

# INTERIM GHG FOOTPRINT REPORT

5th June 2020



## Beethoven Pastoral Project

Bonn, Germany

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# 1. INTRODUCTION

## 1.1. OVERVIEW OF CLIMATE NEUTRAL NOW INITIATIVE

This report has been prepared by the Climate Neutral Now team within the UNFCCC secretariat.

The Climate Neutral Now initiative of the UNFCCC secretariat encourages non-Party stakeholders (subnational governments, private companies, NGOs, academia, individuals) to take action to help achieve a climate neutral world by the second half of the 21st century, as enshrined in the Paris Agreement.

Climate neutrality is defined here as a balance between the total emissions of greenhouse gases (GHG) and the capacity of the planet to manage them without causing further global warming.

The Climate Neutral Now initiative encourages this by inviting all stakeholders to address their climate footprint by following a simple 3-step method to measure, reduce and compensate their GHG emissions.

## 1.2. PURPOSE OF THIS REPORT

The purpose of this report is to assist the Beethoven Pastoral Project, a participant in the Climate Neutral Now initiative, to understand the GHG footprint associated to its preparatory activities and the virtual event organized on 5 June 2020 at Beethoven Haus, Bonn, Germany.

All data used in the preparation of this report have been provided by the Beethoven Pastoral Project and the UNFCCC secretariat does not make any representations about the accuracy of that information. Assumptions made to complete the calculations have been agreed with the Pastoral Project and are based on best available information and the intention to make a conservative estimation of the GHG emissions.

This report is not intended to provide an exhaustive assessment of the Pastoral Project's GHG footprint. It has been prepared for use by the Pastoral Project to facilitate compliance with its Climate Neutral Now Pledge, and to encourage climate action by the organization.

This report should not be relied upon for any other purpose.

This report is an interim version that will be revised once the Beethoven Pastoral Project has delivered the events on 5 June 2020, and the final data are available.

## 1.3. OVERVIEW OF THE CLIMATE NEUTRAL NOW PLEDGE

As a participant in Climate Neutral Now, the Beethoven Pastoral Project made a commitment to taking climate action by following three steps:

1. **Measure** (estimate) their GHG emissions;
2. **Reduce** their GHG emissions as much as possible through their own action; and
3. **Compensate** remaining unavoidable GHG emissions, through the use of UNFCCC-recognized offsets.

## 2. EXECUTIVE SUMMARY

### 2.1. GHG FOOTPRINT

The Beethoven Pastoral Project's GHG footprint for the virtual event organized on 5 June 2020 and all of its preparatory activities has been estimated as **136.42 tons of CO2 equivalent**.<sup>1</sup>

As a requirement for participation in the Climate Neutral Now initiative, the Pastoral Project will offset this GHG footprint through the use of UNFCCC-recognized offsets.

More detailed information about the Pastoral Project's GHG footprint and the corresponding compensation is contained in sections 3.3 and 4.3 of this report, respectively.

### 2.2. UNDERSTANDING YOUR GHG FOOTPRINT

**Table 1** identifies the proportion of the Pastoral Project's GHG footprint attributable to each scope of GHG emissions and the relevant sources for each scope.

GHG emissions scope	Significant sources of GHG emissions	Proportion of GHG emissions
Scope 1	<ul style="list-style-type: none"> <li>Business travel - company car</li> </ul>	0%
Scope 2	<ul style="list-style-type: none"> <li>Purchased electricity</li> <li>Purchased heating</li> </ul>	23%
Scope 3	<ul style="list-style-type: none"> <li>Business travel – flights</li> <li>Business travel – public transport</li> <li>Staff commute</li> <li>Accommodation during travels</li> <li>Production of brochures</li> <li>Electricity consumption by viewers of the event</li> </ul>	77%

**Table 1** Proportion and significant sources of GHG emissions by scope.

This information should be used to identify areas where the Pastoral Project's GHG emissions can be further reduced. More information about the Project's GHG emissions profile and opportunities for reducing GHG emissions is contained in sections 3.1 and 4.3 of this report, respectively.

<sup>1</sup> This figure is rounded to the nearest whole number. See **Annexure A** to this report for additional information.

### 3. ANALYSIS OF GHG EMISSIONS

#### 3.1. GHG EMISSIONS PROFILE

##### 3.1.1. Scopes of GHG emissions

There are three categories of GHG emissions that an organization should consider when estimating their GHG footprint:

- **Scope 1:** Direct GHG emissions which occur from sources that are owned or controlled by the organization, for example:
  - GHG emissions from combustion in owned or controlled boilers, furnaces or vehicles; and
  - GHG emissions from chemical production in owned or controlled process equipment;
- **Scope 2:** GHG emissions from the generation of purchased electricity, heat or steam consumed by the organization. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 GHG emissions physically occur at the facility where energy is generated; and
- **Scope 3:** GHG emissions that are an indirect consequence of the activities of the organization, but occur from sources not owned or controlled by the organization. Some examples of scope 3 activities are:
  - extraction and production of purchased materials;
  - transportation of purchased fuels; and
  - use of sold products and services.

