



# Carbon Reduction Plan

Integrated Environmental  
Solutions Ltd

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# Carbon Reduction Plan

Supplier name: Integrated Environmental Solutions Ltd

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## Commitment to achieving Net Zero

- Integrated Environmental Solutions (IES)'s business mission is to decarbonise every building in the world, through the use of our digital twin technologies and services.
- IES could easily claim that these carbon savings via our software provide us with a massive negative carbon saving compared with our operational carbon emissions. So, we as a company, are **currently 100% net zero carbon**.
- However, we strongly believe that this way of evaluating carbon footprint based on offsetting or compensation, although very common, is wrong. Too many companies and governments hide behind offsetting their carbon emissions instead of improving their policies and procedures.
- Therefore, IES is committed to achieving overall net zero and decarbonising our office buildings around the world by 2030, by taking all the necessary actions to change the way our processes and buildings are managed rather than compensating for our emissions.
- This report builds upon our previous commitments to climate action in accordance with the SME Climate Commitment, a campaign for small and medium-sized businesses, or any organisation with under 500 employees, to join the United Nations Global Race to Zero campaign.
- We have committed to this through changes to our working practices and working environment.
- IES also uses a biomass boiler that supplies low-carbon energy to heat our head office in Glasgow, Scotland.
- Our measurement process included the use of our own software products, a suite of physics-based building performance simulation tools, to model and analyse the energy performance of our Glasgow headquarters, and subsequently our Dublin Office, effectively creating a digital twin from which to monitor and simulate where operational improvements can be made to lower our emissions.
- We have published this commitment on our [website](#).

## Past Years Emissions

Baseline emissions are a record of the greenhouse gases that have been produced in the past and were produced prior to the introduction of any strategies aimed at reducing IES' emissions. Baseline emissions are the reference point against which emissions reduction can be measured.

### GLASGOW OFFICE, BASELINE YEAR 2019

2019 was chosen as the baseline year for the following reasons:

- 2020, 2021, and part of 2022 were still affected by restrictions connected with the COVID-19 pandemic, therefore the energy consumption of those years could not be considered a reliable indication of normal business operations.
- Thanks to our ICL software tools and other surveys conducted during 2019, it was possible to acquire previous, reliable data that led to a more accurate assessment of the carbon emissions; among them, a survey of the commuting modes of employees, monthly electricity and heat consumption, and records of business travel.

The following initial emissions calculation of 2019 is related only to the Glasgow office.

**Scope 1** includes the emissions of CH<sub>4</sub> and N<sub>2</sub>O produced by the combustion of pellets in the biomass boiler. The CO<sub>2</sub> emissions account for net zero in Scope 1 with the CO<sub>2</sub> absorbed by the fast-growing bioenergy sources.

However, we have added another category to include such dioxide carbon emissions referred to as 'Out of Scope' or biogenic in the figures presented below.

**Scope 2** regards purchased electricity used for lights and equipment of the office and electricity for EV chargers owned by the company and used to charge E-vehicles of the company.

**Scope 3** is a sum of consumption related to:

- extraction, refining, distribution and transportation of electricity and pellets;
- commuting to the office;
- business travel (use of vehicles and hotel stay);
- waste disposal and water waste of the office.

The total emissions in the table below correspond to the sum of the 3 scopes and the biogenic emissions. Since at the end of 2019, the number of employees in the Glasgow office was 112, the total carbon emissions per person is 2.47 tCO<sub>2</sub>e.

### GLASGOW OFFICE, YEAR 2022

The results of 2022 emissions show a reduction in all scopes. In addition, the number of employees rose to 146 based in the Glasgow Office by the end of 2022, therefore the emissions per person are 1.16 tCO<sub>2</sub>e, corresponding to 47% less per person than the baseline year.

**Scope 1 and biogenic emissions** - The energy consumption connected with the biomass boiler did not change significantly, due to the already optimised space heating energy usage. On the contrary, the related emissions changed due to the fact that the emission factor decreased from

2019 to 2022. Moreover, unlike 2019, in 2022 a partial refilling of refrigerant was necessary, resulting in additional emissions.

**Scope 2** – The electricity consumption of 2019 is underestimated because it was possible to retrieve metered data for only 2/3 of the office area. On the contrary, the consumption of 2022 includes the entire office space. Therefore, the two years are, in general, not comparable, due to this discrepancy. However, it is important to highlight that, even if the area excluded in 2019 emissions reporting is significant, the electricity consumption of 2022 is only 10% higher. This happened thanks to the optimisation of the energy usage, showing IES commitment in avoiding energy waste. Such actions, in addition to the decrease of the emission factor, still led to a slight reduction of the emissions.

