

## **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 CO<sub>2</sub>e).
- 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
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Heavy Load Carrier	General Cargo
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

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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

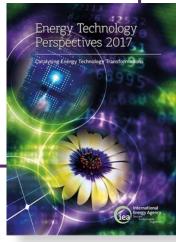


## **CARBON BUDGET ALLOCATION**



### 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.



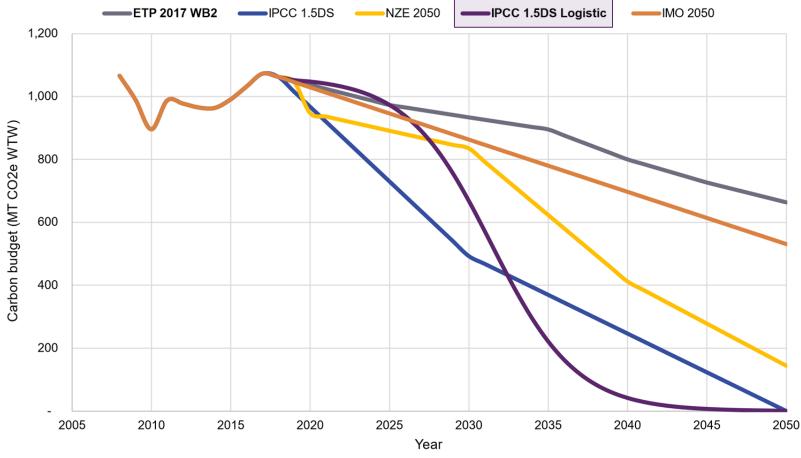
### 1.5°C

- 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).





### 

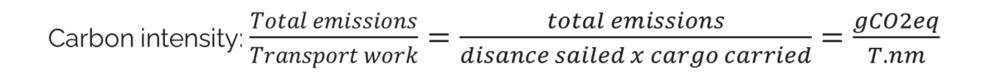




- Well-to-Wake Emissions (Upstream + Operational).
- CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub> (methane).
- IMO curve adapted to include WTT phase.



