

Flight Emissions Label

Manual for Aircraft Operators

Version 1.1

1. Introducing the manual

This document and the supporting templates have been produced in response to the requirements of airlines and third party distributors of the Flight Emissions Label (FEL). Each chapter of the document addresses the knowledge requirements for each of the experts within an organisation with technical interests in label creation and distribution. This document and accompanying templates are disseminated directly to the FEL testers, label holders and distributors and are available to the public via the [FEL website](#).

Version	Publication date	Comments
1.1	22 January 2026	First user manual version replacing the draft user manual.

2. FEL version applicability

This manual is relevant to the *Flight Emissions Label calculator version 5.1*.

3. Manual guidance sections

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4. FEL Introduction

The [EU Flight Emissions Label \(FEL\) regulation](#), adopted by the European Commission empowers passengers to make informed decisions by providing clear and trusted information about their carbon emissions. It relies on real data from past flight performance reported to the European Union Aviation Safety Agency (EASA). Its aim is to provide the means for passengers to understand and compare the carbon impact of travel purchase decisions.

Ensuring that passengers are well-informed about the environmental impact of flights is a crucial part of the transition to a lower carbon economy by enabling sustainable choices. Transparency is vital in this process, and to achieve this the European Commission and EASA have created this platform which creates labels using data from airline performance based on new European laws. When booking flights, passengers will be able to see standardised emissions information derived from data from actual flight performance. This initiative is the first of its kind worldwide and the first one to place passengers at its core.

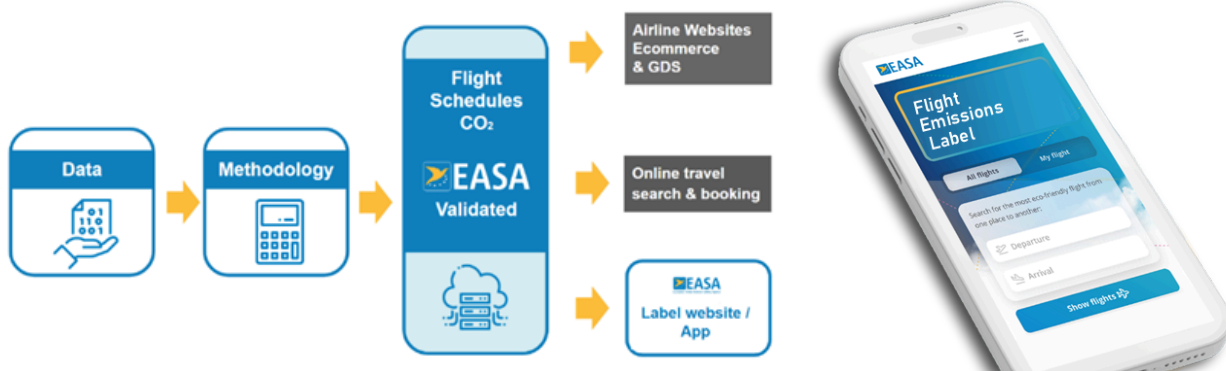


Figure 1: The Flight Emissions Label data flow

5. Background information and relevant documentation

ReFuelEU Aviation	European Commission website
ReFuelEU Aviation Regulation	Regulation (EU) 2023/2405
EU Flight Emissions Label	European Commission website
EU Flight Emissions Label Regulation	Commission Implementing Regulation (EU) 2024/3170
EASA Flight Emissions Label Website	EU Flight Emissions Label (FEL)

6. Relevant content in the Flight Emissions Label Regulation (EU) 2023/2405

The content of this manual supports the implementation of Regulation (EU) 2023/2405. The below sections of the Regulation are directly relevant to the below guidance material. Any additional material present in this documentation not directly referenced in the Regulation is for the practical implementation of the Regulation.

Regulation section	Regulation section description	Relevant guidance material sections
Article 1	Subject matter	All
Article 2	Definitions	Definitions & FAQs
Article 3	Application for the issuance of labels by the Agency	Label holder data reporting guide , Label administration, FEL testing guide
Article 4	Attribution of labels to flights of aircraft operators	Public CSV use guide, Public CSV developer guide, Sustainability Portal guide,
Article 5	Estimation of the flight emissions	Calculations guide, Public CSV use guide, Public CSV developer guide
Article 6	Display of labels by aircraft operators	Public CSV developer guide, Public CSV use guide, Calculations guide, Label administration
Article 7	Monitoring of compliance	Label administration
Article 8	Flight emissions website	Public CSV developer guide, Public CSV use guide, Calculations guide
Article 9	Entry into force	All
Annex I	Timeline for submitting applications and for generating labels	All
Annex II	Methodology for estimating flight emissions	Calculations guide
Annex III	Templates for displaying labels	Public CSV developer guide, Public CSV use guide, Calculations guide

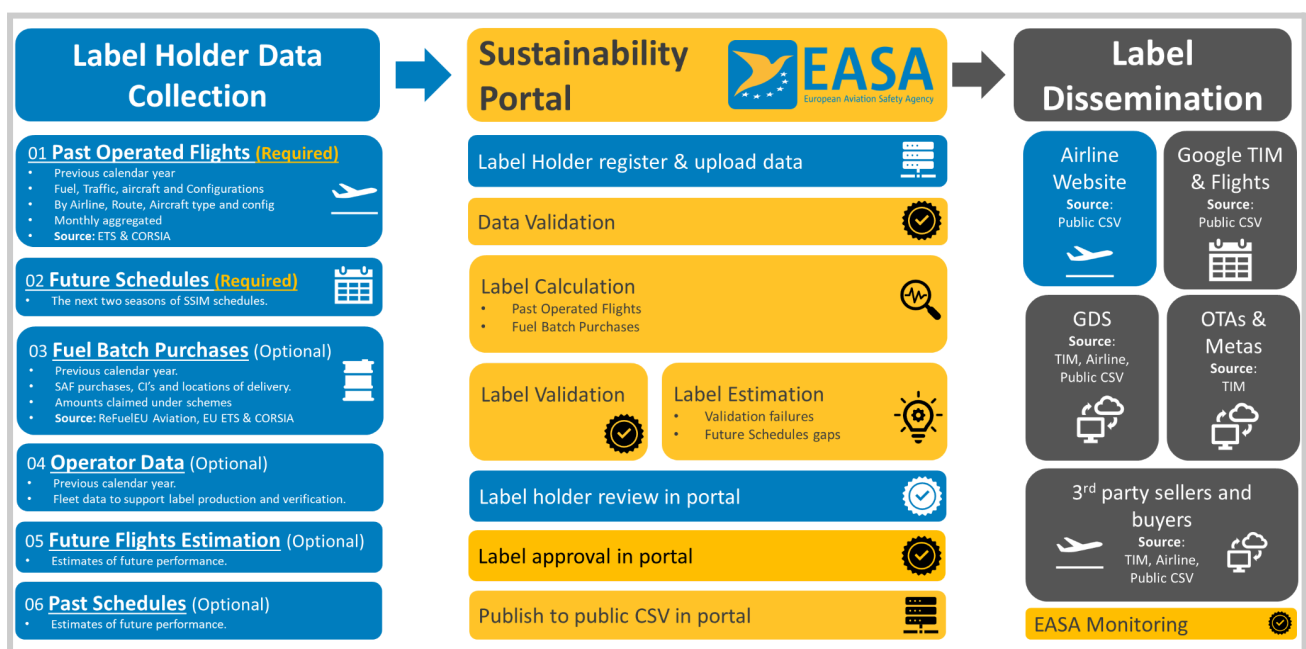
7. The Flight Emissions Label process

Both aircraft operators and EASA have responsibilities in the production of the Flight Emissions Label. Label production procedures are in place to gather data, calculate labels and issue labels with appropriate checks to ensure accurate labelling, while minimising operator reporting burden.

Label holder responsibilities relate to the collection, reporting, review and display of the labels.

EASA actions are focussed on the calculation, validation, and approval of the labels followed by monitoring of compliance.

Third party activities relate to the distribution of the label.



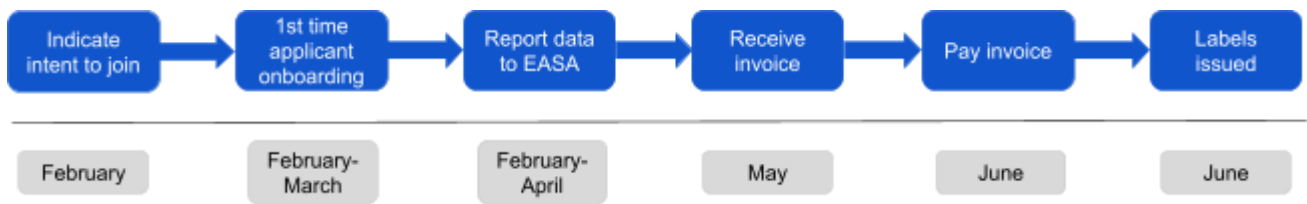
8. Who do I contact for further help?

The following email inboxes have been setup to allow queries and questions to be fielded from all relevant stakeholders. Collectively, these form the EASA FEL Support desk. [Contact details](#) are available in the knowledge base. These contact details have been set up to allow queries and questions to be redirected to the relevant support groups. Collectively, these form the EASA FEL Support desk.

EASA FLIGHT EMISSIONS LABEL (FEL)

Label application and withdrawal processes





Aircraft operators will observe the following procedure from indicating to become a label holder, through to label issuance.

1. Indicate intent

In February of each year, aircraft operators looking to become label holders can make a formal request via a link to opt-in to the program on the [FEL Website](#). For the first-time operators, accounts will be created.

2. First-time applicants onboarding

When registering for the FEL the first time, an aircraft operator is to provide a sample of data to EASA for testing the operator's data and identify any issues which may arise in reporting. This data will be used by EASA to provide an indication of invoicing costs. This process is not required for operators who have received labels in the past three years.

3. Gather and report data

As per the [data reporting guide](#), data reporting will be done by aircraft operators in the EASA Sustainability Portal ("the [Portal](#)") as per the [sustainability portal guide](#). As the monitored period is the prior calendar year, operators may report anytime between February and April of that year. For example; an aircraft operator may monitor performance between January and December 2025, and report between February and April 2026.

4. Receive invoice

When data is received by EASA, the reported SSIM flight schedule file will be used to generate an invoice. Invoices are calculated by EASA as per [EASA's Fees and Charges Regulation](#) (see table below) and provided to the operator within three weeks.

For the absence of doubt a flight emissions label is defined as a scheduled unique combination of aircraft operator, route, aircraft type and aircraft seating configuration, calculated from the aircraft operator scheduled flights in the Portal.

When one label is produced and invoiced, it will have multiple label records to apply to future schedule seasons, so each label may have up to five label records. Subsequent scheduling updates requested by an operator in the calendar year do not require charges.

Environmental labelling scheme (ReFuelEU Aviation/Regulation (EU) 2023/2405) ¹	Fee per label (EUR)
Issuance charge	90
Renewal charge	60

5. Pay invoice

Details of payment methods will be provided with the invoice and payment made within 30 days and prior to label issuance.

6. Issue labels

Once payment of the invoice has been received, labels will be made available in the [Portal](#) at least two weeks prior to issuance.

7. Withdrawal of labels or of label holder status

Withdrawal of labels or label holder status

At any stage after calculation has been completed, a label holder can request the withdrawal of a label. Once requested, the label will be removed from the public CSV data effective immediately. Please note EASA websites and dependent sources are only updated every 24 hours, as such the updated public CSV may take up to 24 hours to be distributed. Label withdrawal requests require the label holder to submit a reason for the withdrawal and provide evidence. Accepted reasons for a label holder to request a withdrawal include, but are not limited to label scoring changes related to label holder data quality issues, and errors in the calculation or distribution with recognised impact to label scoring.

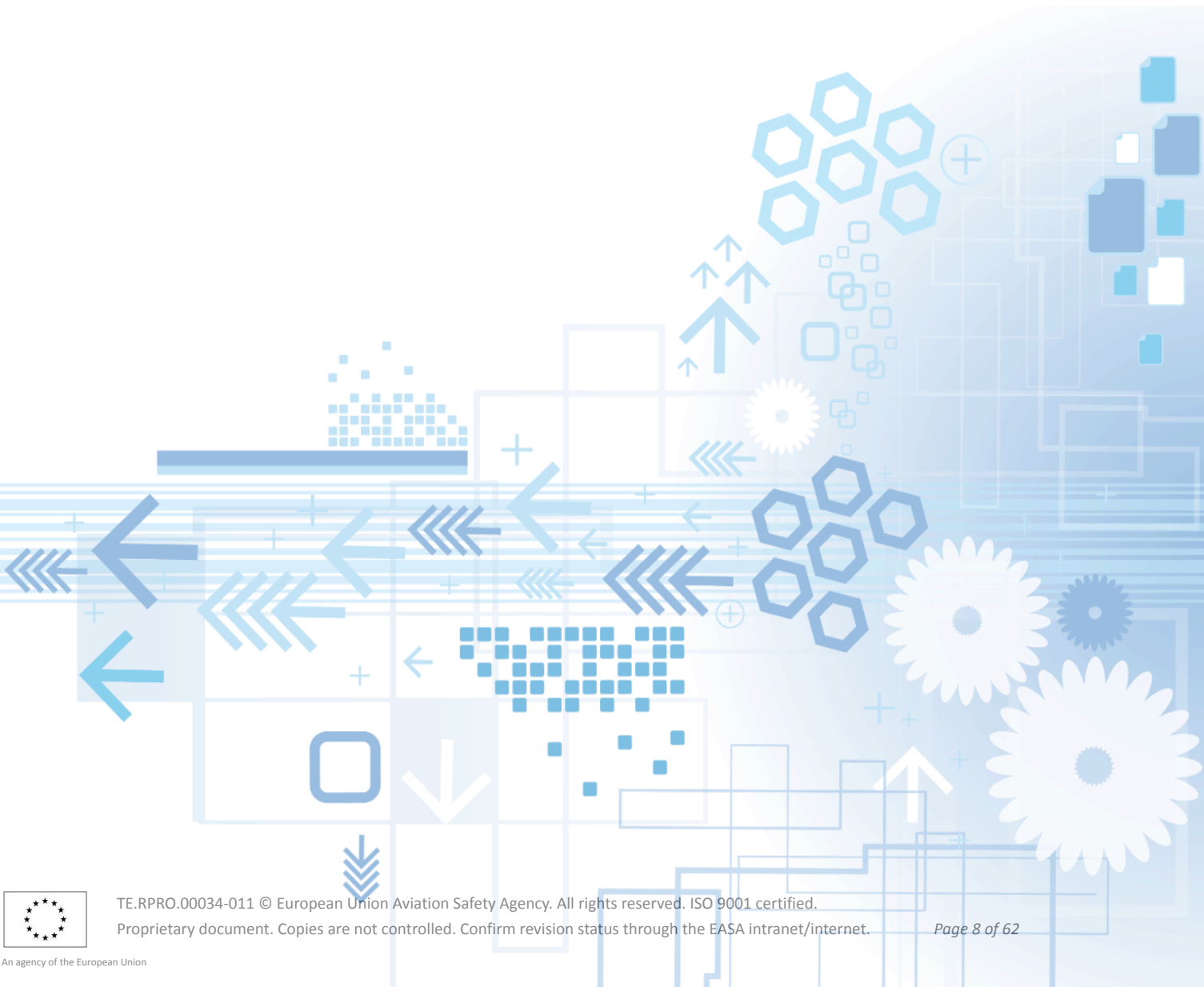
Labels reissued following withdrawal and the approval of the withdrawal reasons by EASA will not be subject to any additional fees. All concerns or queries with label scoring or distribution should be submitted to the [EASA FEL Support desk](#) and information can be found in the [FAQs section of this manual](#). EASA may require the revoking and reissuing labels free of charge should the issue highlight any functional issue with the label relating to bugs or data quality.

It is within the rights of a label holder to withdraw from the program at any time. To do so, the label holder must contact EASA in writing to express the formal requirement to withdraw. EASA will respond within 24 hours, starting with revoking all labels and initiate a process of issuing a formal acceptance statement. Withdrawal does not entitle an aircraft operator to a full or partial refund. At this time, the label holder may choose to submit a label withdrawal request on the full population of issued labels to accelerate the process of removing all issued labels from the Public CSV. Label holder data and calculations derived by EASA from the data will be retained for 36 months from the date of withdrawal.

¹ (1) Issuance charge shall apply to single AOC that intend to submit data for initial issuance of environmental labels or to aircraft operators that previously held labels and the most recent label issued has been invalid for over 12 months. (2) Renewal charge shall apply to single AOC holding approved labels (valid within the past 12 months) and requires new labels to be issued as per the ReFuelEU Aviation/Regulation (EU) 2023/2405, or where labels were issued but not valid for public release. Issuance and renewal charges shall be applied up to maximum 7 000 labels per single AOC. No fees will be charged as of label 7 001.

EU FLIGHT EMISSIONS LABEL (FEL)

Data reporting



The first step in the FEL creation is the aircraft operators to report the necessary data to EASA. While the actions to monitor performance and collect data will not be new to the label, the levels of aggregation required will differ from those provided under EU ETS, CORSIA and ReFuelEU Aviation, and some data reported separately will need to be combined. The data reporting guide gives instructions on what data must be reported, what data is optional, a detailed explanation of the required data fields, and how to report it all through the Portal.

Changes to configurations and schedules in the period will require new operator data to reissue the labels.

The document is intended for the teams relevant to the data collection. The primary users of the document are intended to be airline sustainability specialists who are likely familiar with ETS monitoring and reporting. However, it is expected to be utilised by teams providing schedules such as network planning, traffic data specialists, fleet management teams and/or fuel consumption or SAF purchasing specialists.

