

SCHOLARLY COMMONS

National Training Aircraft Symposium (NTAS)

2022 - Bridging the Gap

Neutralization of Fuel Tankering Emissions for Environmental Sustainability

Peter O'Reilly oreillyp@erau.edu

Maria Petrescu Embry-Riddle Aeronautical University, petrescm@erau.edu

Fabricio Sulzbacher Embry-Riddle Aeronautical University, fsulzbacher@voegol.com.br

Diogo Coutinho *Embry-Riddle Aeronautical University*, coutinhd@my.erau.edu

Follow this and additional works at: https://commons.erau.edu/ntas

Part of the Aviation Safety and Security Commons, Finance and Financial Management Commons, Maintenance Technology Commons, Management and Operations Commons, Other Engineering Science and Materials Commons, and the Strategic Management Policy Commons

O'Reilly, Peter; Petrescu, Maria; Sulzbacher, Fabricio; and Coutinho, Diogo, "Neutralization of Fuel Tankering Emissions for Environmental Sustainability" (2023). *National Training Aircraft Symposium (NTAS)*. 13.

https://commons.erau.edu/ntas/2022/presentation/13

This is brought to you for free and open access by the Conferences at Scholarly Commons. It has been accepted for inclusion in National Training Aircraft Symposium (NTAS) by an authorized administrator of Scholarly Commons. For more information, please contact commons@erau.edu.



Neutralization of Fuel Tankering Emissions for Environmental Sustainability

Green Team

Coutinho, Diogo Sulzbacher, Fabricio Maria Petrescu Peter O'Reilly

October 24, 2022



Abstract: Goal of the Research

OUR MAIN OBJECTIVE

VERIFY IF THE BRAZILIAN
AVIATION INDUSTRY CAN
NEUTRALIZE THE CARBON
EMISSIONS FROM FUEL
TANKERING AND BE
ENVIRONMENTALLY
SUSTAINABLE

