Basis of Reporting

2015 Reporting

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Summary

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Lost time injury frequency rate (LTIFR)

Description

Lost time injury frequency rate (LTIFR) is an industry standard measure for tracking personal safety performance for serious injuries.
A lost time injury is defined as an incident arising out of Centrica's operations which leads to an injury where the employee or contractor is not available to work for one day or more, excluding the day that the injury occurred.

Unit of measure

LTIFR (rounded up to 2 decimal places) = ((Number of lost time injuries x 100,000) / Hours worked) x 2

Note: Lost time injury rate for 2015 was calculated using 100,000 hours as the basis of reporting, but is reported on a 200,000 work hour basis (calculated by multiplying the rounded 100,000 work hour rate by 2) to allow for easier industry sector benchmarking. In future years, 200,000 hours will be used as the basis for calculation and reporting.

Scope

All Centrica businesses (ie British Gas (BG), Centrica Energy (CE), Centrica Storage Limited (CSL), Direct Energy (DE) and Bord Gáis Energy (BGE)) are included for the scope of reporting as defined below for the period January to December 2015. There are no reported acquisitions or divestments in 2015 and we continue to report metrics for the Centrica Energy Power business associated with the Celtic Array and Barrow wind farms, which are serviced under a Technical Services Agreement.

As of 1 November 2015, the Centrica Energy business ceases to exist, Exploration & Production will be a stand-alone business and three new businesses have been created: Distributed Energy and Power (DE&P), Energy Marketing and Trading (EM&T) and Connected Homes (CH). These businesses have been created from existing operations and assets and will not impact reporting in 2015. We currently plan to report metrics individually for each of these businesses from 1 January 2016, rolling these into group reporting as is currently the practice.

For the purpose of reporting, all directly controlled activities are included. This includes all activities undertaken by third parties where:

- work activities are undertaken under a Centrica business brand
- work performance is under the direct control of a Centrica businesses line management
- Centrica owns or has the controlling interest in the premises/asset where the third party is working

From 1 January 2013 work hours and injuries associated with franchisee operations are no longer included in the reported data. Injury data, investigation details and corrective actions continue to be recorded from franchisees' for the purposes of sharing learnings across the franchisee community.

Data quality, collection, and reporting frequency

The recording system for all source data is myHSES, our new global HSES data management system launched in September 2015. This system replaced three injury and illness data capture systems: myHSE used by Corporate Centre (CC), British Gas (BG), Centrica Storage (CSL), Centrica Energy Power (CEP), Centrica Energy Millstream (CE Millstream) and Centrica Energy Exploration & Production (E&P), Analytix used by Direct Energy in the US and EnviroManager used by Bord Gáis Energy in Ireland. All data from legacy systems was migrated as businesses switched over to the new data management system in 2015.

We continue to use the Excel template for the purpose of reporting to Centrica Group in parallel with the new system until December 2015 to ensure the accuracy of reporting and to validate the new system. From 1 January 2016 myHSES will systemise business level data validation and provide all HSES metrics and performance reports used within business units and at group level.

Where actual worked hours are available these are used to calculate LTIFR, if actual work hours are not maintained, for example salaried personnel, the following calculation is used to estimate work hours across the group:

> *monthly average FTE (equivalent full time employees) x 8 hours x number of working days in the month (excluding weekends and national holidays)*
>
> *Note: for off-shore workers a 12 hour working day should be used for the days off-shore.*

It may generally be assumed that actual work hours are available for industrial personnel; hours for office based personnel are generally estimated (including agency workers). Contractor hours are provided by the contractor as agreed in the contract.

Any other work hour estimations must be submitted to Group HSES for approval before 1 December of the preceding recording year by the business HSE Director; no approvals were requested or made in 2015.

Reporting frequency

During 2015 data has been reported monthly to Group HSES by each business unit on the Group HSES provided spreadsheet. All data is verified by the business unit HSE Director, or nominated deputy, prior to submission to Group HSES. Group HSES conduct necessary assurance on the submitted data and consolidated business unit data in to a single performance report for the Centrica Executive Committee monthly.

Total recordable injury frequency rate (TRIFR)

Description

Total recordable injury frequency rate (TRIFR) is an industry standard measure for tracking personal safety performance for serious injuries.

Recordable injuries include all work related injuries apart from first aid. This includes fatalities, lost time, restricted duty and medical treatment (Note: all needle stick and sharps injuries are recordable). Only first aid injuries described as below are excluded:

a) Using a non-prescription medication at non-prescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for recordkeeping purposes);
b) Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment)
c) Cleaning, flushing or soaking wounds on the surface of the skin
d) Using wound coverings such as bandages, Band-AidsTM, gauze pads, etc.; or using butterfly bandages or Steri-StripsTM (other wound closing devices such as sutures, staples, etc., are considered medical treatment)
e) Using hot or cold therapy
f) Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes)
g) Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.)
h) Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister
i) Using eye patches
j) Removing foreign bodies from the eye using only irrigation or a cotton swab
k) Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means
l) Using finger guards
m) Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes)
n) Drinking fluids for relief of heat stress.

Unit of measure

TRIFR (rounded up to 2 decimal places) = ((Number of recordable injuries x 100,000) / Hours worked) x 2

Note: Total recordable injury frequency rate for 2015 was calculated using 100,000 hours as the basis of reporting, but is reported on a 200,000 work hour basis (calculated by multiplying the rounded 100,000 work hour rate by 2) to allow for easier industry sector benchmarking. In future years, 200,000 hours will be used as the basis for calculation and reporting.

Scope

All Centrica businesses (ie British Gas (BG), Centrica Energy (CE), Centrica Storage Limited (CSL), Direct Energy (DE) and Bord Gáis Energy (BGE)) are included for the scope of reporting as defined below for the period January to December 2015. There are no reported acquisitions or divestments in 2015 and we continue to report metrics for the Centrica Energy Power business associated with the Celtic Array and Barrow wind farms, which are serviced under a Technical Services Agreement.

As of 1 November 2015, the Centrica Energy business ceases to exist, Exploration & Production will be a stand-alone business and three new businesses have been created:

Distributed Energy and Power (DE&P), Energy Marketing and Trading (EM&T) and Connected Homes (CH). These businesses have been created from existing operations and assets and will not impact reporting in 2015. We currently plan to report metrics individually for each of these businesses from 1 January 2016, rolling these into group reporting as is currently the practice.

For the purpose of reporting, all directly controlled activities are included. This includes all activities undertaken by third parties where:

- work activities are undertaken under a Centrica business brand
- work performance is under the direct control of a Centrica businesses line management
- Centrica owns or has the controlling interest in the premises/asset where the third party is working

From 1 January 2013 work hours and injuries associated with franchisee operations are no longer included in the reported data. Injury data, investigation details and corrective actions continue to be recorded from franchisees' for the purposes of sharing learnings across the franchisee community.

Data quality, collection, and reporting frequency

The recording system for all source data is myHSES, our new global HSES data management system launched in September 2015. This system replaced three injury and illness data capture systems: myHSE used by Corporate Centre (CC), British Gas (BG), Centrica Storage (CSL), Centrica Energy Power (CEP), Centrica Energy Millstream (CE Millstream) and Centrica Energy Exploration & Production (E&P), Analytix used by Direct Energy in the US and EnviroManager used by Bord Gáis Energy in Ireland. All data from legacy systems was migrated as businesses switched over to the new data management system in 2015.

We continue to use the Excel template for the purpose of reporting to Centrica Group in parallel with the new system until December 2015 to ensure the accuracy of reporting and to validate the new system. From 1 January 2016 myHSES will systemise business level data validation and provide all HSES metrics and performance reports used within business units and at group level.

Where actual worked hours are available these are used to calculate TRIFR, if actual work hours are not maintained, for example salaried personnel, the following calculation is used to estimate work hours across the group:

> *monthly average FTE (equivalent full time employees) x 8 hours x number of working days in the month (excluding weekends and national holidays)*
>
> *Note: for off-shore workers a 12 hour working day should be used for the days off-shore.*

It may generally be assumed that actual work hours are available for industrial personnel; hours for office based personnel are generally estimated (including agency workers). Contractor hours are provided by the contractor as agreed in the contract.

Any other work hour estimations must be submitted to Group HSES for approval before 1 December of the preceding recording year by the business HSE Director, no approvals were requested or made in 2015.

Reporting frequency

During 2015 data has been reported monthly to Group HSES by each business unit on the Group HSES provided spreadsheet. All data is verified by the business unit HSE Director, or nominated deputy, prior to submission to Group HSES. Group HSES conduct necessary assurance on the submitted data and consolidated

Significant process safety event

Description

Process safety is defined by the International Association of Oil & Gas Producers as (IOGP): "*a disciplined framework for managing the integrity of operating systems and processes that handle hazardous substances. It relies on good design principles, engineering, operating and maintenance practices.*"

At Centrica the effectiveness of our process safety programmes are tracked through both lagging and leading indicators. These lagging and leading indicators are defined from recommended best practices published by the UK Health & Safety Executive (Developing process safety indicators: A step-by-step guide for chemical and major hazard industries – HSE254 2006), IOGP (Process Safety – Recommended Practice on Key Performance Indicators, Report No. 456 November 2011) and adapted for applicability to Centrica's activities.

Process safety events form a hierarchy of severity from proactive or leading indicators, defined as Tier 4 & 5 indicators, to actual process safety events with increasing severity from Tier 3 to Tier 1, referred to as lagging indicators. Metrics relating to significant process safety events (Tier 1) are publically reported.

Tier 1 Event Definition

A Tier 1 process safety is defined as follows:

> *"An uncontrolled release of flammable gas, steam or hot water under pressure causing a major injury or fatality; or the uncontrolled release of an environmentally hazardous substance causing significant impairment of sensitive receivers."*

Scope

The following Centrica business: Centrica Energy (CE), Bord Gáis Energy (BGE) and Centrica Storage Limited (CSL), reported process safety metrics related to their drilling, completions, processing, generation, storage and supply of energy activities for the period January to December 2015. There are no reported acquisitions or divestments in 2015 and we continue to report metrics for the Centrica Energy Power business associated with the Celtic Array and Barrow wind farms which are serviced under a Technical Services Agreement.

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Tier 1 process safety events are reported for all directly controlled activities, this includes all activities undertaken by third parties where:

- work activities are undertaken under a Centrica business brand
- work performance is under the direct control of a Centrica businesses line management
- Centrica owns or has the controlling interest in the premises/asset where the third party is working

Data quality, collection and reporting frequency

The recording system for all source data is myHSES, our new global HSES data management system launched in September 2015. This system replaced three injury and illness data capture systems: myHSE Centrica Storage (CSL), Centrica Energy Power (CEP), and Centrica Energy

Exploration & Production (E&P); and EnviroManager used by Bord Gáis in Ireland. All data from legacy systems was migrated as businesses switched over to the new data management system in 2015.

We continue to use the Excel template for the purpose of reporting to Centrica Group in parallel with the new system until December 2015 to ensure the accuracy of reporting and to validate the new system. From 1 January 2016 myHSES will systemise business level data validation and provide all HSES metrics and performance reports used within business units and at group level.

Reporting frequency

During 2015 data has been reported monthly to Group HSES by each business unit on the Group HSES provided spreadsheet. All data is verified by the business unit HSE Director, or nominated deputy, prior to submission to Group HSES. Group HSES conduct necessary assurance on the submitted data and consolidated business unit data in to a single performance report for the Centrica Executive Committee monthly.

Planned changes

It is intended to change the basis of reporting from 1 January 2016 to align Centrica's approach with industry best practice so as to improve consistency and the ability to benchmark. This approach will be based on the American Petroleum Institute's (API) recommended practice (Process Safety Performance Indicators for the Refining and Petrochemical Industries, RP 754).

Fatalities

Description

Metric measures any work related fatalities associated with our activities.

Unit of measure

Number of people

Scope

All Centrica businesses (i.e. British Gas (BG), Centrica Energy (CE), Centrica Storage Limited (CSL), Direct Energy (DE) and Bord Gáis Energy (BGE)) are included for the scope of reporting as defined below for the period January to December 2015. There are no reported acquisitions or divestments in 2015 and we continue to report metrics for the Centrica Energy Power business associated with the Celtic Array and Barrow wind farms, which are serviced under a Technical Services Agreement.