1. Reporting through the EASA Sustainability Portal

Data is to be reported through the EASA Sustainability Portal as a part of the “Request new label” function in the “Label requests” page. EASA will inform you how to access the Portal and how to use it. Successful completion of a label request requires that all mandatory data is uploaded. Successful completion of an upload triggers the label calculation process. **All uploaded data should be in .csv or .ssim format only.**

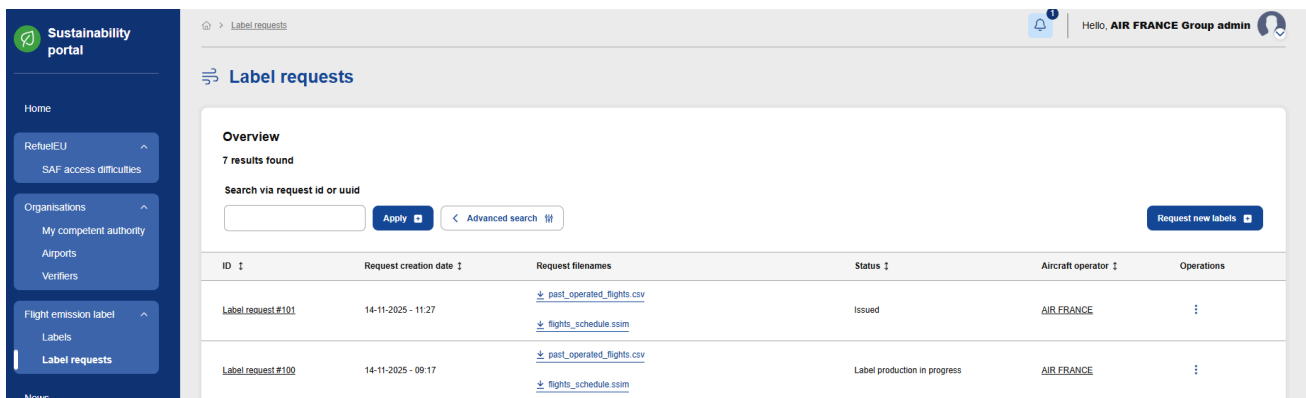


Figure 1: The EASA Sustainability Portal "Label Request" page

2. Data for label creation

Required data

The **operational data** drives the creation of the Flight Emissions labels. The data will be pre-screened in the Portal, labels calculated from the data, and then be run through a statistical validation process to identify errors and patterns of unusual performance.

Future schedules for the next summer and winter seasons will be required with a full schedule of the ideal options. This data is the basis for which labels will be generated, and the number of labels calculated for invoicing purposes. A flight emissions label is defined as a scheduled unique combination of airline, route, aircraft type and aircraft seating configuration, calculated from the airline scheduled flights in the Portal. A single label will include multiple scheduling years and seasons, and therefore there may be up to five label records per charged flight emissions label.

Optional data

Two sets of optional data are important to an operator wishing to reflect their SAF purchases and configurations. To apply discounts based on fuels with lowered lifecycle carbon emissions, the label requires the reporting of SAF **fuel batch purchases**, if any have been made. However, this is optional and failure to report will result in no benefits given to labels for aircraft operator SAF purchases. **Operator data** provides EASA with fleet configuration details for calculating emissions per seat based on operator configuration decisions. It also requests the voluntary submission of aircraft type fleet performance data to support validation.

Other requested data is not crucial for calculation, however, may be utilised by operators voluntarily. **Past schedules** for prior summer and winter seasons may be provided to review the prior label coverage and plan for improvements in coverage if required. Label holder **future flights estimation** may be submitted for new aircraft or route operations. This includes the estimated fuel and block time, seating configurations, passengers by cabin class and the projected amount of freight. All estimates will be subject to EASA validation and approval. **All uploaded data should be in .csv or .ssim format only.**

CSV Template Name	Requirement	Description	Purpose	Sources
01 - Past Operated Flights	Required	Reporting period fuel consumption and traffic of past flights by operator, route, aircraft type and aircraft configuration aggregated by month.	The key data for calculating labels	- EU ETS MRV - CORSIA MRV - Traffic data
02 - Future Schedules (CSV)	Required	The current aircraft operator SSIM format flight schedule.	Identifying label coverage and requirement for estimation.	SSIM standard schedule data
03 - Fuel Batch Purchases	Optional needed for SAF	Reporting period SAF purchase data	Reducing label scores for SAF purchased	- ReFuelEU Aviation MRV
04 - Operator Data	Optional needed for configurations	Reporting period airline fleet and aircraft configurations. Changes to configurations in the period will require new operator data to reissue the labels.	Ensuring reported data and schedules will connect and apply cabin class factors.	- EU ETS MRV - CORSIA MRV
05 - Future Flights Estimation	Optional	Operator projections of fuel consumption and traffic for new operations	To support EASA label estimation of new operations.	- ReFuelEU Aviation MRV
06 - Past Schedules (CSV)	Optional	Reporting period schedules	Checking Past Operated Flights coverage.	SSIM standard schedule data

3. Data Type - Past Operated Flights (required)

The key data for calculating route performance.

Operational data is an aggregation of performance by route, aircraft subtype and aircraft configuration. The required data consists of monthly or seasonally aggregated fuel consumption, block time, aircraft seats fitted by class, flown passengers by class and cargo mass - a more granular breakdown of data reported through the ReFuelEU Aviation (RFEUA), EU ETS and CORSIA MRVs.

This data should have already been reviewed by a verifier in RFEUA, EU ETS, CORSIA and other MBM MRVs. As such no further third party verification will be required. Acceptance of the reports by the operator's relevant competent authority will be confirmed in the Monitoring and Compliance activities of EASA following label issuance.

Uploaded data should be in .csv format only.

Data Field	Format	Description
reporting_period_start	03/31/2024	The starting date of the defined reporting period of a specific route by season. For the calculation of the label, preferred dates are as follows: Calendar year start date for the Jan-March winter period, summer period start date, and October-December winter season start date.
reporting_period_end	25/10/2024	The end date of the defined reporting period of a specific route by season. For the calculation of the label, preferred dates are as follows: Jan-March winter period end date, summer period start date, and end of calendar year for the October-December winter season.
operator_code_icao	XYZ	ICAO 3-character alphanumeric Aircraft Operator Code
operator_code_iata	XY	Aircraft operator IATA code
operator_name	Air XYZ	Aircraft operator name that will be the Air Operator Certificate (AOC) operator
operator_group	Air XYZ Group	Aircraft operator group
departure_airport_icao	XYZA	ICAO 4-letter Departure Airport Code
departure_airport_iata	XYZ	IATA 3-letter Departure Airport Code
arrival_airport_icao	BCDE	ICAO 4-letter Arrival Airport Code
arrival_airport_iata	BCD	IATA 3-letter Arrival Airport Code
aircraft_subtype	Boeing 777-300ER	Aircraft subtype description
aircraft_type_iata	77W	Aircraft IATA code
aircraft_type_icao	B77W	Aircraft ICAO code
aircraft_seat_configuration	F4J58W0Y234	Aircraft seat configuration categorising seat number by class
total_number_of_flights	296	Total number of completed flights on a specific route in the defined reporting period
total_block_time_mins	230880	Total block time, in minutes, by completed flights on a specific route in the defined reporting period
total_fuel_tonnes	28860	Total fuel, in tonnes, used by completed flights on a specific route in the defined reporting period
aircraft_seat_configuration_total	296	The number of configured seats in the aircraft cabin
aircraft_seat_configuration_economy	234	The number of seats to the Economy class
aircraft_seat_configuration_premium_economy	0	The number of configured seats to the Premium Economy class

aircraft_seat_configuration_business	58	The number of configured seats to the Business class
aircraft_seat_configuration_first	4	The number of configured seats to the First class
total_seats_economy	69264	The total number of economy class seats on flights operated on a specific route in the defined reporting period
total_seats_premium	0	The total number of premium economy class seats on flights operated on a specific route in the defined reporting period
total_seats_business	17168	The total number of business class seats on flights operated on a specific route in the defined reporting period
total_seats_first	1184	The total number of first class seats on flights operated on a specific route in the defined reporting period
total_passengers_economy	65801	The total number of economy class passengers flown on flights operated on a specific route in the defined reporting period
total_passengers_premium	0	The total number of premium economy class passengers flown on flights operated on a specific route in the defined reporting period
total_passengers_business	14593	The total number of business class passengers flown on flights operated on a specific route in the defined reporting period
total_passengers_first	414	The total number of first class passengers flown on flights operated on a specific route in the defined reporting period
total_cargo_tonnes	2368	The total amount, in tonnes, of belly freight flown on flights operated on a specific route in the defined reporting period

4. Data Type - Future Schedules (required)

The key data for generating labels

Aircraft operators are required to provide their next summer and winter schedules with a full schedule preferred. This will be the basis of EASA identifying which labels must be generated, and is the basis for invoice calculation.

The SSIM file format used by network planning teams is preferred, the example below and the CSV template outlines the minimum fields required from forward-looking schedules. This data will be generated from a SSIM file in the label calculation.

Should an aircraft operator change schedule and require reissued labels prior to the annual update cycle, the aircraft operator may resubmit a new schedule along with identical past operated flights and fuel batch purchases data and receive reissued labels for no additional charge.

Uploaded data should be in .ssim format.

Data Field	Format	Description
year	2025	The year of the scheduling period that is being estimated provided in YYYY format.
season	Summer	The season of the scheduling period that is being estimated provided.
operator_code_icao	XYZ	IATA 2-character alphanumeric Aircraft Operator Code
operator_code_iata	XY	IATA 3-letter Departure Airport Code
departure_airport_iata	XYZ	IATA 3-letter Arrival Airport Code
arrival_airport_iata	BCD	Aircraft IATA code.
aircraft_type_iata	32B	The number of seats in the aircraft cabin
aircraft_seat_configuration	F0J10W0Y190	Aircraft seat configuration categorising seat number by class
aircraft_seat_configuration_total	200	The number of configured seats in the aircraft cabin
aircraft_seat_configuration_economy	190	The number of seats assigned to the Economy class
aircraft_seat_configuration_premium_economy	0	The number of seats assigned to the Premium Economy class
aircraft_seat_configuration_business	10	The number of seats assigned to the Business class
aircraft_seat_configuration_first	0	The number of seats assigned to the First class

5. Data Type - Fuel Batch Purchases (optional)

Required to apply SAF discounts

Provision of this data is optional, however, to apply discounts for the aircraft operator use of SAF the FEL requires that aircraft operators report this data. It includes purchased masses (SAF purchased and claimed), the carbon intensities of the respective fuels as per the scheme claimed under, and to which scheme the fuel is claimed. **Only scope 1 claimed SAF will be applied in the FEL, please exclude unclaimed.** 2026 RFEUA reports (2025 monitoring year) will be sufficient with fields for reporting period and aircraft operator.

Uploaded data should be in .csv format.

Data Field	Format	Description
reporting_period_start	01/01/2024	YYYY-MM-DD date format, the start of reporting period - likely the start of the monitoring calendar year.
reporting_period_end	31/12/2024	YYYY-MM-DD date format, the end of reporting period - likely the start of the monitoring calendar year.
operator_code_icao	XYZ	ICAO 3-character alphanumeric Aircraft Operator Code to which the SAF discount is to apply.
operator_code_iata	XY	IATA 2-character alphanumeric Aircraft Operator Code to which the SAF discount is to apply.
operator_name	Air XYZ	Aircraft operator name that will be the Air Operator Certificate (AOC) operator.
operator_group	Air XYZ Group	Aircraft operator group.
departure_airport_icao	XYZA	The airport ICAO code where fuel purchase was delivered.
departure_airport_iata	XYZ	The airport IATA code where fuel purchase was delivered.
fuel_supplier	xyz	The name of the fuel supplier who delivered the fuel to the airport.
batch_number	XYZ SAF 123A 2014 123	The traceable identification number of the fuel mass purchase
amount_purchased_tonnes	17769.656	The total mass, in tonnes, of fuel of the specific batch of purchased fuel delivered to the airport in the defined reporting period. If the airport of delivery is not traced to the airport of delivery the fuel cannot be claimed.
category_of_eligible_fuel	xyz	The type of fuel delivered to the airport, as defined in RFEUA or MBM scheme reporting.
fuel_conversion_process	xyz	The approved ASTM pathway used to produce the lower carbon emitting fuel. As per ReFuelEU Aviation reporting.
feedstock_name	xyz	The type of feedstock used in the production of the fuel delivered to the airport and its source. As per ReFuelEU Aviation, EU ETS or CORSIA reporting.
origin_of_feedstock_(country)	xyz	The country of feedstock origin used in the production of the fuel delivered to the airport and its source. As per ReFuelEU Aviation, EU ETS or CORSIA reporting.
fuel_lca_co2e_mj	17	The CO ₂ eq per megajoule life cycle assessment of the specific purchased fuel delivered to the airport in the defined reporting period. As per ReFuelEU Aviation, EU ETS or CORSIA reporting.
eu_ets_claimed_tonnes	3553.9312	The total mass, in tonnes, of the given fuel that has already been claimed in EU ETS.
ch_ets_claimed_tonnes	888.4828	The total mass, in tonnes, of the given fuel that has already been claimed in CH ETS.
uk_ets_claimed_tonnes	888.4828	The total mass, in tonnes, of the given fuel that has already been claimed in UK ETS.
corsia_claimed_tonnes	1776.9656	The total mass, in tonnes, of the given fuel that has already been claimed in CORSIA.
other_mbm_claimed_tonnes	0	The total mass, in tonnes, of the given fuel claimed in any other MBM.
not_claimed_or_sold_tonnes	10661.7936	The total mass, in tonnes, of the amount purchased which has not been claimed in MBM. (purchased - sum of claims)

6. Data Type - Operator Data (optional)

Details of the fleet and configurations may be provided by aircraft operator entities (or aircraft operator group air operator certificate entities), to include the aircraft subtype fleet and fitted configurations, aggregated statistics include fuel consumption, block time and passenger/cargo traffic. **This data is required to be submitted if an aircraft operator wishes to receive FEL scores which are customised for their specific interior configurations.** Provision of the aircraft type performance data aggregated to a fleet level is optional.

Uploaded data should be in .csv format.

Data Field	Format	Description
reporting_period_start	01/01/2024	YYYY-MM-DD date format; the latest of the start of reporting period - likely the start of the monitoring calendar year, and the date the aircraft type entered commercial service.
reporting_period_end	31/12/2024	YYYY-MM-DD date format; the earliest of the end of reporting period - likely the end of the monitoring calendar year, and the date the aircraft type entered commercial service.
operator_code_icao	XYZ	ICAO 3-character alphanumeric Aircraft Operator Code
operator_code_iata	XY	Aircraft operator IATA code
operator_name	Air XYZ	Aircraft operator name that will be the Air Operator Certificate (AOC) operator
operator_group	Air XYZ Group	Aircraft operator group
aircraft_subtype	Boeing 777-300ER	Aircraft subtype description
aircraft_type_iata	77W	Aircraft IATA code
aircraft_type_icao	B77W	Aircraft ICAO code
aircraft_average_age	14.6	The average age, in years in decimals, of the aircraft type in the defined reporting period
aircraft_seat_configuration	F0J10W0Y190	Aircraft seat configuration categorising seat number by class
aircraft_seat_configuration_total	296	The number of seats in the aircraft cabin
aircraft_seat_configuration_economy	234	The number of seats assigned to the Economy class
aircraft_seat_configuration_premium_economy	0	The number of seats assigned to the Premium Economy class
aircraft_seat_configuration_business	58	The number of seats assigned to the Business class
aircraft_seat_configuration_first	4	The number of seats assigned to the First class
economy_seat_area	1	The area occupied by a single economy class seat
premium_economy_seat_area		The area occupied by a single premium economy class seat
business_seat_area	4	The area occupied by a single business class seat
first_seat_area	6	The area occupied by a single first class seat
average_block_fuel_burn_kgph	7.5	Total fuel, in tonnes, used in the defined reporting period
total_fuel_tonnes	865800	Total fuel, in tonnes, used in the defined reporting period
total_cycles_in_period	8880	Total aircraft cycles completed in the defined reporting period
total_block_time_in_period_mins	6926400	Total block time, in minutes, in the defined reporting period

7. Data Type - Future Flights Estimation (optional)

If a future scheduled flight is a new route, or if an aircraft operator intends to fly the route with a new aircraft type or new AOC, the aircraft operator may submit the estimated performance for the aircraft subtype and configuration on the route in terms of fuel consumption, passengers to be carried and cargo loads. This data will undergo the same validation assessment as per reported data and performance to ensure alignment with performance expectations.

All uploaded data should be in .csv or .ssim format only.

Data Field	Format	Description
year	2025	The year of the scheduling period that is being estimated provided in YYYY format.
season	Summer	The season of the scheduling period that is being estimated provided.
operator_code_icao	XYZ	ICAO 3-character alphanumeric Aircraft Operator Code.
operator_code_iata	XY	IATA 2-character alphanumeric Aircraft Operator Code
operator_name	Air XYZ	Aircraft operator name that will be the Air Operator Certificate (AOC) operator.
operator_group	Air XYZ Group	Aircraft operator group.
departure_airport_icao	XYZA	ICAO 4-letter Departure Airport Code
departure_airport_iata	XYZ	IATA 3-letter Departure Airport Code
arrival_airport_icao	BCDE	ICAO 4-letter Arrival Airport Code
arrival_airport_iata	BCD	IATA 3-letter Arrival Airport Code
aircraft_subtype	Airbus A321 231	Aircraft subtype description.
aircraft_type_iata	32B	Aircraft IATA code.
aircraft_type_icao	A321	Aircraft ICAO code.
aircraft_seat_configuration	F0J10W0Y190	Aircraft seat configuration categorising seat number by class.
total_number_of_flights	4108	Total estimated number of flights on a specific route in the defined reporting period.
total_block_time_mins	250588	The number of seats in the aircraft cabin
total_fuel_tonnes	12210	The number of seats assigned to the Economy class
aircraft_seat_configuration_total	200	The number of seats assigned to the Premium Economy class
aircraft_seat_configuration_economy	190	The number of seats assigned to the Business class
aircraft_seat_configuration_premium_economy	0	The number of seats assigned to the First class
aircraft_seat_configuration_business	10	Total estimated block time, in minutes, by flights on a specific route in the defined reporting period.
aircraft_seat_configuration_first	0	Total estimated fuel, in tonnes, used by flights on a specific route in the defined reporting period.
total_seats_economy	780520	The total estimated number of economy class seats on flights operated on a specific route in the defined reporting period.
total_seats_premium	0	The total estimated number of premium economy class seats on flights operated on a specific route in the defined reporting period.
total_seats_business	41080	The total estimated number of business class seats on flights operated on a specific route in the defined reporting period.
total_seats_first	0	The total estimated number of first class seats on flights operated on a specific route in the defined reporting period.

total_passengers_economy	718079	The total estimated number of economy class passengers on flights operated on a specific route in the defined reporting period.
total_passengers_premium	0	The total estimated number of premium economy class passengers on flights operated on a specific route in the defined reporting period.
total_passengers_business	32864	The total estimated number of business class passengers on flights operated on a specific route in the defined reporting period.
total_passengers_first	0	The total estimated number of first class passengers on flights operated on a specific route in the defined reporting period.
total_cargo_tonnes	822	The total estimated amount, in tonnes, of belly freight on flights operated on a specific route in the defined reporting period.

