

SCIENCE BASED TARGET-SETTING IN THE MARITIME TRANSPORT SECTOR

IN-DEPTH TRAINING WEBINAR

31 January 2023

PARTNER ORGANIZATIONS









IN COLLABORATION WITH



VIDEO-CONFERENCE GUIDELINES



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- This is a **zoom webinar**. Your camera and microphone are automatically muted.
- Participants can send questions via the Q&A button.
- Please participate in our online polls, launched throughout the webinar.
- Slides from this webinar will be shared after this meeting.
- Please note that this webinar will be recorded for the benefit of those who cannot attend.





AGENDA

- 1. Housekeeping and agenda
- 2. Introduction to the SBTi Maritime Guidance
- 3. Modelling maritime transport SBTs
- 4. Q&A
- 5. Closing

TODAY'S WEBINAR TEAM

FERNANDO RANGEL VILLASANA

Head of Sector Development SBTi ALAN LEWIS Technical Director SFC



JEAN-MARC BONELLO

Principal Consultant UMAS





INTRODUCTION TO THE SBTi

What is the Science Based Targets initiative?



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The Science Based Targets initiative (SBTi) is a **global body** enabling businesses and financial institutions to set **ambitious emissions reductions** targets in line with **climate science**.



TECHNICAL GUIDANCE AND TOOL

BASED TARGETS

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SCIENCE

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SCIENCE BASED TARGET SETTING FOR THE MARITIME TRANSPORT SECTOR

Version 1.0 November 2022

| SCIENCE BASED TARGETS Sectoral Decarbonization Approach - Maritime Transport Tool | | | | | | | | | |
|---|---|---|-------------------------------------|--|--|--|--|--|--|
| Section 1. Select type of vessel used for transport activity | | | | | | | | | |
| Ferry Passenger Only | | | | | | | | | |
| Section 2. Select vessel size category | | | | | | | | | |
| (GT) 1,000 - 1,999 | | Please refer to guidance document for details | | | | | | | |
| Section 3. Enter emissions and activity | data | | | | | | | | |
| Select a base year | 2018 | Any base year between 2018 and the current year is aligible | | | | | | | |
| Select a base year | 2018 | Hity base year between 2010 and the current year is eighble Near-term tangets must cover a maximum of 10 years from the date the tanget is : | submitted to the SBT/for validation | | | | | | |
| | | | | | | | | | |
| Well-to-Wake (WTW) emissions in base year | 900,000 | metric tonnes of CD2 equivalent (tCD2e) | | | | | | | |
| Activity in base year | Activity in base year 8,000,000 gross some nautical miles (GT.nm) | | | | | | | | |
| Expected activity in target year 9,600,000,000 gross tonne nautical miles (57,mm) | | | | | | | | | |
| Section 4. Review target modelling results | | | | | | | | | |
| Target modelling results - 1.5C | | | | | | | | | |



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THE SBTI MARITIME GUIDANCE

THE CHALLENGE

Decarbonizing a critical link of global trade

- 80% of global trade by volume is carried by sea.
- 3% of global GHG emissions (~1GT of CO₂e).
- Completely reliant on fossil fuels.
- Highly heterogeneous (cargo categories, vessel types, vessel sizes, routes).
- Long asset replacement cycles.



WHAT DOES MARITIME TRANSPORT GUIDANCE COVER?

All movement of goods and people on shipping vessels

A toolkit to **measure** carbon intensity of activity to **inform** decision-making around short-term **actions** towards a **long-term goal**





SHIP CATEGORISATION

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| Vessel type | SBTi vessel type |
|--------------------------------------|------------------|
| Aggregates Carrier | Bulk carrier |
| Bulk Carrier | Bulk carrier |
| Bulk Carrier (with Vehicle Decks) | Bulk carrier |
| General Cargo/Tanker | General Cargo |
| Heavy Load Carrier | General Cargo |
| Heavy Load Carrier, semi submersible | General Cargo |
| Livestock Carrier | General Cargo |

• Comprehensive list provided in Technical Guidance and Tool based on IMO4 categorisation.

| Vessel type | SBTi vessel type |
|--------------------------------------|------------------|
| Aggregates Carrier | Bulk carrier |
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| Heavy Load Carrier, semi submersible | General Cargo |
| Livestock Carrier | General Cargo |



A a

IMO

TRANSPORT WORK DEMAND

FOURTH IMO GREENHOUSE GAS STUDY

SPORT

2



A Strategy for the Transition to Zero-Emission Shipping

6 - Om -

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UMAS 2

PATHWAY DESIGN

CARBON

BUDGET

Well Below 2°C

Energy Technology Perspectives 2017 1.5°C

Global Warming of 1.5°C



CARBON INTENSITY

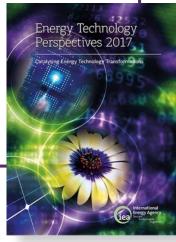


CARBON BUDGET ALLOCATION



WB2°C

- Carbon budget projection from Energy Technology Perspectives 2017 published by the International Energy Agency.
- Well to wake provided at 5 year intervals.
- Linear interpolation.

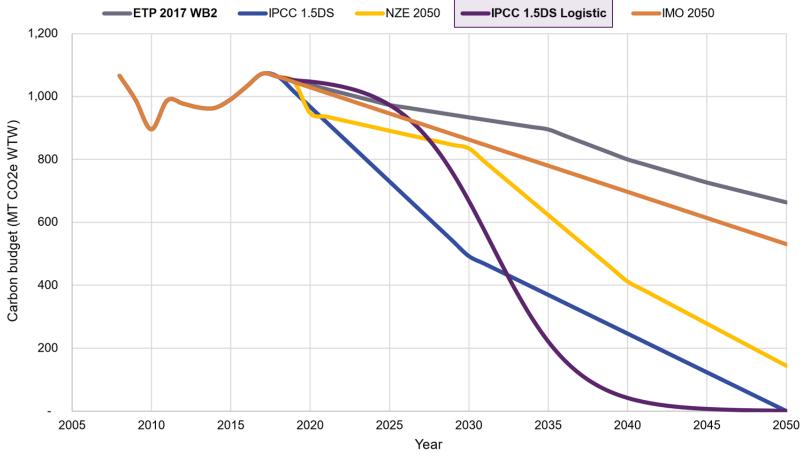


1.5°C

- Establish carbon budget based on IMO4 and IPCC 1.5°C.
- Translate budget from TtW to WtW budget.
- Translate linear assumption to logistics (S-curve).