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Fatalities of members of the public resulting from our activities are also reported, but these are not included in the total fatalities figure.

Data collection

Data is collected from each business upon occurrence.

Reporting frequency

Our reporting standard requires any fatality to be reported to the Chief Executive immediately (as soon as possible following the incident).

British Gas net promoter score (NPS) – Contact/Brand

Description

NPS is a measure of customer advocacy and has been shown to be linked to company growth. It uses a scale of 0 to 10, to measure how much a customer would recommend a company.

British Gas has two distinct measures of NPS, one is based on a combination of **Contact/Brand NPS (British Gas NPS)** and starting in 2015 we also have a **Journey NPS based score (British Gas JNPS)**.

Calculation methodology

Unit of measure

NPS is calculated by categorising customers into three groups based on how they answer the question: *How likely is it you would recommend British Gas?*

On a scale of 0-10 with 0 being Definitely Not Recommend and 10 being Definitely Recommend, how likely is it that you would recommend British Gas?

NPS = % Promoters - % Detractors

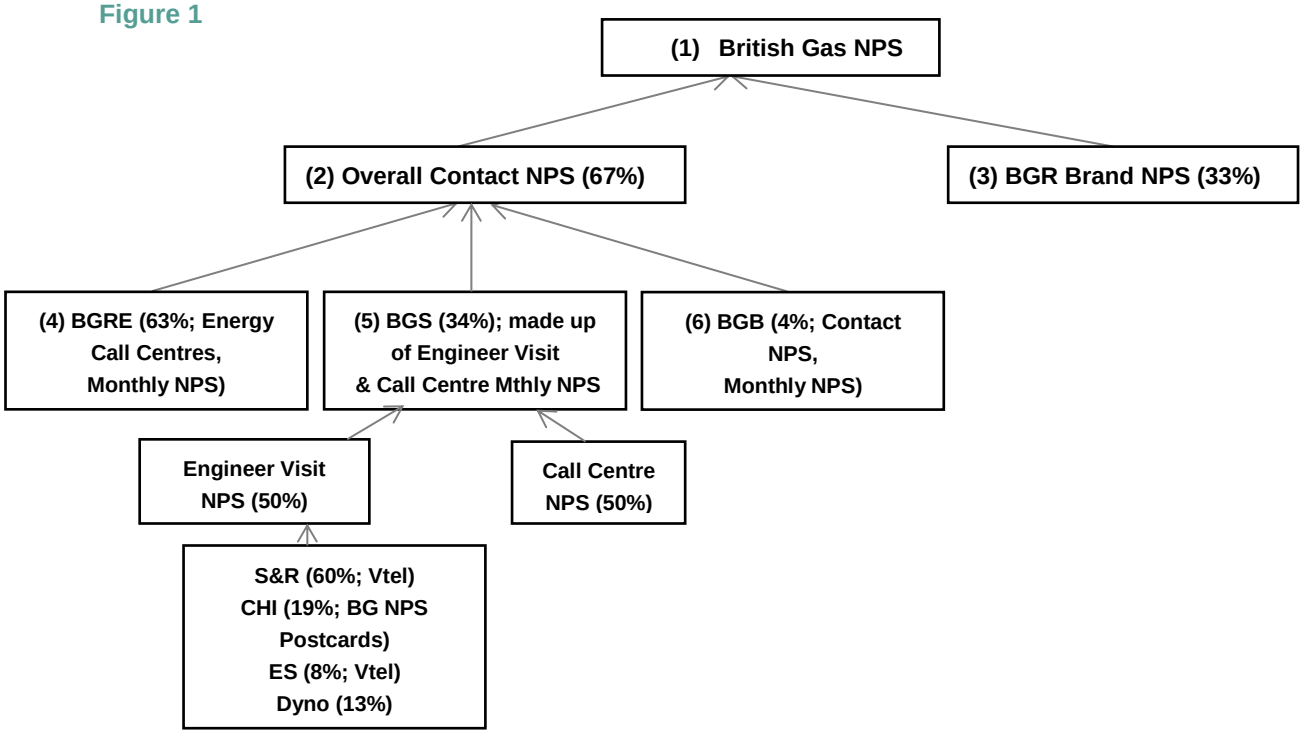
British Gas NPS

Scope

British Gas NPS measure is a composite metric combining NPS scores for Residential, Services and Business divisions.

There are multiple NPS metrics from multiple separate survey sources that go into making up this composite score (outlined below – Figure 1), using the weightings shown.

Figure 1



Types of measurement

The **Contact NPS** measures customer advocacy soon after an interaction (call centre or engineer visit). **Brand NPS** measures customer advocacy among all Residential customers, including customers with no recent interaction with the business.

Table A - Outlines type of measurement used

Metric	Measurement type	Composition / inputs
(1) **British Gas NPS**	Blend of Contact and Brand NPS	British Gas Contact NPS (67%) + British Gas Brand NPS (33%)
(2) **British Gas Contact NPS**	Blend of British Gas Residential, British Gas Services and British Gas Business NPS	British Gas Residential NPS (63%) + British Gas Services NPS (34%) + British Gas Business NPS (4%), each of these scores are in themselves derived from scores based on multiple surveys.
(3) **British Gas Brand NPS**	Brand	NPS calculated from one survey which is representative of residential customers. End of year score is based on an average of the 12 monthly weighted scores from January to December 2015. This is to ensure robustness and eliminate any spikes in monthly or 3 monthly survey data.
(4) **British Gas Residential Energy (BGRE) NPS**	Contact	BGRE Customer Services NPS End of year score is based on the survey data for the 12 months from January to December 2015. No weightings are applied.

(5)	**British Gas Services (BGS) NPS**	Contact	Composite of 50% Engineer visits, and 50% Call Centre. For Engineer visits: Service & Repair (S&R, 60%), Central Heating Installation (CHI, 19%), Electrical Services (ES, 8%) and Dyno (13%), British Gas Community Energy is no longer part of BGS Engineer Visit NPS Metric, as of Dec 2011. NPS scores weighted based on published 2014 profit margins in each area. For Call Centre: Includes all calls in to British Gas Services call centres; no weighting within this category End of year score is based on an average of the 12 monthly weighted scores (from January to December 2015).
(6)	**British Gas Business (BGB) NPS**	Contact	BGB Contact NPS score is based on result of eDigitalResearch (eDR) surveys sent to a selection of customers who have been in contact with BGB. From 1 January 2015 until 30th September 2015 the overall BGB NPS metric was made up of BGB Energy 91.8% and BGB Service 8.2% with the Service score being made up equal weightings from each of the areas within that division. As of 1 October various areas were moved from Services to BGEE (Affordable Warmth, NEST etc.) following reorganisation of the BGB function, from this period of time no weighting were applied to the BGB score.

Calculation methodology

For all business areas within the contact measurement types, the NPS is calculated monthly by calculating the percentage of promoters for that month, the percentage of detractors for the month and subtracting detractors from promoters.

Brand NPS

The Brand NPS survey provides a monthly NPS score for the British Gas residential customer base. The study is designed to ensure that the results are representative of residential customers and as such are weighted based on customer life stage (Young Sharers/Couples/Singles, Families, Empty Nesters/Active Retired, and Elderly), product holding (Energy or Services) and whether they are duel fuel or single fuel.

The monthly total completed surveys among British Gas residential customers are 1,200 (3 month average based on 3,600). Year end is YTD at December 2015.

British Gas Residential NPS

The overall British Gas Residential (BGRE) NPS score is derived from a contact survey covering customer service calls. No weighting is applied and the 2015 NPS is calculated from the arithmetical sums of the promoter responses and detractor responses for the year. The number completed surveys YTD is 430K).

British Gas Services NPS

The British Gas Services (BGS) NPS score is created by first calculating NPS for each of the business areas (S&R, CHI, ES and Dyno). Then, an overall weighted average is calculated with weights reflecting published 2014 profit margins in each area. There are 605.8k completed surveys so far in 2015.The year-end score is YTD at December 2015.

Note: British Gas CE is no longer part of BGS Engineer Visit NPS Metric, as of December 2011.

British Gas Business Contact NPS

British Gas Business Contact NPS is based on eDR surveys. Survey invites are sent following an interaction via both telephone and email contact. The end of year score is based data for December only. The overall BGB NPS score is non-weighted

British Gas Contact NPS

The British Gas Contact NPS is calculated by combining British Gas Residential, British Gas Services and British Gas Business NPS scores using the weighting outlined in Figure 1.

Data quality, collection and reporting frequency

British Gas Residential Energy NPS

The BGRE Customer Service NPS survey uses an automated Interactive Voice Response methodology. Respondents are called back within an hour of their conversation with a contact centre agent. Some respondents are screened out by the system, for example if they have recently filled in a survey, otherwise all are dialled. The contact centre agent does not select the calls that will get the survey. This methodology was introduced at the beginning of 2013.

British Gas Residential reporting is available on a weekly basis; the monthly scores are calculated from the summation of the weekly data.

British Gas Services NPS

CHI customers are surveyed by post, administered internally by British Gas. Each week each business area pulls together a list of all customers who have had an engineer visit in the prior week. All of these customers are sent a paper survey. Completed surveys sent back by customers are analysed by British Gas and NPS scores created.

S&R, Dyno and ES customers are surveyed by an outbound automated phone survey. Each day a dialler file is created for all customers who have had an Engineer visit in the previous day. The file is uploaded to internally hosted secure site, and customers are called automatically and invited to participate in the survey.

The BG Management Information (MI) analysts from ES, Dyno, CHI and S&R then process the raw survey data and calculate the monthly NPS figure. All MI reports are published on the MI portal. British Gas Services reporting is published monthly.

British Gas Business NPS

Data is gathered in real time on eDR systems. These systems can be accessed at anytime to gain up to date scores. As there is now no weighting on BGB scores, monthly scores can be obtained immediately after month end.

British Gas Residential (BGR) Brand NPS

Interviews are conducted online via an external research agency. Interview quotas are set on product holding, fuel mix, and customer life-stage. Corrective weights are added to the final data to ensure the data represents the customer base.

Fieldwork takes place on a daily basis. Approximately 1,200 interviews with British Gas residential customers are completed monthly. The external agency recruits customers from a third party online panel(s), while surveying them and collating the resulting data using their CAWI (Computer-Assisted Web Interviewing) tool, Askia Vista.

Customers surveyed in the last month for any British Gas survey are excluded from the sample, as are customers who have completed the Brand NPS survey itself within the last six months. The Brand NPS figure is published to the business monthly. In addition, interviews are also conducted among customers of 15 competitor brands across the Energy and Home Services Market. Approx 1,300 competitor interviews are completed via the brand survey every month in order to give the business an understanding of their relative position in the market. However these interviews are separate from the British Gas customer interviews and have no impact on the British Gas Brand NPS score.

British Gas net promoter score – Journey (JNPS)

Description

NPS is a measure of customer advocacy and has been shown to be linked to company growth. It uses a scale of 0 to 10, to measure how much a customer would recommend a company.

British Gas has two distinct measures of NPS, one is based on a combination of **Contact/Brand NPS (British Gas NPS)** and starting in 2015 we also have a **Journey NPS based score (British Gas JNPS)**.

Calculation methodology

Unit of measure

NPS is calculated by categorising customers into three groups based on how they answer the question: *How likely is it you would recommend British Gas?*

On a scale of 0-10 with 0 being Definitely Not Recommend and 10 being Definitely Recommend, how likely is it that you would recommend British Gas?

NPS = % Promoters - % Detractors

British Gas JNPS

Scope

British Gas JNPS measure is a composite metric combining JNPS scores across Residential Energy, Residential Services and Business divisions.

The metrics are derived from surveys designed to measure the customer experience at the end of key customer journeys (outlined below – Figure 2), using the weightings shown. As of October 2015, British Gas Business (BGB) weighting has been removed (shown in Figure 3), with the re-weighting to be determined once the impact of new organisational structure within BGB is understood.

