Airport Carbon Accreditation

Level 1 Requirements

Edition 1.0

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ENVIRONMENTAL MINDS

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Disclaimer

The content herein is intended solely for the purposes of becoming certified to *Airport Carbon Accreditation*. While every effort has been made to ensure the accuracy and relevance of the information provided, omissions or errors may be present.

This document can be updated or amended to reflect evolving best practices in carbon management, regulatory changes, or scientific developments. Updates will be available through relevant Communications at the *Airport Carbon Accreditation* website. Feedback from users is welcome to ensure this document continues to reflect the diverse needs and ambitions of the global airport community.

All environmental data submitted by the airport to the Administrator for the purpose of certification will be treated as confidential. Reports are generated using aggregated data that cannot be traced back to individual airports. Specific data may be shared with the Advisory Board upon request, but the airport will be notified. Reporting on individual airports occurs only with their consent.

Thank you to the various stakeholders who provided valuable comments during the review of this document.

Box 1. Terminology

Note that the following terms apply throughout this document.

"Shall" indicates a mandatory requirement or obligation. The action described is compulsory and must be followed without exception.

"Should" suggests a recommended action or best practice, but not a strict requirement. It implies that the action is encouraged and is advisable, however, there may be circumstances where an airport is unable to complete the action.

1 Introduction

1.1.1 Welcome to the *Airport Carbon Accreditation Level 1 Requirements*, which includes information on the data and documentation required to become certified at Level 1 of *Airport Carbon Accreditation*.

1.1.2 This document should be read in conjunction with the *Requirements for All Levels of Airport Carbon Accreditation*.

1.1.3 This document focuses on the requirements for Level 1 including the Policy Commitment and the GHG Inventory (**Table 1**).

1.1.4 Airports shall submit their application in the ACA Portal, completing all required fields.

Table 1: *Airport Carbon Accreditation Key Level Requirements*

		1	2	3	3+	4	4+	5
Carbon Management	Publicly Available Policy Commitment	✓	✓	✓	✓	✓	✓	✓
	Carbon Management Plan		✓	✓	✓	✓	✓	✓
GHG Inventory	Scope 1 and 2	✓	✓	✓	✓	✓	✓	✓
	Select Scope 3			✓	✓			
	All Scope 3					✓	✓	✓
Emissions Reduction Target	Scope 1 and 2 (Absolute or Intensity)		✓	✓	✓			
	Scope 1 and 2 (Absolute) in Line with 1.5°C Pathway[1]					✓	✓	
	Achieve & Maintain Scope 1 & 2 ≥ 90% Absolute Reduction & ≤10% Removals for Residual Emissions							✓
	Commit to Achieve Net Zero[2] Emissions by 2050							✓
Stakeholder Management	Stakeholder Engagement Plan			✓	✓			
	Stakeholder Partnership Plan					✓	✓	✓
Carbon Offsetting	Carbon Offset Reductions or Removals for Residual Scope 1 & 2 Emissions and Staff Business Travel				✓		✓	
	Carbon Offset Removals for Residual Scope 1 & 2							✓
Target Compliance	Compliance with Target Year and Value		✓	✓	✓	✓	✓	✓
	3-Year Rolling Average Annual Improvement		✓	✓	✓			
	Every 6 Years, Max 15% Deviation Accepted					✓	✓	
	Every 3 Years, One Justifiable Missed Target							✓

[1] 2°C pathway only allowed if in line with Nationally Determined Contributions.
[2] Net zero is where anthropogenic residual greenhouse gas emissions (GHG) from an organisations' inventory (Scope 1, Scope 2 and Scope 3) are balanced by removals over a specified period and within specified boundaries; adapted from ISO IWA 42:2022 Net Zero Guidelines.

2 Commitment to Reduce Emissions

2.1.1 Airports shall include written evidence of their commitment to reduce their Greenhouse Gas (GHG) emissions.

2.1.2 In order to be accepted the commitment shall:

1. **Be publicly available through the airport's website or a publication**: The website link or publication proof shall be submitted on the ACA Portal. The commitment shall be publicly available throughout the certification period.
2. **Be signed by the highest management level at the airport**: The commitment shall be signed off by the airport's highest level, for example, the Chief Executive Officer, Chief Operations Officer, the Board of Directors, or equivalent[3].

