

2022 CARBON FOOTPRINT CALCULATION

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Table of Content

1	ABREVIATIONS	2
2	BACKGROUND	3
3	SCOPE	3
4	LIMITATIONS	5
5	METHODOLOGY	6
6	RESULTS & DISCUSSION.....	6
7	FINAL REMARKS.....	24
8	ANNEX I.....	25
9	ANNEX II.....	25
10	KEY RESOURCES	27

1 ABBREVIATIONS

CCTF	UIAA Climate Change Taskforce
COM	UIAA Commission
EC	UIAA Executive Committee
EUMA	European Mountaineering Association
GA	UIAA General Assembly
GHG	Greenhouse Gas
IFMGA	International Federation of Mountain Guides Associations
ISF	International Skyrunning Federation
MB	UIAA Management Board
MPC	UIAA Mountain Protection Commission
RtM	UIAA Respect the Mountains
IOC	International Olympic Committee
ISA	International Slackline Association
IUCN	International Union for Conservation of Nature
PAX	Persons/People
SLH	UIAA Safety Label Holder
SSC	Sustainable Summits Conference
UIMLA	Union of International Mountain Leader Associations
UNFCCC	United Nations Framework Convention on Climate Change
WG	Working Group

2 BACKGROUND

This report outlines the results for the calendar year 2022 of ongoing monitoring and annual reporting of the UIAA's carbon footprint, which is in response to our signed commitment in early 2019 and participation under the United Nations Framework Convention on Climate Change (UNFCCC) [Sports for Climate Action](#) initiative. As a participant and signatory to this initiative, the UIAA is also expected to follow a process including signing a pledge, done in September 2022, to reach (net)-zero by 2040. As part of this process, and to maintain signatory status, annual public carbon emission reports are expected to be submitted from 2021 onwards. As a participant and signatory in this initiative, the UIAA is required and expected to adhere to 5 principles (see [here](#)), these being:

Principle 1: Undertake systematic efforts to promote greater environmental responsibility;

Principle 2: Reduce overall climate impact;

Principle 3: Educate for climate action;

Principle 4: Promote sustainable and responsible consumption;

Principle 5: Advocate for climate action through communication.

Under Principle 2: Reduce overall climate impact, the UIAA is expected to "measure and understand" its carbon footprint in order to design and issue plans to reduce its emission and overall climate impact. To plan for and meet set targets requires first measuring and understanding how our travel and activities contribute to greenhouse gas (equivalent carbon dioxide, CO₂-eq) emissions, requiring a 'baseline' to compare and track progress over time. The first task is to establish and report against a baseline and continue to gather data to monitor how our emissions trend over time. The UIAA can and will also use this data to see where and which activities generate emissions and that can be practically reduced without substantial loss of activity effectiveness.

Many carbon emission reduction measures, such as travel policies to reduce CO₂ emissions, promote the principle of "avoid, reduce, compensate" in that order. The UIAA, through the support and participation of its Mountain Protection Commission (MPC) and the UIAA Climate Change Task Force (CCTF), will seek to draft such a policy as a next step in its fulfilment of the 5 principles set out by the UNFCCC. A final version of the UIAA Climate Action Plan is to be presented to the UIAA General Assembly in October 2024, in line with the UIAA's Environmental and Social Sustainability Guidelines 2023 and the UIAA's next strategic plan 2025-2029.

3 SCOPE

This is the fifth annual carbon footprint calculation of the UIAA, following on the reports for each of the calendar years:

- [2018 \(UIAA baseline year\)](#)
- [2019](#)
- [2020](#)
- [2021](#)

Direct and indirect emissions associated with the UIAA's organizational activities were considered within the scope of the calculation and reporting. The UNFCCC [Green House Gas](#)

[\(GHG\) Protocol](#) terminology, which many organizations use as a measuring and reporting standard, differentiates between Scope 1, 2 and 3 emissions, these being:

- Scope 1: direct emission caused by fuel combustion of owned vehicles, machines, and devices.
- Scope 2: indirect emissions from purchasing energy, in particular electricity, steam, heat, or cooling.
- Scope 3: indirect emissions from upstream and downstream activities, such as travel, purchased goods and services.

Scope 1 – The UIAA does not own vehicles, machines, or devices, thus, no direct emissions are associated with the UIAA’s operations under this scope category.

Scope 2 - The information and data relating to energy use and infrastructure at the UIAA Office is provided by the Swiss Alpine Club (SAC) with whom offices are shared.

Scope 3 - Travel information was gathered for all core activities of the UIAA relating to meetings and events that are directly associated with the operations of the UIAA at the organization's level (e.g. by recording travel for in-person attendance at meetings and events for UIAA Office staff and UIAA delegates including the Executive Committee, Management Board, Commissions, Member Federation representatives and official guests, as well as travel of UIAA Office staff, UIAA delegates, officials and athletes to UIAA-sanctioned competitions.)

The largest international airport in the country of origin was considered as point of departure for all delegates, while the nearest and most relevant airport for the event destination was considered as point of arrival for all meetings and events. Direct travel was assumed, unless further information was readily available. Local travel, via car and/or public transportation, was not included for the 2022 calculation, with the intention to do so from 2023 onward. As of reporting year 2023, all delegates and staff will be asked to submit their travel information as part of their registration to events and post-event surveys issued by the UIAA Office.

The UIAA 2022 carbon footprint calculation does not include indirect emissions associated with other ancillary goods, resources, and services provided at UIAA events and meetings, such as origin and travel of goods and resources, electricity, heating, infrastructure, catering, spectatorship, etc. that are associated with the venues of those events and meetings. The intention is there to start gathering this information from event organizers from 2024 onwards, following a review of the scope of the UIAA’s future emissions reporting by its Climate Change Taskforce.

With the significant increase in virtual meetings within the UIAA community in recent years, future carbon footprint reports should also highlight the impact of our increasingly virtual lifestyles and the emissions caused by virtual meetings.

Since carbon dioxide (CO₂) is by far the main contributor to global warming – about 75 per cent – the global warming potential of GHGs are measured relative to the mass of CO₂ and are thus expressed as CO₂ equivalent (CO₂-eq). The tool used to determine this year’s footprint calculates CO₂ equivalent emissions.