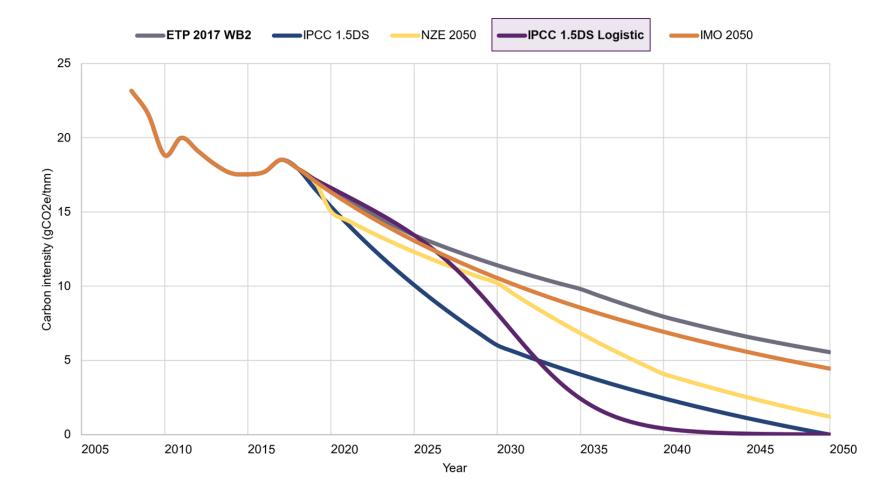




Freight vessels: carbon intensity = 
$$\frac{gCO2eq}{T.nm}$$

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

## CARBON INTENSITY



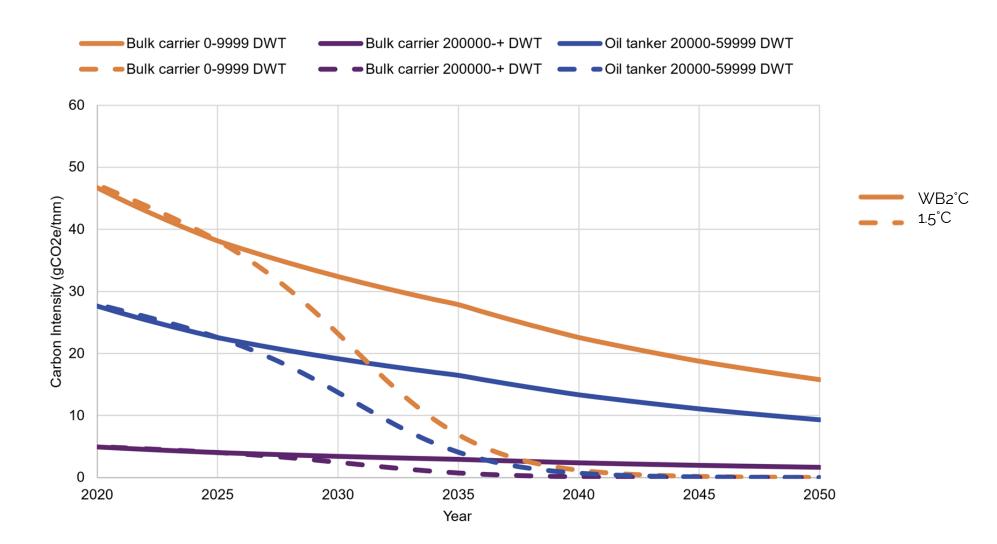


 Metric: gCO<sub>2</sub> / transport work.

### **CATEGORY SPECIFIC TARGET**

SCIENCE BASED TARGETS

Comparing apples with apples



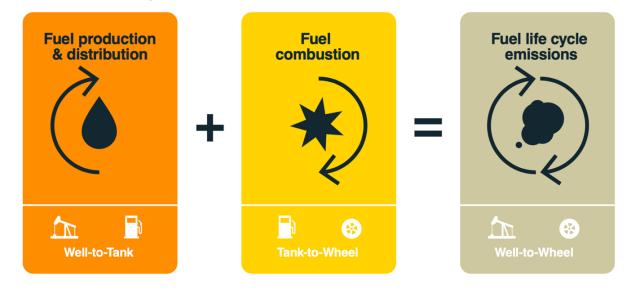
### **EMISSIONS BOUNDARY**



All targets must cover Well-to-Wake (WTW) emissions (in metric tonnes of CO<sub>2</sub> equivalent (CO<sub>2</sub>e)

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



