

HMG

## COP26

### Carbon Management Plan: PAS 2060 Qualifying Explanatory Statement

Reference: COP26 CMP

Final Report | May 2022

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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# Executive Summary

## Achievement of carbon neutrality - Declaration

The United Kingdom, as Host Country for COP26, was required by UNFCCC to deliver a climate neutral conference. This requirement applied to the planning and delivery of the Blue Zone (the main conference venue), the transport of delegates attended the Blue Zone, and local impacts from delegate attendance (local travel and accommodation impacts).

To demonstrate its commitment to sustainability, UK Government took the decision to expand the scope of the commitment to carbon neutrality to also include activities associated with the Green Zone. The carbon neutrality scope also broadened to include key supporting activities such as the police and security operations, Green Zone attendee travel, and the activities carried out by HMG and key suppliers in preparation for the delivery of COP26.

The broadening of the commitment has meant a significantly larger set of emission sources have been included in the Carbon Management Plan (CMP). The intention is to provide a more complete and representative quantification of the impacts arising from hosting a COP. This transparency around the scale of COP26 will also help support future events to better understand and manage their carbon impacts.

**COP26 has achieved and demonstrated carbon neutrality for HMG in accordance with PAS2060: 2014 Specification for the demonstration of carbon neutrality for the period covering the preparation and delivery of COP26.**

This report fulfils the requirements for the Qualifying Explanatory Statement (QES) specified within PAS2060, and contains all relevant documentation to support HMG's declaration of carbon neutrality.

The declaration of achievement of carbon neutrality has been externally assured by Arup.

# 1. Introduction

## 1.1 COP26

COP26 was held in Glasgow, Scotland, United Kingdom (UK) from 31 October to 13 November 2021, under the presidency of the UK. COP stands for Conference of the Parties. Parties are the signatories of the United Nations Framework Convention on Climate Change (UNFCCC) – a treaty agreed in 1994 which has 197 parties (196 countries and the EU).

The 2021 Glasgow-based conference, hosted by the UK together with partners Italy, was the 26th meeting of the Parties. United Nations (UN) climate change conferences are among the largest international meetings in the world. The negotiations between governments are complex and involve officials from almost all countries, as well as representatives from civil society and the world's media.

This was the largest international summit the UK had hosted and the most significant climate negotiations since COP21 in Paris, 2015. COP26 saw 38,000 delegates travelling from nearly 200 countries – the highest attendance ever at a COP – with an average of 13,000 delegates on site each day and more than 17,000 on peak days.

The COP26 event space consisted of two distinct areas: the Blue Zone and the Green Zone.

- The Blue Zone, hosted at the Scottish Event Campus (SEC), was the official UN area and provided a fully accessible space for conducting international negotiations between delegations, ministers and government officials. It was also the location for many official side events hosted by the UN, observer organisations and activities facilitated by the extraordinary number of media outlets attending the event.
- The Green Zone was a UK Government managed space for the public to engage with the topics discussed by the COP26 participants. The Green Zone was open for 12 days from 1-12 November 2021. 215 events were held across 7 events spaces which included a full dome planetarium and a 360-seater cinema. Over 100 organisations were provided with exhibition space.

UNFCCC sets minimum requirements for hosting a COP which include delivering a carbon-neutral conference. The UK Government committed to implementing the International Standard for Event Sustainability Management Systems (ISO20121). In addition, the UK developed a comprehensive Carbon Management Plan aligned with PAS 2060, the international standard for carbon neutrality. COP26 is the first COP to apply this standard, which prioritises identifying all emissions generated as a result of the event, as well as emissions avoidance and reduction.

This PAS2060: Qualifying Explanatory Statement was developed to provide final reporting on the carbon management process, which was delivered by the COP26 Delivery Unit comprising the Foreign Commonwealth and Development Office (FCDO) and the Cabinet Office (CO). The FCDO and CO represent the planning and delivery organisation for COP26 by Her Majesty's Government (HMG) under the terms of the Host Country Agreement (HCA) in place between HMG and the United Nations Framework Convention on Climate Change (UNFCCC).

This report contains all the relevant documentation to support HMG's declaration of commitment to, and achievement of, carbon neutrality as defined in PAS 2060. The declaration of achievement of carbon neutrality has been externally assured by Arup.

## 1.2 Declaration of carbon neutrality

HMG has delivered a carbon neutral COP26 in accordance with *PAS 2060: 2014 Specification for the demonstration of carbon neutrality* for the period commencing **1st May 2021**. The declaration of carbon neutrality has been externally validated by Arup.

Carbon neutrality has been achieved by:

- Understanding and quantifying the impacts (of greenhouse gas emissions) of the activities undertaken to prepare for and deliver COP26;
- Avoiding and reducing emissions against business as usual by actively engaging with delivery partners and suppliers to innovate, seek, identify and implement opportunities to reduce the scale of these impacts to the extent feasible; and
- Using appropriate carbon offsetting measures to account for the residual carbon footprint of the event, after carbon reduction opportunities were implemented.

This report represents the Qualifying Explanatory Statement (QES) for the declaration of achievement of carbon neutrality. Appendix A provides a checklist of PAS2060 requirements and identifies where the relevant clauses can be found within this statement.

Alignment with PAS2060 requires the determination of several characteristics of the event, in order to support the requirements for transparency and accountability for the event, and the declarations on carbon neutrality.

**Table 1: PAS 2060 Information Requirement for COP26**

PAS 2060 Information Requirement	PAS specifics
Entity responsible for making PAS 2060 declaration	Her Majesty's Government of the United Kingdom
Identify the individual responsible for the evaluation and provision of data necessary for the substantiation of the declaration including that of preparing, substantiating, communicating and maintaining the declaration.	Wasim Mir Chief Operating Officer COP26 Presidency
Subject of PAS 2060 declaration	The 2021 United Nations Climate Change Conference (also known as COP26) and including the planning and delivery of associated Green Zone activities.
Rationale for the selection of the subject	The subject is the COP26 event, which was time limited for a period in November 2021. The definition of the subject includes both the operations and events within the Blue Zone and the Green Zone despite their differences as they were commissioned/organised by HMG as complementary zones run in parallel.
Boundaries of the subject	Full details on the boundaries of the subject are set out in Section 2.5. In summary the boundaries include: <ul style="list-style-type: none"> <li>• Delivery of the Blue Zone (the main conference), the transport of delegates attending the Blue Zone, and local impacts from delegate attendance (local travel and accommodation impacts).</li> <li>• Green Zone activities and key supporting activities such as the police operations, Green Zone attendee travel, and the activities carried out by HMG and key suppliers in preparation for the delivery of COP26.</li> </ul>
Characteristics (purposes, objectives or functionality) inherent to that subject	The characteristics and activities material to the subject are detailed in Section 2.5.
Activities material to the fulfilment, achievement or delivery of the purposes,	The characteristics and activities material to the subject are detailed in Section 2.5.

objectives or functionality of the subject	
Option of validation	Other party validation
Baseline year for PAS 2060	<p>PAS 2060 defines three categories of event type:</p> <ul style="list-style-type: none"> <li>• Recurring – e.g. annual conference or exhibition</li> <li>• Periodic – e.g. fundraising event</li> <li>• Non-recurring – e.g. wedding or special anniversary celebration, concert, one-off sports event.</li> </ul> <p>COPs are generally held annually and might be expected to be considered a recurring-type event. However, given the diverse nature and location of individual COPs, and that this is the first instance whereby PAS2060 is being followed, many of the considerations of annual events do not apply. <b>For the purposes of this initial application of PAS2060 the event will be considered akin to a non-recurring event.</b></p> <p>This is relevant as it influences the specification of the Baseline Period and Qualifying Dates for cyclical/periodic demonstration of carbon neutrality (applied for subjects which operate over longer timescales than a single two-week event).</p> <p>PAS2060 permits the use of 100% offsetting for the first iteration of its application, i.e. where a subject has not undergone PAS2060 previously and there is no existing baseline. This is the appropriate approach for COP26 where, in the absence of a historic baseline or baseline period, the Carbon Management Plan is instead based on an understanding of the event plan and a quantification of likely footprint based on this event plan and relevant assumptions where necessary.</p>
Achievement period	<p>The hosting of COP26 encompasses several different periods of activity covering the setup, delivery, and takedown of the event venues; the preparatory work undertaken by other bodies in support of the event planning and delivery; and the activities of the COP Unit, including the activities of the COP President.</p> <p>The scheduled period for COP26 was 31<sup>st</sup> October 2021 – 12 November 2021.</p> <p>The start period for the process of delivering COP26 is taken to be 1<sup>st</sup> May 2021 to encompass the majority of planning activity prior to the physical event.</p> <p>The end period for the process of delivering COP26 is taken to be 31<sup>st</sup> March 2022 to encompass post-event activities.</p>
Commitment period	As the approach is to consider COP26 a non-recurring event then the Commitment Period is not relevant.