4 LIMITATIONS

The accuracy and completeness of the 2022 carbon calculation carries some caveats worth highlighting.

First, direct travel by plane was assumed for most delegates and staff, unless accurate information was available. From 2023 onwards, a more detailed survey will be issued to collect more accurate information regarding travel for in-person attendance at key UIAA events. Consequently, the expected format and communications associated with data collection methods will be revised for future reporting.

Selecting the closest “home” airport of a delegate is based on an assumption of where within a country the delegate lives. For example, Denver International Airport was assumed to be the home airport of all delegates or athletes from the USA. This perception is clearly limited, in that many of them might have had to travel from much closer or farther away locations from within the USA.

Second, no local travel via car and/or public transport was included in the 2022 calculation. The scope remained on travel by airplane, as it is the means for transport that is proven to spike CO₂ emissions significantly more than any other transportation type and to also give us a comparison to the 2018, 2019, 2020 and 2021 calculations, which used a similar method and assumption.

Data on travel and generated emissions of the livestream production crew, including the commentator, were readily available and thus included in this report, while data from other contractors of the UIAA were not. For future reports, the UIAA Climate Change Taskforce, in consultation with the MPC, will need to define addition criteria for reviewing contractors, dependent on the fact that some are likely to track their own carbon emissions.

Third, and mainly due to limited financial resources, this calculation was done internally by the UIAA Office. In the future, the aim is to standardize the carbon footprint calculation, against international standards, and to have it audited by an external and accredited organization.

As explained within the IOC’s Sustainability Essentials Guide: “Carbon footprinting is an internationally recognised practice and various standards exist for estimation of the footprint of products or organisations. These include the GHG Protocol, ISO 14064 and the European Commission’s Organisation Environmental Footprint (OEF). However, as these standards were not developed with sports events in mind, they are not necessarily well adapted for this purpose and a certain amount of flexibility and adaptation is required”. Given this caveat, a closer examination of which internationally recognized practice and standards would best suit the UIAA will be necessary and will need to be evaluated by the UIAA Climate Change Taskforce in consultation with the MPC to define a way forward.

Lastly, the 2022 carbon footprint calculation only partially reports on the many ways in which additional CO₂ emission has been avoided, limited, or already minimized by the UIAA, its delegates and staff up until this point. In the future, and once the UIAA adopts its Climate Action Plan, this report will focus not only on the carbon footprint, but also track which measures have been implemented and how those impact on the overall footprint.

5 METHODOLOGY

In a first step, attendance sheets of all UIAA meetings and events in 2022 were gathered. Some of these registration lists displayed the flight numbers of delegates, which helped to accurately calculate the distances travelled from location of origin to destination.

In all other cases, the largest “home” airport of each delegate, staff member or else was determined, considering their country of origin.

The closest and most relevant airport to the meeting or event locations was determined.

CO₂ emission calculations of all relevant travel were done for return trips.

The following online carbon footprint calculator was used for all calculations:

<https://www.carbonfootprint.com/calculator.aspx> . Carbon emissions from planes at high altitude have an increased effect on global warming. The tool recommends multiplying aviation emissions by a radiative forcing factor of 1.891, as per recommendation of the UK’s Department of Environment, Food & Rural Affairs. As the factor might change over the years, and to avoid fluctuating results, radiative forcing was omitted from the calculation.

The beforementioned calculator is recommended by the International Olympic Committee (IOC) in its [Sustainability Essentials Guide](#), issue 2, as an adequate tool to be used by smaller organizations with limited resources.

Lastly, information such as energy use (derived from energy bills) by the UIAA Office was received from the Swiss Alpine Club (SAC) and energy use evaluation was done via the same calculator as highlighted above.

6 RESULTS & DISCUSSION

The sum of UIAA CO₂ emissions generated in 2022, totaled 209.48 tonnes, compared to 12.08 tonnes in 2021, 146.5 tonnes in 2020, 353.33 tonnes in 2019, and 365.56 tonnes in 2018.

The two main sources of CO₂ included in this calculation are (1) the office infrastructure and (2) airplane travel of UIAA delegates and athletes to scheduled events. A detailed breakdown of these calculations is provided below.

TOTAL	2018	2019	2020	2021	2022
Tonnes of CO ₂ emissions generated through: Office Infrastructure	2.17	2.99	2.22* (corrected figure)	1.17	3.22
Tonnes of CO ₂ emissions generated through: Airplane Travel	363.39	350.34	144.28	10.91	206.26
Total: Tonnes of CO ₂ emissions generated	365.56	353.33	146.5* (corrected figure)	12.08	209.48

Table 1 – ALL CO₂ Emissions generated through the UIAA

*Corrected figure: The published [2020 UIAA Carbon Footprint Report](#) did not show all data and footprint associated with the office infrastructure, as numbers were not received at the time of publication. In the meantime, these values were received, and the correct final footprint for 2020 is now highlighted in this table.

There are large emissions associated with office activities in 2022, comparable to previous years. The reasons, as Table 2 shows, are due to the acquisition of additional IT hardware equipment. The calculator used for data entry asks for any purchased IT hardware in a given year and accounts for emissions of the product.

Additionally, the CO₂-eq factor provided by Energie Wasser Bern (EWB) for district heating changes over the years. In 2018, the CO₂-eq factor was not yet provided by EWB and therefore not factored into the calculation. District heating was assumed to emit negligible emissions, which doesn't realistically reflect energy use and associated emissions caused that year.

The large decrease in emissions associated with airplane travel from 2020 to 2021 is especially attributed to the COVID-21 pandemic and less travel to UIAA Ice Climbing World Tour events.

- In 2020, there were four events (2 in Asia, 1 in central Europe and 1 in Russia) and overall, 317 athletes partook in at least one event.
- In 2021, there were only two events (both held in Russia), one of which was a Youth Championship, and only 66 athletes partook in one of the two.
- In 2022, there were two events (both in Switzerland) and overall, 152 athletes partook in at least one event.

