

# Is there a role for sustainable biofuels in the decarbonisation of shipping?



**Andrew Stephens**, Executive Director  
Sustainable Shipping Initiative

**10<sup>th</sup> ISCC Global Sustainability Conference**  
12 February 2019

# SSI: Who are we?



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## How does the SSI work?

A multi-stakeholder initiative that brings together **like-minded and ambitious leaders spanning the entire shipping value chain** to contribute to – and thrive in – a more sustainable maritime industry.

through

**Leadership:** Demonstrating leadership through our members' sustainability initiatives to inspire change by sharing learning and best practice

**Collaboration:** Combining the SSI's expertise and knowledge to address specific challenges and working together to develop tangible solutions for adoption by the industry to overcome barriers to change

**Voice of the industry:** Driving and convening debate on key sustainability issues to encourage long-term thinking across the industry

# Decarbonisation



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# What is shipping doing about decarbonisation?

## The International Maritime Organisation's (IMO) initial strategy on reduction of GHG emissions from ships

- April 2018 MEPC.304(72)) reducing absolute GHG emissions by at least 50% from a 2008 baseline by 2050

## Poseidon Principles

- Launched June 2019 by 13 leading banks

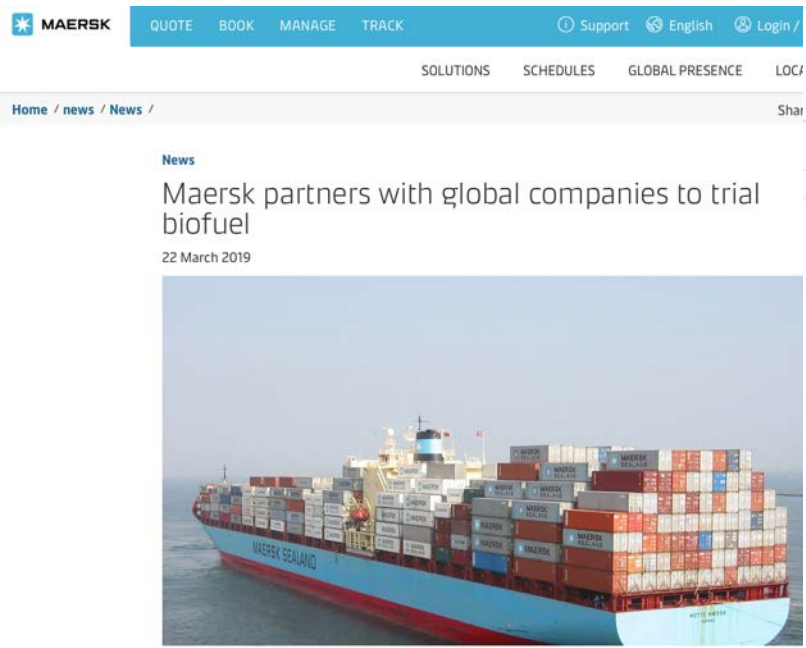
## Getting To Zero Coalition

- Launched September 2019, a partnership between the Global Maritime Forum, Friends of Ocean Action and the World Economic Forum
- SSI is one of six knowledge partners & a member of the GTZ's ***Fuels, Technologies and Pathways*** workstream

## Science Based Targets Initiative

- Commitment so far by 5 industry actors – NYK, K-Line, CMA-CGM, Port of Auckland and Port of Rotterdam

# Who is already working with biofuels in shipping?



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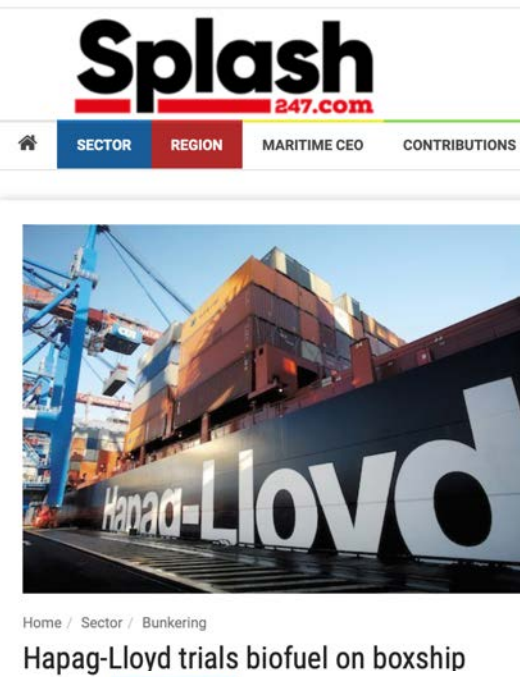
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## Maersk partners with global companies to trial biofuel

