Carbon Management Plan: Final quantification of carbon emissions

24.09.21

Contents

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1 Introduction

The G7 Leaders' Summit (G7 Summit) was hosted by the UK in Cornwall from 11th to 13th June 2021. The G7 Summit was attended by leaders from the world's seven largest advanced economies: Canada, France, Germany, Italy, Japan, UK and the United States, in addition to representatives from the European Union, India, South Korea and Australia. The purpose of the G7 Summit was to reach major new agreements to help the world fight, and then build back better from coronavirus and create a greener, more prosperous future.

Her Majesty's Government (HMG) committed to delivering a sustainable and carbon neutral G7 Summit. Leading by example on event sustainable development issues, as this relates to environmental, social and economic performance across the 2021 G7 Summit's 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

This report – 'Carbon Management Plan (CMP): Final quantification of carbon emissions' – was developed for the delivery body for the G7 Summit which comprises the Cabinet Office (CO) and the Foreign, Commonwealth and Development Office (FCDO). The CO and FCDO represent the planning and delivery organisation for the G7 Summit, by Her Majesty's Government (HMG). It covers how the planning and delivery of the G7 Summit was managed to ensure the event achieved carbon neutrality. It was developed in order to align with best available guidance on carbon neutrality, primarily PAS 2060, and has been informed by internationally recognised standards on the measurement and reporting of Greenhouse Gases (GHG) impacts.

This report is HMG's declaration of carbon neutrality for the G7 Summit and provides a clear and transparent source of information on how the carbon footprint of the G7 Summit was managed, the ways in which emissions from the event were reduced, final emissions from the event and offsetting approach for the residual carbon footprint.

2 Declaration of carbon neutrality

Carbon neutrality of the G7 Leaders Summit, Cornwall (G7 Summit) has been achieved by Her Majesty's Government in accordance with PAS 2060 at 31st October 2021 for the period commencing 1st May 2021. Our declaration of carbon neutrality has been externally validated by Arup.

This report represents the Qualifying Explanatory Statement (QES) for the declaration of achievement of carbon neutrality. Appendix B provides signposting to the relevant clauses required within the QES as required by PAS 2060.

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.

Key definitions are set out below.

- The entity claiming carbon neutrality for the G7 Summit is: ***Her Majesty's Government.***
- The subject of the PAS 2060 claim is: **The G7 Leaders Summit, Cornwall (G7 Summit)**
- The G7 Summit took place over a three-day period: **11th – 13th June 2021**
- Boundary: A discussion of the boundary of the Carbon Management Plan is set out in Section 3.2 which represents the fullest understanding of the GHG-emitting activities for the G7 Summit and has been developed in line with the GHG Protocol Corporate Accounting and Reporting Standard.
- Classification of event type: Non-Recurring. G7 Summits are generally held annually and might be expected to be considered a recurring-type event. However, given the diverse nature and location of individual G7 Summits, and that this is the first instance whereby PAS2060 is being followed, many of the considerations of annual events do not apply. For the purposes of this application of PAS2060 the event has been considered akin to a non-recurring event.
- Validation: Arup has validated HMG's compliance with PAS 2060 as an 'other party'

3 Carbon Approach

3.1 Commitment

The G7 Summit 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. 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 the G7 Summit;
- 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.

3.2 Carbon Management Plan Boundary

Following PAS2060 methodology, the boundary for the CMP was defined to include *all activities integral to the holding of the event and the achievement of its intended outcomes.*

The assessment considers emissions generated as a result of the event including those that can be directly managed and influenced, and other emissions attributable to the event but outside direct control of HMG, such as delegate transportation.

A summary of the boundary of the CMP for the G7 Summit is presented below.