2.1.3 The commitment can be in the form of:

- A policy, for example a carbon policy or an environmental policy.
- Part of an existing policy or included in an existing report, for example for certification against a standard, such as *ISO 14001: Environmental Management System*.

[3] Unsigned policies can only be accepted if the publicly available versions clearly state the name and position of the approver and the airport can provide evidence of this approval (e.g., Board decision)

3 GHG Inventory

3.1 Overview

3.1.1 At Level 1 airports shall account for all Scope 1 and Scope 2 emissions in line with the definitions and principles from the GHG Protocol, which shall be clearly stated within the airport's GHG Inventory.

3.1.2 Note that the GHG Inventory categories outlined in *ISO 14064-1 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals* are also accepted by the programme.

3.1.3 Airports shall manage their GHG Inventory quality in line with Chapter 7 of the GHG Protocol "*A Corporate Accounting and Reporting Standard*".

3.2 Scope 1: Direct Emissions

3.2.1 Scope 1 emissions are direct GHG emissions from sources under operational control by the airport that involve the combustion or release of physical fuels or substances, and can be categorised into four categories:

1. Stationary Combustion Emissions
2. Mobile Combustion Emissions
3. Fugitive Emissions
4. Process Emissions

Stationary Combustion Emissions

3.2.2 This category includes direct emissions from the combustion of fuels in stationary equipment under operational control by the airport.

3.2.3 Typical airport stationary combustion sources include heating plants, terminal boilers, standby or emergency generators, combined heat and power (CHP) units, and fixed ground-power systems that provide electricity, heat, steam, or cooling to airport buildings and operations. These assets commonly use fuels such as petrol/gasoline, diesel, biodiesel, natural gas, liquefied petroleum gas (LPG), kerosene, propane, biogas or biomethane.

3.2.4 Emissions from the on-site generation of electricity, heat, steam, or cooling shall be reported under Scope 1. If any of the energy generated on site is sold or provided to tenants or other parties, the associated emissions shall not be netted off; the airport shall report 100% of these emissions.

3.2.5 Note that when an airport generates electricity on site from renewable sources, energy attributes are not required for the volume that is consumed directly by the airport unless this contradicts local or national regulation.

Mobile Combustion

3.2.6 This category covers direct emissions from the combustion of fuels in mobile equipment and vehicles under operational control by the airport.

3.2.7 Typical airport examples include airside vehicles (e.g., maintenance trucks, operational vehicles), ground support equipment (GSE) such as tugs and baggage tractors, snowploughs, fire and rescue vehicles, and landside fleet vehicles, all of which use fuels including petrol/gasoline, diesel, biodiesel.

3.2.8 Leased or rented vehicles under the airport's operational control must be included in Scope 1 regardless of legal ownership, consistent with GHG Protocol organisational boundary requirements.

3.2.9 Emissions from fuel sold by the airport to third parties for use in their operations (e.g., vehicles, equipment) shall not be part of Scope 1 emissions. They shall be included in Scope 3 emissions.

Calculation Guidance for Stationary and Mobile Combustion

3.2.10 Emissions shall be calculated using GHG Protocol–aligned methods:

1. **Fuel-use method**: Fuel consumed (e.g., litres, kg, m^3) multiplied by the fuel-specific emission factors.
2. **Energy-content method**: Convert fuel quantities into energy units (e.g., GJ) using standard calorific values and apply emission factors.
3. **Default emission factors**: Use national inventory, IPCC, or supplier-provided factors where site-specific fuel data is unavailable.
4. **Distance-based method** (*mobile combustion only*): Estimate emissions using distance travelled multiplied by the fuel economy and the emission factor.

Guidance for Stationary and Mobile Combustion Relating To Biofuels and Biomethane

3.2.11 Biofuels (e.g., biodiesel, HVO, bio-LPG) and biomethane may be used in both stationary and mobile combustion. Emissions shall be calculated using the guidance outlined below.