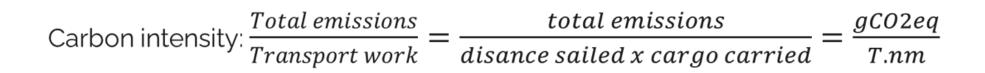




- Well-to-Wake Emissions (Upstream + Operational).
- CO₂, N₂O, CH₄ (methane).
- IMO curve adapted to include WTT phase.



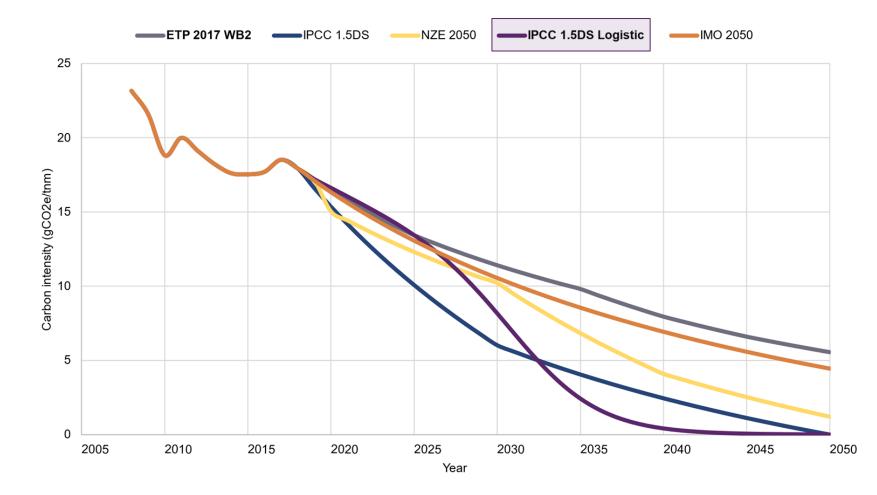




Freight vessels: carbon intensity =
$$\frac{gCO2eq}{T.nm}$$

Passenger vessels: carbon intensity =
$$\frac{gCO2eq}{GT.nm}$$

CARBON INTENSITY



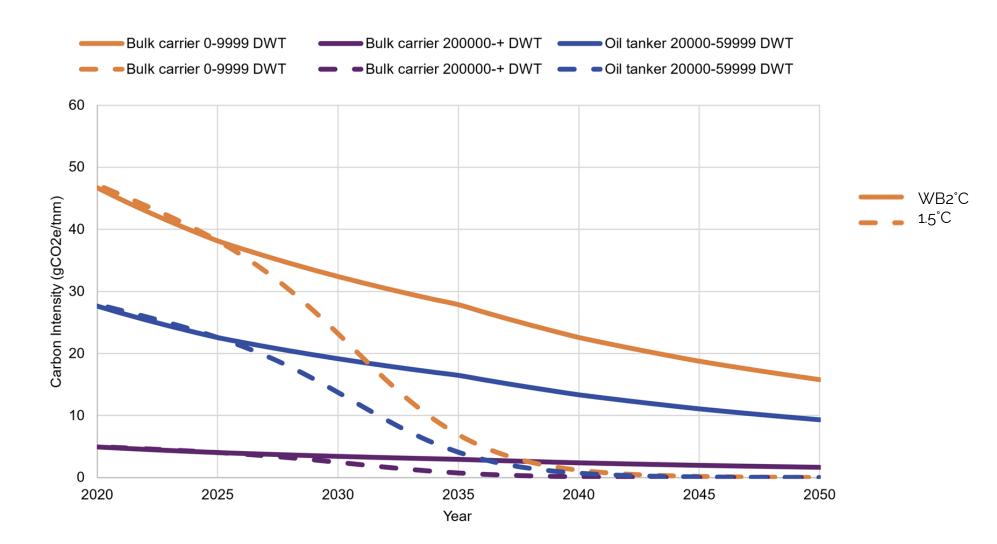


 Metric: gCO₂ / transport work.

CATEGORY SPECIFIC TARGET

SCIENCE BASED TARGETS

Comparing apples with apples



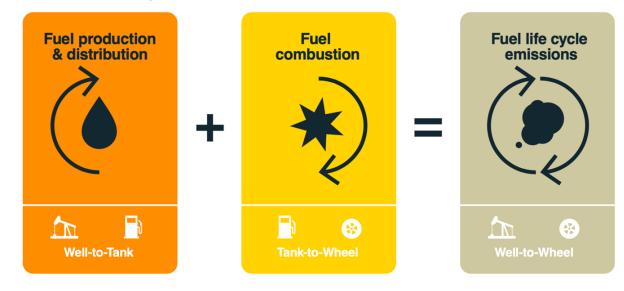
EMISSIONS BOUNDARY



All targets must cover Well-to-Wake (WTW) emissions (in metric tonnes of CO₂ equivalent (CO₂e)

WTW emissions are emissions generated across the life cycle of a fuel, from both upstream and operational activities.

They include both Well-to-Tank (WTT) emissions, generated in the fuel's production and distribution, and Tankto-Wake (TTW) emissions, generated in the combustion of the fuel. The Fuel Life Cycle



[©] Smart Freight Centre 2019

TARGET COVERAGE



| Type of shipping re | lated emissions | WTW base year GHG emissions | Base year activity data* | | |
|--------------------------------|-----------------|--------------------------------|-----------------------------|--|--|
| Vessel owners / | Passenger | Scope 1 Scope 3 | tonne-nautical mile | | |
| operators | Freight | Scope 1 Scope 3 | tonne-nautical mile | | |
| Cargo shippers / | Passenger | Scope 3 category 6 or 7 | tonne-nautical mile | | |
| Logistics Service Providers | Freight | Scope 3 category 4 or 9 | tonne-nautical mile | | |

* Except cruises

Eor all companie

 For all companies, near-term target year must be no earlier than 2030.