Table 1 Summary of the G7 Summit CMP boundary

Category	Emissions sources included in the CMP and Offsetting Strategy
Pre-event planning	• HMG staff business travel related to planning for G7 • Office use in the planning of the event from HMG
Venues, catering and materials	• Venue energy, water, waste (Carbis Bay, Tregenna Castle, National Maritime Museum Cornwall) for the duration of the event (11th-13th June 2021) • Virtual participants • Catering (Main venues) • Waste (Police) • Generator fuel use, gas and electricity consumption (temporary structures) • Materials used for temporary structures/construction • Freight associated with construction of temporary structures and hire equipment • Branding and merchandise sourced for the event including branded items
Travel / Transport	• World leaders, official accredited delegation, registered participants, official media and invited guests: international and UK transport, local transport • UK Police, MoD, NHS and Fire: UK and local transport, official vehicle movements • HMG Staff: international and UK transport, local transport during the event • HMG Suppliers and Consultants including security: international and UK transport, local transport pre-event and during the event
Accommodation	• Accommodation for world leaders, delegations, invited guests, official media, HMG staff, contractors, police and security.

Activities related to the direct and successful running of the G7 Summit were included in the boundary. As such, specific elements such as travel and accommodation by non-accredited individuals, side events not organised by HMG and travel for purposes other than the G7 Summit were excluded. Generally, a conservative approach has been taken for the assessment in order to avoid under-representation.

Emissions from Scope 1 (direct emissions) and Scope 2 and 3 (indirect emissions) were considered.

3.3 Initial Baseline

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.

The preliminary baseline assessment for the G7 Summit using an upper level was approximately 16,000 tCO_2e**.** This baseline was calculated at the initial planning stages of the G7 Summit and was subject to change in light of decisions around the event and as the scope of relevant activities to support the event became clearer as planning and engagement progressed.

3.4 Carbon Hierarchy

The G7 Summit's approach followed the carbon management hierarchy as shown in Figure 1 below.

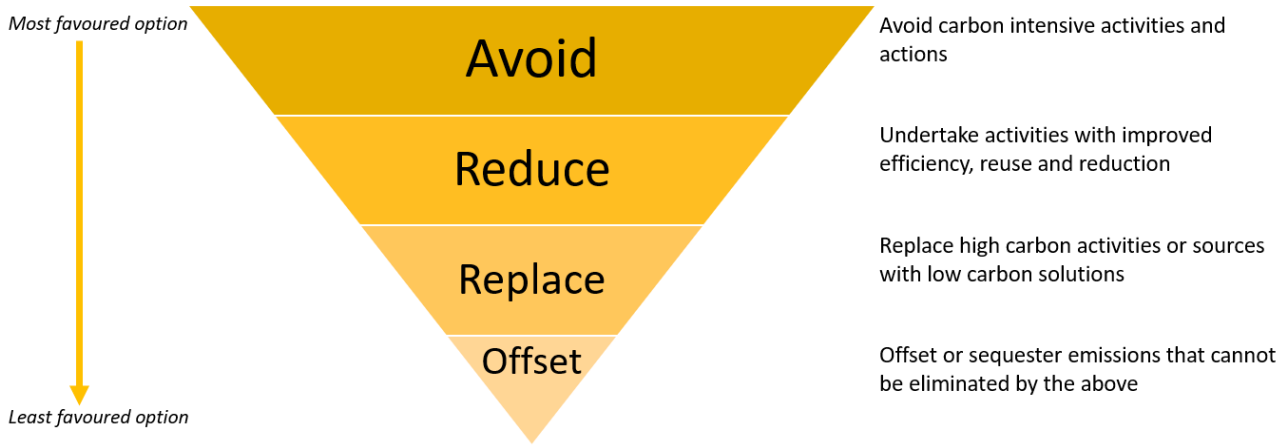

Figure 1: Carbon management hierarchy

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.

3.5 Carbon Avoidance and Reduction

Priorities for emissions avoidance and reduction for the G7 Summit during the planning and delivery of the event included:

- **International travel**: the largest contributor to the baseline due to private planes. Other than reducing the number of planes or changing the plane type/fuel, which is not within HMG's control, it is difficult to avoid or reduce these emissions. HMG asked all the international parties if they offset their emissions from travel.

