IWRMP 2019 CARBON FOOTPRINT ACCOUNTING

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Disclaimer

This document is prepared from sources and data which the authors believe to be reliable; the authors make no representation as to its accuracy or completeness.

Introduction

This study was conducted to establish the carbon footprint of the International Women in Resources Mentoring Programme (IWRMP) which is one of the programmes run by International Women in Mining (IWiM).

IWiM and its activities

International Women in Mining (IWiM) is a global organisation committed to advancing women in the mining sector by acting as Industry Change Agent, WIM Champion and Diversity Trend Setter. IWiM is the fastest growing network for women in the mining industry, with long-lasting and supportive relationships with 40+ WIM organisations globally, as well as its own 10,500+ members and followers across 100 countries.

IWiM is a not-for-profit organisation, registered as a community interest company (C.I.C.) in the UK and operating with the support of sponsors and partners. IWiM also relies on a team of volunteers and supporters without whom it could not achieve any of its objectives; like IWiM's Directors, they are based all over the world and bring different perspectives to the organisation.

To that end, IWiM acts on three pillars:

- as Industry Change Agent, to make mining a better industry through diversity, gender parity and inclusion;
- as WIM Champion, to strengthen and coordinate Women in Mining (WIM) organisations to achieve global cohesion; and
- as Diversity Trend Setter, to collect and dispense knowledge supporting the enhancement of women's role and participation

In addition, as the only international platform supporting the global gender parity agenda in mining, **IWiM Connections** link up a variety of stakeholders across the industry pursuing similar transformation goals in extractives and/or other industrial sectors; these connections can entail providing support, exchanging information and/or coordinating joint initiatives and are a significant part of IWiM's work, leadership and impact.

Projects that are run by IWiM globally include:

- IWRMP , a global cross-company mentoring programme for women in mining: launched in 2018 and organised annually, IWRMP is providing support to a variety of women working in, around and with the mining sector and building the pipeline of women leaders for the industry;
- IWiMSpeakUp, focused on promoting women's voices in industry meetings, conferences and thought-leadership initiatives: since 2015, IWiMSpeakUp is changing the conversation in

collaboration with forward-looking event organisers and increasing the visibility of women across all mining disciplines and world-wide; and

- Women on Mining Boards, a 10-month webinar series designed and recorded by IWiM in collaboration with leading experts in 2015-2016, which gave women working in mining or covering the mining sector and interested in directorships an opportunity to learn steps and tools to achieve their goal; and
- **IWiM Global Campaigns** focusing on sharing best practices and/or advocating for women in mining, including
    - the Inclusive Workplace Design in Mining initiative focusing on innovative and practical ideas to improve workplace design to benefit everyone working in mining;
    - the #MiningTogether – Inclusion Begins With Us video storytelling campaign organised in 2019 by IWiM in collaboration with Anglo American and De Beers Group; and
    - The IWiM Photo Campaign creating a photo library to increase awareness of how many women work in mining and to share important visual stories that celebrate women in mining; and
- **IWiM** Thought Leadership and Research including the "Impactful Women" initiative examining opportunities and constraints for WIM organisations worldwide, currently conducted in strategic partnership with the World Bank.

International Women in Resources Mentoring Programme (IWRMP)

International Women in Resources Mentoring Programme (IWRMP) is a global cross-company mentoring programme initiated in 2018 and run by international Women in Mining (IWiM).

The programme's main objective is to empower and promote women working the resources sector. IWRMP gives participants an opportunity to connect with more experienced professionals as mentors and work closely with thriving professionals of the mining industry.

IWRMP also aims to provide female mentees with fruitful mentoring relationships that will develop them and help build up the pipeline of future leaders in the industry and assist in creating a more inclusive and diverse society.

The programme, which lasts for a period of six months, typically has a launch event (start) and celebration event (finish) for each cohort and these are done at different locations across the globe. An example is IWRMP 2019 which had the launch event at Mining Indaba, Cape Town South Africa in February 2019 and a celebration event in London, England in September 2019.

