

## FY2013 Basis of reporting

This document provides additional details about the scope and calculation methods used in the Global Impact 2013 report (the "Report"), available at [www.deloitte.com/GlobalReport](http://www.deloitte.com/GlobalReport). It should be read in conjunction with the Report and all definitions used therein also apply to this document. In this document Deloitte refers to DTTL and its member firms.

### **Scope and methods for performance measurements**

Deloitte Touche Tohmatsu Limited (DTTL) adhered to widely accepted standards in developing this report. These standards define a systematic approach to understanding the issues that the report should cover and measuring and documenting performance with regard to those issues. Performance measures for societal impact and environmental sustainability are based on widely recognized guidelines. For reporting on societal impact, DTTL and its member firms observed standards from the Committee Encouraging Corporate Philanthropy and the London Benchmarking Group. The monetary value of community activities by member firm people was estimated according to the type of service performed. The value of volunteer work was based on local member firms' staff costs. Pro bono work, defined as work that the member firms might otherwise sell but that was performed for free, has been valued at rates representative of the local member firms' client service rates for comparable services. Estimates of carbon emissions were prepared according to the Greenhouse Gas (GHG) Protocol Corporate Accounting and Reporting Standard created by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) with emissions accounted for on the basis of operational control. DTTL and the member firms have applied recent, authoritative, and locally specific GHG emissions factors as available and as appropriate for the countries in the report's scope. In 2011, the WRI and the WBCSD issued a new standard, the Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Deloitte continues to evaluate the methodologies set forth in the Scope 3 standard for consideration in future reporting. While the reporting for FY2013 includes a significant number of Scope 3 sources, it does not consider full upstream and downstream emissions across all sources. FY2013 environmental performance data in this report was directly collected from 29 member firms and from DTTL. These entities represent 91 percent of aggregate Deloitte people and 94 percent of aggregate member firm revenues. Extrapolations were used to account for the emissions of the remainder of the organization that did not directly report data. FY2013 societal impact data was reported by 33 member firms and by DTTL, which represent 93 percent of aggregate Deloitte people and 97 percent of aggregate member firm revenues. No estimate was made for the member firms that did not report due to the variations in societal impact activities across member firms. It should be recognized that this limits the year-to-year comparability of the data.

Comparability is expected to improve over time as the number of non-reporting member firms decrease. Data that formed the basis of the reporting was obtained from financial reporting systems, other internal records, and outside sources such as travel agencies, utilities, and property managers. In addition to adhering to the UN Global Compact and Global Reporting Initiative (GRI) 3.1 frameworks for reporting, this report was prepared according to the principles of inclusivity, materiality, and responsiveness from the AA1000 AccountAbility Principles Standard (AA1000APS).

### **Emission factors**

DTTL member firms are encouraged to select the most accurate, source-specific, localized, and recently published GHG emission factor available for each emission source, such as specific emission factors for a local electric utility. Member firms are also provided with default emission factors from the following sources:

- The GHG Protocol published by the WRI and WBCSD
- The International Energy Agency (IEA)
- The UK's Department for Environment, Food and Rural Affairs (DEFRA)
- The U.S. Department of Energy (US DOE)
- Environmental Paper Network Paper Calculator ([www.papercalculator.org](http://www.papercalculator.org))
- The Carbon Neutral Company

A compilation of emission factors used to calculate the data in the Report is included at the end of this section. Note that for FY2013 the default emission factors were only updated for major emission sources such as airlines.

### **Global warming potential**

The 100-year global warming potentials (GWP) of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4) were used in calculating carbon dioxide equivalents.

### **Building-related emission sources**

Building-related emission sources included in the GHG emissions data of the Report were those associated with the use of electricity, natural gas, district heating, and district cooling and those arising from the fugitive emissions of refrigerants in the office buildings and data centers that DTTL member firms either own or over which they have operational control. Upstream building-related emission sources, such as those associated with electric transmission and distribution line losses, were not included in the GHG emissions inventory.