As presented among the limitations, the calculation only covers airplane travel of people. When for instance an athlete is French and an event takes place in France, his/her travel is not calculated as part of the UIAA footprint.

That being said, meeting frequency and attendance increased significantly for most UIAA delegates as virtual discussions were held on a more regular basis.

6.1 Office Infrastructure

Office infrastructure generated 3.22 tonnes of CO₂ emissions in 2022, as Tables 1 and 2 show. This includes emissions generated through electricity, heating, printing, and acquiring new IT hardware.

Electricity: For 2022, as was the case in 2021 and 2020, the electricity sourced was 100% green and thus its carbon emission impact is negligible. From 2022 onward, our electricity provider Energie-Wasser-Bern presented a revised reporting cycle, changing to May-to-May cycles instead of reporting by the calendar year. For the purpose of this report, the amounts were split in half, with one half being added to the 2022 calculation and the other going to 2023.

Heating/air-conditioning: Heating of the office space and water is generated through district heating, and thus emissions generated are minimal. Air-conditioning is not used. The emissions factor for district heating is determined as per the official information sheet issued by Energie-Wasser-Bern (EWB): Under

<https://www.ewb.ch/wissen/wissen/wissen-fernwaerme-oekobilanzdaten>

and then «Ökobilanzdaten 2022 ewb.Natur.FERNWÄRME»

<https://www.ewb.ch/media/docs/pdf/diverses/oekobilanzdaten-2022-natur-fernwaerme.pdf>

Printing: A significant amount of office work has shifted to online only, where printing is avoided where possible. What has not been considered for the 2022 and in fact any previous UIAA carbon footprint reports, are the emissions caused by printing the UIAA Annual Report and the Alpine Skills Handbook. This was simply due to forgetting about these one-off prints, however, will need to be included for 2023, as highly relevant.

Purchased computers/IT equipment: The calculator used for data evaluation asks for any purchased IT hardware in a given year and accounts for emission of the product, presumably for the sourcing and production of these.

In 2022, the amount of IT hardware purchased was much more than in 2021, generating more emissions.

	2018	Tonnes of CO2	2019	Tonnes of CO2	2020	Tonnes of CO2	2021	Tonnes of CO2	2022	Tonnes of CO2
Area of office infrastructure space, in square meters	35.7	-	35.7 from Jan-Sept, 27.73 from Oct-Dec	-	27.73	-	27.73	-	27.73	-
Nbr of staff members	6 (working as 4.2 pax incl. 1 pax remote)	-	6 (working as 4.2 pax incl. 1 pax remote)	-	6 (working as 4.2 pax incl. 1 pax remote)	-	6 (working as 4.2 pax incl. 1 pax remote)	-	6 (working as 4.2 pax incl. 1 pax remote)	-
Electricity	3'023 in kWh at a factor of 0.0140 kgCO2e/kWh	0.04	3,135.8 kWh at a factor of 0.014 kgCO2e/kWh	0.04	later on available: 1,119 kWh at a factor of 0 kgCO2e/kWh because 100% Ökostrom	0	1,053.9 kWh at a factor of 0 kgCO2e/kWh, because 100% Ökostrom	0	769 kWh at a factor of 0 kgCO2e/kWh, because 100% Ökostrom	0
Other heating systems:	141,200 kg or L District Heating (Ground Source Heat Pump)	0.00	23,120.13 kWh at a factor of 59 (kg CO2-eq per MWh district heating) (Ground Source Heat Pump)	1.36	2,040 kWh at a factor of 43 (kg CO2-eq per MWh district heating) (Ground Source Heat Pump)	0.88	2,176 kWh at a factor of 46 kg CO2-eq per MWh district heating (Ground Source Heat Pump)	1.00	1,709 kWh at a factor of 44 kg CO2-eq per MWh district heating (Ground Source Heat Pump)	0.34
Printing	263 pages b/w – CHF 0.10 pp 8 colour – CHF 0.20 pp (Adding up to a total cost of EUR 26)	0.01	23 pages b/w - CHF 0.10 pp 174 colour - CHF 0.20 pp (adding up to total cost of EUR 29)	0.01	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	Negligible	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	Negligible	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	Negligible
Cost computers and IT equipment	CHF 4,250.00	2.12	CHF 1,737.00	1.58	CHF 1,500.80	1.34	CHF 436.00	0.17	CHF 7'134	2.88
Total Office Infrastructure Footprint		2.17		2.99		2.22		1.17		3.22

Table 2 - CO₂ Emission generated through the UIAA Office Infrastructure, also provided in Annex I

6.2 Travel by Airplane

An individual or groups of people travelling for UIAA official duties and core activities are highlighted in the first row of Table 3, while the first column lists the potential events, conferences, or meetings the individual or group of people attended. The numbers indicate the CO₂ emissions in tonnes, which the individuals/groups of people caused traveling to the given events/meetings.

Travel by Air Plane	Office staff	EB members	MC members	GA delegates/ MF rep	Honorary Members	Unit Members	UIAA Court	COM full members	COM corresponding member	Officials	Athletes	Production Crew	Accredited Lab	Manufacturer	Goods	Guests (incl. Observers)	CO ₂ , tonnes
to GA	2.46	8.9	15.54	59.71	0	1.26	0	8.22	0	0	1.05	-	0	0	9.84	106.98	
to MC	1	4.91	2.4	0	0	0.18	0.26	0.97	0	0	0	0	0	0	0	0	9.72
to EB	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to COMWVG	0.43	-	-	-	0	0	0	9.13	5.71	0	0	0	-	5.72	0	2.9	23.89
to Sports Events	-	0	0	0	0	0	0	0	0	0.3	63.26	0.17	0	0	1.92	0	65.67
to Trade Shows	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Office	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to SSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Sponsorship Meetings	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to SportAccord	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to IF Forum	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Rock Climbing Festivals to other meetings (member anniversaries:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3.89	13.81	17.94	59.71	0	1.44	0.26	18.32	5.71	0.3	64.33	0.17	0	5.72	1.92	12.74	206.26

Table 3 - CO₂ Emissions generated through UIAA delegates' Travel by Plane, also provided in Annex II

The total CO₂ equivalent emissions generated through airplane travel in 2022 are 206.26 tonnes.