Figure 2

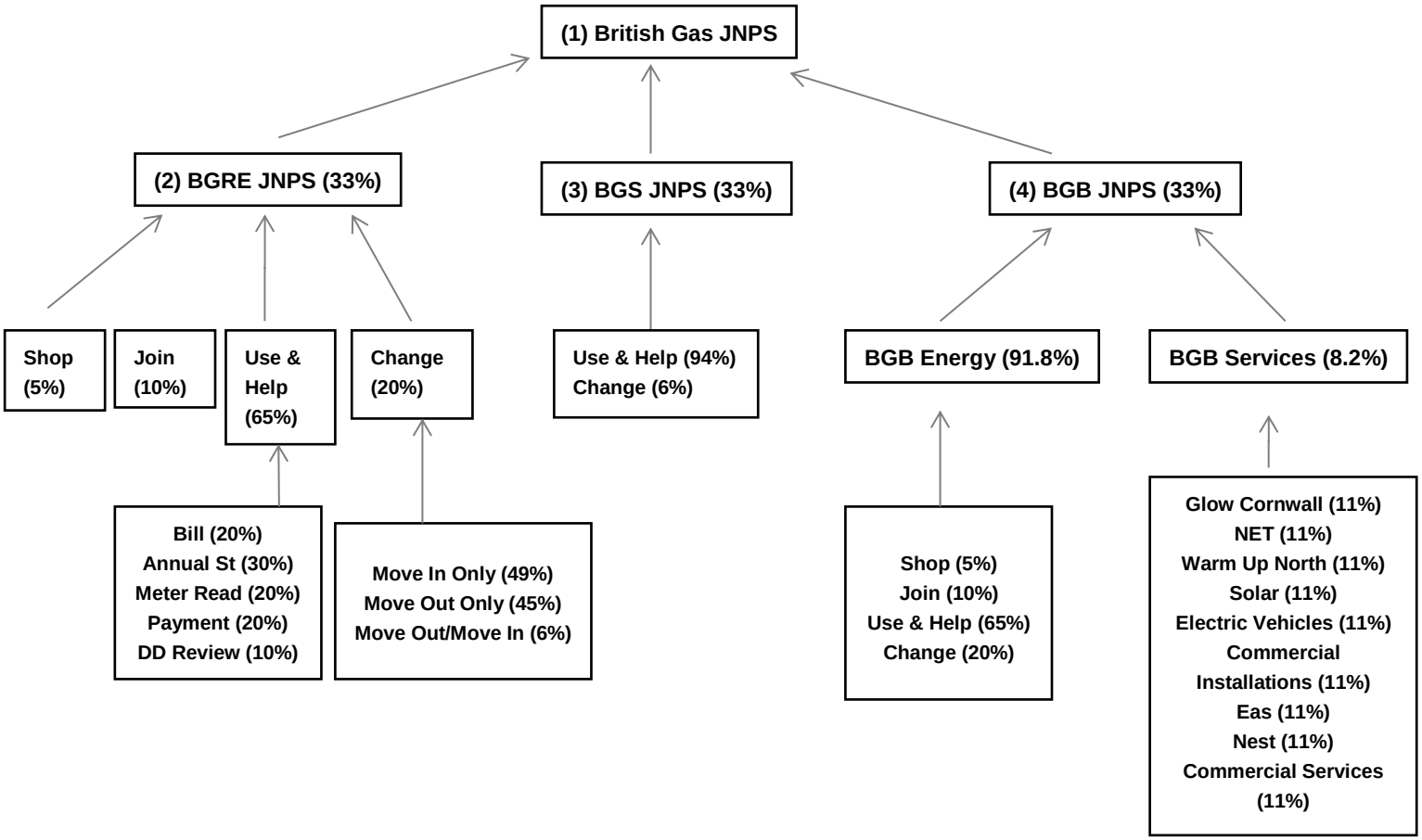
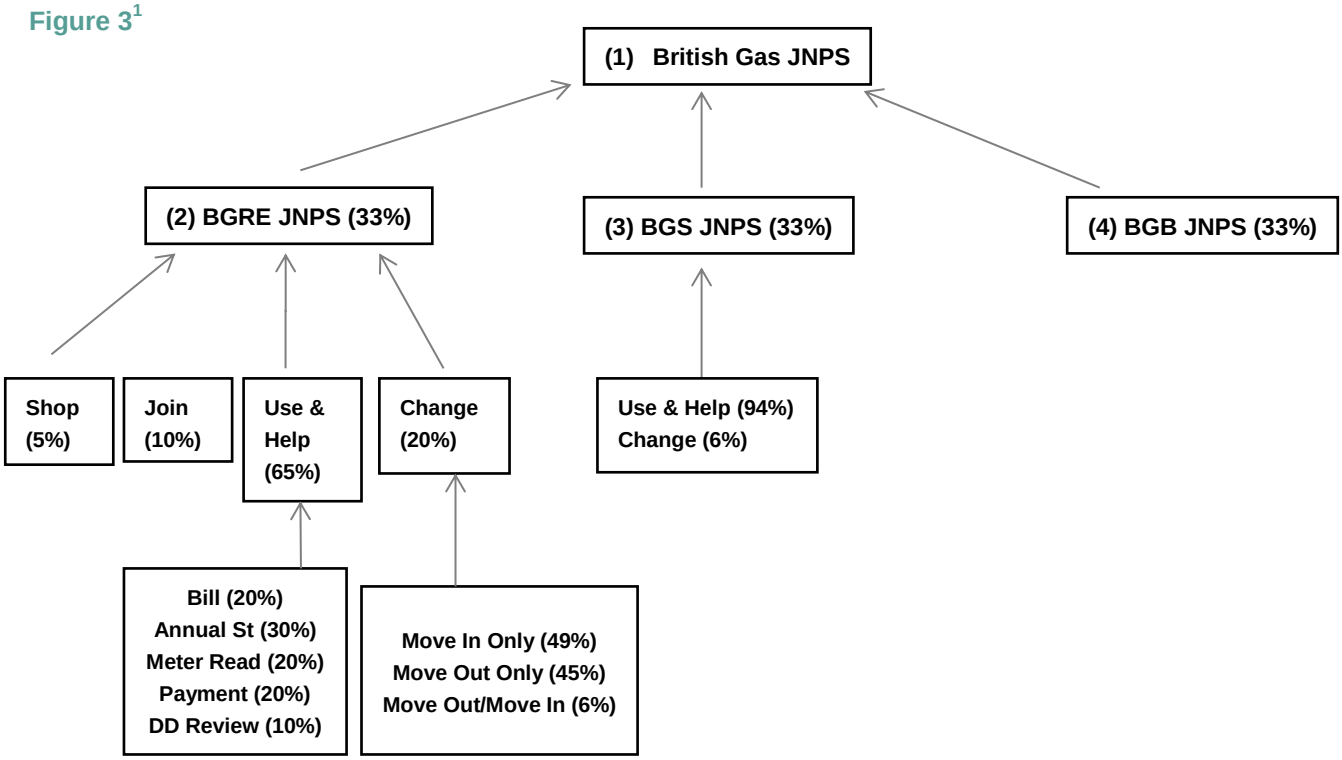


Figure 3[1]



[1] From September- December 2015, BGB JNPS, whilst forming a third of the overall JNPS score, was an un-weighted score. Prior to September it was weighted, as per figure 2.

Types of measurement

The British Gas JNPS is made up of NPS scores obtained from customers after they have reached the end of key customer journeys. This allows us to measure the impact of the entire experience.

Table B - Outlines type of measurement used

Metric	Measurement type	Composition / inputs
(1) **British Gas JNPS**	Weighted average of 3 scores	British Gas Residential Energy JNPS (33%), British Gas Services JNPS (33%), British Gas Business JNPS (33%)
(2) **British Gas Residential Energy JNPS**	Weighted average of scores across 4 journeys	Shop (5%), Join (10%), Use and Help (65%), Change (20%). Weights based on volume of customers going through each journey. Use & Help and Change (HMV) based on weighted average of sub-journeys. Weights based on volume of customers going through each sub-journey.
(3) **British Gas Services JNPS**	Weighted average of scores across 2 journeys	Use and Help (94%), Change (6%). Weights based on volume of customers going through each journey.
(4) **British Gas Business JNPS**	Weighted average across BGB Energy & BGB Services	From 1 January 2015 to 31 September 2015 BGB Energy (91.8), BGB Services (8.2%) and within BGB Services equal weightings across each of the areas. Weights based on volume of customers and surveys. Since 1 October restructure of BGB all weightings have been removed. This may be reassessed going forward.

Calculation methodology

For all JNPS scores, the metric is reported monthly and it is a rolling 3 month score. It is the percentage of promoters for the most recent 3 months, the percentage of detractors for the most recent three months and subtracting detractors from promoters. Journey NPS metrics capture the customer experience at the end of key journeys. The target score is based on 1 month performance in December.

Data quality, collection and reporting frequency

British Gas Residential Energy and Services JNPS Surveys

For all of the residential energy surveys, data collection is carried out by agency partner eDigitalResearch (eDR); customers are invited via email to participate in an online survey. Data collection is continuous throughout the month; results are available immediately via an online portal called HUB to which key internal users have access.

Customers are triggered to receive an invite based on having reached the end of the particular journey. Rules are in place to ensure customers do not receive duplicate invites if they are in more than one journey, and also to ensure that 90 days must have elapsed before being invited to participate in a JNPS survey again. The volumes of surveys vary widely per month depending on the journey.

British Gas Business JNPS Surveys

Data collection is carried out by agency partner eDR; customers are invited via email to participate in an online survey. Customers are triggered for the survey based on calling into BGB call centre and an agent selecting from a drop down menu.

Direct Energy net promoter score (NPS)

Description

NPS is a measure of customer advocacy and has been shown to be linked to company growth. It uses a scale of 0 to 10, to measure how much a customer would recommend a company.

The Direct Energy North America (DE NA) NPS metric reflects customer advocacy from: DER (residential), DEB (business), and DES (services) customers from across its operating markets in the United States of American and Canada.

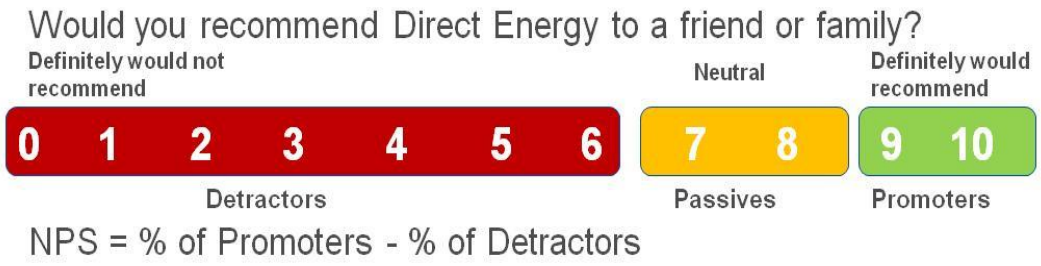
Calculation Methodology

Unit of Measure

NPS is calculated by categorizing our customers into three groups based on how they answer the question: *How likely are you to recommend {Brand Name} to friends or colleagues?*

Customers rate their likelihood to recommend on a scale of 0 to 10, with zero being 'definitely would not recommend' and 10 being 'definitely would recommend'. As depicted in the image below, customers are grouped three ways based on how they rate their likelihood to recommend:

- 0 to 6 are detractors
- 7 or 8 are passive
- 9 or 10 are promoters



Types of Measurement

DE NA employs two methods for measuring NPS: 'relationship' and 'moment of truth'. The relationship approach is used to measure DER and DEB's customers' advocacy. It measures the 'likelihood to recommend' at an overall brand level on a monthly basis by region and commodity where applicable.

The moment of truth (MOT) approach is used to measure DES customers. MOT measures the 'likelihood to recommend' at an overall brand level following a MOT customer interaction with respect to a service / maintenance visit and a furnace / air conditioning installation.

Scope

The DE NA metric measures DE's DER, DEB, and DES customers across DE's various operating regions. The table below outlines the scope of the metric and indicates the type of measurement used.

