Third-party Verification

Requirements for verification of fuel consumption & transport activity

Version 3.0

June 2026

KATALIST

Contents

1. Introduction

Katalist was developed by RMI and the Fonden Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, two non-profit organizations, with the aim of accelerating shipping decarbonization and supporting reductions in scope 3 emissions across industries. To mobilize efforts in a timely and effective manner, Katalist is intended to provide reliable data on emission-related claims that build trust among parties through the transport chain.

This document provides context on the Katalist Registry and describes verification activities for voyages that shipping companies want to book in the Registry. Such verification activities should be conducted by third-party organizations that are independent of the Registry and have the expertise to perform this type of verification. These organizations shall determine, with reasonable assurance, to what extent information provided by shipping companies is accurate and free from misreporting or discrepancies relative to expected values or industry averages for similar voyages.

2. Principles

a) Impartiality: The verifier shall design and execute the verification plan so that it is objective and does not introduce bias[1].

b) Evidence-based approach: The verifier shall ensure verification activities employ a rational method for reaching reliable and reproducible verification conclusions and are based on sufficient and appropriate evidence[2].

c) Documentation: The verifier shall document the verification activities and ensure they establish the basis for the conclusion and conformity with the criteria[3].

d) Confidentiality and information security: The verifier shall exercise discretion in the use and protection of information acquired in the course of its duties. This includes the proper handling of sensitive or confidential information[4].

3. Definitions

3.1. Registry-related definitions

See the Katalist Glossary.

[1] Adapted from ISO 14064-3 (4.2).
[2] Adapted from ISO 14064-3 (4.3).
[3] Adapted from ISO 14064-3 (4.5).
[4] Adapted from ISO 19011 (4d).

3.2. Verification-related definitions

a) Verifier: A legal entity with a proven capacity to perform verification of data related to ocean transport services under statutory requirements (i.e., the EU Monitoring, Reporting, and Verification Directive - EU MRV). In this context, proven capacity is defined as having received attestation by a national accreditation body or other relevant designated body, and that the entity meets the requirements of harmonized standards such as the ISO/IEC 17029:2019.

b) Criteria: Set of requirements used as a reference against which evidence collected and data provided by shipping companies are compared.

c) Independent review: A process aiming to evaluate if the verification process has been conducted in alignment with the requirements established in this document.

d) Inherent Risk: It refers to the level of risk that exists in the shipping company's data collecting and reporting processes without considering any internal control or risk mitigation intervention.

e) Control Risk: It refers to the risk that control activities do not detect or prevent material discrepancies and misstatements in the information required as part of the booking process in the Katalist Registry.

f) Detection Risk: It refers to the risk of a verifier not detecting a material discrepancy or a condition that could affect data accuracy and integrity.

g) Control activity: It refers to any action implemented by shipping companies to mitigate their inherent risk.

h) Level of assurance: Degree of confidence in the statement provided by the verifier.

i) Reasonable assurance: It is the level of assurance where the nature and extent of the verification activities have been designed to provide a high but not absolute level of assurance on the data provided by shipping companies.

j) Reporting period: It will vary depending on the voyage(s) selected for verification. For example, the reporting period could be six months of a calendar year in which a vessel completed three (3) voyages. Although the verification can be done for the three voyages included in the reporting period, the shipping company must complete one Data Questionnaire for each of the voyages and provide the corresponding supporting documentation.

k) Statement of Conformity: Electronic document prepared and signed by the verifier that states whether the data and supporting documentation provided by the shipping company are satisfactory or unsatisfactory in meeting Katalist's requirements.

l) Verification: Process for evaluating information in the Data Questionnaire and other required documentation to determine if it is materially correct and conforms to the criteria defined in this document.

m) Emission saving credits and bonuses: For purposes of the Registry, GHG emissions savings credits or bonuses refer to any downward adjustment embedded in a RED-certified lifecycle GHG emission factor displayed in the SMF's Proof of Sustainability (PoS), and calculated according to the relevant RED-recognized certification scheme, that is not solely attributable to the fuel's supply chain and combustion profiles. Because these adjustments may reflect consequential or intervention-based accounting elements rather than purely attributional fuel-pathway emissions, shipping companies shall disclose them separately to improve transparency regarding their contribution to the certified emission factor and the resulting emissions savings recorded in Katalist (see Annex 2). This distinction is consistent with the treatment of avoided emissions and market-based instruments under the GHG Protocol, SBTi Net-Zero Standard, and the AIM Platform Standard and Guidance V1.0.[5]

4. General requirements

4.1 Verification scope

The verifier shall define the scope considering the vessel and voyage's characteristics, the reporting period, and supporting documentation provided by the shipping company. The verifier shall state this scope in the verification report and the Statement of Conformity, clearly identifying the vessel and voyage(s) included. The scope shall also include the minimum documentation required in Annex 2 and consider the minimum verification criteria and additional requirements established in the Registry Manual.

