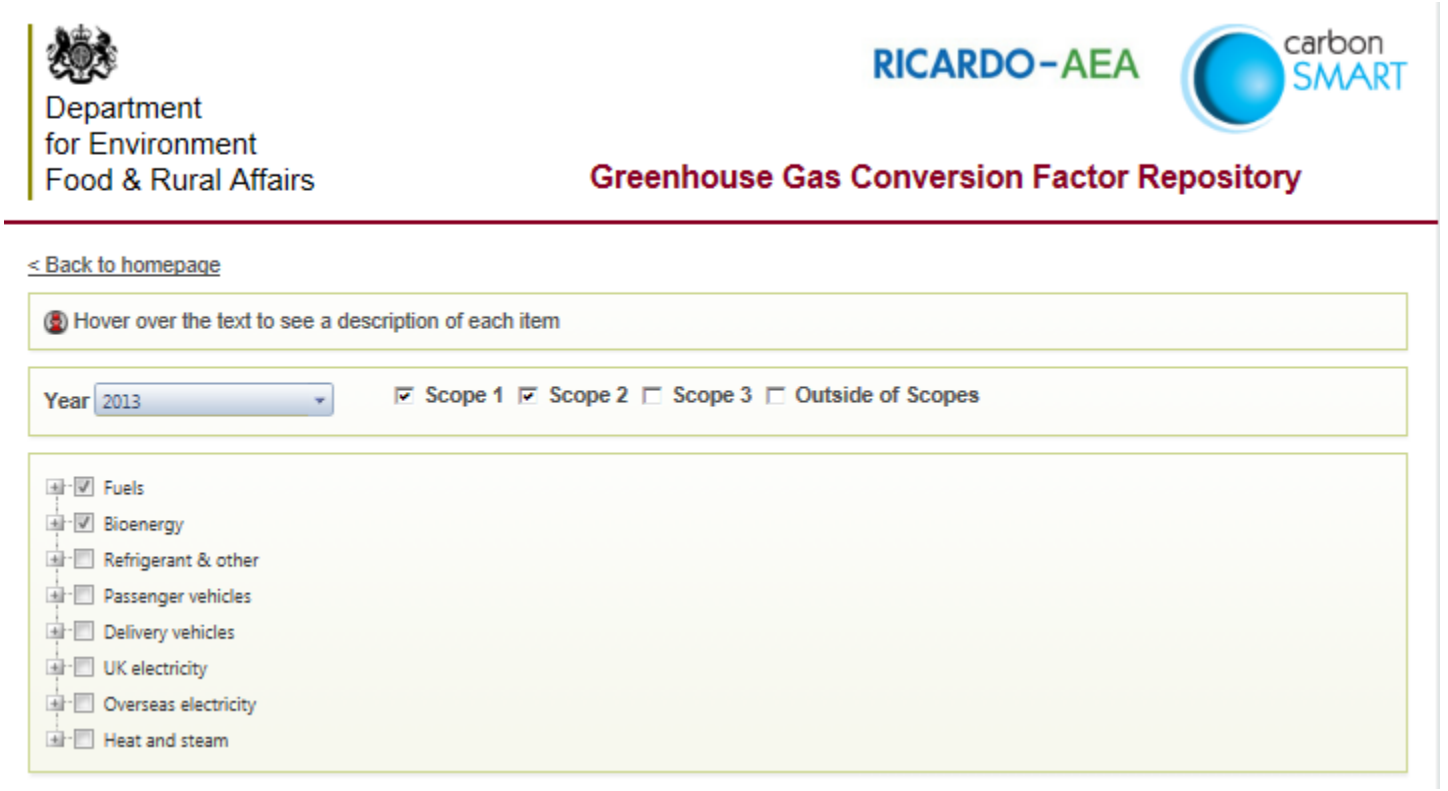
Three navigation options

Demo



Select a year, scopes and top level emissions sources

Demo



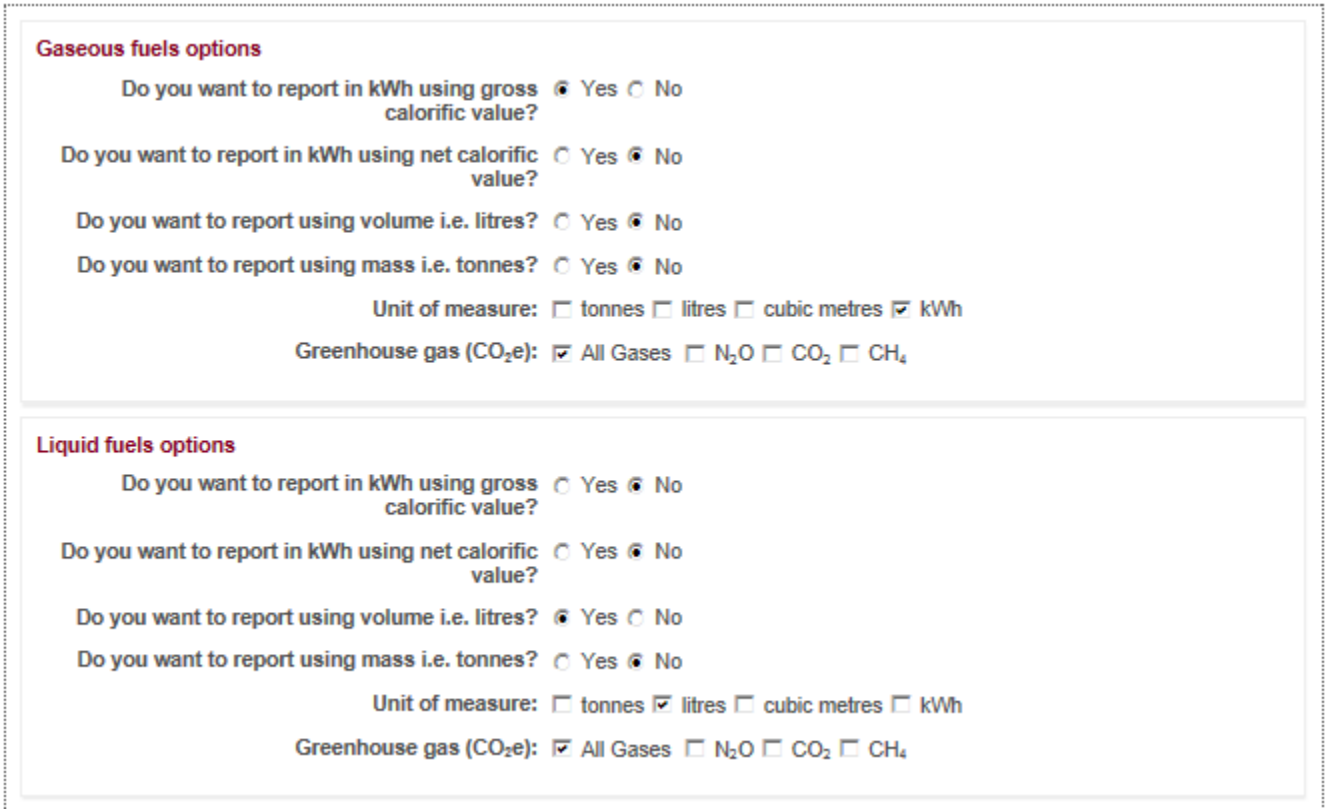
- Note: only electricity, heat & steam and related scope 3 factors are reported back to the 1992 – all other fuel and activity factors (except 2012 and 2013) remain in the old sheets in the Defra archives:
