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European Parliament Intergroup Seas, Rivers, Islands and Coastal Areas (Searica)

Maritime Energy Transition
Setting the Course towards Decarbonisation of Shipping

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Key facts about shipping GHG emissions

*In 2012, international shipping emitted approximately 800 MtCO2, representing **2.2% of global CO2 emissions***.*

*Shipping carries the bulk of world trade: ships transport about **80-90% of global traded goods** and **40% of intra-European goods**.*

***Maritime CO2 emissions are projected to increase in the coming decades.** Depending on future economic and energy developments, business-as-usual scenarios project an increase by 20% to 210% between 2012 and 2050.*

*Source: Third IMO GHG study

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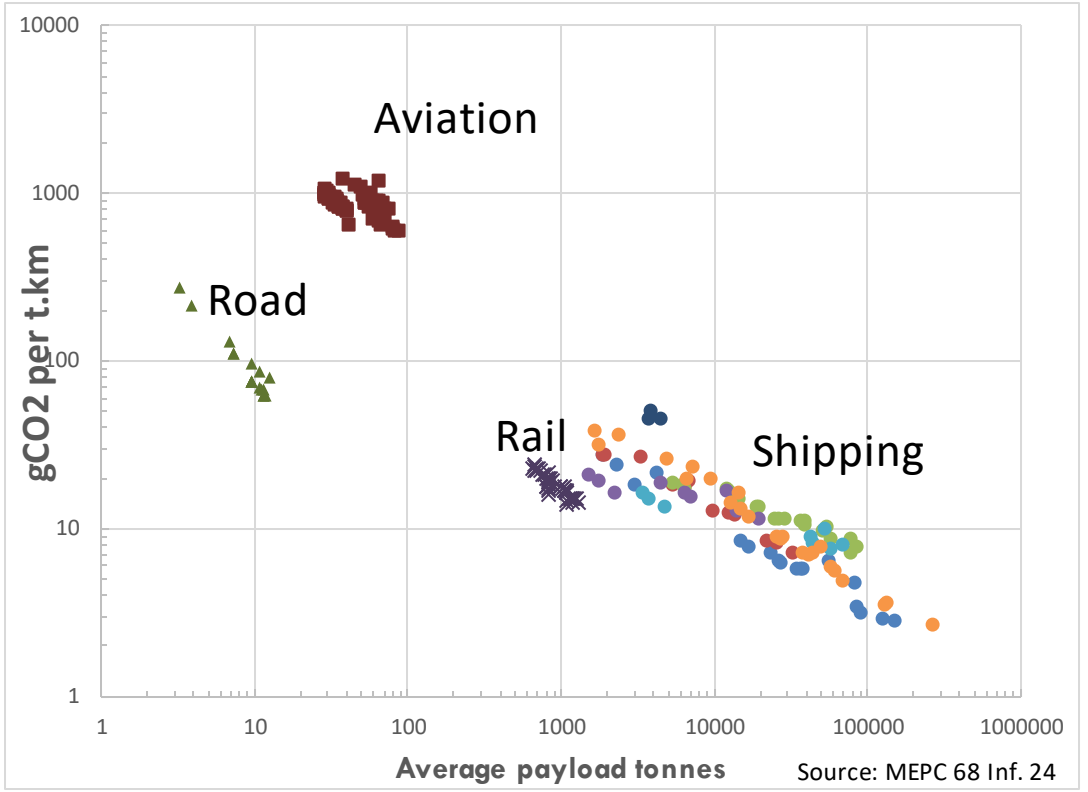

Overall, shipping is the most energy-efficient mode of mass transport of cargo.

<u>However</u>, for the smaller ships, there is not a large difference in carbon intensity with large trucks or rail, and other modes are already decarbonising.

This means that shipping will not remain the greenest mode of transport for long, unless it starts to decarbonise.

IMO negotiations on shipping emissions

Negotiations on CO2 emissions from international shipping started in 1997 at the IMO.

A difficult point in the negotiations is the question of which principle to apply to regulate CO2 emissions from international shipping:

- ***Common but differentiated responsability*** *– CBDR: principle of the UNFCCC (differentiation between developed and developing countries)*

- ***No more favourable treatment*** *- NMFT: principle of IMO (no differentiation between flags)*

Some developing countries led by China, Saudi Arabia, Brasil support the application of CBDR for shipping emissions.