The scope does not include activities aiming to verify the identity and assess the risk of Registry Users (e.g., KYB/KYC). Likewise, the scope does not include or replace the document validation performed by the Registry Administrator to determine if the requirements for booking, transferring, and retiring an Environmental Attribute Certificate (EAC), established in the Registry Manual, were met.

[5] EU RED II (Directive (EU) 2018/2001) and its amendment under RED III (Directive (EU) 2023/2413) establish attributional life-cycle assessment (LCA) as the primary framework for determining compliance with sustainability and greenhouse gas (GHG) reduction criteria for biomass and renewable fuels. Accordingly, attributional LCA is the default basis for calculating the SMF emission factor and is thus used in Katalist. However, EU RED allows, under specific circumstances, the inclusion of certain consequential style elements or methodological adjustments that reduce the reported Well-to-Tank (WTT). For example, credits or bonuses related to biomass from restored degraded land or from verified improved agricultural/manure management.

4.2 Objectives

The overall goal of the verification activities is to ensure the accuracy and reliability of data submitted by shipping companies. The specific goals of the verification activities are the following:

a) evaluate the completeness and sufficiency of the data provided by shipping companies according to Annex 2;

b) compare data provided by shipping companies in the Data Questionnaire with third-party data sources and proprietary models;

c) determine with reasonable assurance if the data accurately reflects the vessel characteristics and conditions of the voyage to be booked in the Registry;

d) identify potential misstatements.

4.3 Level of materiality

The verifier, in order to provide a reasonable assurance level in the Statement of Conformity, shall determine whether the discrepancy is material to the calculations and transactions performed on the Registry. That materiality level is set at 5% in line with the current EU MRV regulatory requirements. If a discrepancy exceeds 5% for any data point, the verifier shall request additional information to determine the nature and impact of the discrepancy.

4.4 Criteria

The verifier shall define and document the criteria to be used during the verification according to the requirements in Annex 3. The verifier can add any criteria relevant to achieving the verification objectives.

5 Preparing verification

5.1 Team selection

The verifier shall select personnel with the necessary qualifications to perform the verification activities effectively. The verifier shall also ensure that there is no conflict of interest between the personnel and the shipping company's object of verification. The verifier shall identify and monitor such qualifications and potential conflicts of interest according to ISO/IEC 17029:2019 as part of its accreditation.

5.2 Documented information

The verifier shall document, implement, and maintain verification procedures to perform the activities described in this document. The verifier shall maintain documented information about the following:

a) verification plan;

b) tools to perform verification activities (e.g., third-party data sources, analytical models to estimate fuel consumption, and sampling guidelines);

c) who performed the verification activities and when they were performed;

d) communication with the shipping company on material misstatements;

e) the conclusions reached by the verification team;

f) verification report and Statement of Conformity.

5.3 Perform strategic analysis

The verifier shall perform a strategic analysis to understand the activities and complexity of the shipping company's data monitoring system, and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used as input for the risk assessment (section 5.4). The strategic analysis shall consider:

a) relevant sector information;

b) the nature of operations of the shipping company (e.g., vessel type and size);

c) the criteria, including applicable regulatory requirements;

d) the likely accuracy and completeness of the data inputs for the Data Questionnaire;

e) the reporting period for voyage data;

f) appropriateness of the shipping company's calculation methods for fuel consumption data, distance, and total cargo;

g) sources of information for voyage data;

h) data management information system and controls;

i) the results of previous verification as part of Katalist;

j) the results of statutory verification (e.g., FuelEU, EU MRV, IMO's SEEMP, and IMO's CII calculation);

k) other relevant information.

5.4 Perform risk assessment of verification

The verifier shall assess the inherent risks, control risks, and detection risks to determine the nature and extent of verification activities. The verifier shall identify qualitative matters that may be material (e.g., the shipping company's document management system and the shipping company's

history of compliance with regulations related to the Registry's data requirements). The risk assessment shall consider the following:

a) the likelihood of misstatements in the data and documentation provided according to Annex 2;

b) the likelihood of misstatements in the allocation of sustainable marine fuel consumption to each voyage;

c) any changes from prior voyage data submission;

d) any significant regulatory changes that might impact voyage and emissions reporting (e.g., changes in the definition of voyage, in GHG emissions included, or in methods to determine fuel consumption);

e) selection and quality of data sources;

f) the level of detail of the available documentation;

g) the nature and complexity of data collection methods and the process for transferring the data to the Data Questionnaire, and any other data collection tool defined by the Katalist Documents;

h) any significant estimates and assumptions on which the data reported is based;

i) the characteristics of the data management information system and controls;

j) The use of in-house or independent registries or mechanism to sell or transfer environmental attributes (e.g., emission saving certificates) to third parties, including the shipping company's customers.

k) any controls used to monitor and report required data.

In addition, the verifier shall identify and assess activities and data with higher inherent risk (e.g., data collection, completion of data questionnaire, and fuel consumption allocation). Furthermore, the verifier shall identify and assess any technology and operational factors that could impact data integrity, completeness, accuracy, and consistency across vessels and voyages in one or more submissions on the Katalist Registry.

