CII

Frequently Asked Questions by DNV

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Sustainable Ships

SUSTAINABILITY ON DEMAND

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1) WHAT IS THE CII AND THE CII RATING SCHEME?

The Carbon Intensity Indicator (CII) is a measure of how efficiently a ship transports goods or passengers and is given in grams of CO2 emitted per cargo-carrying capacity and nautical mile. The ship is then given an annual rating ranging from A to E, whereby the rating thresholds will become increasingly stringent towards 2030. The CII applies to all cargo, RoPax and cruise ships above 5,000 GT. The yearly CII is calculated based on reported IMO DCS data and the ship is given a rating from A to E. For ships that achieve a D rating for three consecutive years or an E rating in a single year, a corrective action plan needs to be developed as part of the SEEMP and approved.
What ships does the CII apply to?

The CII applies to all ships above 5,000 GT of the following ships types: bulk carriers, gas carriers, tankers, container ships, general cargo ships, refrigerated cargo carriers, combination carriers, LNG carriers, vehicle carriers, Ro-Ro cargo vessels, Ro-Ro passenger vessels and cruise ships.

2) HOW IS THE CII CALCULATED?

The basic CII is calculated as CO2 emitted per cargo-carrying capacity and nautical mile. The CII calculation will be further improved through correction factors in a separate guideline that will be developed next year.
For the time being, using actual cargo carried instead of capacity (i.e. the EEOI) can only be reported on a voluntary basis and not for the purpose of the CII rating.

3) WHAT IS AER/CGDIST?

For different ship segments, the CII is based on different ways of measuring the carbon footprint of the transport work. The Annual Efficiency Ratio (AER) and capacity gross ton distance (cgDist) are two such CIIs using different units. AER (emission per dwt-mile) is used for segments where the cargo is weight critical, and cgDist (emissions per gross ton-miles) for volume-critical cargo.

4) WHY IS AER/CGDIST USED AS THE CII AND NOT EEOI (ENERGY EFFICIENCY OPERATIONAL INDICATOR)?

AER (emission per dwt-mile) and cgDist (emissions per gross ton-miles) are supported by data elements reported through the IMO DCS system. The IMO DCS system does not collect the cargo data required to calculate the EEOI (emission per tonne-mile). Therefore, the EEOI is not an option to use for the CII today. However, it will be possible to voluntarily report cargo data and report the EEOI for those who wish to do so.

5) WHEN WILL THE CII ENTER INTO FORCE AND WHAT IS REQUIRED TO BECOME COMPLIANT?

The CII requirements will take effect from 2023. An enhanced SEEMP with an implementation plan for achieving the required CII needs to be approved and kept on board. The SEEMP will be subject to company audits, although the guidelines for the audit are still to be developed.

6) WHY DOES THE CII USE 2019 AS A REFERENCE AND NOT 2008 LIKE THE IMO GHG STRATEGY?

The reference year for CII is 2019 because this is the first year with verified DCS data reported to the IMO. Otherwise, the reference line would have to be established based on highly uncertain AIS data. The reduction factors are relative to 2019 and are adjusted considering achieved improvements between 2008 and 2019.

7) WHAT IS THE DIFFERENCE BETWEEN THE EEXI AND THE CII?

The EEXI is a one-time certification equivalent to the EEDI (Energy Efficiency Design Index) phase 2 or 3 concerning design parameters of the vessels. The CII is an operational indicator and will be assessed annually from 2023 with yearly stricter emission limits. The EEXI and CII are applicable to the same ship types. The difference is that CII ratings will apply to ships 5,000 GT and above regardless of propulsion type.

8) WHAT IS THE RELATION BETWEEN THE CII AND SEEMP?

A strengthening of the SEEMP (enhanced SEEMP) to include mandatory content is a part of the CII regulation. The intention is to ensure continuous improvement of energy efficiency and lower carbon intensity. The enhanced SEEMP shall include an implementation plan on how to achieve the CII targets, and it will also be subject to approval and company audits. For ships that achieve a D rating for three consecutive years or an E rating in a single year, a corrective action plan needs to be developed as part of the SEEMP and approved.