<sup>©</sup> 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

## **E**or all companie

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

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### 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:



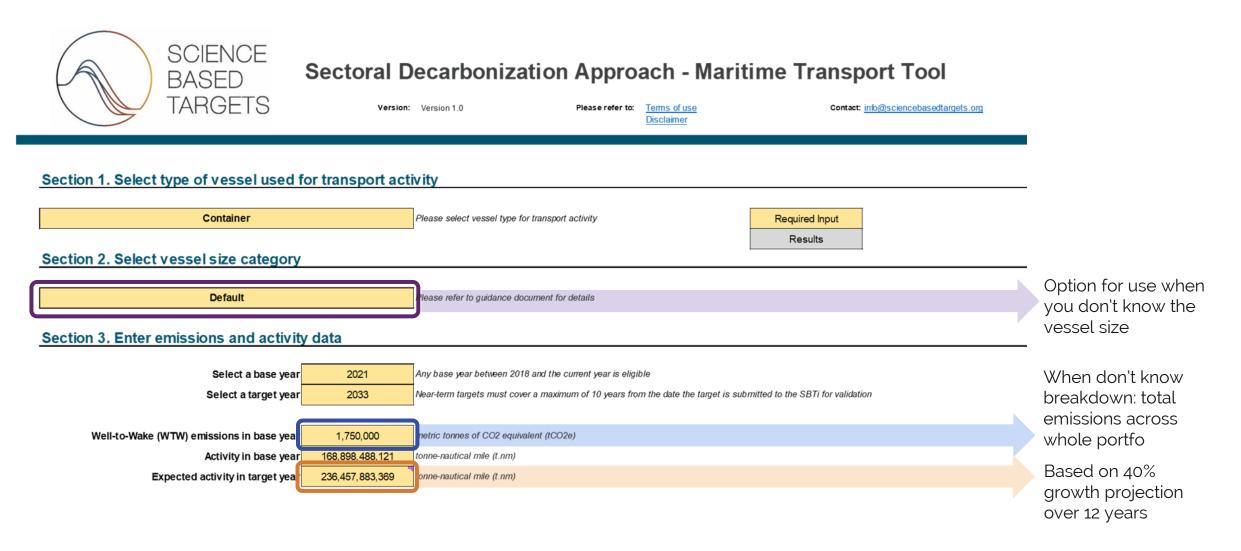
Vessel operators can model emission reduction targets for freight and passenger maritime transport activities. Shippers and Logistics Service Providers can also use this tool to model emission reduction targets for scope 3 category 4/9 emissions.