Emissions from Biofuels

3.2.12 Biofuels used directly at the airport (e.g., biodiesel in airport-owned vehicles, biogas used in on-site generators, or bio-LPG in heating systems) shall be included in the GHG Inventory using the best available emission factors. Where supplier-specific emission factors are available and transparent, these may be used; otherwise, national inventory emission factors, IPCC default factors, or other authoritative sources shall be applied.

3.2.13 In accordance with the *GHG Protocol*, direct CO_2 emissions from the combustion of biofuels are classified as biogenic and shall be excluded from Scope 1 totals. These biogenic CO_2 emissions must instead be reported separately to ensure transparency. Biogenic CO_2 emission factors should be obtained from fuel suppliers or national or IPCC sources and reported in tonnes of CO_2.

3.2.14 All non-CO_2 emissions produced during the combustion of biofuels (such as CH_4 and N_2O) shall be included in Scope 1.

3.2.15 Airports can voluntarily report Scope 3 emissions to include the life cycle (well-to-tank) emissions of the biofuel (such as those from feedstock cultivation, processing, and transportation), as well as the upstream emissions from production and transport using appropriate emission factors.

3.2.16 Where biofuels are procured through voluntary sustainability or certification schemes, airports should ensure that such schemes are credible and aligned with national regulations or airport procurement policies.

3.2.17 When considering the use of biofuels, products that are sourced from any of the voluntary biofuel certification schemes[4], and which have EU Commission approval, are considered as best practice for ACA airports; the minimum standard will, however, in all cases, remain compliance with national regulation.

3.2.18 The following additional information is provided, for consideration by airports in their use of biofuels:

- Recommended biofuel certification schemes approved by the European Commission are listed on the Commission's website.
- Where these schemes are used biofuel attribute certificates must show that only 2nd or 3rd generation biofuels are purchased for airport operations.

3.2.19 When biofuels are used on-site, the emission factors shall convey the direct GHG emission rate associated with the unit of biofuel.

3.2.20 In the case of biofuel attribute certificates or heat purchased from biofuel used by a third party they shall convey the direct GHG emission rate associated with the unit of biofuel/heat and be the only instrument that carries the GHG emission rate claim associated with that quantity of biofuel/heat.

[4] ICAO also approves Sustainability Certification Schemes that certify Sustainable Aviation Fuels in the context of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). More details can be found at https://www.icao.int/CORSIA/corsia-eligible-fuels

Emissions from Biomethane

3.2.21 Biomethane used directly at the airport shall be included in the GHG Inventory.

3.2.22 Airports that directly use non-renewable gases such as natural gas for activities such as heating, cooking or on-site electricity generation, may choose to procure Biomethane Attribute Certificates (BACs) to support market-based reporting and reduction target claims, where this is permitted by the national regulations of the airport's country. BACs may be used to demonstrate the procurement of biomethane even when physical biomethane is not delivered to the airport through the gas network.

3.2.23 The airport shall retain full ownership of the environmental attributes associated with the BACs and shall not transfer, sell, or otherwise double-count the certificates. BACs procured shall be attached to the airport's application.

3.2.24 When an airport uses BACs they shall report the emissions associated with both:

- ***The location-based method***: Calculated using the standard emission factor for fuel combustion.
- ***The market-based method:*** Calculated using the biomethane emission factor associated with valid BACs.

3.2.25 Airports are strongly encouraged to report this dual-reporting information on their website or within public sustainability reports to maintain transparency.

3.2.26 Given the absence of a universally recognised framework for BACs, airports shall carefully evaluate the benefits and drawbacks of using BACs. Considerations should include assessing potential changes in national or international policy, eligibility for future reporting schemes, reputational risks, stakeholder expectations, and any risks associated with purchasing certificates issued in other countries or regions.

3.2.27 Airports are encouraged to apply high levels of transparency and due diligence when using BACs. Airports should monitor emerging standards, regulatory developments, and best practices in biomethane attribute certification to ensure ongoing compliance and credibility of reported emission reductions.

Fugitive Emissions

3.2.28 Fugitive emissions include unintentional releases of GHGs from equipment and systems under operational control by the airport.