The verifier shall consider the following factors that could increase the detection risk:

i. The verifier does not have any previous verification record or performance information for the vessel included in the verification scope ('in-scope vessel');

ii. The verifier has identified systematic misreporting issues from the in-scope vessel in statutory verification reports or statements of compliance (e.g., FuelEU and EU MRV);

iii. The in-scope vessel has not implemented a monitoring plan following the EU MRV regulation;

iv. The voyage or voyages included in the scope are outside the scope of the EU MRV regulation.

5.5 Design verification activities

The verifier shall design activities to collect sufficient and appropriate evidence upon which to base the verification conclusion at a reasonable level of assurance. The verifier shall consider inherent risks and detection risks in designing such activities.

In the design of verification activities, the verifier shall consider the following:

a) processes for collecting, processing, consolidating, and reporting data and supporting documentation required in Annex 2;

b) data source of fuel consumption described in the internal monitoring methods, for example, using the methods and requirements defined by the EU MRV (i.e., manual tank soundings, flow meters on fuel consumers, manual recording, or auto-logged recording of fuel consumption numbers);

c) systems and processes that ensure the validity and accuracy of the data and supporting documentation;

d) the results of relevant assessments and statutory requirements (e.g., verification of monitoring plan and Ship Energy Efficiency Management Plan - SEEMP);

e) the results of previous verification of data submitted to Katalist Registry.

5.6 Develop a verification plan

The verifier shall develop a verification plan considering the results of the strategic analysis, risk assessments, and the defined verification activities. The plan shall include the following:

a) the scope and objectives;

b) identification of the verification team;

c) schedule of verification activities;

d) verification criteria.

The verifier shall communicate the verification plan to the shipping company with enough time in advance.

6 Conducting verification

6.1 Perform assessment of the monitoring and reporting system

The verifier shall assess the shipping company's documented information on their methods and tools for monitoring the data required in Annex 2. During the assessment, the verifier shall verify that control activities (e.g., data quality procedures, data flows, internal audits, and technology supporting the monitoring and reporting system) are appropriately documented, implemented, and maintained. Furthermore, the verifier shall determine the extent to which control activities are effective at mitigating risks that may impact data integrity, completeness, accuracy, and consistency across vessels and voyages in scope.

The verifier may assess the monitoring methods and tools implemented by the shipping company and the effectiveness of the control activities through documents used for compliance purposes, such as the Monitoring Plan (Regulation (EU) 2015/757 and (EU) 2024/2031) or the Ship Energy Efficiency Management Plan (Regulation MEPC 346(78)), if applicable. In doing so, the verifier shall assess to what extent the activities and tools described in the plan ensure that data requirements in Annex 2, and that any required calculation or transformation, are neither systematically nor knowingly inaccurate.

If the shipping company uses in-house or independent registries to sell or transfer environmental attributes , the verifier shall evaluate the control activities to mitigate the risk of submitting or recording of the same sustainable marine fuel's attributes in two separate registries (i.e., double counting). Likewise, if the shipping company uses mechanism to share or transfer the right to voyage's emission profiles or the consumed fuel's environmental attributes for regulatory purposes (e.g., pooling mechanism), the verifier shall evaluate the corresponding control activities and, if available, the appropriate records, to mitigate double counting.

If there is a potential inaccuracy or missing data, the verifier shall verify that activities to identify and reduce any source of inaccuracies are implemented. In addition, the verifier shall verify that activities to complete the missing data were performed and do not lead to material misstatements.

In addition, the verifier shall assess the reliability of the process to collect information required in Annex 2, especially,

a) attribution of sustainable marine fuel consumption to the voyage in scope, and

b) report on fuel consumption (including pilot fuel) and distance data for at sea and at berth or only at sea (if applicable).

6.2 Perform verification of fuel consumption and transport work

The verifier shall perform verification activities according to the verification plan to determine, with reasonable assurance, that the data reported is complete and accurate and reflects the characteristics of the vessel and the voyage (e.g., at sea and at berth or only at sea). In addition,

such activities shall determine whether data trails and supporting documentation exist for data reported in the Data Questionnaire. The verification activities include:

a) detailed testing, including tracing the data back to the primary data source;

b) cross-checking the data with external data sources, including vessel-tracking data;

c) performing reconciliations with data reported in the Data Questionnaire against shipping company's data collection and monitoring systems or statutory reporting;

d) carrying out recalculations;

e) comparing reported values in the Data Questionnaire with supporting documentation;

f) Any other activities required to achieve the verification objectives.

The verifier shall consider the criteria in Annex 3 to perform verification activities and identify discrepancies or potential misstatements.

Where material discrepancies are found, the verifier must carry out further analyses. As part of this assessment, the verifier may require vessel records from previous statutory reporting periods to determine if there are additional risks or evidence of potential misreporting that led to the discrepancy. In addition, the verifier may also use historical data from non-statutory data sources about the in-scope voyage or a similar route to the in-scope vessel.