## 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<sup>\*</sup>.
  - 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

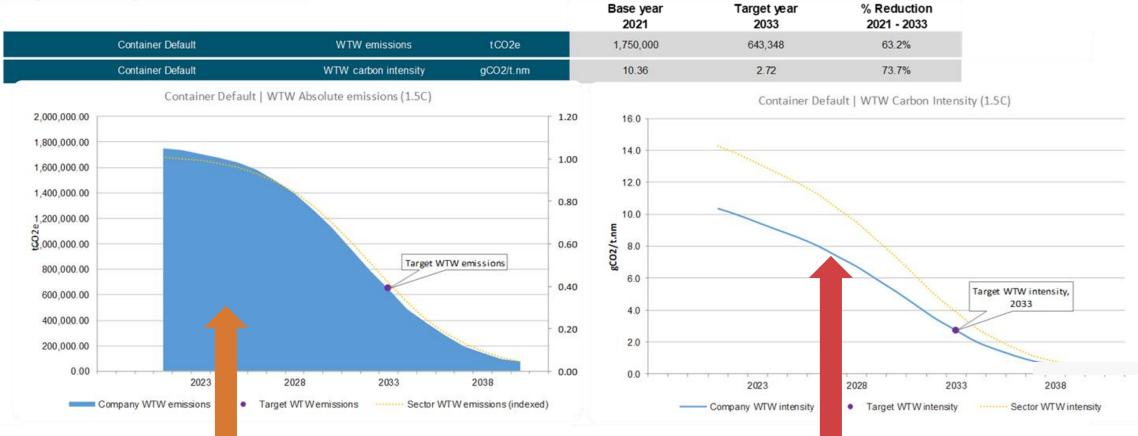
- 20,000 tonnes loaded at Tilbury & transported 1,800 nm to Barcelona.
- 5,000 tonnes unloaded at Barcelona and remaining 15,000 tonnes transported 1,150 nm to Piraeus.
- Total tonne nm = 20,000 x 1,800 + 15,000
   x 1,150 = 53,250,000
- Always break each journey down into constituent parts for the most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



