





# Reporting CARE's carbon footprint and Climate-Smart practices in PIIRS<sup>1</sup>

## Guidance note



This guidance document provides information for all CARE offices (Country Offices, Candidates, Members, Affiliates) on how to report greenhouse gas (GHG) emissions and climate-smart practices into PIIRS.

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## I. INTRODUCTION



### What is a Climate-Smart organization?

A climate-smart organization measures its emissions, reduces them as much as possible and compensates its unavaoided emissions.

As an organization dedicated to addressing the underlying causes of poverty and social injustice, CARE is a serious advocate for an urgent, effective and equitable response to climate change. This includes an ambitious commitment by CARE itself to adopt practices that reduce GHG emissions that are causing climate change.

To remain within a global temperature increase of 1.5°C, global GHG emissions in 2030 need to be approximately 55 percent lower than in 2017 (IPCC, 2018). In tonnes CO<sub>2</sub>e emissions, this would mean going from an average of 4.8 tonnes CO<sub>2</sub>e per capita in 2017 to 2.3 tonnes CO<sub>2</sub>e per capita in 2030<sup>2</sup>. In comparison: a direct round trip flight from Paris to New Delhi produces 3.4 tonnes of CO<sub>2</sub>e emissions per passenger, which is far more than the 2030 climate compatible annual emissions budget for one person.

Reporting on CARE's carbon footprint and climate-smart practices is a part of CARE's Program Information and Impact Reporting System (PIIRS), and is done for the following purposes:

- To have an annual global overview of the total amount of GHG emissions generated by CARE
- To have a global overview of the total amount of GHG emission reductions by CARE over consecutive years
- To have a global overview on the types of measures developed by CARE offices to reduce and/or to offset emissions.
- To generate information that supports reflection and learning around good practices to reduce emissions and about areas that require improvement and support.

All data retrieved will be analysed and results will be shared with all CARE offices in an annual report.

<sup>1</sup> [http://careglobalmel.careinternationalwikis.org/global\\_data](http://careglobalmel.careinternationalwikis.org/global_data)

<sup>2</sup> Boden et al. (2017), UNFCCC (2018), BP (2018)

## II. HOW TO REPORT CARE'S CARBON FOOTPRINT AND CLIMATE-SMART PRACTICES IN PIIRS

Calculating GHG emissions is a multi-step process. There are three main sources of GHG emissions in CARE offices: flight related emissions (i), vehicle related emissions (ii) and office energy consumption related emissions (iii).



### Which office information should be reported in PIIRS?

Each CARE office is asked to report on the gathered information of all its different offices in the country. For example, CARE USA will report on the emissions related to its Atlanta Headquarters and all the sub-offices in the USA but will not report on the emissions of the Country Offices it leads in the Global South. CARE Uganda will report on the emissions of its national office in Kampala and all its sub-offices in Uganda.



### Recommendation:

Experience has shown that it is preferable to monitor emissions on a continuous basis – using a live spreadsheet or database – rather than calculate emissions in one large annual number-crunching exercise. Not only does this make the task more manageable, but it also keeps the topic alive and increases staff's awareness. See below an example of a spreadsheet for flight-related emissions.

a	Exercise				Means of transportation				CO2 (t)	Name	Unit	Country
	Fiscal	Date	Reason of travel	Depart	Arrival	One /	transportation					
FY18	long-haul flight	FY18	Aug/17	capitalization meet	paris	beyrouth	ar	long-haul flight	1,360	Antoine	DG	Lebanon
FY18	long-haul flight	FY18	Nov/17	monitoring visit	paris	casablanca	ar	long-haul flight	0,764	Antoine	DG	Morocco
FY18	long-haul flight	FY18	Jan/18	others	paris	oslo	ar	long-haul flight	0,660	Antoine	DG	norway
FY18	short-haul flight	FY18	Mar/18	others	paris	nice	ar	short-haul flight	0,33	Antoine	DG	France
FY18	long-haul flight	FY18	Jun/18	monitoring	paris	beyrouth	ar	long-haul flight	1,360	Antoine	DG	Lebanon



### Step 1

## Flights and greenhouse gas emissions during the FY



### The impact of air travel

One return flight from Atlanta to Nairobi and back generates almost 10 tonnes of CO2e emissions ([www.atmosfair.de](http://www.atmosfair.de)), which is more than the average total annual emissions of a European citizen (ca 7.7 tonnes CO2e per year in 2017) and almost 100 times the average total annual emissions of a Malagasy citizen (0.1 tonnes CO2e per year in 2017).