The number “0” indicates that none of the group’s members attended a respective event in person, thus not generating any emissions associated with travel.

The hyphen symbol “-“ indicates that (a) member(s) of the group attended the respective event in person, but did not fly there (i.e. used other means of transportation such as a car, bus or rail) or the emissions generated are already accounted for elsewhere. This is the case, for example, if a UIAA Executive Committee (EC) member attends a sports event and uses the opportunity and presence to attend a sponsorship meeting in the same country.

Many extra meetings between working groups and/or taskforces took place in 2022. These will not be listed separately in this report, due to the sheer volume and their online nature.

These included, but aren’t limited to:

- UIAA Covid Consultation Committee meetings
- UIAA Climate Change Taskforce meetings
- UIAA Continental Representatives meetings
- UIAA Executive Committee working group meetings (Finance & Audit, Internal Relations, External Relations, Commissions, Communication)
- UIAA Mountain Workers Initiative meetings
- UIAA Commission Internal Working Group meetings
- Weekly UIAA Office meetings
- Meetings between UIAA Office / EC and UIAA Member Federations
- UNFCCC Sports for Climate Action Signatories’ and WG meetings
- Meetings with external service providers (database, website, video production, etc.)
- Sponsorship meetings
- General Assemblies of UIAA member and other external International Federations

The following events were not attended by any UIAA delegate and/or didn’t take place in 2022:

- Rock climbing festivals
- Sustainable Summits Conference
- SportAccord World Sport & Business Summit
- Sport Positive Summit

And the following events took place online:

- UIAA Management Board meetings (2 of 4 online)
- UIAA Executive Committee meetings (9 of 11 online)
- UIAA Commission meetings (many, as described in Section 6.2.8)

In the following section, explanations regarding each group of people and the results are highlighted, as well as compared to previous years.

6.2.1 Office Staff Travel

In 2022 “Office staff” counts 7 people, with 2 of them working remotely on a permanent basis.

Of the listed meetings/events in Table 3, Office staff traveled to the following events:

- UIAA General Assembly in Banff, Canada
- UIAA Management Board meeting in Skopje, North Macedonia
- UIAA Executive Committee meetings (as part of the above events)

- UIAA Commission meetings (mostly as part of the above events)
- UIAA Sports Events
- Trade Shows
- IF Forum

Of the listed meetings/events in Table 3, the following events were attended online by Office staff:

- UIAA Management Board meetings (2 of 4 online)
- UIAA EC meetings (9 of 11 online)
- UIAA Commission meetings
- UIAA EC/ Commission Internal Working Group meetings
- UIAA Office meetings
- Sponsorship meetings
- Other meetings (UNFCCC signatories and WG meetings, Sport Positive Summit)

OFFICE	2018	2019	2020	2021	2022
Number of people in this group	6	6	6	6	7
Number of meetings held by this group itself	No data collected	No data collected	Weekly online meetings	Weekly online meetings	Weekly online meetings
Tonnes of CO ₂ emissions generated through airplane travel of this group	19.59	6.93	1.99	0.49	3.89

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through UIAA Office staff

The significant increase in CO₂ emissions is due to many meetings being held in-person again, versus merely online in 2021.

6.2.2 EC Members' Travel

“EC members” refers to the UIAA Executive Committee which in 2022 from January until December counted 7 people. In previous reports, this group was referred to as “Executive Board or EB”. At the time of publishing this report, the name had been changed and adopted accordingly.

Of the listed meetings/events in Table 3, EC members traveled to the following events:

- UIAA General Assembly in Banff, Canada

- UIAA Management Board meeting in Skopje, North Macedonia
- UIAA Executive Committee meetings (as part of the above events)
- UIAA Commission meetings (mostly as part of the above events)

The EC held 11 meetings in 2022, two of which were held as part of other UIAA events, namely the UIAA Management Board meeting in Skopje, North Macedonia and the UIAA General Assembly in Banff, Canada respectively.

Of the listed meetings/events in Table 3, the following events were attended online by EC members:

- UIAA Management Board meetings (2 of 4 online)
- UIAA EC meetings (9 of 11 online)
- UIAA Commission meetings
- UIAA EC/ Commission Internal Working Group meetings
- UIAA Office meetings
- Other meetings (UNFCCC signatories and WG meetings, Sport Positive Summit)

EC	2018	2019	2020	2021	2022
Number of people in this group	7 from Jan-Oct 5 from Oct-Dec	5 from Jan-Oct 7 from Oct-Dec	7	7	7
Number of meetings held by this group itself	6 total 1 x Kathmandu, 1 x Lisboa, 1 x Budapest, 2x Bern, 1x Ulaanbaatar	8 total 4 x online, 2 x Bern, 1 x Malta, 1 x Larnaca	10 total 9 x online, 1 x hybrid Bern	14 total all online	11 total 9 x online, 1 x Skopje, 1 x Banff
Tonnes of CO ₂ emissions generated through airplane travel of this group	26.45	15.34	0.29	0.00	13.81

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through the UIAA Executive Committee

The significant increase in CO₂ emissions in 2022, is the in-person nature of some of the events/meetings which was not the case in 2021.

6.2.3 MB Members' Travel

“MB members” refers to the UIAA Management Board which in 2022 counted 21 people from January to December. 7 of these MB members are simultaneously EC members. In previous reports, this group was referred to as “Management Committee or MC”. At the time of publishing this report, the name had been changed and adopted accordingly.

Of the listed meetings/events in Table 3, MB members traveled to the following events:

- UIAA General Assembly in Banff, Canada
- UIAA Management Board meeting in Skopje, North Macedonia

The MB held 4 meetings in 2022, one of which was held as part of other UIAA events, namely the UIAA General Assembly in Banff, Canada. It furthermore held two meetings with Commission Presidents on two occasions, namely the day before the MB meeting in Skopje and the day before the MB meeting in Banff.