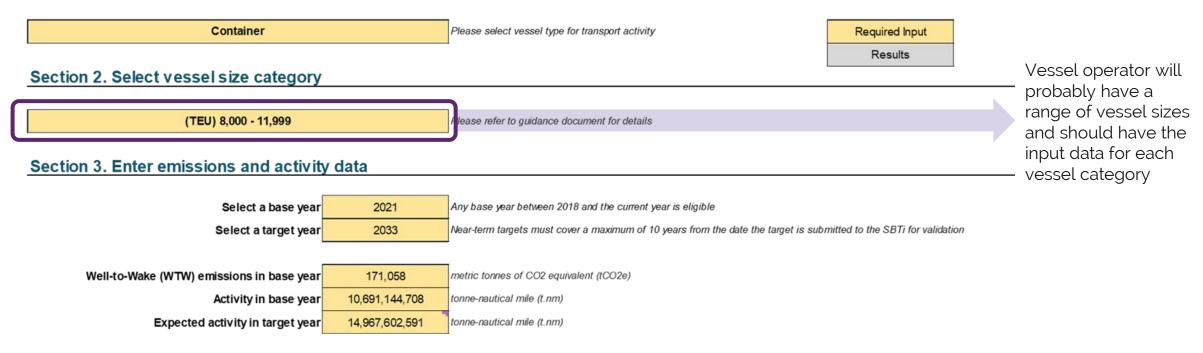


### Sectoral Decarbonization Approach - Maritime Transport Tool

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





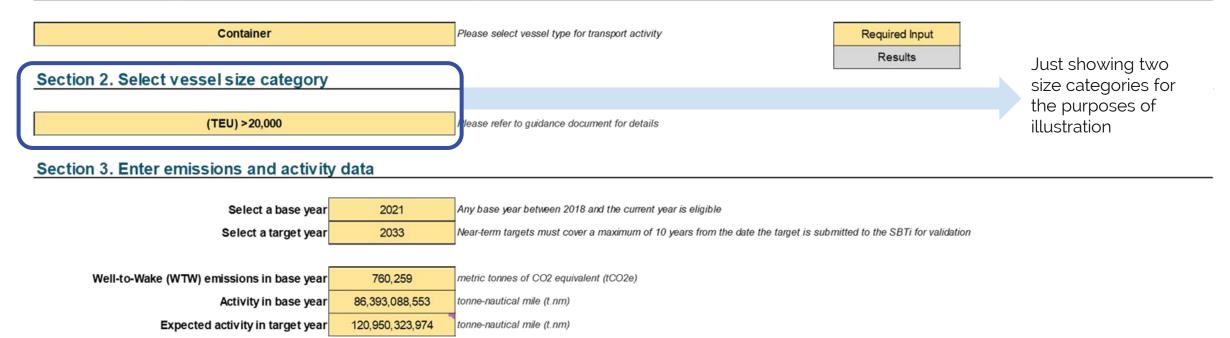


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### Sectoral Decarbonization Approach - Maritime Transport Tool

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.

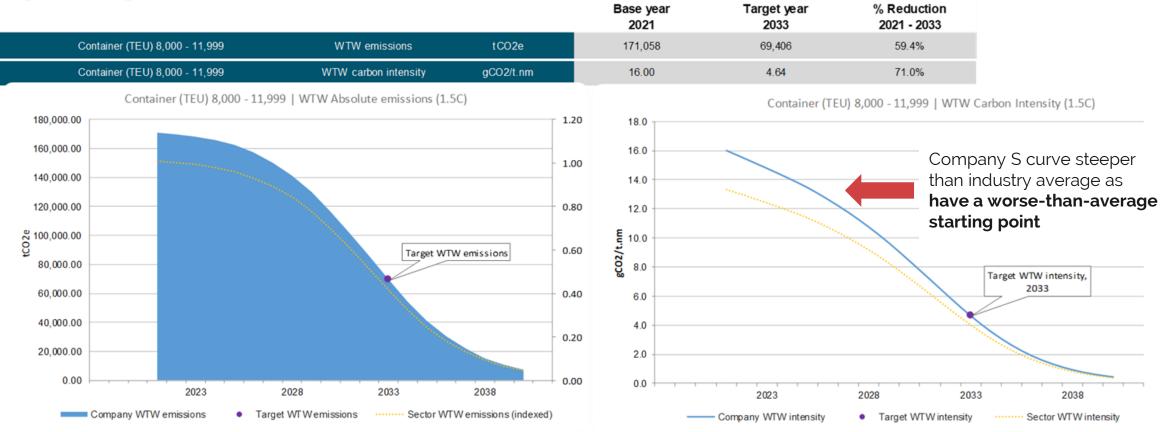
Step 3: hput the results calculated in step 2 into columns L through T of the SBTaggregator tab. The aggregated results and prorated reduction target are shown in at the bottom of row of this table. Please note that only intensity targets with the same activity denominatos (i.e., unit) can be aggregated.

	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

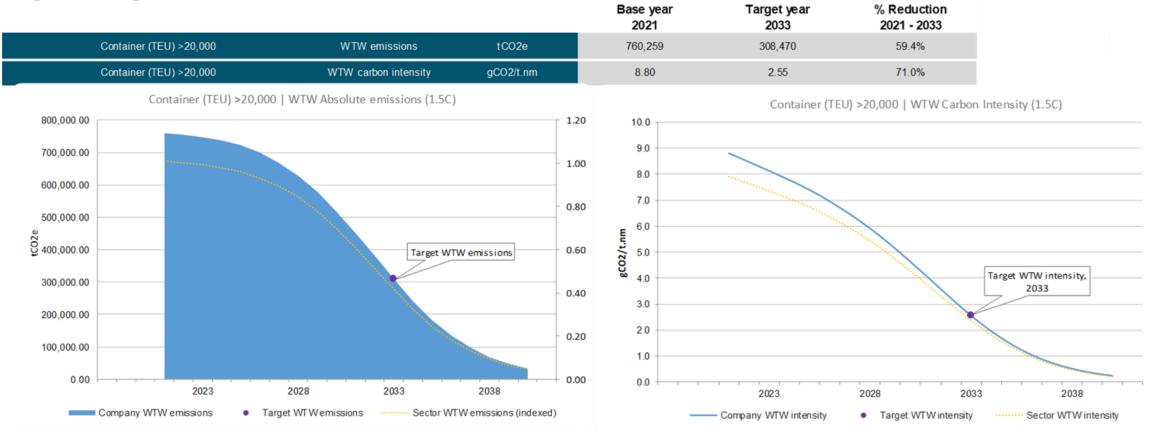
### Target modelling results - 1.5C





### 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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	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**