### PIIRS Question

**Number of (#) flights under 2 hours of flight time (i), number of flights over 2 hours of flight time (ii), total number of hours of all flights (iii) and total number of flights (iv).**

Flights covering longer distances (for example from Bonn to Maputo) generate a lot of emissions. But short flights (for example from The Hague to Geneva) are also very harmful for our climate as it is during take-off and landing that most energy is used. For this reason, the PIIRS form makes a distinction between flights over two hours and below two hours as short flights can often be substituted through other means of transport and should therefore be avoided where possible.

Under this question, it is important to report the number of flights paid for by your office for both staff and consultants. In addition, when reporting flights that have intermediate stops, consider them as one flight and include the total hours of flying. For example, if you had a travel that consists of a one hour long flight, an intermediate stop and another flight of 6 hours, report it as "one flight over 2 hours". This should thus not be counted as two separate flights ("one flight under two hours of flight time" and one "over two hours of flight time").

**PIIRS Question**

**Total amount of GHG emissions (in tCO<sub>2</sub>-equivalent<sup>3</sup>) from flights that were supported by your office.**

This question provides an overview of the total amount of emissions from flights paid for by your office (also for external consultants). You can calculate your office flight emissions yourself with an online tool or ask an external organization to do it for you. The most important thing to keep in mind is to be consistent: so use the same calculation methodology over the years.

If you choose to do the calculation of emissions yourself, it is recommended to use the online calculator “Atmosfair”. This calculator can be found via the following link: <https://www.atmosfair.de/en/offset/flight>. Atmosfair takes into account intermediate stopovers (which add to your footprint, as landing and take-off use most energy) and non-CO<sub>2</sub> factors. Other online calculators do exist but have different ways of calculating emissions and are not always accurate.

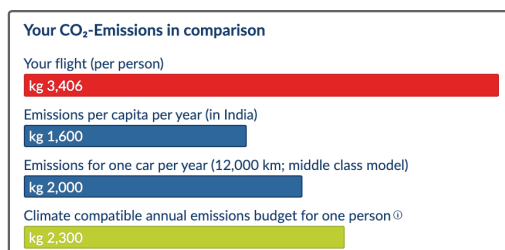
The Atmosfair calculator requires your input for departure and arrival airports. Reporting any stops in between is also required. Your input is also needed for the cabin class (first, business, economy), flight type (scheduled or chartered) and aircraft type. This information can be found in your travel itinerary provided by your travel agency or in your online travel details. Based on this information, Atmosfair will calculate your flight emissions.

*When using Atmosfair, this is what you will see:*

The screenshot shows the Atmosfair calculator interface. It has two tabs: 'round-trip' (selected) and 'one-way'. There are input fields for 'Departure airport' (CDG Paris - Charles de Gaulle [FRA]), 'Via airport' (DXB Dubai [ARE]), and 'Arrival airport' (DEL New Delhi [IND]). There are dropdown menus for 'Flight class' (Economy), 'Flight type' (Scheduled), and 'Aircraft type' (Airbus A33k). There are also input fields for 'Num. flights' (1) and 'Num. of persons' (1). A 'Calculate' button is visible at the bottom right.