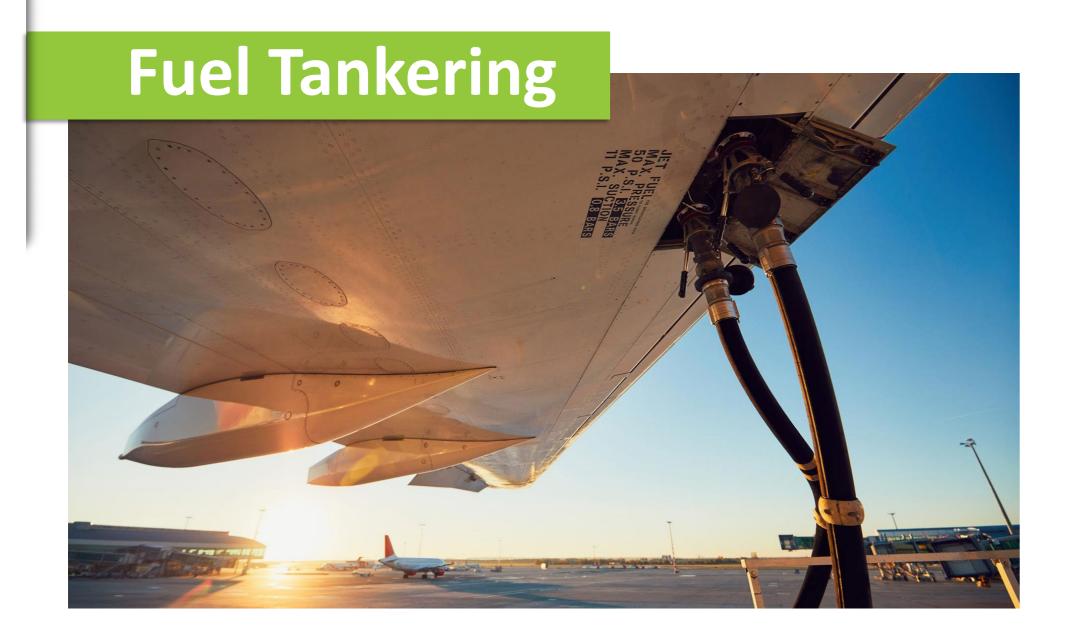
Fuel Tankering impacts

Carbon Credits

compensations



Introduction





FUEL EXPENSES IN BRAZIL

Airline highest operational costs

30-35% In Brazil

23%

Worldwide



SUSTAINABILITY

Fuel tankering is not environmentally friendly



Literature Review

Fuel Tankering Economic savings

Primary focus on financial savings



Environmental sustainability

Society and market pressure for companies with ecological results

Methodologies minimize fuel tankering

Programs and initiatives aimed to reduce aviation CO2 emission

Brazilian scenario

ICMS: tax rates defined independently by each State

Methodology



DATA FROM MORE THAN 90% OF BRAZILIAN DOMESTIC MARKET IN 2019

Fuel Tankering
Data

X

Carbon Emission
Data

Cost of Weight: 4-5%

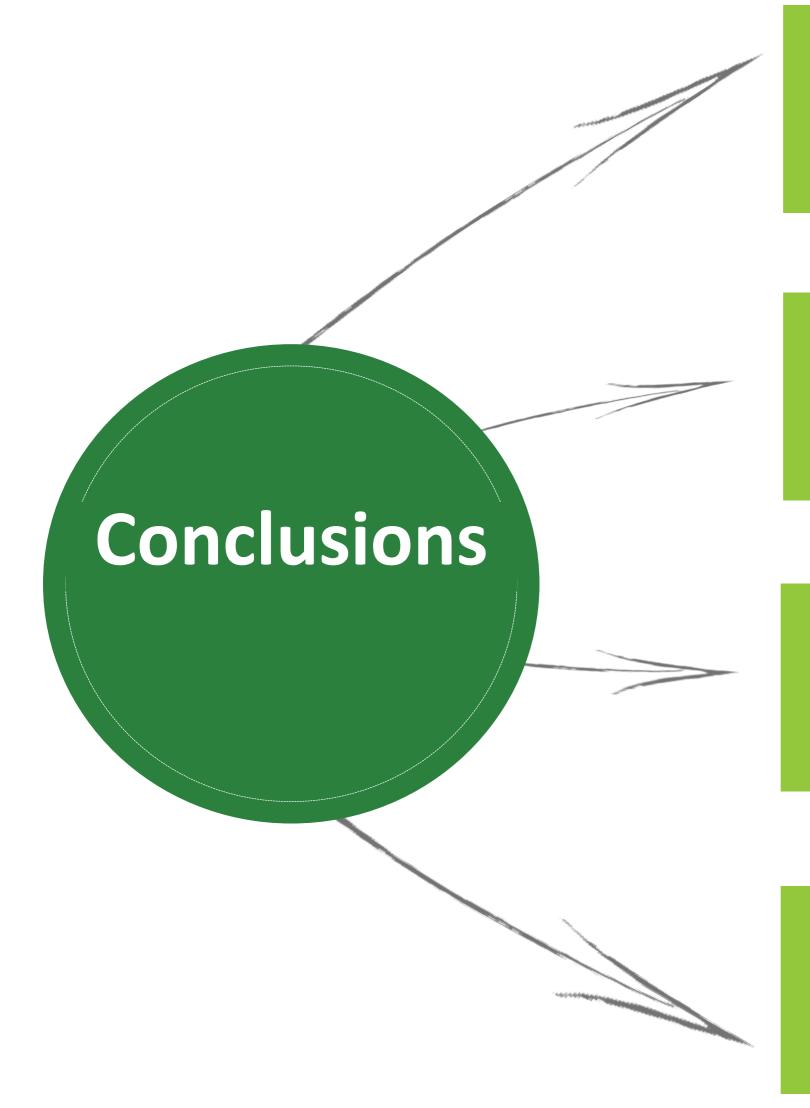
Carbon emission: 3.16 (kg CO2 / kg fuel)

Carbon Credits to neutralize the emissions from Fuel Tankering practice

Total Fuel Tankering (Kg)	Extra Total fuel burned (Kg)	Carbon Credits Required
377.783.583	34.000.522	1.074.417



Conclusion



Financial investments to neutralize the carbon emission from Fuel Tankering practice has not been considered by the airlines

