Assurance report of the independent auditor

To: the board of directors of TUI Group Airlines

Assurance report on the annual environmental performance indicators FY2018/19

Our opinion

In our opinion, the environmental performance indicators of TUI Group Airlines, as presented on pages 1 and 2 in the TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory Note FY2018/19, as mentioned in the paragraph 'What we have assured', are prepared in all material respects, in accordance with TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory Note FY2018/19.

What we have examined

The object of our assurance engagement consists of the following data at pages 1 and 2 (hereafter: the reported annual environmental data) in the accompanying TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory note FY2018/19 of TUI Group Airlines, for the period 1 October 2018 until 30 September 2019:

- TUI Airlines Nederland B.V. - gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission;
- TUI Airlines Belgium N.V. - gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission;
- TUI Group Airlines - gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission;
- TUIfly GmbH- gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission;
- TUIfly Nordic AB - gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission;
- TUI Group Airlines (average) - gCO2/Revenue Passenger Km, gCO2e/Revenue Passenger Km, l/100pkm specific fuel consumption, total fuel consumption in tonnes, revenue fuel consumption in tonnes, total CO2 emission, revenue CO2 emission.

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All other information in the TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory note – FY2018/19 was not subject to our assurance engagement and we do not report and do not opine on this information.

The basis for our opinion

We conducted our examination in accordance with Dutch law, including the Dutch Standard 3000A Assurance engagements, other than audits or reviews of historical financial information (attestation engagements) and ISAE 3410 'Assurance Engagements on Greenhouse Gas Statements'.
This engagement is aimed to provide reasonable assurance. Our responsibilities under this standard are further described in the section 'Our responsibilities for the examination' of our report.

We believe that the assurance information we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence and quality control

We are independent of TUI Group Airlines in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assuranceopdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence requirements in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Code of Ethics for Professional Accountants, a regulation with respect to rules of professional conduct).

We apply the 'Nadere voorschriften kwaliteitssystemen' (NVKS, Regulations for quality systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and other applicable legal and regulatory requirements.

Applicable criteria

TUI Group Airlines developed its reporting criteria, which are disclosed together with the detailed information on the reporting scope and reporting process and methods in the Carbon & Other Metrics Methodology and Calculations Explanatory Note FY 2018/19. We consider the reporting criteria to be relevant and appropriate for our assurance engagement.

Responsibilities for the environmental performance indicators and the examination thereof

Responsibilities of the board of directors

The board of directors of TUI Group Airlines is responsible for the preparation of the environmental performance indicators in accordance with the TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory note – FY2018/19, including the identification of the intended users and the criteria being applicable for the purpose of these users.

Furthermore, the board of directors is responsible for such internal control as it determines is necessary to enable the preparation of the environmental performance indicators that is free from material misstatement, whether due to fraud or error.

Our responsibilities for the examination

Our responsibility is to plan and perform our examination in a manner that allows us to obtain sufficient and appropriate evidence to provide a basis for our opinion.

Our opinion aims to provide reasonable assurance that the environmental performance indicators is prepared, in all material respects, in accordance with reporting criteria developed and published by the TUI Group Airlines. Reasonable assurance is a high but not absolute level of assurance, which makes it possible that we may not detect all material misstatements.

Misstatements may arise due to fraud or error. They are considered to be material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users taken on the basis of the environmental performance indicators. Materiality affects the nature, timing and extent of our assurance procedures and the evaluation of the effect of identified misstatements on our opinion.

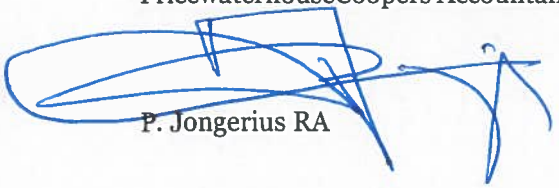
Procedures performed

An assurance engagement includes, amongst others, examining appropriate evidence on a sample basis. We have exercised professional judgement and have maintained professional scepticism throughout the examination in accordance with the Dutch Standard 3000A, ethical requirements and independence requirements.