Events are where possible attached to an industry event that is well attended and where IWRMP participants can maximise on travel to also attend meetings, network, attend a conference etc.

The 2020 programme was set to launch in April around Expomin 2020 in Santiago, Chile and end in Melbourne, Australia during IMARC in October 2020. However, due to the corona virus epidemic, the 2020 programme is being fully conducted online.

Other IWRMP objectives include:

- Enhance global retention and support for women in mining;
- Give programme participants global opportunities to connect and network;
- Provide superior role models to women working in mining in different cultures and global communities;
- Assist women with setting goals, career plans and achieving them;
- Reduce cross-cultural barriers;
- Make sure women from all continents are represented and that we have diversity and intersectionality within, strong focus on emerging markets;
- Engage globally recognised industry sponsors to contribute to a mentoring programme that aligns with their values in diversity and inclusion.

Aim and Objectives of this Study

This study is aimed at determining the carbon footprint of the IWRMP programme and recommending ways in which the programme's carbon footprint can be lessened during future activities as IWiM's bid to prioritising environmental sustainability. In order to achieve this aim, the following objectives were set:

- Establish and classify components of the mentoring programme such as air travel and meals in accordance with laid down standards and guidelines for Greenhouse Gas emissions reporting;
- Calculate IWRMP's Greenhouse Gas (GHG) emissions for past Mentoring Programme events;
- Based on results from GHG emissions calculations make appropriate recommendations.

This report forms part of IWiM's commitments to sustainability and environmental best practice and informs the senior management's decision making to develop a sustainability strategy.

Methodology and Scope

Methodology

The inventory has been prepared and presented in accordance with DEFRA Environmental Reporting Guidelines[1], using the UK Government's GHG Conversion Factors for Company Reporting[2] where possible.

The boundaries established for this analysis included all emission scopes where data was available: travel, accommodation, catering and purchased materials. Most of the emissions fall under scope 3.

The period of our report is for the calendar year 2019 and includes both mentors and mentees of the IWRMP programme.

There were 36 pairs in the 2019 IWRMP programme or 72 participants. In addition, there were 2 Programme Directors. Participants (mentors and mentees) were based in 17 different countries.

Reporting process

A working group composed of three people discussed in Skype meetings and drew up a structured reporting process which entailed:

- Collection and consolidation of the data.
- Decision on the relevant information to be included.
- Generation on an inventory by processing the data collected in an Excel sheet and estimating emissions according to the standard guideline
- Identification of the limitations in the reporting.
- Approval from IWiM.
- Publication on the organisation website to make it fully transparent and available to all stakeholders (if possible).

[1] DEFRA (2019) Guideline for reporting carbon footprint: DEFRA Guidance, retrieved from https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance

[2] DEFRA (2019) Conversion factors by DEFRA, retrieved from https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting

IWRMP's GHG Emissions

The reporting scope of GHG emission in business travel is from Jan to Dec in 2019 and it will be set as base year. Emission from air travel, hotel and catering for the two events in Cape Town and London where information mostly available are included in this scope.

Emissions from the conference centre and purchased materials are not included. Instead of giving an estimate, we decided to omit these two sources until data becomes available in future programmes.

We used Microsoft Excel spreadsheet to calculate GHG emissions. Annex II shows a more detailed calculation with emissions factors used and their sources. Table 1 shows the summary of the carbon emissions and air travel contributes a significant proportion of the totals (98 %). The table below shows both absolute emissions and normalised emissions by participants and programme directors (74 people in total).

Table 1 Summary of all the emissions of IWRMP

Emission sources (tCO_2eq)	Cape Town Event	London Event
Air Travel	26.46	36.40
Hotel	1.10	0.27
Catering	0.41	0.15
Site emissions	NA	NA
Purchased materials	NA	0.003
Sub-total	27.97	36.82
TOTAL (tCO_2eq)	**64.79**	
Carbon Intensity (tCO_2eq/person)	**0.88**	

Carbon Brief and the *OECD* estimate that per-capita emissions in the UK being around 5.4 - 5.6 tCO_2 in 2018[3]. Total IWRMP carbon intensity emissions (especially air travel) already contributed to around a sixth of the carbon footprint per person per year.

