

Tanzania Airports Authority

GREEN HOUSE GAS EMISSION INVENTORY REPORT

KILIMANJARO INTERNATIONAL AIRPORT

Year 2024 and 2025

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1. INTRODUCTION

This report presents a separate analysis of Kilimanjaro International Airport (KIA) greenhouse gas emissions data for 2024 and 2025, followed by an assessment of the key improvements demonstrated by the 2025 results. The analysis is based on the KIA ACERT/ACI Greenhouse Gas Emissions Inventories for the respective years. The inventories cover the Airport Operator's Scope 1 and Scope 2 emissions.

Year 2024 was the baseline year in KIA's Greenhouse emission reduction efforts under the Airport Carbon Accreditation (ACA) making it the first Airport in Tanzania to join the programme. ACA is the global Airport carbon management certification programme developed and managed by Airports Council International (ACI). It provides a framework for Airports to measure, manage, reduce and progressively neutralize their carbon emissions. Currently KIA has Level 1 accreditation under this programme.

2. ANALYSIS OF THE 2024 GREENHOUSE GAS EMISSIONS DATA

The 2024 inventory reports show that KIA's gross greenhouse gas emissions is 1,422.0 tCO_2e. Out of that, 560.3 tCO_2e were Scope 1 emissions, while Scope 2 emissions from purchased electricity were 861.7 tCO_2e. Scope 1 therefore represented 39.4% of the reported total, while Scope 2 represented 60.6%.

Airport activity during 2024 comprised of 1,044,276 passenger movements, number of aircraft movements 24,202, cargo 6,562 tonnes and 1,109,896 traffic units. The airport operator had 338 Full Time Equivalent (FTE) staff.

2.1 Scope 1 emissions in 2024

Mobile sources (Vehicles) were the largest Scope 1 source with 444.0 tCO_2e, equivalent to 31.22% of total Airport emissions. Emergency generators contributed 67.8 tCO_2e (4.77%), while process sources contributed 48.5 tCO_2e, including 47.7 tCO_2e from refrigerants and 0.8 tCO_2e from fire training. The inventory therefore

indicates that vehicles and other mobile equipment were the dominant direct-emission source in 2024.

2.2 Scope 2 emissions in 2024

Purchased electricity was the largest overall emissions source in the 2024 inventory with 861.7 tCO_2e equivalent to 60.60% of total Airport Operator emissions. Electricity consumption was 2,386 MWh. With renewable electricity reported at 0%, the inventory identifies purchased electricity as a major area for future emissions-management attention.

2.3 Carbon intensity and carbon-neutrality indicators

The reported Airport Operator carbon intensity was 4.2 tCO_2e per FTE and 1.36 $kgCO_2e$ per passenger. The inventory reports no purchased offsets, 0% neutrality achieved and no achievement of net zero for Scopes 1 and 2.

3. ANALYSIS OF THE 2025 GREENHOUSE GAS EMISSIONS DATA

The 2025 inventory reports show that KIA's gross greenhouse gas emissions is 1,446.0 tCO_2e. Scope 1 emissions declined to 501.0 tCO_2e, while Scope 2 emissions increased to 945.0 tCO_2e. Scope 1 represented 34.65% of the total and Scope 2 represented 65.35%.

In 2025 Airport activity increased; Passenger movements reached 1,082,963, aircraft movements 25,103, cargo rached 6,742 tonnes and 1,150,388 traffic units. Airport operator staff increased to 371 Full Time Equivalent (FTE).

3.1 Scope 1 emissions in 2025

Mobile sources remained the largest Scope 1 category at 444.1 tCO_2e, representing 30.71% of total Airport Operator emissions. Emergency-generator emissions fell to 28.6 tCO_2e (1.98%). Fire-training emissions were 0.2 tCO_2e (0.02%), and refrigerant emissions were 28.1 tCO_2e (1.94%). Total Scope 1 emissions were therefore 501.0 tCO_2e.

3.2 Scope 2 emissions in 2025

Purchased electricity remained the largest source of emissions, increasing to 945.0 tCO_2e, equivalent to 65.35% of total Airport Operator emissions. Electricity consumption increased to 2,617 MWh. The inventory again reports 0% renewable electricity.

3.3 Carbon intensity and carbon-neutrality indicators

The 2025 carbon-intensity indicators were 3.9 tCO_2e per FTE and 1.34 $kgCO_2e$ per passenger. In this year, still there is no carbon offsets purchased, neutrality achieved remained at 0% and net zero for Scopes 1 and 2 was not achieved.