**Scope 3** - The most significant achievement is connected with travelling. In 2022 a review of business travel and its practices was undertaken, which encouraged employees to utilise a more sustainable choice of transport mode during business travels. At the same time, commuting trips were limited by the implementation of a hybrid working pattern. Both measures allowed a drastic reduction of Scope 3 emissions, although the number of employees increased by 30% circa.

#### **DUBLIN OFFICE, BASELINE YEAR 2022**

2022 was chosen as the baseline year in Dublin because it is the oldest year in which complete data is available. In addition, it was important to compare and possibly align the carbon footprint of the Glasgow and Dublin office, in order to analyse trends and plan actions on the travelling and commuting side.

**Scope 1** emissions are not included because there are no direct emissions to report, as the heating and cooling system is electricity-powered. For the same reason, biogenic emissions are also zero.

**Scope 2** regards purchased electricity used for lights and equipment of the office and space conditioning.

**Scope 3** is a sum of consumption related to:

- extraction, refining, distribution and transportation of electricity;
- commuting to the office;
- business travel (use of vehicles and hotel stay).

Emission factors related to waste disposal and water waste are not available, therefore such emissions cannot be included in Scope 3 calculations.

The total emissions in the table below correspond to the sum of the 3 scopes and the biogenic emissions. At the end of 2022, the number of employees in the Dublin office was 49, and the total carbon emissions per person was 2.49 tCO<sub>2</sub>e.

LOCATION	GLASGOW OFFICE		DUBLIN OFFICE
	Baseline		Baseline
YEAR	2019	2022	2022 (baseline)
NUMBER OF EMPLOYEES	112	146	49
EMISSIONS	TOTAL (tCO <sub>2</sub> e)	TOTAL (tCO <sub>2</sub> e)	TOTAL (tCO <sub>2</sub> e)
Scope 1	0.829 (0.007 per pers.)	0.96 (0.007 per pers.)	0
Scope 2	21.413 (0.19 per pers.)	20.22 (0.14 per pers.)	4.83 (0.1 per pers.)
Scope 3 (Included Sources)	236 (2.11 per pers.)	130.15 (0.89 per pers.)	117 (2.39 per pers.)
Biogenic emissions (Out of Scope)	18.53 (0.17 per pers.)	18.31 (0.13 per pers.)	N/A
Total Emissions	276.772 (2.47 per pers.)	169.64 (1.16 per pers.)	121.81 (2.49 per pers.)

## Current Emissions Reporting

This section considers the third- and second-year emission reports of the Glasgow and Dublin Office, respectively; Plus, the baseline emissions of the North America, Dubai, Melbourne, and Singapore Offices. A subsequent report to follow will include IES' Pune office emissions on the completion of its data collection.

### GLASGOW AND DUBLIN OFFICES, YEAR 2023

In order to provide a more coherent and accurate representation of 2023 emissions, it was decided to merge the Business Travel activities of Glasgow and Dublin. Indeed, due to the administrative and operative interconnection between the teams of the two offices, in many cases, it was not possible to unequivocally categorize trips as 'Glasgow office' or 'Dublin Office' travels, mainly because of their purpose and the people involved.

Therefore, the 2023 emissions of the two offices are reported as below.

**Scope 1, Scope 2, Scope 3 – Upstream, Scope 3 – Commuting, and Scope 3 – Waste** are accounted separately for each office because they are related to their use and attendance. They include the same categories explained in the 'Past Years' paragraph.

**Scope 3 – Business Travels** relates to the use of vehicles and hotel stays emission's during trips that both Glasgow and Dublin employees took in 2023.

#### **GLASGOW OFFICE - Comments on the 2023 results**

**Scope 1 and biogenic emissions** - The energy consumption and emissions connected with the biomass boiler did not change significantly, due to the already optimised space heating energy usage. However, in 2023 the amount of refrigerant refilled was 3 times the amount of 2022, resulting in higher emissions.

**Scope 2** – The electricity consumption connected with the use of the office remained stable between 2022 and 2023, thanks to continuous monitoring and optimisation of the energy usage. However, in 2023 there was a greater use of the company's EV chargers, which are free of charge for employees, resulting in higher emissions. Such increment, however, does not have a negative impact on the total emissions, because the more frequent use of EV chargers shows a more active attention on choosing sustainable transport modes.

**Scope 3 (Business travels excluded)** – The sum of commuting, waste and upstream decreased by 35% from 2022 to 2023, although the total number of people increased from by 18% between the two years. Such result shows the effects of the business travels policy, highlighting IES employees' commitment to reduce emissions.

#### **DUBLIN OFFICE – Comments on the 2023 result**

**Scope 1**, as noted in the 2022 baseline, have no direct emissions to report, as the heating and cooling system is electricity-powered. For the same reason, biogenic emissions are also zero.

**Scope 2** - The electricity consumption and emissions connected with the use of the office did not change significantly between 2022 and 2023, thanks to continuous monitoring and optimisation of the energy usage.