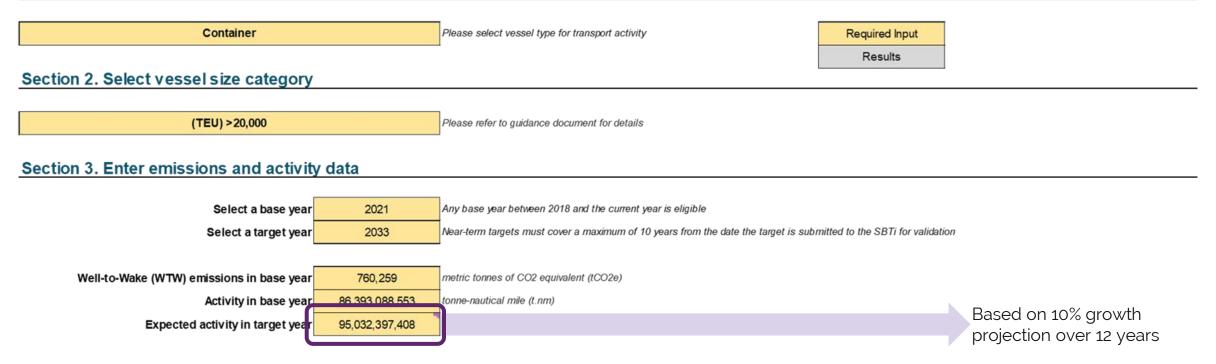


### Sectoral Decarbonization Approach - Maritime Transport Tool

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



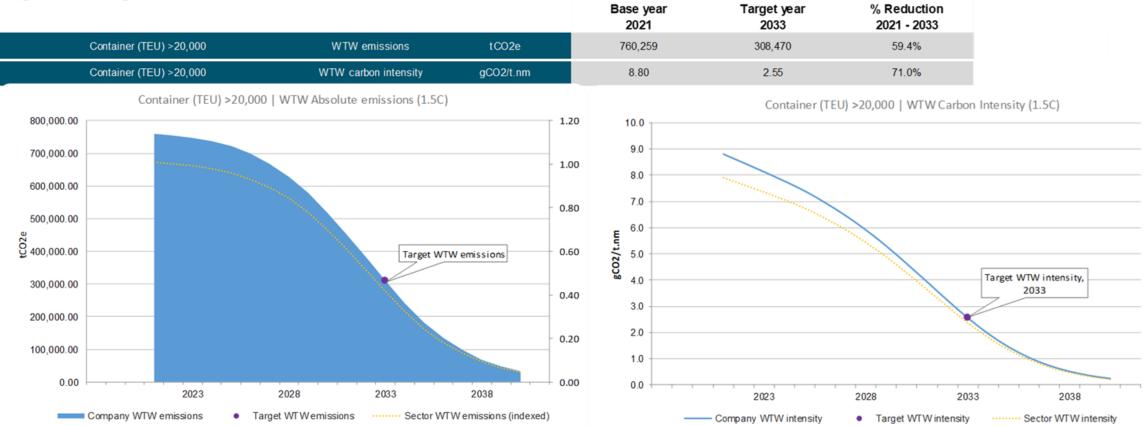
## **CONTAINER OPERATOR: HIGH GROWTH**

Repeat of 40% growth example used previously



### Section 4. Review target modelling results

### Target modelling results - 1.5C

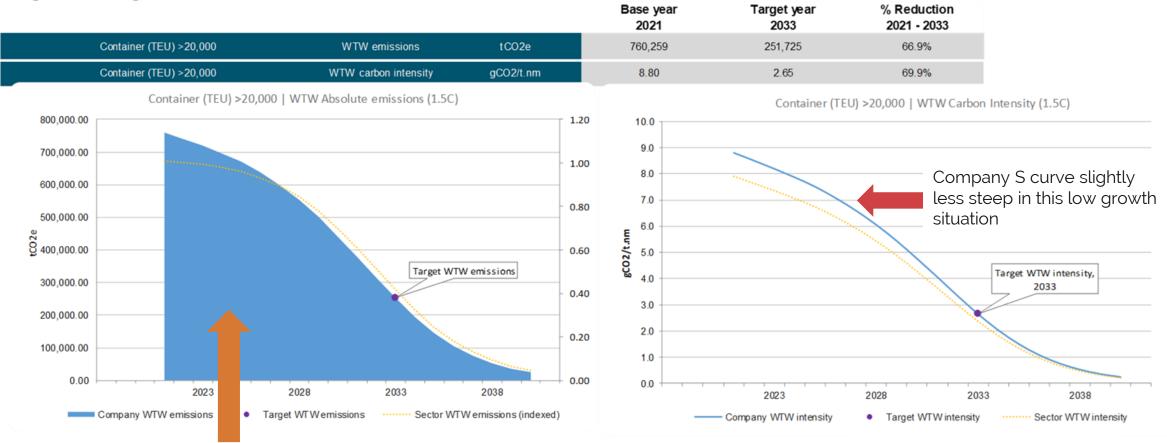


## **CONTAINER OPERATOR: LOW GROWTH**



### Section 4. Review target modelling results

### Target modelling results - 1.5C



Easier to respect company share of GHG budget





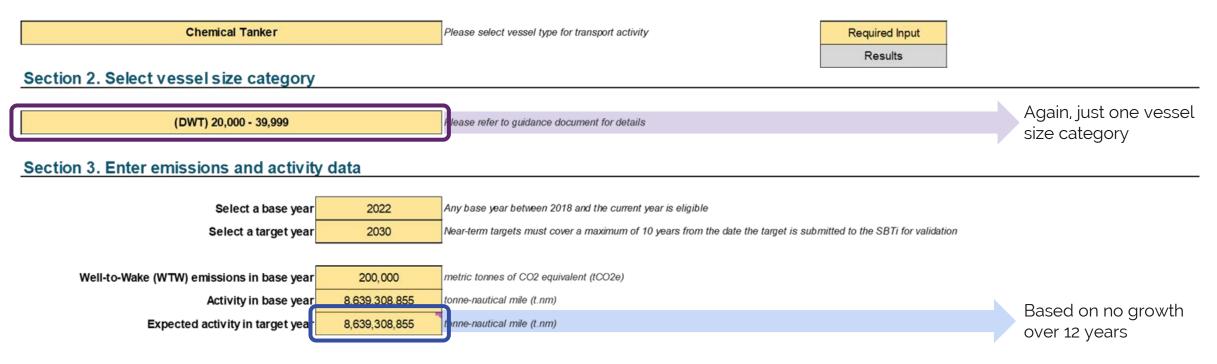
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### Sectoral Decarbonization Approach - Maritime Transport Tool



