Gama Aviation

Carbon Footprint reduction plan

2020 -2050 reduction plan

2021 / 2022 planning period

revision v2

29th November 2021

Overview

As a Group we are on a journey to managing our business responsibly across a wide range of stakeholders; from the local communities of which we are a part, to recognising and mitigating the environmental impact of our business activities.

In 2019, we undertook a baseline assessment of our greenhouse gas ("GHG") emissions and through the support of the Group's Chief Executive and Board, have determined the following pathway to net zero.

Pathway to Net Zero

Aviation has been classified as a 'hard to abate' industry. This requires Gama Aviation to set a programme to achieve Net Zero that:

- Reduces our own Group's Scope 1,2 and 3 GHG emissions, mitigating those that remain by using responsible offset schemes that work in accordance with our CSR goals
- Reduce, wherever possible, customer demand-initiated Scope 3 GHG emissions through the incorporation of changes in flight operations, ground operations or any other areas that may reduce fuel burn without compromise to safety
- Offset to mitigate customer demand-initiated Scope 3 GHG emissions, should the prevailing technologies of the planning period be unable to provide the reduction in $C0_2e$ forecast
- Positively influence and encourage the adoption of new, enabling technologies, that are commercially available / feasible to reduce customer demand-initiated Scope 3 GHG emissions
- Supports new and enabling technologies that seek to reduce GHG emissions across the wider aviation sector

Commitment to achieving Net Zero

Given the prevailing technologies open to the highly regulated aviation sector, our ability to influence customer demand initiated GHG emissions, our ability to directly reduce our Group's own emissions and our ability to mitigate emissions via offset, **Gama Aviation is committed to achieving Net Zero emissions by 2050.**

2019 baseline emissions footprint

The Group's baseline emission footprint was undertaken by an independent third-party auditor, Carbon Footprint Ltd, using an ISO14064-1:2018 accredited process. The collected data represents the whole Gama Aviation group including our operations in the US, Middle East, Asia, Europe, and the UK. The table below summarises the GHG emissions for the period 1st January 2019 to 31st December 2019.

Scope	Activity	Tonnes $C0_2e$
Scope 1	Site gas & oil	798.2
	Company car travel	140.2
	Vehicle fuel usage	119.66
Scope 2	Electricity generation & use	2,677.81
Scope 3	Flights	873.05
	Air freight	165.91
	Electricity transmission & distribution	152.8
	Taxi travel	0.43
	Lorry freight	0.26
	Rail travel	0.09
	Ferry travel	0.03
	Bus travel	0.01
	Total (scope 1 & 2)	**4928.45**
Scope 3	Use of aircraft by clients (downstream)	59,526.45
	Total (scope 3 indirect)	**59,526.45**
	Total overall $C0_2e$	**64,454.90**

Additional details relating to the baseline emissions calculations

- The 2019 baseline is the first year of our Group's commitment to GHG reporting
- Measurements are provided at a Group level and include operations within the US, Middle East, Asia, Europe, and the UK.
- The baseline data reflects the full year 2019, a year where air travel was unaffected by the COVID-19 pandemic and therefore represents a baseline (given the data available) of our GHG emissions for a typical year given the prevailing business model / mix of the time.
- The Group's business is based on an availability model; there is no timetable of flights. Flight demand is initiated purely by our client's needs, which directly influences fuel consumption and emissions resulting from such demand. Therefore, we recognise the GHG emissions of those flights separately within Scope 3 as being disconnected to the those generated by the direct activity of our Group. This does not mean we abdicate a responsibility in this regard, on the contrary we actively engage with our clients to assist them in lowering their GHG footprint through more efficient flight operations, fuel technologies or other mechanisms to reduce emissions and mitigate what can't be reduced through offsetting.

2020 emission reporting

The Group's 2020 emission footprint was undertaken by an independent third-party auditor, Carbon Footprint Ltd, using an ISO14064-1:2018 accredited process. The collected data represents the whole Gama Aviation group including our operations in the US, Middle East, Asia, Europe, and the UK.

