FIA ACTION FOR ENVIRONMENT

FIA CARBON OFFSET GUIDANCE DOCUMENT

CONTENTS

4	Introduction
6	Objectives
8	Defining Carbon Neutrality
8	Offset portfolio and fee structure
9	Key steps in obtaining carbon neutrality
10	Defining the Boundary and Scope of the Offset Program
11	Emissions measurement and quantification
14	Emissions reduction
15	Offsetting emissions
16	Reporting emissions
17	Stakeholder Relevant Emission Sources
18	Checklist - possible reductions
17	Checklist - possible reductions

INTRODUCTION

Motor sport, in common with most other anthropological activities, results in emissions of greenhouse gases. The motorsport industry's position at the technological cutting edge of automotive development provides an opportunity to demonstrate how emissions from automotive related activities can be managed in a sustainable way.

These guidelines have been developed to provide detailed advice for FIA stakeholders, on how to obtain carbon neutrality in line with the FIA's commitment to improve environmental performance across all organisations affiliated with motor sport events.

This document should be read in conjunction with the Environmental Certification Framework developed by the FIA. The Certification Framework can be accessed through www.fia.com

OBJECTIVES

Following these guidelines and adopting key initiatives will facilitate alignment with the FIA's environmental goals notably:

- All major stakeholders will function within the FIA Environmental Certification framework; and

- Major stakeholders achieving carbon neutrality.

This document forms part of a number of publications relating to the FIA's Action for Environment strategy. It has been developed to assist stakeholders to achieve carbon neutrality.

DEFINING CARBON NEUTRALITY

The term "carbon neutral" was coined in the early 1990s and in its early existence was rather loosely defined. Different interpretations co-existed, particularly regarding the boundary of the entity to which the term applied and how neutrality could be demonstrated. More recently, international standards for demonstrating carbon neutrality have been published which provide a standardisation of definitions. This guidance is based on the publicly available and internationally recognised standard PAS2060:2010[1]. However, a number of other standards are also available (including ISO14064[2]) which may be more appropriate if recognition or certification in a particular country is desired.

PAS2060 defines 'Carbon neutral' as a "condition in which there is no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject"[3]

[1] PAS 2060:2010 - Specification for the demonstration of carbon neutrality
[2] ISO14064-1:2006 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

KEY STEPS IN OBTAINING CARBON NEUTRALITY

The process of becoming carbon neutral involves four key steps:

- Defining the boundaries and scope of the organisation's offset programme
- Measuring greenhouse gases emissions from the organisation's routine and non-routine activities;
- Reducing emissions where possible; and
- Offsetting emissions that cannot be reduced. In this context, offsetting means arranging for reductions in greenhouse gas emissions elsewhere that would not otherwise have taken place.

In line with best practice, carbon neutrality should be demonstrated by means of a carbon footprint management plan. This addresses the following key points:

- Your commitment to achieving carbon neutrality, including a definition of the entity for which carbon neutrality is being claimed;
- A timetable for achieving carbon neutrality;
- Quantitative targets for reductions of greenhouse gas emissions as well as a timetable for achieving reductions
- The measures you intend to implement to achieve emissions reductions; and
- The offset strategy you intend to implement in regard of emissions remaining after emissions reduction measures have been carried out.

[3] The PAS 2060 standard can be obtained at http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030198309

DEFINING THE BOUNDARY AND SCOPE OF THE OFFSET PROGRAM

It is important to be clear about what emissions will be included in your carbon emissions inventory. There are two aspects to this:

- The definition of organisational boundaries determines how you will account for the emissions from the entities within your organisation; and
- The definition of operational boundaries determines which emissions you will include in your inventory.

ORGANISATIONAL BOUNDARIES

For wholly owned entities, the determination of organisational boundaries is simple. All emissions should be included in the overall total. For more complicated organisational structures involving joint ventures, subsidiaries etc. it is important that the method of accounting is clearly defined and used consistently.

Two approaches can be used. In the equity share approach, the fraction of the emissions from the shared entity that are included in your inventory reflects the fraction of its equity that you hold. In the control approach, 100% of the emissions of an entity are included if you have control over the entity but no emissions are included for entities in which you have a financial interest but which you do not control. In this context, control may be defined as financial control or operational control. In some cases it may be sensible to use different organisational boundaries for different purposes. For example, national regulations may require emissions to be amalgamated in a particular way, but other stakeholders may require a different method of amalgamation.