To perform recalculations or to support its conclusion, the verifier may request additional fuel consumption data from the shipping company that better reflects the operational nuances of the fuel types and engine types used. The additional data may include consumption by engine type and pilot fuel consumption, with the corresponding emission intensities reported. Although Katalist does not establish a threshold for the amount of the pilot fuel that can be used, the verifier shall require additional information or carry out further analysis if the pilot fuel fraction is significantly above contractual requirements between shipping companies and their customers.

6.3 Perform verification of the emission intensity calculation for sustainable marine fuels

The verifier shall check that the Well-to-Wake (WTW) emission intensity of sustainable marine fuels reported in the Data Questionnaire corresponds to the documentation provided, calculation methods described in the Monitoring Plan or similar document, and additional requirements in the Katalist Manual.

The Well-to-Wake (WTW) emissions are disaggregated into the Well-to-Tank (WTT) emissions generated during the production and transportation of fuel and the Tank-to-Wake (TTW) emissions generated during the fuel combustion. The verifier shall consider the guidelines in Annex IX of the Katalist Manual, which establish the parameters and calculations for determining WTT and TTW emissions. Verifier may use the Excel tool provided by Katalist Registry to determine, based on the

Proof of Sustainability and the consumption per engine type, the emission intensity that reflects the attributes of the fuel used during the voyage in scope (including engine slip).

In addition, if the emission factor for sustainable marine fuel includes GHG emission savings credits and bonuses, the verifier shall verify that these were properly accounted for in the calculation of the WTW emissions reported in the Data Questionnaire. Verifier shall include in the Statement of Conformity the WTW emission factor, including and excluding such credits and bonuses that meet the RED II/III eligibility criteria. .

In case of material discrepancies, the verifier shall review if the monitoring plan provided considers different calculation methods (e.g., different Global Warming Potential, estimated engine slip from the engine's manufacturer, or the use of actual values from measurement instruments onboard). Furthermore, the verifier shall request any clarification to determine the cause of the discrepancy.

6.4 Perform verification of fuel volumes that meet the additionality requirements

The verifier shall check the information reported in the section Additionality of the Data Questionnaire against the documentation provided by the shipping company (e.g., FuelEU Database record, FuelEU Document of Compliance, etc.) and any declaration in the Monitoring Plan regarding the participation in a pooling mechanism of the vessel in scope.

To satisfy contractual obligations with their clients, shipping companies may request the verifier to incorporate supplementary criteria, calculations, or additionality requirements. These shall not contravene or replace Katalist's requirements, In addition, these shall be described in the verification report and referenced in the Statement of Conformity.

6.5 Sufficient evidence and communication about issues during verification

If the verifier determines that there is insufficient information to achieve the verification's objective, the verifier shall request additional information. If, according to the verifier's judgment, the shipping company does not respond appropriately within a reasonable period, the verifier can disclaim the issuance of the verification report and Statement of Conformity.

If the verifier identifies potential risks that may negatively impact the integrity or accuracy of the data provided, it shall inform the shipping company to determine the correction and corrective actions required to amend the discrepancy or misstatement. The shipping company shall implement the correction and corrective actions within the following 30 calendar days after discrepancies or misstatements are communicated. If material misstatements are not corrected or clearly and satisfactorily explained, they shall be included in the Statement of Conformity.

6.6 Determining verification conclusions

The verification conclusion shall address the following issues:

a) whether information in the Data Questionnaire and its supporting documentation conform to the verification criteria with a reasonable level of assurance;

b) whether the volume of sustainable marine fuel reported complies with the additionality requirements defined in the Registry Manual;

c) whether the shipping company has the right to use and transfer the environmental attributes of the sustainable marine fuel used in the in-scope voyage;

d) whether the emission factors included in the Data Questionnaire accurately reflect the documentation provided (i.e., Proof of Sustainability), the vessel's characteristics (e.g., engine type), and CO2 and non-CO2 emissions generated during fuel combustion (e.g., engine slip).

e) any major misstatement or qualitative issue that may negatively impact the integrity or accuracy of the data provided, if applicable;

f) corrections and corrective actions agreed with shipping companies, if applicable;

g) Where applicable, recommendations for improvement.

6.7 Verification report

The verifier shall consolidate the verification conclusions and relevant information of the verification activities in a report that includes:

a) identification of shipping company and vessel (i.e., IMO number);

b) reporting period;

c) list of voyages included in the reporting period;

d) reference to documentation reviewed (e.g., bunker delivery notes, logbooks, monitoring plans, SEEMPs);

e) verification criteria;

f) verification activities (including the sampling characteristics), if applicable;

g) verification team;

h) verification conclusions;

i) date of activities (including virtual or physical site visits, if applicable);

6.8 Statement of Conformity

The verifier shall issue a statement that states whether the data and supporting documentation provided by the shipping company are satisfactory or unsatisfactory in meeting the requirements of

this document and its annexes. The statement shall include at least the following information about each voyage in scope:

a) vessel's IMO number;

b) ports of call and dates for initial and last legs;

c) type of fuels used during voyage, including conventional fuel and sustainable marine fuel;

d) total fuel consumption per type of fuel;

e) amount of sustainable marine fuel that complies with the additionality requirements defined in the Registry Manual and whose environmental attributes (i.e., emission savings) the shipping company has the right to use and transfer;

f) distance traveled;

g) total cargo carried;

h) WTT and TTW emission factors for each sustainable marine fuel used in the voyage(s) in scope;

i) WTT and TTW emission factors without including GHG emission saving credits and bonuses (e.g., GHG emissions savings from soil carbon accumulation and use of manure for biogas/biomethane production).

j) material misstatements that were not corrected before the statement was issued;

k) point of contact for checking the veracity of the statement and for further clarification as part of the Registry Administrator's validation during the booking process.