4. Improvements Demonstrated in 2025

The 2025 inventory demonstrates several measurable improvements when considered against the 2024 inventory.

INDICATOR	2024	2025	IMPROVEMENT / CHANGE
Scope 1 Emissions	560.3 tCO_2e	501.0 tCO_2e	Reduction of 59.3 tCO_2e (10.6%)
Emergency generator	67.8 tCO_2e	28.6 tCO_2e	Reduction of 39.2 tCO_2e (57.8%)
Refrigerants	47.7 tCO_2e	28.1 tCO_2e	Reduction of 19.6 tCO_2e (41.1%)
Fire training	0.8 tCO_2e	0.2 tCO_2e	Reduction of 0.6 tCO_2e (75.0%)
Carbon intensity per FTE	4.2	3.9	Improved by 7.1%
Carbon intensity per passenger	1.36 $kgCO_2e$	1.34 $kgCO_2e$	Improved by 1.5%
Carbon intensity /	1.28 $kgCO_2e$	1.26 $kgCO_2e$	Improved by 1.6%

traffic unit			
Total Scope 1 + 2	1,422.0 tCO_2e	1,446.0 tCO_2e	Increase of 24.0 tCO_2e (1.7%)
Scope 2	861.7 tCO_2e	945.0 tCO_2e	Increase of 83.3 tCO_2e (9.7%)
Electricity use	2,386 MWh	2,617 MWh	Increase of 231 MWh (9.7%)

4.1 Reduction in direct emissions

There is a clear improvement in Scope 1 emissions where it has been reduced from 560.3 to 501.0 tCO_2e, a decrease of 59.3 tCO_2e (10.6%). The largest contributors to this improvement were the reductions in emergency generator emissions and refrigerant emissions. However mobile source emissions remained unchanged at about 444 tCO_2e.

4.2 Improved carbon efficiency

Despite growth in Airport activity, all reported carbon intensity indicators improved. Carbon intensity per FTE declined from 4.2 to 3.9 tCO_2e/FTE; intensity per passenger declined from 1.36 to 1.34 $kgCO_2e$/passenger and intensity per traffic unit declined from 1.28 to 1.26 $kgCO_2e$/TU. This indicates that emissions increased at a slower rate than the Airport's operational activity.

4.3 Areas requiring continued attention

The principal area requiring further attention is purchased electricity (Scope 2). Scope 2 emissions increased from 861.7 to 945.0 tCO_2e, corresponding with an increase in electricity use from 2,386 to 2,617 MWh. Renewable electricity remained at 0% in both inventories. The 2025 results therefore show there is a need of energy efficiency measures, electricity demand management and assessment of possible opportunities of using renewable energy in Airport operations.

5. Overall Assessment

The 2024 inventory establishes a carbon baseline in which purchased electricity and mobile sources were the dominant emission sources. The 2025 inventory shows measurable progress in direct emissions management, particularly through reductions in emergency generator, refrigerant and fire-training emissions. At the same time, increased electricity consumption resulted in higher Scope 2 emissions.

Overall, the 2025 results show improved carbon efficiency rather than an absolute reduction in total emissions. The improvement is particularly evident because passenger movements, aircraft movements and traffic units all increased while carbon intensity indicators declined.

6. Current Management Focus

Currently KIA management is taking the following initiatives in improving in GHG emissions reduction

i. Maintain measures that contributed to the reduction of scope 1 emissions.
ii. Develop the Carbon Management Plan (CMP) which will provide a strategic framework and clear pathway towards achieving Net Zero carbon emissions.
iii. Assess renewable-energy options, including solar photovoltaic generation, to reduce dependence on purchased electricity. In 2026/2027 financial year, KIA is expecting to conduct an energy audit which will also provide possible options of starting using solar power in some of Airport operations.
iv. Implementation of electricity efficiency programme which includes installation of new AGL lights which will shift from Halogen lights to LED technology which is more energy efficient.
v. Continue monitoring emissions from vehicle and other mobile equipment which are the largest sources of Scope 1 emissions.
vi. Maintain consistent annual ACERT data collection and methodology to enable reliable year to year performance tracking.

vii. Improve data collection for relevant Scope 3 categories as information becomes available.

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DIRECTOR

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