22 March 2019




A large blue and red Maersk container ship, the MAERSK SEALAND, is shown at sea, heavily loaded with multi-colored shipping containers.



Splash 247.com

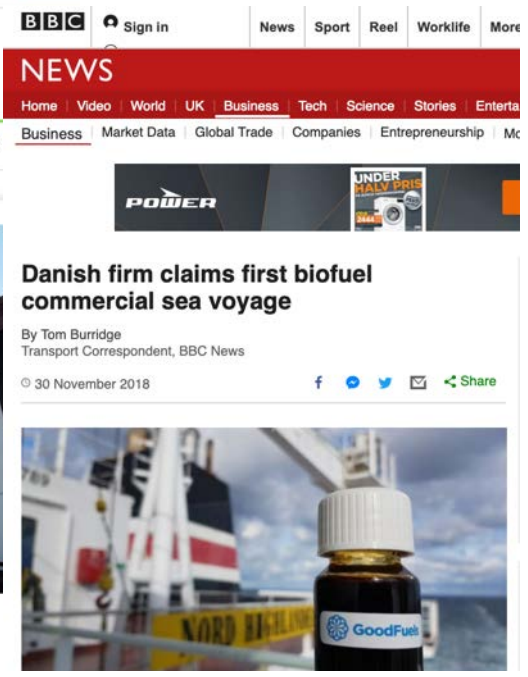
SECTOR REGION MARITIME CEO CONTRIBUTIONS



A Hapag-Lloyd container ship is docked at a port, with a large crane visible. The ship's name 'Hapag-Lloyd' is prominently displayed on its side.

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## Hapag-Lloyd trials biofuel on boxship




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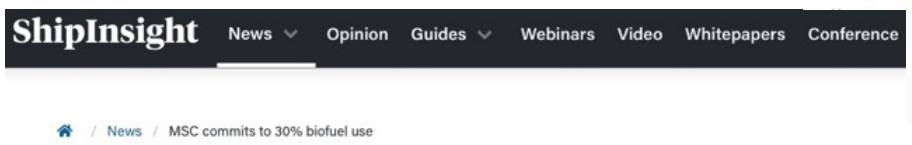
## Danish firm claims first biofuel commercial sea voyage

By Tom Burridge  
Transport Correspondent, BBC News

© 30 November 2018



A close-up of a GoodFuel biofuel bottle with a white cap, set against a background of a ship's deck.



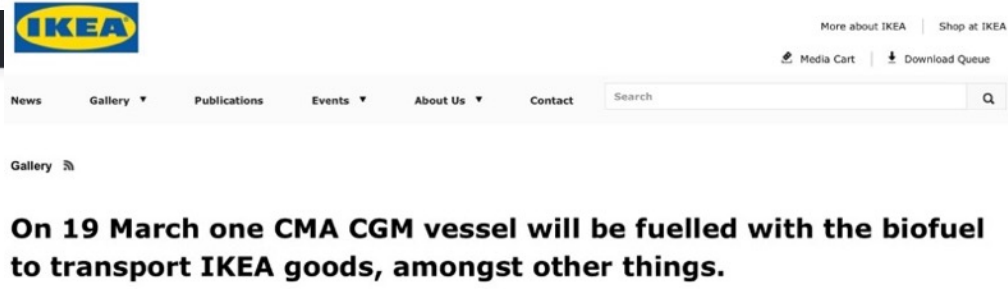
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## MSC commits to 30% biofuel use

Some ports are already investing in specific fuel-related infrastructure e.g. Singapore & Rotterdam

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## On 19 March one CMA CGM vessel will be fuelled with the biofuel to transport IKEA goods, amongst other things.