19

TARGET AMBITION

TARGET YEAR ELIGIBILITY

- Vessel owners or operators must also submit **long-term sciencebased targets** (net-zero targets) along with their near-term target submission.
- For maritime transport emissions, a long-term science-based target means reducing emissions to a residual level **in line with 1.5°C** scenarios by no later than 2040.

SECTOR SPECIFIC REQUIREMENTS*





LIMITATIONS ON FOSSIL FUEL ACTIVITIES

- The SBTi Fossil Fuel Policy affects the extent to which companies engaging in fossil fuel businesses can commit to climate aligned targets.
- Currently the SBTi is unable to accept commitments or validate targets from companies in the oil and gas or fossil fuels sectors.
- Users of the <u>SBTi Maritime Tool</u> with activities related to transportation or extraction of fossil fuel products are advised to **review the current status of this policy** as well as the latest version of the <u>SBTi Criteria</u>.



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MODELLING TARGETS

EXCEL TOOL TO SUPPORT TARGET SETTING FOR THE MARITIME SECTOR

Calculates science-based targets for different vessel types and sizes following the SDA (convergence approach)

| SCIENCE BASED TARGETS | Sectoral Decarbonization Approach - Maritime Transport Tool DRAFT Version for Public Consultation Mar-2021 Proventie Interaction Contact: Infe@ediacolareateacterester | |
|---|--|----------|
| Section 1. Select type of vessel used to | for transport activity | |
| Belk Carrier | Please of the transport activity Required laput Results | |
| Section 2. Select vessel size category | | |
| (DVT) 100,000 - 155,555 | Plowerstern quidence kocument for detaile | |
| Section 3. Enter emissions and activit | v data | |
| Select a base year | 2018 Any have year between 2015 and the surrent year is aligible | |
| Select a target year | 2036 Torgets must caree ominimum al Sycore and omaximum al 15 years from the date the target is submitted to the SBT/for validation | |
| Vell-to-Vake (VTV) emissions in base year | 30.000 metric tenner of CO2 equivalent (CO2e) | |
| Activity in base year | 3,000,000 tenne voute almite (t.m.) | |
| Expected activity is target year | 3,300,000,000 tanno-novticalmile (t.nm) | |
| Section 4. Review target modelling re- | sults | |
| Target modelling results - 1.5C | <u>Go to WB2C scenario results</u> Base year Target year 2 Reduction | |
| Intro Tool SBTag | gregator 1.5C WB2C (+) | : 4 |
| | | A Change |

One interface for calculating SBTs for all

maritime transport categories and one additional (non target setting) feature are included:



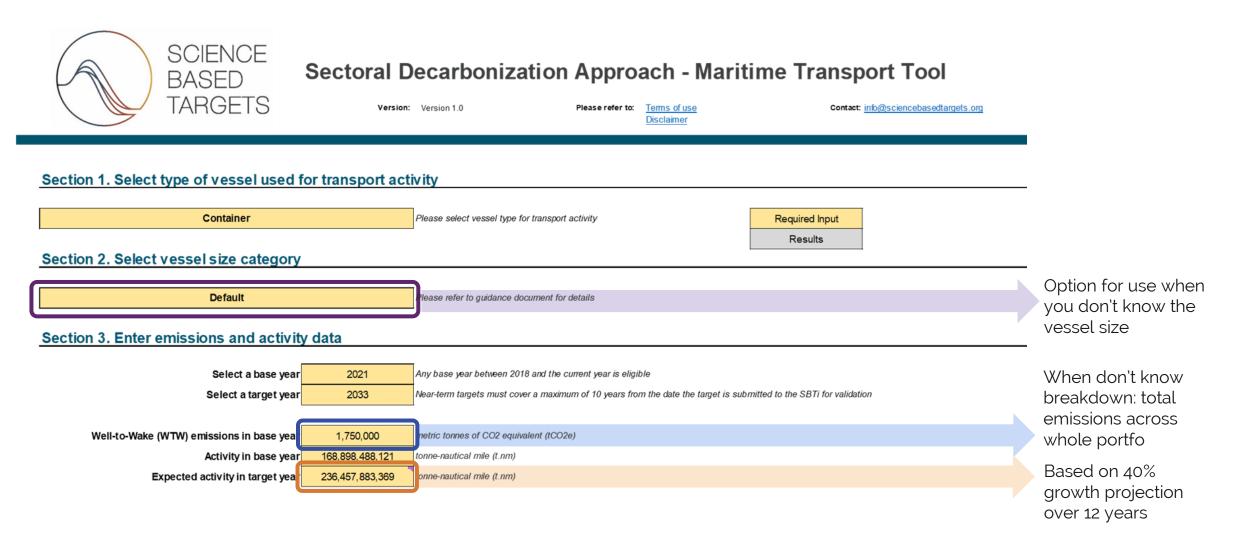
Vessel operators can model emission reduction targets for freight and passenger maritime transport activities. Shippers and Logistics Service Providers can also use this tool to model emission reduction targets for scope 3 category 4/9 emissions.

SBT aggregator

Additional feature to help companies combine targets across multiple maritime transport categories into a single metric.

CONTAINER SHIPPER: DEFAULT





TRANSPORT ACTIVITY

- Transport activity: measure of the amount of transport conducted.
 - Calculated by multiplying the amount of goods or number of people by the distance traveled.
- For the purpose of calculating the EEOI, as defined by IMO, this is the actual distance^{*}.
 - This may need to be converted when generating a corporate inventory.
- Amount of goods is quantified in metric tonnes.
- In the <u>SBTi Maritime Tool</u>, distance is quantified in **nautical miles**.