- **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 for traffic management staff and using biofuels for generators at the transport hubs
- **Venues**: Carbis Bay Hotel & Estate; Tregenna Castle Resort and the National Maritime Museum Cornwall in Falmouth to source energy from renewable sources and implement energy efficiency measures
- **Catering**: using local and seasonal produce including a commitment to use locally sourced produce for catering procured within a 100 mile radius to reduce mileage.

The majority of commercial tenders communicated our sustainability and carbon ambitions and required carbon reduction as part of the contract requirements. Arup engaged with our supply chain partners directly to assist them in how to best avoid, reduce or replace high carbon activities.

4 Final Emissions

4.1 Final quantification of emissions

The methodology adopted for carbon footprinting is based on the GHG Protocol, 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. A list of assumptions and source data for the final calculated footprint is provided in Appendix A.

The final assessment for the G7 Summit was calculated to be 20,960 tCO_2e. Figure 1 presents the total emissions by category. The majority of emissions are associated with international aviation (40%) and accommodation (30%).

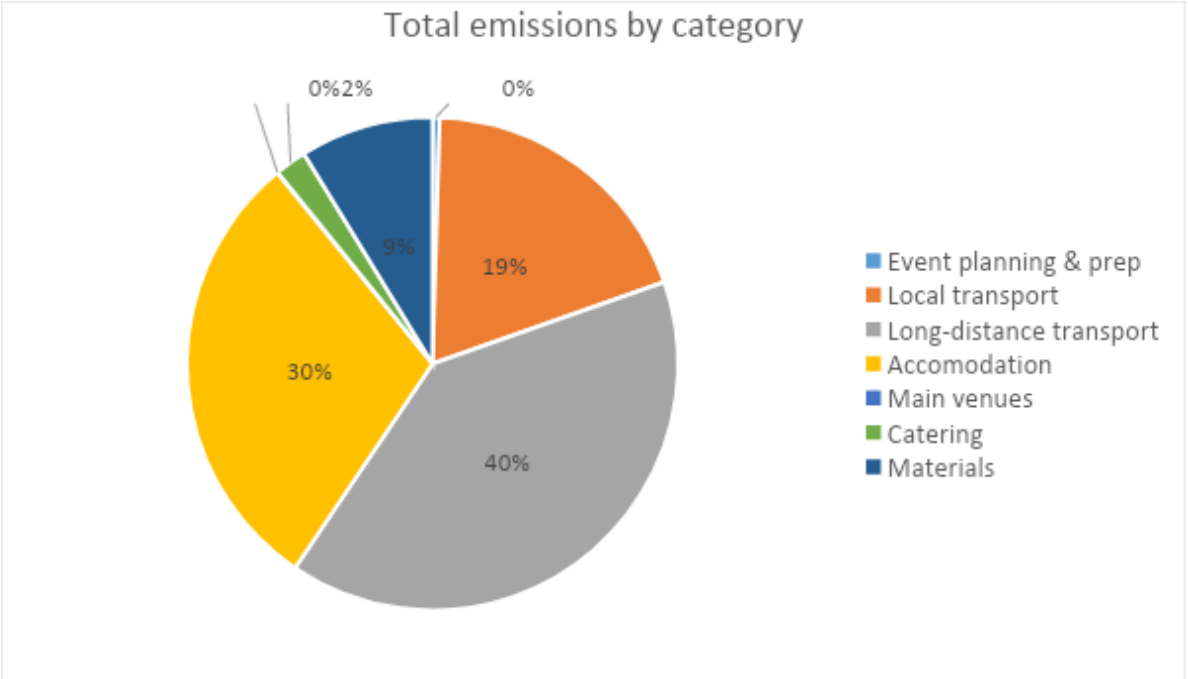

Figure 2: Percentage of emissions by category

4.2 Review of final emissions

The final emissions were 4,960 tCO_2e above the initial baseline estimate. The increase in emissions from the baseline estimate was primarily due to:

- ***Covid-19***
  The global pandemic and changing national guidance during the planning and delivery of the event meant that the forecast emissions changed. This was due to:
  - An increase in participants and contractors physically attending the G7 Summit in person due to the relaxing of UK restrictions for travel for work purposes.
  - A significant increase in the accommodation needs due to social distancing requirements (particularly with respect to shared accommodation facilities).
  - An increase in the number of cars due to social distancing requirements.
  - During the preparation of the initial baseline forecast, the venues were closed due to the national lockdown so information was not able to be sourced directly.