Some of the activity data associated with building-related emission sources was available directly to the DTTL member firms. For example, some facilities have direct utility meters or sub-meters from which DTTL member firms obtain readings. For facilities that have no available meter data, activity data for the entire building was typically allocated on the basis of the percentage of total building floor space used (based on rentable square meters) by the DTTL member firm. Where building-specific data was unavailable, DTTL member firms estimated electricity and fuel usage using actual data from a similar building or an average from a recognized source.

GHG emission factors and system information (such as equipment type) associated with district heating and cooling are seldom available through the utility provider. In instances where emission factors and system information were unavailable, benchmark emission factors from the U.S. DOE were used.

Fugitive emissions of refrigerants used in building cooling systems were included as a GHG emission source. To determine refrigerant leakage from a system, the refrigerant volume readings from the beginning and the end of the fiscal year are needed along with any volumes added or removed. For most systems and equipment at DTTL member firm facilities, this complete data set cannot be obtained and data is limited to refrigerant additions. In such instances, the assumption is made that all refrigerant added in a given year replaces refrigerant leaked during the same year. This method likely overestimates actual emissions in some years and underestimates them in others, but over time captures the fugitive emissions of the system. A similar simplifying assumption is used for calculating the volume of diesel fuel used for backup power generation; that is, it is assumed that diesel fuel purchased during the fiscal year is used that year.

#### **Business travel — Air**

Reported GHG emissions are those resulting from air travel by professionals flying for business reasons in accordance with DTTL and member firm policies. GHG emissions from flights taken by non-employees are also reported in instances where flight activity data is captured in DTTL or member firm travel systems and reimbursed or paid for by DTTL or a member firm (such as travel by family members in accordance with policies or travel by prospective DTTL and member firm professionals). The majority of business air travel data was obtained from DTTL and member firm travel systems. Much of the rest was obtained from travel expense records.

The default GHG emission factors used to calculate emissions from air travel were based on information published by DEFRA. Flight segments were identified by distance, and emission factors were applied according to whether the flight segment was categorized as long haul (more than 1108 km), medium haul (463 to 1108 km) or short haul (less than 463 km).

Where data on seat class was available class-specific emission factors were also applied (e.g., First, Business, Premium Economy, Economy). An uplift factor of 1.08 was applied to airline distance data to account for non-direct routes, delays, and circling. The emission factors used did not include radiative forcing or indirect emissions.

#### **Business travel — Road**

Reported GHG emissions from business travel by automobiles includes travel in Deloitte-owned vehicle fleets (personnel driving in vehicles owned by DTTL and/ or the member firm), reimbursed driving (personnel driving in personal cars for which they are reimbursed), rental cars (personnel driving in rented/ hired cars, for which the member firm pays); buses and taxis (reimbursed personnel trips in buses, taxis, car-service vehicles, and limousines).

For road travel, activity data was gathered from expense reports, rental agency records, travel agency records, company accounting systems, fuel receipts, odometer logs, and receipts or other records indicating distance and location of trip segments. When fuel information was available, GHG emissions are calculated on the basis of mobile combustion factors for the given fuel type. When only distance information was available, GHG emissions were calculated on the basis of average emissions factors (emissions per kilometer traveled) for vehicles according to vehicle type (bus or car), fuel type (diesel, petrol, hybrid, or unknown), and location.

A very limited amount of employee commuting activity data was available from member firms. Where available, this information was added to the emissions total. As more member firms collect this data, reporting is expected to grow in future years.

#### **Business travel — Rail**

Rail travel accounts for GHG emissions from employee trips on subways, railways, and trams, with different GHG emission factors used for each type of rail system. Activity data sources included travel agency reports, employee expense reports, company accounting systems, receipts, and other records indicating the distance and location of trip segments. In cases where actual distance was unavailable, estimates were made using travel expense data and average travel costs per unit of distance traveled.

#### **Accommodations**

The GHG emissions inventory in the report includes emissions from accommodations at hotels, guest houses, and apartments for business reasons and in accordance with DTTL and member firm policies. Data was collected from corporate travel agency records, employee travel expense reports, and internal records. The emission factors were applied according to the location of the accommodation.