Image by Freddy from Pixabay



CALCULATION OF TRANSPORT ACTIVITY

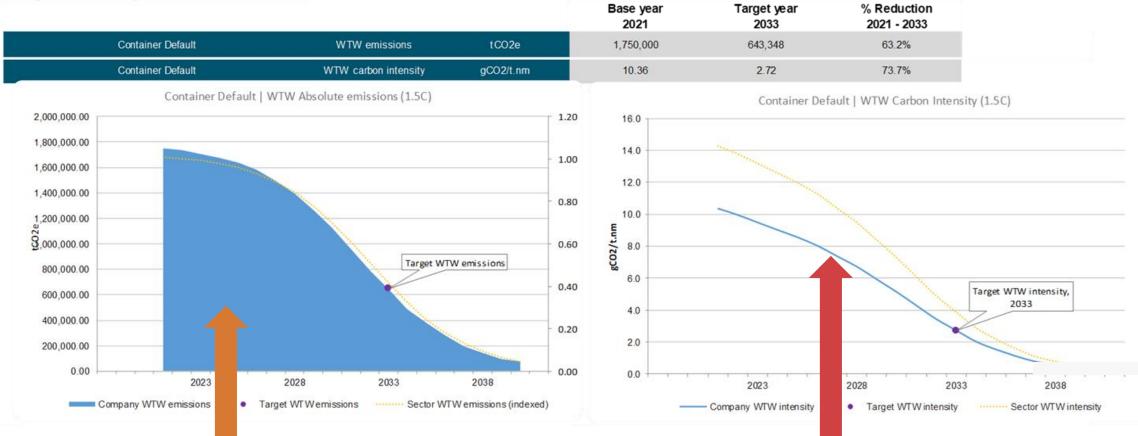
- 20,000 tonnes loaded at Tilbury & transported 1,800 nm to Barcelona.
- 5,000 tonnes unloaded at Barcelona and remaining 15,000 tonnes transported 1,150 nm to Piraeus.
- Total tonne nm = 20,000 x 1,800 + 15,000
 x 1,150 = 53,250,000
- Always break each journey down into constituent parts for the most accurate results.

CONTAINER SHIPPER: DEFAULT



Section 4. Review target modelling results

Target modelling results - 1.5C



Total emissions respect company share of total GHG budget

Company S curve less steep than industry average as **have a better-than-average starting point**



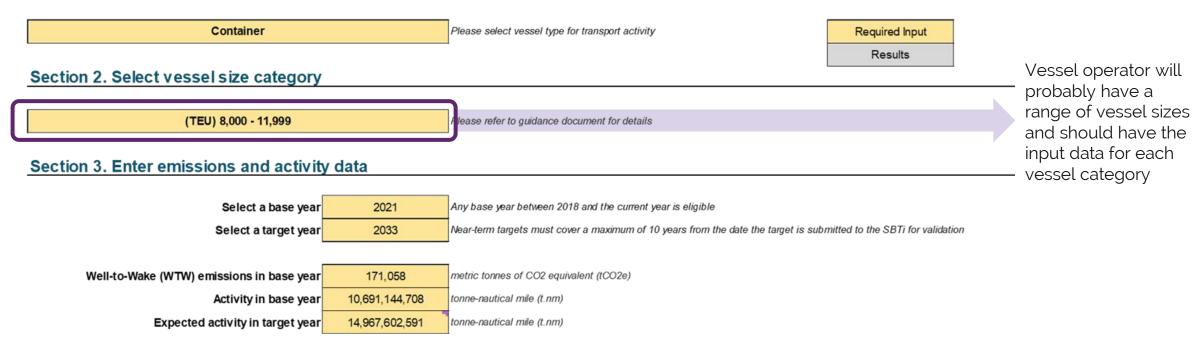


Sectoral Decarbonization Approach - Maritime Transport Tool

Version: Version 1.0

Please refer to: Tems of use Disclaimer Contact: info@sciencebasedtargets.org

Section 1. Select type of vessel used for transport activity





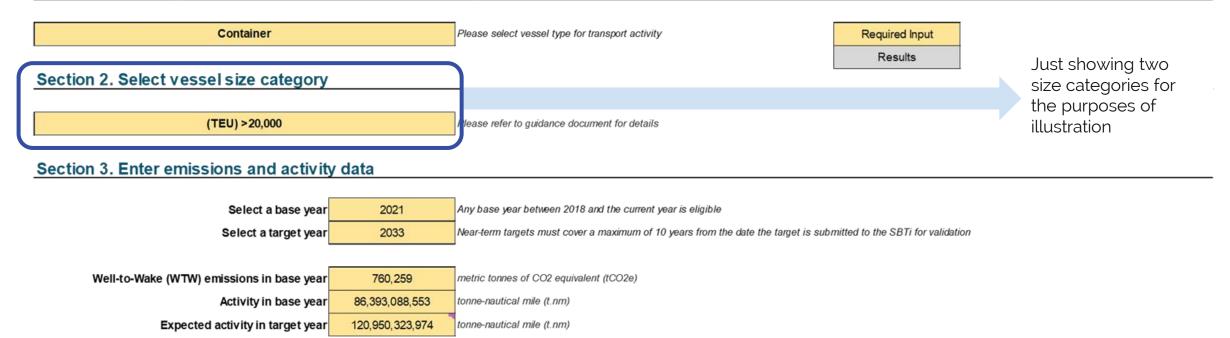


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Sectoral Decarbonization Approach - Maritime Transport Tool

Version: Version 1.0 Ple

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OPTIONAL - Target aggregation sheet

Step 1: List the vessel type, size, base year emissions (WTW), activity, and target year activity in columns D, E,G, H and J for each different vessel type or size category for which targets are to be calculated.

Step 2: Calculate the targets for each different vessel type or size category using the "Tool" tab.

