

## Shell's response to the open public consultation on FuelEU Maritime – Green Maritime Space Initiative

Shell welcomes the EU's Green Deal and supports the target to achieve climate neutrality in the EU by 2050. For this to happen, industry needs clear goals and predictable policies to provide the business case for investment. Therefore, Shell supports the European Climate Law's role in making it a legislative requirement to have pathways to net-zero emissions (NZE) for key sectors, including the maritime sector. To deliver NZE in shipping by 2050 in the EU there is a need to accelerate the deployment of low carbon technologies and investments in this sector. The FuelEU Maritime initiative is a first concrete step from the EU in this direction. Shell believes that a sectoral policy framework will be required to set clear goals and obligations for different actors in the sector. The framework will need to consist of a set of complementary measures to accelerate and synchronise demand and supply of lower carbon energies and provide the necessary infrastructure. It will need to address the following key challenges:

- **Global nature of industry.** Ship and fleet owners and operators are spread across many jurisdictions and so for policy to be most effective it should be enforced across all jurisdictions and vessels. The EU can play a key role in leading the way with a comprehensive policy framework and should influence global policies to ensure economic sustainability.
- **Long-life, capital intensive assets and undercapitalisation.** New deep-sea vessels cost several hundred million each to build and new cruise ships up to \$1billion. These ships have a commercial life of 20-30 years and so there is a slow turnover of the fleet, which in turn slows down penetration of new (non-drop-in) fuels and powertrains. Ship owners want predictability and a level playing field. Technology risks tend to inhibit early adoption.
- **The pathway to achieve NZE in shipping is not yet agreed.** Currently there is no scalable zero-carbon drop-in fuel option, i.e. synthetic fuels based on direct air capture or advanced biofuels that can be used on existing vessels, and no consensus on a final technology and fuel mix that is needed to deliver zero-emission shipping. A wide range of destination zero-carbon fuel and power train options are being developed including hydrogen-based routes (liquid hydrogen, ammonia, methanol), methane options (bio- or synthetic LNG) and drop-in liquid bio- or synthetic fuels. None of them are technically ready today and all are cost disadvantaged compared to today's internal combustion engines and bunker fuels. Ready today lower carbon fuels (LNG and FAME based bio-bunker blends) are being offered as a transition step. Any new fuel will need a new bunkering and supply infrastructure in many ports around the world.

Shell believes that to shift the international deep-sea shipping sector to decarbonisation, several likely features of the sector's transition can already be assumed:

1. The pathway will start with ready today energy efficiency measures.
2. Fuels cells are a potential gamechanger enabling the use of zero-carbon fuels at high efficiency.
3. The sector will eventually converge around a hydrogen-based fuel needed for the scale of supply.
4. The hydrogen choice will likely be between liquid hydrogen and ammonia.
5. LNG significantly reduces air emissions compared to fossil fuel and contributes to the reduction of GHG emissions, thus from an environmental footprint is the preferred fuel option today. It will continue to have at least a 25-year window to contribute as a result of the late start and slow fleet turnover to zero emission ships.
6. There will be a role during the transition for liquid and gaseous biofuels for the legacy fleet.

Internationally trading vessels contribute over between 70%-85%<sup>1</sup> of global shipping emissions, and most cargo vessel are deployed globally, it is therefore critical that global shipping is set on a clear trajectory to reduce emissions via mandatory measures adopted by the IMO.