3.2.29 Typical fugitive emission sources include refrigerant leaks from terminal HVAC systems (e.g., chillers, air handling units, packaged air conditioners), cold-storage facilities, and fire-suppression systems that use hydrofluorocarbons (HFCs). Losses may occur through routine operation, maintenance, or accidental release.

3.2.30 Fugitive emissions shall be calculated in line with the GHG Protocol's guidance:

1. **Material balance method**: Estimate emissions as refrigerant purchased compared with the refrigerant recovered/disposed.
2. **Default emission factors**: Default loss rates and Global Warming Potentials.

3.2.31 If refrigerant refills occur less than once per year, the amount added should be divided across the time since the previous refill so that the reported emissions reflect an annualised, pro-rata leak rate.

Process Emissions

3.2.32 Process emissions arise from airport activities involving chemical or physical transformations.

3.2.33 Typical airport sources include the use of de-icing fluids and on-site waste or wastewater treatment systems operated by the airport.

Emissions from De-icing

3.2.34 Airports shall report emissions from the use of de-icing substances such as ethylene glycol, propylene glycol and potassium formate.

3.2.35 The emissions shall be calculated with the following inputs:

- The volume and percentage concentration of the de-icing chemical.
- The emissions factor for the degradation of the de-icing chemical.
- Adjustments for dilution factor.

3.2.36 A possible emissions factor for the degradation of propylene glycol can be found in the *ACERT* tool. Airports can also calculate their own emissions factors using chemical equations. Where other calculation methodologies are used, airports shall provide details of the calculation method with justification and assumptions made.

Emission from On-Site Waste or Wastewater Treatment

3.2.37 Where the airport operates an on-site waste or wastewater treatment system, the direct GHG emissions shall be reported under Scope 1. For example, emissions may arise from the degradation of organic material in wastewater and sludge during treatment and handling processes.

3.3 Scope 2: Electricity Indirect Emissions

3.3.1 Airports shall account for all indirect emissions from the consumption of purchased electricity, heat, steam and cooling (collectively referred to as "electricity"), in accordance with the *GHG Protocol Scope 2 Guidance*.

Calculation Methods

3.3.2 Airports shall quantify Scope 2 emissions using the following methods:

- ***The location-based method*:** Reflects the average emissions intensity of the local or regional electricity grid where consumption occurs, irrespective of contractual energy procurement choices.
- ***The market-based method:*** Reflects emissions from electricity that the airport has procured using contractual instruments such as Renewable Energy Certificates (RECs), Guarantees of Origin (GOs), International-RECs (I-RECs), Power Purchase Agreements (PPAs) or Green Tariffs.