MB	2018	2019	2020	2021	2022
Number of people in this group	21 including EC members	18 including EC members	20 including EC members	20 from Jan-Oct 21 from Oct-Dec including EC members	21 including EC members
Number of meetings held by this group itself	2 total 1 x Kathmandu, 1 x Ulaanbaatar	2 total 1 x Malta, 1 x Larnaca	4 total all online	5 total all online	4 total 2 x online, 1 x Skopje, 1 x Banff
Tonnes of CO ₂ emissions generated through airplane travel of this group	34.11	12.26	0.00	0.00	17.94

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through the UIAA Management Board

The significant increase in CO₂ emissions in 2022, is the in-person nature of some of the events/meetings which was not the case in 2021.

6.2.4 GA Delegates' Travel

“GA delegates” refers to all official delegates of the UIAA General Assembly and representatives of UIAA member associations, who aren't simultaneously part of the EC, MB or COM delegates.

The UIAA closed 2022 with 94 Member Associations, comprising 69 full members, 1 unit member, 18 associate members and 6 observer members from 69 different countries.

The GA delegates mainly attended 1 meeting in 2022, notably the General Assembly. Separate e-meetings between GA delegates, members of the EC and the Office were held prior to the GA to discuss membership issues.

Therefore, of the listed meetings/events in Table 3, only the following event was travelled to by GA members:

- UIAA General Assembly in Banff, Canada

In 2022, the General Assembly was held over two days and took place in Banff, Canada. It was attended by:

- 44 GA delegates representing member federations (MFs), including Observer members;
- 7 EC members;
- 11 MB members, 6 of which also represent MFs;
- 7 Representatives of UIAA Commissions, 2 of which also represent MFs;
- 1 Unit member representative;
- 0 Court members;
- 1 Athlete;
- 13 Guests;
- 1 Moderator;
- plus 2 UIAA Office staff members.

In total this accounts for 89 people attending the GA.

GA	2018	2019	2020	2021	2022
Number of people in this group	52 attendees including full, associate and observer members, excluding EC, MB, commission, court and honorary members, guests, office	67 attendees including full, associate and observer members, excluding EC, MB, commission, court and honorary members, guests, office	85 attendees including full, associate and observer members, excluding EC, MB, commission, court and honorary members, guests, office	110 attendees including full, associate and observer members, excluding EC, MB, commission, court and honorary members, guests, office	44 attendees including full, associate and observer members, excluding EC, MB, commission, court and honorary members, guests, office
Number of meetings held by this group itself	1 total Ulaanbaatar	1 total Larnaca	1 total online	1 total online	1 total Banff
Tonnes of CO ₂ emissions generated through airplane travel of this group	35.67	53.96	0.00	0.00	59.71

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through GA delegates

Travel of GA delegates accounted for significantly more emissions in 2022 – a total of 59.71 CO₂ - compared to the baseline year of 2018. This is mainly due to the location, with many delegates from Asia and Europe attending the UIAA General Assembly, their carbon footprint had a significant impact on the overall picture.

However, it is worth noting that a lower number of attendees compared to other GA in previous years. The events in Banff were livestreamed via YouTube, thus many more delegates

might have joined this way, giving other representatives who did travel their proxy votes. The number of delegates who attended virtually was not recorded.

6.2.5 Honorary members' travel

“Honorary members” refers to a reserved group of official UIAA delegates, being nominated by the GA. They are invited to all MB meetings and the General Assembly. In 2022, no honorary member attended these meetings.

HONORARY MEMBERS	2018	2019	2020	2021	2022
Tonnes of CO ₂ emissions generated through airplane travel of this group	2.08	0.75	0.00	0.00	0.00

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through UIAA Honorary Members

The representatives' travel by airplane in 2022, accounts for 0.00 tonnes of CO₂.

6.2.6 Unit Members' Travel

“Unit members” refers to representatives of the current UIAA Unit Members. Representatives of UIAA Unit Member federations are invited to attend the MB meetings and the GA.

In 2022, as in previous years, the UIAA counted only 1 Unit Member, notably the International Skyrunning Federation (ISF). In 2022, 1 delegate represented the ISF at MB meetings including the in-person ones in Skopje, North Macedonia and Banff, as well as attended the UIAA General Assembly also taking place in Banff, Canada.

UNIT MEMBERS	2018	2019	2020	2021	2022
Tonnes of CO ₂ emissions generated through airplane travel of this group	1.88	0.53	0.00	0.00	1.44

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through UIAA Unit Members

The representatives' travel by airplane in 2022, accounts for 1.44 tonnes of CO₂.

6.2.7 UIAA Court Travel

The “UIAA court” attends the GA and MB meetings and counts 4 people in 2022, 1 of which attended most MB meetings, including the in-person one in Skopje, North Macedonia. The GA was not attended by any UIAA court member in 2022.

UIAA COURT	2018	2019	2020	2021	2022
Tonnes of CO ₂ emissions generated through airplane travel of this group	3.49	0.43	0.00	0.00	0.26

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through the UIAA Court

The representatives’ travel by airplane in 2022, accounts for 0.26 tonnes of CO₂.

6.2.8 Commission Members’ Travel

“COM members” refers to all full and corresponding members of UIAA Commissions. Full members are expected to attend one annual commission meeting in person, while corresponding members are encouraged but not necessarily expected to attend in person meetings. Commission presidents additionally attend all MB meetings as well as the GA. In 2022, the UIAA ended the year with 8 commissions, which are:

- Antidoping Commission
- Legal Affairs Commission (since May 2022)
- Medical Commission
- Mountain Protection Commission
- Mountaineering Commission
- Safety Commission
- Training Commission (since May 2022)
- Youth Commission

The Ice Climbing Commission was dissolved in August 2022.

Many of these commissions have internal working groups who meet more frequently, mostly online. These meetings and attendance won’t be listed separately.

The number of members to each commission varies throughout the year, as nominations and revocations of memberships are accepted in May and October of each year. For reference and to allow a comparison between calendar years the below list highlights the average number of members per commission as well as details on meeting frequency and format/location for the given year.