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<sup>1</sup> MEPC 75/7/15 Reduction of GHG emissions from ships, Fourth IMO GHG Study 2020 – Final Report, 2020

The EU should take a decisive role in driving IMO policies and enabling international deep-sea shipping decarbonisation by:

- **Driving development at IMO:** The revised IMO Strategy due in 2023 should call for a more ambitious target of net zero carbon emissions in 2050. Short term goal-based measures addressing both design (the IMO Energy Efficiency Design Index (EEDI)) and Energy Efficiency Existing Ship Index (EEXI)) and operational (Carbon Intensity Index (CII)) indices should all apply to the existing fleet. As the EEDI/EEXI is more advanced, it should be adopted as soon as possible and not be delayed by the finalisation of the CII measure.
- **Market based measures (MBM):** Introduce a price on emissions in the shipping sector and utilize the revenue to fund R&D and pilot schemes to decarbonise the sector, as well as funding infrastructure/bunkering at ports. Preferably this should be at a global level. There is an opportunity for EU Member States to lead efforts at IMO level for a global system. With respect to the EU proposals to include international maritime into the EU ETS, Shell supports a standalone ETS for international maritime as an alternative to an EU ETS extension. In the event a global MBM is implemented it will be easier to phase out a standalone ETS rather than having to carve out international maritime from the existing EU ETS. In case of a standalone ETS, Shell recommends allowing limited carbon credits for international maritime as compliance pathway against the ETS obligations to reduce the cost of compliance whilst maintaining a robust carbon price.
- **Research, development and deployment (RD&D) for low- and zero-carbon solutions in shipping:** in the absence of proven pathways to low- and zero-emission shipping, significant effort is required to develop and prove new technologies in an industry which in the face of slow vessel turnover and high CAPEX is reluctant to take risks by deploying untested technologies. Existing and emerging EU RD&D funding mechanisms (such as the Clean H2 Partnership) should support the required technologies such as fuel cells for energy conversion, on board integration, (fuel systems, tanks, optimising energy use), port infrastructure (storage, bunkering) and develop uniform port standards to enable the use of the new fuels. If the EU decides to set up a separate EU ETS for shipping, any income from a shipping ETS fund should be used to set up a dedicated fund to support RD&D in low- and zero- carbon solutions for shipping in addition to the existing funding schemes.
- **Support for lower carbon options today:** policy should encourage the use of lower carbon fuels available today, specifically LNG and drop-in biofuels (liquid and gas) as the widespread uptake of zero carbon fuels in new vessels is at least a decade away.
- **Ports as a catalyst for change:** provision of onshore power supply (OPS) is being often mentioned as a key policy option to reduce GHG emissions and improve air quality in ports. However, OPS faces significant barriers with regards to the necessary investment to build the required zero emission supply chain in ports and on-board vessels. OPS should therefore be limited to shipping sectors and locations where there are clear advantages and should compete with other options for funding in preference of making it mandatory for all vessels. Ports should consider all options to reduce emissions, specifically just in time arrival and increasing port efficiency may present significant emissions reduction opportunities at lower investment costs. Incentives such as reduced port fees may also prove further encouragement to build lower emission vessels.

## **Definitions and cautionary note of the New Sketch: A Climate Neutral EU by 2050**

This document contains data and analysis from Shell's Sky scenario. Unlike Shell's previously published Mountains and Oceans exploratory scenarios, the Sky scenario is based on the assumption that society reaches the Paris Agreement's goal of holding the rise in global average temperatures this century to well below two degrees Celsius (2°C) above pre-industrial levels. Unlike Shell's Mountains and Oceans scenarios, which unfolded in an open-ended way based upon plausible assumptions and quantifications, the Sky scenario was specifically designed to reach the Paris Agreement's goal in a technically possible manner. These scenarios are a part of an ongoing process used in Shell for over 40 years to challenge executives' perspectives on the future business environment. They are designed to stretch management to consider even events that may only be remotely possible. Scenarios, therefore, are not intended to be predictions of likely future events or outcomes.

Additionally, it is important to note that as of 10<sup>th</sup> September 2020, Shell's operating plans and budgets do not reflect Shell's net-zero emissions ambition. Shell's aim is that, in the future, its operating plans and budgets will change to reflect this movement towards its new net-zero emissions ambition. However, these plans and budgets need to be in step with the movement towards a net-zero emissions economy within society and among Shell's customers.