9) HOW WOULD CONSUMPTION DURING ANCHORING, FOR EXAMPLE, BE CONSIDERED?

Currently, the CII does not attribute fuel consumption to specific stages of a voyage or operations, including anchoring. Consumption during anchoring would simply be considered as consumption without distance travelled.

10) WHAT IS THE CII RELATIONSHIP TO POSEIDON PRINCIPLES OR SEA CARGO CHARTER?

Poseidon Principles uses AER, and Sea Cargo Charters uses EEOI. Both are initiatives by major shipping banks and charterers or cargo owners, respectively, for driving the implementation of decarbonization and do not have a direct link to the IMO process of establishing the CII. In future, the Poseidon Principles and Sea Cargo Charters may align definitions and indicators with the IMO, although keeping their own trajectory.

11) HOW CAN A SHIPOWNER CONTROL THE CII?

The CII is based directly on the fuel consumption, which is influenced by how a specific ship is operated in combination with its technical efficiency and fuel. Its value will be affected by the type of fuel used, the efficiency of the vessel and operational parameters such as vessel speed, cargo transported, weather conditions and the general condition of the vessel (e.g. biofouling).

An owner can control the CII by optimizing operations and ensuring vessels are in a good condition. Charterers will have a major influence over the CII of the ships they charter by selecting the speed. It will be beneficial for owners/operators to continuously monitor the CII performance of the vessel to avoid having to take drastic measures unexpectedly. DNV can assist in monitoring the CII through the Emissions Insight Service.

12) CAN CONSUMPTION RELATED TO AVOIDANCE OF BAD WEATHER BE DEDUCTED FROM CII CALCULATIONS?

According to the published IACS guidelines on CII correction factors, adverse weather/tropical storm/cyclones are not considered as a reason to use FC-voyage correction factor. Therefore, consumption related to avoidance of bad weather cannot be deducted from CII.

13) WHERE WILL I SEE MY VESSEL'S ATTAINED OPERATIONAL CII AND ENVIRONMENTAL RATING?

Attained CII and additional CII data will be visible in IMO DCS FOC-R review page upon submission after the year end. After successful verification, both attained CII and acquired Environmental Rating will be presented on the DCS Statement of Compliance.

14) I SUBMITTED A CHANGE OF FLAG/COMPANY DCS REPORT IN 2023. WHY ARE ATTAINED CII AND ENVIRONMENTAL RATING BLANK ON THE DCS SOC?

Attained CII and Environmental Rating are calculated only on annual basis, therefore for Change of Flag/Company periods these will not be present on the DCS Statement of Compliance.

15) MY VESSEL WILL CHANGE THE FLAG DURING THE YEAR. WILL SHE RECEIVE AN ATTAINED CII FOR THE DCS PERIOD UNDER FORMER FLAG?

No, attained CII is only calculated on annual level. However, DCS data from the period under former flag will also be taken into consideration in calculations.

16) MY VESSEL WILL CHANGE THE COMPANY DURING THE YEAR. WILL SHE RECEIVE AN ATTAINED CII FOR THE DCS PERIOD UNDER MY MANAGEMENT?

No, attained CII is only calculated on annual level. However, DCS data from the period under former company management will also be taken into consideration in calculations. Therefore, DNV will provide the aggregated data required for CII calculation after successful period verification.

17) WILL DNV PROVIDE ANY DATA RELATED TO CII FOR CHANGE OF COMPANY/CHANGE OF FLAG DCS PERIOD?

In addition to currently aggregated information, DNV will provide information about the amount of fuel to be deducted from CII calculation, the amount of fuel consumed in STS operations and distance to be deducted from CII calculation.

18) I AM TAKING OVER A VESSEL DURING THE YEAR. DO I HAVE TO PROVIDE ANY DATA FOR THIS VESSEL FROM THE PREVIOUS MANAGER'S DCS PERIOD?