COMMISSION MEMBERS	2018	2019	2020	2021	2022
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Access: Number of people in this group	4 full members, 12 corresponding members	Commission was integrated into the Mountaineering Commission in May	n/a	n/a	n/a
Access: Number of meetings held by this group itself	1 total Canmore	1 total Malta*	n/a	n/a	n/a
Antidoping: Number of people in this group	3 full members, 2 corresponding members	3 full members, 1 corresponding member	3 full members, 0 corresponding members	3 full members, 0 corresponding members	3 full members, 0 corresponding members
Antidoping: Number of meetings held by this group itself	1 total Lausanne	1 total Malta*	0 extra meetings total, as they meet during Sports Events*	0 extra meetings total, as they meet during Sports Events*	0 extra meetings total, as they meet during Sports Events*
Ice Climbing: Number of people in this group	8 full members, 8 corresponding members, 3 athletes	9 full members, 9 corresponding members, 3 athletes	8 full members, 8 corresponding members, 3 athletes	9 full members, 14 corresponding members, 5 athletes	Up until August 2022, 11 full members, 14 corresponding members, 4 athletes
Ice Climbing: Number of meetings held by this group itself	1 total Busteni	1 total, Malta*	1 total, online	6 total, all online	2 total, all online
Legal Affairs: Number of people in this group	n/a	n/a	n/a	n/a	From October 2022, 6 full members, 2 corresponding members
Legal Affairs: Number of meetings held by this group itself	n/a	n/a	n/a	n/a	From October 2022, 1 total online

Medical: Number of people in this group	23 full members, 19 corresponding members	23 full members, 21 corresponding members	23 full members, 22 corresponding members	23 full members, 21 corresponding members	21 full members, 22 corresponding members
Medical: Number of meetings held by this group itself	1 total Kathmandu	1 total Bolzano	0 total	1 total online	1 total Hathersage + conference held in Pontresina
Mountain Protection: Number of people in this group	9 full members, 8 corresponding members	8 full members, 6 corresponding members	7 full members, 7 corresponding members	7 full members, 8 corresponding members	9 full members, 10 corresponding members
Mountain Protection: Number of meetings held by this group itself	1 total Lake District	1 total Baku	2 total all online	5 total all online	4 total all online
Mountaineering: Number of people in this group	24 full members, 7 corresponding members (Expeditions, Training and Legal Experts had its own members)	26 full members, 9 corresponding members (Access, Expeditions, Training and Legal Experts had its own members)	35 full members, 21 corresponding members (Access, Expeditions, Training and Legal Experts had its own members)	43 full members, 21 corresponding members (including Access, Expeditions, Training and Legal Experts)	34 full members, 25 corresponding members (including Access, Expeditions, but excluding Training and Legal Affairs)
Mountaineering: Number of meetings held by this group itself	2 total 1 x Lisbon, 1 x Budapest	2 total 1 x Novi Sad, 1 x Hong Kong	2 total all online	2 total all online	3 total 1 Skopje 2 x online
Safety: Number of people in this group	9 full members, 7 corresponding members	9 full members, 9 corresponding members	7 full members, 10 corresponding members	8 full members, 10 corresponding members	10 full members, 7 corresponding members

Safety: Number of meetings held by this group itself	1 Lisbon	2 total 1 x online, 1 x Malta*	8 total 7 internal, online 1 plenary, online	6 total 4 internal, online 2 plenary, online	6 total 5 internal, 1 x Skopje, 4 x online; 1 plenary Skopje
Training: Number of people in this group	n/a	n/a	n/a	n/a	From October 2022: 14 full members, 3 corresponding members
Training: Number of meetings held by this group itself	n/a	n/a	n/a	n/a	From October 2022: 1 total online
Youth: Number of people in this group	18 full members, 5 corresponding members	17 full members, 5 corresponding members	16 full members, 4 corresponding members	17 full members, 5 corresponding members	13 full members, 4 corresponding members
Youth: Number of meetings held by this group itself	1 total Cadiz	0 total	0 total	5 total all online	3 total 1 x Skopje 2 x online
Tonnes of CO ₂ emissions generated through airplane travel of this group	53.37	37.9	0.00	0.00	24.03

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through UIAA Commission members

*joint with another UIAA meeting/event

Collectively, the full members of UIAA Commissions accounted for 18.32 tonnes of CO₂ emissions, whilst corresponding members accounted for 5.71 tonnes. In total, the representatives of this group generated 24.03 tonnes of CO₂ through airplane travel.

In general, and as a new feature of most UIAA meetings, all in-person meetings are offered in hybrid format, allowing for many more delegates to participate even if travel is not an option for them.

Consequently, Corresponding Members were much more likely to attend Commission meetings due to their hybrid or online format. As most representatives of that group would have to pay for their travel themselves, they usually do to not attend in-person meetings.

6.2.9 Officials' Travel

“Officials” of the UIAA refer to stakeholders at the UIAA Sports Events working in an official capacity for the UIAA. These include: international results managers, international route setters and international judges. Excluded are national/local judges and route setters, guests, the livestream production crew and the livestream commentator.

Among the UIAA Sports Events are: UIAA Ice Climbing World Cups, the UIAA Ice Climbing World Championships, the UIAA Ice Climbing Youth World Championships and the UIAA Ice Climbing Combined World Championships.

In 2022, the season only comprised two events, namely:

- UIAA Ice Climbing World Championships, Saas-Fee, SUI (26-29 January 2022)
- UIAA Ice Climbing World Youth Championships, Saas-Fee, SUI (26-29 January 2022)

OFFICIALS	2018	2019	2020	2021	2022
Number of events within calendar year	6 total 1 Saas Fee 1 Rabenstein 1 Hohhot 1 Cheongsong 1 Kirov 1 Malbun	8 total 1 Cheongsong, 1 Beijing, 1 Saas Fee, 1 Rabenstein 1 Champagny-en-Vanoise 1 Denver 1 Oulu 1 Kirov	4 total 1 Chang chun, 1 Cheongsong, 1 Saas-Fee, 1 Kirov	2 total 1 Tyumen, 1 Kirov	2 total 2 Saas-Fee
Tonnes of CO ₂ emissions generated through airplane travel of this group	No data collected	18.68	10.42	1.22	0.3

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through UIAA Officials

6.2.10 Athletes' Travel

“Athletes” of the UIAA are all those competing in international UIAA Sports Events, notably the UIAA Ice Climbing World Cups, the UIAA Ice Climbing World Championships, the UIAA Ice Climbing Youth World Championships and the UIAA Ice Climbing Combined World Championships.