Also, in this document we may refer to "Shell's Net Carbon Footprint", which includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions but, to support society in achieving the Paris Agreement goals, we aim to help and influence such suppliers and consumers to likewise lower their emissions. The use of the terminology "Shell's Net Carbon Footprint" is for convenience only and not intended to suggest these emissions are those of Shell or its subsidiaries.

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# Public Consultation for the FuelEU Maritime – Green Maritime Space Initiative

Fields marked with \* are mandatory.

## Introduction

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The [European Green Deal communication](#) published by the European Commission in December 2019, emphasised the need to accelerate the transition to a low-emission and climate-neutral economy, including through the shift to sustainable mobility. The Commission has announced a basket of measures as part of this transition, to be proposed in the course of 2020 and 2021.

As part of this, the Commission plans to adopt in 2020 the comprehensive “Strategy on Sustainable and Smart Mobility”, delivering on ambitious sustainability and modernisation objectives, while ensuring the transport sector recovers from the COVID-19 crisis. The Strategy will set out the key areas and initiatives in transport and mobility where the Commission will consider policy actions to be taken in the coming years and beyond.

The 'FuelEU Maritime – Green European Maritime Space' initiative was announced as a legislative initiative in the context of the [2020 Commission Work Programme](#). It will be an important element of the Strategy on sustainable and smart mobility, focusing on ramping-up the production, deployment and uptake of sustainable alternative marine fuels, ensuring technological neutrality (low and zero-emissions sustainable alternative fuels and power, including but not limited to: liquid biofuels, e-liquids, decarbonised gas (including bio-LNG and e-gas), decarbonised hydrogen and decarbonised hydrogen-derived fuels (including methane, and ammonia) and electricity), regulating access of the most polluting ships to EU ports and obliging docked ships to drastically reduce their emissions, including through using shore-side electricity.

By creating a clear pathway for the demand of sustainable alternative fuels (low and zero-emissions sustainable alternative fuels and power) in maritime transport, the 'FuelEU Maritime – Green European Maritime Space' initiative aims to accelerate the achievement of low-emission, climate-neutral shipping and

ports by promoting the uptake of sustainable alternative energy and powertrain systems. This initiative is a first concrete step to bring the maritime sector in line with the European target of reaching climate-neutrality by 2050. It does not address issues related to the energy system and infrastructure, taxation, state aid or the EU Emissions Trading System, which will be subject to specific proposals and policy actions.

This initiative continues the approach already promoted by the 2016 [Low Emission Mobility Strategy](#), with a clear pathway for the maritime sector to contribute to the EU's objectives to reach climate neutrality by 2050 outlined in the [European Green Deal](#), the [Commission's long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050](#) and the proposal for a Climate Law, as well as the [strategic orientations of Horizon Europe](#). It is also in line with the global Strategy for the reduction of GHG emissions from ships by the [International Maritime Organization](#), which includes candidate measures and recommendations to support the development and uptake of low- and zero-carbon alternative fuels.

This public consultation invites citizens and organisations to contribute to the assessment of how to accelerate the uptake of sustainable alternative energy and power by the shipping sector. The consultation will be open for a period of 10 weeks instead of the standard 12 weeks. The consultation period has been shortened given the importance of the measure including in the recovery from the crisis. A targeted consultation with various stakeholders will complement the public consultation.

Please note that it is not mandatory to reply to all questions.

## About you

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### \* Language of my contribution

- Bulgarian
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\* I am giving my contribution as

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- EU citizen
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- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

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Lea

\* Surname

Weisbrod

\* Email (this won't be published)

lea.weisbrod@shell.com

\* Organisation name

*255 character(s) maximum*

Shell

\* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

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Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

05032108616-26

\* Country of origin

Please add your country of origin, or that of your organisation.

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- Cook Islands
- Costa Rica
- Côte d'Ivoire
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\* Publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

**Anonymous**

Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published.

**Public**

Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution.

