



## Zimbabwe Country Progress Update

Second Phase of the ICAO Assistance Project with the EU Funding :  
*“Capacity Building for CO<sub>2</sub> Mitigation from International Aviation*

**3 to 5 April 2023**  
**Harare, Zimbabwe**



**Sherphard Machingauta**  
**State Focal Point**





## Agenda

1. Use of the Aviation Environmental System (AES)
  - ❖ Data collection and Monitoring
  - ❖ Submission of Monthly CO<sub>2</sub> Reports to ICAO
2. Mitigation Measures – Implementation Progress
  - ❖ Measures already in place
  - ❖ Measures that started as a result of the project
  - ❖ Measures that are scheduled to be implemented in the short term
3. Major challenges related to the implementation of mitigation measures



## THE AVIATION ENVIRONMENTAL SYSTEM (AES)

- The AES System was installed on 18 January 2023 on a Civil Aviation Authority of Zimbabwe and is accessible through a virtual machine on the server.
- The database was populated with Baseline Data, Expected Results, Data Providers as well as well as Historical data from the last 4 months of 2022.
- Currently, the AES system is being to monitor international flights only. Plans are in place to extend the use of the AES in the monitoring and reporting of domestic flights as well.



# Data Collection and Monitoring

INTERNATIONAL CIVIL AVIATION ORGANIZATION  
ENVIRONMENTAL PROGRAMME  
FORM ENV1

Date: 01-02-2023  
Last name: GONZO  
First name: HART  
Email: [hart.gonzo@fastjet.com](mailto:hart.gonzo@fastjet.com)  
Data provider: HART GONZO

Flight number	Date of departure	Airline	Origin	Destination	Aircraft	Seats available	Passengers carried	Payload available (Kilogrammes)	Freight carried (incl. express) (Kilogrammes)	Mail carried (Kilogrammes)	Scheduled	Fuel consumed (Litres)	APU usage time (Minutes)
FN8331	01-03-2023	FTW	HRE	JNB	E-145	50	48	1100				1940	

- Zimbabwe has operators attributed to the State therefore the ICAO definition of International flights used in the monitoring of emissions data.
- Monthly Form ENV1s from data providers are checked and verified before being imported into the system.



## Submission of Monthly CO2 Reports to ICAO

### MONTHLY AVIATION CO<sub>2</sub> REPORT

Feb-23

#### ZIMBABWE

State-level report 1 reporting airline(s)  
ICAO definition for international flights

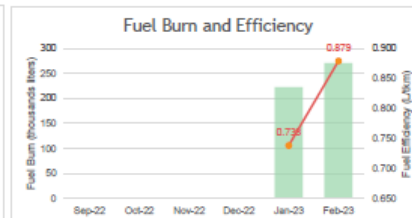
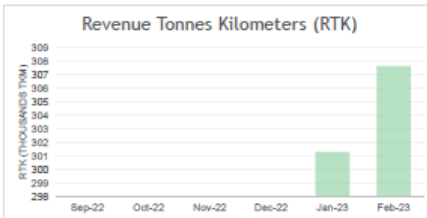
#### KEY METRICS FOR INTERNATIONAL AVIATION

FLIGHTS	RTK (tkm)	FUEL BURN (L)	CO <sub>2</sub> EMISSIONS (t)	FUEL EFFICIENCY (L/tkm)
164	307,603	270,468	684	0.879

#### TRENDS

MONTH-TO-MONTH	Feb-23	Jan-23	% CHANGE	6 MONTHS TREND
RTK (tkm)	307,603	301,286	↑ 2%	
FUEL BURN (L)	270,468	222,320	↑ 22%	
CO <sub>2</sub> EMISSIONS (t)	684	562	↑ 22%	
FUEL EFFICIENCY (L/tkm)	0.879	0.738	↑ 19%	

YEAR-TO-YEAR	Feb-23	Feb-22	% CHANGE	1 YEAR TREND
RTK (tkm)	307,603			
FUEL BURN (L)	270,468			
CO <sub>2</sub> EMISSIONS (t)	684			
FUEL EFFICIENCY (L/tkm)	0.879			



- The Report shown is for the month of February 2023.
- The RTK is 307 603 tkm and the fuel burn is 270468 liters.
- The reports are sent to ICAO by the fifth day of the next month.