Further details of how to set organisational boundaries can be found in the GHG Corporate Accounting and Reporting Standard[6]

OPERATIONAL BOUNDARIES

The GHG Protocol5 defines three "Scopes" of emissions:

- Scope 1 Emissions are those emitted directly by an organisation's operations, i.e. those operations within the organisational boundary. Examples include emissions of CO2 from combustion of fuels in equipment or vehicles owned or controlled by the organisation;
- Scope 2 Emissions are those emitted as a result of generating the electricity purchased by the organisation;
- Scope 3 Emissions are those emitted indirectly by sources that are not owned or controlled by the organisation as a result of its activities. Examples include emissions associated with transport of fuels, or transport of event attendees or teams or with the use of services purchased. There may be cases in which a facility owner wants (as part of primary business) to include emissions from all participating teams within the organisational boundary. Some facility owners may wish to also include the price of offsetting emissions from spectator travel to and from the event within the price of an event ticket, with the aim of increasing awareness of spectators by launching "green tickets". These emissions would be covered under the facility owners' Scope 3 emissions. Please refer to Section 3.2.1 and 7.3 for further guidance.

In accordance with best practice, all Scope 1 and Scope 2 emissions must be included in an organisation's inventory. Inclusion of Scope 3 emissions is voluntary but strongly recommended. The types of emissions included in the Scope 3 emissions will differ from organisation to organisation, but should be relevant to the organisations operations. This is discussed in more detail in the stakeholder-specific guidance below.

EMISSIONS MEASUREMENT AND QUANTIFICATION

The second step in achieving carbon neutrality is to quantify emissions. The overall emissions of an organisation are referred to as its emissions inventory. PAS2060 lists a number of standards that can be used to determine your emissions inventory. The standards differ mainly in their range of applicability and reporting provisions. The most widely used are those within the GHG Protocol series[4] developed by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). Within this series, the standard for Corporate Accounting and Reporting[5] and the supplementary standard on Corporate Value Chain (Scope 3) Accounting and Reporting[6] are likely to be the most appropriate for all motorsport stakeholders.

TYPES OF GREENHOUSE GASES TO BE QUANTIFIED

In accordance with best practice, the greenhouse gas inventory should include emissions of the six greenhouse gases controlled by the Kyoto Protocol (carbon dioxide (CO2), methane, nitrous oxide, hydrofluorocarbons; perfluorocarbons; and sulphur

[4] www.ghgprotocol.org
[5] http://www.wri.org/publication/greenhouse-gas-protocol-corporate-accounting-and-reporting-standard-revised-edition
[6] http://www.ghgprotocol.org/standards/scope-3-standard

hexafluoride). CO2 is likely to be the most important of these gases but emissions of other gases may occur in particular situations. For example:

- methane may be emitted from sewage treatment facilities.
- nitrous oxide fuel additive may be emitted as leak from storage.
- hydrofluorocarbons are used in refrigeration and air conditioning equipment and may be released because of leakage or during maintenance. They are also used as propellants in industrial aerosol and blowing agents in the manufacture of polystyrene foams

No significant sources of perfluorocarbons or sulphur hexafluoride have been identified that are likely to be relevant to the motor sport sector.

Other gases not controlled by the Kyoto protocol, for example chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants (which are controlled under the Montreal Protocol on substances that deplete the ozone layer but may be present in older equipment) should be included if they are relevant to your operations, but they must be accounted for separately.

CALCULATION METHODOLOGY FOR DETERMINING EMISSIONS BASELINE

In most cases, it is not practical to measure emissions of greenhouse gases directly. They are most commonly determined by applying an emissions factor to a measure of an activity that produces emissions.

IDENTIFYING APPROPRIATE EMISSIONS FACTORS

Emissions factors are calculated ratios that relate the emissions to the particular measure of activity. For the combustion of fuel, the measure of the activity is generally the heating value of the fuel consumed and the emissions factor is stated in tonnes of CO2 per unit of energy. However, emissions factors can also be stated in other units such as tonnes of CO2 per tonne of fuel or per vehicle km travelled or per tonne km of air travel.