We are keenly aware that, 2020 was a unique year and consequently the GHG emissions table reflects a year of far lower business activity. The table below summarises the GHG emissions for the period 1st January 2020 to 31st December 2020.

Scope	Activity	Tonnes CO_2e
Scope 1	Site gas oil	406
	Site gas	154
	Van travel and distribution	32
	Company car travel	8
	Scope 1 Sub Total	**600**
Scope 2	Electricity generation	2,086
	Scope 2 Sub Total	**2,086**
Scope 3	Customer aircraft fuel consumption	21,845
	Flights	210
	Home-workers	144
	Electricity transmission & distribution	114
	Other*	55
	Scope 3 Sub Total	**22,369**

Total scope 1,2,3 including customer aircraft fuel consumption	
Total tonnes of CO_2e	25,055
Total Energy Consumption (kWh)**	97,009,229
Tonnes of CO_2e per tonne of jet fuel	6.90
Tonnes of CO_2e per £M turnover***	162

Scope 1,2 & 3 excluding customer aircraft fuel consumption	
Total tonnes of CO_2e excl. customer aircraft fuel consumption	3,210
Tonnes of CO_2e per employee	4.41

*Other includes emissions from Air Freight, Grey Fleet, Taxi Travel, Rail Travel and Outsourced Lorry Freight.
**Total Energy Consumption includes Electricity, Site Gas, Site Gas Oil, Company Owned Vehicles, Grey-Fleet and Customer Aircraft Fuel Consumption.
***25,054.58/ (Revenue of $197.5m/1.28 = £154.3m) =162

Note: In accordance with the ISO 14064-1:2018 methodology the calculation accuracy and materiality of the following report has a total uncertainty of +/- 6% leading to an estimated total error margin (all scopes) of +/- 1,474 tCO_2e.

*Based on the total tonnes of CO_2e excl. customer aircraft fuel consumption

**Based on an employee population during the audit period of 728.

Offsetting 2020 emissions

In 2021, the Board approved the offsetting in of the Group's 2020 emissions pertaining to the following categories audited by Carbon Footprint Ltd under ISO 14064-1:2018:

- The Group's Scope one emissions.
- The Group's Scope two emissions.
- The Group's Scope three emissions but limited to those that the business is directly responsible. This omits indirect customer aircraft fuel consumption as previously defined.

To this end the Group offset **3,210 tonnes of CO_2e** in 2021.