Below is an example of calculating a trip from Paris to New Delhi, with a stopover in Dubai. This is an economy class trip on a scheduled flight, on an Airbus A330-200:

This is a detailed screenshot of the Atmosfair calculator. The 'round-trip' tab is selected. The 'Departure airport' is 'CDG Paris - Charles de Gaulle [FRA]', 'Via airport' is 'DXB Dubai [ARE]', and 'Arrival airport' is 'DEL New Delhi [IND]'. The 'Flight class' is 'Economy', 'Flight type' is 'Scheduled', and 'Aircraft type' is 'Airbus A33k'. The 'Num. flights' is '1' and 'Num. of persons' is '1'. A 'Calculate' button is at the bottom right.



*This round-trip from Paris to New Delhi produces 3,406 CO<sub>2</sub>e kg emissions.*

**!** Notice that Atmosfair’s result is in kgCO<sub>2</sub> equivalent. To input this data into the PIIRS sheets, it must first be converted into tCO<sub>2</sub>e. 1 t = 1000 kg. Thus you must divide Atmosfair’s result by 1000 in order to get a result in tCO<sub>2</sub>e. Once converted, this example would result in 3.406 tCO<sub>2</sub>e.

**R Recommendation:** CARE staff could be asked - in their travel/ booking form to calculate the teqCO<sub>2</sub> emissions for their potential travel, which is a good way to gather the information for this PIIRS question. All staff should use the same calculator for this (CARE recommends to use the online calculator “Atmosfair”). Below is an example of what the travel form could look like.

Detailed travel plan				
From (date)	To (date)	Destination (Country/ Location)	Type of transport	CO <sub>2</sub> Emission <sup>3</sup>
Click here to enter a date.	Click here to enter a date.			
Click here to enter a date.	Click here to enter a date.			
Click here to enter a date.	Click here to enter a date.			
Click here to enter a date.	Click here to enter a date.			

<sup>3</sup> Carbon (C) is commonly but misleadingly used as shorthand for carbon dioxide (CO<sub>2</sub>). In fact, 1 kg of C = 3.67 kg CO<sub>2</sub>. The more correct term to use is CO<sub>2</sub> equivalent (CO<sub>2</sub>e), which is the basis used to aggregate the impact of all GHG. Gases other than carbon dioxide are calculated as CO<sub>2</sub>e based on their global warming potential.



## Step 2

## Fuel consumption for vehicle use in the FY



### What is the impact of vehicle emissions?

The Energy Saving Trust Limited calculated that a journey from London to Edinburgh for one passenger, would generate around 144 kg CO<sub>2</sub>e by plane, 115 kg CO<sub>2</sub>e with a diesel car, 120 kg CO<sub>2</sub>e with a gasoline car and 29kg CO<sub>2</sub>e by train.

### PIIRS Question

#### Number of (#) litres of a) gasoline b) diesel c) other fuels.

This question allows for the estimation of emissions from vehicle use by your office. Note that only vehicles used for projects purposes, by your staff and consultants, should be considered. This question does not include daily office commuting by your office staff.

There is a direct link between fuel consumption and CO<sub>2</sub>e emissions. Cars that use more fuel emit more CO<sub>2</sub>e, and some fuels are more harmful to the environment than others: for example, diesel produces about 2.70 kg CO<sub>2</sub>e/litre, gasoline about 2.32 kg CO<sub>2</sub>e/litre and ethanol about 1.52 kg CO<sub>2</sub>e/litre<sup>4</sup>. Having fuel consumption per type of fuel reported in PIIRS will allow for a calculation of GHG emissions, using corresponding emission factors.



## Step 3

## Office(s) energy consumption during the FY



### Fuels, green energy and GHG emissions

For many organizations, purchased electricity represents one of the largest sources of GHG emissions and the most significant opportunity to reduce these emissions.<sup>5</sup> Natural gas emits significantly less GHG than coal, but more than solar or wind. Natural gas remains an important CO<sub>2</sub>e emitter that has to be taken into account in your office energy consumption calculation.

### PIIRS Question

#### Electricity in kWh, consumed by your office(s).

The total amount of kWh used by your office during the FY would normally be available in the metered electricity consumption or utility bills specifying consumption in MWh or kWh units.