Emissions factors are published by a range of organisations, for example, the Intergovernmental Panel on Climate Change (IPCC)[7], publishes default factors for use by governments in preparing national greenhouse gas inventories[8]; the UK Government publishes default factors[9], which are updated annually for use by operators in reporting their emissions within the European Emissions Trading Scheme (ETS).

Caution should be exercised in determining exactly what activity an emissions factor is related to and you should ensure that factors that are relevant to your activities are used.

[7] http://www.ipcc-nggip.iges.or.jp/
[8] 2006 IPCC Guidelines for national greenhouse gas inventories- http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html

For example emissions factors for fuel combustion may be related to the heat content of the fuel calculated on the basis net calorific value (LHV) or gross calorific value (HHV). You should also consider whether a value that is more specific to your operations can be used rather than a published default value. For example, if you have accurate fuel consumption data for your vehicles, it is better to use these to calculate emissions rather than to use the distance travelled and a default emissions factor for emissions per km based on a generic vehicle type.

Specific emissions factors can be provided by suppliers in many cases. For example, in determining the Scope 3 emissions related to purchased paper in ASNs, a paper supplier is likely to be able to provide its customers with an emissions factor that relates the quantity of paper to the emissions arising from its supply.

It may be difficult to precisely quantify some Scope 3 emissions. For example, emissions from spectators' travel to an event could be determined by surveying a sample of those attending an event to determine their travel distance and mode of transport. In such cases the uncertainty in the results should be taken into account and conservative assumptions should be applied when estimating the emissions.

IDENTIFYING THE PERIOD OVER WHICH EMISSIONS WILL BE QUANTIFIED

Having identified the calculation method and the appropriate emissions factors, the period covered by the inventory should be determined. The period is usually a calendar year (1 January to 31 December) or is aligned with the financial accounting schedule.

DOCUMENTATION AND INVENTORY CONTROL

It is important that the decisions, processes and data sources used to prepare the methodology and the inventory are documented so that if necessary the calculations could be repeated or corrected if errors are found and so that the reasons for changes in the quantities of emissions from period to period can be properly explained. The WRI Greenhouse Gas Protocol5 provides a free carbon emissions quantification tool that can be downloaded from the internet, and through which the organisation's emissions can be quantified. The tool is relatively easy to use and is widely accepted as a standardised approach for quantifying emissions. It can be used to carry out a first pass assessment of baseline carbon emissions. Country specific conversion factors are also provided within this tool.
The steps above should enable an organisation to determine its baseline emissions.

[9] Carbon Emission Factors and Calorific Values from the UK Greenhouse Gas Inventory (AEA, 2011) to Support the EU ETS - http://ghgi.decc.gov.uk/factors.html

EMISSIONS REDUCTION

PAS2060 requires organisations claiming carbon neutrality to make real reductions in their emissions compared to a baseline (determined from the steps above) and only offset the remaining emissions. In order to achieve this, organisations should develop a Carbon Footprint Management Plan that identifies all opportunities for reducing emissions and associated methodologies to implement the reduction, along with responsibilities for key actions, and a defined time frame to achieve reductions.

Opportunities for reducing emissions range from simple to complex and costs can be negative (i.e. reducing emissions also reduces costs), zero cost or require investment. It is obvious that the simple, low cost opportunities should be identified and pursued first and within these, those providing the largest reductions should be prioritised. It is useful to consider the different options by categorising them in a number of different ways. For example the inventory could be subdivided by department, by location and by activity (such as heating, lighting, machinery use, transport etc.). The areas with the largest contribution to the carbon emissions can then be targeted.

Emissions reductions can be achieved in a number of ways:

- By eliminating activities that result in emissions. (For example, by eliminating lighting in unoccupied rooms by means of presence detectors.
- By switching to the use of less emission intensive fuels. (For example converting vehicles from gasoline to compressed natural gas where possible.)
- By increasing efficiency of fuel use. (For example by installing a heat pump to replace a conventional heating boiler.)
- By using electricity generated by zero emission technologies such as hydropower or wind.
- More specific examples are discussed below in the stakeholder-specific guidance.