**Paper**

Emissions associated with paper used in business by DTTL and member firm offices, mainly printer paper, were included in the inventory. Paper used in documents produced by outside vendors was not included in the inventory. Paper data was obtained from procurement records and grouped by sheet size, percentage of recycled content, and paper type and weight. Default emission factors were selected using the Environmental Paper Network Paper Calculator based on the percentage of recycled content and applied to the purchased weight. Where a specific percentage of recycled content could not be identified, the most conservative possible assumption was made (for example, 30 percent recycled content was assumed if the paper source was identified as having 30 percent or more recycled content).

**Estimations**

In calculating emissions, various estimations and extrapolations were made to account for known data gaps.

For many travel activities, activity information and cost data were available both from travel providers (reservation systems, travel agencies, or travel vendors) and from DTTL or member firm expense systems. Travel expenses recorded in DTTL or member firm expense systems often exceeded the corresponding expenses recorded by travel providers because of travel arrangements made outside of reservation systems or without travel agencies. In cases where such differences were identified, the travel activity data associated with the incremental cost was estimated based on the same

proportion of cost to activity that was reflected in the original travel system reservation.

Not every DTTL member firm has the capacity to report activity data for GHG emissions, and some member firms report on some, but not all, of the activities within the report boundaries. Ratios of emissions per FTE (average full-time equivalent for FY2013) by emission source were calculated for the member firms that reported, and averages of these ratios were calculated based on clusters of geographic location and size. Using the appropriate cluster ratio, missing data was extrapolated based on the known FTE data.

Consistent with other GRI indicators, emissions intensity per FTE was calculated using the FTE total at the reporting year-end (31 May 2013).

While the above description is intended to be as accurate as possible, invariably the inventory will contain some exceptions to this reporting basis. None of the known exceptions are considered to materially change the total emissions reported.

**Emission factors**

The table below shows emission factors that were used in the inventory.

Note — Some values below may differ slightly from the published reference source due to the use of the IPCC AR4 GWPs rather than the GWPs of the Second Assessment Report of the IPCC. Where factors are used in specific countries only, these are listed after the emission source.