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\* Please specify which interests you (the organisation on behalf of which you respond) represent

- National public authorities (transport ministries, agencies)
- Regional or local public authorities
- Ship owning and ship management
- Short sea shipping
- Ports management and administrations
- Port terminal operator or other port services provider
- Inland waterways sector
- Shipbuilding and marine equipment manufacturers
- Academia, research and innovation
- Investment and financing

- Energy producers and fuel supply (including alternative / sustainable fuel sources)
- Technical standardization bodies and class societies
- Logistics suppliers, shippers and cargo owners
- Interest organisations representing societal interests, particularly on environmental and social topics
- Other

## General assessment and policy context

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1. Various studies have described key options for decarbonising the maritime sector. These include the potential of energy efficiency improvements (i.e. less fuel consumed per a given volume of transported cargo or passengers) and the uptake of sustainable alternative fuels (i.e. use of low- and zero-carbon fuels).

In your view, how relevant is the uptake of sustainable alternative fuels and diversifying the fuel mix of maritime transport in order to accelerate the decarbonisation of shipping?

- Very relevant
- Relevant
- Somewhat relevant
- Less relevant
- Not relevant
- No opinion

2. While energy efficiency improvements have occurred over the past decade in shipping, the uptake of sustainable alternative fuels or propulsion technologies remained negligible.

What are your expectations concerning the uptake of sustainable alternative fuels in maritime transport in the nearest future, i.e. by 2025 (under the existing regulatory framework)?

- It will increase significantly
- It will increase moderately
- It will remain the same
- It will decrease

- No opinion

3. The EU has already set up a regulatory framework for the deployment of alternative fuels infrastructure for maritime transport. The framework includes provisions for equipment of the necessary infrastructure in ports on the [Trans-European Transport Network \(TEN-T\)](#) in particular through the provisions of the Directive on the deployment of alternative fuels infrastructure ([Directive 2014/94/EU](#)). Yet the existing regulatory scope is limited to the supply of Liquefied Natural Gas (LNG) and on-shore power supply (non-mandatory) and does not contain provisions related to their use in operations.

In your view, how relevant is it to complement the existing regulatory framework with policy measures focusing on the demand side (i.e. addressing the use of sustainable alternative fuels by operators) in order to achieve a better deployment or further uptake of such fuels?

- Very relevant
- Relevant
- Somewhat relevant
- Less relevant
- Not relevant
- No opinion

4. The development and deployment of sustainable alternative fuels requires coordination among different economic actors (e.g. operators, fuel suppliers, ports, technology providers, etc.). It also requires a consistent approach to ensure availability of the fuel and guarantee the well-functioning of the internal market.

The Green Deal foresees that EU action needs to be coordinated with action at global level, in particular the International Maritime Organization (IMO). However, what would be, in your opinion, the governance level best suited to address these objectives in the European Union?

- The objectives would be best addressed at the EU level
- The objectives would be best addressed by Member States individually
- The objectives would be best addressed at regional level
- The objectives would be best addressed by individual stakeholders with no public intervention
- No opinion

5. The [European Green Deal](#) as well as the proposal for a European Climate Law set the objective of achieving climate neutrality by 2050 and the maritime transport sector should contribute to this decarbonisation effort. This means that most of the fuel consumed by EU maritime transport will have to be low- or zero-carbon at the latest by 2050.

In your view, how likely is it that – without specific policy intervention - a significant uptake of such low or zero-carbon fuels will take place in the following periods?

Please rate the options listed in the table below from 5 (very likely) to 1 (very unlikely). Not all options need to be rated (e.g. in case of “no opinion”).

**A significant use of sustainable alternative fuels to occur:**

	1	2	3	4	5
Before 2030	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between 2030 and 2040	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After 2040	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. The 'FuelEU Maritime' initiative focuses mainly on the decarbonisation of the maritime sector. In your view, how relevant is it to complement this initiative with policy measures dedicated to inland navigation (provision of on-shore power supply, uptake of new sustainable alternative fuels for inland waterway vessels in operation, etc.)?