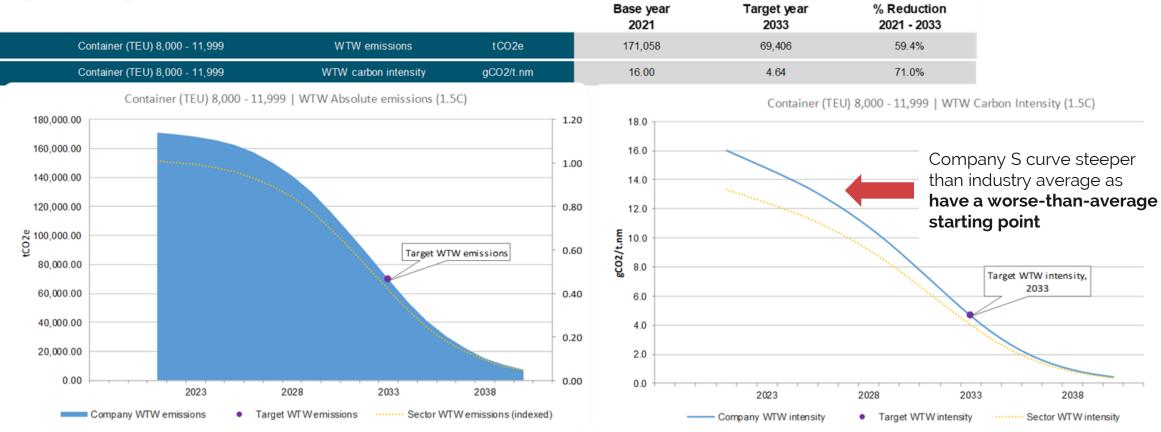
Step 3: hput the results calculated in step 2 into columns L through T of the SBTaggregator tab. The aggregated results and prorated reduction target are shown in at the bottom of row of this table. Please note that only intensity targets with the same activity denominatos (i.e., unit) can be aggregated.

| | Emissions and activity data (as entered in tool interface) | | | | | | | | |
|----|--|-----------------------|--------------------------|-----------------------------|---|-----------------------------|--|--|--|
| | | | | Target year | | | | | |
| | Vessel type | Vessel size | WTW emissions (tCO2e) | Activity (t.nm or GT.nm) | WTW carbon intensity (gCO2e/t.nm or gCO2e/GT.nm) | Activity (t.nm or GT.nm) | | | |
| 1 | Container | (TEU) >20,000 | 760,259 | 86,393,088,553 | 8.80 | 120,950,323,974 | | | |
| 2 | Container | (TEU) 14,500 - 19,999 | 449,028 | 45,356,371,490 | 9.90 | 63,498,920,086 | | | |
| 3 | Container | (TEU) 12,000 - 14,499 | 369,654 | 26,457,883,369 | 13.97 | 37,041,036,717 | | | |
| 4 | Container | (TEU) 8,000 - 11,999 | 171,058 | 10,691,144,708 | 16.00 | 14,967,602,592 | | | |
| 5 | | | | | | | | | |
| 20 | | | | | | | | | |
| | | | | | | | | | |
| | | Combined results | 1,750,000 | 168,898,488,121 | 10.4 | 236,457,883,369 | | | |



Section 4. Review target modelling results

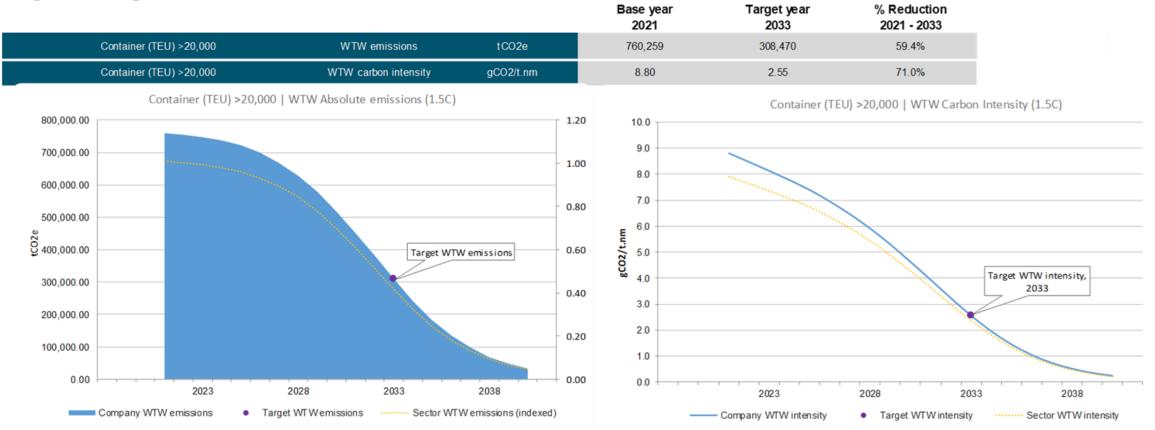
Target modelling results - 1.5C





Section 4. Review target modelling results

Target modelling results - 1.5C







Sectoral Decarbonization Approach - Maritime Transport Tool

Version: Version 1.0 Ple

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Step 1: List the vessel type, size, base year emissions (WTW), activity, and target year activity in columns D, E,G, H and J for each different vessel type or size category for which targets are to be calculated.

Step 2: Calculate the targets for each different vessel type or size category using the "Tool" tab.

Step 3: hput the results calculated in step 2 into columns L through T of the SBTaggregator tab. The aggregated results and prorated reduction target are shown in at the bottom of row of this table. Please note that only intensity targets with the same activity denominatos (i.e., unit) can be aggregated.

| | Emissions and activity data (as entered in tool interface) | | | | | | | Target modelling results - 1.5C | | | | |
|----|--|-----------------------|--------------------------|-----------------------------|---|-----------------------------|--------------------------|---------------------------------|---|----------------|--|--|
| | | Base year | | | Target year | Target year | | Target year | | | | |
| | Vessel type | Vessel size | WTW emissions (tCO2e) | Activity (t.nm or GT.nm) | WTW carbon intensity (gCO2e/t.nm or gCO2e/GT.nm) | Activity (t.nm or GT.nm) | WtW emissions (tCO2e) | % reduction | WTW carbon intensity (gCO2e/t.nm or gCO2e/GT.nm) | % reduction | | |
| 1 | Container | (TEU) >20,000 | 760,259 | 86,393,088,553 | 8.80 | 120,950,323,974 | 308,470 | 59.4% | 2.55 | 71% | | |
| 2 | Container | (TEU) 14,500 - 19,999 | 449,028 | 45,356,371,490 | 9.90 | 63,498,920,086 | 182,190 | 59.4% | 2.87 | 71% | | |
| 3 | Container | (TEU) 12,000 - 14,499 | 369,654 | 26,457,883,369 | 13.97 | 37,041,036,717 | 149,985 | 59.4% | 4.05 | 71% | | |
| 4 | Container | (TEU) 8,000 - 11,999 | 171,058 | 10,691,144,708 | 16.00 | 14,967,602,592 | 69,406 | 59.4% | 4.64 | 71% | | |
| 5 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| | | | | | | | | | | | | |