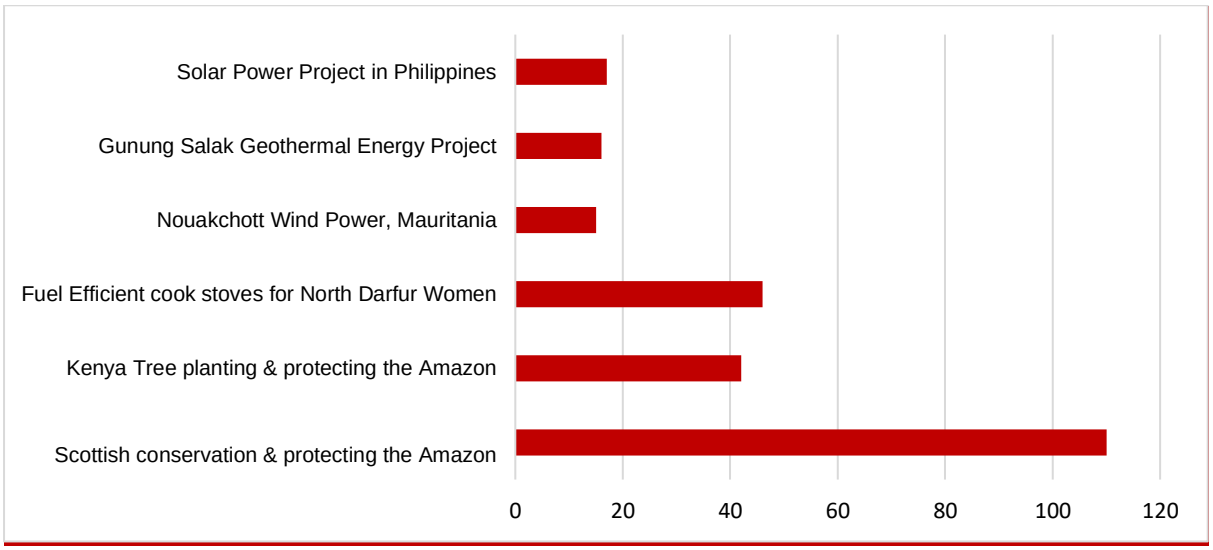
Selection of offsetting programmes

In accordance with our wider corporate social responsibility programme and its values, we believe that any offsetting programme should be compatible with the spirit of our corporate social responsibility aims. It is for this reason that the selection of the offsetting programme:

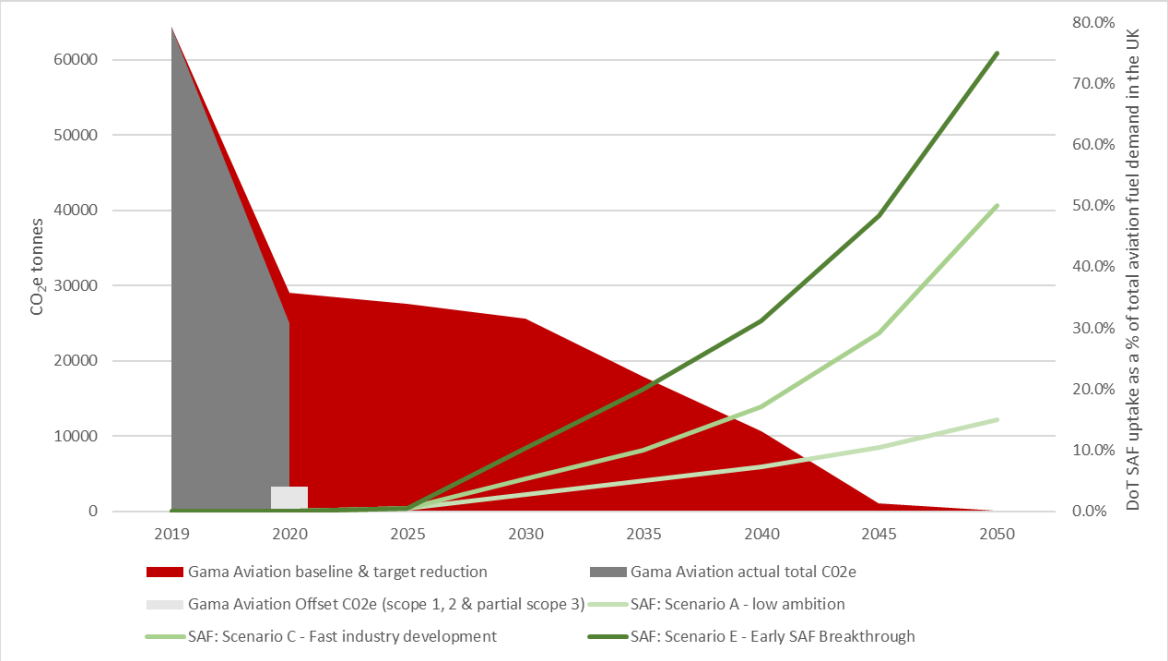
- Will not include 'tree-planting' in the UK as its sole means of carbon reduction.
- Shall not be limited to activities in the UK to reflect the geographic and ethnic diversity of employees within the Group.
- Where possible, empower gender and racial diversity and encourage economic growth within a community.
- Should comply with the Group's ethical standards.
- Should be delivered through a Gold Standard VER / Verified Carbon Standard or equivalent scheme.

An all-staff survey (c900 employees) concluded from 228 individual votes that the offset scheme should be focused on Scottish Conservation and protection of the Amazonian forest. The Gold Standard programme was purchased at a cost of £9.50 per CO_2e.