##### 3.1.2. Sources of GHG emissions

The Beethoven Pastoral Project has identified that the activities set out in **Table 2** are significant sources of its GHG emissions in scopes 2 and 3.<sup>2</sup>

Scope of GHG emissions	Significant sources of GHG emissions
Scope 1	<ul style="list-style-type: none"> <li>• NA</li> </ul>
Scope 2	<ul style="list-style-type: none"> <li>• Consumption of electricity</li> <li>• Heating</li> </ul>
Scope 3	<ul style="list-style-type: none"> <li>• Business travel - company car</li> <li>• Business travel – flights</li> <li>• Business travel – public transport</li> </ul>

<sup>2</sup> These activities correspond to the data contained in **Annexure A** to this report.

- Staff commuting
- Accommodation during travels
- Production of brochures
- Electricity consumption by viewers of the event

**Table 2** Significant sources of GHG emissions by scope.

It should be noted that the electricity consumed for some of the operations of BTHVN 2020 as organizer of Pastoral Day is 100% renewable and that the emissions associated to one of the videos streamed online on 5 June 2020 had already been compensated for.

## 3.2. ACCOUNTING METHODOLOGY

### 3.2.1. Collection of data

All data used in the preparation of this report has been provided by the Beethoven Pastoral Project and the UNFCCC secretariat does not make any representations about the accuracy of that information.

Assumptions made to complete the calculations have been agreed with the Pastoral Project and are based on best available information and the intention to make a conservative estimation of the GHG emissions.

### 3.2.2. Calculation of GHG emissions from air travel

The amount of the Pastoral Project's GHG emissions from air travel has been estimated using a methodology developed by the International Civil Aviation Organization (ICAO), known as the ICAO Carbon Emissions Calculator, and data inputs provided by the Pastoral Project.

The ICAO methodology applies the best publicly available industry data to account for various factors such as aircraft types, route specific data, passenger load factors and cargo carried.

For additional information, please refer to the methodology to the ICAO Carbon Emissions Calculator: [https://www.icao.int/environmental-protection/CarbonOffset/Documents/Methodology%20ICAO%20Carbon%20Calculator\\_v10-2017.pdf](https://www.icao.int/environmental-protection/CarbonOffset/Documents/Methodology%20ICAO%20Carbon%20Calculator_v10-2017.pdf)

### 3.2.3. Calculation of GHG emissions from other sources

The amount of the Pastoral Project's GHG emissions from sources other than air travel has been estimated using a methodology developed by the UNFCCC Secretariat, known as the Climate Neutral Now Calculator.

The assumptions made to complete the calculations are listed as below:

1. 10 staff or participants traveling by train from Berlin to Bonn (round trip). The distance Berlin – Bonn considered is 479 km.

2. 100 staff or participants traveling by train from Cologne to Bonn (round trip). The distance considered is 25 km.
3. 100 staff or participants using local transport with a total round-trip distance 40 km. Half of them travel by bus and half by private car.
4. 1 flight from New York to Frankfurt (round trip, economy class). That person takes the train from Frankfurt to Bonn (round trip). The distance from Bonn to Frankfurt is 173.3 km.
5. 6 flights from Vienna to Cologne (round trip, economy class).
6. 19 person-night stays in hotels.
7. 3000 Brochures printed for the Project. The flyer's size is 5.5 x 8.5 in (source <https://www.canva.com/sizes/flyer/>). Flyer's assumed ? or estimated? weight is 0.17 kg/m<sup>2</sup> paper (source <https://printworx.co.uk/paper-weights-explained/>). Emission factor is 1.183 Kg CO<sub>2</sub> e/Kg paper (source [https://www.mfe.govt.nz/sites/default/files/media/2016-voluntary-ghg-reporting-summary-tables-emissions\\_0.pdf](https://www.mfe.govt.nz/sites/default/files/media/2016-voluntary-ghg-reporting-summary-tables-emissions_0.pdf)).
8. The duration of the event has been assumed to be 6 hours. 100,000 viewers will stream the event. Viewers were divided equally among four categories: users of smartphone in UHD and 4G network; users of smartphone in SD and WiFi; users of laptop in UHD and WiFi; and users of laptop in SD and WiFi. The emission factors come from the International Energy Agency (IEA), source: <https://www.iea.org/commentaries/the-carbon-footprint-of-streaming-video-fact-checking-the-headlines>.
9. Electricity consumption was estimated by extrapolating the 19.3.19 – 13.3.20 consumption of the Project's parent organization, Beethoven Anniversary Society (BTHVN2020 GmbH), to 30 months, to cover the life of the Project from November 2017 until end of 2020, and then taking 10% of the total as Pastoral Project's share of the BTHVN 2020 shared offices. The grid emission factor for Germany in 2019 was applied.
10. For heating, a similar procedure was followed. The invoice for the period 1.1.2018 - 31.12.2018 was extrapolated to 30 months, to cover the life of the Project from November 2017 until end of 2020, and then taking 10% of the total as Pastoral Project's share of the BTHVN 2020 shared offices. The heating fuel was assumed to be natural gas.