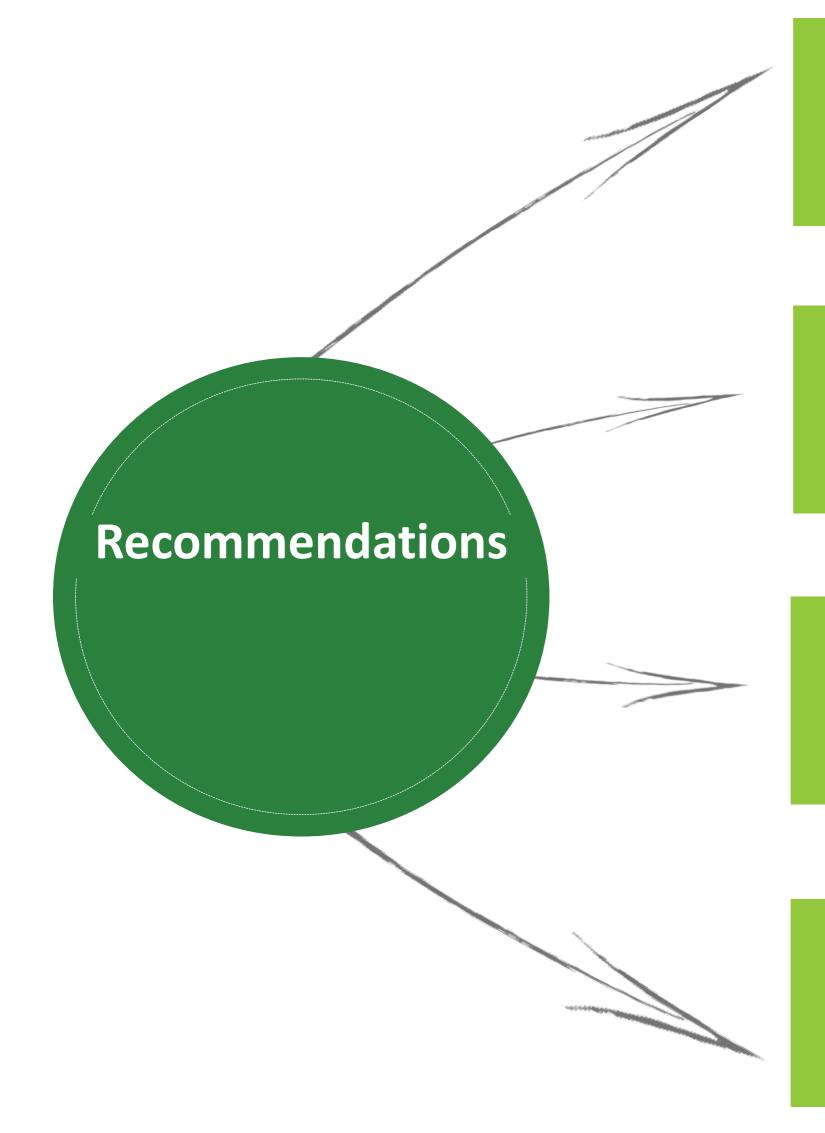
In Brazil, the difference between ICMS taxation is one of the root causes of Fuel Tankering existence

The Fuel Tankering environmental consequences have not been part of the airlines account savings

Carbon emission compensation/neutralization policies have not been detailed and cleared in the Brazilian aviation market.



Recommendations



Fuel Tankering practice shall be profitable and sustainable

In Brazil: levelling of the State taxes (ICMS)

Brazilian airlines consider to purchase Carbon Credits and/or other actions

Implementation of carbon emission compensation and/or neutralization policies, using part of the financial savings obtained with the Fuel Tanking practice



Future Research and Lessons Learned

Future Research

✓ Same research in a post-pandemic scenario
 comparing the findings;

✓ Implemented policies in Brazil;

✓ State taxes and its impacts in the Fuel

Tankering practice.

Lessons Learned

✓ Confidential data x Competitiveness;

✓ Investments for carbon neutralization is relatively low when compared to the savings provided;

✓ ICMS has been one of the main factors contributing to the Fuel Tankering practice.



Questions







Contact Information

- Fabricio Sulzbacher-fsulzbacher@voegol.com.br
- Diogo Coutinho- djcoutinho@voegol.com.br
- Maria Petrescu- PETRESCM@erau.edu
- Peter O'Reilly- oreillyp@erau.edu

THANK YOU!

EMBRY-RIDDLE
Aeronautical University