It is important to be clear that carbon reductions from various measures are only counted once. This is particularly important when "green tariff" electricity is concerned where emissions reductions may be claimed by the generator. If this is the case, reductions cannot also be claimed by the user of the electricity. Further details on stakeholder specific emissions reduction measures have been provided in Section 7.0

[10] http://ec.europa.eu/clima/policies/ets/index_en.htm
[11] http://cdm.unfccc.int/DOE/index.html

OFFSETTING EMISSIONS

It is unlikely that emissions reduction measures will eliminate all greenhouse gas emissions from an organisation's operations. In order to be carbon neutral, the remaining emissions must be offset, implying that you must ensure that emissions reductions equivalent to emissions generated by your organisation are made outside your organisation. Generally this is done by purchasing and retiring allowances issued within a regulatory scheme such as the EU Emissions Trading Scheme (ETS)[10] or by purchasing certificates that confirm that emissions reductions have been made as the result of a particular project.

PAS2060 stipulates that offsets conform to the following principles:

- The offsets must represent genuine greenhouse gas emissions reductions elsewhere.
- Offsets representing certificated emission reductions must be permanent and additional and avoid double counting.
- Offsets must be verified by an independent third party verifier. The verification is usually arranged by the organisation making the greenhouse gas reductions but carried out by an organisation that is, specifically qualified according to the relevant regulatory scheme adopted (For example, a designated operational entity is an independent auditor accredited by the CDM Executive Board to validate project proposals or verify whether implemented projects have achieved planned greenhouse gas emission reductions[11]) and which is independent of both the buyer and seller of the offsets.
- Offsets from emissions reduction projects must represent emissions reductions that have already been achieved.
- Offsets must be supported by publicly available documentation
- Accounting for offsets must involve the documentation of holdings and retirement in an independent and credible registry.

The following are sources of offset credits that conform to these principles2:

- Kyoto Protocol Clean Development Mechanism Certified Emission Reductions (CERs);
- Kyoto Protocol Joint Implementation Emission Reduction Units (ERUs) ;
- European Emissions Trading Scheme Allocations (EAUs);
- Gold Standard Certified Emission Reductions; and
- Voluntary Carbon Standard Credits (now renamed Verified Carbon Standard Credits).

Offsetting can be done on a periodic accounting basis where the requirement for offsetting is determined at the end of an accounting period and offsets are obtained for the aggregated emissions. Alternatively offsetting can be done on a "pay as you go" basis where offsets are purchased at the same time as a particular activity is carried out. This is often done when offsetting emissions from air travel, for example. A combination of both approaches can also be used.

When purchasing project-based carbon credits it may be useful to consider whether credits from particular types of project may help you achieve other business and sustainability goals. For example, it may be appropriate to purchase credits from projects located in a particular country or region with which your organisation has particular links. For a transport related organisation it may be appropriate to purchase credits from projects related to the development of public transport or in geographical vicinity to a large motorsport event.

REPORTING EMISSIONS

At all stages of the process of attaining carbon neutrality reporting of emissions is important.

Internal reporting of emissions is important in raising awareness of emissions reduction programmes and in tracking progress. External reporting is important in demonstrating commitment to stakeholders. The content and format of reporting should be appropriate for the intended audience. For example, internal reporting might provide detailed information on emissions from individual departments and locations and at frequent intervals that would not be appropriate in an external report. External stakeholders (for example trade associations, regulatory bodies or voluntary programmes such as the Carbon Disclosure Project) may have particular reporting requirements. They may also require that independent auditors verify your reports. You may wish to have your reports similarly verified on a voluntary basis. Even if you do not have your reports verified independently, it is good practice to document the process by which your reports are compiled so that they could, in principle, be verified by a third party.

STAKEHOLDER RELEVANT EMISSION SOURCES

This section provides overview key sources of Scope 1, 2 and 3 emissions to be considered as well as corresponding opportunities for emissions reduction.

The Scope 1,2 and 3 emissions must be defined by each stakeholder, and must be based on relevancy of the ownership, structure and responsibility of organising the various activities.

In order to avoid double counting of emissions Scope 1, Scope 2, and Scope 3 emissions are mutually exclusive for the reporting entity meaning that for the same reporting entity Scope 3 emissions do not include any emissions already accounted for as Scope 1 or Scope 2 by the same reporting entity.