Table H - Scope Metrics and Type of Measurement Used

Line of Business	Measurement	Regions/Segments
DER - Residential	Relationship	▪ Texas (Direct Energy brand and incumbent brands that include CPL Retail Energy, WTU Retail Energy and First Choice Power) ▪ Canada (Direct Energy brand, Alberta competitive only) ▪ USN (Direct Energy brand in CT, IL, IN, MA, MD, MI, NJ, NY, OH, PA). Gateway brand in NY and NJ. Energetix! and NYSEG Solutions brands in NY.
DEB - Business	Relationship	▪ U.S.A. only (Canada dropped due to operating conditions similar to residential) ▪ Large & medium, and small commercial customer base
DES - Services	MOT	▪ Alberta, Canada ▪ Airtron ▪ Clockwork brands (One Hour Heating and Air, Benjamin Franklin Plumbing, and Mister Sparky Electric) ▪ Home Warranty of American (HWA)

Calculation Methodology

A NPS score is calculated by each line of business. 1) Calculations for DER customers are first conducted on a regional basis to show a NPS regional score, and then combined with other regions using weightings based on customer count to produce a line of business NPS score. 2) DEB customers are based on the brand survey in the U.S.A. only. The score is then weighted at 35% for small companies and 65% for mid-sized and large companies. 3) DES customer scores simplified its weighting methodology in 2013; NPS calculations are now done using the pure, unweighted scores from within each Line of Business. This results in a NPS score for each of the four business units. These four scores are in turn weighted based on customer count to come up with the consolidated DES score.

Each business' NPS score is calculated by adding all the promoters, divided by the rolling total sample for the last twelve months, and adding all the detractors, divided by the rolling total sample for the last twelve months. A score is produced by subtracting the percentage of promoters by the percentage of detractors and multiplying by 100.

The full DE NA NPS score is then calculated by multiplying each business' NPS score against a weighting and adding the totals together. The formula below shows the calculation:

DE NA NPS = (Residential NPS x 50%) + (Services NPS x 30%) + (Business NPS x 20%)

Deliverables – Data and Reporting

Data Collection – Relationship NPS

Data is collected through telephone interviews conducted by research agencies. DE provides the agencies with a full sample of qualifying DE customer records, the agency then randomly selects records to survey. Data management aligns to industry best practices with the research agency performing all necessary data hygiene and list management rules, for example ensuring no duplications exist. The agency collates interview responses and provides data to the respective Direct Energy team who calculates the final NPS score (excluding don't know responses) with data being cleaned of errors and de-duplicated.

Data Collection – Moment of Truth Home Services NPS

For Alberta Canada, data is collected through the daily execution of mail and email NPS surveys the day following the MOT customer interaction. All eligible customers (not on Do Not Contact list) with an email address are surveyed. For mail, a random 25% sample is selected for Service while 100% of Installs are selected. The mail vendor and email vendors deliver daily response files. The survey execution files and the response files are loaded daily to database tables. Derivation and reporting of NPS scores is performed by Telesight and RR Donnelly. DES queries a database view table that consolidates the NPS database tables across all DES business units.

A similar process is followed for each of Clockwork and Airtron with the exception that only mail surveys are conducted for Airtron with 25% sampling of Service and 100% sampling of install. For Clockwork, majority of surveys are conducted for all service and install jobs when the customer's email is available; mail surveys are executed only for the install customers who do not have an email address. Derivation and reporting of Clockwork and Airtron NPS scores is performed by Customer Insights and Analytics Team in Buffalo Grove, IL by querying the consolidated view table noted above.

For HWA an email survey is sent to every homeowner who had a claim in which a vendor (contractor) was assigned. The data is collected, and results of those surveys are stored in database tables. Every Monday an automated job queries the above referenced tables, and sends an encrypted NPS file to the Customer Insights and Analytics team for DES in Buffalo Grove, IL.

Reporting Timelines

The NA DE NPS is reported on monthly and on a rolling 12 month basis for each year. The metric is reported to management, corporate affairs and back to each business. The 2015 figure is based on results for the calendar year 1/1/2015 to 12/31/2015.

Vulnerable households helped by British Gas initiatives

Description

The metric measures the total number of vulnerable households helped through British Gas initiatives. A 'vulnerable household' is where one or more of its residents are defined as 'vulnerable'.

Those households impacted are where a specific product or service is provided to help improve the service experienced or ensure the household is able to manage their gas or electric supply.

The broad industry definition of vulnerability agreed with Energy UK and the six major UK energy suppliers is:

> ***A customer is vulnerable if for reasons of age, health, disability or severe financial insecurity, they are unable to safeguard their personal welfare or the personal welfare of other members of the household.***

British Gas has widened its definition and policy approach to align with the British Gas core values:

> ***'Doing what's right' includes recognising and supporting customers who, due to their personal circumstances, may be unable to safeguard their personal welfare or that of other household members***

This new definition aligns with both academic thought and the direction in which our regulators (namely Ofgem and the FCA) are moving towards in recognising that vulnerability can be transient and temporary in nature.

We recognise, however, that to meet some of the programmes of support we offer, a more defined list of criteria enables us to apply a framework whereby we can deliver our obligated programmes. The criteria includes any one of the following:

- Customers suffering from financial hardship:
  - Customers claiming Means Tested Benefits; and / or
  - Customers with a household income of < £16,190
  - Customers spending >10% household income on fuel per year for adequate heating (usually 21 degrees for the main living area, and 18 degrees for other occupied rooms)

- Age, disability or long term illness - households with one or more of the following:
  - Households with children aged 16 years or under;
  - A household member of pensionable age;
  - A household member who requires constant carer's assistance;
  - Relies on mains powered medical equipment;
  - Long term/chronic ill health including terminal illness e.g. cancer;
  - Claiming disability benefits or registered disabled

- Customers suffering from severe stress or any other mental health problems:
  - People living with dementia (Alzheimer's is the most common form)
  - Very confused or stressed and unable to understand basic information, hold a normal conversation or make a decision

Products and services available to vulnerable customers may differ, depending on the vulnerability criteria being met and the contract they hold with us or business area they are liaising with (e.g. Smart, Energy, Services).

For customers who are identified as vulnerable, an indicator is added to their gas and / or electricity account to ensure their status is recognised in future interactions, and as a trigger for our agents to offer appropriate products and services that the customer may be entitled to, or in need of. Customer status is periodically reassessed. Once identified as being in a vulnerable circumstance and in need of extra support, a customer is reported as fitting this definition until such a periodic assessment has been performed and concluded that the customer household no longer meets this definition.

Calculation methodology

Unit of measure

Total number of households that benefited in 2015 from one or more of British Gas' social programmes designed to assist vulnerable customers.

Scope

The metric covers British Gas residential customers and programmes. Each of the seven vulnerable customer programmes that British Gas offers are shown below, including the products offered within each. Data is sourced from these products to produce the metric.

Table I – British Gas Vulnerable customer programmes

1. **Debt Customers**
Products which support vulnerable households suffering from debt. These products differ for the energy they receive (e.g. electricity or gas). Customers are considered in debt with outstanding arrears of greater than 28 days. PAYGE customers are identified where a debt was added to their meter at the point of meter exchange from credit to prepayment. Fuel Direct supports customers on certain benefits to repay their debt. A weekly repayment value is agreed with Department for Work and Pensions, and with the customer's permission.
2. **British Gas Energy Trust (BGET)**
Grants to help vulnerable customers manage their energy debt.
3. **Priority Services Register**
The Priority Services Register (PSR) is a regulatory requirement whereby we must hold a register of customers who are of pensionable age, living with a chronic illness or are disabled. The data on the register is sent to the Distribution Network so in times of power outages, these customers can be prioritised. For certain customers on the register, we also provide bills in alternative formats, move gas and electricity meters to a more suitable position for reading meter reads, and we can also ensure meters are read quarterly. Linked to the PSR, customers who are on means tested benefits and of pensionable age; disabled or living with a chronic illness; as well as households with children under 5 may also be eligible for an annual free gas safety check.
4. **Energy Efficiency**
Customers can have free or heavily subsidised insulation and / or a boiler installed to help with managing their energy consumption.
5. **Benefits Assessment / Income Maximisation**
Customers on low income are offered advice and guidance on eligibility and application for government benefit which they may not be currently receiving.
6. **Vulnerable Customers Off Supply**
Where customers are without fuel due to faulty meter or card / key, a visit is undertaken to get them back onto supply within four hours where practicable to do so. This service is measured in terms of successful visits / measures (some measures may include providing alternative sources of heat or cooking or paying for a taxi to stay at a relative's house).
7. **Warm Home Discount Scheme**
Customers who qualify for a credit to help with their electricity fuel costs. Customers are either identified by data sharing with Department for Work and Pensions, who notify suppliers of Pension Credit recipients (criteria changes each year). This is known as the Core Group. Suppliers also have their own

Broader Group Scheme, with criteria which is approved by Ofgem. These customers are assessed for the Scheme either verbally, or via an application form, and once qualified, will receive a payment equal to that of Core Group customers. For 2015, the payment is £140

Data collection, quality and reporting frequency

Data collection and quality

Data is collected for the seven programmes from seven individuals. The customer data for each of these programmes is sent to data analytics. Etiquette marketing database is used to match the addresses against those held in the database and perform any de-duplications. Where more than one product is assigned to one house, the figure is consolidated to produce a total number of unique households.

Reporting frequency

Some of the individual vulnerable customer products are collated and reported monthly, but the metric for all vulnerable customer programmes and products is measured on a half-yearly basis.

Smart meter installations (residential and business customers)

Description

British Gas installs smart meters in UK homes and businesses as part of the national meter installation programme replacing standard electricity and gas meters in the UK with new smart metering devices. The installation of smart meters in homes and businesses are done through separate programmes. This metric measures the installations in both programmes to produce a combined total figure of smart meters installed by British Gas.

Calculation methodology

Unit of Measure

The absolute volume of installed electricity or gas smart meters in residential properties and the absolute volume of installed smart and advanced metering devices in businesses.

Scope

The smart meter installation figure is a composite metric covering electricity and gas smart meter installations in residential properties in the UK, excluding Scottish Islands and Northern Ireland, and the installation of electricity advanced meters and gas data-loggers in UK businesses.

The cumulative total of the smart meters installed for residential and business customers since the start of the programme in 2009 until the end of 2015 was 2,509,398. Of this, only data since 1 July 2011, totalling 2,142,086 installations, has been subject to external assurance due to the availability of evidence for smart meters installed by third party Commercial Meter Operators (CMO).

Prior to October 2010, 182,683 meters were installed for residential customers by third party CMO. This data was not externally assured as evidence was not available due to the historic nature of the data and the cessation of relationships with the CMO. From October 2010 to July 2011 the installation was transitioned in-house with all meters installed by British Gas from 1 July 2011. Data for installations by British Gas, totalling 1,791,415, has been subject to external assurance.

For business customers, all meters are installed by third party providers. Prior to July 2011, the data only included installations where customers had been directly referred by British Gas, thereby excluding customers who went to the third party for installation directly. Since 1 July 2011, data reporting processes have been amended to include installations for all business customers. Data prior to July 2011, totalling 184,629, has not been subject to external assurance. Data for installations from July 2011, totalling 350,671, has been subject to review by our external assurance providers.

	Pre July 2011 (not assured)	Post July 2011 (assured)	Total
British Gas Business	184,629	350,671	
British Gas Residential	182,683	1,791,415	
Total	367,312	2,142,086	2,509,398

For residential properties, the measure includes meters installed directly by British Gas and meters installed by CMO acting on behalf of British Gas. CMO ceased installations on behalf of British Gas in 2011. Table A outlines the reporting scope in more detail for the installation of smart meters in residential properties. Included in residential volumes are smart meter installations completed where the meter is not functioning in smart meter mode. The end of 2015 reflected 29,200 smart assets installed that are not functioning as smart.

For business properties, the measure includes meters installed directly for sites supplied by British Gas, as well as those where the meter has been provided to a non-energy supply British

Gas customer for purpose of Energy Analytic propositions and services that British Gas provides. Tables B and C outline in more detail the reporting scope for the installation of smart meters in business properties.