A CMA CGM container ship is shown at sea, viewed from an elevated angle. The ship is heavily loaded with containers.

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# Discussions on alternative fuels, but which ones?

**Electrofuels** (*zero-carbon synthetic fuels made from renewable energy*)

- **Hydrogen, Ammonia, Methanol** – all carry safety risks

## **Biofuels**

- Biofuels derived from biomass\* may be an attractive option for the shipping sector and can be used as a feedstock to produce alcohol fuels such as ethanol and methanol, liquefied bio-gas (LBG) or bio-diesel

## **Liquefied Natural Gas (LNG)**

- Limited GHG reduction potential; Some Cruise ships adopting

## **Electricity (Batteries)**

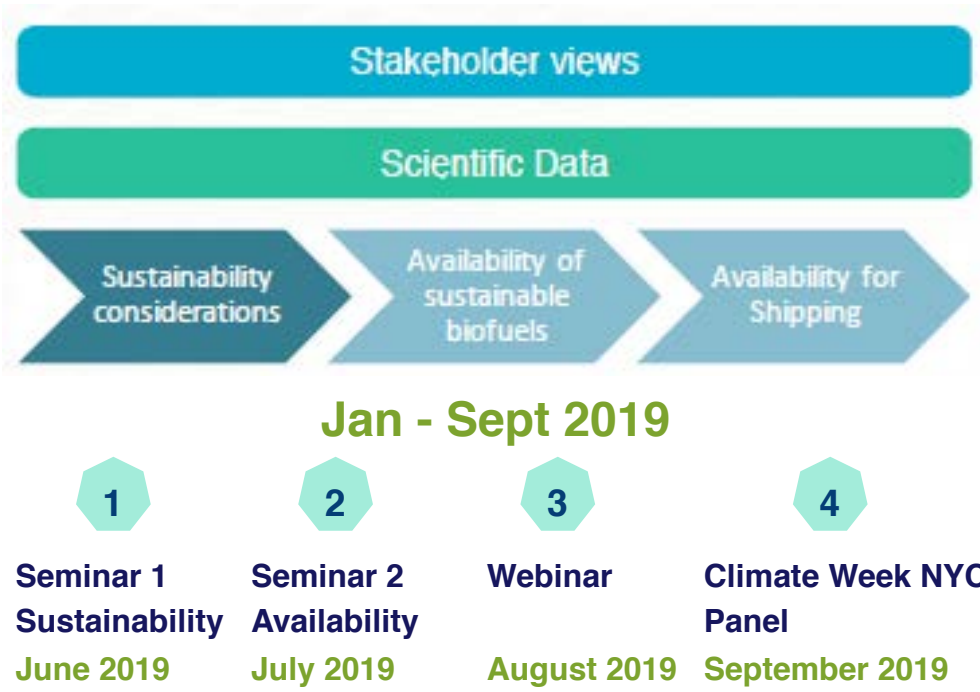
- Already being adopted in short sea ferry operations (in Norway for example)

*\* Biomass can originate from organic feedstock including purpose-grown energy crops, residues from agriculture and forestry and municipal waste which can be used to produce a variety of fuels with different properties and impacts. **‘Conventional’ biofuels are made from crops that can also be used for food and feed; ‘advanced’ biofuels are made from non-food crop feedstocks which do not directly compete with food and feed crops for agricultural land or cause adverse sustainability impacts.***

