

## 2022 Energy & Carbon Footprint Report



# 2022 highlights...

# 5% reduction

# 75% reduction

 $\begin{array}{c} 1361 \\ \text{tonnes of} \\ \text{CO}_2\text{e saved} \end{array}$ 

Laboratory Efficiency Assessment Framework (LEAF) launched across EMBL

11% reduction in data services electricity use

200.008 kWh of electricity generated by our PV array

in scope 1 & 2 emissions against 2021 in business travel emissions against 2019

due to our energy efficiency measures in 2022



#### Progress against our carbon reduction targets

Our sustainability Strategy sets out our carbon reduction targets:

Target 1. Reduce scope 1 & 2 carbon emissions ( $tCO_2e$ ) by 50% by 2030, compred to a 2019 baseline.

Target 2. Reduce business travel emissions ( $tCO_2e$ ) by 50% by 2030, compared to a 2019 baseline.

These targets have been set using the Science Based Target tool alighed with a scenario to limit global warming to 1.5C above pre-industrial levels.

	Scope 1 & 2		2019 Baseline	2020	<b>2021</b> 15.040	2022 Change to baseline	
Target 1.		tCO <sub>2</sub> e	14.583	11.850		14.339	-2%
	Target	tCO <sub>2</sub> e	14.583	13.920	13.257	12.594	
	Progress against Target	%	0%	-15%	13%	14%	
Target 2.	Business Travel	tCO <sub>2</sub> e	8.964	1.152	418	1.943	-78%
	Target	tCO <sub>2</sub> e	8.964	8.557	8.149	7.742	
	Progress against Target	%	0%	-87%	-95%	-75%	



## Change in Scope 1 & 2 Carbon Footprint

What are the driving factors behind the reduction in our Scope 1 & 2 carbon footprint?

The EMBL Heidelberg campus expanded in 2022 with the opening of the Imaging Centre and the expansion of the EMBO office. We calculate that these two additions contributed 445 tCO<sub>2</sub>e to our scope 1 & 2 carbon footprint. The weather in 2022 was relatively favourable in terms of the demand placed on our heating, ventilation & air conditioning (HVAC) systems to keep our facilities comfortable compared to 2019 and 2021. We calculate that this reduced our 2022 footprint by 29 and 100 tCO<sub>2</sub>e compared to 2019 and 2021 respectively. Our energy saving measures, implemented throughout 2022 reduced our carbon footprint by 1,378 tCO2e compared to 2021 and 575 tCO<sub>2</sub>e compared to 2019. Finally, the carbon intensities of the electricity supplies in our host states increased from 2021 to 2022 which increased our carbon footprint by 315 tCO2e. The electricity supply carbon intensities are still marginally lower than 2019.



2019 vs 2022

2021 vs 2022

Increase Decrease

#### Absolute Carbon Emissions

In the table below we report our full carbon footprint, including indirect emissions from our activities (i.e. Scope 3 emissions). By reporting a full GHG emissions inventory, we are able to better understand the total impact of emissions associated with our activities. The GHG Protocol identifies 15 categories for scope 3 emissions of which 5 are directly relevant to our business. The table below provides a breakdown of our entire emissions inventory.

		2019 (Baseline)	2020	2021	2022	Baseline % Change	Year-on-Year % Change
tCO2e	Scope 1	2.818	2.705	3.606	2.828	0%	-22%
	Scope 2	11.765	9.145	11.434	11.511	-2%	1%
	Scope 1 & 2	14.583	11.850	15.040	14.339	-2%	-5%
	1. Purchased Goods & Services	21.924	26.883	19.481	30.160	38%	55%
	2. Capital Goods	28.128	17.808	16.312	11.538	-59%	-29%
	4. Upstream transportation and distribution	94	99	95	163	73%	72%
	6. Business Travel	8.964	1.152	418	1.943	-78%	365%
	8. Upstream leased assets	225	155	161	104	-54%	-35%
	Scope 3	59.335	46.097	36.467	43.908	-26%	20%
	Absolute Carbon Emissions	73.918	57.947	51.507	58.247	-21%	13%



## **Energy and Carbon Intensities**

As EMBL is a growing organisation with new buildings and extensions being completed in 2022, it is useful to measure our energy consumption and carbon footprint normalised for the size of our campuses. Furthermore, it is helpful to normalise against staff numbers (FTE) and the number of scientific publications in the year as a indicator of the organisations activity levels in each year.

In 2022, we reduced our energy intensity (kWh/m<sup>2</sup>) by 17% compared to 2021 as a result of the energy saving measures we took and our total carbon intensity (tCO<sub>2</sub>e/m<sup>2</sup>)(Scope 1,2 & 3) by 5%.

			2019			
			(Baseline)	2020	2021	2022
	Area	m²	65.182	65.182	65.862	74.712
	FTE	No.	1791	1911	1945	1986
	Publications	No.	685	720	806	895
Energy Reporting	Total Energy	kWh	54.980.938	45.186.934	59.350.254	56.200.089
	Energy Intensity	kWh/m²	843	693	901	752
		kWh/FTE	30.702	23.648	30.517	28.298
		kWh/pub.	80.264	62.760	73.636	62.793
Carbon Reporting	Total Carbon	tCO <sub>2</sub> e	73.918	57.947	51.507	58.247
	Carbon Intensity	tCO <sub>2</sub> e/m <sup>2</sup>	1,134	0,889	0,782	0,780
		tCO <sub>2</sub> e/FTE	41	30	26	29
		tCO <sub>2</sub> e/pub.	108	80	64	65
Reduction previous	Energy Intensity	%		-18%	30%	-17%
year	carbon Intensity	%		-19%	27%	-5%
Reduction to 2019	Energy Intensity	%		-18%	7%	-11%
(baseline)	carbon Intensity	%		-22%	-31%	-31%



### Make-up of our total 2022 carbon footprint



#### Scope 1 Emissions

This covers emissions which are emitted on our sites (eg, gas boilers, steam generators)

#### Scope 2 Emissions

This covers upstream emissions from energy we purchase from a third-party (eg, grid electricity, district heating, data centre power)

#### **Scope 3 Emissions**

Emissions generated by the goods and services we purchase split into the following categories: Agriculture products Business travel Capital goods Construction & refurbishment Food & Drink Glass and plastic products Legal, consultancy and other business activities Medical and precision instruments Office machinery & Computers Organic Chemicals Purchased goods and services (PG&S) Upstream leased assets Upstream transportation and distribution

www.embl.org/sustainability sustainability@embl.org