- ***Policing / Security***
  The policing and security presence increased from the initial baseline forecasts. This resulted in an increase in travel and additional accommodation provision. The cruise ship that was required for the additional accommodation was not known at the time of the initial forecast.

- ***Flights***
  There was an increase in the number of planes arriving into the UK from the initial baseline. This was due to international guests bringing additional planes including cargo planes.

  The emissions from helicopters from Newquay Airport to St Ives was reduced from the initial forecast due to the weather conditions that restricted helicopter travel.

- ***Confidentiality / Security***
  During the collation of information for the baseline estimate, some details of the event were deemed confidential for reasons of operational security. It wasn't until during the event itself and post event that full details could be disclosed to allow a more accurate assessment of the footprint.

5 Carbon Offsetting

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 G7 Summit was agreed with BEIS before the event and complies with PAS2060 requirements:

- All unavoidable emissions will be offset using Certified Emissions Reductions (CERs) from Clean Development Mechanism (CDM) from Commitment Period 2 (2013 – 2020)
- CERs selected are:
  - 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
- Local offsetting schemes have also been explored where available and feasible, and accredited by relevant codes such as the Woodland Carbon Code or Peatland Carbon Code.

A total of 802 tCO_2e associated with international aviation was voluntarily offset by individual delegate nations. The offsetting programs that were used were checked to comply with PAS2060 requirements and therefore were applied towards the G7 Summit.

Therefore to achieve carbon neutrality 20,158 tCO_2e of carbon offsets were required to be purchased by HMG.

Prior to the event, in line with the initial baseline, HMG purchased 16,000 tCO_2e of carbon offsets. Post event HMG purchased 4,200 tCO_2e of carbon offsets. The offsets support five global projects certified by the Gold Standards:

- Improved Cook Stoves CDM project of JSMBT, India
- Avoided methane emission through aerobic composting at Vietstar municipal solid waste treatment facility, Vietnam
- Xe Namnoy 2 – Xe Katam 1 Hydropower Project, Laos
- CYY Biopower Wastewater treatment plant including biogas reuse for thermal oil replacement and electricity generation Project, Thailand
- Installation Of Low Greenhouse Gases (GHG) Emitting Rolling Stock Cars In Delhi Metro, India

The total residual emissions associated with the G7 Summit were offset in line with the Carbon Offsetting Strategy and satisfy the PAS2060 requirements.

6 Conclusion

The G7 Summit 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. 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 the G7 Summit;
- 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.

Appendix A – Key assumptions

Category		Units	Assumption	Source
Event planning & preparation	Office use	No. of people	25% of HMG staff	HMG
		No. of days	6 months of 20 working days	HMG
	Office use – Area	m²	10m² per person	HMG
	Office use – Electricity consumption	kWh/m²/year	Grid Electricity	2019 Real Estate Environmental Benchmark, Building Better Partnerships (March 2020)
		kg CO_{2e}/kWh	Carbon factor for Grid Electricity used	2021 UK Government GHG Conversion Factors for Company Reporting
	Office use – Gas consumption	kWh/m²/year	Natural Gas	2019 Real Estate Environmental Benchmark, Building Better Partnerships (March 2020)
		kg CO_{2e}/kWh	Carbon factor for Natural Gas used	2021 UK Government GHG Conversion Factors for Company Reporting
	Office use – Water consumption	litres/person/day	Typical usage	2019 Real Estate Environmental Benchmark, Building Better Partnerships (March 2020)
		kg CO_{2e}/l	Carbon factor for Water (Litres) used	2021 UK Government GHG Conversion Factors for Company Reporting
	HMG travel (Air)	km		HMG & Cabinet Office travel logs
		kg CO_2/vkm	Average emissions factor	2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors

			for domestic flights	
	HMG travel (Land)	km		HMG & Cabinet Office travel logs
		kg CO_{2e}/km	Carbon factor from Passenger Vehicles and Business Travel (Land) used	2021 UK Government GHG Conversion Factors for Company Reporting
Long distance travel	Flights (Australia)	km	Return Canberra to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a A330-300 (worst case emissions factor from A330 range in long haul list)	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (Canada)	Km	One-way Ottawa to Cornwall One-way Cornwall - Geneva	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a A310	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (EU Commission & EU Council)	Km	Return Brussels to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Average emissions factor	HMG – aircraft number and model

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			for short haul flights	2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (France)	Km	Return Paris to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Average emissions factor for short haul flights	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (Germany)	km	Return Berlin to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a A319	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (Italy)	Km	Return Rome to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a A319	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (Japan)	km	Return Tokyo to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a BOEING 777-300ER	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (South Africa)	km	Return Pretoria to Cornwall	Distance calculated using https://flight-distance.com/

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		Kg CO_2/vkm	Emissions factor for a A737-900	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors (worst case emissions factor from A737 range in short haul list (A737 range not included in long haul list))
	Flights (South Korea)	km	Return Seoul to Cornwall	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a BOEING 747-400	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (USA)	km	One-way Washington to Cornwall One-way Cornwall - Geneva	Distance calculated using https://flight-distance.com/
		Kg CO_2/vkm	Emissions factor for a A757-300 and A747-400	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors (used worst case emissions factor from A757 range and A747 range in long haul lists)
	Flights (UNSG)	km	Return Brussels to London Return Charter flight (Farnborough to Cornwall)	Distance calculated using https://flight-distance.com/

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		kg CO_2/vkm	Average emissions factor for short haul flights and average emissions factor for domestic flights	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights (UK)	km	Return London to Cornwall	Distance calculated using https://flight-distance.com/
		kg CO_2/vkm	Emissions factor for a A321	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights – Cargo (USA)	km	One-way Washington to Cornwall One-way Cornwall - Geneva	Distance calculated using https://flight-distance.com/
		kg CO_2/vkm	Average emissions factor for long haul dedicated cargo flights	HMG – aircraft number and model 2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Flights – Cargo (UK)	km	Return London to Cornwall	Distance calculated using https://flight-distance.com/
		kg CO_2/vkm	Average emissions factor for domestic	HMG – aircraft number and model

			dedicated cargo flights	2021 Government Greenhouse Gas Conversion Factors for Company Reporting: Methodology Paper for Conversion factors
	Helicopters (UK)	km	Return London to Cornwall	Distance calculated using https://flight-distance.com/
		Litres	1.135 kilometres / litre. Converted to 0.88 litres/km	Fuel consumption for an August Westland AW109, Aero Corner
		kg CO_{2e}/litre		2021 UK Government GHG Conversion Factors for Company Reporting (Fuels-Aviation turbine fuel)
Local transport	Helicopters between NQY and venue (Delegates)	km	44 separate trips across the week. 45km each way. Assumed helicopters returned to NQY	HMG Distance calculated using https://flight-distance.com/
		Litres	1.135 kilometres / litre. Converted to 0.88 litres/km	Fuel consumption for an August Westland AW109, Aero Corner
		kg CO_{2e}/litre		2021 UK Government GHG Conversion Factors for Company Reporting (Fuels-Aviation turbine fuel)
	Royal travel (Rail)	km	1 train at max capacity (239). London to Cornwall (490km) return	HMG
		kg CO_{2e}/ passenger.km		2021 UK Government GHG Conversion Factors for Company Reporting
	HMG (Rail)	km	5 trains at max capacity (239).	HMG