8. Data Type - Past Schedules (optional)

Aircraft operators are requested to provide their prior year summer and winter schedules to support monitoring of compliance and validation, however, it is not a requirement. The SSIM file format used by network planning teams is preferred. SSIM or CSV template format are both acceptable. An example of the minimum fields required from forward-looking schedules for label creation is detailed below.

All uploaded data should be in .csv or .ssim format only.

Data Field	Format	Description
year	2025	The year of the scheduling period that is being estimated provided in YYYY format.
season	Summer	The season of the scheduling period that is being estimated provided.
operator_code_icao	XYZ	IATA 2-character alphanumeric Aircraft Operator Code
operator_code_iata	XY	IATA 3-letter Departure Airport Code
departure_airport_iata	XYZ	IATA 3-letter Arrival Airport Code
arrival_airport_iata	BCD	Aircraft IATA code.
aircraft_type_iata	32B	The number of seats in the aircraft cabin
aircraft_seat_configuration	F0J10W0Y190	Aircraft seat configuration categorising seat number by class
aircraft_seat_configuration_total	200	The number of configured seats in the aircraft cabin
aircraft_seat_configuration_economy	190	The number of seats assigned to the Economy class
aircraft_seat_configuration_premium_economy	0	The number of seats assigned to the Premium Economy class
aircraft_seat_configuration_business	10	The number of seats assigned to the Business class
aircraft_seat_configuration_first	0	The number of seats assigned to the First class

EU FLIGHT EMISSIONS LABEL (FEL)

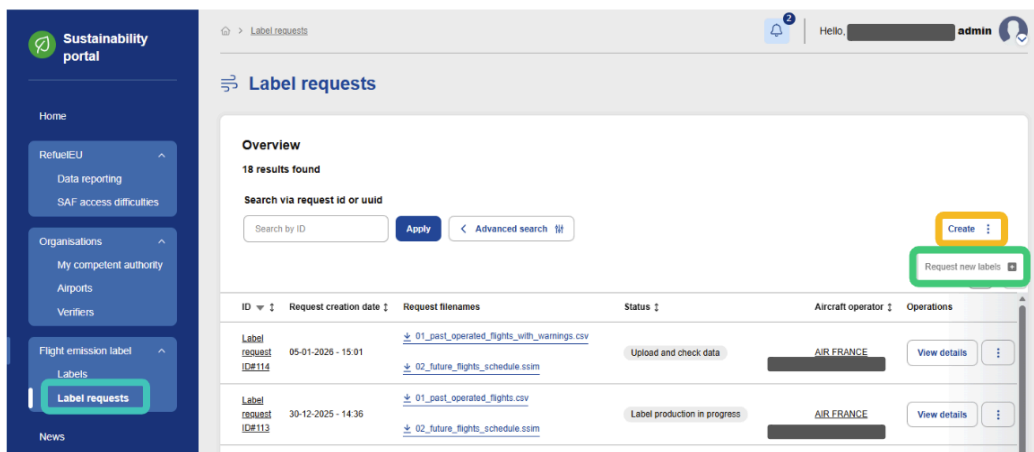
Sustainability Portal reporting guide



All FEL processing and label issuance will be completed through the EASA Sustainability Portal. The Portal guide is a step-by-step set of instructions with screenshots of the Portal for an aircraft operator (AO) to follow. **This process issues labels based on the scheduled operations of the aircraft operator. Should revised schedules require labels to be issued, an aircraft operator may submit a request for a label update via the Portal. Updates are not charged for.**

The document is intended for the user of the Portal to complete the reporting data requirements and interact with EASA regarding the label production process.

Once EASA has granted user access to the Portal an aircraft operator triggers the process of label creation by creating a label request. In the **Label requests** section of the Portal, select **Create**. The user will then be prompted to **Request new labels**.



The submission process requires CSV files to be uploaded as per the data collection guidance. Files are prescreened for formatting or missing data errors which would impede the calculation process.

Below is the four-step process to label generation as a label holder using the Portal:

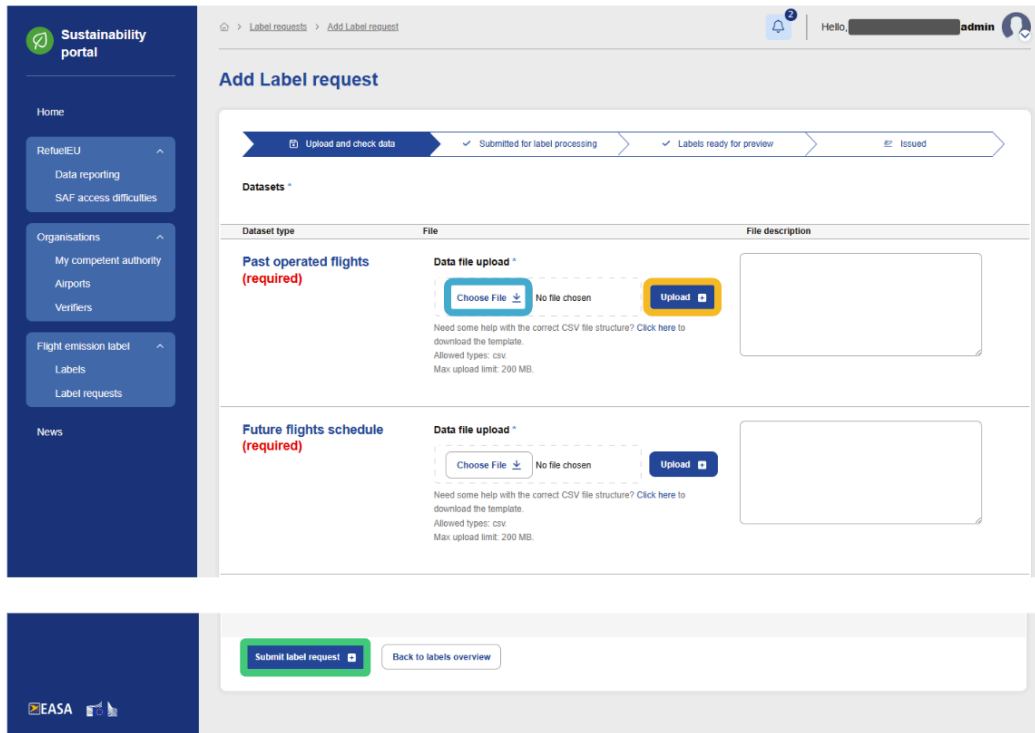


1. **Upload and check data** - creation of a label request and validation of uploaded CSV files.
2. **Submitted for label processing** - processing by EASA, for AOs no action is required.
3. **Labels ready for preview** - AO may preview labels before issuance.
4. **Issued** - the process is complete and labels are published to the Public CSV.

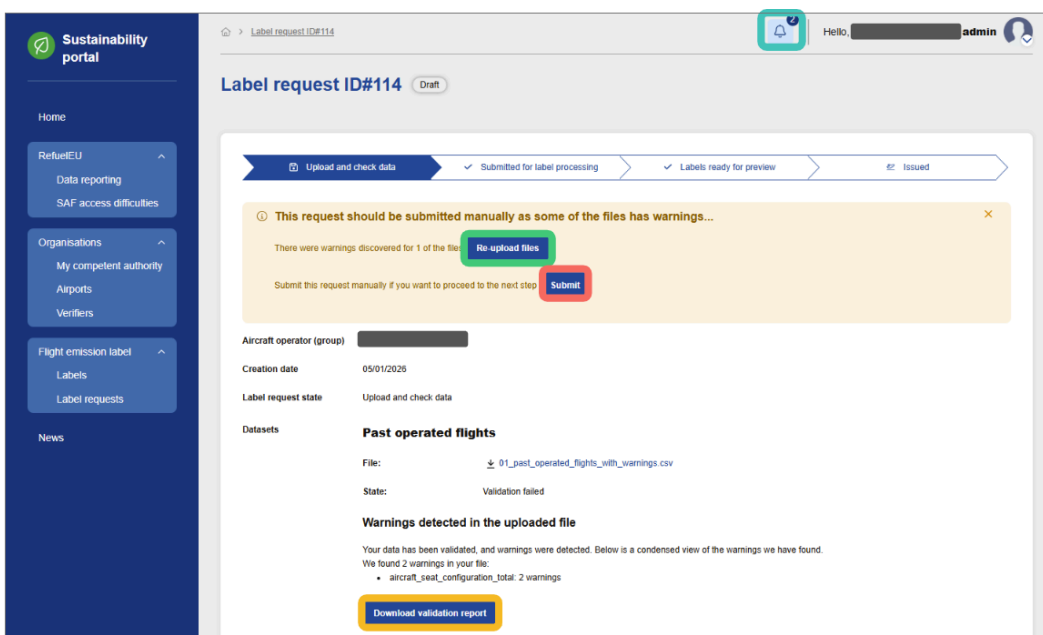
If AO has concerns about or wishes to remove any label or set of labels, they can create **withdrawal requests**.

1. Upload and check data

Choose Files to select CSV data using the provided templates and **Upload**. Once all data has been uploaded, **Submit label request**. This will trigger the data validation prescreening.

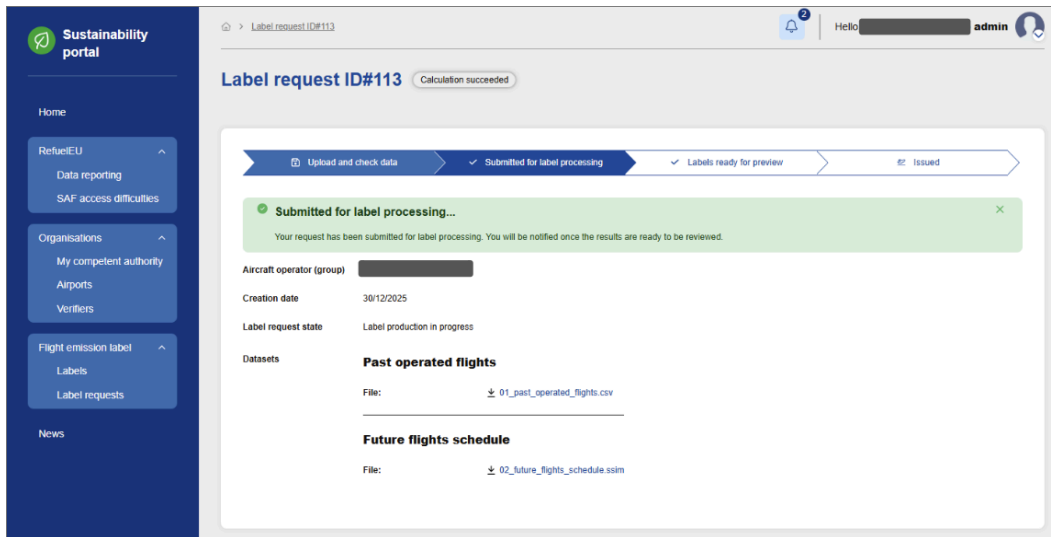


Data validation warnings alerted via **notifications**. Warnings reviewed via **downloadable validation report**. When corrected, the operator can **Re-upload files**. If OK, the request can be pushed to **Submit**.



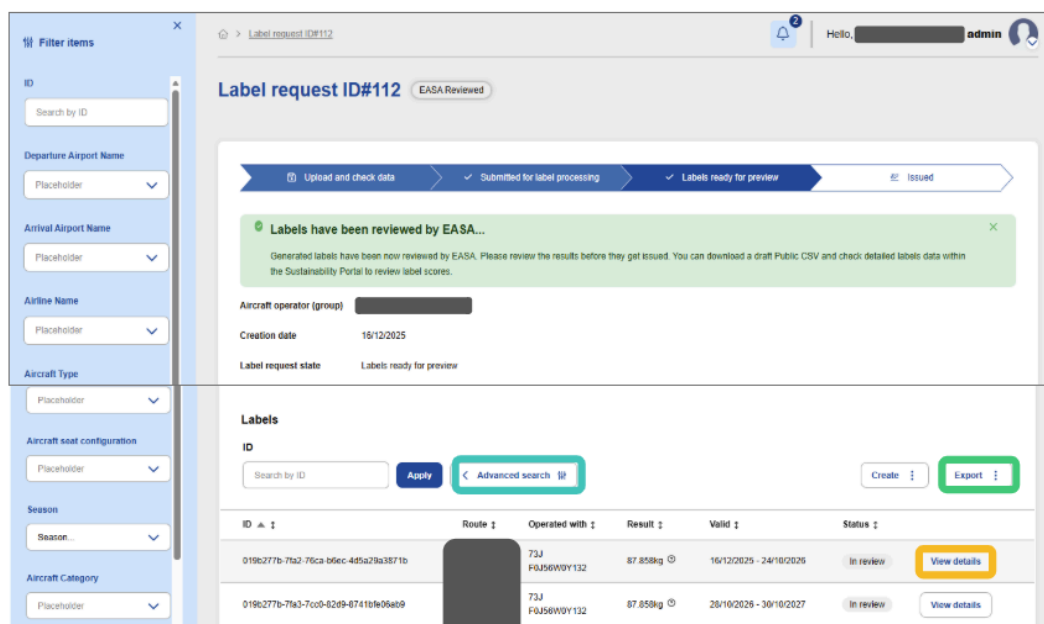
2. Submitted for label processing

When data is uploaded no actions are required for EASA to produce labels. Calculation takes minutes and EASA reviews post-calculation-validation (PCV) results to approve or reject labels. **Labels are rejected only for issues with data.** EASA will contact the label holder to rectify.



3. Labels ready for preview

Label requests can be previewed by an operator before issue. They can be filtered in the **Advanced search** function. **View details** allows aircraft operators to review the data behind the label to support assessment. This is confidential to the aircraft operator and EASA. Previews of the Public CSV can be requested for **Export**. However, these are not labels to be displayed. Contact EASA FEL Support desk for any queries at this time.

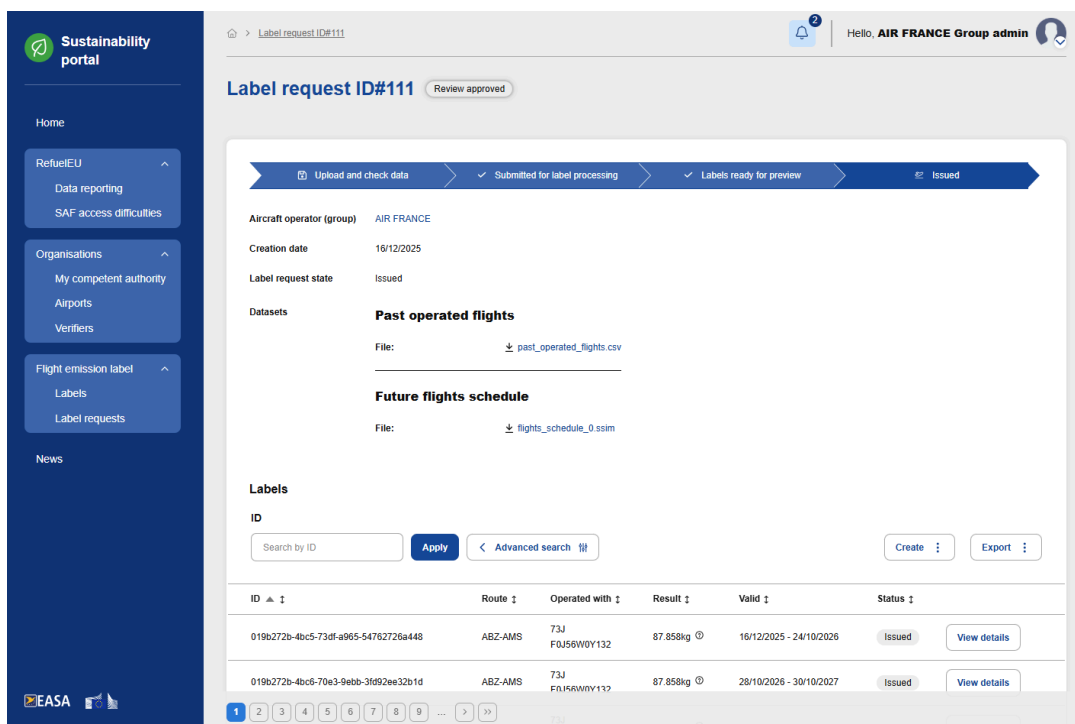


4. Label Issuance

Once issued, labels are available via the FEL Public CSV and ready for display. Manual chapters outline guidelines:

- [“Public CSV use guide”](#) for sustainability professionals.
- [“Public CSV developer guide”](#) for product and engineering teams.

Public CSV templates and a CSV file of assumptions are available. Label records remain on the Portal for data review if required.