**Scope 3 (Business travels excluded)** – The sum of commuting and upstream decreased by 12%, while the total number of people remained stable. Such result shows the effects of the business travels policy, highlighting IES employees' commitment to reduce emissions.

**Important note.** Emissions factors of Ireland for the year 2023 have not been released yet, so in the calculation below 2022 factors were used and results will be updated as soon as the factors will be available.

#### **USA, DUBAI, MELBOURNE, SINGAPORE, BASELINE YEAR 2023**

2023 was chosen as the baseline year, because it is the most recent year with reasonable amount of data, which allows an accurate definition of CO<sub>2</sub> emissions.

In North America there is only one physical office in Atlanta (Georgia) and one virtual office in Santa Clara (California). Dubai and Melbourne offices are virtual offices.

In Singapore there is a physical office. The energy consumption is impossible to retrieve, because the office consists in a room inside a co-working building, where spaces are rented by different people and companies, without a constant occupancy and energy use profile.

Therefore, Scope 1, Scope 2, Scope 3 – Upstream are related to the Atlanta Office only, while Scope 3 – Business Travel and Scope 3 – Commuting include all physical and virtual offices trips.

**Scope 1** emissions are zero, because the system in Atlanta office is electricity driven and refrigerant was not refilled in 2023.

**Scope 2** regards purchased electricity in Atlanta Office.

**Scope 3** is a sum of consumption related to:

- extraction, refining, distribution and transportation of electricity used in Atlanta Office;
- commuting to Atlanta Office and Singapore office and homeworking in different countries;
- business travels (use of vehicles and hotel stay) of employees of all offices.

The total emissions in the table below correspond to the sum of the 3 scopes. At the end of 2023, the number of employees in the four areas (North America, Dubai, Melbourne, Singapore) was 28, and the total carbon emissions per person was 2.32 tCO<sub>2e</sub>.

LOCATION	GLASGOW OFFICE	DUBLIN OFFICE	USA, DUBAI, MELBOURNE, SINGAPORE
YEAR	2023	2023	2023
NUMBER OF EMPLOYEES	178	50	28
EMISSIONS	TOTAL (tCO <sub>2e</sub> )	TOTAL (tCO <sub>2e</sub> )	TOTAL (tCO <sub>2e</sub> )
Scope 1	1.66 (0.009 per pers.)	0	0
Scope 2	25.97 (0.15 per pers.)	4.84 (0.1 per pers.)	28.84 (1.03 per pers.)
Scope 3 (Upstream, Commuting, Waste)	112.55 (0.63 per pers.)	91.86 (1.84 per pers.)	36.12 (1.29 per pers.)
Scope 3 (Business travels)	35.01 (0.15 per pers.)*		
Biogenic emissions	17.85 (0.1 per pers.)	N/A	N/A
Total Emissions (Business travel excluded)	158.03 (0.89 per pers.)**	96.7 (1.94 per pers.)**	N/A

Total emissions (Business travel included)	289.74 (1.27 per pers.)***	64.91 (2.32 per pers.)
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\* calculated dividing the Scope 3 – Business travels emissions by the combined number of Glasgow and Dublin employees, which is 228 people.

\*\* calculated dividing the total emissions (business travel excluded) by the number of employees for each office, which is 178 in Glasgow and 50 in Dublin.

\*\*\* calculated dividing all scopes emissions of the two offices (business travels included) by the combined number of Glasgow and Dublin employees, which is 228 people.

## Emissions reduction targets

In 2022, IES committed to reduce the total carbon emissions by 5% and our scope 1 and 2 emissions by 10% by 2023.

Since 2022 emissions are calculated only for two offices, Glasgow and Dublin, the comparison below can only be referred to them.

The targets were partially met:

- The total emissions per person decreased by 15.3% (0.7% considering the total);
- Scope 1, Scope 2 and Biogenic emissions increased in 2023, mainly due to refrigerant leakage and increased use of electric vehicles. However, the value per person decreased by 3%.

Such results highlight the necessity of investigating the refrigerant leakage in Glasgow office, but also show a positive increased use of IES EV charging points.

It is also important to note that efforts have been put in decreasing the Scope 3 emissions, especially in relation to commuting and business travels.

<b>GLASGOW AND DUBLIN OFFICE COMBINED</b>		
	<b>2022</b>	<b>2023</b>
<b>Number of employees</b>	195	228
	<b>tCO<sub>2</sub>e</b>	<b>tCO<sub>2</sub>e</b>
<b>Scope 1</b>	0.96 (0.005 per pers.)	1.66 (0.007 per pers.)
<b>Scope 2</b>	25.05 (1.28 per pers.)	30.81 (0.135 per pers.)
<b>Scope 3</b>	247.15 (1.27 per pers.)	239.42 (1.05 per pers.)
<b>Biogenic emissions</b>	18.31 (0.094 per pers.)	17.85 (0.078 per pers.)
<b>TOTAL</b>	291.74 (1.5 per pers.)	289.74 (1.27 per pers.)