The verifier shall have a procedure to receive, process, and settle claims (if applicable) from shipping companies on data, observations, or conclusions included in the Statement of Conformity.

6.9 Independent review

The verifier shall designate an independent reviewer who must not be part of the verification team but who has the appropriate authority to review documented information and the draft conclusions of the verification. The independent reviewer shall have demonstrated competencies to perform the review and ensure that the verification scope is covered, and the verification objectives are achieved. The verifier shall have a procedure for defining and evaluating the competencies of a person selected as an independent reviewer.

In addition, the verifier shall have a procedure to settle any major difference in professional judgment regarding the conclusion from the verification activities and how these were performed.

6.10 Distribution of verification report

Unless required by law, the verification team shall not distribute the verification report or any other evidence collected during the verification to any other party, without the explicit approval of shipping company.

7 Ex-post verification

In case the verifier is aware or informed about major nonconformities or misstatements found in annual statutory verification (i.e., EU MRV, IMO's DCS, and SEEMP), the verifier shall communicate them to the registry administrator. The verifier shall include in the communication to what extent this finding may impact the verification's conclusions and, thus, what is stated in the Statement of Conformity. This should be considered as part of the risk assessment of future verifications performed with regard to the shipping company and vessel.

In case a Registry User submits a claim against the veracity of information related to an Environmental Attribute Certificate (EAC), the registry administrator shall request to the verifier a copy of the documented information related to the voyage(s) included in the claim. The registry administrator shall review the documented information according to this document and the additional guidelines provided. Likewise, if there is evidence of suspected fraudulent practices, the registry administrator shall also request the relevant documented information and require an ad-hoc verification of the shipping company's data and supporting documentation. Registry administrator shall ensure that documented information provided by verifiers is treated as confidential and shall not be linked in any way to an EAC, account, or user in the Registry. The conclusion of the evaluation of the documented information shall be documented to support the change in the status of the EAC and accounts included in the claim.

8 Conflict of interest

The verifier shall document, implement, and maintain procedures or controls to safeguard the objectivity, independence, and impartiality of the verification activities. These controls shall ensure, for example, that personnel involved in verification activities and independent review do not have any conflict of interest that could affect the verification's results.

Furthermore, the verifier shall ensure that activities performed by its personnel do not affect the confidentiality, objectivity, independence, and impartiality of the verification. For example, the verifier shall ensure that itself and the personnel involved in the verification activities have not provided technical assistance or consulting services in developing monitoring plans or drafting emissions reports for the shipping company.

9 Version and Effective Period

Version	Description of Changes	Date

1.0	Adoption of the document.	November 14, 2024
1.1	Small changes in the text throughout the document, including the addition of a clarification in clause 6.4 and Annexes II and III regarding fuel's attributes ownership and additionality requirements.	December 20, 2024
1.2	Small changes in text throughout the document.	February 14, 2025
2.0	Data points in the Data Questionnaire were updated (Annex 2). Also, this version introduces clarification on the verification of WTW emissions calculations, additionality criteria, and the use of pilot fuels.	January 12, 2026
3.0	Data points in the Data Questionnaire were updated (Annex 2). Clarification credits and bonuses impacting WTW emission intensity calculations were added. Changes in nomenclature were applied based on the Manual's new version.	June 04, 2026

Annex I – Introduction to Katalist

The Katalist Registry is grounded on the definition of Book and Claim chain of custody models, “in which the administrative record flow is not necessarily connected to the physical flow of material or product throughout the supply chain” (ISO 22095). This model has been successfully applied in electricity markets for decades and, more recently, in the aviation industry, enabling companies eager to reduce indirect emissions to channel green premium to product and service providers adopting zero and low-emission processes or inputs.

Katalist allows a shipping company to use sustainable marine fuels during a voyage and book the fuel’s environmental attributes on the Registry. Fuel and voyage information is transformed into Environmental Attribute Certificates (EAC) that can be claimed by freight forwarders and cargo owners without access to the transport chain using sustainable marine fuels . EACs represent the well-to-wake emissions for 1 terajoule of energy (TJ) used on a voyage and include key data points to determine emission intensity and support claiming the corresponding emission savings.