Other countries are strongly opposed, because such principle would undermine the level playing field necessary for shipping as an international industry, as well as the efficiency of the strategy to reduce emissions.

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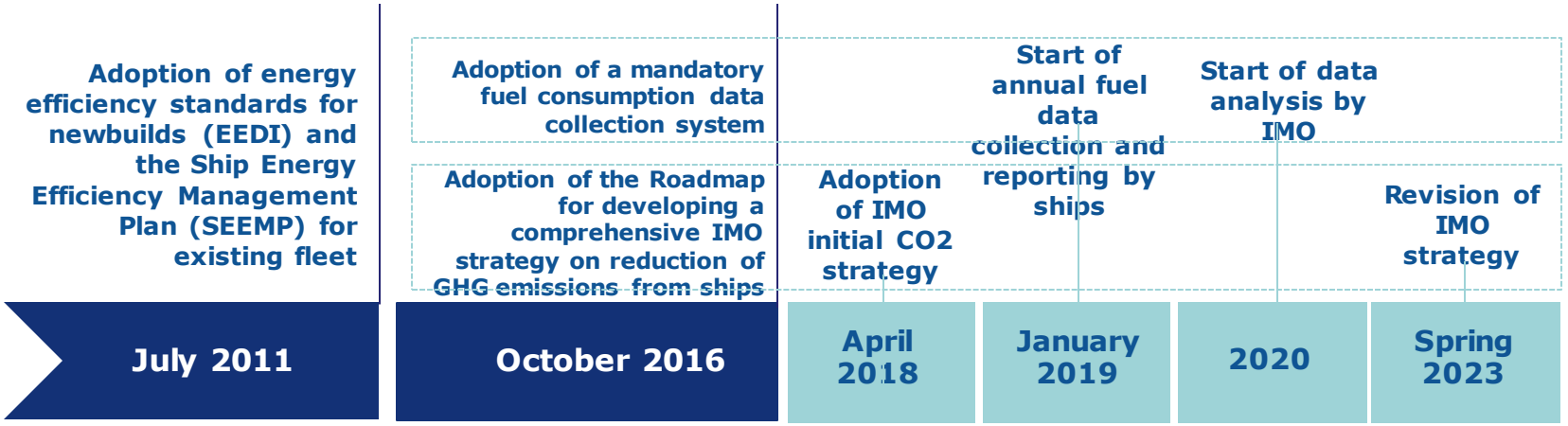
Milestones of IMO action on CO2 emissions



At the EU level

*In 2015, adoption of Regulation 2015/757 on **the monitoring, reporting and verification** (MRV) of CO2 emissions from maritime transport*

➡ *Contains **similarities** and **differences** with the global data collection system adopted by the IMO in 2016*

	EU MRV Regulation	IMO Data collection System
Monitoring	Voyages to/from & between EEA ports Start on 1st January 2018	All International Voyages Start on 1st January 2019
Reporting	Fuel consumption and CO_2 Distance travelled Time spent at sea Cargo carried Transport work - Distance × Cargo	Fuel consumption (CO_2 derived) Distance travelled Hours under way DWT (deadweight) Transport work proxy - Distance × DWT
Verification	Independent accredited verifiers	Flag administrations or recognised organisations
Reports to	European Commission & Flag State	Flag administrations
Publication	Distinctive - ship specific database	Anonymous - aggregated ship database
Disclosure	Public	Confidential (Parties access/analysis)

Adoption of the IMO strategy to reduce GHG emissions

- *In April 2018, the IMO adopted its initial strategy to reduce greenhouse gas emissions from ships.*

- *Includes the **objective** to **peak GHG emissions** from international shipping **as soon as possible** and to reduce the total annual GHG emissions **by at least 50% by 2050 compared to 2008**, whilst pursuing efforts **towards phasing them out as soon as possible in this century***

- *Includes a **list of candidate short-, mid- and long-term measures***

Shipping sector on the path to decarbonisation

- *International shipping is the first industry sector to agree globally on an absolute emission reduction aim.*

- *Achieving a reduction of GHG emissions of at least 50% by 2050 compared to 2008 means that measures that can deliver reduction of GHG emissions in the **short-term**, and preferably before 2023, are needed.*