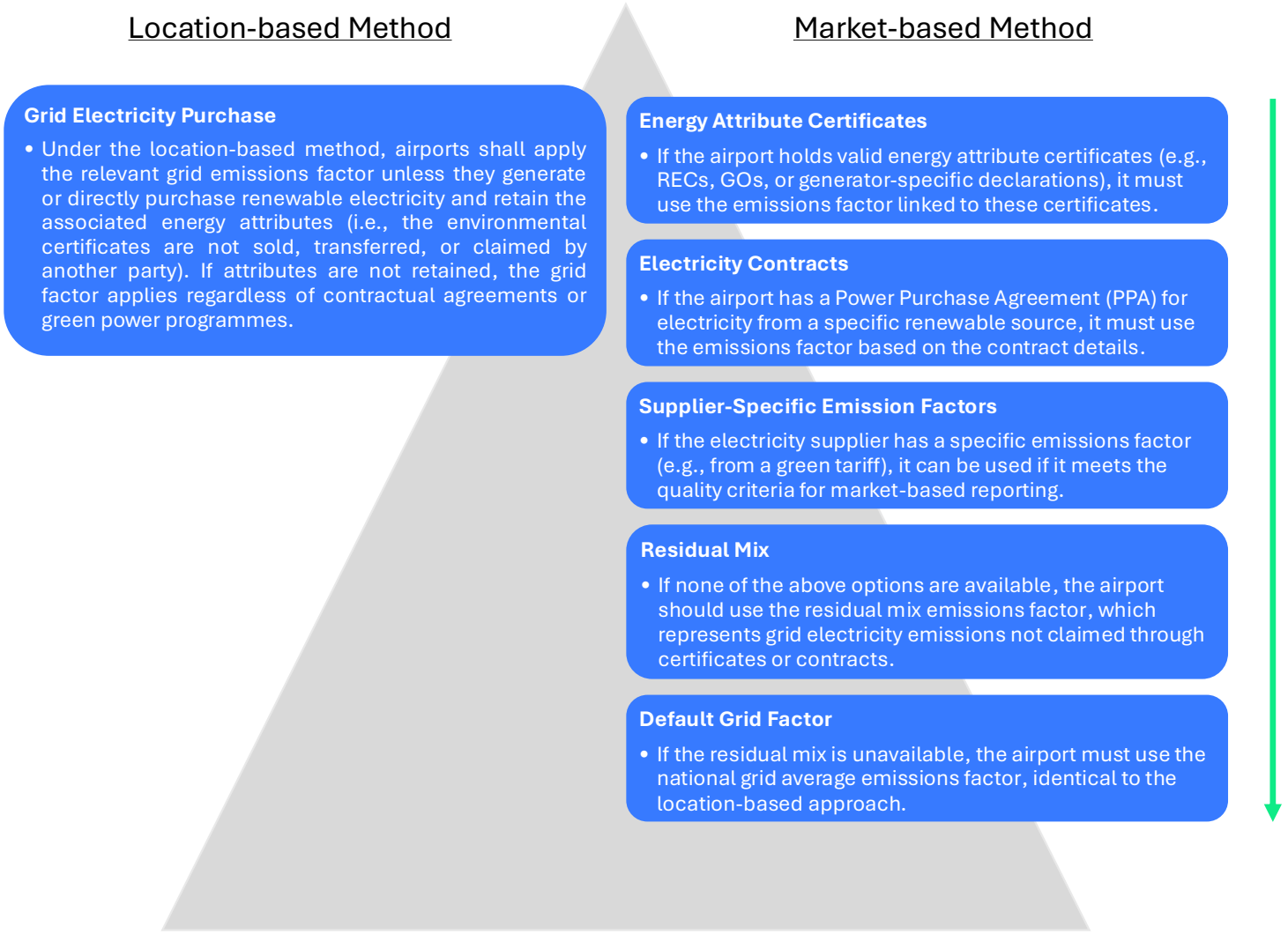
3.3.3 For airports with operations only in markets that do not provide product- or supplier-specific data or other contractual instruments, only one Scope 2 result shall be reported, based on the location-based method.

3.3.4 For airports with any operations in markets providing product or supplier specific data in the form of contractual instruments, airports shall account and report Scope 2 emissions in two ways and label each result according to the method: one based on the location-based method, and one based on the market-based method. This is applicable even when the airport is not using any contractual instruments.

3.3.5 Airports shall apply the same accounting method consistently throughout the inventory year and shall not report part of the year with the location-based methodology and the other part of the year with the market-based methodology.

3.3.6 Airports should use the principles in **Figure 1** when determining which emission factors to apply under the location-based method and market-based method.

***Figure 1**: Location-Based and Market-Based Emissions Hierarchy*



Use of Contractual Instruments

3.3.7 Contractual instruments are agreements or certificates that convey the GHG emission and environmental attributes of electricity purchased by the airport. Contractual instruments contain all of the associated energy and non-energy attributes, including but not limited to, the zero or low emissions claim associated with the electricity. These mechanisms include:

- Energy Attribute Certificates such as *Guarantees of Origin* (GOs) in the European Economic Area, *Renewable Energy Certificates* (RECs) in USA and Canada, and *International-Renewable Energy Certificates* (I-RECs) in other countries.

3.3.8 Contractual instruments are procured in various methods but can also be embedded as part of contractual agreements such as Power Purchase Agreements (PPA), Green Tariffs or other contracts.

3.3.9 Contractual instruments provide verified claims that a specific quantity of electricity was generated from renewable or low-carbon sources.