## 2. Approach to Carbon Management

### 2.1 Commitment

The UK, as Host Country for COP26, was required by the UNFCCC to deliver a climate neutral conference. This requirement (as set out in the Host Country Agreement) applied to the delivery of the Blue Zone (the main conference), the transport of delegates attending the Blue Zone, and local impacts from delegate attendance (local travel and accommodation impacts).

The UK decided to expand the commitment to carbon neutrality to include the Green Zone activities and key supporting activities such as the police operations, Green Zone attendee travel, and the activities carried out by HMG and key suppliers in preparation for the delivery of COP26. This was a significant increase in scope from previous COPs but was considered appropriate given the UK's commitment to deliver a climate neutral event and the highest levels of sustainability achievable.

### 2.2 Overview of the process

Carbon Management is one element of the broader sustainable event management process, and it falls under the wider ISO 20121 Sustainable Event Management process.

A Carbon Management Plan (CMP) was developed for the delivery body of COP26<sup>1</sup>. The CMP followed the main steps set out in Figure 1.

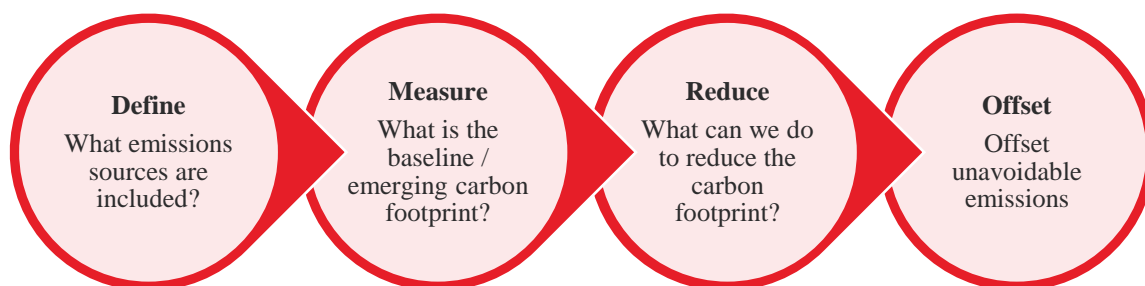


Figure 1: Key steps in the carbon management process

### 2.3 Methodology

PAS 2060 requires that a recognised methodology is used to quantify the carbon footprint of the identified Subject. The methodology adopted for COP26 is based on the Greenhouse Gas (GHG) Protocol, primarily using carbon activity factors produced by the UK Government Department for Business, Energy and Industrial Strategy (BEIS). Wherever possible primary data has been used to assemble the carbon footprint of the event. However, where this data was not available, or was impractical to gather, secondary or spend-based data was used as an appropriate estimation method.

The process of detailing and collecting data to inform the Carbon Management Process was challenging due to the scale and complexity of data, the multiple parties involved in planning and

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<sup>1</sup> <https://ukcop26.org/wp-content/uploads/2021/11/Executive-summary-of-our-Carbon-Management-Plan.docx.pdf>

delivery, and the transitory nature of some project partners (for whom their involvement concluded shortly after the closing of COP26).

A suite of data collection templates was developed iteratively through the planning stages to ensure that adequate data was collected to inform the carbon management process. Templates were shared with the relevant parties in advance of COP26 to ensure completion during planning stages and to ensure all parties were aware of the data needs. In some cases, data was not provided in the level of detail or granularity expected, and various methods were adopted to address these gaps based on other projects or publicly available benchmarks. All assumptions used to assemble the event footprint are set out later in this document, including where secondary or benchmark data was used.

The use of secondary data implies uncertainties due to assumptions and estimations. Efforts have been made to not underestimate the actual carbon footprint of the given activity. Wherever actual activity data has not been available, a precautionary approach had been applied in the quantification of the carbon footprint in order to avoid under-reporting of GHG emissions.

All data included within the final carbon quantification has been assigned a quality ranking, based on the nature of the data and the level of data manipulation required. Sets out the quality ranking scores.

**Table 2: Data quality rankings**

<b>Quality Ranking process</b>	Standard carbon factors are available for use from reputable source for specific project location	Standard carbon factor is available for use from reputable source but is not relevant to specific project location	No standard carbon factor available. Estimated carbon factor has been used based on professional judgement
Primary data available in good level of granularity.	<b>High (1)</b>	<b>Medium (2)</b>	<b>Medium (2)</b>
Project-specific data available but manipulation/extrapolation required from part of the group to a whole; or activity data has been estimated based on project-specific profile of activity.	<b>Medium (2)</b>	<b>Medium (2)</b>	<b>Low (3)</b>
No primary or project specific data available. Benchmarks from other events has been using a conservative approach to avoid significant underestimation of emissions.	<b>Medium (2)</b>	<b>Low (3)</b>	<b>Low (3)</b>

Generally, the calculation of carbon emissions for a specific activity is carried out using a basic formula:

$$\text{Quantum of 'activity'} \times \text{emissions factor per unit of activity} = \text{Quantum of GHG}$$

The quantum of activity can take various forms:

- Units of fuel (m<sup>3</sup>, kWh etc)
- Quantities of materials (m<sup>3</sup>, tonnes etc)
- Numbers of items (e.g. sheets of paper, meals, nights in hotels etc)
- Usage values (train journeys, flights etc)
- Expenditure values



The emissions factors, data sources and data quality rankings for the final quantification of emissions are set out in Appendix C.

## 2.4 Boundary

Defining the boundary for the carbon assessment was based on the principles set out in the GHG Protocol Corporate Standard and applied in line with the requirements set out in PAS 2060 Carbon Neutrality. The boundary and scope was also informed by wider considerations such as the commitments placed on the UK as the host country of the event, and also considerations of transparency and the need to demonstrate leadership in the subject.

The GHG Protocol presents two main approaches to identifying which emissions fall under the responsibility of the entity: *Equity Share* or *Control*.

- *Equity Share* reflects the extent of the rights of a company to the risks/rewards of an operation based on the company/organisation's equity interest. This approach was not considered relevant to scoping of COP26.
- The *Control* approach reflects either:
  - *Financial Control* defines where an entity has sufficient control to benefit financially from an activity; or
  - *Operational Control* where an entity has full authority to introduce and implement operating policies at an operation.

The boundary of the carbon scope has been further informed by the concept of *Control* and *Influence* with additional consideration given to the underlying principles within PAS2060 which contains the over-arching principle that:

*“it is necessary that the boundary be defined so as to include all activities integral to the intended outcome of that event (i.e. activities without which, the event could not be held or would be fundamentally changed in intention or outcome) which may generate emissions at some stage during the life cycle of the event”*

This principal – when considered in the context of an international event of the magnitude of COP26 – tended to encourage a wide-ranging approach to boundary setting. Given the attendance of large numbers of international delegates, and a large number of VIPs and heads of state, there were several aspects around transport, accommodation, security, and policing without which the event would “be fundamentally changed in intention or outcome”. For this reason, the application of PAS 2060 to the Carbon Management Process for COP26 led to the inclusion of some significant additional sources of emissions not typically included in historic COP reporting. This process has also led to the inclusion of some emissions sources over which HMG had more limited control – e.g. emissions from hotel accommodation, from participant international travel, and impacts associated with policing. However, given the sensitivity of the event (with respect to global focus and the need for transparency around GHG emissions), and the desire and expectation to understand the full impacts of the event, these sources were included within the boundary of the assessment.