For athletes participating in consecutive legs of the World Tour, continuous travel was assumed, as athletes tend to stay on the continent to train locally before the next competition.

ATHLETES	2018	2019	2020	2021	2022
Number of people participating in at least one event	232	249	197	64	152
Number of events within calendar year	6 total 1 Saas Fee 1 Rabenstein 1 Hohhot 1 Cheongsong 1 Kirov 1 Malbun	8 total 1 Cheongsong, 1 Beijing, 1 Saas Fee, 1 Rabenstein 1 Champagny 1 Denver 1 Oulu 1 Kirov	4 total 1 Chang chun, 1 Cheongsong, 1 Saas-Fee, 1 Kirov	2 total 1 Tyumen, 1 Kirov	2 total 2 Saas-Fee
Tonnes of CO ₂ emissions generated through airplane travel of this group	153.95	180.68	122.56	5.28	64.33

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through Athletes attending UIAA Ice Climbing World Tour events

Apart from competing in UIAA supported events, nominated athletes attend Ice Climbing Commission meeting, and in 2022 the UIAA General Assembly in Banff, Canada.

Arguably, the travel of athletes is an indirect environmental impact caused by UIAA supported (or hosted) events. The main reason why their footprint is included in the overall UIAA carbon footprint calculation, is because these events count towards core UIAA activities and are branded accordingly, which is highly visible on athletes' bibs, banners around the venue, etc.

6.2.11 Production Crew

The "Production Crew" refers to those individuals travelling to international UIAA (Ice Climbing) Events to assure a livestream and commentary are available.

In 2022 these were 6 people, including two commentators, one who worked at the UIAA Ice Climbing World Tour and a local commentator that was hired for the UIAA General Assembly in Banff, Canada.

For the UIAA Ice Climbing World Tour, the Production Crew travelled to the World Championships and the Youth World Championships, as these were held simultaneously and in the same location.

PRODUCTION CREW	2018	2019	2020	2021	2022

Number of people in this group	No data collected	No data collected	5	5	6
Number of events within calendar year	5 total 1 Saas Fee 1 Rabenstein 1 Hohhot 1 Cheongsong 1 Kirov (excluding World Youth Championships)	7 total 1 Cheongsong, 1 Beijing, 1 Saas Fee, 1 Rabenstein 1 Champagny 1 Denver 1 Oulu (excluding WYC)	3 total 1 Chang chun, 1 Cheongsong, 1 Saas-Fee, (excluding WYC)	1 total 1 Kirov (excluding World Youth Championships)	3 total 2 Saas-Fee 1 Banff (only local commentator)
Tonnes of CO ₂ emissions generated through airplane travel of this group	No data collected	No data collected	7.1	2.0	0.17

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through the Livestream Production Crew

Their airplane travel accounts for 0.17 tonnes of CO₂ emissions in 2022. The decrease compared to previous years, is mainly due to the fact that only three events were attended, two of which took place simultaneously and that the camera team drove to rather than taking the airplane.

6.2.12 Accredited Laboratory Representatives

The “Accredited Laboratory Representatives” refers to those individuals representing accredited testing laboratories for UIAA Safety Label Standards, who attend the plenary assemblies of the UIAA Safety Commission.

ACCREDITED LAB REPS	2018	2019	2020	2021	2022
Average number of attendees of this group	No data collected	No data collected	11	8	2
Number of plenary meetings attended by this group	1 Lisbon	1 total 1 x Malta*	1 total online	2 total all online	1 total Skopje/hybrid

Tonnes of CO ₂ emissions generated through airplane travel of this group	No data collected	No data collected	0.00	0.00	0.00
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Subset of Table 3 – Zoom-in on CO₂ Emissions generated through Accredited Laboratory Representatives

All representatives of this group attended the one meeting virtually.

6.2.13 Manufacturer Representatives

The “Manufacturer Representatives” refers to those individuals representing manufacturers of climbing and mountaineering equipment, interested and often holding UIAA Safety Labels, who attend the plenary assemblies of the UIAA Safety Commission.

MANUFACTURER REPS	2018	2019	2020	2021	2022
Average number of attendees of this group	No data collected	No data collected	30	24	39
Number of plenary meetings attended by this group	1 Lisbon	1 total 1 x Malta*	1 total online	2 total all online	1 total Skopje/hybrid
Tonnes of CO ₂ emissions generated through airplane travel of this group	No data collected	No data collected	0.00	0.00	5.72

Subset of Table 3 – Zoom-in on CO₂ Emissions generated through Manufacturer Representatives

Nine representatives of this group attended the plenary session of the UIAA Safety Commission meeting in person, while 30 others joined virtually, generating a total of 5.72 tonnes of CO₂ equivalent emissions.

6.2.14 Goods’ travel

A certain amount of “Goods” get transported for and by the UIAA, such as branding material, sponsors’ in kind gifts, UIAA trophies, medals, etc.

In most cases, and whenever possible, these travel with UIAA delegates to the various locations. At times though, goods are sent by airplane, which account for 1.92 tonnes of CO₂ emissions in 2022, as was the case in previous years.

6.2.15 Guests' Travel

"Guests" of the UIAA refer to official invitees to UIAA meetings and observer federations of the UIAA. In 2022, guests were invited to the UIAA General Assembly, the Management Board meetings, Executive Committee meetings and at times Commission meetings.

In 2022, the GA was attended by 13 guests, including speakers presenting at the UIAA Climate Change Summit and the UIAA Mountain Protection Award ceremony, accounting for 9.84 tonnes of CO₂.

Various guests were also invited to commission meetings, accounting for 1.92 tonnes of CO₂.