- Very relevant
- Relevant
- Somewhat relevant
- Less relevant
- Not relevant
- No opinion

If very relevant, relevant or somewhat relevant, please specify:

*400 character(s) maximum*

Low emission mobility in inland navigation, e.g reduction in both GHG emissions and air pollution is important to meet the objectives of the Green Deal. It is important that inland navigation is included in the FuelEU Maritime initiative so that there is consistency and a coherent framework between the maritime sector and inland navigation.

## Barriers to the uptake of sustainable alternative fuels in maritime transport

7. According to the data on emissions from maritime transport collected under the [EU Monitoring, Reporting and Verification \(MRV\) Regulation](#), the vast majority of the 44 million tonnes of fuel consumed in 2018 concerned conventional fossil fuels such as heavy fuel oil, gas oil, diesel oil, etc. Despite the existing framework for supporting corresponding infrastructure development, sustainable alternative fuels were only a small fraction of the fuels consumed by the monitored fleet. How would you explain this situation?

Please rate the potential barriers listed in the table below from 5 (most important) to 1 (least important). Not all options need to be rated (e.g. in case of “no opinion”).

### Reasons for the low uptake of sustainable alternative fuels

	1	2	3	4	5
Lack of predictability of the regulatory framework	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
High risk of investment in vessels technology and port infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Lack of mature technologies (e.g. on ships and on shore)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Higher price of sustainable alternative fuels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Lack of communication between actors and lack of transparency on the environmental performance, incl. of the fuel performance	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insufficient supply (fuel production and infrastructure) of sustainable alternative fuels or on-shore power supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Insufficient demand for sustainable alternative fuels or on-shore power supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Bunkering (i.e. fuel supply) of ships outside the EU	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presence of split incentives in the sector (i.e. situations where the benefits of an investment do not entirely accrue to the investor. Example: a ship owner that is not also the ship manager may have less incentive to invest in green technologies)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other reasons, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

If “other reasons”, please specify:

*400 character(s) maximum*

Vessels have a high CAPEX and long commercial life and switching to alternative fuels (i.e. not drop-in solutions such as biofuels) requiring new fuel storage and conversion systems is generally not an option for existing vessels. Disruptive technology costs money and need new skills, so there is a risk that early movers back the wrong fuel/vessel choice and end up disadvantaged.

8. In your opinion, which of the identified barriers should be addressed as a matter of priority at EU level?

Please rate the items in the table below from 10 (highest priority) to 1 (lowest priority). Not all options need to be rated (e.g. in case of “no opinion”).

**Reasons for the low uptake of sustainable alternative fuels**

	1	2	3	4	5	6	7	8	9	10
Lack of predictability of the regulatory framework	<input type="radio"/>	<input checked="" type="radio"/>								
High risk of investment in vessels technology and port infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of mature technologies (e.g. on ships and on shore)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>							
Higher price of sustainable alternative fuels	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>						
Lack of communication between actors and lack of transparency on the environmental performance, incl. of the fuel performance	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insufficient supply (fuel production and infrastructure) of sustainable alternative fuels or on-shore power supply	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Insufficient demand for sustainable alternative fuels or on-shore power supply	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Bunkering (i.e. fuel supply) of ships outside the EU	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presence of split incentives in the sector (i.e. situations where the benefits of an investment do not entirely accrue to the investor. Example: a ship owner that is not also the ship manager may have less incentive to invest in green technologies)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other reasons, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If “other reasons”, please specify:

*400 character(s) maximum*

Shell believes that a sectoral policy framework will be required to set clear goals and obligations for different actors in the sector.

9. From your experience, can you give an example of a successful introduction of sustainable alternative fuel or power supply in maritime transport?

- Yes
- No

10. From your experience, can you give an example of a failed attempt to introduce sustainable alternative fuel or power supply in maritime transport?

- Yes
- No

### Possible policy options

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11. The table below presents possibly policy measures – both regulatory and non-regulatory – which could be taken at the EU level to address the barriers to the uptake of sustainable alternative fuels and power in the maritime sector.