- ***Demanding process** leading to MEPC 72 result*

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Decarbonizing the shipping sector: Next steps and key issues

Expectations for MEPC 73:

- *Agreement on action plan/work plan/follow-up actions at MEPC 72*
- *Start discussions on measures*

Key issues to consider:

- *What measures can and should be adopted before 2023?*
- *How to assess the impacts of emission reduction measures on States?*

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Decarbonizing the shipping sector: no silver bullet

Possible short-term measures:

- ***Strengthening of EEDI for new ships***
  - Advancing the applicability of EEDI requirements for phase 3 to 2022
  - Possible tightening of the reduction rates
  - Agreement to create a new phase 4, e.g. for 2025
- ***Improving energy efficiency of existing ships***

- ***Speed management/optimisation***
  - Studies show that a 20% speed reduction would lead to a 35% emission reduction
  - Need to consider an approach that addresses safety concerns and contractual arrangements

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Decarbonizing the shipping sector: no silver bullet

Support actions:

- ***Port-side developments – economic incentives and infrastructure***
- ***R&D addressing marine propulsion, alternative low-carbon and zero-carbon fuels***

Long(er) term actions:

- ***Preparing the transition to sustainable alternative low- and zero-carbon fuels***
- ***Consider other reduction mechanisms, such as market based instruments***

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EU assisting R&D and technology development
Funding Green shipping

- ***Connecting Europe Facility***
  - Current CEF Maritime Portfolio: 89 Actions receiving €981.3m
  - Motorways of the Sea (€378.8m grant financing, with its environmental pillar of **€183.7m**) is the most important instrument
  - Examples of innovative vessel-based investments:

    Zero emission ferries Action – financed the conversion of two complex gasoil RoPax vessels to a **fully-electric propulsion system**

    Next Gen Link Action: includes environmental upgrades on a RoPax vessel, notably an **auxiliary wind propulsion system**)

    Other funded projects address the deployment of **on-shore power supply**

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EU assisting R&D and technology development
Funding Green shipping