In 2022, the total travel of official UIAA guests accounted for 12.74 tonnes of CO₂ emissions, compared to 6.79 tonnes of CO₂ emissions in 2019. In the years 2020 and 2021, representatives of this group caused no emissions, due to the purely online nature of meetings and events.

7 FINAL REMARKS

The sum of UIAA CO₂ emissions generated in 2022 is 209.48 tonnes, compared to 12.08 tonnes in 2021, 146.5 tonnes in 2020, 353.33 tonnes in 2019 and 365.56 tonnes in 2018. However, a direct comparison of these figures does not provide for an accurate representation to compare one year to another, since the underlying conditions and factors that lead to the respective CO₂ emissions generated in any given year, differ.

Overall emissions over the years, with a baseline of 2018, is not directly comparable given that the number of delegates per representative group varies across the years, and so do meeting/event locations, often having a significant impact on generated emissions. The overall UIAA carbon footprint depends on the format and location of its annual meetings and events, but also on the number and origin of delegates traveling.

Far-off meeting locations generate more CO₂ emissions, yet at the same time, it is centrally located meeting destinations that are attended by more representatives, thus also spiking the amount of emissions generated. Nevertheless, the resulting figures give much opportunity to further reflect on those activities that generate the most emissions, compared to all others that are part of the core operations of the UIAA as an organization.

2022 was a special year, in that many parts of the world – including organizations such as the UIAA – reverted to more in-person meetings and events, at least to some extent, after an impactful COVID-19 pandemic. What remained is a spirit of offering the option to join meetings hybrid, with more frequent online meetings in general.

Many travel policies to reduce CO₂ impact promote the principle of "avoid, reduce, compensate" in that order. The UIAA, through the support and participation of its Mountain Protection Commission and the UIAA Climate Change Task Force, will seek to draft such a policy in 2024, in its fulfilment of the 5 principles set out by the UNFCCC.

8 ANNEX I

Table 2 - CO₂ Emissions generated through UIAA Office Infrastructure

	2018	2019	2020	2021	2022	Tonnes of CO ₂
Area of office infrastructure space, in square meters	35.7	35.7 from Jan-Sept, 27.73 from Oct-Dec	27.73	27.73	27.73	-
Nbr of staff members	6 (working as 4.2 pax incl. 1 pax remote)	6 (working as 4.2 pax incl. 1 pax remote)	6 (working as 4.2 pax incl. 1 pax remote)	6 (working as 4.2 pax incl. 1 pax remote)	6 (working as 4.2 pax incl. 1 pax remote)	-
Electricity	3'023 in kWh at a factor of 0.0140 kgCO ₂ e/kWh	3,135.8 kWh at a factor of 0.014 kgCO ₂ e/kWh	later on available: 1,119 kWh at a factor of 0 kgCO ₂ e/kWh because 100% Ökostrom	1,053.9 kWh at a factor of 0 kgCO ₂ e/kWh, because 100% Ökostrom	769 kWh at a factor of 0 kgCO ₂ e/kWh, because 100% Ökostrom	0
Other heating systems:	141,200 kg or L District Heating	23,120.13 kWh at a factor of 59 (kg CO ₂ -eq per MWh district heating)	2,040 kWh at a factor of 43 (kg CO ₂ -eq per MWh district heating)	2,176 kWh at a factor of 46 kg CO ₂ -eq per MWh district heating	1,709 kWh at a factor of 44 kg CO ₂ -eq per MWh district heating	0.34
Printing	(Ground Source Heat Pump)	(Ground Source Heat Pump)	(Ground Source Heat Pump)	(Ground Source Heat Pump)	(Ground Source Heat Pump)	Negligible
	263 pages b/w - CHF 0.10 pp 8 colour - CHF 0.20 pp (Adding up to a total cost of EUR 26)	23 pages b/w - CHF 0.10 pp 174 colour - CHF 0.20 pp (adding up to total cost of EUR 29)	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	5 pages b/w - CHF 0.10 pp 30 colour pages - CHF 0.20 pp (adding up to total cost of EUR 6.00)	
Cost computers and IT equipment	CHF 4,250.00	CHF 1,737.00	CHF 1,500.80	CHF 436.00	CHF 7134	2.88
Total Office Infrastructure Footprint	2.17	2.99	2.22	1.17	3.22	

9 ANNEX II

Table 3 - CO₂ Emissions generated through UIAA delegates' Travel by Plane

Travel by Air Plane	Office staff	EB members	MC members	GA delegates/ MF rep	Honorary Members	Unit Members	UIAA Court	COM full members	COM corresponding member	Officials	Athletes	Production Crew	Accredited Lab	Manufacturer	Goods	Guests (incl. Observers)	CO2, tonnes
	2.46	8.9	15.54	59.71	0	1.26	0	8.22	0	0	1.05	0	0	0	0	9.84	106.98
to GA																	
	1	4.91	2.4	0	0	0.18	0.26	0.97	0	0	0	0	0	0	0	0	9.72
to MC																	
	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to EB																	
	0.43	-	-	-	0	0	0	9.13	5.71	0	0	0	0	5.72	0	2.9	23.89
to COM/MWG																	
	-	0	0	0	0	0	0	0	0	0.3	65.28	0.17	0	0	0	1.92	65.67
to Sports Events																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Trade Shows																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Office																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to SSC																	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to SSC																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Sponsorship Meetings																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Sport/Record																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to IF Forum																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to Rock Climbing Festivals																	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to other meetings (member anniversaries)																	
	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3.89	13.81	17.94	59.71	0	1.44	0.26	18.32	5.71	0.3	64.33	0.17	0	5.72	1.92	12.74	206.26

10 KEY RESOURCES

1

IOC Sustainability Essentials Guide

<https://stillmed.olympics.com/media/Document%20Library/OlympicOrg/IOC/What-We-Do/celebrate-olympic-games/Sustainability/sustainability-essentials/SUSTAINABILITY-ESSENTIALS-ISSUE-2.pdf>

2

UNFCCC The Path to Climate Neutrality – Measure the Basics

https://unfccc.int/sites/default/files/resource/ThePathtoClimateNeutrality-Measure-TheBasics_May26.pdf