CONTAINER OPERATOR: GROWTH



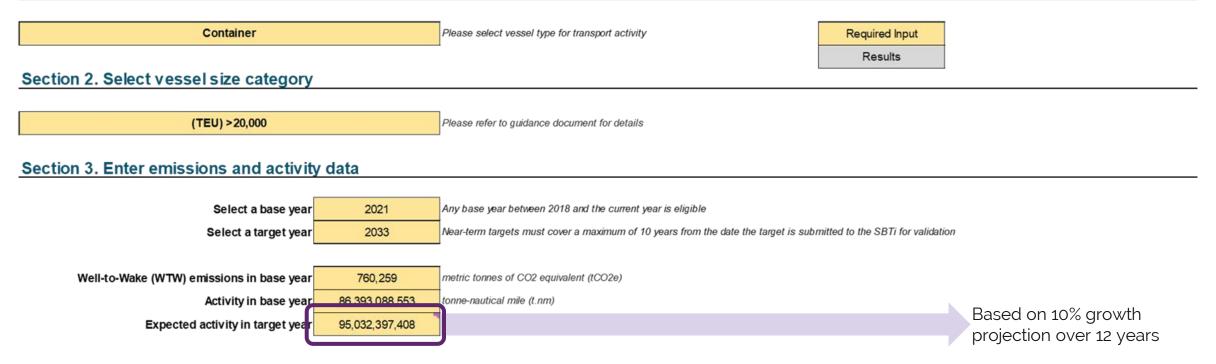


Sectoral Decarbonization Approach - Maritime Transport Tool

Version: Version 1.0

Please refer to: Terms of use Disclaimer Contact: info@sciencebasedtargets.org

Section 1. Select type of vessel used for transport activity



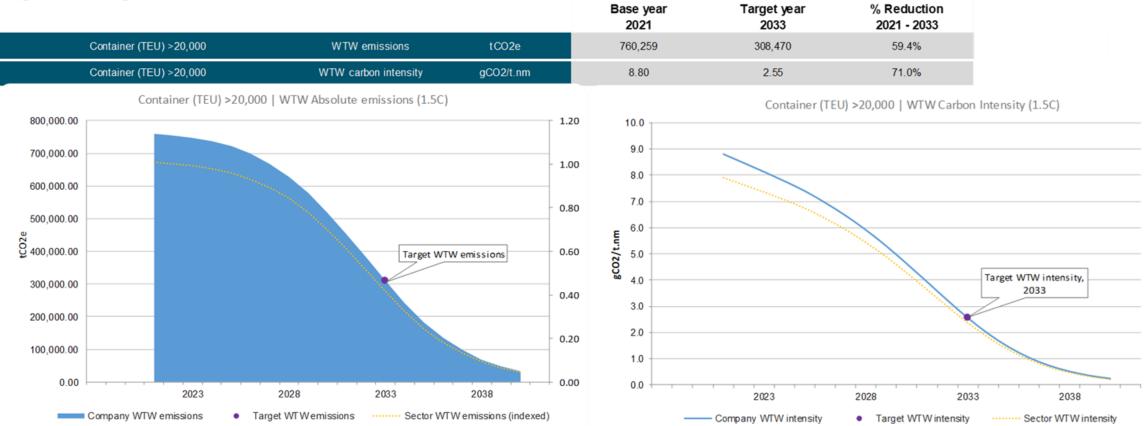
CONTAINER OPERATOR: HIGH GROWTH

Repeat of 40% growth example used previously



Section 4. Review target modelling results

Target modelling results - 1.5C

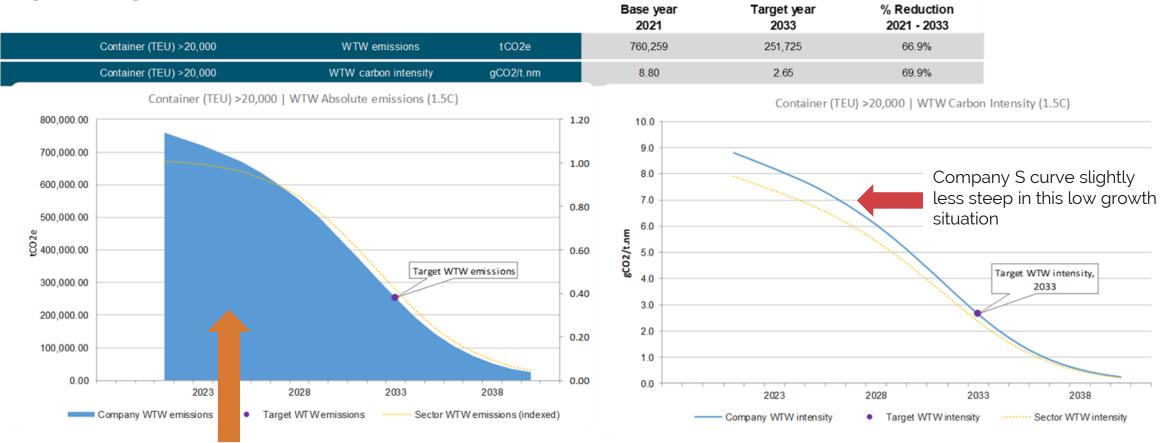


CONTAINER OPERATOR: LOW GROWTH



Section 4. Review target modelling results

Target modelling results - 1.5C



Easier to respect company share of GHG budget





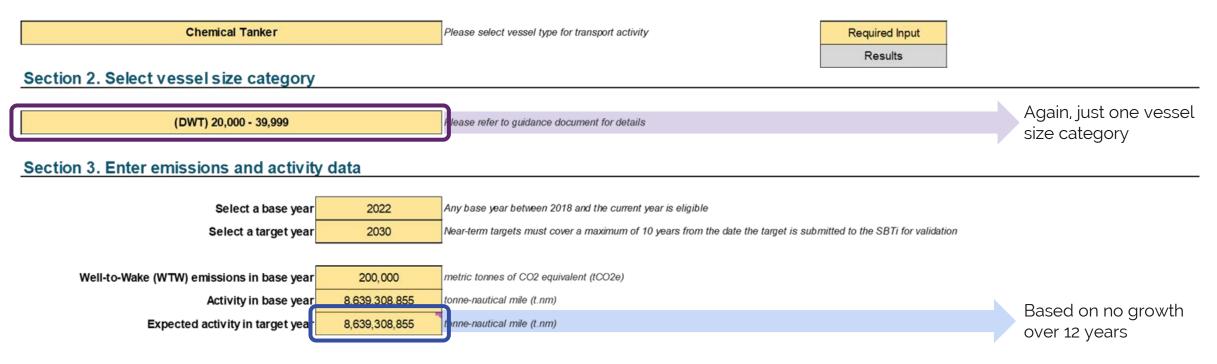
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Sectoral Decarbonization Approach - Maritime Transport Tool