Chart of the votes cast for each scheme



Future emission reduction targets



Basis of reduction targets (2020 to 2050)

- Both our targets and the model will be reviewed annually with progress being measured against our audited streamlined energy & carbon reporting ("SECR") obligation.
- Reduction targets will be calculated on a five-year incremental basis and reflect the Group's total tonnes of CO_2e (scope 1,2 & 3).
- On an annual, and five yearly basis, the Group will review the projected targets based on the availability of accelerating carbon reductive technologies such as SAF, synthetic fuels and hydrogen.
- On an annual, and five yearly basis, the Group will review the ambition of the projected targets based on the Group's prevailing strategy, it's business model and service mix.

Reduction targets and assumptions to 2050

The 2020 SECR report showed a significant delta between the Group's 2019 baseline GHG emissions and its 2020 equivalent. This was due to:

- The 2020 sale of our US aviation business which had the effect of reducing the Group's total managed aircraft fleet (by c55%) and subsequently its downstream, customer initiated, GHG emissions.
- The global COVID-19 pandemic supressed flight requirements further and caused some clients to sell aircraft, further reducing the managed aircraft fleet.

Forecast reduction target 2020 to 2025
The Group projects that carbon emissions will decrease over the next five years to 27,555 tonnes of CO_2e by 2025. This is a reduction of 5%.

The basis of this forecast is predicated on:

- Project Element Six (the Group's carbon reductive plan) will continue to improve performance in the Group's own Scope 1,2 & 3 GHG emissions, however this will be somewhat offset by business growth and the addition of aircraft into the fleet.
- Project Element Six's workstream three (transitioning clients to a lower carbon future) will increase the level of carbon mitigation through offsetting by our clients, however the take up of SAF will continue to be low due to pricing and availability.

- Flight traffic will rise given pent up demand, the abatement of travel restrictions and airline schedules continuing to be rebuilt post-pandemic
- The Group will maintain a policy of using carbon offset schemes to mitigate any Scope 1, 2 and partial Scope 3 emissions that cannot otherwise be reduced.
- Fuel technologies such as SAF will not reach critical mass (as per the Department of Transport's own projections) and therefore, these will only provide marginal gains during the planning period.

Forecast reduction target 2025 to 2030 and 2030 to 2035
The Group projects that carbon emissions will decrease by 7% between 2025 -2030 and a further 7% between 2030 – 2035, such that by 2035, 17,827 tonnes of CO_2e are being emitted.

The basis of this forecast is predicated on:

- A continuation of the baseline activities with no major changes in the business model or mix. Aircraft additions are likely to remain steady and the emissions impact of them is likely to be lower, given the prevalence at this stage of next generation aircraft, fuels, and the optimisation of air traffic control to reduce unnecessary fuel burn.
- Fuel technologies such as SAF will begin to be present as viable options within the UK supply chain with prices dropping as volumes increase. This will be largely predicated by the following actions: an increase in demand from the airlines, increase in UK supply infrastructure, taxation / incentivisation to switch to SAF (i.e., reduction in the cost differential to 'fossil').
- The strong likelihood that the current managed fleet will have largely been upgraded by the aircraft's respective owners, to be more fuel efficient, thus reducing fuel burn and GHG emissions.

Forecast reduction target 2035 to 2050
The Group projects that carbon emissions will decrease by 20% over the five years to 2040 and then a further 75% to 2045. At the end of this period 112 tonnes of CO_2e are forecast to be emitted.

The basis of this forecast is predicated on:

- A continuation of the baseline activities with no major changes in the business model or mix.
- Fuel technologies such as SAF will have broken out (as per the DoT's projections) and will be largely available such that the fossil equivalent is minimal. Further technologies such as eVTOL and hydrogen will also become mature, accelerating progress towards net zero by the end of the planning period.
- The managed aircraft fleet's owners will now have taken one or two replacement cycles and are most likely to be using the most efficient technologies available to them during this period.