Label request ID#111 Review approved

Progress: Upload and check data → Submitted for label processing → Labels ready for preview → Issued

Aircraft operator (group) AIR FRANCE

Creation date 16/12/2025

Label request state Issued

Datasets

Past operated flights

File: [past_operated_flights.csv](#)

Future flights schedule

File: [flights_schedule_0.ssim](#)

Labels

ID

Search by ID

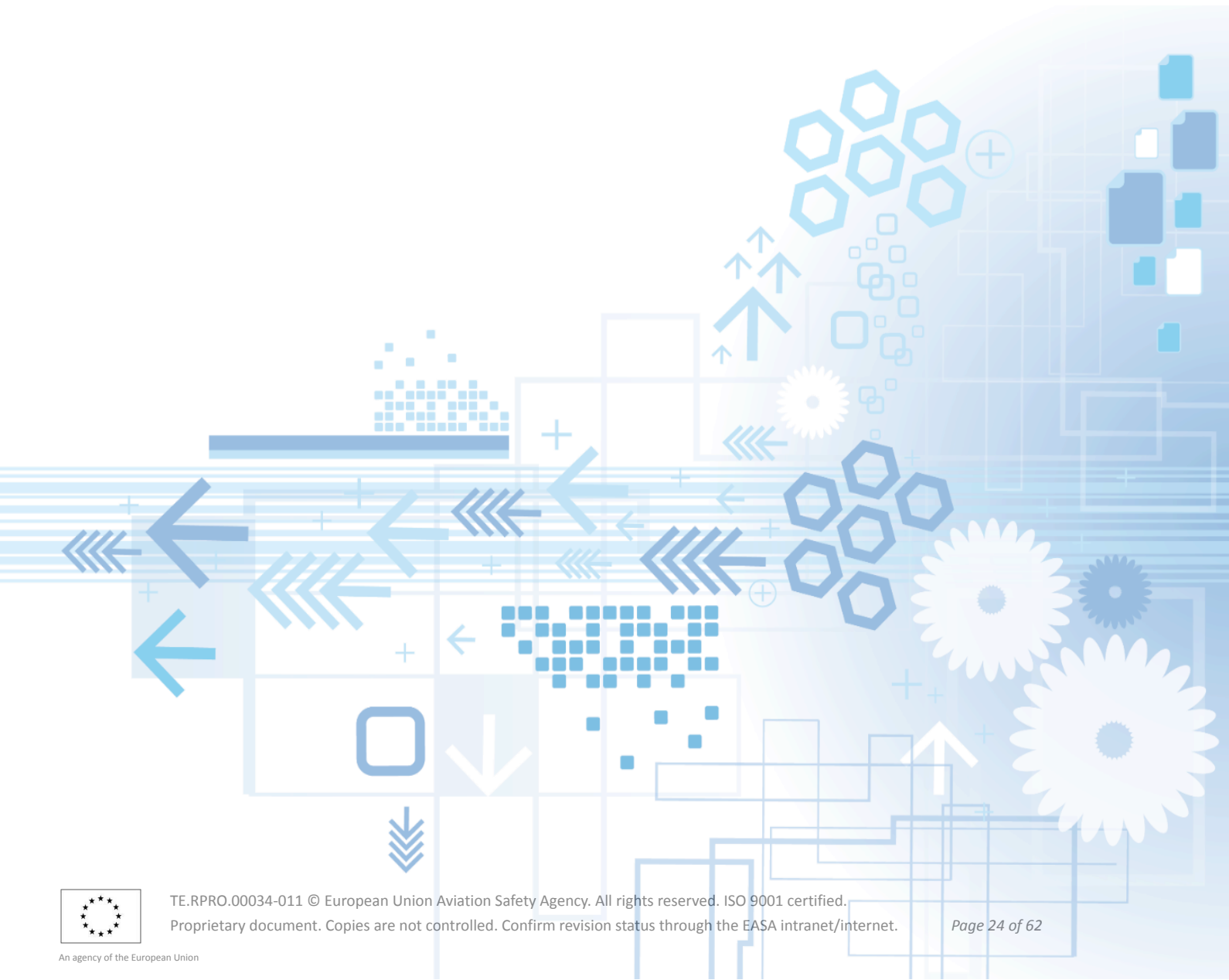
ID	Route	Operated with	Result	Valid	Status
019b272b-4bc5-73df-a965-54762726a448	ABZ-AMS	73J FQJ56WY132	87.858kg	16/12/2025 - 24/10/2026	Issued <input type="button" value="View details"/>
019b272b-4bc6-70e3-9ebb-3fd92ee32b1d	ABZ-AMS	73J FN156WY132	87.858kg	28/10/2026 - 30/10/2027	Issued <input type="button" value="View details"/>

5. Withdraw labels if needed

At any stage after calculation has completed, a label holder can request the withdrawal of a label. Once requested, the label will be removed from the public CSV data effective immediately. Please note the EASA Website and Public CSV are only updated every 24 hours. Label withdrawal requests require the label holder to submit a reason for the withdrawal and provide evidence should the label holder wish it to be reissued with adjustments.

EU FLIGHT EMISSIONS LABEL (FEL)

Calculations



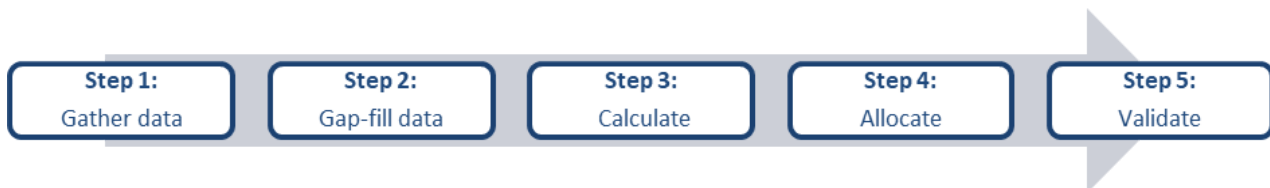
This section is for FEL users who require an understanding of how the FEL calculates and produces labels. The guidance is intended for sustainability, fuel and traffic specialists to understand and communicate the technical functions of the label to a wider audience both inside and external to the organisation. For details regarding data collection or use cases of the label, please refer to the data reporting and use guides.

The calculations guide gives a detailed breakdown of the metrics used, the formulas for calculating based on past data and the methods for estimation. It also gives an overview of some of the types of label validation used to flag outliers and anomalies.

The assumptions made in the calculation process are provided in the below section and provided in the CSV file available to the public: public_csv_variables.

The calculation process

The FEL data and process flow outlines an end-to-end labelling process that utilises reported data from carriers to create a label that communicates environmental performance at the point of sale. Labels are calculated automatically by the system with labels produced for unique combinations of aircraft operator, route, aircraft type, configuration with a separate record for each season and year.



1. [Gather data](#)
2. [Gap-fill data with estimates for fuel consumption and traffic](#)
3. [Calculate flight emissions and fuel lifecycle emissions](#)
4. [Allocation of flight emissions to passengers and freight](#)
5. [Label validation](#)

This document follows Commission Implementing Regulation (EU) 2024/3170, namely Article 2 (Definitions) and Annex II; Methodology For Estimating Flight Emissions. Changes to the structure and supplementing calculations have been made in this document to more closely describe procedures required based on the required data ingestion outlined in Article 3, estimation of the flight emission outlined in Article 5 and the preparation of calculation results for display as per Article 6.

1. Gather data

As outlined in the [data reporting guide](#), Flight emissions, traffic and schedules are required for label generation, with fuel batch purchases (SAF) and supporting data use being voluntary as outlined in the below table. Data provided in this stage will be screened for quality issues in the Portal, and submission of the data after screening triggers the automated calculation and validation process.

2. Gap-fill data with estimates for fuel consumption and traffic

Under specific instances, estimation is used to close data gaps and provide a label for a label holder where primary data was unavailable or inadequate. Such instances include the opening of a new route by an aircraft operator, the use of new aircraft technology on a route by an aircraft operator, a new configuration used on an existing aircraft type, or a label data failing validation. In these instances, EASA will estimate flight fuel consumption and passengers.

Data gaps are identified via forward schedules for new operations and label validation outlier detection.

Fuel consumption estimation

Flight fuel consumption is estimated by regressing the below simplified Breguet-Range equation against aircraft type specific fuel consumption observations of the information reported in the label system.

$$V_{fuel} = a \times \left(\frac{e^{b \times R}}{r} - 1 \right)$$

where:

a = aircraft mass when landing at the airport of arrival, in kilogrammes,

$$b = \frac{c}{(V \times L / D)}$$

$$r = \frac{W_3}{W_1} = \frac{W_2}{W_0}$$

R = flight range determined using the great circle distance method (GCD), in km

and where

V = speed of the aircraft, in kilometres per hour,

c = thrust-specific aviation fuels consumption, in kilogrammes per Newton-hour,

L = lift force acting on the aircraft, in Newtons,

D = aerodynamic drag force acting on the aircraft, in Newtons,

W_0 = aircraft empty mass, in kilogrammes,

W_1 = aircraft mass after climbing 3 000 ft (or 914.4 metres), in kilogrammes,

W_2 = aircraft mass after climbing to cruise, cruising, and descending to 3 000 ft (or 914.4 metres), in kilogrammes,

W_3 = aircraft mass when landing at the airport of arrival,

The coefficients a , b and r shall be determined using regression analysis, to minimise the estimated difference (L2-Norm) between the observed aviation fuel consumption and the estimated value.

Passenger and cargo estimation

Where information on the number of passengers is not reported because the conditions of the operations are different to those of previous flights, an estimated number of passengers shall be calculated based on the following factors:

$$C_w = N \times L \times P_m$$

where:

N = the number of seats available in the aircraft type, per cabin class,

L = estimated load factor of the flight, calculated considering the average load factor of the aircraft operator per cabin class particularly in flights (i) on the same route; (ii) on comparable routes; and (iii) on any other route. If the operator is new, a load factor will be estimated based on comparable business model aircraft operators.

P_m = the mass attributed to a passenger including their baggage, which shall be 100 kg.

Where information on the mass of cargo is not reported because the conditions of the operations are different to those of previous flights, an estimated mass of cargo shall be estimated for the flight. Estimates will consider the average cargo of the aircraft operator particularly in flights on the same route with a similar aircraft type or on comparable routes with a similar aircraft type. Where prior cargo data is missing for a specific operator in comparable operations, no cargo will be estimate

3. Calculate flight emissions and fuel lifecycle emissions

Flight emissions

Flight emissions are calculated by multiplying the estimated consumption of aviation fuels for the flight in question by the weighted average of lifecycle emissions of the aviation fuels uplifted at the departure airport in the monitoring period. Flight emissions are emissions allocated to the cabin and freight.

$$E = E_c + E_f = E_{WTT} + E_{TTW} = V_{fuel} \times \frac{EC_{fuel} \times LCE_{fuel}}{1000}$$

where:

E = flight emissions, in tonnes of carbon dioxide equivalent (t CO₂eq),

E_c = cabin emissions, in t CO₂eq,

E_f = freight emissions, in t CO₂eq,

E_{WTT} = fraction of the flight emissions corresponding to well-to-tank, in t CO₂eq,

E_{TTW} = fraction of the flight emissions corresponding to tank-to-wheel, in t CO₂eq,

V_{fuel} = consumption of aviation fuels of the flight, in kilogrammes (t),

EC_{fuel} = energy content of aviation fuels, in megajoule per kilogramme (MJ/kg),

LCE_{fuel} = weighted average lifecycle emissions of the aviation fuels uplifted at the departure airport, in grammes of carbon dioxide equivalent per megajoule (g CO₂eq/MJ).

Fuel lifecycle emissions

Label display requires average lifecycle emissions of the aviation fuels for the flight. These are calculated as the weighted average of the aviation fuel life cycle emissions of all aviation fuels consumed at that airport by the given operator.

$$LCE_{fuel} = \sum_{b=1}^n \frac{(LCE_b \times V_b)}{V_b}$$

where:

LCE_b = the aviation fuel lifecycle emissions of a batch 'b' of aviation fuels, in gCO₂eq/MJ. For conventional aviation fuels, this value shall be 89 gCO₂eq/MJ;

V_b = mass of a batch 'b' of aviation fuels, in kg.

However, the V_b of conventional aviation fuels (CAF) is not required for reporting as it is not tracked independently of V_{fuel} in all cases. Total mass of all fuel consumption at an airport by an airline (V_{fuel}) is monitored and reported by operators. Purchased SAF masses (V_{SAF}) and LCE_{SAF} are also monitored and reported. To calculate the average lifecycle emissions of the aviation fuels uplifted a percentage carbon emissions discount factor (Dct) from the airline purchases and deliveries of SAF to the airport is applied.

$$LCE_{fuel} = LCE_{CAF} \times Dct$$

$$E = V_{fuel} \times \frac{EC_{CAF} \times LCE_{CAF}}{1000} \times Dct$$

$$Dct = 1 - Red$$

where

Red = fuel CO₂eq reduction; percentage of CO₂eq mass avoided using SAF

Dct = fuel CO₂eq discount from use of SAF to apply to LCE_{CAF} , in percent.

LCE_{CAF} = The lifecycle emissions of CAF in gCO₂eq/MJ

To calculate Dct , the weighted average lifecycle emissions of SAF purchases and deliveries must be calculated.

$$LCE_{SAF} = \sum_{b=1}^n \frac{(LCE_b \times V_b)}{V_b}$$

When weighted average lifecycle emissions are known, they can be used to calculate the percentage of CO₂eq mass avoided using SAF (R) and applied to calculate flight emissions.

$$Red = \frac{V_{SAF}}{V_{fuel}} \times \left(1 - \frac{LCE_{SAF} \times EC_{SAF}}{LCE_{CAF} \times EC_{CAF}} \right)$$

where

LCE_{SAF} = The lifecycle emissions of SAF in gCO₂eq/MJ

EC_{CAF} = The energy content of CAF in MJ/kg

EC_{SAF} = The energy content of SAF in MJ/kg

V_{Fuel} = The total mass of all fuels consumed by the flight in tonnes

4. Allocation of flight emissions to passengers and freight

Flight emissions are attributed to passengers in the cabin classes and to freight based on a combination of the share of payload weight and cabin seating configurations.

Passenger cabin emissions

The emissions allocated to the passenger cabin are calculated as follows:

$$E_c = E \times W_c$$

where:

E_c = estimated flight emissions allocated to the cabin, in t CO₂eq per flight.

E = estimated flight emissions, in t CO₂eq per flight.

$W_c = \frac{C_w}{F_w + C_w}$, the share of the payload attributed to the cabin, where:

$$C_w = pax \times P_m$$

F_w = mass corresponding to the freight on board of the aircraft, in t per flight

pax = number of passengers in the cabin per flight

P_m = mass attributed to a passenger including their baggage, which shall be 100 kg.

Passenger cabin class emissions allocation

Cabin emissions are allocated to each passenger based on their respective cabin class factor (CCF). Where aircraft operators report the area per seat of each class in each aircraft configuration, it shall be used in the first instance to calculate what cabin class factor to apply.

$$CCF = \frac{SA_c}{SA_t}$$

where:

CCF = Cabin class factor representing the allocation of cabin emissions per passenger in each cabin class estimated based on the seating area allocated in an aircraft to the lowest class,

SA_c = the floor area per seat of a given cabin class,

SA_l = the floor area per seat of the lowest cabin class in each aircraft configuration.

If the floor seat area referred to in the previous point is not available, the cabin class factors will be estimated. Cabin class factor estimates are calculated as the weighted average of observed area per seat by movement reported. Weighted averages will be based on operator specific observations where possible, and on by aircraft class at a minimum. Should insufficient data be available for an aircraft class weighted average, the cabin class factors set out in Table 2 shall be applied.

Table 2: CCF calculations based on seating area and default values

Cabin Class	CCF based on aircraft floor area per seat	Default CCF	
		Wide-body (CCFc-w)	Narrow-body (CCFc-n)
Economy (e)	$\frac{SA_e}{SA_l}$	1	1
Premium Economy (pe)	$\frac{SA_{pe}}{SA_l}$	1.5	1
Business (b)	$\frac{SA_b}{SA_l}$	4	1.5
First (f)	$\frac{SA_f}{SA_l}$	5	1.5

Allocations are calculated by creating a unit based on the number of passengers in the respective cabin class factors.

$$LC_{eq} = \sum pax_c \times CCF$$

where:

LC_{eq} = "lowest class equivalent – a theoretical number of passengers calculated for the purpose of allocating cabin emissions to passengers in each cabin class, not for label communications.

pax_c = number of passengers in each given cabin class.

Passenger emissions footprint

The total cabin per passenger emissions footprint is expressed as follows:

$$C_{ef} = \frac{E_c}{pax} \times 1000$$

where:

C_{ef} = cabin emissions footprint per passenger, in kg CO₂eq per passenger.

Label primary display requires a cabin class specific emissions footprint per passenger, expressed using the lowest class equivalent passengers and the cabin class factors

$$CC_{ef} = \frac{E_c}{LC_{eq}} \times CCF \times 1000$$

where:

CC_{ef} = cabin class emissions footprint per passenger, in kg CO₂eq per passenger,

LC_{eq} = “lowest class equivalent” – a theoretical number of passengers calculated for the purpose of allocating cabin emissions to passengers in each cabin class, not for label communications,

E_c = estimated flight emissions allocated to the cabin, in t CO₂eq per flight,

CCF = Cabin class factor representing the allocation of cabin emissions per passenger in each cabin class estimated based on the seating area allocated in an aircraft to the lowest class.

Passenger emissions efficiency

The total cabin per passenger efficiency is expressed as follows:

$$C_{ee} = \frac{C_{ef}}{R} \times 1000$$

where:

C_{ee} = cabin emissions efficiency, in g CO₂eq per passenger kilometer,

C_{ef} = cabin emissions footprint, in kg CO₂eq per passenger,

R = flight range determined using the great circle distance method (GCD), in km.

Label secondary display requires a cabin class specific emissions efficiency per passenger kilometer, also expressed using the lowest class equivalent passengers and the cabin class factors

$$CC_{ee} = \frac{CC_{ef}}{R} \times 1000$$

where:

CC_{ef} = cabin class emissions footprint, in g CO₂eq per passenger kilometer,

C_{ef} = cabin emissions footprint, in kg CO₂eq per passenger,

R = flight range determined using the great circle distance method (GCD), in km.

note: moving curtains

Many narrowbody aircraft can quickly change the seating configuration between business and economy classes, referred to here as a moving curtain. In these cases, there is typically one scheduled configuration, and only one label required. In these scenarios there can often be significantly higher economy passengers than the scheduled seats indicate. This is normal and does not require adjustment in the calculation as the calculation uses passengers, not seats.