If your energy provider indicates your energy consumption in MWh, you have to convert it in kWh. To do so, multiply the number in MWh by 1000.  $MWh \times 1,000 = kWh$

<sup>4</sup> Environmental Protection Agency (2014). Greenhouse Gases Equivalencies Calculator - Calculations and References. Retrieved from <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

<sup>5</sup> World Resources Institute & World Business Council for Sustainable Development (2004)

## PIIRS Question

### CO2 intensity in grams of CO2 equivalent per kWh.

The CO2 intensity<sup>6</sup> provides the means through which we can calculate the total amount of CO2e emitted through office energy consumption on the basis of the electricity consumption in kWh.

Energy providers often indicate energy intensity information in electricity bills. In some countries the term ‘CO2 emission intensity’ is used and in other countries ‘CO2 emission factors’. In both cases it is understood to be GHG emissions (in CO2 equivalence) per activity (either in electricity used, fuel used, or gas used). Below are two examples of electricity bills from Ireland (Electric Ireland) and Australia (Origin Energy):

**Your electricity bill in more detail**

Abbreviations a: actual reading e: estimated reading c: customer reading p: price change cr: credit

**Your last bill**

Your last bill	200.00
Payments / Transactions	200.00 cr
Balance brought forward	0.00

**Your Electricity usage Tariff Standard Electricity**

meter num	current reading	previous reading	unit usage	unit price	unit type	Amount
XX	28047 e	27047 a	1000	0.1672	General	167.20
<b>Total electricity charges</b>						<b>167.20</b>

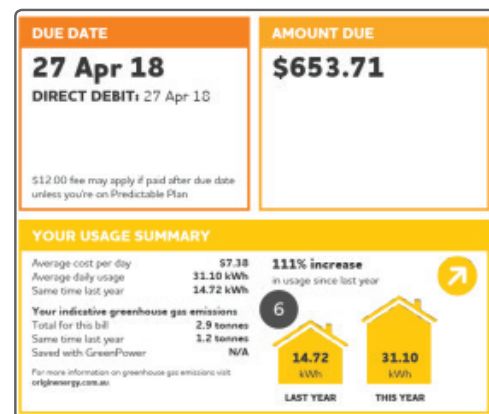
**Standing charges and other items**

Standing charge	61 days @ €0.3882 / day	23.68
PSO Levy Oct/Nov		6.96
VAT	13.5% on €197.84	26.71

**Payments/Other Transactions**

Payment received thank you	224.55 cr
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Your energy consumption on this bill amounts to approximately XXkg of carbon emissions **22**



Looking at Electric Ireland's sample bill on the left: point 22 is where carbon emissions are listed directly in kg. In the Origin Energy's sample bill on the right: at point 6 is where carbon emissions are listed directly in kg.

If your energy provider cannot give you this information, provide us with the CO2e emission factor indicated in your national energy grid. The following source is recommended: <https://pub.iges.or.jp/pub/iges-list-grid-emission-factors>. This reliable and regularly updated source contains a lot of information. You may find the value for your country under the third tab "Summary EF from CDM", column **Operating Margin EF (average)**. See example below. You may then insert this value in PIIRS.

Region	Host Party	Data				
		Number of data	Combined Margin EF (Average)	Combined Margin EF (Maximum)	Combined Margin EF (Minimum)	Operating Margin EF (Average)
Asia	Bangladesh	4	0,641	0,691	0,620	0,639
	Bhutan	2	0,892	1,004	0,779	1,080
	Cambodia	5	0,665	0,698	0,657	0,628
	China	3615	0,872	1,253	0,474	1,043
	Democratic People's Republic of Korea	6	0,912	0,940	0,883	0,912
	India	1273	0,904	1,136	0,418	0,993
	Indonesia	60	0,783	0,951	0,520	0,813
	Lao PDR	7	0,560	0,560	0,560	0,560
	Cuba	2	0,874	0,906	0,841	0,871
	Dominican Republic	14	0,654	0,750	0,478	0,727
Ecuador	27	0,583	0,719	0,363	0,736	
El Salvador	7	0,682	0,717	0,569	0,716	
Guatemala	15	0,602	0,805	0,483	0,771	
Guyana	1	0,948	0,948	0,948	0,948	
Honduras	28	0,661	0,752	0,498	0,675	

<sup>6</sup> CO2 intensity is Defined by the UNFCCC as "the average emission rate of a given GHG for a given source, relative to units of activity".