Project Element Six. Our carbon reduction and transition programme

Project Element Six is sponsored by the CEO and is our principal programme to reduce scope 1,2 & 3 carbon emissions to 2050. Currently project Element Six has four workstreams which are described below:

- *Workstream 1: Data collection, auditing, and mitigation via offset.* Through this workstream we aim to improve audit accuracy and data such that the Group has, in the future, a near real time view of carbon emissions. This requires some change to systems, policies, and behaviours.

- *Workstream 2: Fix & Optimise.* Through this workstream we will aim to fix, optimise, or add policies / processes and changes in procurement practice that seek to lower the Group's scope one, two and three emissions through change.

- *Workstream 3: Educate and transition.* Through this workstream we will advise our client base, moving them to lower carbon options introduces in conjunction with leading audit / offsetting partners that can aid in compensating and reducing carbon emissions.

- *Workstream 4: Partner to develop low carbon alternatives.* Through this workstream we will work with industry to assist in the development / use of low carbon technologies (fuels, engines, systems, platforms) that may substitute current technologies to achieve a low carbon future.

Project Element Six reduction projects – 2021 to H1 2022

Below is an indicative subset of projects that the Group is in the process of delivering, or seeking to deliver, by H1 2022. These projects are designed to support the delivery of our reduction ambitions within the current year planning period to 2025.

Base	**Workstream**	**Initiatives**	**Objectives (and any performance indicators)**	**Key Tasks (What sequence of activities need to be completed)**	**Timeline**
GLA	2	LED lighting in the Gama and SAS hangars?	LED Lighting upgrade Gama and SAS hangar. Typically LED bulbs will save around 70% in energy than running on traditional lighting. LED will deliver a far improved quality of light and far surpass the lifespan of traditional lighting thus significant savings due to not having to replace failing lights. A typical LED light bulb have an average lifespan of up to 50,000 hours, whereas traditional lighting equates to 8000 hours.	Remove existing 20 induction high bay light fittings replacement only, alongside 20 full fluorescent tub light fitting and dispose of in an environmentally friendly manner. Install to existing system 20 360watt LED linear light fitting. Install to existing lighting system 48 360watt LED linear complete with Day light harvesting sensors. Indicative costs to carry out this work is in the region of £17k/ 48k	Autumn 2021. SME Loan Scheme - Scottish Government funding is available to help pay for the energy efficiency project. If Gama are eligible, we could receive a cash back grant of up to £20k. Spend/capex yet to be approved.
GLA	2	LED- lighting for Gama landside led circular panels to reduce cost/ environmental impact (According to EON 50% electrical consumption is lighting). PIR systems for again further controlled		Combination of LED and Bulbs and external bollards Formulating plan to replace bulbs with LEDs. Engaging suppliers to obtain quotes to assess and select. 06.09.21 - Quotes received (~£30k). Approval tbc by Steve W..	Q4 2021

		usage including bollards externally			
GLA/ABZ/INV	2	Aerated taps + urinals. Aerators – Reduce water consumption (£650/ann/wc savings possible)		Cost-benefit analysis resulted in cancelation of initiative.	Cancelled
GLA/ABZ/INV	2	Continual monitoring of energy usage on gas and electricity consumption	Engaging with EON suppliers for installing smart meters and achieving more sustainability. ABZ and INV smart meter awaiting progress	Supplier changed to 100% renewable energy in INV Smart meter interest registered	Ongoing Smart meters installed by Q1 2022. Aberdeen / GLA Smart meters for Gas complete.
GLA	2	Assessing quotes to install additional 4 x vehicle charging points		Awaiting 3rd Quote to progress to downselect and approval.	Q4 2021
GLA/ABZ	2	Roof Mounted Solar Panels – Augment heating system? We have very large roof areas – more so Glasgow than Aberdeen		Mounting on roof not allowed due to ILS interference. Investigating Floor-mounted arrays.	TBD
INV/ABZ	2	Introduction of charging points for INV and Aberdeen. 2 charging points.	Install EV charger points at ABZ and INV. Use existing 3 Core cabling in ABZ which would help reduce install costs. Two quotes received. Bumble Bee £11k, Munro & McDonald £8,288. OLEV discount ££350 per socket.	Apply to the Office for low emissions vehicle/ Workplace charging scheme for grant. Work commenced in Inverness w/c 31st August	To be completed end of Q4 2021. Inverness Work started to install.
GLA/ABZ	2	Air conditioning control mechanism	GLA - Centralised Control system implementation of air conditioning within Gama/SAS hangars curbing excessive usage and vacant areas. Awaiting quote for install of a Centralised Controller. ABZ - Building Temperatures. Central control i.e., limit heating where system control parameters allow: Bedrooms – 20C Corridors – 22C Communal Areas (Crew rooms) – 22C	Plan to install to existing system in ABZ. Investigating for planning purposes. GLA replacement of new equipment (due to age). With AFS to come up with solution due to complexity Request price for equipment and installation Controls about to be instigated in Aberdeen.	ABZ - Q4 2021. GLA - Too Old. Replacement of Aircon on retirement of system a future consideration