Please rate them in the table below from 5 (most important) to 1 (least important). Not all policy measures need to be rated (e.g. in case of “no opinion”).

#### Policy measures to accelerate the uptake of sustainable fuels

	1	2	3	4	5
Accelerate research and innovation enabling the use of sustainable alternative fuels and power (demonstration and deployment)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Set a clear regulatory pathway for decarbonising the current marine fuel mix	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Increase public funding and incentivise private investment to overcome the high investment risk in vessels powered by sustainable alternative fuels or propulsion systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Increase public funding and financial support to overcome the high investment risk in sustainable alternative fuel supply or on-shore power supply infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Establish economic incentives to reduce the price differential between conventional and sustainable alternative fuels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Define objectives for the supply of sustainable alternative fuels and power to the maritime sector	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Define objectives and provisions for the use of sustainable alternative fuels and power in the maritime sector	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Develop standards related to sustainable alternative fuels (incl. fuels, machinery, infrastructure, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Increase transparency by establishing a certification mechanism for sustainable alternative fuels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Other measures (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

If “other measures”, please specify:

*400 character(s) maximum*

The pathway to NZE requires changes to vessels, fuels and infrastructure and increased costs need to be reflected in overall transport costs of goods which requires a level playing field. Introducing ambitious performance standards for new and existing ships needs a global approach to be effective. The EU should further foster its RR&D approach to reduce costs and address technology barriers.

12. How should requirements for the use of sustainable alternative fuels and power be set in your view?

a. For ships in navigation:

- Requirements on the share of specific sustainable alternative fuels to be used in ships fuel mix
- Performance requirements based on the carbon-intensity of energy used in marine operations
- Other (please specify)
- No opinion

If “other ”, please specify:

*400 character(s) maximum*

Performance requirements based on the carbon-intensity of energy used in marine operations. Carbon intensity of energy used in marine operations should be measured on a well-to-wake (WtW) basis.

b. For ships at berth:

- Requirements on the share of specific sustainable alternative fuels to be used in ship’s fuel mix while at berth (incl. use of on-shore power)
- Performance requirements based on the carbon-intensity of energy used by ships at berth
- Other (please specify)
- No opinion

If “other”, please specify:

*400 character(s) maximum*

Vessels have limited choices to change their fuel mix in ports so a prescriptive approach is difficult to enforce unless drop-in fuels such as biofuels are specified. Significant emissions are generated whilst vessels are waiting outside the port and addressing the overall efficiency of port operations should have priority to reduce port call emissions.

13. In case new requirements on the use of sustainable alternative fuels and power are proposed, to whom should these apply in your view?

a. Types of ships:

- To all ships
- To certain ship types (e.g. highest emitters) or types of trade
- Other (please specify)
- No opinion

If “other”, please specify:

*400 character(s) maximum*

To all international vessels over 5000 GT.

b. Scope coverage:

- Ships calling at ports of the European Union
- Ships bunkering in ports of the European Union
- Ships sailing in the territorial waters and Exclusive Economic Zones of EU Member States
- Other (please specify)
- No opinion

If “other”, please specify:

*400 character(s) maximum*

Preference is to have a global approach. If the EU takes action then it should be for ships calling at ports of the EU.

14. In your view, how should the environmental performance of sustainable alternative fuels for maritime transport be calculated?

- On a “tank-to-wake” basis, accounting total emissions from combustion on board a ship and potential leakage

- On a “well-to-wake” basis, taking into account emissions on board and potential leakage, but also emissions resulting from producing the fuel and making it available for use in ships
- Other (please specify)
- No opinion

If “other”, please specify:

*400 character(s) maximum*

A well-to-wake (WtW) basis should be used accounting for GHG emissions. To encourage first movers for a time limited period where availability of low well-to-tank (WtT) fuel is limited, fuels can be assessed on their tank-to-wake (TtW) emissions to encourage uptake in shipping and experience in their use. If a TtW approach is adopted then CO<sub>2</sub> emissions from biofuels should be accounted as zero.