### Unit precision:

Be aware that the unit that you must use when reporting your carbon intensity in PIIRS is gCO<sub>2</sub> / kWh. Some sources provide this information in other units (for example, the suggested national grid source gives the information in t/MWh, and some energy providers provide the carbon intensity in Kg/kWh). **If you do not convert in the correct unit, it will create a huge mistake in your data.** It is thus vital to convert it according the following:

If your source provides you your carbon intensity in t/MWh, multiply per 1000



$$\text{t/MWh} \times 1000 = \text{g/kWh}$$

If your source provides you your carbon intensity in Kg/kWh, multiply per 1000



$$\text{kg/kWh} \times 1000 = \text{g/kWh}$$

### PIIRS Question

#### Number of litres of a) gasoline b) diesel c) other fuels consumed by generators.

Generators produce electricity by burning fuel, which creates greenhouse gas emissions. Diesel generators for example, produce carbon dioxide (CO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), and particulate matter<sup>7</sup>. Every litre of fuel has 0.73 kg of pure carbon, 2.6 kg of carbon dioxide released per litre of diesel fuel, which exacerbates climate change<sup>8</sup>. Therefore, the amount of fuel to power CARE offices generators is recorded in PIIRS.

If there is a generator per the whole facility where your office is, calculate the generator fuel consumption with the following formula:

$$\frac{\text{Office surface (m}^2\text{)}}{\text{Total facility surface (m}^2\text{)}} \times \text{Total generator fuel consumption of facility (l)} = \text{Generator fuel consumption of office (l)}$$

### PIIRS Question

#### Number of cubic meters of gas consumed.

This question provides an overview of the total amount of cubic meters of gas consumed by your office (for example for heating and cooking). Gas consumption can correspond to different types of gases: natural gas, propane, butane and liquefied petroleum gas (LPG).



### Recommendation:

CARE offices can reduce their office energy consumption related emissions by investing in energy efficient technologies and energy conservation. Additionally, emerging green power markets provide opportunities to switch to less GHG intensive sources of electricity. CARE offices can install renewable energy-producing equipment (for example solar panels on the roof) to power an office, particularly if it replaces the purchase of more GHG intensive electricity from the grid.

<sup>7</sup> [https://energyeducation.ca/encyclopedia/Diesel\\_generator](https://energyeducation.ca/encyclopedia/Diesel_generator)

<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pubmed/11417675>



## Step 4

# Measures your office has taken to reduce and/or offset emissions in the FY

### PIIRS Question

## 1. Awareness raising among staff about the climate change impact of...

Flight travel	Vehicle use	Office(s) energy consumption
---------------	-------------	------------------------------

Select “yes” if your office implements measures to create awareness on the impact of their behaviour on the climate. Examples:

- Setting up green teams
- Sensitization training
- Code of conduct
- Environmental reports
- Internal campaigning on the impact of flight emission



### Recommendation:

A CARE office could do routine reporting of office emissions on a 6-month or on an annual basis, and share it with staff to raise and keep awareness levels high.