GLA/ABZ	2	Sanitary consumables review: 1. Reduce use of single-use items e.g., hand towels. 2. Replace air freshener units with diffusers. 3. Printing/paper reduction by introducing SharePoint folders	"Initial" - Terminate Costly "Initial" Contract Contract notice period – 3 months Contract Termination Costs Return "Initial" hardware i.e., soap dispensers, air freshener dispensers, hand towel dispensers and replace or re-decorate gaps Purchase "Initial" hardware – Cost TBC Replenish soap stock and hand towels from locally sourced vendor (Costco) OR Purchase Electric Hand dryers. Proposals to switch to electrical hand dryers in facility to eliminate use of disposable towels	"Initial" - Terminate Costly "Initial" Contract Contract notice period – 3 months Contract Termination Costs (ends June 2022) Return "Initial" hardware i.e., soap dispensers, air freshener dispensers, hand towel dispensers and replace or re-decorate gaps Purchase "Initial" hardware – Cost TBC Replenish soap stock and hand towels from locally sourced vendor (Costco) OR Purchase Electric Hand dryers. Proposals to switch to electrical hand dryers in facility to eliminate use of disposable towels	Q4 2021 - Q1 2022 assessing cosmetic impact or hardware changes.
GLA	2	Replacement of crew bus when contract expires. Target for hybrid or full electric.	Assessing options for Electric/ hybrid crew bus in 2021 for contract renewal	Contract expiry June 2022	Q2 2022
GLA/INV	2	Establish CO2 emissions for all used vehicles and confirm any reductions due to replacement of old (e.g., the new Navara's)	CO2 emissions for Nissan Navarra's @ 234g/km. Assessing options for Electric/ hybrid crew bus in 2022 for contract renewal	Dependent on contract expiry	
ABZ	2	Move to electric lift tow to replace a diesel tractor.	Tractor – Replace with more appropriate electrical lift tow that enhances carbon footprint whilst offering Gama increased flexibility in range of aircraft handling.• Tractor (MF4709) – Sell in favour of Electric Lift Tow OR Lift Tow with far smaller footprint than agricultural, air polluting, diesel farm tractor – WIP	Awaiting training on the lift tow to take place w/c 20th Sept. Coordinated with replacement of tractor for lift tow. Training programme in place by end of September. Bill to then train once a tow is delivered. 12 weeks lead in from order.	Q1 2022
GLA/ABZ/INV	2	Dishwasher and hot water Urn installed GLA/ABZ. Sensible to keep kettle in INV due to low usage		Glasgow Complete ABZ Urn installed Space for dishwasher in design	Q4 2021
GLA/ABZ/INV	2	Switching to recycled paper and emphasis of avoiding printing paperwork where and when possible		Complete	Q3 2021
GLA	2	Reusable cups and "Green Coffee".			
Facilities Management	2	IT SharePoint Common use files in use between several bases e.g., GLA/ABZ/INV …. PPM Control of			