Below it is a setup of various proposals for the three category scopes, and each stakeholder has the responsibility to priority according to relevance:

SCOPE 1 (DIRECT) EMISSIONS - KEY SOURCES TO CONSIDER

- Combustion of fuel in boilers or furnaces that are owned by the reporting organization;
- Generation of electricity, steam, or heat in equipment that is owned or rented by the reporting organization;
- Business travel in vehicles that are owned by the reporting company, such as company cars or corporate jets;
- Employee commuting in company-owned vehicles, such as a car pool or company car;
- Operation of owned and hired site vehicles;
- On site fuel sources used for operation of the organisation and facilities or procured fuel used to generate power supplied to others (for example supplied to pit garages or to customers hiring facilities for corporate events);
- Operation of temporary generators;
- Owned and hired transport used by officials and marshals during events;
- Owned and hired construction equipment;
- Fuel used to heat temporary or fixed buildings;
- Fuel used in operating their own workshops and facilities;
- Fuel use during racing/the event;
- Transport of personnel and competition vehicles to and from the event.

SCOPE 2 (INDIRECT) EMISSIONS - KEY SOURCES TO CONSIDER

- Generation of purchased electricity, steam, or heat;
- Generation of purchased electricity supplied by the site owner.

SCOPE 3 (INDIRECT) EMISSIONS - KEY SOURCES TO CONSIDER

When considering Scope 3 emissions, offsetting by others may be taken into account. For example, if you wish to account for emissions generated by teams during your events, you could consider whether individual teams have already offset their emissions. Incentives could be provided for teams that can demonstrate that they have achieved carbon neutrality, as they would not contribute to your Scope 3 emissions.

In other cases it may be more appropriate to assume no offsetting has taken place. For example, when considering emissions from spectators' travel, ignoring any personal offsetting by spectators would be a reasonable assumption. To avoid double counting or emissions care should be taken that Scope 3 emissions do not include any emissions already accounted for as Scope 1 or Scope 2 by the same reporting entity.

- Business travel in non-company-owned vehicles such as rental cars, employee cars, trains, and commercial planes;
- Employee commuting in vehicles not owned by the reporting organization, such as light rail, train, buses, and employee cars;
- Production or manufacture of office materials and resources, such as furniture, paper, equipment, toner cartridges, etc.;
- Incineration of office waste or decomposition in a landfill when the facilities are not owned by the reporting organization;
- Outsourced activities such as shipping, courier services, and printing services.
- Fuel use by competitors during events;
- Teams' travel to and from events;
- Fuel use for testing and development of new technologies;
- Spectators' travel to and from events;
- Outsourced construction and maintenance;
- Disposal of waste from routine operations and events;
- Supply of materials used in manufacturing and maintenance of competition vehicles;
- Disposal of waste from manufacturing and maintenance activities.
- Hotel accommodation for team personnel, guest`s, officers, media etc.

CHECKLIST - POSSIBLE REDUCTIONS

Opportunities for reducing emissions include the following:

- Switch to biofuels or compressed natural gas for site vehicles;
- Strategically locate teams' garages, pits and marshalling areas to minimise competitors' travel distances during events;
- Facilitate spectators' use of public transport by providing connecting services;
- Installing higher efficiency heating plant, including air or ground-sourced heat pumps;
- Installing combined heat and power systems;
- Considering the use of a Building Management System;
- Heat recovery from extracted air;
- Improvement of building insulation;
- Installation of high efficiency lighting;
- Controlling lighting with presence detectors;
- Encouraging switching off of computers and office equipment when not in use;
- Consider energy consumption in purchasing decisions for office equipment;
- Use of recycled paper;
- Avoiding business travel by using tele/video-conferencing instead;
- Encouraging the use of public transport for business travel;
- Facilitate car sharing by employees and encouraging commuting by bicycle;
- Use temporary tie-ins to grid electricity supplies rather than temporary generators;
- Use highly insulated temporary buildings;
- Use high efficiency radiant heaters in temporary buildings;
- Optimise the logistics;
- Locally based equipment and other resources;
- Use aerodynamic modelling rather than wind tunnel testing where possible;
- Reduce track testing as far as possible.

REFERENCE DOCUMENTS

1. International Standard ISO14064 - 1:2006. Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
2. PAS 2060: 2010 - Specification for the demonstration of carbon neutrality.

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