If, during the year, you are taking over a vessel which previous DCS period was not verified by DNV, you will have to provide verified aggregated data from the previous verifier to DNV according to the table available in appendix 3 of Resolution MEPC.348(78).

19) ONE OF MY VESSELS IS A NEWBUILDING DELIVERED IN THE MIDDLE OF A REPORTING YEAR. AS THE CII IS AN ANNUAL RATING, HOW SHOULD I PROCEED WITH MY REPORTING?

For the new vessels delivered during the reported year, CII will be calculated based on available data.

20) WHERE CAN I FIND THE FULL CII FORMULA CONTAINING CORRECTION FACTORS AND VOYAGE ADJUSTMENTS? WHERE CAN I FIND A LIST OF ANNOUNCED CII CORRECTION FACTORS AND VOYAGE ADJUSTMENTS?

Full CII formula with correction factors and voyage adjustments is available in IMO's RESOLUTION MEPC.355(78) - 2022 INTERIM GUIDELINES ON CORRECTION FACTORS AND VOYAGE ADJUSTMENTS FOR CII CALCULATIONS (CII GUIDELINES, G5).

21) MY VESSEL DID NOT MEET THE REQUIRED CII AND GOT A D-RATING. WHAT ARE THE CONSEQUENCES?

Currently, there are no consequences announced by IMO for not meeting the Required CII and receiving a D-Rating for your vessel's performance in the previous reporting year. If a vessel would get a D-Rating 3 years in a row, you would be obliged to submit a SEEMP Part III Corrective Actions Plan before DCS Statement of Compliance can be issued. The situation may change after revision of the regulations from IMO in 2025.

22) MY VESSEL GOT AN E RATING. WHAT ARE THE NEXT STEPS?

If a vessel would receive an E-Rating for the previous reporting year, you would be obliged to submit a SEEMP Part III Corrective Actions Plan before DCS Statement of Compliance for this year can be issued. This functionality will be available in DNV's SEEMP Part III generator from 1 January 2024.

23) MY VESSEL GOT A C-ENVIRONMENTAL RATING AND THEN 2 X D IN A ROW. IS SHE OBLIGED TO PERFORM ANY SPECIAL ACTIONS?

In this scenario, no specific actions were defined by IMO. Nevertheless, DNV recommends to aim to achieve the Target CII planned for upcoming years in the SEEMP Part III for the vessel.

24) WHAT IS CII FOR TRIAL PURPOSES? DO I NEED ANY ADDITIONAL DATA TO CALCULATE THESE?

CII for trial purposes is a voluntary value calculated on individual request. There are 4 different trial CIIs: EEPI, EEOI applicable for vessels using DWT as a capacity in their CII calculations and cbDIST and clDIST applicable for vessels using GT as a capacity in their CII calculations. Information will be retrieved by DNV from the DCS data or DNV's ship database. More information on calculation methodology can be found in IMO Resolution MEPC.336(76).

25) HOW WILL MY VESSEL'S CII BE CALCULATED IN CASE OF MAJOR CONVERSION?

In case of a ship undergone major conversion, including extensive changes of carrying capacity and/or ship type during the year, defined by regulation 2.2.17 and regarded by the Administration as a newly constructed ship as per regulation 5.4.3, the required and attained annual operational CII should be calculated and verified as per a newly constructed ship for the period after conversion.

For the year of conversion, the attained CII and required CII should be calculated and verified as per a newly constructed ship for the period after conversion. Data for partial year before conversion should still be reported for verification but will not be included in the calculation and verification of the attained annual operational CII.

26) CAN A PERIOD SPENT DRY-DOCKING BE DEDUCTED FROM CII CALCULATIONS?

No, currently there is no CII correction factor nor voyage adjustment that would deduct period spent at the dry-dock from CII calculation. If the vessel was not connected to an onshore power supply, this period would simply be considered as consumption without distance travelled.