# SSI's multi-stakeholder inquiry on the sustainability and availability of biofuels for shipping



2018



Dec 2019

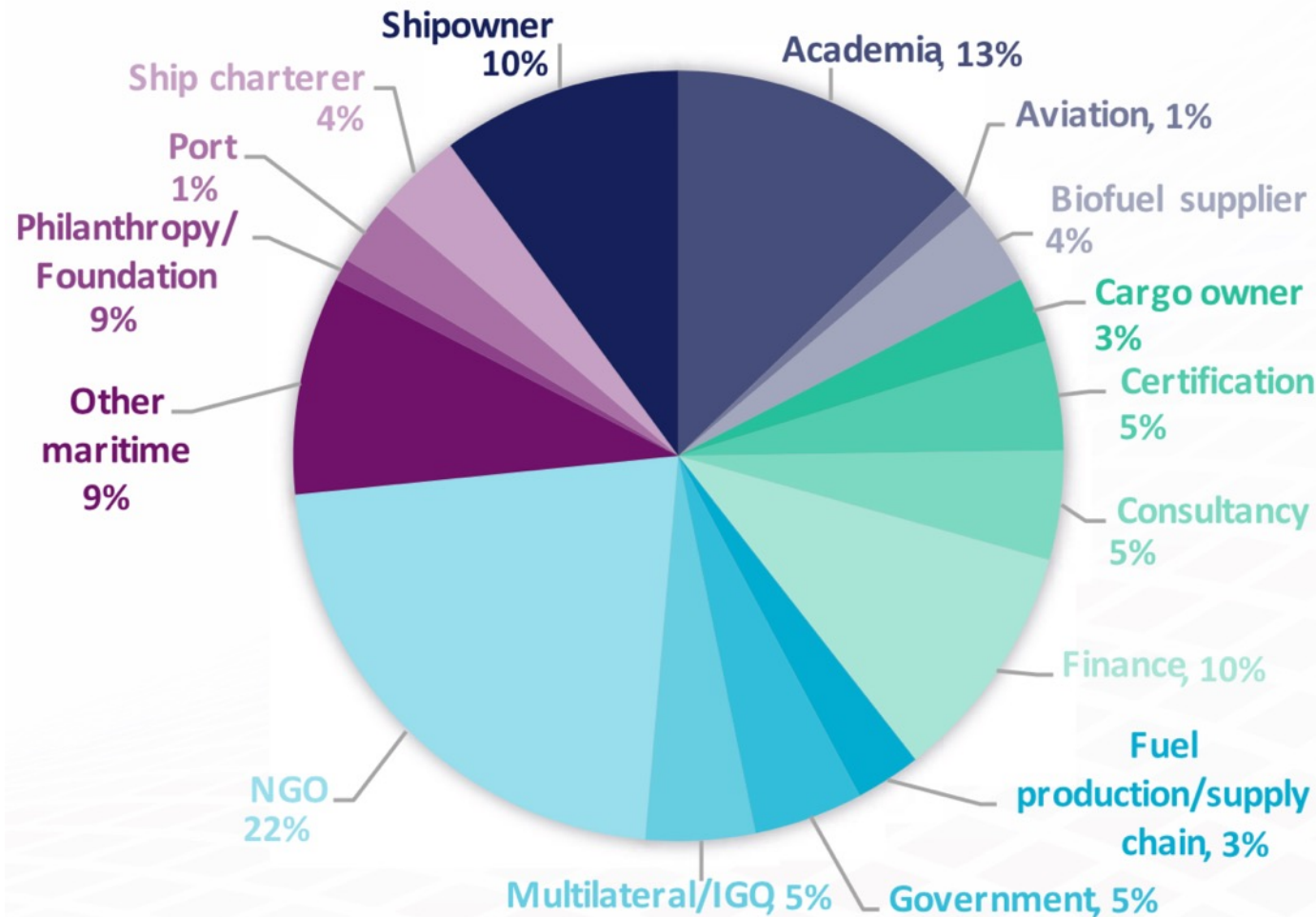


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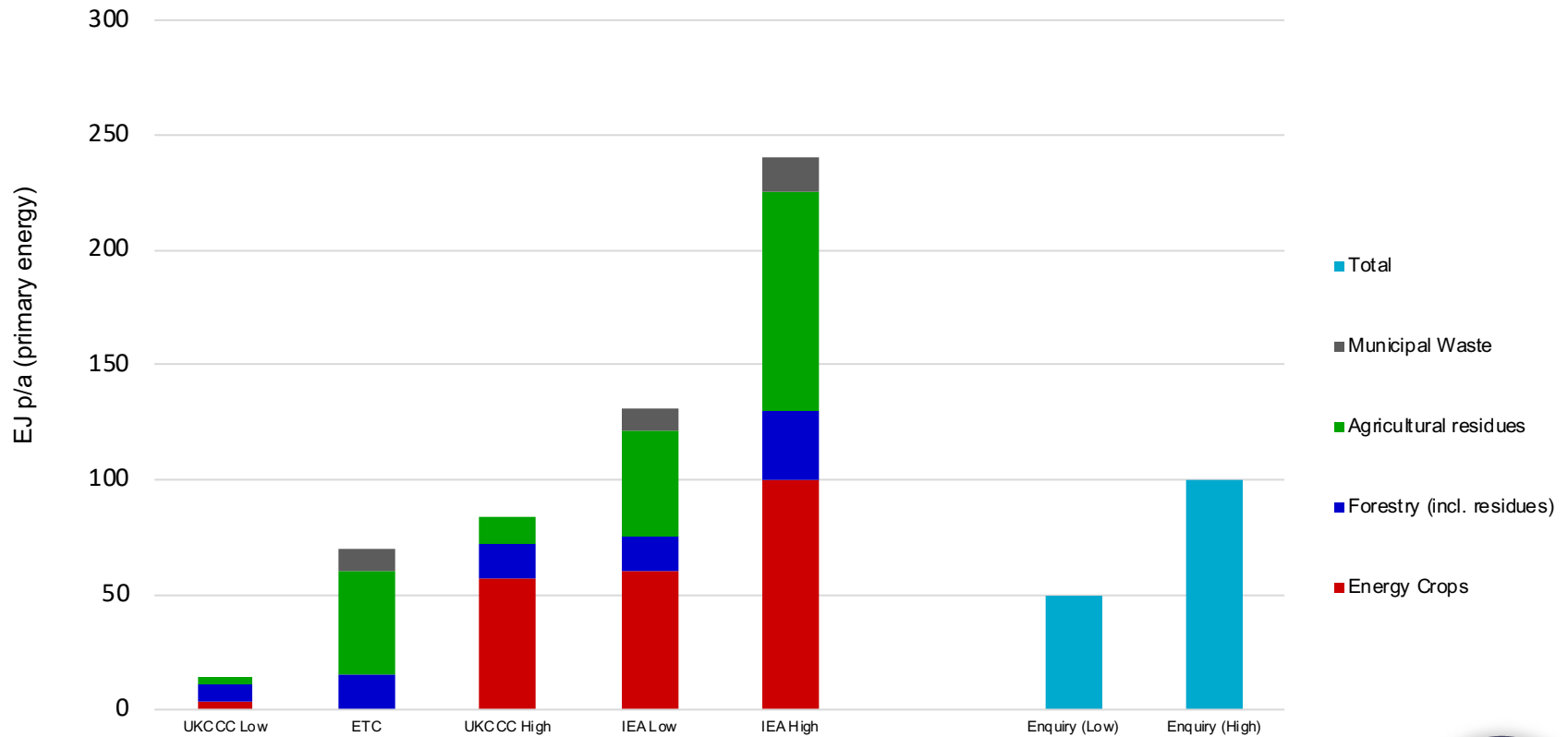