When passengers are estimated using load factors and scheduled seats, the load factors are calculated by looking at the load factor by cabin class. Moving curtains can mean much higher than 100% economy load factors on narrowbodies, and these figures are used in estimation for an accurate representation of passengers on board by class, and statistically analysed to ensure normalcy. **For these reasons, no adjustments are required to account for moving curtains in aircraft operator schedules and reported data.**

Freight emissions

Both dedicated freight aircraft and passenger aircraft follow the same methodology. The emissions allocated to the freight share of payload are calculated as follows:

$$E_f = E \times W_f$$

where:

E_f = estimated flight emissions allocated the freight share of payload, in t CO₂eq per flight,

E = estimated flight emissions, in t CO₂eq per flight,

$W_f = \frac{F_w}{F_w + C_w}$, the share of the payload attributed to the cabin, where:

F_w = mass corresponding to the freight on board of the aircraft, in t per flight,

$C_w = pax \times P_m$.

pax = number of passengers in the cabin per flight,

P_m = mass attributed to a passenger including their baggage, which shall be 100 kg.

Freight emissions footprint

The freight emissions footprint is expressed as follows:

$$F_{ef} = \frac{E_f}{F_w} \times 1000$$

where:

F_{ef} = freight emissions per tonne of freight, in kg CO₂eq /t,

E_f = estimated flight emissions allocated the freight share of payload, in t CO₂eq per flight,

F_w = mass corresponding to the freight on board of the aircraft, in t per flight.

Freight emissions efficiency

The freight emissions footprint is expressed as follows:

$$F_{ee} = \frac{F_{ef}}{R} \times 1000$$

where:

F_{ee} = freight emissions per freight-tonne-kilometre, in gCO₂eq/FTK,

F_{ef} = freight emissions per tonne of freight, in kg CO₂eq /t ,

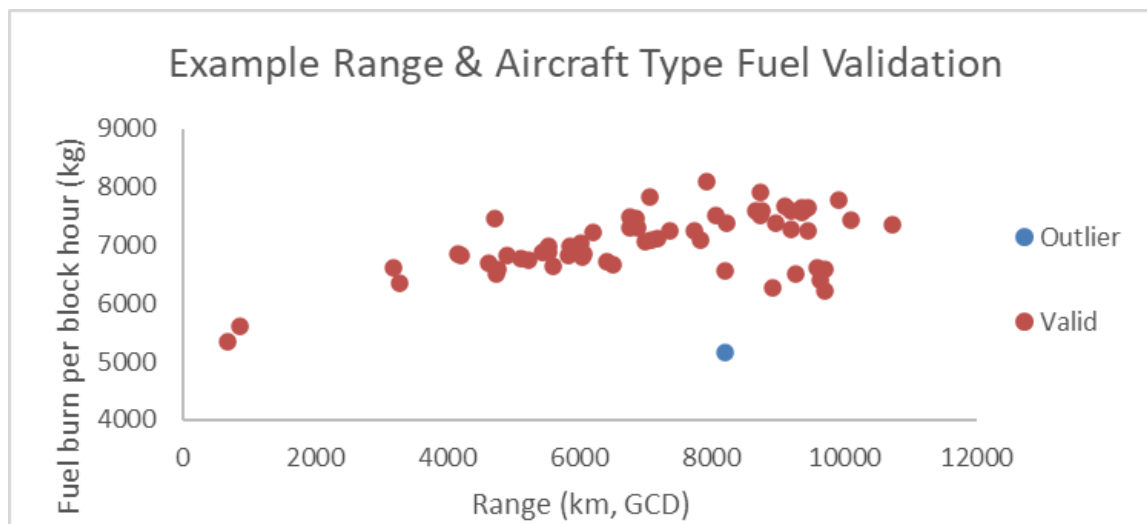
R = flight range determined using the great circle distance method (GCD), in km.

5. Label validation

Reported data is analysed to identify anomalies through outlier analysis. Outliers are estimated and flagged for EASA review as to whether this is due to an error in the data, or unusual performance, which should be used for the label and not omitted. This process happens automatically and results are provided to EASA in the review stage of the label creation process in the Portal. Such examples of digital review include:

Fuel consumption

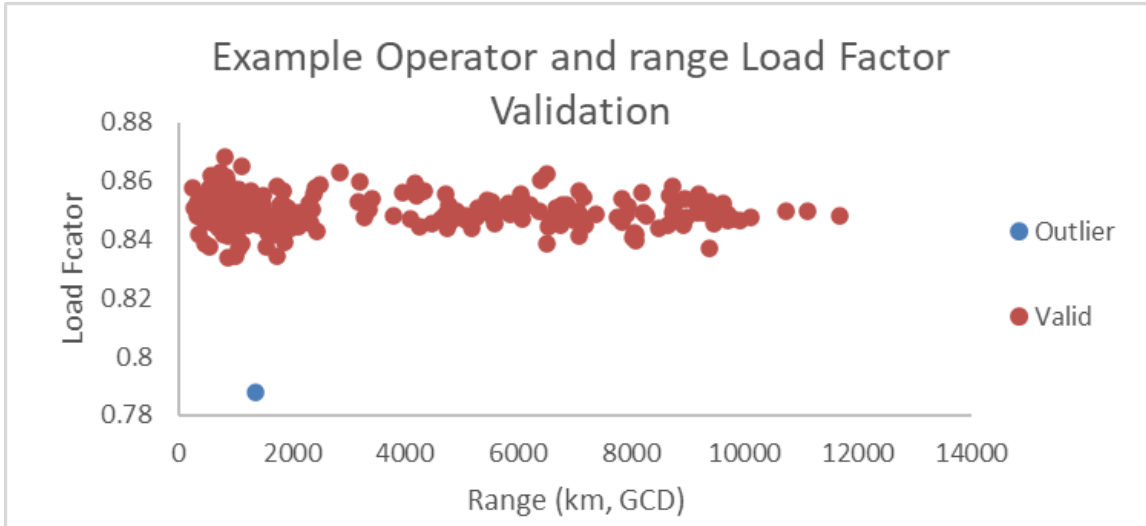
A label fuel consumption is flagged as abnormally high or low for the flight range category and aircraft type. The digital review will apply a calculation to convert the route fuel burn to fuel burn per block hour. Performance statistics are then grouped by aircraft type and range categories with common fuel efficiency performance to identify likely data reporting errors.



Load factor

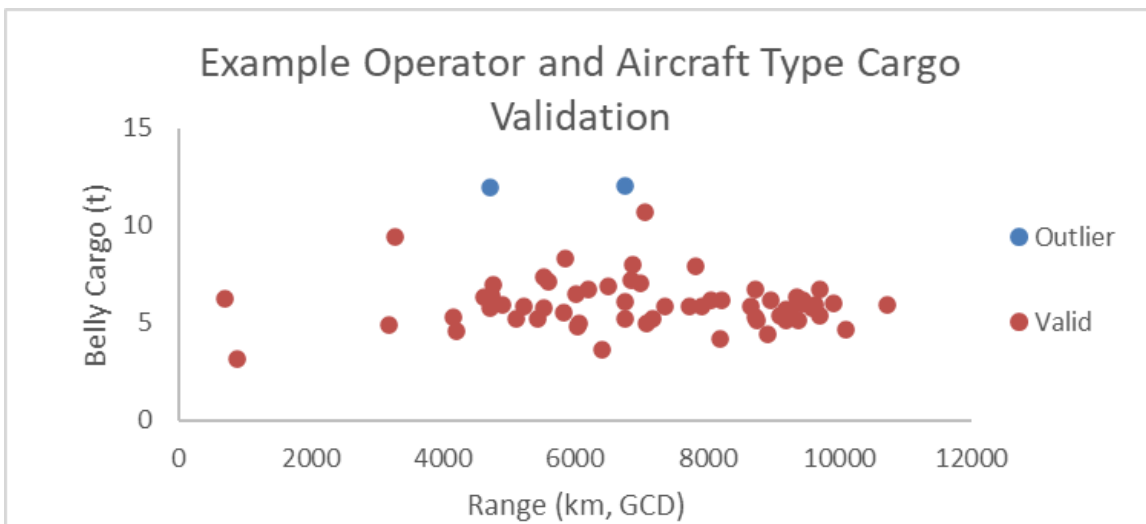
A label is flagged as having abnormally high or low **passenger load factor** for the aircraft operator in each range category. The calculation first converts passengers and seats data to the load factor for a label. By grouping load factor statistics by the operator business model and range category, outliers can be identified. While load factor is volatile, each label consists of many flight times over several months, so the variation between specific flights is greatly reduced. This said, there will likely be instances where systematic outliers

will require additional logic to be written in the validation process to approve outliers which are known operational trends, such as (nearly) empty leg flights.



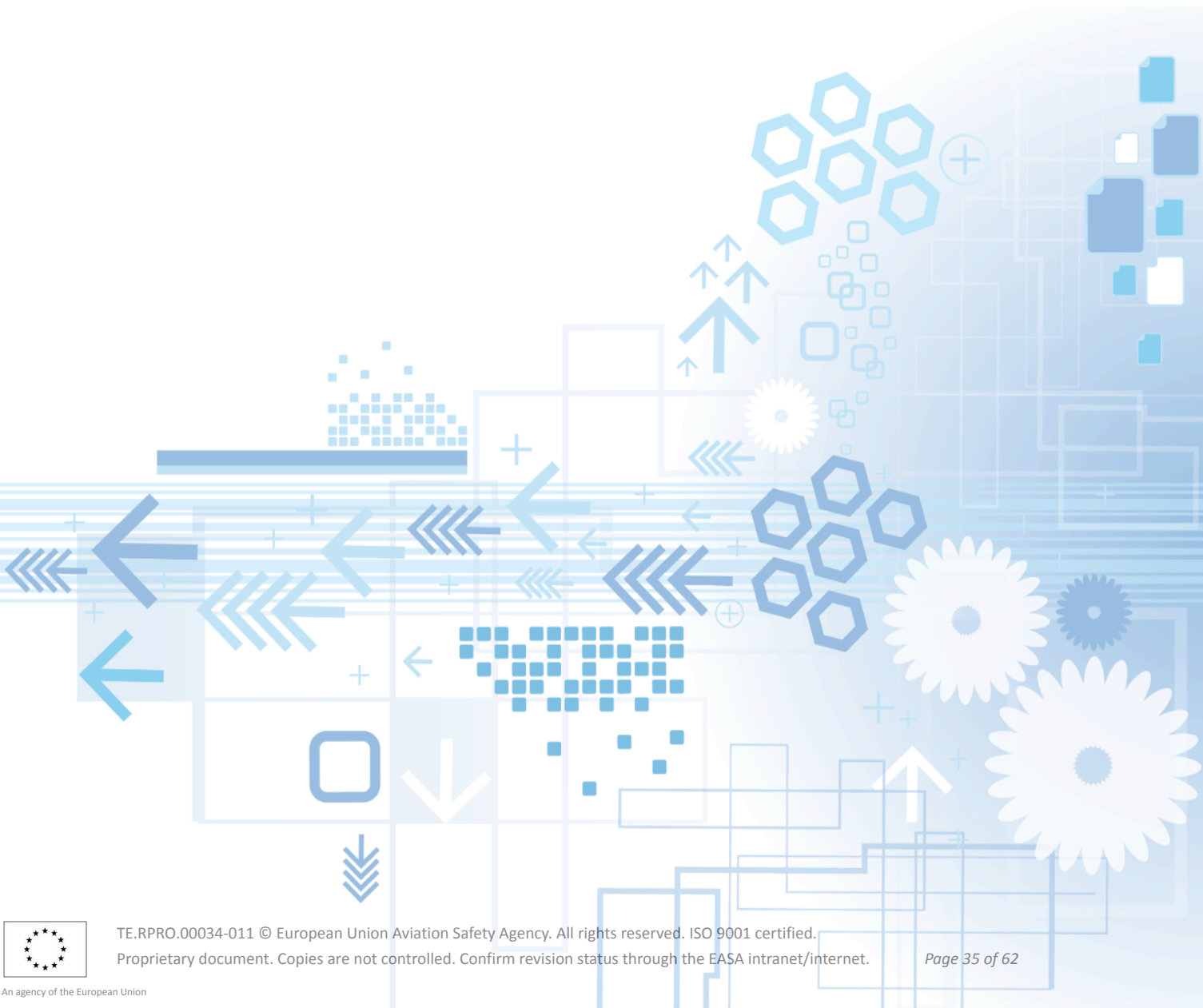
Cargo loads

A label is flagged as having unusually **high cargo** for aircraft operator business model and aircraft type. As with load factor, cargo statistics are based more on operator business model, however cargo capacity is often highly dependent of the aircraft type. Cargo is also a volatile variable as with load factor, and will likely require exceptions to be made for recurring outliers.



EU FLIGHT EMISSIONS LABEL (FEL)

Public CSV use guide



The public CSV use guide details how the labels should be used by organisations. It provides an overview of the information in the FEL and guidelines on what the figures mean, the terms of use and limitations in application. This guide is intended also to give a brief overview of the display and distribution of the labels. More detailed instructions are provided in the CSV developer guide.

The primary users of this document are intended to be sustainability teams to guide technical and non-sustainability specialists teams on how and when the label should be used. Users are expected to be not only within aircraft operator label holders, but also label distributors and third party resellers.

1. Alternative methodology emissions display

The [FEL Implementing Regulation](#) sets out the conditions for a correct and clear display of flight emissions. As per Article 6(5)(b) of this implementing regulation, EU and non-EU aircraft operators may not display emissions similar to those in the FEL, within the EU jurisdiction, which were not requested under the formal FEL process. This applies to all routes to and from union airports regardless of whether or not the aircraft operator is a label holder, or a label has been requested. Using the FEL is therefore the only method to ensure compliance of aircraft operators with EU law when displaying emissions either to or from Union airports. If the aircraft operator is a label holder, it should request labels for all operations.

[EASA collaborates with industry partners such as Google](#), currently providing estimates to the industry for displays of emissions. This is to ensure aircraft operators participating in the program and their third-party resellers, including online travel agents (OTAs), meta searches and travel management companies (TMCs), can seamlessly comply with the requirements of the law with the minimum burden of digital deployment. Monitoring of compliance by EASA will be performed collaboratively with aircraft operators and third parties, appropriately considering any gaps in the request or display of labels and addressing challenges in distribution, such as platform updates, while ensuring compliance with the legal framework.

2. Label metrics application

The FEL metrics are for labelling a flight due to happen in the future based on the flight and cabin class selected by a passenger. Labels are to be applied to a flight-based route, airline, aircraft and aircraft configuration with a score for each seating class. This means if the airline changes the aircraft type or configuration which is scheduled on a route, then the label must also change to match, and a class selection by a passenger should also have the relevant class CO₂e footprint and efficiency.

Primary and secondary label score displays are provided, only the footprint (kgCO₂e per passenger) is required in the primary display and so modifications should be made to the metrics and displayed as a comparable metric at the point of purchase.

The label is not designed for accounting purposes. The label is an indication of what may happen in the future while corporate reporting is a statement of what happened in the past. As the label develops, the system may be used to produce CO₂e footprint or efficiency metrics for reporting purposes. Until that time, the label should not be used for corporate reporting. If you wish to express your requirements for reporting data from EASA, please register to stay up to date.

CO₂eq footprint (per passenger)

The primary display figure of the FEL. It represents the carbon equivalence of a passenger given their specific cabin class in kilograms of CO₂eq equivalent per passenger (kgCO₂eq/pax). The figure is an estimate of the greenhouse gas emissions of an aircraft in future operations on a per passenger basis. It is based on prior fuel consumption and traffic performance by the aircraft operator, and adjusted by the “Fuels CO₂eq discount percent” according to the prescribed methodology.

CO₂eq efficiency (per passenger kilometer)

A secondary display figure of the FEL. It represents the carbon equivalence of a passenger per kilometer given their specific cabin class. It is expressed in grams of CO₂ equivalent per passenger kilometer (gCO₂eq/pkm) and the distance between the origin and destination airport in km, calculated using the GCD method. The figure is an estimate of the greenhouse gas emissions of an aircraft in future operations on a per passenger kilometre basis. It is based on prior fuel consumption and traffic performance by the aircraft operator, and adjusted by the “Fuels CO₂eq discount percent” according to the prescribed methodology.

Fuels CO₂eq intensity²

A secondary display figure of the FEL. It is a representation of the estimated weighted average carbon intensity of all of the fuels used in estimating a label footprint or efficiency. It is expressed in grams of CO₂ equivalent per megajoule (gCO₂eq/MJ), and includes both fossil Jet A1 and sustainable fuels. It plays no direct role in the calculation and exists as an indication of the effect of sustainable fuels. It is calculated by multiplying the “Fuels CO₂eqq” discount percentage by the carbon intensity of Fossil Jet A1 fuel. Unless SAF allocations have been made to specific routes under EU ETS, the metric will be unique to flights with the same aircraft operator and airport of departure.

Fuels CO₂eq discount percent

the key metric used in the calculations to derive the label footprint and efficiency. While it is provided in the Public CSV data, it is not a label display figure. A FEL footprint or efficiency metric is calculated by multiplying the fuel's CO₂ discount percent by a footprint or efficiency metric which has not been adjusted for any SAF purchases. It is calculated based on the amount of SAF purchased by an airline and delivered to a specific airport in the reporting year. The calculation takes the assumed Carbon I of fossil fuel and the total fuel consumption at the airport by the airline and calculates a weighted proportional carbon reduction due to the purchase and delivery of the reported fuels. The result is the “fuels CO₂eq reduction percent”, and the discount percent is calculated as one minus the reduction percent.

² For the absence of confusion, the reporting by aircraft operators of fuel batch purchases refers primarily to the disclosure of “SAF” or “sustainable aviation fuels” purchases and deliveries. Under ReFuelEU Aviation the term SAF applies only to RED III fuels which meet the regulation's criteria. As the label accepts fuels defined under ReFuelEU and CORSIA eligible fuels, for which the term Fuel Batch Purchases is used synonymously. FEL metrics include adjustments for the SAF purchased by the operator, delivered to the airport and verified under an MRV for a market based measure (MBM) or ReFuelEU Aviation

Fuels CO₂eq reduction percent

An intermediary metric used in the calculations to derive the Fuels CO₂eq discount percent as described in the “fuels CO₂eq discount percent”. While it is provided in the Public CSV data, it is not a label display figure.

Benchmarks

Metrics under development by EASA based on FEL observations and in collaboration with industry partners regarding the optimal method of benchmarking performance.