## 2.5 Scope

The ‘How to COP’ handbook (produced by the UNFCCC) provided some guidance on the minimum scope of activities to include in the CMP.

For the conference venue, these include:

- Electricity and steam consumption;
- On-site fuel consumption (combustion) for power and heating;
- Release into the atmosphere of refrigerants for air conditioning, heating and cooling;
- Water consumption;
- Catering impacts; and

- Waste generation and management.

Outside the venue, these include:

- Aggregate fuel/energy consumption for dedicated local transport (public transportation, taxis, shuttles, limousines, etc.); and
- Per capita electricity/steam/fuel/water consumption and waste generation at the hotels.

As outlined in section 1.2 the UK decided to expand the commitment to carbon neutrality to include the Green Zone activities and key supporting activities such as the police operations, Green Zone attendee travel, and the activities carried out by Her Majesty’s Government (HMG) and key suppliers in preparation for the delivery of COP26.

Unofficial events taking place around Glasgow / Scotland were excluded from the boundary and scope of the CMP.

Table 3 below sets out the boundary definition and scoping for relevant emissions sources.

**Table 3: Summary of boundary and scope**

Emissions source	Period	In/out boundary	In/out scope	Rationale
<b>VENUES</b>				
BZ Energy consumption	Prior to, during and post event	In	In	
BZ Refrigerant leakage	Prior to, during and post event	In	Out	Exclude on materiality basis given the small contribution of this during the period of the event.
BZ Water consumption	Prior to, during and post event	In	In	
BZ Catering	Prior to, during and post event	In	In	
BZ Waste generation	Prior to, during and post event	In	In	
GZ Energy consumption	Prior to, during and post event	In	In	
GZ Refrigerant leakage	Prior to, during and post event	In	Out	Exclude on materiality basis given the small contribution of this during the period of the event.
GZ Water consumption	Prior to, during and post event	In	In	
GZ Catering	Prior to, during and post event	In	In	
GZ Waste generation	Prior to, during and post event	In	In	
Additional venue energy consumption	Prior to, during and post event	In	In	
<b>EMERGENCY SERVICES</b>				
Police operational vehicle fuel use	Prior to and during the event	In	In	
Police operational venues – consumption, catering & waste	Prior to and during the event	In	In	
Police accommodation	Prior to and during the event	In	In	

Other emergency services (SFRS and SAS) operational vehicle fuel use	Prior to and during the event	In	In	
Other emergency services (SFRS and SAS)accommodation	Prior to and during the event	In	In	
Royal Navy and Royal Air Force operational vehicle fuel use	Prior to and during the event	In	In	
Police procurement	Prior to and during the event	In	In	Police Scotland undertook significant procurement in advance of COP26 to provide the operational capability for an event of this scale. A full break down of what was purchased has not been made available in sufficient time to inform this reporting – and an allowance has been made to reflect this uncertainty.
<b>ACCOMMODATION</b>				
HMG (COP Unit) accommodation pre and post event	Prior to and post event	In	In	
Supplier & Consultant accommodation (Hotels, apartments etc)	Prior to, during and post event	In	In	
Supplier & Consultant accommodation (cruise ship) – (energy, water, waste)and transport to Scotland	Prior to and during the event	In	In	
Blue Zone Registered participant accommodation (energy, water, waste)	During the event	In	In	
Green Zone visitor accommodation (energy, water, waste)	During the event	In	In	
Blue Zone Registered participant per diem expenses (outside venues)	During the event	Out	N/A	HMG has no control or influence over BZ/GZ Delegates activities outside the event and BZ/GZ Delegates activities outside the event venues are not relevant to the successful delivery of the event.
Green Zone visitor per diem expenses (outside venues)	During the event	Out	N/A	
<b>VENUES</b>				
BZ Energy consumption	Prior to, during and post event	In	In	
BZ Refrigerant leakage	Prior to, during and post event	In	Out	Excluded on materiality basis

BZ Water consumption	Prior to, during and post event	In	In	
BZ Catering	Prior to, during and post event	In	In	
BZ Waste generation	Prior to, during and post event	In	In	
GZ Energy consumption	Prior to, during and post event	In	In	
GZ Refrigerant leakage	Prior to, during and post event	In	Out	Excluded on materiality basis
GZ Water consumption	Prior to, during and post event	In	In	
GZ Catering	Prior to, during and post event	In	In	
GZ Waste generation	Prior to, during and post event	In	In	
Additional venue energy consumption	Prior to, during and post event	In	In	
<b>LOGISTICS AND OPERATIONS</b>				
Office use by HMG during planning stages	Pre-event	In	Out	Data not readily available and forecast to contribute <1% of footprint (when aviation excluded) in line with PAS2060
Office use by others (UNFCCC, Consultants, Police etc)	Pre-event	Out	N/A	No control by HMG and not expected to meet materiality test
Venue emissions arising from training of staff and volunteers in advance of the event	Pre-event	In	Out	Due to Covid restrictions the majority of volunteer training has been undertaken using virtual engagement platforms. Any residual impact is expected to be not material.
Travel and catering associated with training of staff and volunteers in advance of the event	Pre-event	In	Out	
Freight transport for Blue Zone delegates/Parties	Immediately prior to, and during, the event	In	In	
Paper use and printing	Immediately prior to, and during, the event	In	In	
Merchandise and gifts provided to delegates during the event	Prior to the event	In	Out	Confirmed that gift bags would not be provided to VIPs therefore any impact not expected to be material
Manufacture of bespoke uniforms for staff/volunteers	Prior to the event	In	Out	Not considered materials
Information and Communications Technology (ICT) related impacts	During the event	In	In	ICT impacts either arise from the manufacture of equipment, or from the energy impacts associated with operations and delivery of digital information. There is no expectation that ICT equipment will be procured only for use during COP26 so this is excluded. The wider ICT footprint (via energy use

				for servers etc) is currently scoped out based on the availability of accurate data, the extent of control of HMG, the capturing of electricity use within venue energy consumption reporting and the lack of control of HMG on other party usage of ICT outside the venues.
<b>TRAVEL</b>				
Business travel by HMG during planning stages inc. COP President travel	Pre-event	In	In	
Business travel use by other parties: UNFCCC; Arup; Crowberry; Identity; Atalian; Optima; Police	Pre-event	In	In	
Blue Zone Registered participant international and UK transport	Prior to and following the event	In	In	
Blue Zone Registered participant local transport	During the event	In	In	
Green Zone visitor international and UK transport	Prior to and following the event	In	In	
Green Zone visitor local transport	During the event	In	In	
VIP local transport	During the event	In	In	
Other individuals in the vicinity of BZ and GZ but not attending formally (e.g. protestors, campaigners, 3 <sup>rd</sup> party businesses etc)	Prior to, during, and following the event	Out	Out	HMG has no control over other attendees and events beyond the formal Blue and Green Zones. These are also not relevant to the successful delivery of the event.

## 3. Carbon footprint – managing carbon emissions for the event

### 3.1 Approach to carbon management

The preliminary baseline assessment for COP26, was estimated at **102,500 tCO<sub>2</sub>e**. This baseline provided the best working assessment of the emissions from the event based on planning parameters for the event, carbon reporting for previous COPs, and lessons learnt from the footprinting of previous similar events.

COP26 represented the largest summit ever hosted by the UK and included a large number of participant organisations and as such the baseline footprint provided an indication of scale in order to inform the wider activities within the Carbon Management Plan.

The majority of emissions were estimated to come from international aviation, equating to approximately 60% of the baseline footprint.