Our examination consisted, among other things of the following:

- reviewing documents to gain an understanding of the activities and structure of the TUI Group Airlines;
- conducting interviews with TUI Group Airlines' management to understand the data collection process, internal controls and to evaluate the accuracy of the quantitative and qualitative information in the reported annual environmental data;
- based on this understanding, assessing the risks that the information in the reported annual environmental data contains material misstatements;
- responding to the assessed risks, including the development of an overall approach, and determining the nature, timing and extent of further procedures;
- performing analytical procedures on the reported data;
- evaluating relevant internal and external documentation, on a test basis, to determine the reliability of the information in the reported annual environmental data
- evaluating the appropriateness of quantification methods and reporting policies used;
- assessing the data gap approach used, and the methods used to estimate missing data; and
- evaluating the overall format and presentation of the annual environmental data, as presented in the TUI GROUP Airline Carbon & Other Metrics Methodology and Calculations Explanatory note – FY2018/19 (including an evaluation of the consistency of the information, in line with the above-mentioned reporting criteria).

Amsterdam, 19 November 2019
PricewaterhouseCoopers Accountants N.V.



P. Jongerius RA

TUI Group Airlines

Carbon & Other Metrics Methodology and Calculations Explanatory Note FY 2022/23

Introduction

This document outlines the process for the collation and analysis of the carbon-efficiency data in the TUI Group Annual Report 2022/23 (FY22/23), including the basis of the underlying assumptions and the methodology applied to the calculations undertaken during the preparation of the report.

The methodology for the calculation of selected flight operations metrics was taken into account by Verifavia in their assurance procedures – please refer to Verifavia's Independent Assurance Report via the following weblink: https://www.tuigroup.com/en-en/responsibility/sustainability/reporting-downloads

Background

EU law (Directive 2014/95/EU) requires large companies to publish regular reports on the social and environmental impacts of their activities. Companies are required to include non-financial statements in their annual reports from 2018 onwards, although TUI was an early adopter of this Directive and included a non-financial statement in their 2017 annual report.

The Directive does not currently require external verification of the quantitative data or qualitative statements within the non-financial statement. However, TUI Group has appointed audit firm Verifavia to verify both the absolute emissions from its 5 airlines and associated intensity metric (gCO_2/Revenue Passenger Km).

Flight operations metrics

TUI Group calculated the following carbon efficiency performance metrics for the TUI Group Annual Report FY22/23 which were audited by Verifavia – see the actual table below with FY22/23 data. These metrics are also reported in TUI Group's FY22/23 Annual Report. It is the data contained in the table below that Verifavia have specifically verified and to which Verifavia's Independent Assurance Report relates.

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INTENSITY (RELATIVE) METRICS FY22/23 TUI Group	*gCO_2/Revenue Passenger Km (RPK)*	*gCO_2e/Revenue Passenger Km (RPK)*
TUI Airways	60.7	61.3
TUI fly Belgium	66.3	66.9
TUI fly Germany	60.0	60.5
TUI fly Netherlands	59.6	60.2
TUI fly Nordic	59.8	60.4
TUI Group Airlines	**61.1**	**61.7**

INTENSITY (RELATIVE) METRICS FY22/23 TUI Group	*Total Fuel Consumption (in tons)*	*Revenue Fuel Consumption (in tons)*	*Specific Fuel Consumption (in litres per 100 pax revenue Km)*
TUI Airways	741,121	651,267	2.41
TUI fly Belgium	182,741	165,105	2.63
TUI fly Germany	184,498	169,370	2.38
TUI fly Netherlands	172,249	150,697	2.37
TUI fly Nordic	58,756	55,825	2.37
TUI Group Airlines	**1,339,364**	**1,192,265**	**2.43**

INTENSITY (RELATIVE) METRICS FY22/23 TUI Group	*Total CO_2 emissions (in tons)*	*Total CO_2 emissions equivalent (in tons)*
TUI Airways	2,334,286	2,355,552
TUI fly Belgium	575,573	580,817
TUI fly Germany	581,106	586,400
TUI fly Netherlands	542,527	547,470
TUI fly Nordic	185,061	186,747
TUI Group Airlines	**4,218,553**	**4,256,987**

Metrics used

All metrics are using data for the reporting period 01 October 2022 to 30 September 2023 (TUI Group`s 2022-2023 financial year) using the following methodology:

- Individual airline total carbon emissions and relative [specific CO_2 and CO_2e] carbon efficiency as well as TUI Group's total fuel burn and airlines CO_2 and CO_2e averages for passenger flights were calculated.
- In addition to the key metrics, the indicators ´total fuel consumption´ and ´specific fuel consumption in litres per 100 pax revenue km´ are included in the assurance scope of the

auditor – Verifavia - for FY22/23.