3. Label data formats provided by EASA

Public CSV

The public CSV is the raw data file issued on the [Flight Emissions website](#) for the purposes of label distributors. This is related to the primary data used to update the label on aircraft operator ecommerce platforms, meta and OTAs, GDS and other third parties. It contains legislation required information but omits any data which may enable the exact underlying performance data of a flight to be identified.

EASA Sustainability Portal

The Portal offers data regarding each produced label including detailed statistics regarding benchmarks of performance to facilitate the approval and validation process by operators. This information will be available to operators to download and use for internal analytics. Where statistics may be at risk of violating commercial confidentiality, such as being based on very few flight observations, such data will be omitted from the Portal.

Website

The [Flight Emissions website](#) will provide not only the public CSV but is required by the legislation to provide a graphical interface to the public to search and compare labels, with simple benchmarks to enable the public to better understand the labels and facilitate better decision making.

4. Label dates of issue, validity and applicability

Three sets of dates are provided on each label to indicate the obligations regarding the display of a given label. The labels issued will be applied to flights departing in the following periods defined by the IATA scheduling season.

Winter Scheduling Period

Starts on the last Sunday of October and ends on the last Saturday of March.

Summer Scheduling Period

Starts on the last Sunday of March and ends on the last Saturday of October.

Issue date

The date at which the label is made available to a label holder and the public via the Portal prepare for distribution.

Applicability dates

The applicability dates of the label refer to the start and end dates of the scheduling period during which a relevant departing flight must have the label applied. If the issue date is after the start of the season, the start date will be equal to the issue date.

Example: A flight booked which departs on the 9th of August 2025 was in the summer 2025 season. The label was issued June 30, 2025. The label applicability start dates for that flight would be a relevant flight emissions label record with the applicability start date of June 30, 2025 and applicability end date October 25, 2025.

Validity dates

The validity dates indicate to operators the period when the label is to be displayed at all points of sale. The valid start date is the latest of the issue date, and five months prior to the applicability start date. The valid end date is the same as the applicability end date. Prior to the valid start date a label may be displayed voluntarily, after the valid start date the label must be displayed. Following the valid end date, the label is not to be displayed. Should a label be revoked or replaced, the valid end date will be retroactively updated to reflect the requirement that the label can no longer be displayed.

Examples of dates and obligations

Season	Issue	Valid Start	Valid End	Applicability Start	Applicability End
Summer 2025	30-06-2025	30-06-2025	25-10-2025	30-06-2025	25-10-2025
Winter 2025	30-06-2025	30-06-2025	28-03-2026	26-10-2025	28-03-2026
Summer 2026	30-06-2025	29-10-2025	24-10-2026	29-03-2026	24-10-2026
Winter 2026	30-06-2025	25-05-2026	27-03-2027	25-10-2026	27-03-2027

5. Third party vendors³

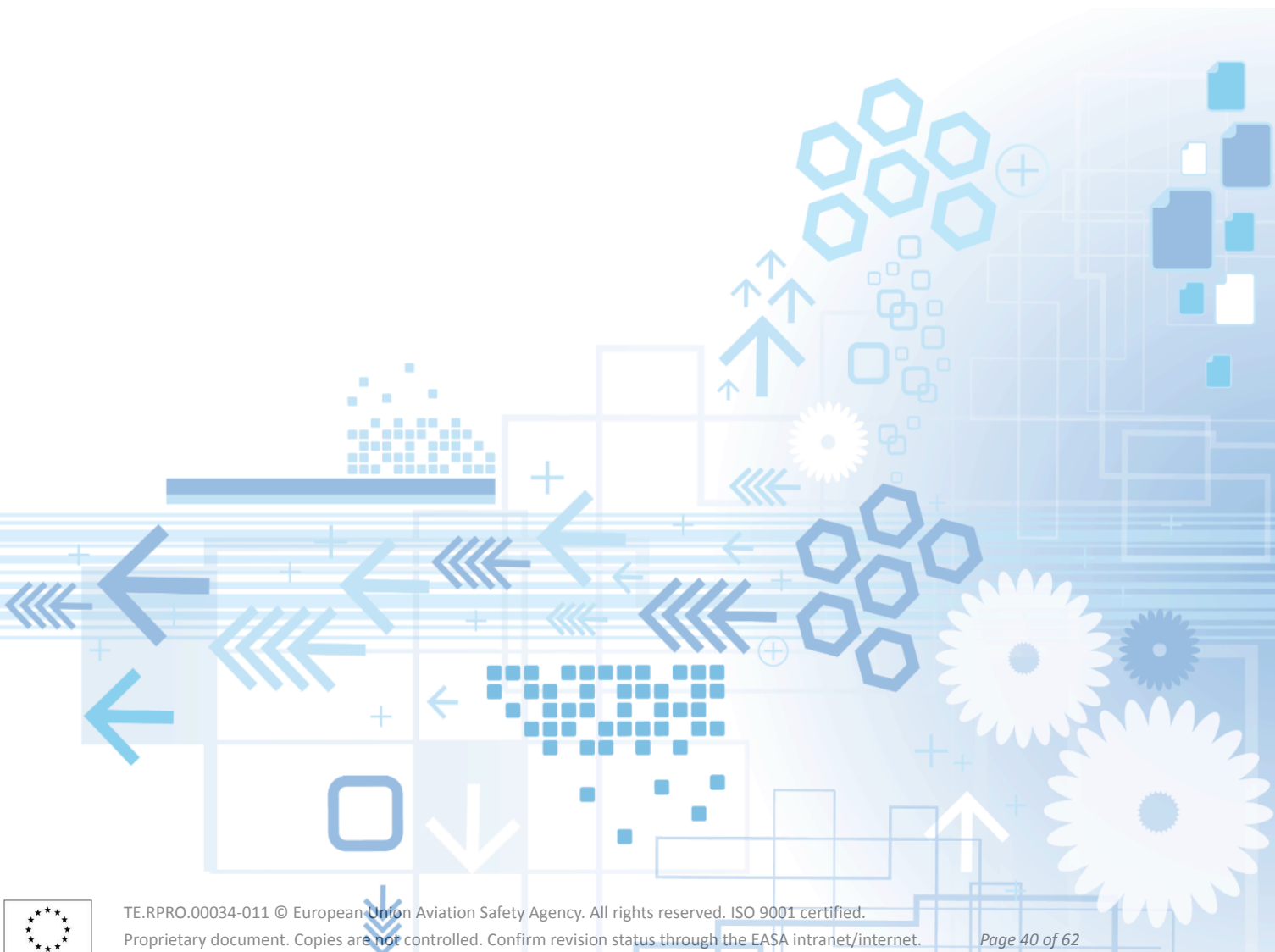
[EASA collaborates with industry partners such as Google](#) and publishes label data on the [EASA Flight Emissions Label website](#) to support distribution to third party resellers. However, for third party points of sale with which the aircraft operator has a contractual relationship it is the responsibility of the aircraft operator efforts to ensure:

- The labels are displayed without delay at the point of sale upon issuance;
- The third-party points of sale do not reject the labels;
- They do not recalculate the EASA estimated emissions for any purpose.

³ **Note:** For third party points of sale with which the operator has no contractual relationship, they shall make best efforts to ensure that the above points are adhered to, with the best of their ability.

EU FLIGHT EMISSIONS LABEL (FEL)

Public CSV developer guide



The CSV developer guide is a technical overview of the FEL results including display and distribution. It is therefore aimed at developers and data management teams. It provides extensive details on the data fields provided by EASA in the label CSV file, display and design guidelines on an operators' e-commerce sites, and details on the file versioning that EASA will use. Users are expected to be not only within aircraft operator label holders, but also label distributors and third party resellers.

1. Displaying Flight Emissions labels

Matching a label with a flight

The label that is allowed to be displayed for a flight (on all platforms) should be the label that matches with the relevant flight details:

- Aircraft operator
- Departure airport
- Arrival airport
- Aircraft type
- Aircraft seat configuration

The relevant flights where the label must be displayed for will be those which depart on the Applicable Start Date (`applicable_start_date`) and on or before the Applicable End Date (`applicable_end_date`).

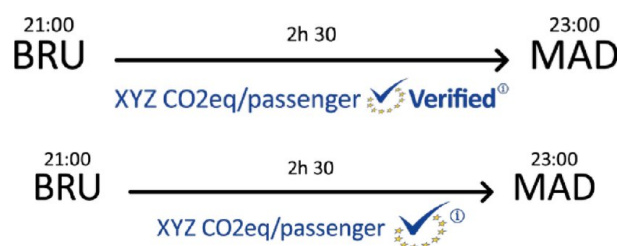
Valid display of a label

Labels should be displayed on all platforms from the relevant Valid Start Date (`valid_start_date`) and must not be displayed after the Valid End Date (`valid_end_date`).

The label that is displayed, must include the data that is listed below, under the section "Display". The displayed label data should match with the selected cabin of the flight.

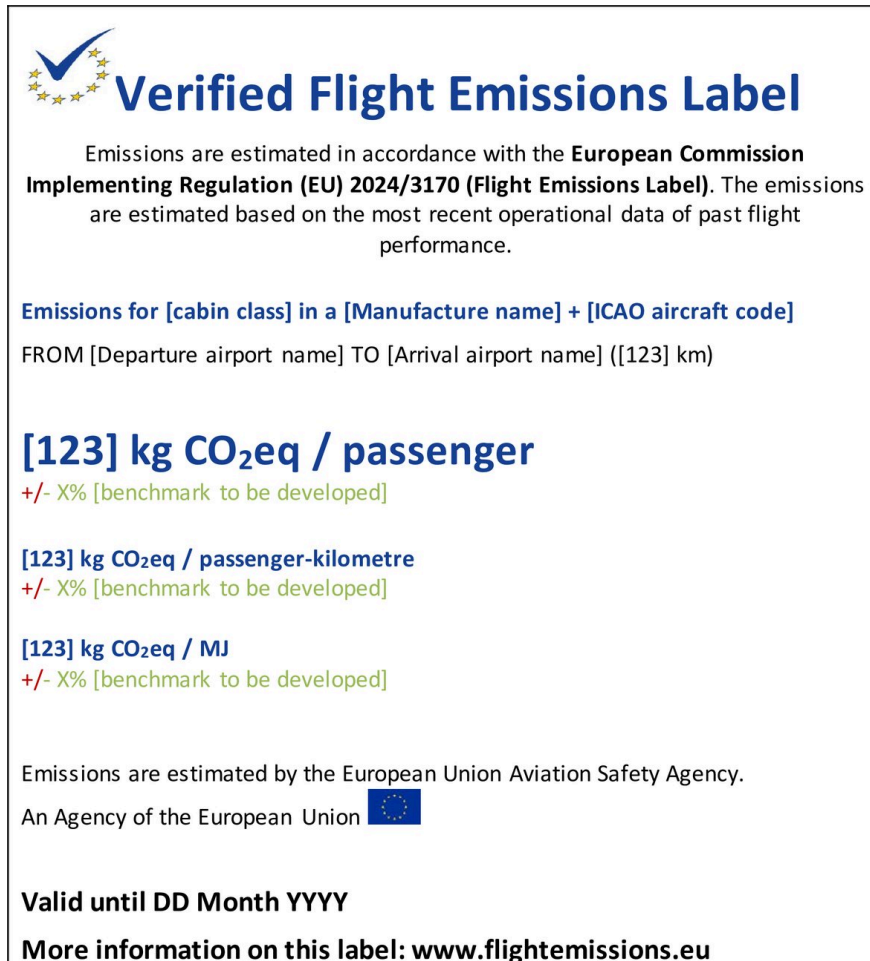
Primary display


The primary label data display is the **footprint** (in kgCO₂e per passenger) for the selected passenger cabin or cargo and the relevant **benchmark**.



Secondary display

The secondary label display is for the **footprint** (in kgCO₂e per passenger or freight tonne), **efficiency** (in gCO₂e per passenger kilometer or freight-tonne-kilometer), and **fuel lifecycle emissions** (gCO₂e/MJ) for the selected by the passenger cabin or cargo alongside the relevant **benchmark**.



 **Verified Flight Emissions Label**


Emissions are estimated in accordance with the **European Commission Implementing Regulation (EU) 2024/3170 (Flight Emissions Label)**. The emissions are estimated based on the most recent operational data of past flight performance.

Emissions for [cabin class] in a [Manufacture name] + [ICAO aircraft code]
FROM [Departure airport name] TO [Arrival airport name] ([123] km)

[123] kg CO₂eq / passenger
+/- X% [benchmark to be developed]

[123] kg CO₂eq / passenger-kilometre
+/- X% [benchmark to be developed]

[123] kg CO₂eq / MJ
+/- X% [benchmark to be developed]

Emissions are estimated by the European Union Aviation Safety Agency.
An Agency of the European Union 

Valid until DD Month YYYY

More information on this label: www.flightemissions.eu

Figure 1: Example secondary display mock-up of the Flight Emissions Label

The fuel lifecycle emissions are calculated by multiplying the default fuel lifecycle emissions (89) by `fuels_co2eq_discount_percent`. As per the [methodology section](#) the fuel CO₂eq discount percent can be used to reverse-engineer the fuel lifecycle emissions and the label scores excluding SAF.

Displayed Data

Cabin class	The cabin class selected by the passenger
Aircraft type	The aircraft manufacturer, type, subtype and ICAO aircraft code.
Route	<p>Departure airport: The name of the departure airport or any of the values from the departure airport fields (departure_airport_iata or departure_airport_icao)</p> <p>Arrival airport: The name of the arrival airport or any of the values from the arrival airport fields (arrival_airport_icao or arrival_airport_iata)</p> <p>Distance (in km): The value of distance_km</p>
Passenger flight label metrics	<p>The footprint for the selected by the passenger cabin or cargo</p> <ul style="list-style-type: none"> avg_economy_wtw_kg_co2eq_per_pax avg_premium_economy_wtw_kg_co2eq_per_pax avg_business_wtw_kg_co2eq_per_pax avg_first_wtw_kg_co2eq_per_pax avg_wtw_cargo_kg_co2eq_per_ft <p>The efficiency for the selected by the passenger cabin or cargo</p> <ul style="list-style-type: none"> avg_economy_wtw_g_co2eq_per_pax_km avg_premium_economy_wtw_g_co2eq_per_pax_km avg_business_wtw_g_co2eq_per_pax_km avg_first_wtw_g_co2eq_per_pax_km avg_wtw_cargo_g_co2eq_per_ftk <p>The average fuel life cycle emissions used to estimate the flight emissions, measured in gCO₂eq/MJ:</p> <ul style="list-style-type: none"> fuels_co2eq_intensity
Benchmarks	<p>Benchmarks and the comparisons of the label scores to the benchmarks based on observed typical performance on the route or on comparable routes</p> <p>Economy</p> <ul style="list-style-type: none"> co2eq_economy_benchmark co2eq_economy_efficiency_benchmark co2eq_economy_benchmark_comparison co2eq_economy_efficiency_benchmark_comparison <p>Premium economy</p> <ul style="list-style-type: none"> co2eq_premium_economy_benchmark co2eq_premium_economy_efficiency_benchmark co2eq_premium_economy_benchmark_comparison co2eq_premium_economy_efficiency_benchmark_comparison <p>Business</p> <ul style="list-style-type: none"> co2eq_business_benchmark co2eq_business_efficiency_benchmark co2eq_business_benchmark_comparison co2eq_business_efficiency_benchmark_comparison <p>First</p> <ul style="list-style-type: none"> co2eq_first_benchmark co2eq_first_efficiency_benchmark co2eq_first_benchmark_comparison co2eq_first_efficiency_benchmark_comparison <p>Cargo</p>

	<ul style="list-style-type: none"> • co2eq_first_benchmark • co2eq_first_efficiency_benchmark • co2eq_first_benchmark_comparison • co2eq_first_efficiency_benchmark_comparison <p>Fuels</p> <ul style="list-style-type: none"> • fuels_benchmark • fuels_benchmark_comparison
Validity Dates	<p>The validity date of the label ensures the label scores are current.</p> <ul style="list-style-type: none"> • valid_end_date
More information link	<p>The webaddress(URL) to access a label's detailed page, without the hostname flightemissions.eu</p> <ul style="list-style-type: none"> • label_url

Design guidelines

- If there is sufficient space, use the logotype with the word "Verified";
- The secondary display needs to appear when hovering over or when clicking on the logotype or on the information ('i') icon visible on the right side of the logotype in the primary display;
- It is mandatory to show negative benchmark values in green;
- It is mandatory to show positive benchmark values in red;
- The secondary display should always be presented on a white background;
- The font size should remain legible;
- It is not allowed to divert from the proposed layout, by moving elements to other positions;
- The word "verified" should always be stylised in Calibri bold and always in the user's language.

Logotype

The prescribed logotype of the label must be utilised.

[Download the EC FEL Logo package](#) which is offered in various formats, languages and colour spaces.

Versioning

The model will be developed further over time, e.g. with improved load factors methodology or refined seat area ratios calculation, when this occurs, new versions will be published.

A full model version will have four components: MAJOR.MINOR.PATCH.DATE, e.g. 1.3.1.20230101. The four tiers of versioning are defined as below:

Major versions

Changes to the model that would break existing client implementations if not addressed, including changes in data types or schema, or major methodology changes such as adding new data sources to the model that lead to major output changes. We expect these to be infrequent, but they need to be managed with the appropriate care and attention with all stakeholders. As such, major versions will be accompanied with advanced briefings for stakeholders.

Minor versions

Changes to the model that, while being consistent across schema versions, change the model parameters or implementation.

Patch versions

Implementation changes meant to address bugs or inaccuracies in the model implementation.

Dated versions

Any change to code, or internal datasets are recreated with refreshed input data but no change to the algorithms regularly.

Version Communication

All upcoming major releases and potential breaking changes will be announced ahead of time. Consumers will receive detailed information and migration guidance where necessary. [Subscribe to the Open Data integrators newsletter](#) to stay informed.

2. Label data

This document outlines the steps to fetch, display, and manage the open label data, ensuring compliance with the initiative's standards and enhancing the visibility of this data on your platform.

Open label data CSV

The open label data will be made publicly available via a Comma-Separated Values (CSV) file.