Uncertainties/limitations/assumptions

There is a certain element of inaccuracy in this carbon accounting since it is retrospective, and thus, some data was not available. Assumptions have been made in terms of dietary requirements and flight distance, assuming all flights were originated from the capital cities.

[3] Carbon Brief (2019 March 04) Simon Evans, Analysis: UK's CO_2 emissions fell for record sixth consecutive year in 2018. Retrieved from https://www.carbonbrief.org/analysis-uks-co2-emissions-fell-for-record-sixth-consecutive-year-in-2018; and OECD (2017) Air and GHG emissions, retrieved from https://data.oecd.org/air/air-and-ghg-emissions.htm

Flight emissions were only fully accounted for those participants that travelled only for IWRMP, flight emissions from participants who travelled for IWRMP and another conference or business meeting were accounted for half of the emissions, and emissions from participants who travelled to another conference or business meeting and took the advantage of being there to participate in IWRMP have not been accounted for.

In order to collect such data for the following IWRMP years, a questionnaire is proposed to be distributed to participants in subsequent IWRMP programmes closer to the training/event days to be completed (see Annex II).

Recommendations

Reduce emissions (first and foremost)

IWiM is already doing a lot of things to reduce the carbon footprint of the programme such as:

- As the programme is global and not everyone is able to travel in person, the entire programme has always (since 2018) been available online from the training session, the webinars to the final celebration. A recording is also available in addition to live streaming.
- The banners IWiM uses are light and can be transported in carry on or hand luggage. In addition, IWiM recycles and reuses the same IWRMP banner frame and only gets the canvas changed with new sponsors rather than buying a completely new banner. The IWiM banner gets reused yearly.
- IWiM organises the IWRMP training and launch event around a big mining conferences where people are already travelling to so that they can take advantage of the trip to participate in professional meetings and networking in addition to the IWRMP programme.

Other things that could be done to further reduce IWRMP carbon footprint would be:

- Encourage participants to book sustainable accommodation options
- Encourage participants to travel by train and public transport where possible
- Choose sustainable airlines that use alternative fuel, reduce their plastic use, focus on waste management, also try to avoid travel in business class.
- Engage in public advocacy for the reduction of emissions in the minerals sector as well as the empowering of women to make that change.

Mitigate emissions (last resource – offsets)

Face to face meetings held by IWRMP are invaluable for mentees and mentors to meet and get to know each other. Although international face to face meetings are better than remote meetings, the nature of those will always have an associated carbon footprint attached to it.

The carbon footprint should be reduced as much as possible first and foremost, and left-over emissions that cannot be reduced should be mitigated via offsets. It is important to remember that offset schemes should only be used as a last resort and should not be used to mitigate emissions.

Moreover, it is very important to select best in class carbon offset schemes that ensure long-term maintenance of the scheme, otherwise the carbon taken up is released again to the environment. Not all projects are maintained correctly in the long-term. *Ethical Consumer* estimated that only about 30% of the money makes it to the actual project, with the rest used for overheads, verification costs, and projects developers' profits. This is because most of the offset projects are done by for-profit companies.[4]

If offsets are to be used, we would recommend choosing a Gold Standard certified project, which are best in class projects verified by a third-party supported by environmental and social organisations.

[4] Ethical Consumer (2017) A Short Guide to Carbon Offsets, retrieved from: https://www.ethicalconsumer.org/energy/short-guide-carbon-offsets

Annex I: Calculation

1. Air Travel

CO_2 emission = passenger-km x emission factor ($kgCO_2e$/passenger-km)

Emission factor is taken from the UK 2019 Government Greenhouse Gas Conversion factors for Company Reporting Methodology Paper for Emission Factors Final Report https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/829336/2019_Green-house-gas-reporting-methodology.pdf

Assumptions:

1. Kilometres travelled have been estimated from travel location to destination via https://www.travelmath.com/
2. Assuming that everyone travelled from capital city airports and economy class - no business class flights