### PIIRS Question

## 2. Application of alternatives/measures to reduce GHG emissions from...

Flight travel	Vehicle use	Office(s) energy consumption
<p>Select “yes” if your office implemented measures that influence air travel behaviour to become less impactful on climate. Examples:</p> <ul style="list-style-type: none"> <li>• Checklists for staff to consider before deciding to use flights</li> <li>• Stricter travel authorizations</li> <li>• Promote use of trains, buses, boats or vehicles instead of planes</li> <li>• Create virtual spaces for meetings instead of flight travel.</li> </ul>	<p>Select “yes” if your office implements measures that influence vehicle travel behaviour to become less impactful on climate. Examples:</p> <ul style="list-style-type: none"> <li>• Promote public transport</li> <li>• Promote car-sharing</li> <li>• Promote carpooling</li> <li>• Promote bicycle use</li> <li>• Create virtual spaces for meetings instead of vehicle travel.</li> </ul>	<p>Select “yes” if your office implements measures that influence office energy consumption behaviour to become less impactful on climate. Examples:</p> <ul style="list-style-type: none"> <li>• Install more energy-efficient lighting, equipment and motion sensors</li> <li>• Set the office equipment and Heating Ventilation and Air Conditioning system into energy-saving modes or completely shut-down, especially during off-hours</li> <li>• Produce or purchasing renewable energy</li> <li>• Promote paper-less offices and reduce printing of reports and emails</li> </ul>

### PIIRS Question

## 3. Application of reduction targets for...

Flight travel	Vehicle use	Office(s) energy consumption
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Select “yes” if your office has set long or short term targets to reduce emissions. The reduction target should refer to a baseline year and should strive to reduce emissions in comparison to that year by a certain percentage. For example: reduce GHG emissions by 10 or 20 % in year X. These reductions should be overall or absolute reductions, meaning that the absolute amount (in tCO<sub>2</sub>eq) should be reduced, independent of increases in staff or in operations.

### PIIRS Question

#### 4. Application of a carbon budget for...

Flight travel	Vehicle use	Office(s) energy consumption
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Select "yes" if your office applies a carbon budget to reduce emissions.

A carbon budget can be office-wide as well as individual-specific (with different carbon budgets depending on an individual's role within the organization). The intention of a carbon budget should be to limit an office's emissions. It should decrease year to year in order to drive more carbon reduction achievements. Staff are then being issued carbon budgets which they can manage at their discretion. The decision of whether or not to undertake a particular trip becomes a trade-off against their future allocation for the year. Management would receive reports of carbon expenditure against budget, analyse variances and ensure that departments stay within budget.

### PIIRS Question

#### 5. Offset of emissions through internal funds or external parties, for...

Flight travel	Vehicle use	Office(s) energy consumption
---------------	-------------	------------------------------

Select "yes" if your office compensates for unavoidable emissions. Even though reducing emissions is the best way to limit one's carbon footprint, it is important to take responsibility for the emissions CARE offices produce. Using credible carbon offsets from known projects that have a high social impact and environmental integrity is better than doing nothing at all. Compensating for emissions can either be done through an internal fund or external parties. In both processes, some aspects must be taken into consideration for offsetting your office emissions. Those are described below.

##### External party:

Make sure your offset provider, be they your airline, your travel agent or independent broker, is offering one of the following:

- 'Gold standard' offsets ([www.goldstandard.org](http://www.goldstandard.org)), which have strict requirements for sustainability, local participation and proof that the project is truly additional to business-as-usual;
- 'Retiring' offsets (i.e. removing carbon credits from markets where there is a finite supply of permits to pollute, notably the EU) (<https://sandbag.org.uk/carbon/>, or [www.carbonretirement.com](http://www.carbonretirement.com))

Your office should also take into account the fact that land-based offsets such as tree-planting might not always be the best option, as they are by their nature temporary (trees die in time, emitting the carbon they have absorbed).

##### Internal funds:

It has been proposed that CARE sets up an internal project for offsetting. Currently, the CCRP is working on this, and you will receive more information in time through the CCRP quarterly newsletter. This CARE project should be prioritized for offsetting your office emissions once it is in place.

### PIIRS Question

#### 6. Other measures

There may be other measures that your offices is implementing in order to reduce its carbon footprint. If that is the case, please describe here any other initiative taken in order to reduce your greenhouse gas emissions.

## QUESTIONS?

Contact [info@careclimatechange.org](mailto:info@careclimatechange.org)