



Business Carbon Footprint Statement for 2011

SP Distribution

SP Manweb

SP Transmission

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Introduction

This report sets out SP Energy Networks' Business Carbon Footprint statement for 2011 for the two electricity distribution licensees - SP Distribution and SP Manweb - in accordance with Ofgem's guidelines.

Group Structure and Commitments

SP Energy Networks is the Scottish Power division responsible for the licensed Transmission and Distribution networks in Central and Southern Scotland, North West England, and North Wales. The network licensees involved are;

- SP Manweb plc
- SP Distribution Ltd
- SP Transmission Ltd

SP Power Systems Limited provides network management and operation services to the three licensees above. All of the above companies are members of the Scottish Power group which in turn is part of the Iberdrola group of companies.

In 2010 Scottish Power set out a Big Goals framework for forward environmental targets, this sets out a 20% target for reduction of carbon emissions in coming years. As an initial measure SP Energy Networks has set a target of 15% reduction in non-operational buildings energy use.

General Methodology

This data was compiled between April and July 2012 based upon available data for calendar year 2011 drawn from a number of data reporting sources.

Scottish Power Group has reported carbon emissions at group level for many years and SP Energy Networks has contributed data to that commitment. For that reason most of the datasets used are sourced from the SP Group annual Corporate Social Responsibility report submission and co aligned to calendar year scope. The data sources are verified annually via corporate audit arrangements.

General methodologies are in line with internal corporate procedures for environmental reporting which in turn align with the Greenhouse Gas Protocol and Defra Guidelines.

Source data acquisition relies upon a number of mainly supplier related bulk contract reports principally for air travel, electricity supply, and road transport fuel. Internal activity reports are sourced for other smaller scale or specialist activity measures such as red diesel use, SF6 emissions, business miles driven and network losses. Accuracy is therefore limited to that of the source systems including any rounding and estimation

techniques. In practice this excludes any minor ad-hoc purchases of fuels or energy supplies made via local suppliers on a cash or credit card basis.

Several of the datasets are supplied with business unit / location source data allowing alignment to the license where this is the case these have been directly allocated. Where business unit allocation is not pre-indicated apportionment factors have been used to subdivide the whole based upon relevant operational profiles.

Emissions for SP Transmission operations have been apportioned from the overall business total and reported separately via RIIO T1 requirements, in line with developing BCF requirements for transmission.

Carbon conversion constants are stated in the Defra / DECC Document - 2010 Guidelines to Defra / DECC's Conversion Factors for Company Reporting. Generally unless stated where relevant Net CV (LHV) constants have been used. Where Net CV values are not available the constant most appropriate to the available data unit of measure has been selected. Our single contractor report has reported in terms of total carbon emissions apportioned by the scale of works on the contract. This is externally validated via a CEMARS Scheme certification.

To deliver BCF reporting an internal carbon model delivered Excel spreadsheet has been developed. This provides for;

- Input and classification of the base data sets
- GHG Protocol Scope Classification
- Ofgem BCF table classification
- General type classification
- Unit of measure classification
- Data source classification
- Input of the appropriate conversion constant
- Carbon calculation in kg and Tonnes
- Licence / business unit allocation.
- Pivot table analysis outputs by Ofgem table classification.

During 2012 we have invested in the development of Credit 360 Web based carbon reporting software. This will allow remote entry of data by contractors and suppliers automate the carbon conversion, apportionment and output reporting processes in 2013 and beyond.

Third Party Audit

AMEC Environment Infrastructure UK have this year provided independent third party audit. This indicates that "within the limitations of the present review the process used to calculate the BCF makes the best use of the data available and uses consistent, reasonable practices to apportion data". AND "The manner in which the BCF is calculated

is practical and robust (to the extent it can be given the data available)". The audit report also makes recommendations regarding future improvements relating to data source transparency.