### Section 1. Select type of vessel used for transport activity

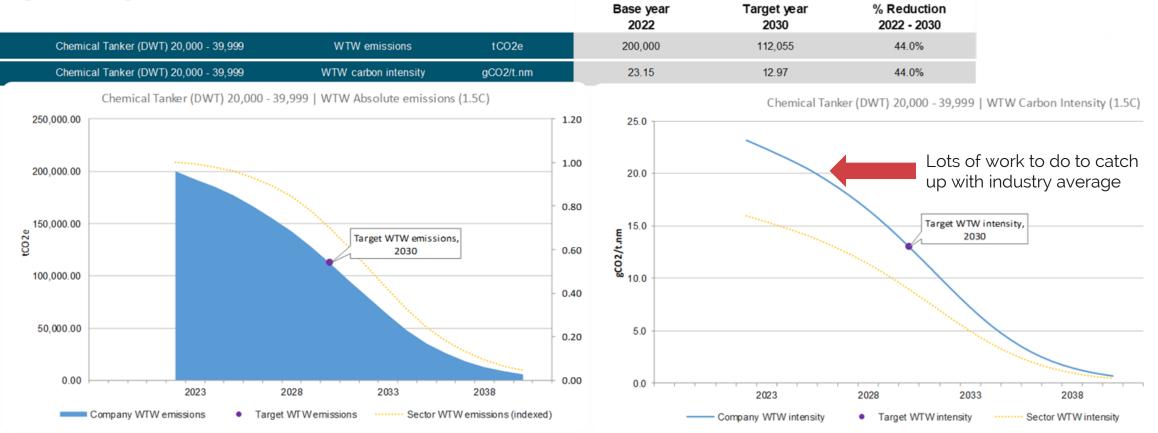


**CHEMICAL TANKER** 



### Section 4. Review target modelling results

### Target modelling results - 1.5C



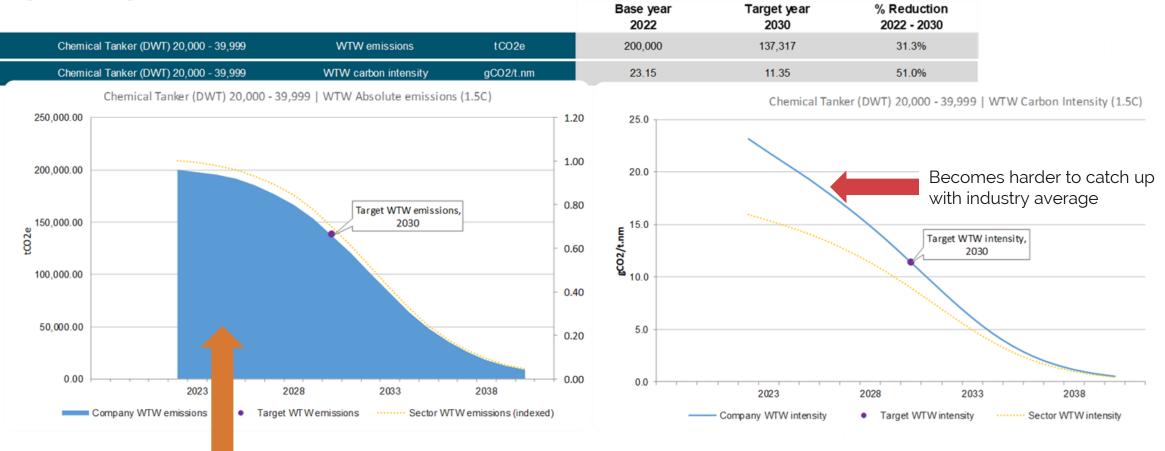
### **CHEMICAL TANKER: HIGH GROWTH**



Change to 40% growth example

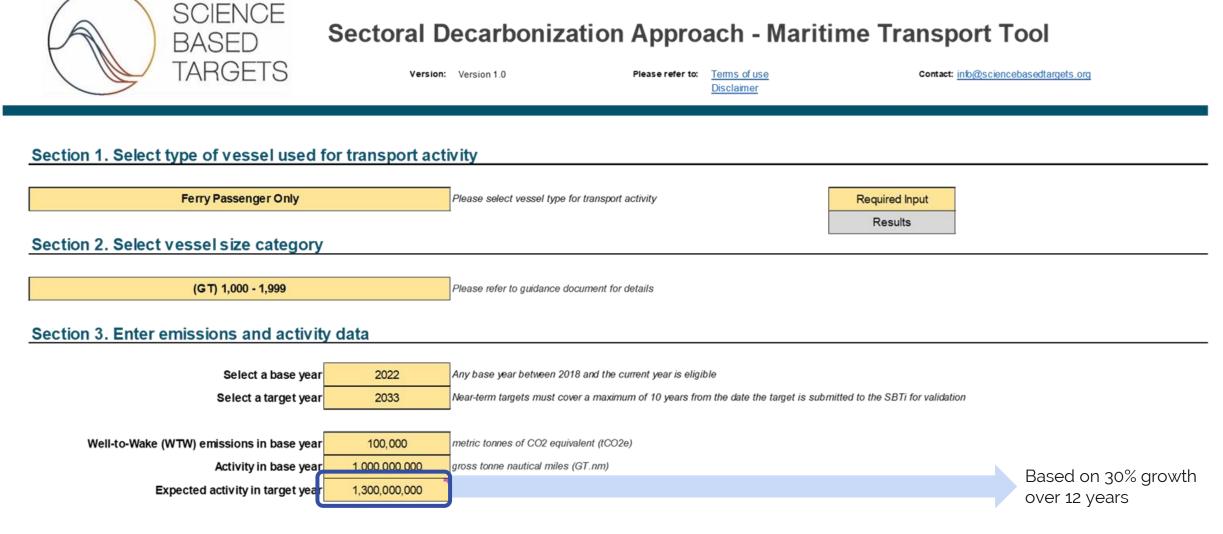
### Section 4. Review target modelling results