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			London to Cornwall (490km) return	
		kg CO_{2e}/ passenger.km		2021 UK Government GHG Conversion Factors for Company Reporting
	Security / Suppliers / Consultant travel (Land)	Km		Security, Suppliers and Consultant travel logs
		kg CO_{2e}/km	Carbon factor from Passenger Vehicles and Business Travel (Land) used	2021 UK Government GHG Conversion Factors for Company Reporting
	Police – Local travel		All assumptions included within the Operation Trelawny GHG assessment	Operation Trelawny GHG assessment, University of Exeter 2021
	Delegate's security movements (Car)	km	Two large petrol cars at 200km per country attending. NQY to St Ives return plus another 80km for in & around local area	HMG
		kg CO_{2e}/km		2021 UK Government GHG Conversion Factors for Company Reporting
Accommodation	Hotels (Delegates)	No. of nights	Assumed single occupancy	HMG

		kg CO_{2e}/room	Assumed 5* hotel	Hotel Footprinting Tool, Hotel Carbon Measurement Initiative
	Hotels – Consultants / Suppliers / Media	No. of nights	Assumed single occupancy	HMG, Consultants and Suppliers
		kg CO_{2e}/room	Assumed 3* hotel	Hotel Footprinting Tool, Hotel Carbon Measurement Initiative
	Other accommodation (temporary cabins & caravans) – Security	No. of nights		Atalian Servest
		kg CO_{2e}/room	Carbon factor assumed the same as a 2* hotel	
	Police – Accommodation		All assumptions included within the Operation Trelawny GHG assessment	Operation Trelawny GHG assessment, University of Exeter 2021
Venues	Venues – Days in use	No. of days	Used throughout the event – 3 days	HMG
	Venues – Floor area	m²		Identity
	Venues – Electricity consumption	kWh/m²/year	Grid Electricity	TM46 Energy Benchmarks (for Hotels), CIBSE
		kg CO_{2e}/kWh	Carbon factor for Grid Electricity used	2021 UK Government GHG Conversion Factors for Company Reporting
	Venues – Gas consumption	kWh/m²/year	Natural Gas	TM46 Energy Benchmarks (for Hotels), CIBSE
		kg $CO2_e$/kWh	Carbon factor for Natural Gas used	2021 UK Government GHG Conversion Factors for Company Reporting

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	Venues – Water consumption	l/attendee	Total water/person - Mean	2018 Green Venue Report, Greenview
		Kg CO_{2e}/l	Carbon factor for Water (Litres) used	2021 UK Government GHG Conversion Factors for Company Reporting
	Venues – Waste	kg/attendee	Venue - Total waste/person - Low	2018 Green Venue Report, Greenview
		kg CO_{2e}/tonne	Waste - Commercial and industrial waste landfill	2021 UK Government GHG Conversion Factors for Company Reporting
	Virtual participants	No. of hours	8 virtual participants at 8 hours per day over 3 days (Some 'virtual participants' may be a group, however assumed they would be joining from one video connection).	HMG
		Kg CO_{2e}/hr	Carbon factor taken from literature	Obringer, R. et al (2021) The overlooked environmental footprint of increasing Internet use. Resources, Conservation and Recycling, 167, p.105389.

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	Generators – fuel consumption	Litres		Stadium management
		kg CO2e/litre	Biodiesel HVO	2021 UK Government GHG Conversion Factors for Company Reporting
Catering	Meals – delegates	No. of meals	3 average meals per day per delegate	HMG
		Kg CO_{2e}/meal	20% vegetarian, 40% with chicken, 40% with beef	World Food LCA Database (2015)
	Snacks – delegates	No. of meals	Assumed 1 hot or cold snack per day	HMG
		Kg CO_{2e}/snack	Catering – 50% cold, 50% hot	World Food LCA Database (2015)
	Non Alcoholic drinks – delegates	litres/person	2 litres per day per delegate	HMG
		Kg CO_2/litre	Bottled water, including packaging	World Food LCA Database (2015)
	Alcohol – delegates	litres/person	0.3 litres alcohol per day per delegate	HMG
		Kg CO_2/litre	Wine (Including packaging)	Life Cycle Assessment in the Wine Sector, Bengoa, X (2010)
	Meals – non-delegates	No. of meals	3 average meals per non delegate per day	HMG