- http://archive.defra.gov.uk/environment/business/reporting/conversion-factors.htm
- http://archive.defra.gov.uk/environment/business/reporting/older-ghg-conversion-factors.htm

Drill down into specific fuel or activity types; select and deselect as desired

Demo

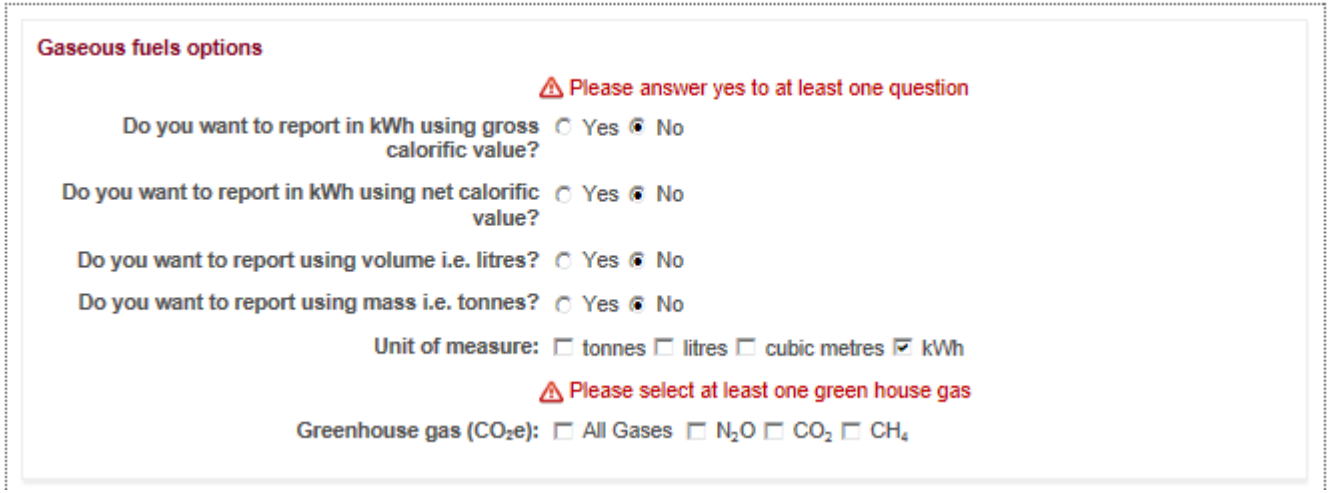
For each “second level” option you will be asked to hone your selection