Table A – Reporting scope for smart meter installations in residential properties (BGR)

In Reporting Scope	Out of Scope
Smart Electricity Meter installed by British Gas Smart Meters (BGSM)	In Home Device (IHD) Installation / Exchange
Smart Gas Meter installed by BGSM	Newly acquired customers with smart device installed by another supplier
Smart Electricity Meter installed by CMO	
Smart Gas Meter installed by CMO	
Smart Meters installed as new connections	
Smart Meters installed in place of existing Dumb Meter	
Smart Meters installed to replace faulty meters as a result of an emergency	

Table B – British Gas Business (BGB) only - Reporting Scope (Electricity)

In Reporting Scope	Out of Scope
Smart meters installed as part of BGB programme to replace standard meters	Newly acquired customers with a smart device installed by another supplier
Smart meters installed as new connections/upgrades	
Smart meters installed to replace faulty meters as a result of an emergency	

Table C – BGB only - Reporting Scope (Gas)

In Reporting Scope	Out of Scope
Dataloggers installed as part of BGB programme to upgrade standard meters	Newly acquired customers with a smart device installed by another supplier
Dataloggers installed where BGB providing smart services but are not the supplier	
Dataloggers installed to replace faulty dataloggers as a result of an emergency	
Smart Meters installed as part of BGB programme to upgrade standard meters	
Smart Meters installed where BGB providing smart services but are not the supplier	
Smart Meters installed to replace faulty meters as a result of an emergency	

Calculation methodology

The total smart meter installation figure is a summation of the installations in residential and business properties. The calculations of both components are outlined below.

Residential

Total smart meters installed = Total gas smart meters installed + total electricity smart meters installed.

Business

Total smart meters installed = Total volume of electricity advanced meters installed + total volume of gas smart meter or dataloggers installed.

- Where British Gas is the energy supplier to the customer, the installation is identified and recorded at the earliest point of receipt of industry dataflow (D0150) indicating a smart meter is on site.
- All smart gas or datalogger installations are identified and recorded following confirmation from the meter installer of the install via third party weekly reports.

Data Quality

For residential installations, a record of the installation is recorded in SAP, via H1 Handheld terminal. Any connectivity issues leading to potentially inaccurate data in SAP is amended by the Site Support team in SAP.

For business installations, figures for electricity are only recognised through receipt of formal industry dataflow D0150 that indicate to the rest of the industry that a smart meter is present on site. Where a Gas smart meter or datalogger has been installed, it is confirmed through agent reports. The overall installation figures are reconciled in December with our strategic install partners through these routes.

Data collection

Detailed outlines of the collection for residential installations can be found in Table D and for business installations in Table E.

Table D – data collection for residential installations

Source	Provider	Fuel	Frequency	Purpose	Assumptions
SAP	British Gas	Gas/ Elec	Daily	Data for British Gas field operation	All Smart Meters identified by Service Order Description (i.e. type of job booked)

Table E – data collection for business installations

Source	Provider	Fuel	Frequency	Purpose	Assumptions
Industry DataFlows (D0150)	Meter Operator	Elec	Daily	Industry confirmation of smart meter installation	All Smart Meters identified where the meter_type indicates a smart/advanced meter has been installed.*
Agent Weekly Report	Meter Installer	Gas	Weekly/ Annually	Confirmation of all installs completed on behalf of British Gas	Meter installer confirmation of smart meter or advanced metering device (datalogger) for British Gas led installations.
Industry Datafiles (OnJob)	Meter Installer	Gas	Daily	Industry confirmation of smart meter installation	All Smart Meters identified where the meter type indicates a smart/advanced meter has been installed.

* Smart/Advanced Meter's identified where the meter_type value is one of: RCAMR, RCAMY, NCAMR, NSS, S1, S2A, S2B, S2C, S2AD, S2BD, S2CD, S2ADE, S2BDE ,S2CDE

Employee engagement

Description

Employee Engagement is defined as 'an emotional state driven by individuals' perception of different components within an organisation, which in turn has a measurable impact on business performance.' It is generally measured annually, by an external provider (Centrica currently uses ETS plc) via a survey delivered either online or via paper copy to all employees. In some instances it is also appropriate to include some contractors and third party employees.

Calculation methodology

The employee engagement score takes the mean of six questions which represent the "feel" and "Do" elements of the ETS model. The final engagement score is calculated by taking the average of the means of each of the six engagement questions.

Employees are asked to respond to six specific questions:

Feel:

I feel passionate about the job I'm doing
I am proud to work for (Brand Name)
I feel a strong sense of commitment for (Brand Name)

Do:

I am motivated by my business area to do the best job I can
I tell others outside this company the great things about working here
I intend to be working at (Brand Name) in one year's time

The questions are answered using a 6 point scale:

1. Strongly Disagree
2. Disagree
3. Slightly Disagree
4. Slightly Agree
5. Agree
6. Strongly Agree

Scope

In 2014, all direct Centrica employees are invited to complete the Centrica Employee Engagement survey with the exception of British Gas where only a representative sample was invited to take part. A different approach was taken in British Gas this year because the actions agreed after the 2013 survey are still being actioned and it was agreed that a 'temperature check' survey to track progress was appropriate as actions were unlikely to change.

The administration of the survey is agreed annually and is generally administered annually unless otherwise agreed by the Centrica Executive Committee (CEC). The survey generally runs for three weeks.

Timeframe

In 2015, the survey ran at slightly different times and to slightly different durations to accommodate the needs of each business.

Centrica Storage, Centrica Energy and British Gas Business ran the survey for longer than other brands to accommodate the shift pattern of their employees.

Business	Survey opened	Survey closed
Centrica Storage and Centrica Energy (some sites)	18 Aug	03 Oct (online) 10 Oct (paper)
PH Jones	27 Aug	03 Oct (online) 10 Oct (paper)

Direct Energy	15 Sept	03 Oct (online) 10 Oct (paper)
Bord Gáis Energy	15 Sept	03 Oct
Centrica Corporate Centre	15 Sept	03 Oct
British Gas	15 Sept	03 Oct (online) 10 Oct (paper)
Centrica Energy (remaining sites)	15 Sep	

Exclusions

The overall Centrica engagement index excludes contractors, third party and agency staff and also excludes Bord Gáis Energy and Direct Energy Astrum (two very newly acquired businesses). However where contractor and third party staff provide a significant contribution to business operations some of the Centrica businesses do include agency and third party staff. Results are presented, and clearly labelled, as including or excluding contractors and third party staff appropriately.

Languages and Geography

The survey was administered primarily in English with a small number being printed in Vietnamese (46) and Spanish (83). Translation of which was a joint approach between ETS - who conducted the initial translation, and a representative from the appropriate business area, who reviewed and signed off the translations.

The primary countries of distribution are:
United Kingdom
Norway
The Netherlands
Trinidad and Tobago
America
Canada
Ireland

Data quality, collection and reporting frequency

Data Quality

Employee data for all Centrica employees, including the organisational hierarchy is initially extracted from the Centrica SAP database. This data is then checked, verified and updated manually by teams placed within each business to ensure accuracy.

The survey is administered primarily on-line, however where employees do not have online access, paper copies of the survey are also printed and either locally distributed or posted directly to home addresses. ETS invite employees to take part, either via an e-mail invitation or by a paper copy of the survey delivered either to the local office or to home addresses.

Collection

To maintain anonymity responses are captured directly by ETS, either via the online survey, or posted, freepost directly back to ETS.

Reporting Frequency

Reports are developed annually for the CEC and leadership teams. Detailed reports, down to individual manager level, are cascaded throughout each business. With the exception of British Gas each manager who receives 5 or more responses against their team code receives their own tailored manager report. Manager reports were excluded for British Gas managers this year because only a proportion of employees were invited to take part and there was no intact hierarchy to reliably create line manager reports. This was agreed by the British Gas HR Leadership Team.

Absence rate

Description

Employee sickness absence relates to the number of days lost to sickness absence in a given reporting period.

Calculation methodology

Unit of measure

The MAT sickness per FTE rate is calculated by dividing the moving annual total number of absence days by the full time equivalent in the given reporting period.

Scope

Absence is measured and reported for the UK and North American Business Units. Absence data is not available for the European entities and Trinidad. Given that these employees represent less than 1% of the 2015 headcount; these are not considered to be material from a Group absence perspective. Contractors are not included in absence calculations.

Data is collected for all the Business Units in the UK and North America as follows:

- Corporate Centre
- British Gas Residential
- British Gas Services
- British Gas Business
- British Gas New Markets
- Centrica Energy
- Centrica Storage
- Direct Energy – data is available at BU level but it is summarised at DE level for absence reporting purposes

Data Calculation

For each business the total number of absence days in the month is divided by the business' FTE for that month. For the Corporate Responsibility Report, the MAT sickness per FTE figure covers the period from January 2015 to December 2015. The total figure is calculated by adding together the monthly rates for this period.

Data quality, collection and reporting frequency

Data quality

Quality is reliant on the accuracy and timeliness of the data being input into the systems. This is more critical in certain parts of the business which are reliant on up-to-date resource planning tools to deliver at optimum resource levels (e.g. Engineers and Call Centres).

Data collection

Data is collected on a monthly basis for all the BUs and reported in the Centrica People Metric reports.

All managers in Centrica are responsible for completing a notification form of absence and sending it to Centrica People Services so that the SAP system is updated, including payroll.

Reporting frequency

Absence data is reported by line managers on a daily basis to a central team, where the data is then uploaded onto the HR system. Data is then reported monthly at Group, BU and cost centre level.

Retention rate

Description

Employee sickness absence relates to the number of days lost to sickness absence in a given reporting period.

Description

The retention rate is the complementary ratio to the unplanned or regrettable attrition rate and is the proportion of the workforce that remains with the business in a given reporting period. There would be some level of correlation between retention rates and Employee Engagement scores, in that a fully engaged workforce is more likely to stay in the business.

Calculation methodology

Unit of measure

The number of employees who stay with the business in a given reporting period expressed as a percentage of the average headcount in the period.

Scope

In this calculation 'Leavers' only includes unplanned leavers (i.e. employee initiated and not within the control of Centrica) as this is the part of attrition that the business has no control over.

Unplanned leavers includes:

- Resignation (Personal/Career Progression)
- Death In Service

Planned Leavers are subtracted from the average headcount before calculation and are not included. They are:

- Retirement (Normal, early, late & ill health)
- Redundancy (Voluntary & Compulsory)
- Mutual Consent
- Career break (e.g. Sabbatical)
- Business Di-Vestment

Dismissals are also subtracted from the average headcount before calculation. They are:

- Capability
- Misconduct

Retention is measured and reported for the UK & North American Business Units.

Headcount is the total number of individuals undertaking an activity, irrespective of whether they work full or part time.

It includes:

- Employed staff – Individuals paid through Centrica's payroll on either a full time or part time basis. This also includes fixed term contract staff (FTC) that are paid through Centrica's payroll and have received pay for a service

Head count data is collected for all the Business Units in the UK and NA as follows:

- Corporate Centre
- British Gas Residential
- British Gas Services

- British Gas Business
- British Gas New Energy
- Centrica Energy
- Centrica Storage
- Direct Energy – data is available at BU level but it is summarised at DE level for reporting purposes

For the calculation a mean average headcount is calculated for each business unit, Centrica UK, DE and then Group (UK+DE) over a twelve consecutive month range.

The retention rate is the complementary ratio to the attrition rate, which is the number of unplanned leavers in a given reporting period expressed as a percentage of the average headcount (minus planned leavers and dismissals) in the period. Therefore, the retention rate can be determined as being 100% minus the attrition rate (e.g. if the attrition rate is 9%, the retention rate is 91%).

Exclusions

- Agency & Contractor staff
- Consultants
- Third Party and Outsourced staff
- Rest of World (RoW) (Netherlands, Norway, and Trinidad) headcount data is excluded from the calculation at this time due to inaccessibility and missing data in SAP. Their omission is immaterial as their combined headcount figure currently contributes to less than 1% of the overall group total.

Calculation

- Taking into account the above, the final retention figure is calculated as follows:

$$\frac{\left(\text{Group Average Headcount} - \text{Total Unplanned Leavers}\right)}{\text{Group Average Headcount}}$$

Data quality, collection and reporting frequency

Data quality: Quality is reliant on the accuracy and timeliness of the data being input into the systems. This is more critical in certain parts of the business which are reliant on up to date resource planning tools to man at optimum resource levels (e.g. Engineers and Call Centres).