3.3.10 Contractual instruments are not classed as offsets, which allow for a reduction of emissions achieved in each project over a period of time. Instead, they indicate the appropriate emissions factor for the electricity procured by the airport. Therefore, they can only be used to report in a more precise manner an airport's Scope 2 emissions as per the market-based method.

3.3.11 To claim zero or low emissions electricity under the market-based method, the airport must legally retain the environmental attributes. If attributes are sold, transferred or not included in the contract, the airport cannot report the electricity as zero-emission.

3.3.12 All contractual instruments used in market-based reporting shall fulfil the following GHG Protocol criteria:

1. Convey the direct GHG emission rate associated with the electricity produced.
2. Be the only instruments that carry the GHG emission rate attribute claim associated with that quantity of electricity generation.
3. Be tracked and redeemed, retired, or cancelled by or on behalf of the reporting entity.
4. Be issued and redeemed in the same reporting period of energy consumption to which the instrument is applied.
5. Be sourced from the same market in which the reporting entity's electricity-consuming operations are located and to which the instrument is applied.

3.3.13 Supplier-specific emission factors may only be used if they relate directly to the electricity product the airport receives, and they are backed by an underlying contractual instrument.

Scope 2 Emission Exclusions

3.3.14 Certain emissions may be excluded from Scope 2 emissions (**Figure 2**):

- **Airport-owned electricity generation assets**: If the airport owns an electricity generation plant (on-site or off-site), emissions shall be included in Scope 1 rather than Scope 2.
- **Reselling purchased electricity**: If the airport resells purchased electricity to tenants and consumption is separately metered, the associated emissions may be excluded from Scope 2. This rule applies regardless of how the energy is resold (for example, based on floor area, metering, or other allocation).

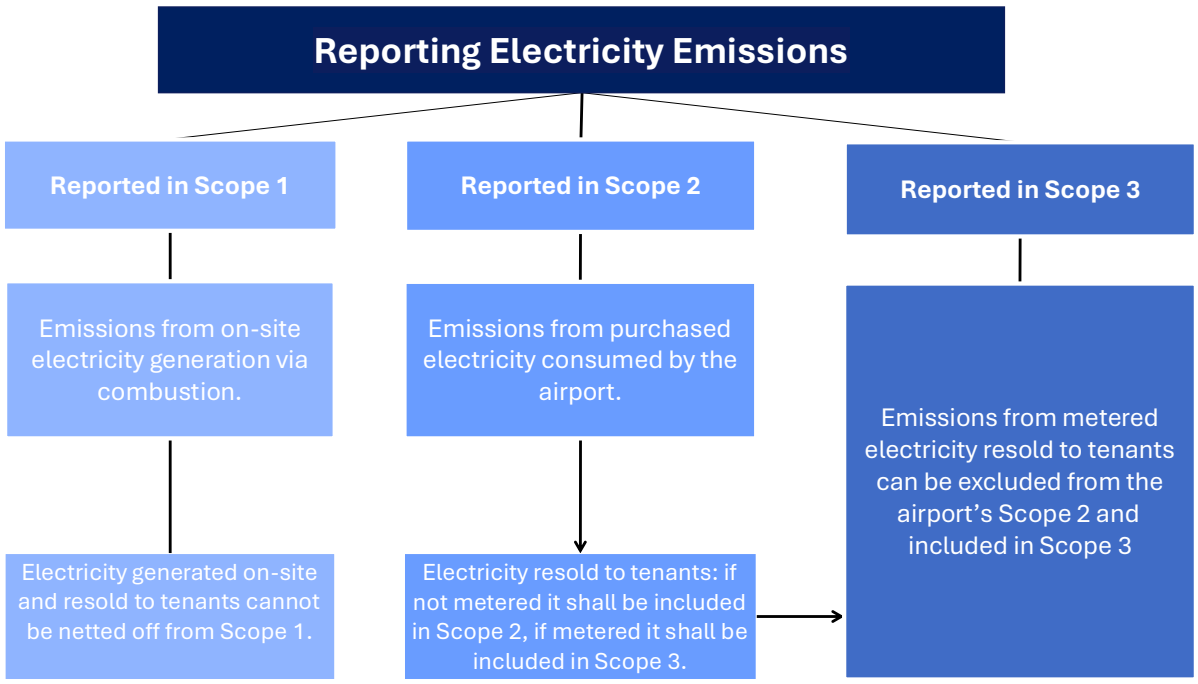
Heat Purchased from Biofuel Used by a Third Party

3.3.15 Where the airport purchases heat (e.g. steam or hot water) generated from biofuel by a third-party supplier, emissions shall be included in Scope 2. Airports shall:

- Use location-based emission factors provided by national inventories where available.
- Use market-based supplier-specific factors only where they meet market-based quality criteria.