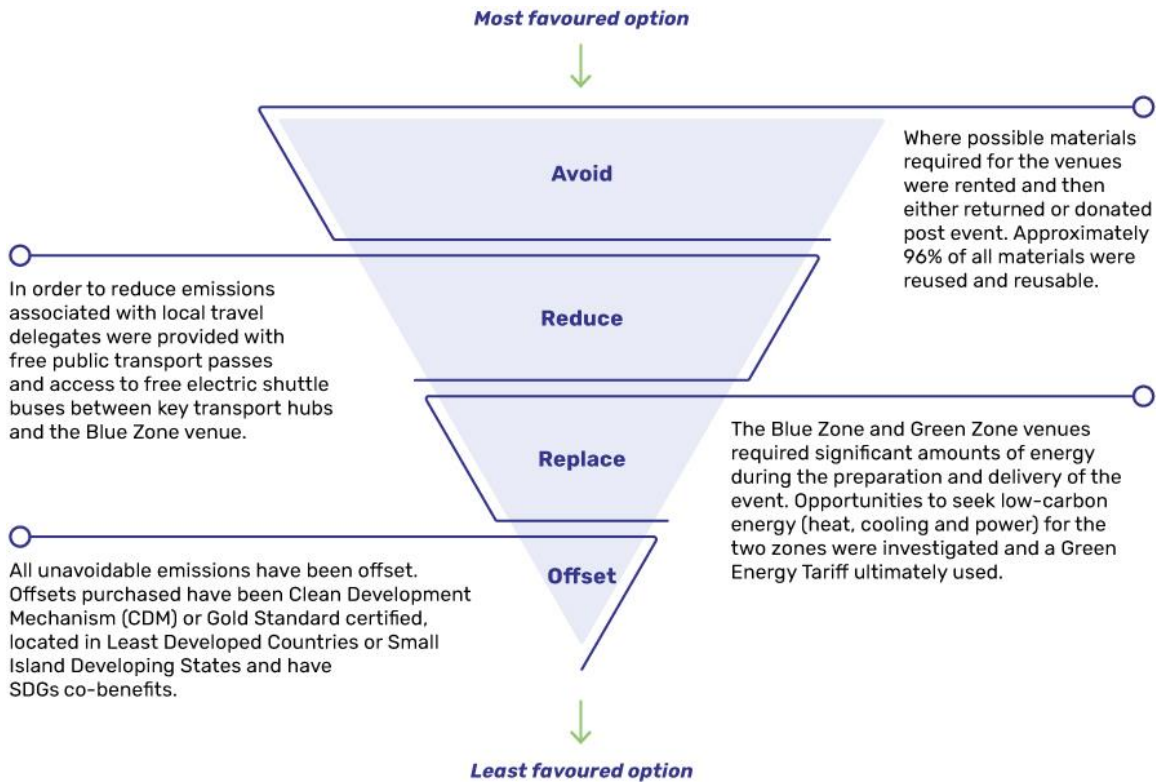
Other large contributions to the baseline footprint were from:

- Accommodation for delegates and participants
- Policing and Security for the event
- Transportation to and from venues during the event
- Venue energy, water and waste management
- Temporary venue space construction and transportation of materials
- Venue catering

The baseline identified a set of priority topic areas representing the carbon hotspots of COP26. These included:

- **International travel:** promoting alternative travel options e.g. Rail where feasible/ appropriate.
- **Partners/Supply chain:** HMG included carbon reduction in the major contract packages including Production and Ground Transport and worked with suppliers to reduce carbon through their contracts.
- **Ground Transport:** using low emission vehicles where possible, prioritising walking/cycling and public transport, and using biofuels for generators where no appropriate charging infrastructure was available
- **Venues:** BZ and GZ venues sourcing energy from renewable sources and implementing energy efficiency measures
- **Catering:** using local and seasonal produce.

COP26's approach to carbon management followed the hierarchy shown in Figure 2 below.



**Figure 2: Carbon management hierarchy**

In alignment with standards and guidance, carbon reduction/minimisation was adopted as a priority and offsetting has been used for 'residual' emissions only – i.e. those that cannot be reduced to zero.

A series of strategies and interventions were identified and developed in order to reduce the emissions from key hotspots across both Blue and Green Zones. These are discussed in the following section in the context of the actual calculated/reported emissions for COP26.

## 4. Residual emissions quantification

### 4.1 Residual emissions calculation

The final quantification of residual emissions for COP26, was calculated at **131,556 tCO<sub>2</sub>e**.

The emissions factors, data sources and data quality rankings for the final quantification of emissions are set out in Appendix C.

#### Key messages

The majority of emissions came from international aviation, equating to approximately 72% of the calculated residual emissions from the event. Aviation for international attendees remains one of the most challenging areas in which to reduce impacts.

Policing and associated procurement and activity was a key component within the delivery of COP. Impacts arising from these include the transport and accommodation of police officers, their travel each day during the event, and also the procurement of equipment and consumables for the event. Police Scotland adopted a procurement approach which focused on ensuring that all procurement of materials/equipment would only take place where there was an operational need for COP26, and also where there was an identified onward use for all asset/equipment bought (either for other future policing operations, or for use by other organisations). It was expected that in addition to this procurement there would also be some purchasing of one-off consumables (including items such as catering, temporary accommodation, mobile and communications services, vehicle rental, training, police dog expenses etc). Full appraisal of procurement impacts from Police Scotland has not yet been completed – but it was considered appropriate to include an allowance within the final reporting to reflect the potential impacts from this procurement for those items solely for consumption/use during the event (i.e. without an ongoing value/function).

Due to the scale of the event in Glasgow it was necessary to seek additional accommodation solutions for police and other staff associated with the event. The impacts from bringing a cruise ship to Glasgow and using it to provide accommodation near to the venue was significant – responsible for around 5% of the overall residual emissions. Reported emissions for police and delivery partner accommodation are lower than expected as they are captured in the ship-based accommodation element.

Impacts from the Blue Zone venue have been reported using the location-based reporting metric. This provides a higher estimate than the market-based method as a renewable energy tariff was used to supply the BZ during build, operation, and breakdown of the event. The location-based approach estimates emissions from electricity for BZ at approximately 186 tCO<sub>2</sub>e. In practice the emissions from electricity would have been closer to, or near, zero under a market-based reporting approach. However given the scale of uncertainties within the wider appraisal it was decided to retain the location-based approach when considering the scale of offsets required to deliver the carbon neutral event.

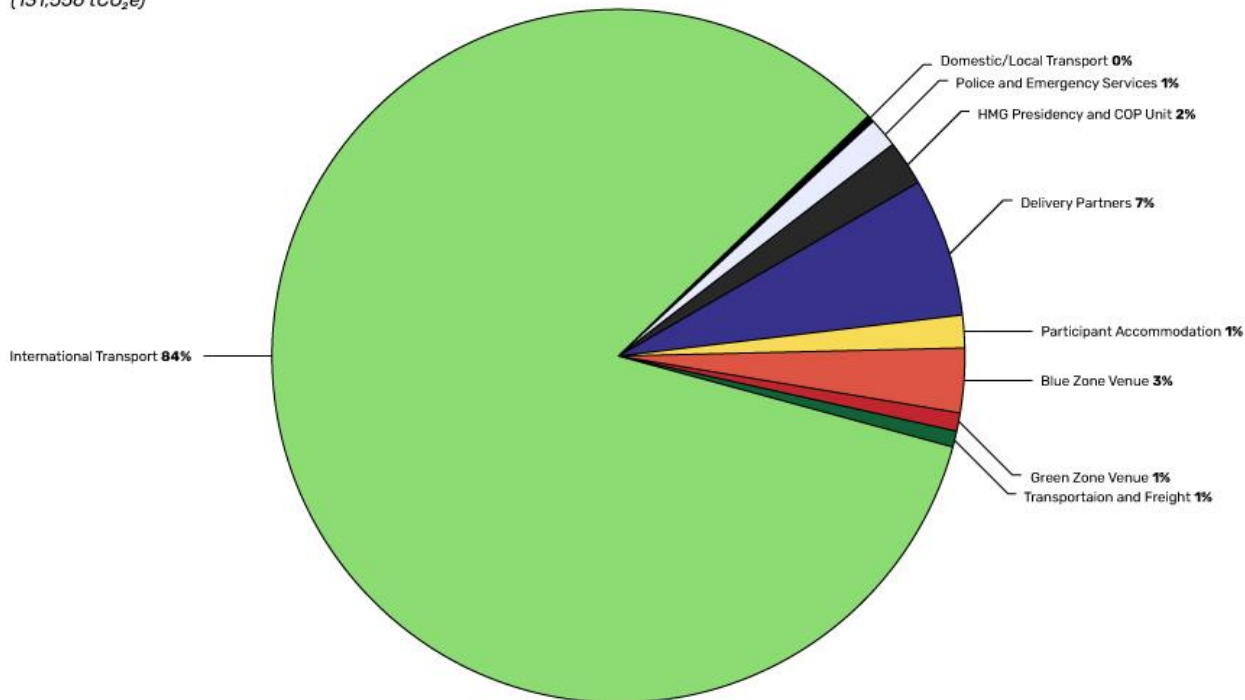
For two key areas of interest – catering and local travel – the emissions reported for the event are significantly lower than in the baseline appraisal. While these are a moderate element of the overall footprint they do represent areas of key importance as they were material to the day-to-day experience of attendees. The reduced impact in these areas (compared to baseline) is attributed mainly to the provision of alternative locally based food choices within the Blue Zone, and from the provision of free public transport for attendees during the event – removing the need for private car usage.