Data collection

Data is collected on a monthly basis for all the BUs and reported in the Centrica People Metric reports.

Reporting frequency

The number of employees leaving the business is reported on a monthly basis at Group, BU and cost centre level. The retention percentage is then calculated from that.

Internal carbon footprint (property, fleet and travel)

Target

Centrica has committed to reduce the annual carbon footprint of our core offices, company vehicles and travel by 20% by the end of 2015 (from 2007 base year).

Target structure

Centrica has not set an absolute reduction target to our entire (present and future) business due to our planned expansion. We are however committed to applying good practice in reducing the impacts of both our existing and future businesses. Accordingly, we have set ourselves an ambitious target in relation to our core business (existing in 2007) and are committed to applying the same good practice to our future businesses where practicable.

This target uses a 2007 base year.

Scope of target

Organisational boundary

Table C - Organisational boundaries of the target

	Emissions included in scope	Emissions excluded from scope
Existing business	• All in-scope assets and activities associated with the businesses within Centrica plc as at 31 December 2007. • Organic growth of the existing business which does not involve new assets • Activities and assets associated with organic growth or new business that cannot be isolated in the financial accounts	• Emissions from new businesses[2] acquired through merger or acquisition (including equity share) and joint ventures since 31 December 2007 • Emissions from new assets[3] since 31 December 2007 that can be isolated in the financial accounts • Emissions from business divestments since 2007
Geography	• Activity associated with Centrica's global businesses	• n/a

New businesses and new assets are excluded on the basis that the company is in growth mode thus allowing for consistency of scope and on-going comparability with our 2007 baseline business.

Furthermore, we aim to ensure new businesses have best technology applied from the outset (e.g. a low emission vehicle fleet), thus limiting the opportunity for further significant improvement during the target period.

Out of scope assets and activities will be accounted for separately. In only excluding future growth that can be isolated within the accounts, a conservative approach is taken and our on-going carbon footprint is over-estimated rather than under-estimated.

[2] A new line of business that can be individually isolated through the financial accounts (typically through cost codes)

[3] A new asset is an additional asset, whether additional vehicle or office, which does not replace an existing asset (irrespective of whether it's a result of new business or organic growth)

Operational boundary

Table D - Operational boundaries of the target

	Emissions included in scope	Emissions excluded from scope
Internal carbon footprint	• Annual emissions associated with energy and fuel consumption from our occupation of offices, our commercial fleet, our company cars and our business travel (see below)	• Annual emissions from upstream (gas terminals, power stations, etc.) assets • Annual emissions from assets and activities other than listed opposite
Offices	• Office accommodation permanently occupied by Centrica personnel, including wholly occupied and partially occupied, owned and leased offices • Emissions associated with the use of gas, biodiesel; biomass and electricity for servicing the office	• Offices on sites and for the express purpose of upstream generation and storage (gas terminals and power stations) • Offices and other facilities owned or leased by Centrica but not occupied by Centrica employees • Home-worker offices • Use of ozone depleting substances (ODS) within office facilities[4] • Emissions from generating power for export under Short Term Operating Reserve (STOR) contracts[5]
Commercial fleet	• Utility vehicles used by Centrica, including downstream service engineers and upstream site based vehicles • Vehicles used by long-term contractors working under Centrica management control • Shuttle buses[6]	• Non road legal vehicles, including heavy plant • Franchisee commercial vehicles • Vehicles used by contractors that do not meet the criteria opposite
Company cars	• Emissions from cars owned, leased or hired by Centrica for use by Centrica employees for business purposes	• Emissions associated with personal mileage • Emissions associated with privately-owned vehicles used for business purposes (which includes Direct Energy since company cars are not provided) • Instances where fuel costs are claimed, as opposed to mileage[7]
Business travel	• Air and rail travel undertaken by Centrica employees booked via corporate travel providers	• Air and rail travel undertaken by Centrica employees not booked via corporate travel providers (with the exception of North American flights in 2007 and 2008)[8] • International rail travel, e.g. Eurostar • North America rail travel • Taxis • Buses

[4] Emissions of ODS are not considered to have a material impact on the total footprint and therefore are not included
[5] At a number of our UK sites, we have Short Term Operating Reserve (STOR) contracts with National Grid to provide self-generated power to the grid. While we capture the emissions associated with this power generation in our Total Carbon Emissions metric, they are outside of the scope of the Internal Carbon Footprint.
[6] Buses used to transport Centrica staff to and from Centrica offices and local public transport/amenity facilities
[7] Claiming fuel costs as opposed to mileage for business purposes is not in line with Centrica expenses policy and therefore is a rare occurrence and considered immaterial
[8] A central booking system was not fully implemented until 2009 in North America, refer to Table F for further details

Period of target

2007 base year to 2015 target year. All data years are calendar years (January to December).

Rationale for target period

Selection of base year - the Greenhouse Gas (GHG) Protocol produced by the World Resources Institute and the World Business Council for Sustainable Development states;
'Companies should choose as a base year the earliest relevant point in time for which they have reliable data'

2007 has been selected as a base year for Centrica as it is the earliest year for which we have reliable data.

2015 is the end year. This means that the emissions associated with the 12 months of 2015 will be compared to those of 2007 to determine the overall reduction.

Calculation methodology

Base year re-calculation

The 2007 base year emissions will not be re-calculated for mergers and acquisitions (outside scope), but in order to ensure we do not claim credit for simply down-sizing our business, the base year emissions will be reduced following divestment of any part of the existing business that was in existence during 2007.

This will entail the identification of the in-scope emissions associated with the assets and activities of the divested business and the removal of such, from the 2007 base year emissions.

We recognise that GHG accounting at the individual level can be difficult and that the separation of divested businesses is not always clear cut. Accordingly, in an effort to remain credible, a conservative approach will be taken designed to avoid positive bias in the data (i.e. overestimation of the base year footprint) and detailed records maintained for transparency.

Base year to end year comparison

The following methodology will be applied to ensure an accurate comparison between the 2007 base year and the 2015 end year.

- The property portfolio, as defined in the boundaries and scope, in existence in 2007 is documented along with the corresponding energy use and GHG emissions. This forms the core property of the 'existing businesses'.
- Should any site close or be vacated, we will cease to account for emissions from the point of vacancy. Historical emissions data will not be removed from the baseline and subsequent years unless the office was vacated due to a divestment. Where vacated sites are directly replaced by a new site(s), the new site will be included in scope from the point of occupation. The replaced site(s) will also stay in scope so that the data during Centrica's occupation is retained.
- The commercial and company car fleet portfolio, as defined in the scope, during 2007 is documented along with the corresponding fuel use and GHG emissions. This forms the core fleet of the 'existing businesses'.
- Business travel is accounted by cost centre. In this way, any travel associated with new, out of scope business can be identified and accounted for discretely.

Data quality

Where available we will take direct use/sources as defined in Table E. Estimations are made for serviced offices[9] and fuel card user private mileage, see Table E.

Data collection and reporting frequency

Data is compiled on a quarterly basis, using an online software solution - *ourEnvironment*. The system is designed to receive the data by reporting entity and by indicator. The data providers (such as fleet department) submit and validate the data in the system and can attach supporting documents, as well as commentary. Where appropriate, the system automatically calculates the carbon dioxide equivalent (CO_2e) using referenced emission factors where required.

The internal footprint is internally reported to the Centrica Executive Committee (CEC) on a quarterly basis and reported externally on an annual basis through the Corporate Responsibility report.

Emission factors

Emission factors relevant to each year will be applied, recognising that a time-lag maybe present. The guidance provided on using the emission factors, in association with the emission factors themselves, will be applied unless specifically stated otherwise.

The 'Total GHG' direct emission factors are used. These include the global warming potential of carbon dioxide, methane and nitrous oxides. This total GHG approach is considered to be most reflective of the company's actual in-scope carbon footprint.

The emission factors used include Scope 1, 2 and 3, but exclude 'out of scope' emissions.

Refer to Tables E and F for the actual emission factor values used (correct as of November 2015).

[9] Serviced offices – Centrica occupies space within a number of third party owned offices. Staff numbers can range from hundreds to less than five. In most cases we do not have access to energy use data and have little or no influence on the energy efficiency of the building or the actions of the other occupants. For completeness, we do include these offices within our emission data, but calculate the emissions in accordance with Tables E and F

Table E - UK and European emission factors

Category	Owner	Source	Calculation	Emission factors	Assumptions
Offices					
Electricity	Group Property	Solely occupied sites: meter readings validated against bills	Consumption (kWh) x emission factor	DEFRA's one year average factors	n/a
		Serviced offices: calculated using average Centrica power use per FTE	Average Centrica power use per FTE x FTE in office x emission factor	As above	There will be a lower rate of improvement in the serviced offices; therefore an average (2009) Centrica power use/FTE value is applied to all years
Gas	Group Property	Solely occupied sites: meter readings validated against bills.	Consumption (kWh) x emission factor	DEFRA's Gross Calorific Value	n/a
		Serviced offices: calculated using average Centrica gas use per FTE	Average Centrica gas use per FTE x FTE in office x emission factor	As above	There will be a lower rate of improvement in the serviced offices; therefore an average (2009) Centrica gas use/FTE value is applied to all years
Biodiesel blends	Group Property	Measurement of biodiesel consumption for on-site power generation	Biodiesel consumption (litres) x Scope 1&3 emission factor. Mineral diesel consumption x emission factor	DEFRA emission factor for the transport and processing (scope 3) of waste cooking oil plus the Scope 1 emissions relating to direct tailpipe emissions of methane (CH4) and nitrous oxide (N2O)[10]	The biodiesel used originates from UK cooking oil. Best practice for carbon accounting of biofuels is to include the Scope 1 and 3 emissions associated with it
Biofuel	Group Property	Quantity of biofuel (woodchips) purchase invoices	Biofuel (tonnes) x Scope 1 & 3 emission factors	As above	n/a
Fleet					
Commercial	Group Fleet	Fuel card data	Fuel volume (l) x emission factor	DEFRA Total Direct GHG emission factor relevant to fuel type	All Fleet activity is for business purposes
Company cars	Group Fleet	Expenses data provided by external HR provider	Mileage (m) x emission factor	Vehicle-specific manufacturers tail-pipe emission factors (where this is not available an emission factor based on a Centrica average	Mileage claims are accurate

[10] Direct emissions of CO_2 are set to 0 for biofuels, as the same amount of CO_2 is absorbed in the growth of the feedstock from which the biofuel is produced.

				by vehicle type will be used)	
		Fuel card data	Volume (l) x emission factor	DEFRA Total Direct GHG emission factor relevant to fuel type	27% of fuel use is private and therefore excluded (based on a review in 2015)
Category	**Owner**	**Source**	**Calculation**	**Emission factors**	**Assumptions**
Travel					
Rail	Group Procurement	External corporate travel provider	Passenger miles x emission factor	DEFRA's 'National Rail' category	All rail journeys are categorised as 'National Rail'
Air travel	Group Procurement	External corporate travel provider	Flight km x emission factor[11]	Short Haul (≤ 500km) = DEFRA's Domestic flight emission factor Medium Haul (>500km ≤ 4000 km) = DEFRA Short Haul flight emission factor Long Haul (> 4000km) = DEFRA Long Haul flight emission factor	It is assumed that all flights are booked according to standard company policy that long haul and transatlantic journeys are business class, while other flights are economy class

Table F – Non-European emission factors

Category	Owner	Source	Calculation	Emission factors	Assumptions
Offices					
Electricity	Group Property	Solely occupied sites: meter readings validated against bills	Consumption (kWh) x location specific emission factors	Emissions & Generation Resource Integrated Database eGRID Year 2007 Summary Tables Environment Canada Electricity Intensity Tables 2008 data	n/a
		Serviced offices: square footage and type	Square footage x consumption rate (by property type) x state/province emission factor	(as above) Consumption rates (by location and building type) from Energy Information Administration (EIA)	

[11] Radiative Forcing considers the non-CO_2 climate change effects of aviation (e.g. water vapour). It is a complex and not well understood area, where research is on-going. The 2015 DEFRA publication provides the option of emission factors that include or exclude radiative forcing. Due to the uncertainty of the impacts and the crudeness of the multiplier instrument to account for them, Centrica has decided to continue to include the Uplift Factor but not include the impact of Radiative Forcing. This will ensure consistency with the approach taken in previous years and will mean we will not have to re-state our Internal Carbon Footprint target to account for this significant change in carbon reporting methodology.