3.3.16 Biogenic CO_2 emissions associated with the biofuel combustion shall be reported separately.

Figure 2: Scope 2 Electricity Indirect Emissions Reporting
(Scope 3 emission reporting is not required for Level 1 but included to show the correct categorisation)



3.4 GHG Inventory Report

3.4.1 Airports shall submit a GHG Inventory Report in the ACA Portal, which shall include:

1. **General contextual information** including a brief overview of the airport ownership structure, location, key operational metrics such as number of employees/passengers/aircraft movements/cargo. *Should not exceed 1-page*.
2. **Information on Data:**

   Data Collection: Reporting period, organisational and operational boundaries, data collection procedures, roles and responsibilities.

   Data Sources: A description of the sources of activity data, such as invoices, delivery notes, and meter readings (the source document itself is not required).

   Types of Data: Energy consumption data relevant to Scope 1 and Scope 2, including electricity use and fuel consumption.

   Data Management: Tools or software used, data quality controls, verification or assurance processes, and record-keeping practices.
3. **Methodology**: Emission factors, calculation formulas, assumptions made, and any exclusions applied, in line with the *GHG Protocol*.
4. **Inventory Adjustments**: Any adjustments due to asset changes, boundary changes, or data corrections.
5. **Data Analysis**: Presented by Scope (1 & 2) (such as trends, comparisons, uncertainties, materiality).

4 Verification

4.1.1 Regarding verification of the airport's application, verifiers shall attest that all of the requirements of Level 1 have been adhered to, including:

- Policy Commitment
- The GHG Inventory
- The GHG Inventory Report

4.1.2 The verification of the GHG Inventory shall be conducted in accordance with the requirements of *ISO14064-3* and in line with the *GHG Protocol*.

4.1.3 At Level 1, verification shall take place for year 1 and year 3 **(Table 2)**.

***Table 2**: Level 1 Renewal and Verification*

Entry (Year 1)	Renewal 1 (Year 2)	Renewal 2 (Year 3)	Year 4
Verification	No verification	Verification	Must upgrade to a higher level with verification

5 Public Reporting

5.1.1 The programme promotes transparency in carbon management and emission reduction claims. Therefore, public reporting is required at all levels of the programme. At Level 1, the airport shall publish the following information on the airport's website or other public documents:

- Signed Policy Commitment
- GHG Inventory: Total Scope 1 & 2 emissions

6 Certification Renewal at Level 1

6.1.1 Airports should upgrade to a higher level of the programme after two years of certification at Level 1.

6.1.2 Airports shall upgrade to a higher level of the programme after three years of certification at Level 1.

6.1.3 Airports cannot downgrade to Level 1, while if an airport withdraws from the programme at any level, they are only entitled to re-enter the programme at Level 2 or higher.

6.1.4 During the two renewal years permitted at Level 1, airports shall fulfil all certification requirements as outlined in this document.

6.1.5 During the two renewal years permitted at Level 1, airports shall submit their GHG Inventory and Inventory Report including their Scope 1 and Scope 2 emissions and shall clearly outline any changes of the emission sources reported.

Annex 1

Checklist for Level 1

Indicative list to support airports in the certification process. Airports shall ensure that all the level specific requirements are met.

Requirement	Check
Policy Commitment	
Publicly available policy commitment signed by highest level.	
GHG Inventory	
GHG Inventory including Scope 1 and Scope 2 emissions.	
GHG Inventory Report	
GHG Inventory Report which meets all specified requirements.	
Verification (if required)	
A verification report.	