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Air Travel – Various lengths and seat classes	0.087 - 0.350	Passenger km	DEFRA/DECC’s 2013 Guidelines to GHG Conversion Factors for Company Reporting (June 20) – with 9% uplift and AR4 GWP; various factors used depending on class and distance
Air Travel – Various lengths (Belgium)	0.22 - 0.66	Passenger km	Agence de l’Environnement et de la Maîtrise de l’Energie (ADEME)
Air Travel – Various lengths (Finland, Germany)	0.131 - 0.213	Passenger km	Travel agency records
Air Travel – Various lengths (Japan)	0.98	Passenger km	Ministry of Land, Infrastructure, Transport and Tourism (MLTI) 2011
Bus (Europe)	0.149	Passenger km	DEFRA/DECC’s 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Bus (Japan)	0.051	Passenger km	Ministry of Land, Infrastructure, Transport and Tourism (MLTI) 2011
Bus (Outside Europe)	0.067	Passenger km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Bus (U.S.)	0.107	Passenger miles	WRI – GHG protocol emission factors from cross sector tool set v 1.1 (June 2011)
District Cooling	0.887	Ton-hour (Short ton)	U.S. DOE EIA-1605 (18 November 2010) Appendix N
District Cooling (Japan)	57	GJ	Ministry of the Environment, Government of Japan, Law Concerning the Promotion of the Measures to Cope with Global Warming
District Heat	88.56	MMBtu	U.S. DOE EIA-1605 (18 November 2010) Appendix N
District Heat/Steam (Germany)	0.257	kWh	Deloitte Germany emission factor based on DEFRA
District Heat/Steam (Japan)	57	GJ	Ministry of the Environment, Government of Japan, Law Concerning the Promotion of the Measures to Cope with Global Warming
Electricity (Australia)	260 - 1190	MWh	Australian Government Department of Climate Change National Greenhouse Energy Reporting System (NGERs) Technical Guidelines (July 2012). Table 7.2 Indirect (scope 2) emission factors for consumption of purchased electricity from a grid. Page 425
Electricity (Belgium)	0	MWh	Electrabel Alp Energy – Hydro energy
Electricity (Belgium)	227	MWh	Estimation based on Luminus energy mix and EF for energy production by energy source (Source Manicore) (20%)
Electricity (Canada)	2 - 840	MWh	Environment Canada National Inventory Report 1990-2010
Electricity (Chile)	391 - 806	MWh	Ministry of Energy of Chile Reporte de Emisiones para el SING 2012
Electricity (Finland)	250	MWh	Finnish Electricity Company
Electricity (Germany)	562	MWh	Umweltbundesamt, Strommix Deutschland, UBA 2010
Electricity (India)	838 - 943	MWh	India Environmental Portal CO2 Baseline Database for the Indian Power Sector – User Guide – v 8.0 January 2013
Electricity (Japan)	514 - 932	MWh	Various Japanese Power Companies
Electricity (New Zealand)	120 - 210	MWh	New Zealand Ministry of Economic Development – Quarterly Energy Update
Electricity (Norway)	307	MWh	Norwegian Water Resources and Energy Directorate (NVE) Residual Mix (nve.no)
Electricity (South Africa)	1027	MWh	Eskom’s 2012/2013 data
Electricity (UK)	445.4	MWh	DEFRA/DECC’s 2013 Guidelines to GHG Conversion Factors for Company Reporting (June 20)
Electricity (U.S.)	226 - 828	MWh	USEPA eGRID 2012 Version 1.0 Subregion Data (Year 2009)
Electricity (Various countries)	2.7 - 761.0	MWh	IEA Statistics, “CO2 Emissions from Fuel Combustion Highlights.” 2011 Edition
Hotel Stays	31.93 - 33.45	Nights	Carbon Neutral Company (legacy source)
Hotel Stays (China, Australia, U.S.)	40.91	Nights	Private study based on IEA 2005, DEFRA 2005, DTI 2004, and DOE 1997.
Hotel Stays (Japan)	7	Nights	Carbon Offset Japan
Hotel Stays (New Zealand)	2.56 - 7.97	Nights	Ministry for the Environment, Guidance for voluntary, corporate greenhouse gas reporting, 2011 Calendar Year

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Hotel Stays (South Africa)	19	Nights	Deloitte 2008 "Qualified Greenhouse Gas Inventory" Report: Emissions factor provided by UNEP World Meteorological Organisation Climate Change And Tourism Report; A2.2.3 Accommodation; 9 July 2008
Mobile Combustion – Black Car/Limo	0.157	Vehicle km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Bus (Europe)	0.112	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (Average) (Diesel) (Finland)	0.139	km	Actual information from the fleet company
Mobile Combustion – Car (Average) (Diesel) (Europe)	0.187	km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (Diesel)	2.668	Liter	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (Diesel) (Belgium)	2.947	Liter	Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)
Mobile Combustion – Car (Hybrid)	0.135	km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (Luxury) (unknown fuel)	0.313	km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (Petrol) (Belgium)	2.835	Liter	Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)
Mobile Combustion – Car (unknown fuel) (Germany)	0.135 - 0.207	km	Rental company
Mobile Combustion – Car (Petrol) (Japan)	2.322	Liter	Ministry of the Environment, Government of Japan, Law Concerning the Promotion of the Measures to Cope with Global Warming
Mobile Combustion – Car (Petrol) (New Zealand)	2.31 - 2.33	Liter	Landcare – CarboNZero emissions factor database
Mobile Combustion – Car (Petrol) (Outside Europe)	0.237	km	WRI (2011) GHG Protocol Tool for Mobile Combustion v 2.3
Mobile Combustion – Car (Petrol/ Gasoline)	2.314	Liter	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Car (unknown fuel)	0.248	km	DTTL estimated using data from WRI (2011) GHG Protocol Tool for Mobile Combustion v 2.3
Mobile Combustion – Car (unknown fuel) (Australia)	2.289	Liter	Australian Government Department of Climate Change (July 2011) National Greenhouse Accounts (NGA) Factors. Table 4
Mobile Combustion – Car (unknown fuel) (Australia)	2.289	Liter	Australian Government Department of Climate Change (July 2011) National Greenhouse Accounts (NGA) Factors. Table 4

A detailed description of this report's boundaries and the performance measurement methods used is available [here](#). Note: Because of rounding, numbers may not tally with the total.