Gas	Group Property	Solely occupied sites: meter readings validated against bills.	Consumption (m^3) x gas emission factor	National Inventory Report 1990-2006, Environment Canada	n/a
		Serviced offices: square footage and type	Square footage x consumption rate (by property type) x gas emission factor	Consumption rates (by building type) from EIA	

Category	Owner	Source	Calculation	Emission factors	Assumptions
Fleet					
Commercial	Group Fleet	Fuel card data	Fuel volume (l) x emission factor	Canada National Inventory Report US EPA	All Fleet activity is for business purposes
Travel					
Rail	N/A	N/A	N/A	N/A	Emissions associated with rail travel are considered immaterial due to low levels of use
Air travel	Group Procurement	External corporate travel provider	Flight km x emission factor	Short Haul (≤ 500km) = DEFRA's Domestic flight emission factor Medium Haul (>500km ≤ 4000 km) = DEFRA Short Haul flight emission factor Long Haul (> 4000km) = DEFRA Long Haul flight emission factor	It is assumed that all flights are booked according to standard company policy that long haul and transatlantic journeys are business class, while other flights are economy class

Total Carbon Emissions

Description

Centrica's total carbon emissions are important non-financial indicators for the company and are included in both Centrica's Annual and Corporate Responsibility reports.

The reporting of the company's total carbon emissions demonstrates our understanding of our greenhouse gas (GHG) footprint, a pre-requisite for the successful management of such emissions and enables comparison with other companies.

Reporting methodology

Unit of measure

Tonnes of carbon dioxide equivalent (tCO_2e)

Scope and organisational boundaries

Centrica has committed to reporting its total carbon emissions based on the Scope 1 and 2 GHG emissions from all wholly owned or partially owned reporting entities across the group[12]. This encompasses all global activities associated with our brands, British Gas, Centrica Energy, Centrica Storage, Direct Energy and Bord Gais Energy. Where Centrica has only part equity in a reporting entity, (e.g. joint ventures), the emissions are pro-rated to reflect Centrica's share. This equity share approach to our organisational boundaries is an approach supported by the GHG Protocol. It is intended that the reporting approach aligns as closely as possible with the financial accounting approach used in the same reports. This enables the relationship between carbon and financial performance to be compared directly.

Companies in the oil and gas industry often have particularly complex organisation structures as is the case with our gas and oil exploration and production business. Whilst Centrica follows the equity share approach described by the GHG Protocol; we also draw from the IPIECA guidelines[13], to assist in the application of the GHG Protocol to these complex organisational structures (IPIECA is the global oil and gas industry association for environmental and social issues). Section 3.2.1 of the IPIECA guidelines interprets the GHG Protocol equity approach for the oil and gas industry as below:

> *Because these guidelines recommend that the selected organizational boundary (equity share, operational control or financial control) be applied at the reporting unit level, all of the emissions from sources in assets managed by the company's reporting units are used as the basis for consolidation without regard to whether specific emission sources are owned or leased. The emissions sources in assets managed by the company's reporting units are accounted for as Scope 1 emissions and would be consolidated as part of the total emissions of the reporting unit following the method the company selected for establishing its organizational boundaries.*

Therefore Centrica applies the company's equity share to the organisation that controls the assets and not the assets themselves. Hence, where the organisation has contractually exclusive use of assets such as operating and financial leased properties, vehicles and platforms, these are included within Scope 1 and 2 (Sub-leases are excluded irrelevant of their lease type). For consistency, this approach is applied to all the company's business units and not just the oil and gas parts of the business.

Note, this approach is a slight departure from the GHG Protocol's stated approach where only assets that are financial or capital leases are included under the equity share control approach, but it is considered the most transparent and appropriate approach for Centrica.

A calendar year reporting period is adopted for GHG reporting i.e.1 January to 31 December. This aligns with the company's financial reporting periods.

[12] Note: Where an entity is operated as a component of another entity and the environmental regulators treat the facilities as a whole, they are reported as a single reporting entity at the equity of the main facility.
[13] Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions (Second Edition): May 2011

Materiality

For entities and assets, in which we have equity, all material GHG emissions are reported. However, GHG emissions not material to the business are only reported when they are readily available, including, where Centrica is the operator of the asset. The criterion for material emissions is dependent on the central business of the asset, as summarised in Appendix B. This is consistent with ISO 14064-1[14].

This materiality approach is applied across the whole organisation, but to date, it is only the non-operated offshore oil and gas production assets where non-material GHG emissions are omitted. These omitted emissions equate to approximately 0.1% of the company's Scope 1 emissions.

Acquisitions and Divestments

Centrica will at times acquire businesses. From a practical perspective it takes time for these businesses to be fully integrated into the company. As such, we do not report on new acquisitions until after a complete six month period has passed. Where the environmental performance data is obtained sooner it will be included in the company reporting.

Where Centrica divests a business, we will typically report the emissions up to the point of sale. However where the divestment occurs at the beginning of a reporting period, the practicalities of collecting the data typically outweigh the value of the data. As such, reporting of divestments during the divestment reporting period is not required if the unreported emissions do not exceed 7% of the reporting entities estimated annual emissions; and 5% at the gross organisational level emissions.[15]

Greenhouse Gas Emission Sources

The GHG emissions include emissions from:

Scope 1

- The combustion of fossil fuels in the premises, vehicles, equipment and machinery owned/controlled[16] by the reporting entity[17]
- The leakage or escape of GHG emissions from the above

Scope 2

- The GHG emissions associated with the electricity, heat and steam we import for use in our premises, vehicles, equipment and machinery

Greenhouse gasses are defined in section 92 of the Climate Change Act 2008 (c. 27) as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCS), perfluorocarbons (PFCS) and sulphur hexafluoride (SF_6).

Other GHG's including HCFC's are also captured and reported where relevant.

In accordance with the GHG Protocol, greenhouse gases that are released during the combustion of biologically sequestered carbon (biomass and biofuels) are reported as a separate line of the Scope 1 emissions. Currently the company has low volumes of stationary biofuels and biomass consumption, in addition to the biofuel component of UK vehicle petrol and diesel which will also be captured in this separate line. This additional line is excluded from the Total Carbon Emissions metric.

[14] BS ISO 14064-1 states "The organisation may exclude from quantification direct or indirect GHG sources or sinks whose contribution to GHG emissions or removals is not material or whose quantification would not be technically feasible or cost effective."

[15] These thresholds are adapted from the ISO 14064 -3 Specification with guidance for the validation and verification of greenhouse gas assertions

[16] Owned can mean owned or exclusively leased by the reporting entity (refer below).

[17] The equity approach is applied to the reporting entity and does not necessarily reflect the actual ownership of the assets used by that reporting entity. For example, we lease many of the offices and vehicles that we use, but we report them as scope 1 and apportion the emissions based on the equity we have in the reporting entity that uses them.

Table G below, details which emissions are in scope:

Table G – Scope 1 & 2 Emissions

In scope	Out of scope
Offices and Depots	
Scope 1 Emissions from offices that we wholly or partially own or lease • Gas use • Diesel use • Refrigerant leakage	**Scope 1** Emissions from offices that we sub-lease to others Biofuels used onsite to generate heat and power for on and offsite use. (Sequestered carbon is excluded from the TCE metric, but is reported as a separate line of our Scope 1 emissions)
Scope 2 Emissions from offices that we wholly or partially own or lease • Imported power (whether from Centrica or other supplier)	**Scope 2** Emissions from offices that we sub-lease to others

In scope	Out of scope
Fleet	
Scope 1 Emissions from: • Commercial fleet vehicles owned or leased by Centrica • Company cars (business travel only - via mileage expenses or fuel card records) • Rental cars where the fuel is claimed back as expensed mileage (typically where it is a temporary company car)	**Scope 1** Emissions from: • Contractor's vehicles • Personal mileage in company cars, including commuting • Rental car fuel use unless claimed back as expensed mileage • Grey Fleet (personally owned cars used for company business) • Emissions from biofuels in forecourt fuel
Power Generation Reporting Entities	
Scope 1 Emissions from power generating entities where we have equity: • Carbon dioxide (CO_2) from fuel combustion & fugitive emissions • Fugitive GHG (incl. methane (CH_4) from gas turbines, Sulphur Hexafluoride (SF6) leakage, fugitive natural gas emissions, refrigerant leakage (HFCS and PFCS); and emissions of Nitrous Oxide (N_2O))	**Scope 1** Emissions below the materiality threshold (see Appendix B)
Scope 2 Imported power for plant consumption (whether from Centrica or other supplier)	**Scope 2** Emissions from power purchased for resale i.e. Tolling and Power Purchase Agreements (PPA[18])

[18] PPA and Tolling agreements, as well as open market power purchases, are Scope 3 emissions and therefore outside of the Scope of this BoR, even though the financial gains from them are included in our financial accounts.

Hydrocarbon Production Reporting Entities	
Scope 1 GHG emissions from reporting entities where we have equity: • Carbon dioxide (CO_2) from fuel combustion including flaring • Venting and fugitive GHG (incl. methane (CH_4) from gas turbines, Carbon dioxide (CO_2) from hydrocarbon processing, Sulphur Hexafluoride (SF_6) leakage, fugitive natural gas emissions, refrigerant leakage (HFCS and PFCS); and emissions of Nitrous Oxide (N_2O)	**Scope 1** Emissions below the materiality threshold (see Appendix B)
Scope 2 Imported power for plant (whether from Centrica or other supplier)	n/a

Calculation methodology

Scope 1 – Direct GHG Emissions

Scope 1 emissions are the sum of:

1. EU Emission Trading Scheme [EU ETS] values where available. Where reporting entities are not part of the EU ETS scheme, including in North America, the equivalent to the EU ETS is calculated. This being the sum of GHG emissions from fossil fuel combustion (including flaring)
2. Plant fugitive and venting GHG emissions
3. Fleet and property combustion and refrigerant emissions

Site specific emission factors are used where available and when there is site specific variation (e.g. unprocessed natural gas) to convert activity data into GHGs. Where there is negligible site specific variation, standard emission factors, from published sources are applied, including:

- The Greenhouse Gas Protocol – Revised Edition from the WRI and WBCSD
- Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting by DEFRA
- United States Energy Information Administration (EIA)
- eGrid
- Environment Canada 'National Inventory Report 1990-2006'

Where activity data is submitted in energy units (e.g. kWh of gas consumption), the emission factor is based on the assumption that the energy units are the gross calorific value, unless specified otherwise. This is based on natural gas suppliers typically quoting gas consumption in gross energy units and natural gas being the main fuel source used.

Scope 2: Electricity indirect GHG emissions

Scope 2 GHG emissions are from the generation of purchased electricity, heat or steam consumed by the company. Centrica currently imports neither heat nor steam. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

The DEFRA Total Direct GHG one-year average is used to calculate the carbon emissions of our imported power for UK and Rest of World (DEFRA provide values for all countries). The United States of America emission factors are sourced from the latest Emissions & Generation Resource Integrated Database eGRID Summary Tables. The Canadian emission factors are sourced from Environment Canada Electricity Intensity Tables.

In the UK, where we purchase grid power from ourselves, we could justifiably use Centrica's own (lower) power carbon intensity to calculate GHG emissions for this imported power. Moreover, as we already report the emissions associated with power generation within the Scope 1 emissions of our exporting assets, it could be argued that we are double counting the same emissions in the Scope 2 emissions of our importing assets. A solution would be to report our Scope 2 emissions as zero in these cases or remove the relevant emissions from our Scope 1 totals. However, we have retained the approach of

reporting our Scope 2 emissions as if they are imported from another generating organisation using the countries' standard grid emission factors. This ensures transparent accounting of our total Scope 1 and 2 emissions and enables trends in our imported electricity consumption to be understood.

The majority of the power we purchase for our UK sites is 100% Agreed Renewable Source Electricity, which is therefore theoretically, zero carbon. However, we take the conservative approach of applying the UK year average emission factor to it; this is consistent with UK government guidance.