Katalist Registry works for all shipping segments (e.g., containership, tankers, Ro-Ro, etc.) and it is fuel technology agnostic. Furthermore, the Katalist Registry targets low-emission transport services, which means that it should capture both the fuel’s environmental attributes and the condition in which it was burnt (i.e., voyage and vessel characteristics). Such characteristics and conditions determine key factors such as the amount of energy consumed, the emission factor and intensity represented by each EAC, as well as who can book, hold, transfer, or retire such a EAC.

The Registry relies on actual data and third-party verification to enable transparency on emission-related claims through the value chain. This verification aims to determine, with reasonable assurance, whether the data reported in the Data Questionnaire is complete and accurate and reflects the characteristics of the vessel and the voyage. The latest version of the documents referenced here can be found in the documentation section of Katalist website. In case of any discrepancies or doubts on how a principle, requirement, or criteria should be interpreted or applied, please reach out info@katalist.org.

Annex 2 - Minimum data requirements

A1. Data Questionnaire

The Data Questionnaire consolidates the data and supporting documents required to book a voyage in accordance with the rules defined in the Registry Manual. The Data Questionnaire was designed considering current regulatory requirements at the IMO and EU level to reduce administrative burden and facilitate harmonization of definitions and requirements. Therefore, most of the data is already required by authorities from shipping companies on an annual basis. Table 1 shows the data points required to generate Environmental Attribute Certificate (EAC)in the Registry, along with their descriptions and accepted parameters.

Table 1: Data points in the Data Questionnaire

Data Category	Data Point	Units/options	Description
Katalist data	Registry user[1]	N/A	Company name of the registry user booking the voyage.
Katalist data	Registry Account ID[1]	N/A	The unique ID number of the registry user's Registry Account.
Katalist data	Role of Registry User[1]	Shipowner or ship operator	Role of the Shipping Company who is booking the voyage.
Katalist data	Name of company who did not book the voyage[1]	N/A	Name of shipowner or ship operator who did not book the voyage.
Vessel data	IMO No.	N/A	The IMO ship unique identification number.
Vessel data	Vessel Name	N/A	Vessel name.
Vessel data	Vessel Type	Bulk Carrier, Gas Carrier, Tanker, Container Ship, General Cargo Ship, Refrigerated Cargo Carrier, Combination Carrier, LNG Carrier, Ro-ro Cargo Ship (Vehicle Carrier), Ro-ro Cargo Ship, Ro-ro Passenger Ship, Cruise Passenger Ship, service vessel.	Vessel type as IMO classification.
Vessel data	Cargo capacity	N/A	The maximum cargo carrying capacity loaded to the ships summer loading mark (i.e. maximum allowable draught). Expressed in a real positive number.
Vessel data	Cargo capacity units	Metric ton, cubic meter, twenty-foot equivalent unit, number of passengers, car equivalent unit	The unit of the cargo capacity of the ship.
Vessel data	Unique voyage ID[1]	N/A	The unique voyage ID used by the uploader in their internal monitoring systems.
Voyage data (leg)	Departure date	DD-MM-YYYY hh:mm	The UTC date and time of departure (last mooring line

			onboard) from its last terminal berth of cargo operation either loading or discharging.
Voyage data (leg)	Departure port name	N/A	Name of the departure port as per UN/ LOCODE.
Voyage data (leg)	Arrival date	DD-MM-YYYY hh:mm	The UTC date and time of arrival. All mooring lines fastened and prior to loading or discharging cargo.
Voyage data (leg)	Arrival port name	N/A	Name of the arrival port as per UN/ LOCODE.
Voyage data (leg)	Date leaving arrival port	DD-MM-YYYY hh:mm	The UTC date and time of departure from arrival port - same as the departure date for the subsequent leg.
Voyage data (leg)	Distance sailed	Nautical miles	Sailed distance (the great-circle distance) between departure and arrival port as logged by GPS (distance travelled over ground).
Voyage data (leg)	Fuel type[2]	Standardized categories: Heavy fuel oil (HFO), Light fuel oil (LFO), Marine gas oil (MGO), Liquified natural gas (LNG), Ammonia, Methanol, Alternative fuel	The type of fuel oil consumed on the leg and the following cargo operation/port stay
Voyage data	Fuel consumption included[3]	At sea, At sea and at berth	Whether fuel consumption includes fuel consumed at sea only or both at sea and at berth.
Voyage data (leg)	Fuel consumption	Tonnes	All fuel consumed on board including but not limited to the fuel consumed by the main engines, auxiliary engines, gas turbines, boilers and inert gas generator, regardless of whether a ship is underway or not
Additionality Criteria	Amount of SMF used under EU ETS	Tonnes	The amount of Alternative Fuel used in the voyage that was subject to EU ETS
Additionality Criteria	Amount of SMF used to comply with FuelEU	Tonnes	The amount of Alternative Fuel used in the voyage that was used to comply with FuelEU, according to Annex XI.
Cargo data (leg)	Total Cargo Carried	N/A	Quantity of total cargo transported on the leg expressed as a real positive number.
Cargo data (leg)	Cargo unit	Metric ton, cubic meter, twenty-foot equivalent unit, number of passengers, car equivalent unit	The unit of what is carried onboard
Alternative fuel data	Is it a blend?	Yes / No	Indicator of whether the fuel used is a blend of two different types.