### Target modelling results - 1.5C



Fills the company share of GHG budget

## FERRY OPERATOR



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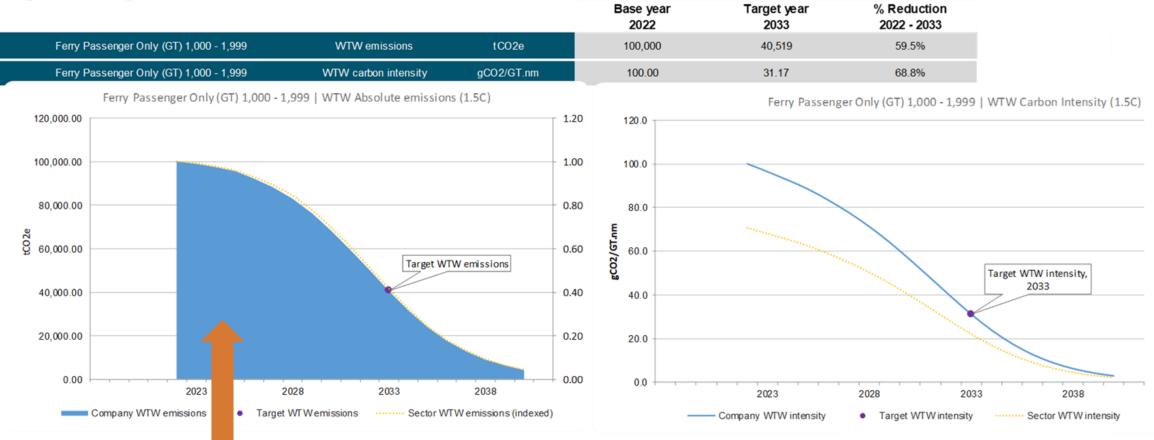
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### Section 4. Review target modelling results

### Target modelling results - 1.5C



Company share of GHG budget already constrained

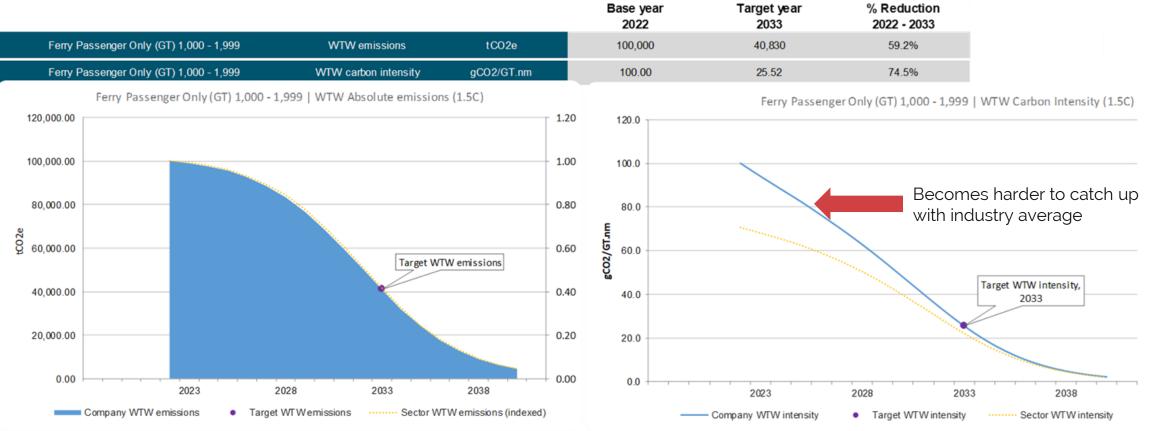
## **FERRY OPERATOR**

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 CO<sub>2</sub>e) or on an intensity basis (e.g., gCO<sub>2</sub>e 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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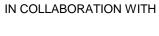
## THANK YOU













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