Figure 3 illustrates the relative scales of different emissions sources within the residual emissions estimate. The breakdown is dominated by the impacts arising from international travel, almost all of which arises from aviation<sup>2</sup>.

**COP26 Residual GHG Emissions**

(131,556 tCO<sub>2</sub>e)



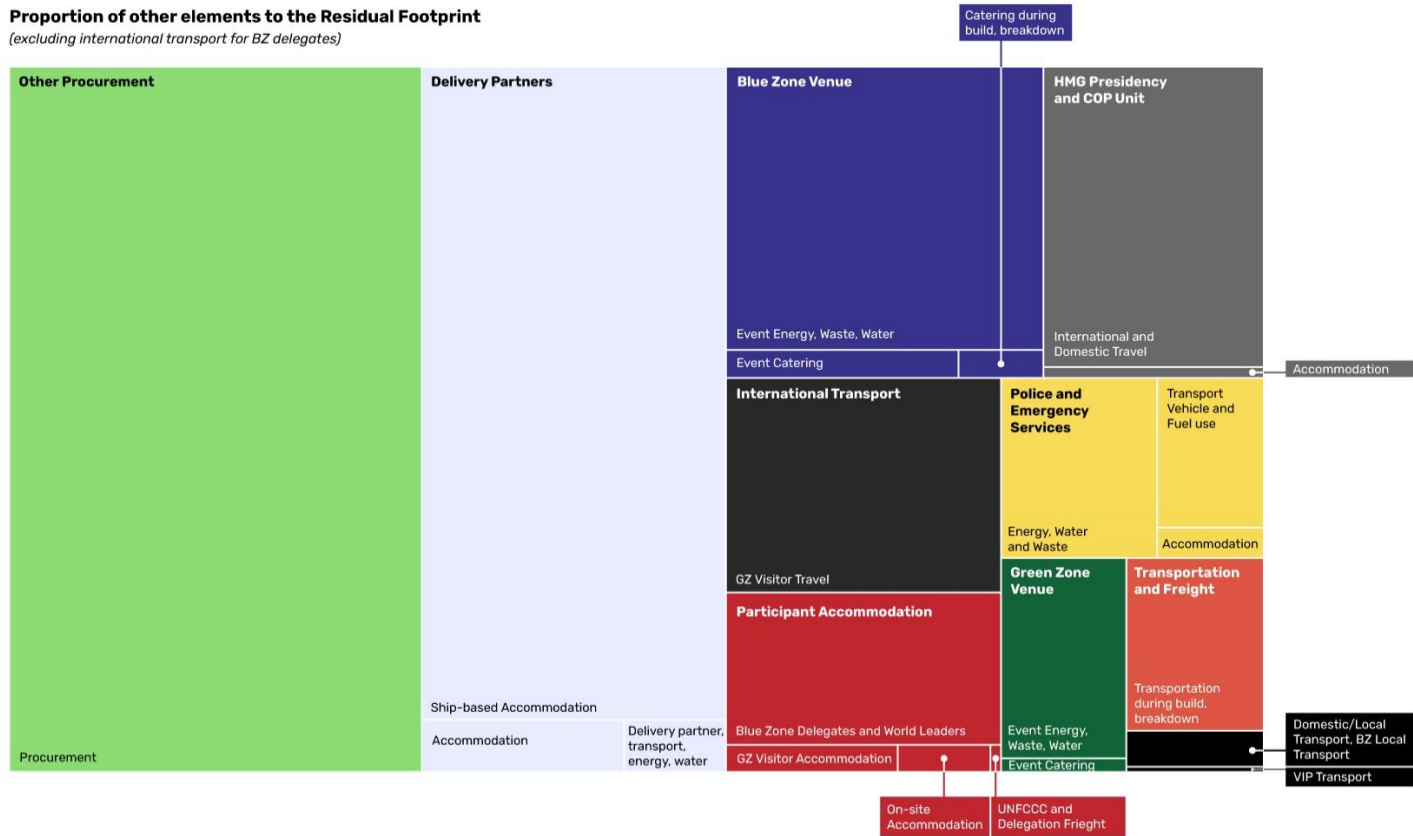
**Figure 3 Residual emissions components**

Given the scale of international transport emissions, and the limited opportunity to reduce these without inhibiting in-person attendance, it is useful to consider the sources of residual emissions without aviation included.

<sup>2</sup> The estimation of emissions for Blue Zone delegates is estimated at 33,398 tCO<sub>2</sub>e. A portion of these emissions are offset directly by UNFCCC and have been removed from the residual emissions calculation. In order to allow for additional non-GHG impacts from aviation arising from radiative forcing mechanisms a precautionary approach has been taken whereby the aviation emissions have been multiplied by a factor of three.

**Proportion of other elements to the Residual Footprint**

*(excluding international transport for BZ delegates)*



**Figure 4 Residual emissions components excluding aviation**

## 4.2 Carbon reduction priorities

The development of the baseline prior to the hosting of COP26 identified a range of areas where efforts were focused in order to attempt to reduce emissions. The following sections attempt to contextualise the emissions from these sources and, where possible, provides additional context based on the use of typical benchmarks for equivalent activities.

### 4.2.1 Transportation

#### Long distance transport

The largest contributor to the GHG emissions impact, by far, arises from international air travel. Air travel falls within the scope of the CMP under the Host Country Agreement between UNFCCC and UK which requires the Host Country to purchase carbon offsets equivalent to the emissions arising from delegate travel to attend the conference.

Detailed information on travel methods for COP delegates was not available as the majority of attendees undertook their own travel booking arrangements. In order to estimate emissions for international travel a quantification exercise was undertaken by UNFCCC, which modelled the impacts from the 38,462 delegates understood to have attended COP26 in Glasgow. The assessment has been reviewed and is confirmed as providing the most appropriate estimate of aviation emissions. This element is estimated to have generated 33,400 tCO<sub>2e</sub> prior to the application of a Radiative Forcing (RF) multiplier of 3, intended to address non-GHG impacts from aircraft emissions.

#### Local transport

Attendance at COP26 by ticketed delegates totalled 195,658 between 27<sup>th</sup> October and 14<sup>th</sup> November 2021. Peak attendance was on 2<sup>nd</sup> November when over 17.5k delegates entered the Blue Zone.

A key strategy for reducing the impact of local travel by delegates was the providing of free transport in the form of:

- Free public transport passes for delegates
- Free electric shuttle buses from key transport hubs to the Blue Zone venue

Travel pass data collected from public transport providers indicates that over 80,000 trips were taken by ticketed delegates using local bus and underground services during COP26. In addition to this an estimated 3.8m km were travelled by train during the event.

It is impractical to consider the full benefit of providing public transport to delegates given the range of destinations and alternative travel modes available to delegates. However for context the 3.8m km of rail are estimated at producing 165 tCO<sub>2e</sub>. Had these journeys been completed using a typical petrol car those emissions would have been approximately 565 tCO<sub>2e</sub>.