### 3.3. ANALYSIS OF GHG EMISSIONS

#### 3.3.1. Analysis of GHG emissions trends

The Beethoven Pastoral Project's GHG footprint for 5 June 2020 and its preparatory activities was estimated as **136.42 tons of CO2 equivalent**.<sup>3</sup>

#### 3.3.2. Analysis of GHG emissions by scope

Information relating to the proportion of Pastoral Day Project's GHG footprint attributable to each scope of GHG emissions is provided in **Table 3**.

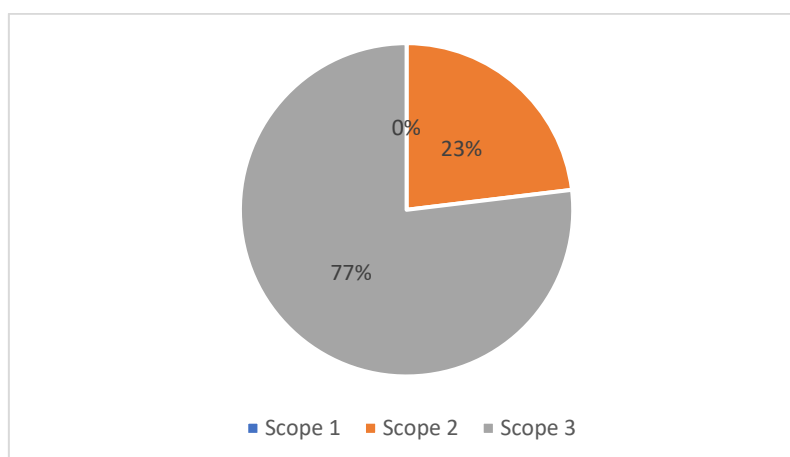
Scope of GHG emissions	Tons of CO2 eq	Proportion of GHG emissions
Scope 1	0	0%
Scope 2	31.50	23%
Scope 3	104.93	77%

**Table 3** GHG footprint by scope.

As can be seen from these numbers, the vast majority of the estimated footprint is associated to scope 3 emissions. The reason is that the Pastoral Day Project itself has limited direct emissions as it consumes mostly renewable electricity, owns no vehicles, and has no direct sources of emissions. Therefore, the most relevant sources are associated with travel and consumption of electricity by the viewers of the streamed event.

**Figure 1** also shows the proportion of Pastoral Day Project's GHG footprint attributable to each scope of GHG emissions.

**Figure 1** Proportion of GHG footprint by scope.



<sup>3</sup> This figure is rounded to the nearest whole number. See **Annexure A** to this report for additional information.



## 4. CONCLUSIONS AND RECOMMENDATIONS

### 4.1. ACCOUNTING METHODOLOGY

It is important that the accounting methodology used to calculate the Beethoven Pastoral Project's GHG footprint is as accurate as possible in order to ensure the credibility of the calculation and its climate action.

For any future events, the Pastoral Project or BTHVN 2020 should consider whether the accounting methodology outlined in section 0 of this report is the most appropriate methodology for calculating its GHG footprint and which improvements could be made.

### 4.2. REDUCTION OF GHG EMISSIONS

It is important for the Pastoral Project to reduce its GHG footprint as much as possible in order to ensure the credibility of its climate action. Pastoral Day Project can do this by setting goals to reduce GHG emissions associated with its activities where possible.

Prior to any subsequent event, the Pastoral Project or BTHVN 2020 should consider whether all avoidable GHG emissions associated with its activities have been identified and measures taken to avoid or reduce them.

### 4.3. COMPENSATION

As identified in section 3.3 of this report, the Pastoral Project's GHG footprint for the event of 5 June 2020 and its preparatory activities was estimated as **136.42 tons of CO2 equivalent**.