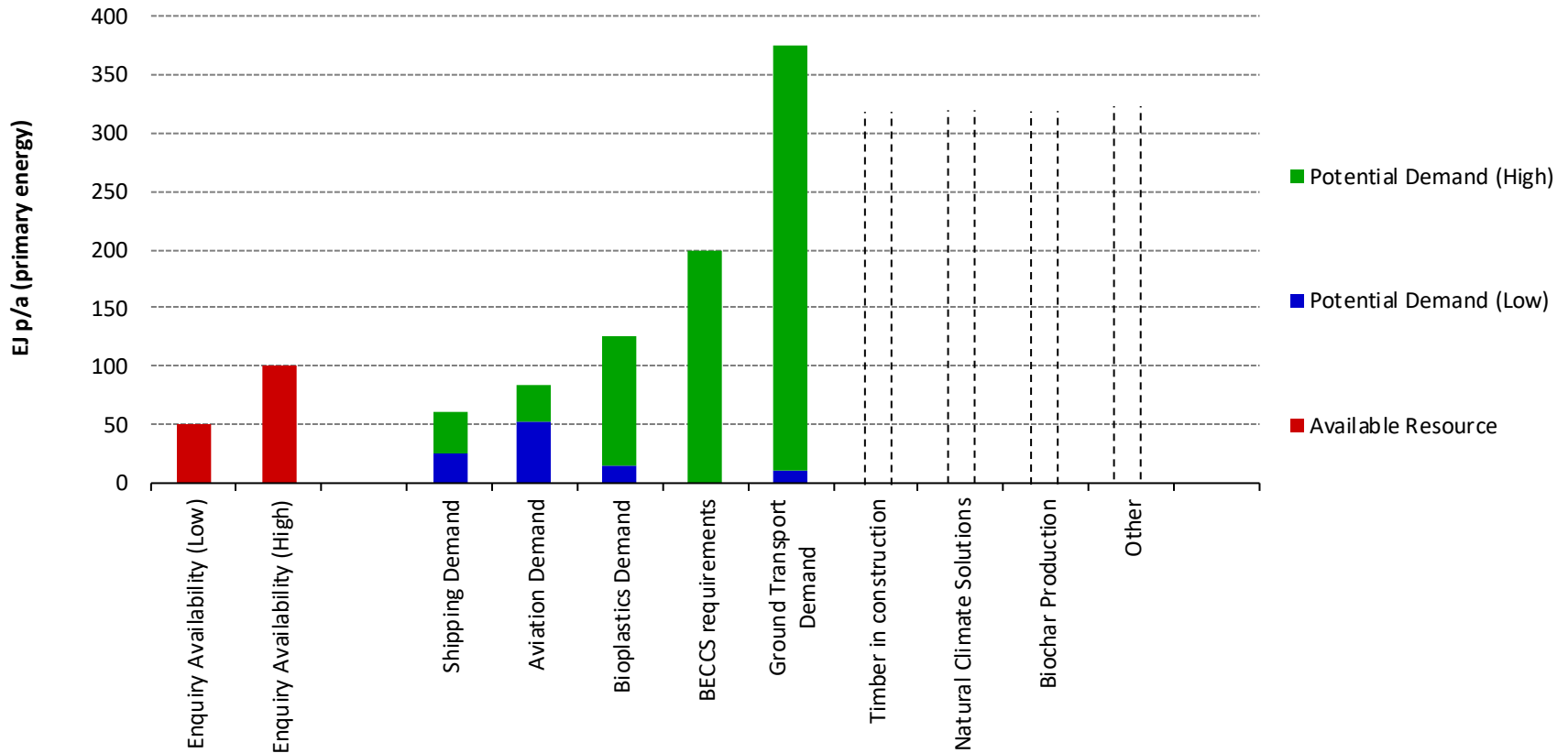
# Stakeholders consulted throughout SSI's inquiry on the sustainability and availability for shipping



# Forecasts for the range of potential availability of sustainable biofuels by 2050



# Forecasts for demand by sector



High and low supply assumptions for biomass feedstocks in comparison to the potential sectors that could make demand for it. Some demands are unquantified as forecasts were not found for these, so they are included illustratively to demonstrate the diversity of sectors that could make use of supply.



# Summing Up

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## Some further work

- As Lord Adair Turner (ETC) concluded at the panel event during Climate Week in New York: “A key question for shipping is how to balance the long-term decarbonisation which may well be ammonia based with short term options such as biofuels. We need to understand better whether biofuels could be a transitional bridge to ammonia, or whether this would result in wasted investment.”
- When and at what scale and price could other zero carbon alternatives become available?
- How can the shipping industry and wider value chain act to scale up the supply of sustainable biofuels?

## Summing up

- It is not yet clear which of the potential zero-carbon alternatives to fossil fuels has the winning combination of availability, sustainability and competitiveness
- Shipping cannot solve or manage these risks and uncertainties in isolation
- SSI's research indicates that in the short-term, biofuels could have a significant role to play to accelerate early decarbonisation action across the maritime sector.



# Q&A

**Thank you**

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# The Role of Sustainable Biofuels in the Decarbonisation of Shipping

The findings of an inquiry into the Sustainability and Availability of Biofuels for Shipping

Report prepared by the Sustainable Shipping Initiative (SSI)



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