No. of people	Flight type	Distance (km)	Emission factor * ($kgCO_2eq$/ passenger-km)	CO2 emission ($kgCO_2eq$)	Adjustment Factor ξ	CO2 emission ($kgCO_2eq$) after adjustment
Cape Town Event						
1	Bulgaria to Cape Town	8536	0.18078	1,543.14	0.5	771.57
1	Canada (Toronto) to Cape Town	13110	0.18078	2,370.03	0.5	1,185.01
4	Canada (Vancouver) to Cape Town	16440	0.18078	11,888.09	0.5	5,944.05
1	Cardiff to Cape Town	9662	0.19562	1,890.08	0	0.00
1	Chile (Santiago) to Cape Town	7944	0.18078	1,436.12	0.5	718.06
1	Kenya to Cape Town	4104	0.18078	741.92	0.5	370.96
2	London to Cape Town	9674	0.19562	3,784.86	0.5	1,892.43
2	UK (London) to Cape Town	9674	0.19562	3,784.86	0	0.00
1	Perth to Cape Town	8700	0.18078	1,572.79	1	1,572.79
1	Poland (Warsaw) to Cape Town	9580	0.18078	1,731.87	0	0.00
1	Spain (Madrid) to Cape Town	8575	0.18078	1,550.19	0.5	775.09
1	USA (NY) to Cape Town	12552	0.18078	2,269.15	0	0.00
	Sub-total (one way)			34,563.08		13,229.96
17	Sub-total (return)			69,126.17		26,459.91
London Event						
1	Australia (Sydney) to London	16,989	0.19562	3,323.39		
1	Bulgaria to London	2143	0.15832	339.28		
3	Canada (Toronto) to London	5713	0.19562	3,352.73		
1	Chile (Santiago) to London	11664	0.19562	2,281.71		
1	Poland (Warsaw) to London	1460	0.15832	231.15		
4	SA to London	9069	0.19562	7,096.31		
1	Turkey to London	3042	0.15832	481.61		

1	USA (NY) to London	5585	0.19562	1,092.54
	Sub-total (one way)			18,198.72
13	Sub-total (return)			36,397.43
TOTAL (tCO_2eq)				**62.86**
Total number of people attending both events				**74**
Carbon intensity tCO_2eq/person				**0.85**

* includes RF. Radiative forcing (RF) is a measure of the additional environmental impact of aviation. These include emissions of nitrous oxides and water vapour when emitted at high altitude.

ξ Adjustment factor: 1 - attend IWMRP only
0.5 - attend IWMRP & Indaba conference
0 - normally come to Indaba, but make use of opportunity to attend IWMRP

Domestic flights: those within the UK
Short haul flights: those within Europe (or those of similar distance, up to a 3,700km maximum)
Long haul flight: those outside of Europe (or for flights over 3,700km)
International flights: those between non-UK destinations

2. Accommodation

CO_2 emission = number of hotel nights x hotel emission factor ($kgCO_2e$/night)
source: *https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019*

Hotel	Number of people	Nights	Emission factor ($kgCO_2eq$/Room /night)	CO_2 emission ($kgCO_2eq$)
Cape Town	12	2	40.2	964.8
Hostel*	1	2	13.4	26.8
Airbnb**	2	2	26.8	107.2
Sub-total ($kgCO_2eq$)				1,098.8
UK (London)	13	1	20.4	265.2
Sub-total ($kgCO_2eq$)				265.2
TOTAL (tCO_2eq)				**1.4**
TOTAL normalised emissions (tCO_2eq)				**0.02**

The factors are skewed toward large, more upmarket hotels and to branded chains. This is because it was mainly large owners or operators of hotels who submitted the aggregated data sets. Hotels in the lower tier segments are not as strongly represented in these data.

* Since emission is skewed towards large, more upmarket hotels, hostel is assumed to be 1/3 of 40.2.