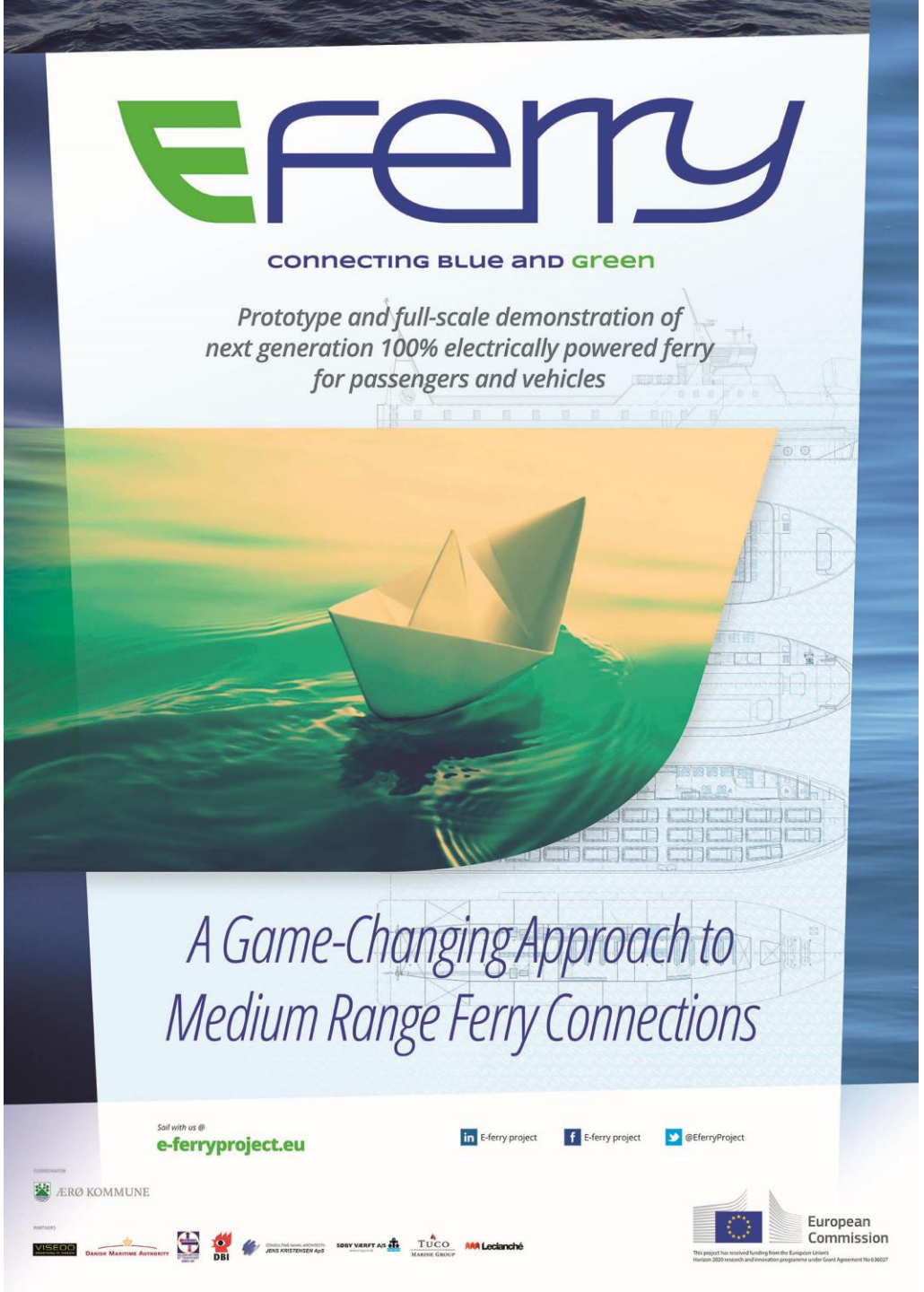
- ***H2020 Funding***
  - €180 m already invested in research and innovation regarding waterborne sector
  - Calls can still be launched for 2018 and 2019
  - **Electrification**: e.g. **E-Ferry project** (a **prototype** and full-scale demonstration of next generation 100% electrically powered ferry for passenger and vehicles) is ongoing
  - **Hydrogen:** e.g. the ongoing **MARANDA project** (launched with the support of the FCH JU) to accelerate the introduction of Fuel Cell and Hydrogen in the Marine sector

Apply extremely energy efficient design concept.

Demonstrate a 100% electric, emission free, medium sized ferry for passengers and cars, trucks and cargo in full-scale operation on longer distances (> 5 Nm).

Install largest battery pack ever in a vessel.

H2020 2015-2019



MARANDA

2017-2021

Marine application of a new fuel cell powertrain

Develop and demonstrate a marinecapable fuel cell plant and hydrogen storage system

Validated in demanding arctic conditions

Test the system for 18 months onboard research vessel Aranda

HySeas III

Jointly led by Ferguson Marine and University of St Andrews.

Building of first sea-going hydrogen-powered car and passenger ferry

First zero-emission ROPAX ferry

Estimated project cost
€12.6 million
(€9.3 million from H2020)

H2020; 2018-2021

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EU assisting R&D and technology development
Funding Green shipping

- ***Green Shipping Guarantee***
  - Created in 2016 by the European Investment Bank to provide financial guarantee through the Connecting Europe Facility (CEF) Debt Instrument and the European Fund for Strategic Investments (EFSI)
  - Green Shipping Guarantee programme - A capacity of €750m of guarantees expected to **generate €3bn of investments in the sector**
  - Designed both for general fleet renewal and the **retrofitting of ships with sustainable technologies**
  - First guarantee transaction concluded in Dec 2017 (purchase of an LNG-powered ferry in France).

EU providing development funding

EU-funded IMO-managed project "*Capacity Building for Climate Mitigation in the Maritime Shipping Industry* ***"***

10 Meur for 5 years (2015-2019)

A global network for energy-efficient shipping

Aims to assist DevCOs in target regions to limit and reduce GHG emissions from their shipping sectors

5 Maritime Technology Cooperation Centers *(MTCCs) in: Africa (Kenya), Caribbean (Trinidad and Tobago), Asia (China), Latin America (Panama) and Pacific (Fiji)*

The ***possibility of extending the funding*** *after 2019 should be considered.*