The provision of the electric shuttle bus provided hop on/off services to delegates arriving at main transport hubs in Glasgow. It also provided access from nearby hotel areas. Emissions from the electric bus are estimated at 5.55 tCO<sub>2e</sub> based on the level of service provision. Had this been delivered using a standard fossil-fuelled bus then emissions for the same level of service would have been an estimated 26,000 tCO<sub>2e</sub> assuming an average occupancy of 10 people per round trip.

### 4.2.2 Catering

Catering was considered to be a sensitive topic for COP26 given the international makeup of the attendee groups, the need for catering to be available for long negotiation sessions, the large numbers of attendees, and the cultural needs of delegates. Catering within the carbon management process also extended to the preparation and post-event period.

The carbon impact of catering was reduced in both the BZ and the GZ by increasing the number of vegetarian meal options. Approximately 61% of meals served in BZ were plant based or vegetarian, and 70% of GZ meals were plant based or vegetarian. non meat based, contributing to an approximate saving of 108 tCO<sub>2</sub>e across the full preparation and delivery phases for COP26.

Consideration was also given to sourcing and transport of products. All products were locally sourced within 70km of the venues.

### **4.2.3 Venues**

The BZ and GZ venues required significant amounts of energy during the preparation and delivery of the event. Opportunities to seek low carbon energy (heat, cooling and power) for the two zones were investigated and a Green Energy Tariff ultimately used.

Where possible materials required for the venues were rented and then either returned or donated post event. Approximately 96% of all product types were reused and reusable. The recycled content of all product types was determined to be 24.6%

Waste management associated event venues was also a key priority. 53% of BZ waste was recycled, with 42% sent to Energy Recovery Facilities (ERF), and 5% sent to anaerobic digestion. Diverting BZ waste from landfill contributed to a saving of approximately 49 tCO<sub>2</sub>e.

## 5. Offset strategy

The CMP required that carbon avoidance and minimisation was adopted as a priority and that offsetting was used for 'residual' emissions only.

The offsetting strategy for the COP26 was agreed with BEIS before the event and complies with PAS 2060 requirements:

- All unavoidable emissions were offset using Certified Emissions Reductions (CERs) from Clean Development Mechanism (CDM) from Commitment Period 2 (2013 – 2020)
- CERs selected were prioritised as being:
  - Gold Standard certified
  - Located in Least Developed Countries or Small Island Developing States
  - Have Sustainable Development Goal (SDG) co-benefits
  - Not renewable energy projects due to concerns around additionality
  - Not industrial gas projects and land sector projects

The final range of offsets procured are set out in Table 4.

**Table 4 Final record of carbon offsets purchased**

Project type	Project Name	Location	Standards	Units purchased (tCO <sub>2</sub> )
Cookstoves	Clean Cook Stoves in Sub-Saharan Africa by ClimateCare Limited	Ghana	CDM	58,839
Composting	Avoided methane emission through aerobic composting at Vietstar municipal solid waste treatment facility	Vietnam	GS CDM	6,881
Waste Water Treatment	Avoided Methane Emission Through Aerobic Composting At Vietstar Municipal Solid Waste Treatment Facility	Vietnam	GS CER	23,500
Hydropower	Xe Namnoy 1 Hydropower Project	Laos	GS CER	27,000
Cookstoves	Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America	Honduras	GS VER	14,000
Wind	Prony And Kafeate Wind-Farms	New Caledonia	GS VER	6,500

In total **136,720 tCO<sub>2</sub>** equivalent of carbon offsets were purchased. This provided a buffer above the total reported emissions for the event which were being finalised and updated at the time of purchase.

## 6. Conclusion

COP26 has achieved carbon neutrality for Her Majesty's Government in accordance with PAS 2060: 2014 Specification for the demonstration of carbon neutrality for the period from 1<sup>st</sup> May 2021 to 31<sup>st</sup> March 2022. Our declaration of carbon neutrality has been externally validated by Arup.

Carbon neutrality has been achieved by:

- Understanding and quantifying the impacts (of greenhouse gas emissions) of the activities undertaken to prepare for and deliver COP26;
- Avoiding and reducing emissions against business as usual including actively engaging with delivery partners and suppliers to innovate, seek, identify and implement opportunities to reduce the scale of these impacts to the extent feasible; and
- Using appropriate carbon offsetting measures to account for the residual carbon footprint of the event, after carbon reduction opportunities were implemented.

**The residual emissions for the event were calculated at 131,556 tCO<sub>2</sub>e.**

# Appendix A

## PAS 2060 QES CHECKLIST

Annex B of PAS 2060 provides a checklist to support the declaration of commitment to carbon neutrality. The checklist provides the contents of what must be included in the Qualifying Explanatory Statement (QES) which is produced to support the commitment to, or achievement of, carbon neutrality.

The checklist has been reviewed and populated with notes to confirm that all elements are in place to support the formal declaration and production of the QES prior to the event.

Checklist requirement	Notes
Identify the individual responsible for the evaluation and provision of data necessary for the substantiation of the declaration including that of preparing, substantiating, communicating and maintaining the declaration.	Wasim Mir Chief Operating Officer COP26 Presidency
Identify the entity responsible for making the declaration.	Her Majesty's Government
Identify the subject of the declaration	The 2021 United Nations Climate Change Conference (also known as COP26) and including the planning and delivery of associated Green Zone activities.
Explain the rationale for the selection of the subject.	<i>Her Majesty's Government</i> commits to delivering a sustainable and carbon neutral COP26. „We will lead by example on event sustainable development issues, as this relates to environmental, social and economic performance across the 2021 COP26 lifecycle, and core values of stewardship, integrity, inclusivity and transparency. HMG's aim was to deliver a sustainable summit through the development, implementation, management and continual improvement of an ISO 20121 Event Sustainability Management System, and integrated Carbon Management Plan, and commit to fulfilling all applicable requirements associated with its implementation“
Define the boundaries of the subject.	See Section 2 - Carbon Approach
Identify all characteristics inherent to that subject.	See Section 2 - Carbon Approach
Identify and take into consideration all activities material to the fulfilment, achievement of the purposes, objectives or functionality of the subject.	See Section 2 - Carbon Approach
Select which of the 3 options within PAS 2060 you intend to follow.	Achievement of carbon neutrality will be solely based on offsetting, although opportunities identified to reduce have been outlined in the CMP and in this QES.
Identify the date by which the entity plans to achieve the status of "carbon neutrality" of the subject and specify the period for which the entity intends to maintain that status.	31st March 2022
Select an appropriate standard and methodology for defining the subject, the GHG emissions associated with that subject and the calculation of the carbon footprint for the defined subject.	GHG Protocol Corporate Standard
Provide justification for the selection of the methodology chosen.	Provides most appropriate standard given the complexity of the event, the parties involved and complexities around allocation of responsibility and definition of boundaries.