- The methodology related to carbon disclosure used followed the protocols outlined in the BS EN 16258 – 2012, *"Methodology for calculation and declaration of energy consumption and GHG emissions of transport services (freight and passengers)"* document. This is essentially the methodology that Airlines with operations within the EU and beyond follow to comply with the EU's Emissions Trading Scheme requirements.
- The UK Government's Environment Department (DEFRA)'s GHG Conversion Factors for Company Reporting have been used – last issued in June 2023.
- As a German domiciled company and one operating under German Law when it comes to filing company accounts, TUI Group has now adopted this EU methodology [using the Great Circle Distance plus 95km for this reporting year (FY22/23).

Total passengers

Passenger numbers are derived from on-board reports signed by the flight's commander, i.e. Flight Crew on-board. This information is fed into the TUI Group's airlines operations database, for flights that actually occurred. All persons aboard the aircraft are included in the total passenger count (i.e. all male, female and child passengers and non-revenue passengers, such as crew on non-active duty); with the exception of active crew on duty and infants.

Flights considered

TUI Group considered all flights conducted under TUI airline's flight number. In addition, it includes ferry flights (a flight is referred to as a ferry flight if it is done without passengers for revenue, rather than logistical, purposes) and Return to Gate (RTG) events.

However, there are a number of types of flight excluded. As follows:

- excluding sub-charters flying for a TUI airline;
- excluding sub-charters a TUI airline flies for other non TUI Group airlines;
- excluding positioning flights (a flight is referred to as a positioning flight if it is done without passengers for logistical, rather than revenue purposes); and
- excluding training, technical and all-cargo flights.

Total fuel burn and carbon data calculations

The scope of TUI Group airlines' carbon data is as follows:

- All flights conducted under each airline's flight number including sub-charters flown for TUI Group airlines
- Excluding sub-charters TUI Group airlines fly for other airlines.

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Fuel Consumption

For each TUI Airline, fuel data is derived from on-board reports signed by the flight's commander. This information is fed into the TUI Group's airlines operations database, for flights that actually occurred. The fuel to be considered to calculate the CO_2 and CO_2e efficiency is the fuel used from the moment the aircraft moves under its own or external power for the purpose of taking-off until the moment it comes to rest at the end of the flight (often referred to from "Off-block" to "On-block").

Great Circle Distance (GCD)

The GCD is the shortest distance between two points on the surface of a sphere, measured along the surface of the sphere – i.e. the Earth. The methodology used by TUI Group`s airlines to calculate this distance is based on officially published airport reference points (in the AIP – Aeronautical Information Publication); using the Vincenty Inverse formula with the Latitude/Longitude points based on the World Geodetic System WGS 84. As outlined and discussed in this document, for this reporting year (FY22/23), TUI Group has applied GCD plus 95km as prescribed by the EU Methodology (EN 16258 – 2012).

Revenue Passenger Kilometre (RPK)

A Revenue Passenger Kilometre (km) for a flight is defined as:

- *gCO_2/Revenue Passenger km value*
  This is calculated by taking the GCD plus 95km flown by an aircraft (in kilometres) for a given flight multiplied by the total number of passengers (using the logic of previous reporting years in order to show our improvements).

- *gCO_2e/Revenue Passenger km value*
  This is calculated by taking the GCD plus 95km flown by an aircraft (in kilometres) for a given flight multiplied by the total number of passengers (using the logic of previous reporting years in order to show our improvements).

Carbon dioxide efficiency factors for TUI Group's airline passengers

The carbon dioxide efficiency factor or co-efficient for TUI Group's airline passenger calculations is as follows:

- *gCO_2/Revenue Passenger km value*
  A factor of 3.14967 tonnes of CO_2 per tonne of aviation turbine fuel burnt has been used. Source, DEFRA [UK] – June 2023, Version 01-00.

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- *gCO_2e/Revenue Passenger km value*
  A factor of 3.178365 tonnes of CO_2e per tonne of aviation turbine fuel burnt has been used. This factor also includes emissions of Nitrous Oxide (N_2O) and Methane (CH_4), two of the six Kyoto gases that form the "CO_2 equivalent" for aviation turbine fuel in addition to CO_2. Source, DEFRA [UK] – June 2023, Version 01-00.

- *Specific Fuel Consumption*
  Liters per 100 revenue passenger km is a common metric used in Europe to express fuel-efficiency and as such is calculated using first principles. For conversion from mass information to liter the standard factor 0.8 kg/liter is used.

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