	Contractors paperwork and RAMS.			
2		Purchase unit capable of converting to electric in future	Order & delivery	September 30th 2021
2	Several GESE are electric: Liftow, Lektro, Hand tug, Water cart, Lav cart and hangar cleaning machine	Have largest proportion possible of electric GSE	Continue provision	Existing
	LED lighting is existing in lounge (83 units in total)	LED lighting in lounge only. Already existing and in place	Continue provision	Existing
2	Reviewing to replace x3 vehicles. These are owned not leased. Criteria of less emissions of the current fleet and/or quality in line with competitors and customer expectations.	Airside fleet to reduce carbon footprint (current = 2.0ltr petrol with 208g/km CO2 emissions)	Obtain quotes and approval of budget	September 30th 2021
2	Coffee is sourced from Nespresso - who use Fairtrade certified cooperatives	Already existing and in place	Continue provision	existing
2	Non plastic crockery used by staff	already existing and in place	continue provision	existing
2	BAC new facility to be designed with carbon offsetting in mind	To obtain current design information	Implement within design or highlight what's within existing design	September 30th 2021
2	Switch to recycled paper for printing		Obtaining quotes. Reviewing other suppliers as 2x the price.	
2				
2	Improved recycling (we already meet ISO14001 requirements, but I would like to better this)		Active engagement with Eco Active reviewing the glass recycling capability audit at some point post-pandemic when we will agree with them the one-to-three-year plan for additional schemes.	Ongoing activity dependent on the state of Jersey
2	Replacement of plastic food trays on charters with recyclable trays/boxes		Purchasing plan for Dave. Dependent on availability. Policy for sourcing recycled first. They don't do supplier accreditation Audits under ISO 14001. (Check with James Bryant). Not done with Local suppliers. (Speak to DD and James Bryant). Chris H/ Tim to lead.	Q3 2021
2	Move to Fairtrade coffees and teas		Complete	Q3 2021

	2	Move vehicles to 'green' bio diesel once available in Jersey		Establish availability - anticipate available from October 2021	Oct-21
	2	Promote vehicle sharing or a cycle scheme for work (we put in a bike shed as part of this last year)		No office working - Policy not to mix in cars	Inactive until advice changes
	2	We are also speaking to the Jersey aviation fuel supplier about 'green' JetA1 – which is approved for use in the G280.	Driven by owner of aircraft - local supplier not engaging.	Source alternative suppliers perform review (financial, logistical). Permission required from Ports of Jersey	Q4 2021
Education	3	Air Ambulance market education	Propagate the discussion regarding the commercial / emissions implications of sustainable aviation fuels within the UK Air Ambulance market	COP26 – industry liaison with Airbus, Safran, Air BP Air Ambulance UK – panel discussion Fuels workshop with Scottish Ambulance Service in conjunction with Air BP	Q3 / Q4 2021 + ongoing to H1 2022
Education	3	Business Aviation market	Personal letter from the Head of Aircraft Management to all owners regarding the use of SAF and Carbon Offsetting. Provision of services to offset through a verified third party.	Obtain information from the fuel vendors Add availability into myairops flight Write letter and follow-up calls	Q1, 2022
Offset	3	Business Aviation market	Major client requiring full music tour offsetting which includes all travel, fan travel and band logistics	Working with Carbon Footprint Ltd to provide the auditing and mitigation under ISO14064	2022
Offset	3	Business aviation market	Incorporation of offsetting within all charter quotes (voluntary basis)	Updating of myairops flight to incorporate the offsetting data and calculations to be incorporated on the charter quote	Q4, 2021
Partner to support low carbon alternatives	4	eVTOL market entrant	Provision of flight operations system to enable certification and operation of eVTOL aircraft.	Commercial agreements are currently in negotiation.	Q3, 2021 & ongoing

Declaration and Sign Off

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standards for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard and uses the appropriate Government emission conversion factors for greenhouse gas company reporting.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard.

This Carbon Reduction Plan has been reviewed and signed off by:

Marwan Khalek
Group Chief Executive, Gama Aviation Plc