(1) FY12 industry values were restated to reflect an updated methodology

(2) Per the Global Reporting Initiative Indicator Protocol, the rate is calculated using the total Deloitte people at the end of the reporting period

(3) Represents a lower bound for measures of learning because certain types of training are not tracked in the online learning platform

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Mobile Combustion – Car (unknown fuel) (New Zealand)	0.235 - 0.237	km	Ministry for the Environment, Guidance for voluntary, corporate greenhouse gas reporting, 2011 Calendar Year
Mobile Combustion – Car average (unknown fuel) (U.S.)	0.392	Mile	WRI – GHG protocol emission factors from cross sector tool set v 1.1 (June 2011). US Environmental Protection Agency default fuel economy for generic car transport
Mobile Combustion – Car or Van (Diesel) (France)	2.4	Liter	Government of France
Mobile Combustion – Car or Van (Petrol) (France)	2.7	Liter	Government of France
Mobile Combustion – Car or Van (various fuels) (Europe)	0.141 - 0.207	km	Specific fleet and rental car information
Mobile Combustion – Europe Car (Average) (Petrol)	0.209	km	DEFRA/DECC’s 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Europe/Car (Average) (unknown fuel)	0.194	km	DEFRA/DECC’s 2013 Guidelines to GHG Conversion Factors for Company Reporting (June 20)
Mobile Combustion – Europe/Car (Average) (unknown fuel)	0.195	km	DEFRA/DECC’s 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Motorcycle	0.119	km	DEFRA/DECC’s 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Outside Europe Car (Average) (Diesel)	0.280	km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Mobile Combustion – Outside Europe/ Car (Average) (Petrol)	0.237	km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Mobile Combustion – Outside Europe/ Car-Average (Unknown fuel) (Japan)	0.152 - 0.193	km	Ministry of the Environment, Government of Japan, Law Concerning the Promotion of the Measures to Cope with Global Warming
Mobile Combustion – Outside Europe/ Car-Average (Unknown fuel) (South Africa)	0.187	km	DEFRA/DECC’s 2013 Guidelines to GHG Conversion Factors for Company Reporting (June 20)
Mobile Combustion – Taxi	0.147	Vehicle km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Mobile Combustion – Taxi (Australia)	0.235	Vehicle km	Australian Government Department of Climate Change (July 2012) National Greenhouse Accounts (NGA) Factors. Schedule 1
Mobile Combustion – Taxi (Japan)	0.170	Vehicle km	Ministry of Land, Infrastructure, Transport and Tourism (MLTI) 2011
Mobile Combustion – Taxi (New Zealand)	0.308	Vehicle km	Landcare – CarboNZero emissions factor database. June 2013
Mobile Combustion – Taxi / Car service (U.S.)	0.143 - 0.252	Passenger km	Specific information from service providers
Mobile Combustion – Taxi / Car service (U.S.)	0.230 - 0.406	Passenger miles	Specific information from service providers