Network Apportionment Factors

Rules of thumb for allocation of company-wide emissions data to licensee where not pre-segregated are generally based upon a geographic profile and staff numbers in line with the proportions below. This is based upon a Human Resources supplied dataset identifying total SPEN staff numbers by geographic location.

SP Transmission 3.89%	SP Manweb 44.39%	SP Distribution 51.72%
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Building Energy Usage – Offices & Depots

This is based upon a calendar year composite of submissions for annual CRC reporting supplied by Scottish Power Energy Retail based upon 2010 /11 & 2011/12 datasets for gas and electricity. This uses billing data and CRC statements for the year as a baseline. The full dataset includes distribution substation use and some radio base station use, use types have been separately classified for reporting. Apportionment has been made in line with staff geographic location and numbers.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Electricity	221.01	2,940.76	3,851.92
Natural Gas	4.30	57.17	4.28

Substation Energy Use Methodology

Assessment was made in 2010/11 of substation classification, substation numbers, and use type to produce an estimate of energy used, leading to single supply agreements for the bulk of substations. Data has been sourced via CRC statements 2010 / 2011 & 2011 / 2012 provided by SP Energy Retail. A small number of substation sites are independently metered and therefore based upon metered billing. No estimate of SP Transmission substations has been made and therefore this has not been included with the exception of one metered substation.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Electricity	64.52	25,450.74	3,656.27

Radio Base Station Use Methodology

The company owns or leases a number of radio base station sites for provision of communications and control equipment using electricity as a primary fuel. A few of these sites are metered and usage sourced via 2010 / 2011 and 2011 / 2012 CRC Statement Datasets.

For the remaining unmetered sites use has been estimated for each site at 3,500 units per annum based upon estimated MPAN data supplied by SP Energy Retail. During 2011 our Group Facilities Management team undertook site visits to most of the unmetered sites and identified several that were out of use or had only third party operators resident. Where this is the case these have been removed from the estimation process. Following this review proposals have been made to meter these sites where appropriate.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Electricity Metered	1.76	23.39	2.03
Electricity Unmetered	No Data	59.16	19.08

Operational Transport

Data obtained from Shell UK / SP Procurement team derived fuel use report for petrol, diesel and LPG. The data currently excludes air, rail and sea freight data. Air travel is excluded as Helicopter line patrol travel data has not yet been developed. Rail and sea - freight are generally not used.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Petrol / Diesel / LPG	202.36	3,476.51	3,198.98

Business Transport

Air Travel: Data obtained from Travel & accommodation service provision contractor data - Air Travel Report spreadsheet via SP Corporate / Procurement.

Business Miles: Data sourced from SP Corporate internal business miles claims for managers and staff.

Rail Travel: For the first time this year we have provided rail travel data, this is sourced from an SP group wide travel and accommodation service providers report. This was manually sorted by name from a list of 4000+ group wide staff journeys to identify Scottish Power Energy Networks proportion and then apportioned in line with geographic allocation of staff numbers. A request has been made for enhancements in the data supply format for 2013 allowing location and business unit sort within the data.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Air Travel	14.09	187.32	160.77
Rail Travel	0.48	6.33	5.44
Road Travel	117.51	1,562.39	1,340.96

Fugitive Emissions

Emissions due to SF6 losses are based on internal estimates. The SPD or SPM population volumes have been multiplied by a 0.5% loss assumption to provide the amount of SF6 leakage. SPT data is based upon a measured loss regime based upon top up measurement.

This year for SPM and SPD we have added data re SF6 not recovered post disposal by our contractor C.Soar and Co via and end of year disposal report provided for Group Wide CSR reporting processes. This is based upon measured recovery data and assumes volumes less than the nominal population for that type have been emitted pre disposal and not recovered pre disposal. This volume will include some data from equipment subject to disruptive failure and containment leakage indicating zero residual volume.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
SF6 Gas	16,590.42	1,638.82	2,845.06

Fuel Combustion

This consists of red diesel only as non road LPG data has not been provided by operations. The data relates to Red Diesel volumes issued via in house stock control systems. Internal LPG plant use data is not included due to purchase via multiple local purchase systems.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Red Diesel	0	193.36	193.36