Section 1. Select type of vessel used for transport activity

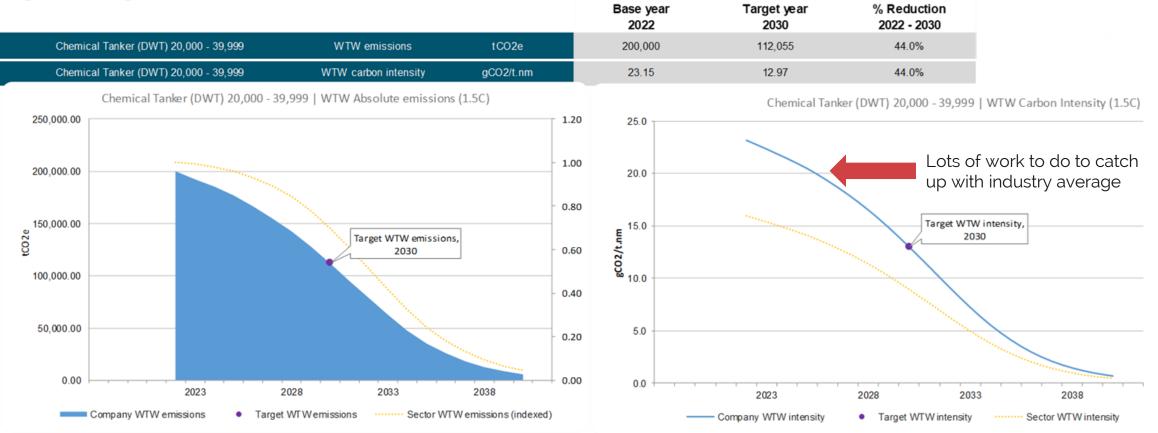


CHEMICAL TANKER



Section 4. Review target modelling results

Target modelling results - 1.5C



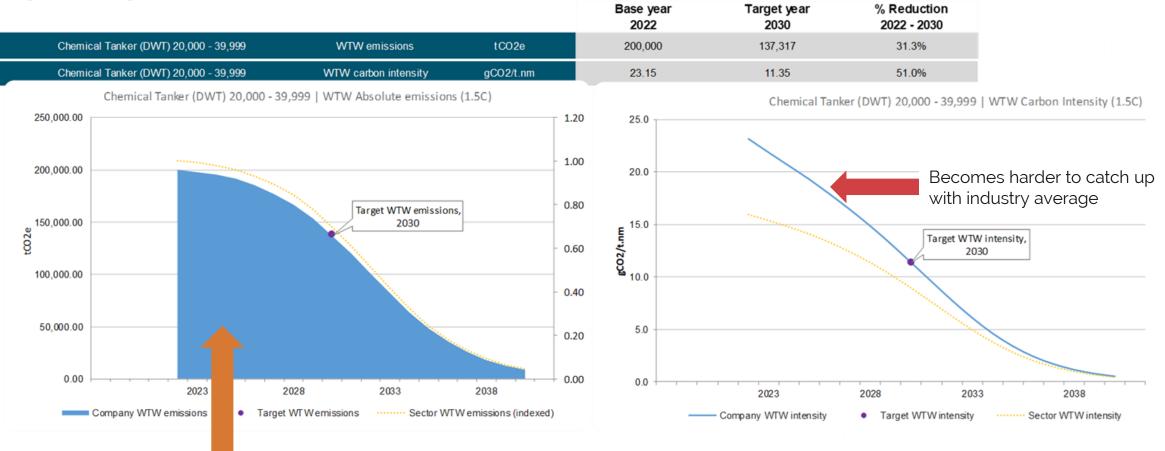
CHEMICAL TANKER: HIGH GROWTH



Change to 40% growth example

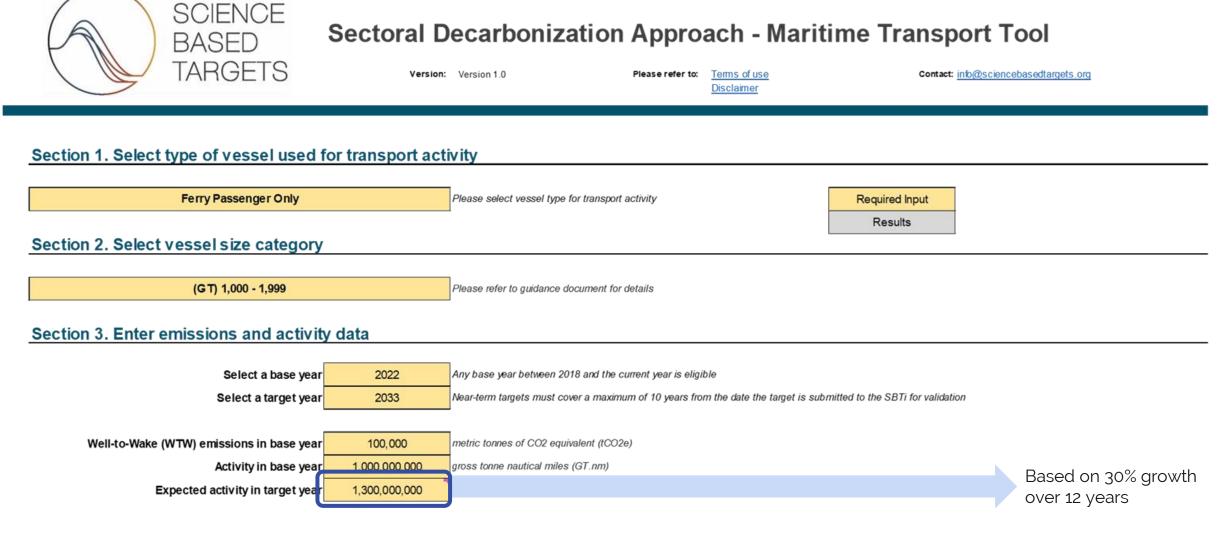
Section 4. Review target modelling results

Target modelling results - 1.5C



Fills the company share of GHG budget

FERRY OPERATOR



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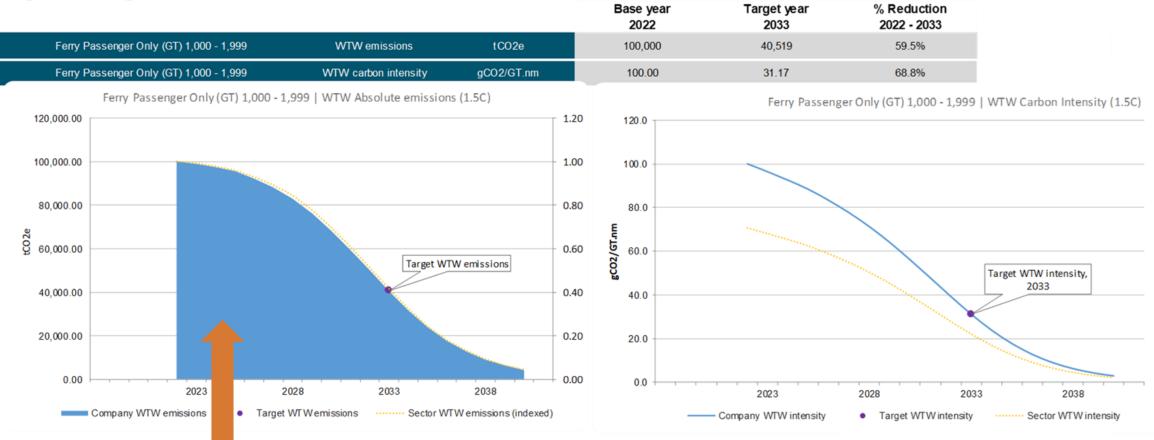
SCIENCE





Section 4. Review target modelling results

Target modelling results - 1.5C



Company share of GHG budget already constrained

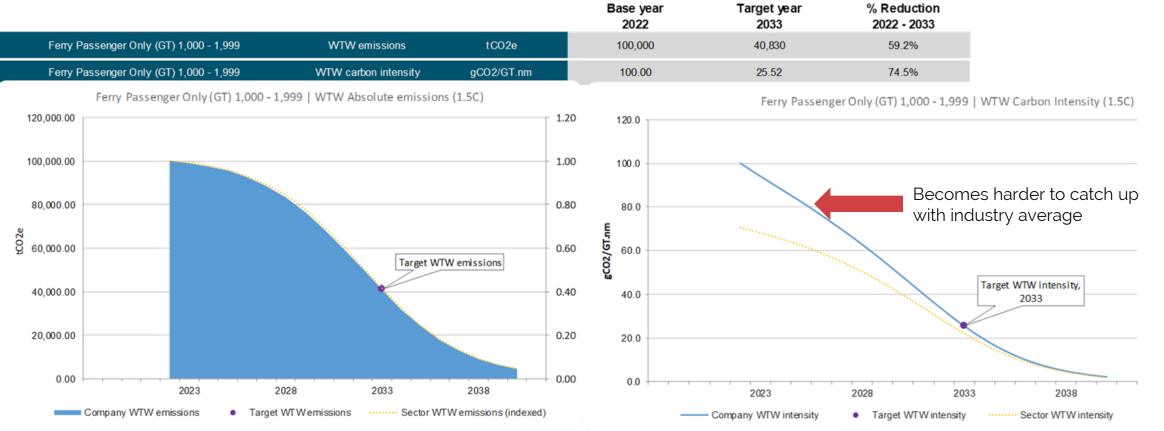
FERRY OPERATOR

Change to 40% growth example

Section 4. Review target modelling results

Target modelling results - 1.5C







TARGET FORMULATION

Targets may be expressed either as absolute emissions (tonnes CO₂e) or on an intensity basis (e.g., gCO₂e per tonne nautical mile).

Vessel Operator commits to reduce Well-to-Wake GHG emissions 69% per tonne nautical mile from ferry operations by 2033 from a 2021 base year.

- SBTi Bioenergy footnote may be applicable.
- Target recalculation is needed in the event of changes to the company structure or its operations. (e.g,. mergers & acquisitions, updates to growth projections, base year data/assumptions).



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Q&A SESSION



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CLOSING





THE TIME TO ACT IS NOW!

- We are urgently calling on **all companies to set science-based** net-zero targets.
- Join our mailing list to receive updates.
- Should you have any questions, contact us at info@sciencebasedtargets.org.
- The new guidance and materials, as well as the recording of this webinar can be found on the <u>SBTi maritime webpage</u>.



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THANK YOU













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in /science-based-targets

info@sciencebasedtargets.org