Alternative fuel data	Conventional fuel portion of blend	Heavy fuel oil (HFO), Light fuel oil (LFO), Marine gas oil (MGO), Liquified natural gas (LNG), Ammonia, Methanol	The name of the conventional fuel that is blended with alternative fuel
Alternative Fuel data	Alternative proportion of the blend	%	Weight of alternative fuel divided by the sum of the weight of alternative fuel and weight of conventional fuel it was blended with
Alternative fuel data	Well-to-Tank emission factor excluding credits [4, 5, 6]	gCO_2e / MJ	The upstream energy based emission factor for fuel, excluding credits
Alternative fuel data	Well-to-Tank emission factor including credits[4]	gCO_2e / MJ	The upstream energy based emission factor for fuel, excluding credits
Alternative fuel data	Tank-to-Wake emission factors[4]	gCO_2e / MJ	The downstream energy based emission factor for fuel
Alternative fuel data	LCV[4]	MJ / g fuel	Lower calorific value measures the released energy when a fuel is burnt
Alternative fuel data	Type of feedstock	List of materials eligible for certification under EU RED	Standardized options to create a list of all key feedstock that is used to produce the fuel
Alternative fuel data	Country of origin of feedstock	N/A	The Country in which the raw material is sourced from
Alternative fuel data	Proof of sustainability number	N/A	Unique number of proof of sustainability
Alternative fuel data	Type of alternative fuel	Biodiesel, Bioethanol, Biogas / Biomethane, Biomethanol, Co-processed oil to be used for replacement of diesel, Co-processed oil to be used for replacement of marine fuel, Co-processed oil to be used for replacement of naphtha, Co-processed oil to be used for replacement of petrol, Co-processed oil to be used for replacement of jet fuel, Co-processed oil to be used for replacement of liquefied petroleum gas, Co-processed oil for the replacement of diesel/ petrol/jet fuel produced from biomethane, HVO - hydrotreated vegetable oil, Pure vegetable oil, Other	The type of the alternative fuel that is used on the voyage
Alternative fuel data	Certification scheme[7]	RSB EU RED, RSB global, ISCC EU, ISCC Plus	The certification scheme for the alternative fuel as per defined in the IMO's interim guidance on the use of biofuels under regulation 26, 27 and 28 of MARPOL Annex VI (DCS and CII)

Alternative fuel data	Date of bunkering	DD-MM-YYYY	The UTC date of the bunkering event that include alternative fuels.
Alternative fuel data	Amount of bunkered alternative fuel	Metric tonnes	The total amount of fuel bunkered. In the case of blends with conventional fuel, include the total mass of the blend.

Notes:

1) Data points are not intended to be filled out for verification purposes. Shipping companies can include those points later during data and document submission in Katalist.

2) Shipping companies may include a maximum of four different types of fuels per voyage.

3) Fuel consumption at sea includes maneuvering away from berth and leaving port, sailing, maneuvering to anchorage, anchorage, and maneuvering to berth. Fuel consumption at sea and at berth includes all activities included at sea as well as activities when docked at berth.

4) Value is for the sustainable marine fuel (SMF) only – if the fuel is part of a blend, these parameters should only be for the SMF portion of that blend.

5) See definition 3.2 (m).

6) Only credits and bonuses with verifiable, auditable documentation and consistency with RED II/III eligibility criteria should be included in the Data Questionnaire and considered for the EAC issuance.

7) Certification schemes besides RSB and ISCC may be considered after an evaluation by the Katalist Registry Administrator.

A2. Required documentation

The shipping company shall provide at least the following documentation to the verifier:

1. Communication with the list of voyages included and relevant information to determine verification scope.
2. The completed Data Questionnaire for each voyage in scope.
3. Bunker Delivery Notes (BDN) for sustainable marine fuel used in voyages in scope.
4. Proof of sustainability for sustainable marine fuel, which should be certified under a recognized Sustainability Certification Scheme (SCS) from Roundtable on Sustainable Biomaterials (RSB) or International Sustainability & Carbon Certification (ISCC). This is according to IMO interim guidelines on biofuels for reporting data to the Carbon Intensity Indicator (CII) and Data Collection System (DCS). This requirement will be adjusted once IMO's Guidelines on the life cycle GHG intensity of marine fuels (LCA Guidelines) are updated. If a fuel is certified under a recognized certification standard for EU-RED, in addition to RSB and ISCC's schemes, please reach out to info@katalist.org for further instructions.
5. Statements and documentation to comply with additionality requirements defined in Registry Manual (e.g., a statement from ISM company/DOC holder stating that fuel will not be used for compliance, including in pooling mechanisms).

6. A document or evidence giving shipping company the right to use and transfer the emission savings associated with the sustainable marine fuel used in the voyage in scope.