Confirm that the selected methodology was applied in accordance with its provisions and the principles set out in PAS 2060.	Confirmed by the validating organisation Arup.
Describe the actual types of GHG emissions, classification of emissions (Scope 1, 2 or 3) and size of carbon footprint of the subject exclusive of any purchases of carbon offsets.	See Section 2 - Carbon Approach
Where the subject is an organisation/company or part thereof...	N/A
Identify if the subject is part of an organisation or a specific site or location, and treat as a discrete operation with its own purpose, objectives and functionality.	The Subject is not part of an organisation, although is hosted by HMG.
Where the subject is a product or service, include all Scope 3 emissions (as the lifecycle of the product/service needs to be taken into consideration)	PAS 2060 suggests that the application to events should take consideration of standard methodologies for goods and services. The approach taken for the COP26 has been to take a pragmatic maximised approach to Scope 3 emissions either where the Entity has a significant degree of control, or where the Subject (the event) could not take place without these activities occurring (e.g. policing impacts). Some activities (e.g. media attendance) were not considered fundamental to the successful delivery of the event and, being largely outside HMG control, are excluded from the boundary for assessment.
Describe the actual methods used to quantify GHG emissions, the measurement unit(s) applied, the period of application and the size of the resulting carbon footprint.	See Section 2 - Carbon Approach
Provide details of, and explanation for, the exclusion of any Scope 3 emissions.	See Section 2 - Carbon Approach
Document all assumptions and calculations made in quantifying GHG emissions and in the selection or development of greenhouse gas emission factors.	Appendix C sets out all assumptions made in quantifying GHG emissions. The methodology adopted for carbon footprinting is based on the GHG Protocol Corporate Accounting and Reporting Standard, primarily using carbon activity factors produced by the UK Government Department for Business, Energy and Industrial Strategy (BEIS) and augmented with publicly available sector specific carbon factors.
Document your assessments of uncertainty and variability associated with defining boundaries and quantifying GHG emissions including the positive tolerances adopted in association with emission estimates.	See Section 2 - Carbon Approach
Document carbon footprint management plan:	Provided by HMG on 30 September 2021
Implement a process for undertaking periodic assessments of performance.	As COP26 is a non-recurring event periodic assessments are not applicable.
Where the subject is a non-recurring event identify ways of reducing GHG emissions to the maximum extent commensurate with enabling the event to meet its intended objectives before the event takes place and include post event review to determine whether or not the expected minimisation in emissions has been achieved.	See Section 2 - Carbon Approach.
For any reductions in the GHG emissions from the defined subject delivered in the period immediately prior to the baseline date.	Not applicable to COP26
Record the number of times that the declaration of commitment has been renewed without declaration of achievement.	Zero
Specify the type of conformity assessment:	Other party validation



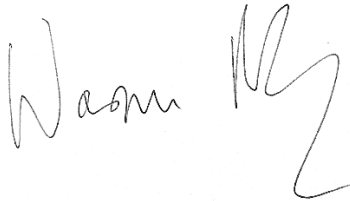
Include statements of validation where declarations of commitment to carbon neutrality are validated by a third party certifier or second party organisations.	Appendix B
Date the QES and have it signed by the senior representative of the entity concerned.	13/05/2022
Make QES publicly available and provide a reference to any freely accessible information upon which substantiation depends	To be made publicly available via HMG and UNFCCC websites.
Update the QES to reflect changes and actions that could affect the validity of the declaration of commitment to carbon neutrality.	N/A

# Appendix B

## HMG Declaration of Carbon Neutrality

COP26 has achieved carbon neutrality for Her Majesty's Government in accordance with *PAS 2060: 2014 Specification for the demonstration of carbon neutrality* for the period commencing 1st May 2021 to 31st March 2022. Our declaration of carbon neutrality has been externally validated by Arup.

Signed by:



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Wasim Mir

Chief Operating Officer

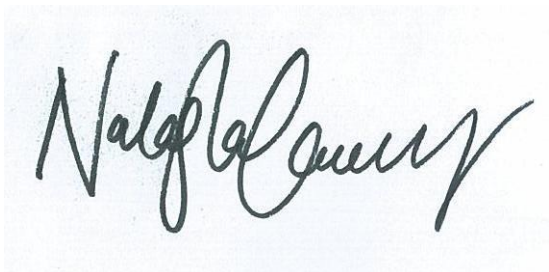
COP26 Presidency

13<sup>th</sup> May 2022

## Statement of Validation

Arup hereby validates the declaration of achievement of carbon neutrality and the qualifying explanatory statements contained in this document are in accordance with the requirements of *PAS 2060: 2014* for COP26 for the period commencing 1st May 2021 to 31st March 2022.

Signed by:



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Natasha Connolly

Associate Director

Ove Arup and Partners Ltd

13<sup>th</sup> May 2022

# Appendix C

## Emissions factors, Data sources, Certainty Ranking & Assumptions

Emissions category	Sub category	Sub category 2	Item	Data source/provider	Emissions factor source	tCO2e (rounded)	Data confidence score	Data confidence score justification
<b>Emergency Services / MOD</b>								
Emergency Services	Police Scotland	Accommodation and associated impacts / Venues	Consumption	Police Scotland	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	1,049	1	No assumptions made by Arup. Data provided by Police Scotland.
Emergency Services	Police Scotland	Accommodation and associated impacts / Venues	Waste	Police Scotland	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	11	1	No assumptions made by Arup. Data provided by Police Scotland.
Emergency Services	Police Scotland	Accommodation and associated impacts / Venues	Catering	Police Scotland	Based on WFLDB (2015) Calculated as 20% vegetarian meal, 40% meal with chicken, 40% meal with beef	114	2	Total number of hot meals provided by Police Scotland. Assumption made by Arup on the vegetarian / meat split using the World Food LCA Database.
Emergency Services	Police Scotland	Travel	Km travelled by mode	Police Scotland	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	439	1	No assumptions made by Arup. Data provided by Police Scotland.
Emergency Services	Scottish Fire & Rescue Services	Accommodation and associated impacts	Total nights of booked accommodation	Scottish Fire & Rescue Services	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	1	1	No assumptions made by Arup. Data provided by Scottish Fire & Rescue Service.
Emergency Services	Scottish Fire & Rescue Services	Travel	Km travelled by mode	Scottish Fire & Rescue Services	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	4	1	No assumptions made by Arup. Data provided by Scottish Fire & Rescue Service.
MOD	MOD	Fuel	Quantity of fuel	MOD	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	142	1	No assumptions made by Arup. Data provided by MOD
						<b>1,759</b>		
<b>Other Procurement</b>								
Other Procurement	Procurement	Materials	Tonnes of supplies	Police Scotland	Custom carbon factor based on analysis of policing and security expenditure during the G7 event using EE-IO spend-based carbon factors.	10,773	3	<p>It was identified early in the planning process that significant procurement of equipment was required by Police Scotland. At the time of writing the complete expenditure is not known. Much of the procurement is likely to be subject to some operational confidentiality limitations.</p> <p>Police Scotland adopted a procurement policy that required procurement to give consideration to onward use for other events and police operations. It is considered reasonable that this purchasing is excluded from the COP26 footprint, but that an allowance be made for any portions of expenditure that were for consumable items.</p> <p>An allowance of £18m has been made to represent an estimated portion of expenditure in this category. In practice it is likely to be significantly smaller than this – but the approach adopted is conservative.</p>