## Mitigation Measures – Implementation Progress

The State Action Plan identifies six key measures that are expected to have the greatest environmental impact. Implementation of some the selected measures has commenced while other measures are yet to be implemented.



## MEASURES ALREADY IN PLACE

### Selecting the aircraft suited to the mission



- Air Zimbabwe has introduced the Embraer 145 while Fastjet has introduced the Embraer 120 turbo-props.
- to enable operational flexibility where the smaller jet will be deployed where the passenger loads do not justify the use of bigger aircraft.



## Participation in Environmental Programs

- State volunteered to participate in Pilot phase of CORSIA on 14 February 2022.
- The State is also participating in Act-SAF and has six (06) organizations from Zimbabwe who have joined ACT- SAF and have signed the Terms and Conditions.

## Airfield improvements

- The traditional halogen runway and taxiway lights have been replaced by energy saving LEDs at the RG Mugabe and JM Nkomo Intl Airports.

## Reduction in Energy Demands

- Traditional incandescent lights have been replaced by LED lights with motion sensor in parts of the Terminal buildings where it is practical.



## Infrastructure design



- The emphasis in the building designs at the newer airports was promoting the use of natural light and ventilation to cut down on the energy bill.



## Clean Sources of Energy



- The State has been encouraging the use of cleaner energy sources at the airports.
- A significant number of shuttles are 100% Electric with the remainder being either hybrid vehicles or small engine capacity vehicles.



## Clean Sources of Energy Cont'd

Closing on: Friday, February 17, 2023

# Invitation for Expression of Interest for Development and Operation of Solar Farms at Robert Gabriel Mugabe, Victoria Falls and Joshua Mqabuko Nkomo International Airports

PROCUREMENT REFERENCE NUMBER: ACZ/INTERNATIONAL/EOI/O101/2023

COMPULSORY SITE VISIT: N/A

Your submission should reach the Airports Company of Zimbabwe (Private) Limited not later than the **Closing Date at 10:00 hours, clearly marked and deposited in the Tender Box at the PMU Reception, 2nd Floor**

- Implementation of Solar Farms around Airports with a view of eventually having Solar at Gate facilities.



## MEASURES THAT STARTED AS A RESULT OF THE PROJECT

### Minimising Thrust Reverser Use

- Operators have started implementing this mainly at RG Mugabe and Victoria Fall Intl Airports where runways are relatively long.

### Engine Wash

- Even though the operating environment does not dictate frequent engine washes, operators have started implementing this measure as a result of the project.

### Air Traffic Management

- Even though there was a PBN implementation project with Airspace design having been done at in Vic Falls, the State Action Plan has brought a renewed push for PBN implementation to be completed.



## MEASURES TO BE IMPLEMENTED IN THE SHORT TERM

### Single Engine Taxi

- Consultations are under way for the implementation of this measure on applicable aircraft types.

### Sustainable Aviation Fuels

- Under the project, the State was selected for a feasibility study on Sustainable Aviation Fuels. It was highlighted that a Consultant was recruited and will be introduced to the State in the near future.



## MAJOR CHALLENGES RELATED TO THE IMPLEMENTATION OF MITIGATION MEASURES

- **Funding** - Lack of funding is the major huddle in the implementation of most mitigating measures.
- **Capacity** – Some of the mitigation measures require expertise in the implementation and the State has to outsource these skills at a cost.
- **Lack of Understanding** – Some of the implementing partners do not have understanding of the potential benefits of environmental programs as they have traditionally been classified as no – essential.

**The State will continue publicizing the State Action Plan and potential benefits with a view of getting more stakeholders to buy in to decarbonizing our sector**



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THANK YOU