** Assuming 2/3 of 40.2

3. Catering

Assumptions:

1. Carbon footprint of meals based on this journal article: doi:10.1007/s10584-014-1169-1. The study showed that:
    - high meat-eaters (> 100 g/d) produce ~ 2.6 tCO_2eq each year
    - medium meat-eaters (50 to 99 g/d) produce ~ 2.1 tCO_2eq
    - low meat-eaters (1 to 50 g/d); ~ 1.7 tCO_2eq
    - for pescatarians and vegetarians: ~ 1.4 tCO_2eq
    - for vegans: ~ 1.1 tCO_2eq
2. Given that in all occasions several people ate meat, estimations of medium meat-eaters

	Number. of people	tCO_2eq
London		
Lunch	60	0.12
Dinner	20	0.04
	Sub-total	0.15
Cape Town		
Lunch	100	0.19
Breakfast & Afternoon	100	0.19
Dinner 1	12	0.02
Dinner 2	NA	
Dinner 3	NA	
	Sub-total	0.41
TOTAL		**0.56**

4. Purchased Materials

Assumption: Used conversion factors of DEFRA guidance, assumed that 2 banners weight 3 kilograms in total.

	weight (t)	tCO_2eq
2 banners	0.003	0.003

Annex II: Questionnaire

We would recommend the organisers of the Mentoring Programme to send the below questionnaire to attendees and collect all questionnaires before the calculation of next year's carbon footprint.

Apart from sending this questionnaire to all participants and making sure they fill in all the information, the organisers of the Mentoring Programme should also collect information on:

- Venue details - location, size of the room, heating/cooling system, electricity used etc
- Catering details - number and type of orders per dietary requirement, food waste generation in conference
- Conference details - paper used, plastic badges, etc

Questionnaire

IWIM, as an international network of women striving to make the mining sector more inclusive, is also committed sustainability. In order to further avoid, reduce and mitigate IWIM's impact on the environment, we are measuring the carbon footprint of the International Women in Resources Mentoring Programme (IWRMP). Please fill in all the information below and return to XXXXXXXXXX by XXXXXXX.

Name:	
Affiliation:	
Travel - For participants requiring international travel	
Did you travel specifically for the mentoring programme or were you travelling for something else?	☐ For IWRMP only ☐ For IWRMP and something else (a conference, meeting, etc.) Could you mention the name of the other event? _____ Would you have travelled to IWRMP if your other event was not happening? ☐ Yes ☐ No Would you have travelled to your other event if IWRMP was not happening? ☐ Yes ☐ No
How did you get to the station/airport at your origin?	☐ Taxi ☐ Car ☐ Bus ☐ Train ☐ Other

Name of the airport at origin	Name of the airport at destination
City	City
Country	Country
Number Connecting flights	
Name the airports of all connecting flights	
How did you get from airport/station to the hotel/venue?	☐ Taxi ☐ Car ☐ Bus ☐ Train ☐ Other
How did you get from hotel to the venue?	☐ Taxi ☐ Car ☐ Bus ☐ Train ☐ Other
How did you get from hotel/venue to the station/airport on the last day?	☐ Taxi ☐ Car ☐ Bus ☐ Train ☐ Other
Travel - For local participants	
How did you get to the venue?	☐ Taxi ☐ Car ☐ Bus ☐ Underground ☐ Train ☐ Other
Accommodation	
Where did you stay?	☐ Hotel ☐ Hostel ☐ Airbnb ☐ Other
How many nights did you stay?	
Meals	
What are your dietary requirements?	☐ Meat eater ☐ Vegetarian ☐ Vegan
Additional Information	

Annex III: Initial ideas for an environmental policy for IWiM

IWIM's environmental policy should aim to minimise and mitigate its environmental impact in its day-to-day business. We would recommend the environmental policy to include:

- A mission statement and policy aim(s)
- Targets to improve its environmental performance and reduce its environmental impacts by activity line
- Monitoring, disclosure, commitment and continuous improvement measures
- Roles and responsibilities within the organisation

We also recommend appointing an environmental champion to facilitate IWIM's environmental policy drafting and implementation.