27) WHAT ARE THE CIRCUMSTANCES UNDER WHICH THE VESSELS WOULD BE ELIGIBLE TO USE CII VOYAGE ADJUSTMENT? (FC-VOYAGE)

There are 2 cases in which a vessel can apply voyage adjustments:

1. Scenarios specified in regulation 3.1 of MARPOL Annex VI, which may endanger safe navigation of a ship area within the ice edge.
2. Sailing in ice conditions, which means sailing of an ice-classed ship in a sea within the ice edge.

28) WHAT ARE THE SCENARIOS WHICH MAY ENDANGER SAFE NAVIGATION OF A SHIP DURING WHICH I CAN REPORT CII VOYAGE ADJUSTMENTS?

Voyages subject to voyage adjustment may include (however respective Flag Administration's instructions needs to be followed on case-by-case basis). When a vessel encounters imminent safety concerns during its voyage, including (example situations):

- saving life at sea, i.e., search and rescue operations, evacuation.
- navigation hazards such as icebergs.
- areas that have been designated on an ad-hoc period due to prevailing navigational hazards.
- piracy risk or other areas restricted for navigation due to war risk

29) IS THE ADVERSE WEATHER A REASON TO USE CII VOYAGE ADJUSTMENTS?

No, adverse weather is not one of the scenarios that are specified in regulation 3.1 of MARPOL Annex VI, which may endanger safe navigation of a ship. Therefore, vessels cannot report voyage adjustments because of unfavourable weather.

30) DOES VOYAGE ADJUSTMENT DEDUCT ALL THE FUEL CONSUMPTION AND DISTANCE USED FOR CII CALCULATIONS FROM A PERIOD IN WHICH IT IS APPLIED?

If correctly reported in the DCS report, fuel consumed and distance in voyage periods during the calendar year which be fully deducted from the calculation of the attained CII.

31) WHAT IS THE DEFINITION OF AN ICE EDGE? HOW TO JUSTIFY THE PERIOD SPENT IN ICE BY THE VESSEL?

Ice edge is defined by paragraph 4.4. of the WMO Sea-Ice Nomenclature, March 2014 as the demarcation at any given time between the open sea and sea ice of any kind, whether fast or drifting. Justification for adjustment to primarily be based on ice charts or log-book extracts, possibly be supported by statements by Master and/or ice navigator/pilot. i.e. documented support for the voyage exclusion when the vessel enters the ice edge and finish when leaves the ice edge.

32) DO CII CORRECTION FACTORS AND VOYAGE ADJUSTMENTS HAVE TO BE REPORTED IN SEEMP PART III?

To receive an official correction to the CII values, the correction factor must be stated in an approved version of the SEEMP Part III. If the correction is not in the SEEMP Part III, the correction will not be applied to the “official” CII corrected values.

33) DO I NEED TO PROVIDE ANY EVIDENCE ON REPORTED CII CORRECTION FACTORS AND VOYAGE ADJUSTMENTS?

CII correction factors and voyage adjustments reporting will be verified on a case-by-case basis. In case of uncertainties in reporting, additional documentation or evidence might be required by the verifier.

34) IS THERE ANY CII CORRECTION FACTOR RELATED TO TIME SPENT ANCHORING?

Until now, no correction factors related to time spent anchoring were announced by IMO. Consumption during anchoring would simply be considered as consumption without distance travelled.

35) MY VESSEL WAS REPORTING DATA FOR FC-ELECTRICAL FOR THE WHOLE YEAR BUT THE CORRECTION WAS NOT APPLIED TO MY CII. WHY DID IT HAPPEN?

If the reporting was correct, the only reason for not having this correction factor included in CII calculation would it to be missing from vessel's SEEMP Part III. All the correction factors have to be reported in SEEMP Part III in order to receive a deduction. Please revise your SEEMP Part III in order to submit a correct CII for verification.