						10,773		
<b>Accommodation and associated impacts</b>								
Accommodation and associated impacts	Pre, during & post COP	HMG	Total nights of booked accommodation	HMG	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	39	3	Number of HMG staff provided by HMG. An average 3 night length of stay has been assumed. Assumed accommodation was a 3 star hotel.
Accommodation and associated impacts	Pre, during & post COP	Suppliers & consultants	Total nights of booked accommodation	Suppliers & Consultants	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	390	2	Number of staff provided by suppliers / consultants. Where hotel, flat or Airbnb was specified as type of accommodation it has been assumed this is equivalent to a 3 star hotel.
Accommodation and associated impacts	Pre, during & post COP	Suppliers & consultants	Cruise ship - Tonnes of marine fuel oil used	Tallink	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	7,350	1	No assumptions made by Arup. Data provided by Tallink via Identity.
Accommodation and associated impacts	Pre, during & post COP	Suppliers & consultants	Cruise ship - Cubic metres of water consumed	Tallink	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	1	1	No assumptions made by Arup. Data provided by Tallink via Identity.
Accommodation and associated impacts	Pre, during & post COP	Suppliers & consultants	Cruise ship - Cubic metres of waste	Tallink	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	12	1	No assumptions made by Arup. Data provided by Tallink via Identity.
Accommodation and associated impacts	Pre, during & post COP	Crowne Plaza	Cubic metres of water consumed	Crowne Plaza	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	0	1	No assumptions made by Arup. Data provided by Crowne Plaza.
Accommodation and associated impacts	Pre, during & post COP	Crowne Plaza	kWh electricity consumed	Crowne Plaza	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	12	1	No assumptions made by Arup. Data provided by Crowne Plaza.
Accommodation and associated impacts	Pre, during & post COP	Crowne Plaza	kWh gas consumed	Crowne Plaza	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	15	1	No assumptions made by Arup. Data provided by Crowne Plaza.
Accommodation and associated impacts	Pre, during & post COP	Crowne Plaza	Number of meals served	Crowne Plaza	Based on WFLDB (2015) Calculated as 20% vegetarian meal, 40% meal with chicken, 40% meal with beef	63	2	Total number of meals provided by Crowne Plaza. Assumption made by Arup on the vegetarian / meat split using the World Food LCA Database.
Accommodation and associated impacts	Pre, during & post COP	Crowne Plaza	Tonnes of waste	Crowne Plaza	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2	1	No assumptions made by Arup. Data provided by Crowne Plaza.
Accommodation and associated impacts	Pre, during & post COP	World leades	Total nights of booked accommodation	HMG	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	125	3	Assumed 120 world leaders staying for 3 nights in a 5 star hotel. An uplift has been applied to account for security staff.
Accommodation and associated impacts	Pre, during & post COP	Delegates	Total nights of booked accommodation	HMG	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	1,395	2	Number of delegates provided by UNFCCC. Assumed accommodation was a 3 star hotel.
Accommodation and associated impacts	Pre, during & post COP	GZ visitors	Total nights of booked accommodation	HMG	<a href="https://www.hotelfootprints.org/footprinting">https://www.hotelfootprints.org/footprinting</a>	158	2	Assumption made around type of accommodation
						9,562		
<b>Operation of venues</b>								
Venues	BZ	Catering	Food items served during planning/ build phase and site breakdown	SEC Food	<a href="https://arecipeforchange-cop26.co.uk/menus">https://arecipeforchange-cop26.co.uk/menus</a> Processed in "COP26- Catering - SEC" spreadsheet.	86	2	Number of meals provided by SEC. Assumption made around hot/cold meal split and carbon factor.

Venues	BZ	Catering	Food items served during event	SEC Food	<a href="https://arecipeforchange-cop26.co.uk/menus">https://arecipeforchange-cop26.co.uk/menus</a> Processed in "COP26- Catering - SEC" spreadsheet.	72	2	Number of meals provided by SEC. Assumption made around hot/cold meal split and carbon factor.
Venues	BZ	Catering	Number of drinks served	SEC Food	Based on WFLDB (2015)	148	3	Number of drinks provided by SEC. Assumption made around number of drinks served per meal, type of drink and carbon factor
Venues	BZ	Catering	Total distance travelled (km) for delivery of COP26 catering	SEC Food	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	10	2	Distance provided by SEC. Assumed mode of transport was HGV, average laden.
Venues	BZ	Catering	Tonnes of waste	SEC Food	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	0	1	No assumptions made by Arup. Data provided by SEC.
Venues	BZ	Consumption	Cubic metres of water consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	3	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	BZ	Consumption	kWh electricity consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	186	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	BZ	Consumption	kWh gas consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	85	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	BZ	Consumption	Litres of Biodivesel HVO	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	597	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	BZ	Materials	Tonnes of supplies	Identity	Total tCO2e provided by Identity	2,463	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	BZ	General waste	Tonnes of waste	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	GZ	Catering	Number of food items served	Glasgow Science Centre	Carbon factors used for the BZ used as proxy	51	3	Total number of meals provided by Glasgow Science Centre. Assumption of 70/30 vegetarian/meat meal split provided by Glasgow Science Centre. Carbon factors used for BZ catering used as proxy.
Venues	GZ	Catering	Number of drinks served	Glasgow Science Centre	Based on WFLDB (2015)	5	3	Total number of drinks provided by Glasgow Science Centre. Assumption made by Arup on the vegetarian / meat split using the World Food LCA Database.
Venues	GZ	Catering	Total distance travelled (km) for delivery of COP26 catering	Glasgow Science Centre	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	4	3	Assumption made on number of deliveries and average distance.
Venues	GZ	Consumption	Cubic metres of water consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	0	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	GZ	Consumption	kWh electricity consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	0	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	GZ	Consumption	kWh gas consumed	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	30	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	GZ	Consumption	Litres of Biodivesel HVO	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2	1	No assumptions made by Arup. Data provided by Identity (Tracker+).

Venues	GZ	Materials	Tonnes of supplies	Identity	Total tCO2e provided by Identity	911	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	GZ	General waste	Tonnes of waste	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2	1	No assumptions made by Arup. Data provided by Identity (Tracker+).
Venues	Temp venues - Stadium Management	Consumption	Litres of Biodivesel HVO	Suppliers & Consultants	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	7	1	No assumptions made by Arup. Data provided by Stadium Management.
Venues	Temp venues - Stadium Management	Consumption	Litres of water consumed	Suppliers & Consultants	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	0	1	No assumptions made by Arup. Data provided by Stadium Management.
						<b>4,664</b>		
<b>Logistics &amp; Operations</b>								
Logistics & Operations	Freight	Suppliers & consultants	Km travelled by mode	Suppliers & Consultants	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	840	1	No assumptions made by Arup. Data provided by Suppliers.
Logistics & Operations	Freight	Delegates	Km travelled by mode	Pickfords	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	3	1	No assumptions made by Arup. Data provided by Pickfords.
Logistics & Operations	Paper use		kg paper consumption	Identity	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	1	1	No assumptions made by Arup. Data provided by Identity.
						<b>844</b>		
<b>Travel</b>								
Travel	Planning & Preparation	HMG (inc. COP President travel)	Km travelled by mode	HMG	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2,439	1	No assumptions made by Arup. Data provided by HMG.
Travel	Planning & Preparation	Suppliers & consultants	Km travelled by mode	Suppliers & consultants	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	80	1	No assumptions made by Arup. Data provided by suppliers.
Travel	During COP	Suppliers & consultants	Km travelled by mode	Suppliers & consultants	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	111	1	No assumptions made by Arup. Data provided by suppliers.
Travel	During COP	Delegates - Long distance travel (flights)	Km travelled by mode	UNFCCC		98,917		No assumptions made by Arup. Data provided by UNFCCC.
Travel	During COP	Delegates - Local travel	Km travelled by mode	Transport Scotland	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	217	3	Travel pass data provided by Transport Scotland, including number of journeys and mode of transport. Assumptions made around journey distances.
Travel	During COP	VIPs - Local travel	Km travelled by mode	Transport Scotland	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	6	1	No assumptions made by Arup. Data provided by Transport Scotland.
Travel	During COP	GZ visitors - primary travel	Km travelled by mode	HMG	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	2182	3	Travel data provided by HMG through ticketing. Assumptions made around journey distances and mode for primary travel.

Travel	During COP	GZ visitors - secondary travel	Km travelled by mode	HMG	<a href="https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021">https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021</a>	1	3	Travel data provided by HMG through ticketing. Assumptions made around journey distances and mode for secondary travel.
						<b>103,953</b>		



## Appendix D

### Glossary

BEIS	Department for Business, Energy and Industrial Strategy
BZ	Blue Zone
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CMP	Carbon Management Plan
CO	Commonwealth Office
COP	Conference of the Parties
DFID	Department for International Development
DfT	Department for Transport
DIT	Department for International Trade
FCO	Foreign and Commonwealth Office
GHG	Greenhouse Gas
GS	Gold Standard
GSC	Glasgow Science Centre
GZ	Green Zone
HCA	Host Country Agreement
HMG	Her Majesty's Government
HMRC	HM Revenue and Customs
ICT	Information and Communications Technology
MCGA	Maritime and Coastguard Agency
NHS	National Health Service
QES	Qualifying Explanatory Statement
SAF	Sustainable Aviation Fuel
SAS	Scottish Ambulance Service
SDG	Sustainable Development Goal
SEC	Scottish Exhibition Campus
SEPA	Scottish Environmental Protection Agency
SFRS	Scottish Fire and Rescue Service
SG	Scottish Government
tCO <sub>2</sub> e	tonnes of CO <sub>2</sub> equivalent
UKVI	UK Visas and Immigration
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emissions Reduction
VIK	Value in Kind
WCC	Woodland Carbon Code