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		Kg CO_{2e}/meal	Meals - 20% vegetarian, 40% with chicken, 40% with beef	World Food LCA Database (2015)
	Snacks – non-delegates	No. of meals	1 hot or cold snack per non delegate per day	HMG
		Kg CO_{2e}/snack	50% cold, 50% hot	World Food LCA Database (2015)
	Non Alcoholic drinks – non-delegates	litres/person	2 litres per day per non delegate	HMG
		Kg CO_2/litre	Bottled water, including packaging	World Food LCA Database (2015)
Materials	Police - purchased materials		All assumptions included within the Operation Trelawny GHG assessment	Operation Trelawny GHG assessment, University of Exeter 2021
	G7 merchandise arranged by G7 taskforce	Total £/type		HMG
		Kg CO_{2e}/£ spent		Carbon factors taken from Annex E of Environmental Reporting Guidelines 2019 as calculated by CenSA
	Materials associated with temporary structures	Tonnes/type		Identity
		kg CO_{2e}/tonne		Carbon factors taken from: • Annex E of Environmental Reporting Guidelines 2019 as calculated by CenSA • Inventory of Carbon and Energy Database V3 • 2021 UK Government GHG Conversion Factors for Company Reporting

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Appendix B – Outline Qualifying Explanatory Statement (QES)

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.	Emma De Closset
Identify the entity responsible for making the declaration.	Her Majesty's Government
Identify the subject of the declaration	The G7 Summit in Cornwall (11th-13th June). Scope 1, 2 and 3 GHG emissions
Explain the rationale for the selection of the subject.	*Her Majesty's Government* commits to delivering a sustainable and carbon neutral G7 Summit. "We will lead by example on event sustainable development issues, as this relates to environmental, social and economic performance across the 2021 G7 Summit's lifecycle, and our core values of stewardship, integrity, inclusivity and transparency. We will aim 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 3 - Carbon Approach

Identify all characteristics inherent to that subject.	See Section 3 - 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 3 - 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 the impact of the event from the estimated baseline will be documented in the CMP and future 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 October 2021
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 the 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 3 - Carbon Approach
Where the subject is an organisation/company or part thereof…	Item 14 does not apply to the G7 Summit
Identify if the subject is part of an organisation or a specific site or location, and treat it 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 G7 Summit 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) are not considered fundamental to 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 3 - Carbon Approach
Provide details of, and explanation for, the exclusion of any Scope 3 emissions.	See Section 3 - Carbon Approach
Document all assumptions and calculations made in quantifying GHG emissions and in the selection or development of greenhouse gas emission factors.	Appendix A 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 3 - Carbon Approach
Document carbon footprint management plan:	See Section 2 – Declaration of carbon neutrality, Section 3 - Carbon Approach and Section 5 – Carbon Offsetting The G7 Summit Sustainable Development Policy also sets out HMG's commitment to carbon neutrality
Implement a process for undertaking periodic assessments of performance.	As the G7 Summit 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	See Section 3 - Carbon Approach.

review to determine whether or not the expected minimisation in emissions has been achieved.	
For any reductions in the GHG emissions from the defined subject delivered in the period immediately prior to the baseline date…	Not applicable to G7 Summit
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 C
Date the QES and have it signed by the senior representative of the entity concerned.	Appendix C
Make QES publicly available and provide a reference to any freely accessible information upon which substantiation depends	When finalised will be available publicly at https://www.g7uk.org/sustainability/
Update the QES to reflect changes and actions that could affect the validity of the declaration of commitment to carbon neutrality.	N/A

Appendix C

HMG Declaration of Carbon Neutrality

The G7 Summit 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. Our declaration of carbon neutrality has been externally validated by Arup.

Signed by:

Emma de Closset
Director of Operations
G7 Presidency Taskforce, Cabinet Secretariat
14 October 2021

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 PAS2060:2014 for the G7 Summit for the period 1st May 2021 to 24th September 2021.

Signed:

Natasha Connolly
Associate Director
Ove Arup and Partners Ltd
14 October 2021