Offsetting is an action that enables organizations to compensate for the GHG emissions they cannot avoid by supporting worthy projects that reduce GHG emissions somewhere else and bring additional sustainable development benefits to the communities.

As part of its Climate Neutral Now Pledge, the Pastoral Project will offset its GHG emissions for this event using Certified Emission Reduction units (**CERs**). CERs are issued for GHG emissions reductions achieved by Clean Development Mechanism (**CDM**) projects.

One option to obtain CERs is through the UN Carbon Offset Platform:

<https://offset.climateneutralnow.org/>

For more information on CDM projects and how they contribute to climate action and sustainable development, you can visit: <https://cdm.unfccc.int/about/multimedia/index.html>

## ANNEXURE A – Results of estimation of GHG emissions

### Estimation of GHG emissions

<b>Reporting period:</b>	1 November 2017 – 5 June 2020
<b>Number of staff/employees:</b>	10

<b>Generating electricity (scope 1)</b>	<b>Fuel type (gas or diesel)</b>	<b>Amount (liters/gallons)</b>	<b>TOTAL CO2 EQ (tons per year)</b>
Generation			NA

<b>Generating heat – non-electric<sup>4</sup> (scope 1)</b>	<b>Source of heat (gas, coal, etc.)</b>	<b>Amount used (kg, tons, gallons)</b>	<b>TOTAL CO2 EQ (tons per year)</b>
Consumption			NA

<b>Business travel - company car (scope 1)</b>	<b>Fuel type (gas, diesel, hybrid)</b>	<b>Type of car</b>	<b>Distance travelled (km)</b>	<b>TOTAL CO2eq (tons)</b>
Vehicle 1				
Vehicle 2				
<b>TOTAL CO2 EQ (tons per year)</b>				NA

<sup>4</sup> This section should be left blank if the heat source is electricity as this will be accounted for in the section above.

Estimation of GHG emissions					
<b>Purchasing electricity (scope 2)</b>	<b>Amount (kWh)</b>	<b>Total cost<sup>5</sup> (please specify currency)</b>	<b>TOTAL CO2eq (tons)</b>		
Consumption	1719		<b>1.07</b>		
<b>Purchasing heating</b>	<b>Amount (kWh)</b>	<b>TOTAL CO2eq (tons)</b>			
Consumption	136432.5	<b>27.56</b>			
<b>Business travel – flights (scope 3)</b>	<b>Origin (departure location)</b>	<b>Destination (arrival location)</b>	<b>Class (business or economy)</b>	<b>CO2eq (tons)</b>	
1 Flight	New York	Frankfurt	Economy	0.73	
6 Flights	Vienna	Cologne	Economy	1.13	
<b>TOTAL CO2 EQ (tons per year)</b>				<b>1.86</b>	
<b>Business travel – public transport (scope 3)</b>	<b>Bus (km)</b>	<b>Taxi (km)</b>	<b>Train (km)</b>	<b>Other</b>	<b>TOTAL CO2eq (tons)</b>
Distance travelled	2000		14926.6		
Tons CO2 eq	0.07	NA	1.34	NA	<b>1.41</b>
<b>Employee commuting</b>	<b>Car Type</b>	<b>Distance traveled (km)</b>	<b>TOTAL CO2eq (tons)</b>		

<sup>5</sup> Please provide this information if the amount of electricity purchased is unknown.

Estimation of GHG emissions			
Employees' own cars	Average gasoline	2000	<b>0.24</b>

Other <sup>6</sup>	Source (please specify, including scope)	TOTAL CO <sub>2</sub> eq (tons)
Significant sources of GHG emissions	Accommodation	1.11
	Printing of brochures	0.02
	Electricity consumption by viewers	84

Aggregate estimated GHG emissions (in tons of CO<sub>2</sub> equivalent)<sup>7</sup>

**124.02**

10% safety factor (in tons of CO<sub>2</sub> equivalent)<sup>8</sup>

**12.40**

**Total estimated GHG emissions (in tons of CO<sub>2</sub> equivalent)<sup>9</sup>**

**136.42**

<sup>6</sup> This is to cover, for example, the generation of large amounts of waste, high consumption of water, and burning of fuels or wood

<sup>7</sup> This is the sum of the "TOTAL CO<sub>2</sub> EQ" figures (ie. the figures in the cells shaded dark grey).

<sup>8</sup> This is to cover GHG emissions from waste, water and other smaller sources. The amount is 10% of the Beethoven Pastoral Project's "Aggregate estimated GHG emissions".

<sup>9</sup> This is the sum of the Beethoven Pastoral Project's "Aggregate estimated GHG emissions" and the "10% security factor", also known as the Beethoven Pastoral Project's "GHG footprint".