Data quality, collection and reporting frequency

Data quality

All the data is submitted in the *ourEnvironment* software system by the business units, sites or associated functions.

In the *ourEnvironment* system, all the Scope 1 and 2 Indicators have a tolerance check activated, where the value entered must be within 50% of the value for the same period in the previous year. Where the value is +/- 50% of the previous value, an explanatory comment must be made and/or supporting documentation attached.

All emissions are to be submitted in accordance with the Group Procedure for Environmental Reporting. This includes:

- The data being provided in the time frames required
- The most accurate data at the time of submission to be used, following the hierarchy of accuracy (direct measurement, if not then calculation, if not then estimation)
- Records to be maintained on site to provide an audit trail

The EU Emissions Trading Scheme (ETS) emissions are externally verified annually and represent almost half of our total Scope 1 emissions. Hence where there is an EU ETS value, it is used. This maximises the integrity of the total Scope 1. However, the EU ETS emissions data are subject to annual verification during March/April of the following year. When the total carbon emissions are reported externally by Centrica prior to receiving the EU ETS verification, the emissions are caveated to that extent. In the compilation of the EU ETS values, two approaches are used:

- Unverified emissions calculations – calculated internally - based on gas chromatography samples of actual gas consumed at sites; and
- Verified emissions calculations – evaluated annually using the finalised internal view of emissions for the calendar year and then verified by an accredited third party for compliance with the EU ETS.

GHG emissions associated with office fuel use and vehicle emissions are not covered by EU ETS, however the majority of these emissions are covered by the assurance for the Carbon Trust Standard. The UK office GHG emissions are also covered by the CRC Energy Efficiency Scheme.

The group totals are compiled by Centrica Group Environment with sign off from:

1. Group Environmental Reporting Manager
2. Group Head of Environment
3. Group Director of Health, Safety, Environment and Security

Assumptions

The GHG emission methodologies and associated assumptions are included in Tables H.

Table H – Calculations and assumptions

UK and European Building and Vehicle Emissions (including Ireland)				
Category	**Source**	**Calculation**	**Emission factors**	**Assumptions**
Buildings				
Electricity	Solely occupied sites: meter readings validated against bills	Consumption (kWh) x emission factor	DEFRA's One-year Average	n/a
	Serviced offices: calculated using average Centrica power use per FTE	Average Centrica European power use per FTE x FTE in office x emission factor	As above	There will be a lower rate of improvement in the serviced offices; therefore an average (2009) Centrica power use/FTE value is applied to all years
	'Green' Electricity	Treated the same as other electricity (refer above)		
Gas	Solely occupied sites: meter readings validated against bills	Consumption (kWh) x emission factor	DEFRA's Gross Calorific Value	n/a
	Serviced offices: calculated using average Centrica gas use per FTE	Average Centrica European gas use per FTE x FTE in office x emission factor	As above	There will be a lower rate of improvement in the serviced offices; therefore an average (2009) Centrica gas use/FTE value is applied to all years
Gas Oil	Gas oil fuel for office plant	Fuel consumption x emission factor	DEFRA gas oil emission factor	n/a
Fleet				
Commercial	Fuel card data	Fuel volume (l) x emission factor	DEFRA Total Direct GHG emission factor relevant to forecourt fuel type	All Fleet activity is for business purposes
Company cars	Expenses data provided by external HR provider	Mileage (m) x emission factor	Vehicle-specific manufacturer's tail-pipe emission factors (where this is not available an emission factor, based on a Centrica UK average by vehicle type, is used)	Mileage claims are accurate
	Fuel card data	Volume (l) x emission factor	DEFRA Total Direct GHG emission factor relevant to forecourt fuel type	27% of fuel use is private and therefore excluded (based on review in 2015)

North American – Building and Vehicle Emissions				
Category	**Source**	**Calculation**	**Emission factors**	**Assumptions**
Buildings				
Electricity	Solely occupied sites: meter readings validated against bills	Consumption (kWh) x location specific emission factors	Emissions & Generation Resource Integrated Database eGRID Year 2010 Summary Tables Environment Canada Electricity Intensity Tables 2008 data	n/a
	Serviced offices: square footage and type	Square footage x consumption rate (by property type) x state/province emission factor	(as above) Consumption rates (by location and building type) from Energy Information Administration (EIA)	n/a
Gas	Solely occupied sites: meter readings validated against bills.	Consumption (m^3) x gas emission factor	United States Energy Information Administration (EIA)	n/a
	Serviced offices: square footage and type	Square footage x consumption rate (by property type) x gas emission factor	Consumption rates (by building type) from EIA	n/a
Fleet				
Commercial	Fuel card data	Fuel volume (l) x emission factor	US EPA Table 2: Mobile Combustion CO2 Emission Factors Canada Environment National Inventory Report (2011) c2013	All Fleet activity is for business purposes

Power Generation Emissions				
Category	**Source**	**Calculation**	**Emission factors**	**Assumptions**
Fuel Consumption for EU ETS sites				
EU ETS of gas fuelled power stations	Provided bi-annually Verified emissions data provided annually by an accredited third party	Sum of emission volumes in tonnes, across months, and across all reporting entities	Site specific dependent on analysis of calorific value of fuel used	Unverified emissions, are derived from gas consumption, and are indicative until verified emissions are available
Nuclear Emissions	Power Business Development, Centrica Energy	Nuclear power stations have low, but not zero emissions, as a result of standby combustion plant. Centrica does not have sight of these emissions pre verification, and as such, the emissions are calculated based on generation and historical carbon intensity In addition to combustion GHG emissions, there are vented CO_2 emissions and imported power consumption	Based on historical intensities Pro-rated for partially owned assets to reflect Centrica's equity	Emissions, are derived from prudent assumptions, and are indicative until confirmed emissions are available from the operator
Fuel Consumption for non-EU ETS sites				
Natural gas/ diesel/fuel oil consumption	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Gas consumption meter readings (energy units) x gross emission factor (site specific if available, otherwise published) Diesel and Fuel oil (volume x published emission factor)	Vary depending on geography and year and published or site specific	In the case of diesel and fuel oil, reported volumes may be based on delivery volumes or consumption
Fugitive Emissions				
Methane from Gas turbines	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Start-up/Shut down: Gas volume x duration Unburnt during combustion: Gas volume x Emission factor	Methane (CH_4) 100 year Global Warming Potential (GWP) IPCC's Second Assessment Report: 21	Assumes all natural gas is methane
Fugitive gas emissions	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Calculation using gas composition, flow volume, size, design and age of facility (often calculation); or, calculated based on estimated gas escapes that result in exterior gas alarms being activated	Methane (CH_4) 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 25	Assumes all natural gas is methane

Category	Source	Calculation	Emission factors	Assumptions
Fugitive Emissions continued				
Fugitive Sulphur Hexaflouride (SF_6)	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Top-up weight from SF_6 maintenance records	SF_6 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 22,800	That the quantity required for system top-up equals the volumes lost through leakage
Nitrous Oxide (N_2O) emissions from fossil fuel combustion	Provided in *ourEnvironment* bi-annually for the preceding 6 months	(Fuel volume x Environment Agency emission factors) x N_2O GWP	N_2O 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 298	NA
HFCs & PFCs where relevant	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Top-up weight from maintenance records	HFC and PFC 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: various	That the quantity required for system top-up equals the volumes lost through leakage
R-22	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Calculated from top-up records	HCFC Global Warming Potential (GWP) IPCC's Fourth Assessment Report HCFC-R22: 1810	That the quantity required for system top-up equals the volumes lost through leakage

Gas Production and Storage Facilities				
Category	**Source**	**Calculation**	**Emission factors**	**Assumptions**
Fuel Consumption for EU ETS sites				
Verified EU ETS	Provided bi-annually by the business units Verified emissions data provided annually by an accredited third party	Sum of emission volumes in tonnes, across months, and across all reporting entities	Site specific dependent on analysis of calorific value of fuel used	Unverified emissions, are derived from gas consumption, and are indicative until verified emissions are available.
Fuel & Flaring (For Non EU ETS sites)				
Natural gas/ diesel/Fuel oil consumption	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Gas consumption meter readings (energy units x gross emission factor (site specific if available, otherwise published) Diesel and Fuel oil (volume x published emission factor)	Natural Gas emission factors vary depending on geography and year and published or site specific	In the case of diesel and fuel oil, reported volumes may be based on delivery volumes or consumption For non ETS, non-operated assets the fuel volumes by their nature will be small. The actual volume consumed is typically difficult to obtain and therefore estimated volumes may be used, based on similar operated assets
Flaring	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Flow meters x emission factor; or calculation based on production	Site specific dependent on analysis of calorific value of fuel used	n/a
Venting and Fugitive Emissions				
Fugitive gas emissions	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Calculation using gas composition, flow volume, size, design and age of facility (often calculation	Methane (CH_4) 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 25	Assumes all natural gas is methane
Nitrous Oxide (N_2O) emissions from fossil fuel combustion	Provided in *ourEnvironment* bi-annually for the preceding 6 months	(Fuel volume x Environment Agency emission factors) xN_2O GWP	N2O 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 298	n/a

Category	Source	Calculation	Emission factors	Assumptions
Venting and Fugitive Emissions continued				
HFCs & PFCs where relevant	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Top-up weight from maintenance records	HFC and PFC 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: various	That the quantity required for system top-up equals the volumes lost through leakage
R-22	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Measurement of inventory levels	100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 1810	That the quantity required for system top-up equals the volumes lost through leakage
Methane from Nitrogen Removal Units	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Flow meters [volume] x spot sampling (concentration)*x GWP	Methane (CH_4) 100 year Global Warming Potential (GWP) IPCC's Fourth Assessment Report: 25	Assumes concentration does not vary between spot samples
Carbon Dioxide from Thermal Oxidisers	Provided in *ourEnvironment* bi-annually for the preceding 6 months	Flow meters x CO_2 concentration (based on spot samples)	N/A	Assumes concentration does not vary between spot samples

Appendix A – Glossary of Terms

Term	Definition
Greenhouse Gas (GHG)	The six greenhouse gases (GHGs) listed in the Kyoto Protocol (CO_2, CH_4, N_2O, HFCs, PFCs and SF_6).
Total carbon emissions	Gross Scope 1 and 2 GHG emissions based on stated organisational boundary.
Scope 1	A reporting organisation's direct GHG emissions.
Scope 2	A reporting organisation's emissions associated with the generation of electricity, heating/ cooling, or steam purchased for own consumption.
Carbon dioxide equivalent (CO_2e)	The universal unit of measurement to indicate the global warming potential (GWP) of each of the six greenhouse gases, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.
tCO_2e	Metric tonnes of carbon dioxide equivalent (refer above)
Equity Share	Percentage of Centrica's ownership within an entity which reflects the extent of the financial risks and rewards of the entity we are entitled to.
Reporting Entity	The level that the equity share is applied. Ensuring that this is at the level appropriate to fairly and accurately reflect our investments.
Exclusive use of asset	In most cases 'Owned' is where we own or have exclusive use of an asset. However in the case of buildings and vehicles, the term 'owned' covers where we use all or part of them for the long term.
EU ETS	European Union Emission Trading Scheme
CO_2	Carbon Dioxide
CH_4	Methane
N_2O	Nitrous Oxide
SF_6	Sulphur Hexafluoride
HFCS	Hydrofluorocarbons
HCFC	Hydrochlorofluorocarbon
PFCS	Perfluorocarbons
Grey Fleet	Private cars used on business
CFC	Chlorofluorocarbon
CRC	Carbon Reduction Commitment

Appendix B – Material and Immaterial Emissions

Centrica reports all material GHG emissions from our wholly owned or partially owned reporting entities across the group. Immaterial emissions are reported when they are readily available, for example, where Centrica is also the operator of the asset.

Table C below, identifies what are considered the material and immaterial emission sources for different business activities.

Table C - Materiality by Business Activity

Business activity	Material emission sources	Immaterial emission sources
Production & power generation	Stationary combustion	
	Flaring	Fugitive emissions
	Venting	Vehicle & building emissions
	Imported electricity	
Fleet based business	Fleet fuel emissions	Building emissions
Office based business	Building electricity use	Fleet fuel emissions
	Building fuel use	