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Mobile Combustion – Taxi/Car service (UK)	0.176 - 0.234	Vehicle km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Van (Diesel)	0.226	km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Van (Petrol)	0.212	km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Mobile Combustion – Van (UK)	0.269	km	DEFRA/DECC's 2013 Guidelines to GHG Conversion Factors for Company Reporting (June 20)
Paper resources	1.688 - 3.012	kg	Environmental Paper Network Paper Calculator v 3.1 ( <a href="http://www.papercalculator.org">www.papercalculator.org</a> )
Paper resources (Belgium, France)	1.32	kg	Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME) 2010
Paper resources (Germany)	1.06	kg	German initiative for paper production. Source: <a href="http://www.initiative-papier.de">www.initiative-papier.de</a>
Paper resources (Japan)	1.52	kg	Japan Paper Association LCA Inventory (published in FY2011)
Paper resources (South Africa)	1.58 - 1.72	kg	Average factors provided by Mondi and Sappi Paper
Rail – Average (Light Rail or Tram)	0.072	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Rail – Average (Light Rail or Tram)	0.102	Passenger km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Rail – National Rail	0.115	Passenger km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Rail – Subway	0.102	Passenger km	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Rail – Subway (U.S.)	0.164	Passenger mile	Derived from the U.S. EPA
Rail (Belgium)	0.01	Passenger km	ADEME (Train en France, Moyenne)
Rail (Eurostar)	0.015	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Rail (Germany)	0.038 - 0.075	Passenger km	Direct information from Deutsche Bahn
Rail (Japan)	0.021	Passenger km	Ministry of Land, Infrastructure, Transport and Tourism (MLTI) 2011
Rail (National Rail)	0.056	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Rail (Netherlands)	0.03	Passenger km	National Rail
Rail (Subway)	0.074	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting, Version 1.0
Rail (UK)	0.015 - 0.058	Passenger km	DEFRA/DECC's 2012 Guidelines to GHG Conversion Factors for Company Reporting (Annex 6, Table 6k), Version 1.0
Rail (U.S.)	0.185	Passenger mile	Derived from the U.S. EPA
Refrigerant – HFC-134a	1430	GWP	Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change (IPCC)
Refrigerant – HFC-143a	4470	GWP	Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change (IPCC)

Emission source	Emission factor	Unit kg CO <sub>2</sub> e/unit	Reference
Refrigerant – R-403a	1400	GWP	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 34 (WRI)
Refrigerant – R-404a	3260	GWP	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 34 (WRI)
Refrigerant – R-407c (Australia)	1526	GWP	Australian Government Department of Climate Change National Greenhouse Energy Reporting System (NGERs) Technical Guidelines (June 2010). Appendix C.
Refrigerant – R-407c	1774	GWP	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 34 (WRI)
Refrigerant – R-410a	2088	GWP	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 34 (WRI)
Refrigerant – R-427a	1800	GWP	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 34 (WRI)
Stationary Combustion – Diesel	2.676	Liter	WRI GHG Protocol Tool for Mobile Combustion V 2.3 (October 2011)
Stationary Combustion – Diesel or Heating Oil (Low Heating Value)	74.53	GJ	WRI (October 2010) GHG Protocol Tool for Stationary Combustion
Stationary Combustion – Heating Oil (Japan)	2.71	Liter	Ministry of the Environment, Government of Japan, Law Concerning the Promotion of the Measures to Cope with Global Warming
Stationary Combustion – LP Gas (Mexico)	0.002	Liter	National GHG Inventory
Stationary Combustion – Natural Gas (High Heating Value) (U.S.)	5.342	Therms	WRI GHG Protocol (September 2011) Emission Factors from Cross-Sector Tools
Stationary Combustion – Natural Gas (Japan)	2.149 - 3.132	Cubic meters	HV-gas company
Stationary Combustion – Natural Gas (Low Heating Value)	1.89	Cubic meters	WRI (October 2010) GHG Protocol Tool for Stationary Combustion
Stationary Combustion – Natural Gas (Low Heating Value)	56.26	GJ	WRI (October 2010) GHG Protocol Tool for Stationary Combustion
Stationary Combustion – Natural Gas (New Zealand)	0.191	kWh	Landcare – CarboNZero emissions factor database (ending 30 June 2013)
Stationary Combustion – Natural Gas (Switzerland)	0.198	kWh	Swiss department of Environment, Transport, Energy and Communication
Stationary Combustion – Natural Gas (UK)	0.185	kWh	DEFRA/DECC’s 2012 Guidelines to GHG Conversion Factors for Company Reporting (Annex 6)