36) MY VESSEL IS USING AUTO-LOGGED DATA FROM A KWH-METERS TO REPORT DATA REQUIRED FOR FC-ELECTRICAL CORRECTION FACTOR. DOES THESE MEASUREMENT EQUIPMENT HAVE TO BE APPROVED BY DNV?

DNV does not have any specific requirements for this kind of functionality. As for all electrical equipment, the new installations should be suitable for marine use with respect to environmental properties.

37) I DO NOT MONITOR ELECTRICAL CONSUMPTION OF REFRIGERATED CONTAINERS ON MY VESSEL. WHAT IS A DEFAULT CONSUMPTION OF A REEFER CONTAINER? DOES THIS CONSUMPTION VARY AT SEA AND IN PORT?

Default consumption of a reefer container defined by IMO is 2.75 kWh. It has to be multiplied by the number of reefer containers onboard according to the BAPLIE file. Size or type of reefer container does not change the default consumption.

38) WHAT ARE EEDI AND EEXI CORRECTION FACTORS?

Your vessel's EEXI/EEDI Technical file might contain few correction factors that are applicable during CII calculation:

- fi - capacity correction factor for ice-classed ships
- fm - ships having ice classes IA Super and IA
- fc - cubic capacity correction factors for chemical tankers
- fi,VSE represents the correction factor for ship-specific voluntary structural enhancement

39) CAN I USE AFTANKERSTS TOGETHER WITH FCELECTRICAL/FCBOILER/FCOTHERS?

No, when AFTankerSTS is applied, none of these correction factors can be applied at the same time.

40) WHAT IF I USE FCVOYAGE TOGETHER WITH OTHER CII CORRECTION FACTORS? WILL THESE BE ALSO APPLIED?

No, FCvoyage will deduct all the fuel consumption and distance from your vessel's CII calculation. Therefore, reporting additional correction factors with this voyage adjustment would not give any additional results.

41) IS EVERY STS TAKEN INTO CONSIDERATION FOR AFTANKERSTS? DO I HAVE TO FULFILL ANY SPECIAL REQUIREMENTS?

To qualify for using AFTanker,STS a voyage (between cargo loading and cargo discharging locations, or between cargo discharging and cargo loading locations) shall be max 600nm and limited to 72 hours.

In the case of a voyage with multiple STS operations, any leg between two STS operations shall be max to 600nm and limited to 72 hours for the voyage to qualify for the correction factor AFTanker,STS.

42) HOW WILL MY VESSEL'S CII BE CALCULATED IN CASE OF CHANGE OF DWT AND/OR GT?

In case of DWT and/or GT change, SEEMP Part III to be revised and submitted for verification. If change of DWT and/ or GT is identified as a CII reducing measure in SEEMP part III and/ or CAP, all future required annual operational CII should be calculated and verified using the original DWT or GT value before DWT or GT conversion.

The attained annual operational CII which is to be used to assess compliance should be calculated and verified using the new DWT or GT value after conversion. Except for the year of conversion where the attained CII should be calculated and verified based on the average DWT or GT value weighted on distance travelled before and after conversion.

If change of DWT and/ or GT IS NOT identified as a CII reducing measure in SEEMP part III and/ or CAP, required annual operational CII should be calculated and verified using DWT or GT value after conversion. For the year of conversion, both required CII attained CII should be calculated and verified based on the average DWT or GT value weighted on distance travelled before and after conversion.

43) WHAT SFOCS SHOULD I REPORT FOR FC-ELECTRICAL CORRECTION FACTORS?

SFOC is the power-weighted average among SFOCs of the respective engines used to provide the electrical power, as indicated in the EEDI/EEXI Technical file. Therefore it has to be reported according to the value presented in EEDI/EEXI Technical file.

44) HOW SHOULD I REPORT CONSUMPTION TO BE DEDUCTED FROM CII CALCULATIONS FOR FC-BOILER AND FC-OTHERS?

Columns for reporting the consumption to be deducted from the CII calculation are treated as a “portion of total” columns, meaning the consumption reported here is also reported in the ME, AE or boiler consumption.