Demo



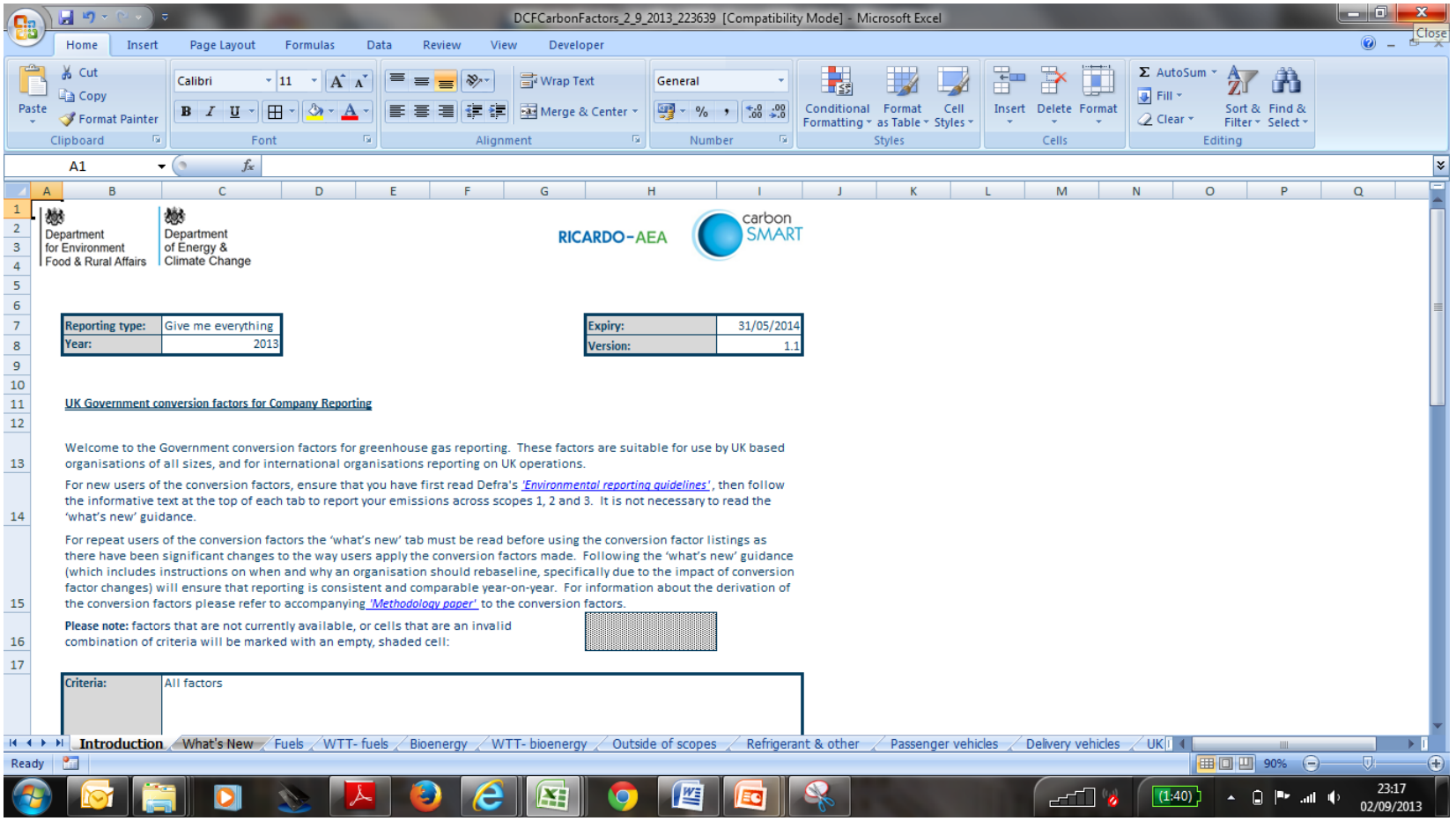
Invalid combinations will yield an error message

Demo



Download stock, or tailored sheets

Demo



- What's new and fuel conversions as standard for all downloads
- WRI groupings around primary emissions sources

Questions

www.carbonsmart.co.uk

Peter House
Oxford Road
Manchester, M1 5AN

D: +44 (0)161 3500069
E: simon.chiva@carbonsmart.co.uk