15. In your view, what emissions should be considered in assessing the environmental performance of sustainable alternative fuels for maritime transport (including ships at berth)?

- CO<sub>2</sub> emissions
- CO<sub>2</sub> emissions and emissions of other greenhouse gases: methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)
- CO<sub>2</sub> emissions, methane (CH<sub>4</sub>) emissions, nitrous oxide (N<sub>2</sub>O) emissions and relevant emissions of air pollutants
- No opinion

If both greenhouse gases and air pollutants should be considered, do you have any views on how to weigh relative advantages and assess possible trade-offs?

*400 character(s) maximum*

Both GHG and air pollutants reduction should be given equal weight. For inland navigation until material volumes of low carbon fuels are available, reduction in air pollutants should be prioritized, eg through use of clean burning paraffinic fuels and LNG.

16. In accordance with data collected in 2018 under the EU Monitoring, Reporting and Verification (MRV) system, emissions from ships at berth (in port) amounted to around 6% of the total CO<sub>2</sub> emissions reported in MRV. In addition, ships at berth can become a significant source of air pollution, in particular for port cities. In your view and experience, how relevant is it to establish a regulatory framework specifically addressing emissions produced by ships at berth?

- Very relevant
- Relevant

- Somewhat relevant
- Less relevant
- Not relevant
- No opinion

17. Reducing emissions produced by ships at berth may require significant investments, for instance to install on-shore power connections. With this in mind, do you have any views on how these requirements for ships at berth should apply?

- Addressing all ships at berth
- Prioritising the ships and the ports already equipped with zero-emissions technologies (including on-shore power supply)
- Prioritising the highest emitters (e.g. specific ship segments)
- Taking action once critical infrastructure is made available in majority of EU ports
- Other (please specify)
- No opinion

## Additional information

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18. Are there other key aspects which you did not find reflected in the questions and you would like to comment upon?

Please give details.

*1500 character(s) maximum*

The pathway to net-zero emissions (NZE) in maritime requires changes to both vessels, fuels and infrastructure. The policy framework should be based on the following principles:

1. Shipping is a global activity and so ideally the policy to decarbonize the sector should be undertaken on a global basis through the IMO and enforced across all ships, flag states and ports.
2. Provide long-term clarity and legal certainty for commercial development and deployment of low carbon technologies and efficiency improvements. Policies should address the specific roles of the different entities both within the sector (e.g. ship owners, charterers and operators) and across the value chain. Policies should be pragmatically enforceable and unambiguous.
3. Ensure a level playing field for all fuel providers and ships, regardless of where they are owned or operated following the principles of the IMO.
4. Cover all GHG emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) and be informed by a well-to-wake (WtW) approach.
5. Include both final ambition level as well as interim targets and be challenging but feasible based on robust data analysis on technical feasibility delivering the required climate objectives.
6. Provide a carbon price to reduce the cost gap to alternative low- and zero-carbon options.
7. Mitigate investment risk in novel alternative vessels and fuels through providing favourable fiscal treatments to encourage first wave build and support advanced technology development.

Please feel free to upload documents, such as additional evidence supporting your responses, such as a policy brief or a position paper here. Please note that the uploaded document will be published alongside your response to the questionnaire which is the essential input to this open public consultation. The document is an optional complement and serves as additional background reading to better understand your position.

The maximum file size is 1 MB

Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

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**/Decarbonising\_the\_shipping\_sector\_EU\_policy\_recommendations.pdf**

19. Please provide references to any studies, reports or other documents that you think are relevant for this consultation, with links for online download where possible.

*1500 character(s) maximum*

Shell has published a joint report with Deloitte on decarbonizing shipping: <https://www.shell.com/energy-and-innovation/the-energy-future/decarbonising-shipping.html#vanity-aHR0cHM6Ly93d3cuc2hlbGwuY29tL0RIY2FyYm9uaXNpbmdTaGlwcGluZw>

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