To continue our progress, our new targets between 2023 and 2024 are to reduce:

1. The total emissions per person of all offices combined by 5%;
2. Our scope 1 and 2 emissions per person of all offices combined by 10%;



3. Our Business travels emissions related to VE consultancy and ICL consultancy teams (both based in Glasgow) by 5% each;
4. Our Business travels emissions related to R&D team (based in Dublin) by 10%.

The last two targets are specifically required for ISO 14001 accreditation.

## Carbon Reduction Projects

### **Carbon Reduction Initiatives (2019 to 2022)**

The following environmental management measures have been implemented since the 2019 baseline. Their status and impact are assessed in the table below.

<b>ACTION</b>	<b>STATUS</b>	<b>IMPACT</b>
Installed a smart TRV and room sensor in some of the meeting rooms to automatically heat them to 18°C when unoccupied and 21°C when occupied	DONE	<b>Low impact.</b> The space heating consumption decreased in the meeting rooms, but the impact on the total consumption is low because the selected meeting rooms are small (around 5% of the total office area).
Used the ICL tools to simulate and calibrate the building model to monitor the energy consumption and detect possible overuse	DONE	<b>High Impact.</b> This action allowed to detect faulty valve in the heating network, avoiding energy waste and to optimise the electricity usage in the office space.
Introduced a global hybrid working policy, to reduce commuting emissions	DONE	<b>High impact.</b> Homeworking drastically reduced commuting emissions.
Retired PCs and laptops are issued to employees for re-use, rather than being disposed of	DONE	<b>Medium impact.</b> Retired electronic devices would have a greater impact on the waste category.
Broadened the use of company electric vehicles among eligible employees	DONE	<b>Low impact.</b> The company owns only few electric cars.
Installed EV chargers at the office site available for all employees	DONE	<b>Medium impact.</b> The presence of on site EV chargers promoted the use of EVs among employees, also thanks to the reduced service charge available for IES employees.

### **Carbon Reduction Initiatives (from 2023)**

The following environmental management measures have been implemented since the end of 2022 and regard Glasgow office only. Their status and impact are assessed in the table below.

<b>ACTION</b>	<b>STATUS</b>	<b>IMPACT</b>
Revise our business travel policy to encourage more use of online meetings, public transport, ride sharing etc.	DONE	<b>Low impact.</b> In many cases, it was not possible to choose a more sustainable transport mode for business travels and commuting, due to distances and availability of vehicles. This measure

		had a significant impact on hotel stays, though, where reduced where possible.
Produce a report of the emissions of our other main offices (Dublin and Pune) and set carbon reduction targets.	ONGOING	<b>High impact.</b> A complete carbon emission report of other offices allows us to monitor the environmental impact of the business and plan future actions.
Identify office occupancy profiles on different days of the week and highlight opportunities for reducing lighting and heating usage.	NOT DONE	N/A
Continue to use the ICL tools to simulate and calibrate the building model to optimise the building energy performance.	DONE	<b>Medium impact.</b> The continuous monitoring of electricity and space-conditioning energy allows us to avoid waste.
Use dashboards (linked to sensors) to educate employees on behaviours that will reduce energy consumption in their workspace.	ONGOING	<b>Medium impact.</b> A dashboard was created but not published yet/ not updated with the latest values.

### ***Ongoing Carbon Reduction Initiatives (from 2024)***

The following list showcases the actions that we plan to introduce from 2024, including those that were not completed in 2023:

- Continue to implement the actions that reduced the emissions (energy consumption monitoring, business travel policy, hybrid working policy, recycling of retired electronic devices, promotion of electric vehicles)
- Identify opportunities to reduce the energy consumption in all offices;
- Identify office occupancy profiles on different days of the week and highlight opportunities for reducing lighting and heating usage in Glasgow office;
- Use dashboards (linked to sensors) to educate employees on behaviours that will reduce energy consumption in their workspace;
- Gain ISO 14001 accreditation;
- Installation of PV panels on the roof of Glasgow office building.

### **Declaration and Sign-off**

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standards for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard<sup>1</sup>


<sup>1</sup> <https://ghgprotocol.org/corporate-standard>

and uses the appropriate Government emission conversion factors for greenhouse gas company reporting<sup>2</sup>.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard<sup>3</sup>.

This Carbon Reduction Plan has been reviewed and signed off by the board of directors (or equivalent management body).

**Signed on behalf of the Supplier:**

A handwritten signature in black ink, appearing to read 'Don McLean', with a stylized flourish at the end.

Don McLean, CEO

Date: 30<sup>th</sup> May 2024

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<sup>2</sup> <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>3</sup> <https://ghgprotocol.org/standards/scope-3-standard>