- The file will be available via a permanent link (URL to be finalised);
- A dummy CSV file has been created for demonstration purposes.

Download the CSV File

To receive updates about the permanent link, please [subscribe to our newsletter](#) for data integrators.

Update frequency

The update process for the open label data CSV is initiated every night at 2:00 AM UTC.

Data fields

- **Type:** The type of data that is available in the column
- **Format:** The format that is used for the data
- **Name:** The non-technical name for the field, without special characters. Can be displayed to an audience with aviation knowledge
- **Display name:** A substitute name that can be used to display to users without any aviation knowledge.
- **Help text:** A description for the field, one which you can use in your own interface as a help text for your user without aviation knowledge (eg: tooltip, informational message,...)

- **Description:** A description for the value of the field

uuid

- **Type:** uuid
- **Name:** UUID
- **Display name:** Label UUID
- **Description:** A unique identifier for the label. No two labels can have the same identifier and will remain the same for the entire lifecycle of the label
- **Help text:** A unique identifier that remains the same for the entire lifecycle of the label

operator_code_icao

- **Type:** Text
- **Name:** Aircraft Operator Code (ICAO Code)
- **Display name:** -
- **Description:** ICAO 3-character alphanumeric Aircraft Operator Code
- **Help text:** Aircraft Operator identification code (ICAO Code)

operator_code_iata

- **Type:** Text
- **Name:** Aircraft Operator Code (IATA Code)
- **Display name:** -
- **Description:** IATA 2-character alphanumeric Aircraft Operator Code
- **Help text:** Aircraft Operator identification code (IATA Code)

departure_airport_icao

- **Type:** Text
- **Name:** Departure Airport (ICAO Code)
- **Display name:** -
- **Description:** ICAO 4-letter Departure Airport Code
- **Help text:** Departure Airport (ICAO Code)

departure_airport_iata

- **Type:** Text
- **Name:** Departure Airport (IATA Code)
- **Display name:** -
- **Description:** IATA 3-letter Departure Airport Code
- **Help text:** Departure Airport (IATA Code)

arrival_airport_icao

- **Type:** Text
- **Name:** Arrival Airport (ICAO Code)
- **Display name:** -
- **Description:** ICAO 4-letter Arrival Airport Code
- **Help text:** Arrival Airport (ICAO Code)

arrival_airport_iata

- **Type:** Text
- **Name:** Arrival Airport (IATA Code)
- **Display name:** -
- **Description:** IATA 3-letter Arrival Airport Code
- **Help text:** Arrival Airport (IATA Code)

aircraft_type_iata

- **Type:** Text
- **Name:** Aircraft Type (IATA Code)
- **Display name:** -
- **Description:** IATA 3-character alphanumeric aircraft designator code

- **Help text:** Aircraft Type (IATA Code)

aircraft_type_icao

- **Type:** Text
- **Name:** Aircraft Type (ICAO Code)
- **Display name:** -
- **Description:** ICAO 4-character alphanumeric aircraft designator code
- **Help text:** Aircraft Type (ICAO Code)

aircraft_seat_configuration

- **Type:** Text
- **Name:** Aircraft Seat Configuration
- **Display name:** Aircraft seating configuration
- **Description:** Aircraft seating configuration
- **Help text:** The number of seats assigned to the different classes in the aircraft cabin

aircraft_seat_configuration_total

- **Type:** Integer
- **Name:** Total number of seats in the aircraft configuration
- **Display name:** Total Aircraft seating capacity
- **Description:** Total Aircraft seating capacity
- **Help text:** The total number of seats in the aircraft

aircraft_seat_configuration_economy

- **Type:** Integer
- **Name:** number of seats in the aircraft configuration economy class
- **Display name:** Economy seating configuration
- **Description:** Economy seating configuration
- **Help text:** The number of seats assigned to the Economy class

aircraft_seat_configuration_premium_economy

- **Type:** Integer
- **Name:** number of seats in the aircraft configuration premium economy class
- **Display name:** Premium Economy seating configuration
- **Description:** Premium Economy seating configuration
- **Help text:** The number of seats assigned to the Premium Economy class

aircraft_seat_configuration_business

- **Type:** Integer
- **Name:** number of seats in the aircraft configuration business class
- **Display name:** Business seating configuration
- **Description:** Business seating configuration
- **Help text:** The number of seats assigned to the Business class

aircraft_seat_configuration_first

- **Type:** Integer
- **Name:** number of seats in the aircraft configuration first class
- **Display name:** First seating configuration
- **Description:** First class seating configuration
- **Help text:** The number of seats assigned to the First class

avg_economy_wtw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Economy WTW Kilograms CO2 Equivalent per Pax
- **Display name:** Lifecycle CO2 footprint per Economy class passenger. This assumes there are 3.827 kg of CO2eq per kg of fuel.
- **Description:** Average Well-to-Wake emissions measured in carbon dioxide equivalent (CO2eq) attributed to a passenger seated in Economy class. WTW emissions factor is 3.827
- **Help text:** Average lifecycle emissions (incl. fuel production) per passenger in Economy class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_premium_economy_wtw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Premium Economy WTW Kilograms CO2 Equivalent per Pax
- **Display name:** Lifecycle CO2 footprint per Premium Economy class passenger. This assumes there are 3.827 kg of CO2eq per kg of fuel.
- **Description:** Average Well-to-Wake emissions measured in carbon dioxide equivalent (CO2eq) attributed to a passenger seated in Premium Economy class. WTW emissions factor is 3.827
- **Help text:** Average lifecycle emissions (incl. fuel production) per passenger in Premium Economy class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_business_wtw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Business WTW Kilograms CO2 Equivalent per Pax
- **Display name:** Lifecycle CO2 footprint per Business class passenger. This assumes there are 3.827 kg of CO2eq per kg of fuel.
- **Description:** Average Well-to-Wake emissions measured in carbon dioxide equivalent (CO2eq) attributed to a passenger seated in Business class. WTW emissions factor is 3.827
- **Help text:** Average lifecycle emissions (incl. fuel production) per passenger in Business class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_first_wtw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg First WTW Kilograms CO2 Equivalent per Pax
- **Display name:** Lifecycle CO2 footprint per First class passenger. This assumes there are 3.827 kg of CO2eq per kg of fuel.
- **Description:** Average Well-to-Wake emissions measured in carbon dioxide equivalent (CO2eq) attributed to a passenger seated in First class. WTW emissions factor is 3.827
- **Help text:** Average lifecycle emissions (incl. fuel production) per passenger in First class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_wtw_cargo_kg_co2eq_per_ft

- **Type:** Float
- **Name:** Avg WTW Cargo Kilograms CO2 Equivalent per freight tonne
- **Display name:** Flight CO2 footprint per freight ton
- **Description:** Average Well-to-Wake emissions equivalent footprint per freight ton. WTW emissions factor is 3.827
- **Help text:** Total average lifecycle emissions per freight ton (incl. fuel production) in carbon dioxide equivalent (CO2eq).

avg_economy_ttw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Economy TTW Kilograms CO2 Equivalent per Pax
- **Display name:** Fuel-associated CO2 footprint per Economy class passenger. This assumes there are 3.182 kg of CO2eq per kg of fuel.
- **Description:** Average Economy Tank-To-Wake CO2 Equivalent Kilograms per passenger. TTW emissions factor is 3.182
- **Help text:** Average flight emissions per passenger in Economy class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_premium_economy_ttw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Premium Economy TTW Kilograms CO2 Equivalent per Pax
- **Display name:** Fuel-combustion (TTW) CO2 footprint per Premium Economy class passenger. This assumes there are 3.182 kg of CO2eq per kg of fuel.
- **Description:** Average Premium Economy Tank-To-Wake CO2 Equivalent Kilograms per passenger. TTW emissions factor is 3.182
- **Help text:** Average flight emissions per passenger in Premium Economy class, expressed in kilograms of carbon dioxide equivalent (CO2eq)

avg_business_ttw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg Business TTW Kilograms CO2 Equivalent per Pax

- **Display name:** Fuel-combustion (TTW) CO₂ footprint per Business class passenger. This assumes there are 3.182 kg of CO₂eq per kg of fuel.
- **Description:** Average Business Tank-To-Wake CO₂ Equivalent Kilograms per passenger. TTW emissions factor is 3.182
- **Help text:** Average flight emissions per passenger in Business class, expressed in kilograms of carbon dioxide equivalent (CO₂eq)

avg_first_ttw_kg_co2eq_per_pax

- **Type:** Float
- **Name:** Avg First TTW Kilograms CO₂ Equivalent per Pax
- **Display name:** Fuel-combustion (TTW) CO₂ footprint per First class passenger. This assumes there are 3.182 kg of CO₂eq per kg of fuel.
- **Description:** Average First Tank-To-Wake CO₂ Equivalent Kilograms per passenger. TTW emissions factor is 3.182
- **Help text:** Average flight emissions per passenger in First class, expressed in kilograms of carbon dioxide equivalent (CO₂eq)

avg_ttw_cargo_kg_co2eq_per_ft

- **Type:** Float
- **Name:** Avg TTW Cargo Kilograms CO₂ Equivalent Kilograms per freight tonne
- **Display name:** Fuel-combustion (TTW) CO₂ footprint per freight ton. This assumes there are 3.182 kg of CO₂eq per kg of fuel.
- **Description:** Average Tank-To-Wake Cargo CO₂ Equivalent Kilograms. TTW emissions factor is 3.182
- **Help text:** Average flight emissions per ton of freight, expressed in kilograms (kg) of carbon dioxide

distance_km

- **Type:** Float
- **Name:** Distance (km)
- **Display name:** Distance
- **Description:** Distance (km)
- **Help text:** The Great Circle Distance between the origin and destination in kilometers (km), without 95km distance adjustment.

avg_economy_wtw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Economy WTW Grams CO₂ Equivalent per Pax km
- **Display name:** Lifecycle CO₂ efficiency per cabin passenger
- **Description:** Average Economy Well-To-Wake CO₂ Equivalent Kilograms per passenger km
- **Help text:** Average lifecycle emissions per kilometer measured in grams of carbon dioxide equivalent (CO₂eq)

avg_premium_economy_wtw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Premium Economy WTW Grams CO₂ Equivalent per Pax km
- **Display name:** Lifecycle CO₂ efficiency per cabin passenger
- **Description:** Average Premium Economy Well-To-Wake CO₂ Equivalent Kilograms per passenger km
- **Help text:** see tooltip F28

avg_business_wtw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Business WTW Grams CO₂ Equivalent per Pax km
- **Display name:** Lifecycle CO₂ efficiency per cabin passenger
- **Description:** Average Business Well-To-Wake CO₂ Equivalent Kilograms per passenger km
- **Help text:** see tooltip F28

avg_first_wtw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg First WTW Grams CO₂ Equivalent per Pax km
- **Display name:** Lifecycle CO₂ efficiency per cabin passenger
- **Description:** Average First Well-To-Wake CO₂ Equivalent Kilograms per passenger km
- **Help text:** see tooltip F28

avg_wtw_cargo_g_co2eq_per_ftk

- **Type:** Float
- **Name:** Avg WTW Cargo Grams CO₂ Equivalent per Freight Tonne km

- **Display name:** Flight CO2 footprint per freight ton
- **Description:** Average Well-To-Wake CO2 Equivalent per freight tonne kilometer
- **Help text:** Average lifecycle emissions per freight ton kilometer measured in grams of carbon dioxide equivalent (CO2eq)

avg_economy_ttw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Economy TTW Grams CO2 Equivalent per Pax km
- **Display name:** Flight CO2 efficiency per cabin
- **Description:** Average Economy Tank-To-Wake CO2 Equivalent Kilograms per passenger km
- **Help text:** Average flight emissions attributed to a passenger on a per kilometer basis, in grams of carbon dioxide equivalent (CO2eq)

avg_premium_economy_ttw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Premium Economy TTW Grams CO2 Equivalent per Pax km
- **Display name:** Flight CO2 efficiency per cabin
- **Description:** Average Premium Economy Tank-To-Wake CO2 Equivalent Kilograms per passenger km
- **Help text:** see tooltip F33

avg_business_ttw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg Business TTW Grams CO2 Equivalent per Pax km
- **Display name:** Flight CO2 efficiency per cabin
- **Description:** Average Business Tank-To-Wake CO2 Equivalent Kilograms per passenger km
- **Help text:** see tooltip F33

avg_first_ttw_g_co2eq_per_pax_km

- **Type:** Float
- **Name:** Avg First TTW Grams CO2 Equivalent per Pax km
- **Display name:** Flight CO2 efficiency per cabin
- **Description:** Average First Tank-To-Wake CO2 Equivalent Kilograms per passenger km
- **Help text:** see tooltip F33

avg_ttw_cargo_g_co2eq_per_ftk

- **Type:** Float
- **Name:** Avg TTW Cargo Grams CO2 Equivalent per Freight Tonne km
- **Display name:** Flight CO2eq footprint per freight ton kilometer
- **Description:** The CO2 equivalent attributed to a ton of cargo on a per kilometer basis, in grams (g) of carbon dioxide. This assumes there are 3.182 kg of CO2 per kg of fuel.
- **Help text:** Average flight emissions attributed to a ton of cargo on a per kilometer basis

fuels_co2eq_reduction_percent

- **Type:** Float
- **Name:** Fuels CO2 equivalent reduction
- **Display name:** Fuel CO2eq reduction percentage
- **Description:** CO2 equivalent emissions saved due to reduced lifecycle emissions fuels
- **Help text:** The percentage of emission reduction resulting from the availability of lower carbon fuels at the departure airport

fuels_co2eq_discount_percent

- **Type:** Float
- **Name:** Fuels CO2 equivalent discount
- **Display name:** fuel CO2 discount percentage
- **Help text:** The discount percentage measures the difference in CO2 equivalent emissions between flying with regular jet fuel and flying with a mix of jet fuel and SAF. To calculate it, you subtract the CO2 equivalent emissions of the flight using the fuel mix from the CO2 equivalent emissions of the flight using regular jet fuel. Then, you divide this difference by the CO2 equivalent emissions of the flight using regular jet fuel. Another way to calculate this is by using the formula: 1 - reduction percentage.

fuels_co2eq_intensity

- **Type:** Float
- **Name:** Fuels CO2 equivalent intensity in gCO2 per MJ
- **Display name:** Fuels g CO2eq / MJ
- **Description:** Net CO2 equivalent emissions including reduced lifecycle emissions fuels
- **Help text:** The fuels emission intensity resulting from the availability of lower carbon fuels at the departure airport

co2eq_economy_benchmark

- **Type:** Float
- **Name:** Economy Class Benchmark
- **Display name:** Economy Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_premium_economy_benchmark

- **Type:** Float
- **Name:** Premium Economy Class Benchmark
- **Display name:** Premium Economy Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_business_benchmark

- **Type:** Float
- **Name:** Business Class Benchmark
- **Display name:** Business Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_first_benchmark

- **Type:** Float
- **Name:** First Class Benchmark
- **Display name:** First Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_economy_efficiency_benchmark

- **Type:** Float
- **Name:** Economy Class Benchmark
- **Display name:** Economy Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_premium_economy_efficiency_benchmark

- **Type:** Float
- **Name:** Premium Economy Class Benchmark
- **Display name:** Premium Economy Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_business_efficiency_benchmark

- **Type:** Float
- **Name:** Business Class Benchmark
- **Display name:** Business Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_first_efficiency_benchmark

- **Type:** Float
- **Name:** First Class Benchmark
- **Display name:** First Class Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_cargo_benchmark

- **Type:** Float
- **Name:** Cargo Benchmark
- **Display name:** Cargo Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_cargo_efficiency_benchmark

- **Type:** Float
- **Name:** Cargo Benchmark
- **Display name:** Cargo Emissions Benchmark
- **Description:** Benchmark based on observed typical performance on the route or on comparable routes
- **Help text:** Benchmark based on observed typical emissions performance on this route or on comparable routes

fuels_benchmark

- **Type:** Float
- **Name:** Fuel Emissions Benchmark
- **Display name:** Fuel Emissions Benchmark
- **Description:** Benchmark based on observed typical performance of fuels used on this route or on comparable routes, expressed in kg CO₂eq / MJ
- **Help text:** Benchmark based on observed typical emissions performance of fuels used on this route or on comparable routes

co2eq_economy_benchmark_comparison

- **Type:** Float
- **Name:** Economy Class Benchmark Comparison
- **Display name:** Economy Class Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_premium_economy_benchmark_comparison

- **Type:** Float
- **Name:** Premium Economy Class Benchmark Comparison
- **Display name:** Premium Economy Class Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_business_benchmark_comparison

- **Type:** Float
- **Name:** Business Class Benchmark Comparison
- **Display name:** Business Class Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_first_benchmark_comparison

- **Type:** Float
- **Name:** First Class Benchmark Comparison
- **Display name:** First Class Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_economy_efficiency_benchmark_comparison

- **Type:** Float
- **Name:** Economy Class Efficiency Benchmark Comparison
- **Display name:** Economy Class Emissions Efficiency Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_premium_efficiency_economy_benchmark_comparison

- **Type:** Float
- **Name:** Premium Economy Class Efficiency Benchmark Comparison
- **Display name:** Premium Economy Class Emissions Efficiency Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_business_efficiency_benchmark_comparison

- **Type:** Float
- **Name:** Business Class Efficiency Benchmark Comparison
- **Display name:** Business Class Emissions Efficiency Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_first_efficiency_benchmark_comparison

- **Type:** Float
- **Name:** First Class Efficiency Benchmark Comparison
- **Display name:** First Class Emissions Efficiency Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes per passenger kilometre, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_cargo_benchmark_comparison

- **Type:** Float
- **Name:** Cargo Benchmark Comparison
- **Display name:** Cargo Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

co2eq_cargo_efficiency_benchmark_comparison

- **Type:** Float
- **Name:** Cargo Benchmark Comparison
- **Display name:** Cargo Emissions Benchmark Comparison

- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes, expressed in %
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

fuels_benchmark_comparison

- **Type:** Float
- **Name:** Fuel Emissions Benchmark Comparison
- **Display name:** Fuel Emissions Benchmark Comparison
- **Description:** Comparison with a benchmark based on observed typical performance on the route or on comparable routes, expressed in % change
- **Help text:** Comparison with a benchmark based on observed typical emissions performance on this route or on comparable routes

issue_date

- **Type:** Date
- **Format:** YYYY-MM-DD
- **Name:** Issue Date
- **Display name:** Issue date
- **Description:** The date at which the label is made available by EASA
- **Help text:** The date at which the label is made available to the airline by EASA

valid_start_date

- **Type:** Date
- **Format:** YYYY-MM-DD
- **Name:** Valid Start Date
- **Display name:** Valid start date
- **Description:** The date from which the label must be displayed. Defined as the later of either the date of label issue (issue_date), or five months prior to the relevant season start (applicable_start_date)
- **Help text:** The date from which the label must be displayed.

valid_end_date

- **Type:** Date
- **Format:** YYYY-MM-DD
- **Name:** Valid End Date
- **Display name:** Valid end date
- **Description:** The date after which the label must not be displayed. Defined as the end of the applicable season (applicable_end_date).
- **Help text:** The date after which the label must not be displayed

applicable_start_date

- **Type:** Date
- **Format:** YYYY-MM-DD
- **Name:** Applicable Start Date
- **Display name:** Application start date
- **Description:** The label must be applied to the sale of relevant flights which depart after this date. Defined as the start date of a label's relevant IATA schedule season in a year.(example; the IATA summer season 2024 starts 31 March 2024)
- **Help text:** The start date of a label's relevant schedule season in a year.

applicable_end_date

- **Type:** Date
- **Format:** YYYY-MM-DD
- **Name:** Applicable End Date
- **Display name:** Application end date
- **Description:** The label is applied to the sale of flights which depart before this date. Defined as the end date of a label's relevant IATA schedule season in a year. (example: the IATA Summer 2024 ends 26 October 2024)
- **Help text:** The end date of a label's relevant schedule season in a year.

label_version

- **Type:** Text

- **Name:** Label Version
- **Display name:** Label version
- **Description:** Label Version
- **Help text:** The version of the specific issued label. Newer versions supersede previous versions, and only the latest version is valid.

model_version

- **Type:** Text
- **Name:** Model Version
- **Display name:** Label model version
- **Description:** Model Version
- **Help text:** The version of the system used for the generation of the label.

label_url

- **Type:** Text
- **Name:** Url to access a label's detail page, without the hostname
- **Display name:** -
- **Description:** Url to access a label's detail page, without the hostname
- **Help text:** -

season

- **Type:** Text
- **Display name:** Flight schedule
- **Help text:** Summer schedule - begins on the last Sunday of March and ends on the last Saturday of October
Winter schedule - begins on the last Sunday of October and ends on the last Saturday of March.

label_status

- **Type:** Text
- **Name:** Label Status
- **Display name:** Label status
- **Description:** Label Status
- **Help text:** Indicates the current validity of the label

fuel_method_b

- **Type:** Text
- **Name:** Fuel method B
- **Display name:** Fuel method B
- **Description:** Fuel method B
- **Help text:** Indicator of whether fuel consumptions estimated using method b as per the regulation, based on a simplified on the Breguet-Range equation, rather than by direct reporting.

cabin_and_freight_method_2

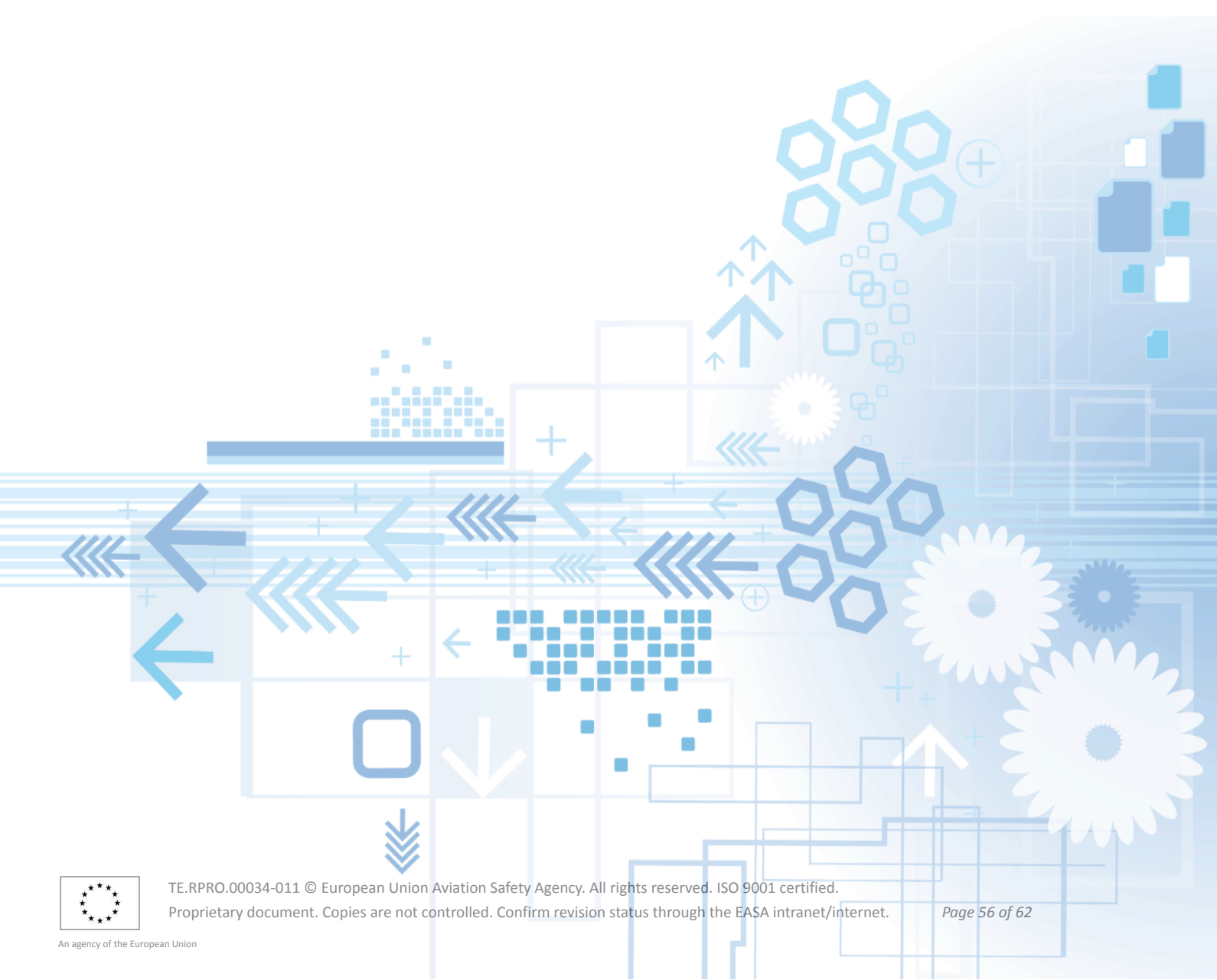
- **Type:** Text
- **Name:** Cabin and freight method 2
- **Display name:** Cabin and freight method 2
- **Description:** Cabin and freight method 2
- **Help text:** Indicator of whether passenger numbers and cargo are calculated based on performance on comparable routes and aircraft by the same operator, rather than by direct reporting.

calculation_methods_b_and_2

- **Type:** Bool
- **Name:** Calculation methods B and 2
- **Display name:** Calculation methods B and 2
- **Description:** Calculation methods B and 2
- **Help text:** Indicator of whether fuel consumption, passengers and cargo are calculated based on the Breguet-Range equation, and performance on comparable routes and aircraft by the same operator, rather than by direct reporting.

EU FLIGHT EMISSIONS LABEL (FEL)

Definitions



The definitions explain the key terms and phrases used in the FEL programme so that aircraft operators are clear on what these terms refer to.

Definitions

‘aircraft configuration’	The number of seats fitted to an aircraft cabin as assigned to each cabin class. In the IATA SSIM manual this is referred to as the seating configuration, whereas aircraft configuration is a 1–3 character airline-defined code which represents a specific version or layout of an aircraft within a single aircraft type. While the SSIM aircraft configuration code may be useful to determine different aircraft configurations, its lack of standardisation implies challenges with use in the labelling system.
‘aircraft operator certificate’ (‘aoc’)	‘air operator certificate (AOC)’ as defined in Article 2, point 8, of Regulation (EC) No 1008/2008 of the European Parliament and of the Council(5);
‘aircraft operator schedule’	A statement of the flights to be operated by an aircraft operator including details regarding the flight number, origin and destination, times of departure and arrival, the aircraft technology to be used and the aircraft configuration. Schedules are commonly communicated in a standardised SSIM data format.
‘aircraft operator’	Aircraft operator falling under the scope of Regulation (EU) 2023/2405;
‘aircraft’	An aircraft as defined in Article 3(28) of Regulation (EU) 2018/1139 and by an International Civil Aviation Organisation (ICAO) code;
‘airport’	means an ‘airport’ as defined in Article 2, point 1, of Directive 2009/12/EC of the European Parliament and of the Council(6). Any land area specifically adapted for the landing, taking-off and manoeuvring of aircraft, including the ancillary installations which these operations may involve for the requirements of aircraft traffic and services, including the installations needed to assist commercial air services and which is identified by the set of alphanumeric characters determined by ICAO and the international air transport association (IATA);
‘aviation fuel’	Fuel as defined in Article 3(6) of Regulation (EU) 2023/2405;
‘aviation fuels greenhouse gas scheme’	a scheme granting benefits to aircraft operators for reducing greenhouse gas emissions from aviation fuels;
‘aviation fuels life cycle emissions’	carbon dioxide equivalent emissions of aviation fuels that include carbon dioxide equivalent emissions of energy production, transport, distribution and use on board, including during combustion, and which represent the sum of carbon dioxide (CO ₂), methane (CH ₄), and of nitrous oxide (N ₂ O) emitted, calculated in accordance with point C of Annex V to Directive (EU) 2018/2001 and, where applicable, other relevant Union law and international standards, and data and methodologies which reflect the latest scientific developments developed under the ICAO framework, and measured in grammes of carbon dioxide equivalent per megajoule;
‘block aviation fuel’	the amount of aviation fuels consumed by an aircraft when operating a flight, from its initial movement from its parking place at the departure airport until it comes to a complete stop at the parking place at the arrival airport, measured in tonnes;
‘block time’	the total time elapsed from the aircraft’s initial movement from its parking place at the departure airport until it comes to a complete stop at the parking place at the arrival airport, measured in minutes;
‘cabin class’ (‘class’)	the distinct service and accommodation provided to passengers which is characterised by the specific configuration of the seats in the cabin, amenities, and fare structures;

‘cabin emissions per passenger-kilometre’	the result of dividing the estimated cabin emissions per passenger by the distance of the operated route, measured in grammes of carbon dioxide equivalent per passenger-kilometre;
‘cabin emissions per passenger’	the result of dividing the cabin emissions by the average number of passengers on the flights in the previous corresponding scheduling period, measured in kilogrammes of carbon dioxide equivalent per passenger;
‘cabin emissions’	the proportion of flight emissions attributed to the cabin, measured in tonnes of carbon dioxide equivalent;
‘carbon dioxide equivalent’ (‘co2eq’)	means the unit of measurement comparing the radiative force of a greenhouse gas to that of carbon dioxide (CO ₂);
‘cargo-only flight’	A scheduled or non-scheduled air service performed by aircraft carrying revenue loads other than revenue passengers, excluding flights carrying one or more revenue passengers and flights listed in published timetables as open to passengers.
‘conventional aviation fuel’ (‘CAF’)	‘Conventional aviation fuels’ as defined in Article 3(14) of Regulation (EU) 2023/2405;
‘digital reporting tool’	a digital platform developed and managed by the Agency as the unique point of contact with aircraft operators for the reporting of data and for the distribution of labels;
‘direct flight’	A ‘flight’ operated between two airports without any intermediate stops and operated with the same call sign;
‘expired labels’	labels that are past their validity period;
‘flight emissions’	the estimated aviation fuels life cycle emissions of a flight operated by an aircraft operator which are made up of cabin emissions and freight emissions, measured in tonnes of carbon dioxide equivalent;
‘flight emissions label’	(FEL) A label applied to a given flight in an Aircraft Operator Schedule based on the combination of Aircraft Operator, Route, Aircraft and Aircraft Configuration. A label may differ between summer and winter seasons to reflect differences in seasonal traffic demand and operations.
‘flight label record’	the unique records of data issued by easa for the purposes of the flight emissions label. As the FEL must be machine readable and apply to multiple future seasons, a unique label record is created for each season. As such, each flight emissions label may have up to five flight emissions label records.
‘flight’	An air transport operation being as it were a unit of such transport, performed by an aircraft operator and which can be made up of more than one ‘direct flight’.
‘freight emissions per tonne-kilometre’	the product of dividing the estimated freight emissions per tonne by the distance of the operated route, measured in grammes of carbon dioxide equivalent per tonne-kilometre;
‘freight emissions per tonne’	the product of dividing the freight emissions by the average mass of freight carried on the aircraft in the previous corresponding scheduling period, measured in kilogrammes of carbon dioxide equivalent per tonne of freight;
‘freight emissions’	the proportion of flight emissions attributed to freight, measured in tonnes of carbon dioxide equivalent;
‘freight’	goods, materials, and parcels other than passenger luggage transported on board an aircraft, measured in tonnes;
‘fuel batch purchases’	a term used to describe purchases of fuels with specific known lifecycle emissions. While for the purposes of labelling these are commonly referred to as Sustainable Aviation Fuels, or ‘SAF’. As the label accepts eligible aviation fuels under CORSIA ⁴ ,

⁴ ICAO CORSIA Sustainability Criteria and Annex 16, Volume IV

‘greenhouse gas scheme’	ReFuelEU Aviation ⁵ , and EU ETS ⁶
‘indirect flight’	The term SAF presents challenges in a unified definition. As such the term fuel batch purchases is used in lieu of a unified definition of SAF or eligible aviation fuels.
‘information sheet’	‘Greenhouse gas scheme’ as defined in Article 3(27) of Regulation (EU) 2023/2405;
‘label’	A ‘flight’ that which is made up of more than one direct flight, which connects two airports with an intermediate stop, in which passengers must disembark the aircraft performing the first direct flight to enter another aircraft performing the second flight, operated with different call signs;
‘label calculation’	A standard document containing the estimated flight emissions, including background information to the estimation and its expiry date of validity;
‘label logotype’	Graphic diagram, printed or electronic, combining ‘valid flight emissions’, the ‘label logotype’ and the ‘validity period’ in accordance with Regulation 2024/3170 Annex III;
‘label production’	The label production process of processing reported data to produce label scores in accordance with methods outlined in the FEL calculation guide.
‘label scope’	The image defined in Point 1 of Annex III of Regulation 2024/3170 that shall represent the verification of the flight emissions;
‘label status’	The process by which EASA processes operator reported data to produce flight emissions labels. The process involves two stages - label calculation and post calculation validation (PCV)
‘online platform’	The scope of the EU Flight Emissions Label (FEL) includes emissions from flights departing from or arriving at a Union Airport as defined in Article 3(1) of Commission Implementing Regulation 2024/3170. While label holder status is voluntary, should a label holder participate it must display the label scores and logotype for all of the flights in scope. A label holder may display emissions for flights which are not in scope at the point of purchase alongside flights which are in scope provided the emissions are calculated by EASA in alignment with the data and methods used for the FEL. These emission estimates cannot be displayed with the FEL logotype and are not to be considered FEL labels.
‘passenger’ (‘pax’)	An indicator or whether a label is valid and must be displayed, or any other status and must not be displayed.
‘point of sale’	A digital service owned by an aircraft operator or that offers flights of that aircraft operator for purchase or comparison and that stores and makes information available to the general public;
‘post calculation validation (pcv)’	a person occupying a seat within the cabin area of an aircraft at the moment of departure of an aircraft, and who is travelling aboard an aircraft for the purpose of reaching a specific destination;
‘revoked label’	a physical location or online platform service owned by an aircraft operator, or which offers the flights of an aircraft operator, where an aircraft operator, or any person authorised to represent that aircraft operator, stores and makes information available to the public about flights operated by that aircraft operator for purchase or comparison purposes.
‘route’	The label production process after label calculation. The result is automatically analysed to identify data outliers. Outliers and new routes or new aircraft types on routes are then estimated. The results of this process are reviewed by EASA before issuing.
	labels that have been permanently cancelled by the Agency are required to be removed from communications within 15 days and could be replaced by a newly issued flight emission label;
	‘Route’ as defined in Article 3(5) of Regulation (EU) 2023/2405 measured using the Great Circle Method in kilometres (‘km’) connecting a departure and arrival airport both defined by International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA) codes;

⁵ ReFuelEU Aviation Regulation (EU 2023/2405)

⁶ Directive (EU) 2018/2001 (RED II)

'scheduling period'	'scheduling period' as defined in Article 2, point (d), of Council Regulation (EEC) No 95/93;
'seat'	A seat fitted to an aircraft on which cabin passengers may be accommodated for the duration of a journey.
'seat'	a seat fitted to an aircraft on which a passenger may be accommodated for the duration of a journey;
'seating area'	the area allocated for each seat for each passenger and for each cabin class, measured in square metres;
'summer season'	The aircraft operator scheduling period from the last Sunday of March of a year until the last Saturday of October of that year;
'surveillance audit'	Any audit of the correct display of flight emissions and labels carried out by the Agency, to confirm compliance with the display obligation or to verify the veracity of any information reported to the Agency;
'terminated label'	Flight emissions that have been voluntarily cancelled by an aircraft operator during their validity;
'union airport'	'Union airport' falling under the scope of Regulation (EU) 2023/2405;
'valid label'	'labels' which must be displayed, defined by the date of display being within the validity period and the 'label status' as valid;
'validity period'	The period during which a label is valid and must be displayed, defined by a start date as of the latest of the date of issuance or valid start date, until the earliest of the end of the applicable scheduling season for which they are issued in accordance with Annex III of Regulation (EU) 2024/3170, or a valid end date defined by EASA due to label withdraw, revocation, or replacement;
'winter season'	The aircraft operator scheduling period from the last Sunday of October of a year until the last Saturday of March of the following year;



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