System Losses Methodology

This data has been provided by our Regulation team and represents monthly interim unsettled loss estimates based upon 2011 unit purchases and sales for both SPD and SPM in GWh. No agreed methodology exists for calculation of SPT data, there is therefore no data supplied.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Electricity	N/A	61,295.62	48,184.67

Contractors

We have included our first contractor data supplied by our new spillage response contractor Adler and Alan. They have reported in terms of total carbon emissions apportioned by the scale of works on the contract. This is externally validated via a CEMARS Scheme certification. This has been apportioned to SPD, SPM and SPT in proportion to the approximate volume of work for each. Although not directly apportioned by use type this will consist of mixed operational and business transport, office electricity and gas and on site fuel use for generators and pumps etc.

We have included a requirement to report carbon within our new cable laying contracts which commenced in mid 2012. Several are already reporting carbon emissions at group level and have established reporting regimes, others will need some support to implement.

Source	SP Transmission (Tonnes)	SP Distribution (Tonnes)	SP Manweb (Tonnes)
Multiple	1.65	7.44	7.44

Summary Tables

2011				
			Calendar Years	
			2010	2011
Emission		Units	DPCR5	
Buildings energy usage	Buildings - Electricity	tCO2e	4,388	2,941
	Buildings - Other fuels	tCO2e	133	57

	Substation Electricity	tCO2e	25,508	25,451
			22	83
			-	
	Total	tCO2e	30,051	28,531
Operational Transport	Road	tCO2e	968	3,477
	Rail	tCO2e	-	
	Sea	tCO2e	-	
	Air	tCO2e	-	
			-	
			-	
	Total	tCO2e	968	3,477
Business Transport	Road	tCO2e	1,818	1,562
	Rail	tCO2e	-	6
	Sea	tCO2e	-	0
	Air	tCO2e	43	187
			-	
			-	
	Total	tCO2e	1,861	1,756
Fugitive Emissions	SF6	tCO2e	1,315	1,639
	Gases Other	tCO2e	-	
			-	
			-	
	Total	tCO2e	1,315	1,639
Fuel Combustion	Diesel	tCO2e	33	
	Gas Natural	tCO2e	-	
	Fuels Other	tCO2e	5	193
			-	
			-	
	Total	tCO2e	38	193.36
Total BCF (excl. losses)		tCO2e	34,233	35,596
Losses		tCO2e	57,613	61,296
TOTAL BCF (incl. losses)		tCO2e	91,846	96,892

2011		Calendar Years		
			2010	2011
Emission		Units	DPCR5	
Buildings energy usage	Buildings - Electricity	tCO2e	4,271	3,852
	Buildings - Other fuels	tCO2e	60	4
	Substation	tCO2e	3,547	3,656

	Electricity			
			65	21
			-	
	Total	tCO2e	7,942	7,534
Operational Transport	Road	tCO2e	3,602	3,199
	Rail	tCO2e	-	
	Sea	tCO2e	-	
	Air	tCO2e	-	
			-	
			-	
	Total	tCO2e	3,602	3,199
Business Transport	Road	tCO2e	1,577	1,341
	Rail	tCO2e	-	5
	Sea	tCO2e	-	
	Air	tCO2e	37	161
			-	
			-	
	Total	tCO2e	1,614	1,507
Fugitive Emissions	SF6	tCO2e	2,486	2,845
	Gases Other	tCO2e	-	
			-	
			-	
	Total	tCO2e	2,486	2,845
Fuel Combustion	Diesel	tCO2e	50	
	Gas Natural	tCO2e	-	
	Fuels Other	tCO2e	5	193
			-	
			-	
	Total	tCO2e	55	193
Total BCF (excl. losses)		tCO2e	15,700	15,278
Losses		tCO2e	47,934	48,185
TOTAL BCF (incl. losses)		tCO2e	63,633	63,463