The verifier may require additional information based on risk assessment, internal verification procedures, or as part of spot checks to determine if the data reported conforms to verification criteria. Some examples of such additional information include, but are not limited to, Bunker Delivery Notes for conventional fuels, Bunker Quantity Surveys, Noon reports, Oil logs, Bill of Lading, Baplie files, certificate of weight and cargo distribution, etc.

Annex 3 – Criteria

Criteria is the set of requirements used as a reference against which data and documentation provided by the shipping company are compared. Table 2 presents the minimum criteria for each attribute of the transport service that will be verified. The verifier may incorporate additional criteria based on the results of risk assessment and the application of internal verification procedures to ensure the achievement of the verification objectives.

Table 2: Minimum verification criteria

Object of verification	Description criteria	Regulatory requirements for reference
A3.1 Vessel's characteristics	1) IMO number and related information (e.g., vessel's name, type, and capacity) must match records of third-party data providers (e.g., performance management systems, AIS data providers) 2) IMO number associated with in-scope vessel should not be under any sanction or measures that restricts its operation in commercial ports.	
A3.2 Voyage's characteristics	1) Definition of the voyage and the legs must follow the description in the Glossary and in the Registry Manual. 2) Ports of call and dates must follow formatting rules included in Data Questionnaire. 3) Data reported in Data Questionnaire must match records retrieved using IMO number in providers of AIS data or vessel performance data. 4) Any potential discrepancy must be within the materiality level defined in section 4.3. If the discrepancy is above this level, verifier shall conduct further analysis and include the conclusions in the Statement of Conformity	**Regulation (EU) 2015/757** Art. 9.1 - Monitoring on a per voyage basis Annex II - Monitoring of other relevant information
A3.3 Fuel consumption	1) Consumption values must be registered in metric tonnes for each type of fuel consumed on the voyage. 2) Values must include fuel oil consumed on board. 3) Values must include fuel consumed by the main engines, auxiliary engines, gas turbines, boilers and inert gas generator, for each type of fuel	**MEPC 78/17/Add.1 Annex 8** Section 7 - Guidance on methodology for collecting data on fuel oil consumption, distance travelled and hours under way Section 7.1 - Fuel oil consumption (7.1)

	consumed, regardless of whether a vessel is underway or not. 3) Type of fuels and consumption values must match supporting documentation and/or historical record of the in-scope vessel as part of the verifier's statutory verification (if applicable). 4) Quantities bunkered of sustainable marine fuel (SMF) must match reported information in Data Questionnaire and supporting documentation (e.g., Bunker Delivery Note -BDN, Proof of Sustainability – POS, Laboratory tests, and Bunker Quantity Survey). 5) The bunker event of SMF should be within the voyage, or in a reasonable time before it. In this case, the verifier shall corroborate that SMF remaining on board at the voyage's first leg plus SMF consumed and remaining on board at the voyage's last leg equals the total quantity bunkered indicated in BDN. 6) SMF's attributes in the Proof of Sustainability (POS) must match the information reported in Data Questionnaire. 7) Any potential discrepancy must be within the materiality level defined in section 4.3. If the discrepancy is above this, verifier shall request additional supporting documentation, even if the verifier already has records of the in-scope vessel as part of its statutory services. 8) Supporting documents timeline must match voyage timeline and port of call. 9) Vessel's identifiers (i.e., name and IMO number) in supporting documentation must match reported information in Data Questionnaire.	**Regulation (EU) 2015/757** Annex I - Methods for monitoring CO2 emissions
A3.4 Distance traveled	1) Distance traveled on the voyage must match information reported by AIS data providers.	**MEPC 78/17/Add.1 Annex 8** Section 7 - Guidance on methodology for collecting data on fuel oil consumption,

	2) Any potential discrepancy must be within the materiality level defined in section 4.3. If the discrepancy is above this level, verifier shall conduct further analysis.	distance travelled and hours under way Section 7.4 - Distance travelled
A3.5 Cargo carried	1) Cargo carried reported in Data Questionnaire (DQ) must match information provided in supporting documentation (e.g., Bill of Lading) or as part of statutory verification (i.e., EU MRV reporting). 2) In the case of container ships, the weight of empty containers should be considered to determine the total cargo carried in a leg. 3) Service vessels can report cargo carried as mass of cargo on board, as deadweight carried for laden legs and zero for ballast leg, or as the number of passengers or crew members. 3) Any potential discrepancy must be within the materiality level defined in section 4.3. If the discrepancy is above this level, verifier shall conduct further analysis.	**Regulation (EU) 2016/1928** Article 3 - Parameters to determine the 'cargo carried' per vessel category
A3.6 Additionality	In case the sustainable marine fuel (SMF) was consumed in a leg including ports under the FuelEU Maritime Regulation, verifier shall: 1) Verify the correct allocation of the SMF to the legs under and outside the scope of FuelEU Maritime Regulation. 2) Check that the amount of SMF used under the EU ETS scope matches the amount reported in the Data Questionnaire. 3) Validate the information in the statement from the ISM company/DOC holder stating that fuel will not be used for compliance. 4) Validate that fuel was not used partially or totally as part of a pooling or banking mechanism (if applicable).	