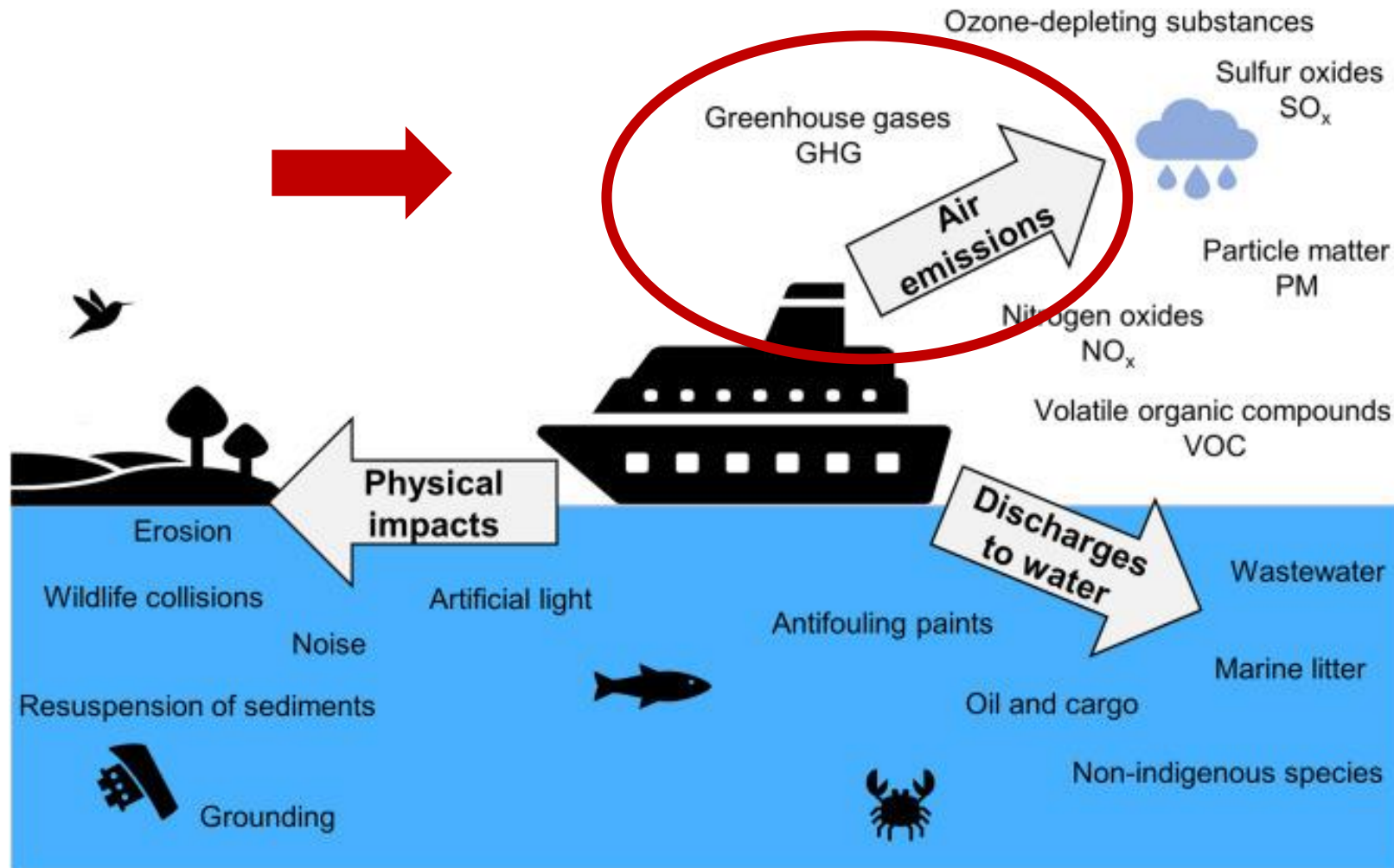


Regulatory Developments of IMO – and European Green Deal

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**EU:n tutkimus- ja innovaatio-ohjelmat ja
Suomen meriklusteri**
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Environmental Impacts of Shipping



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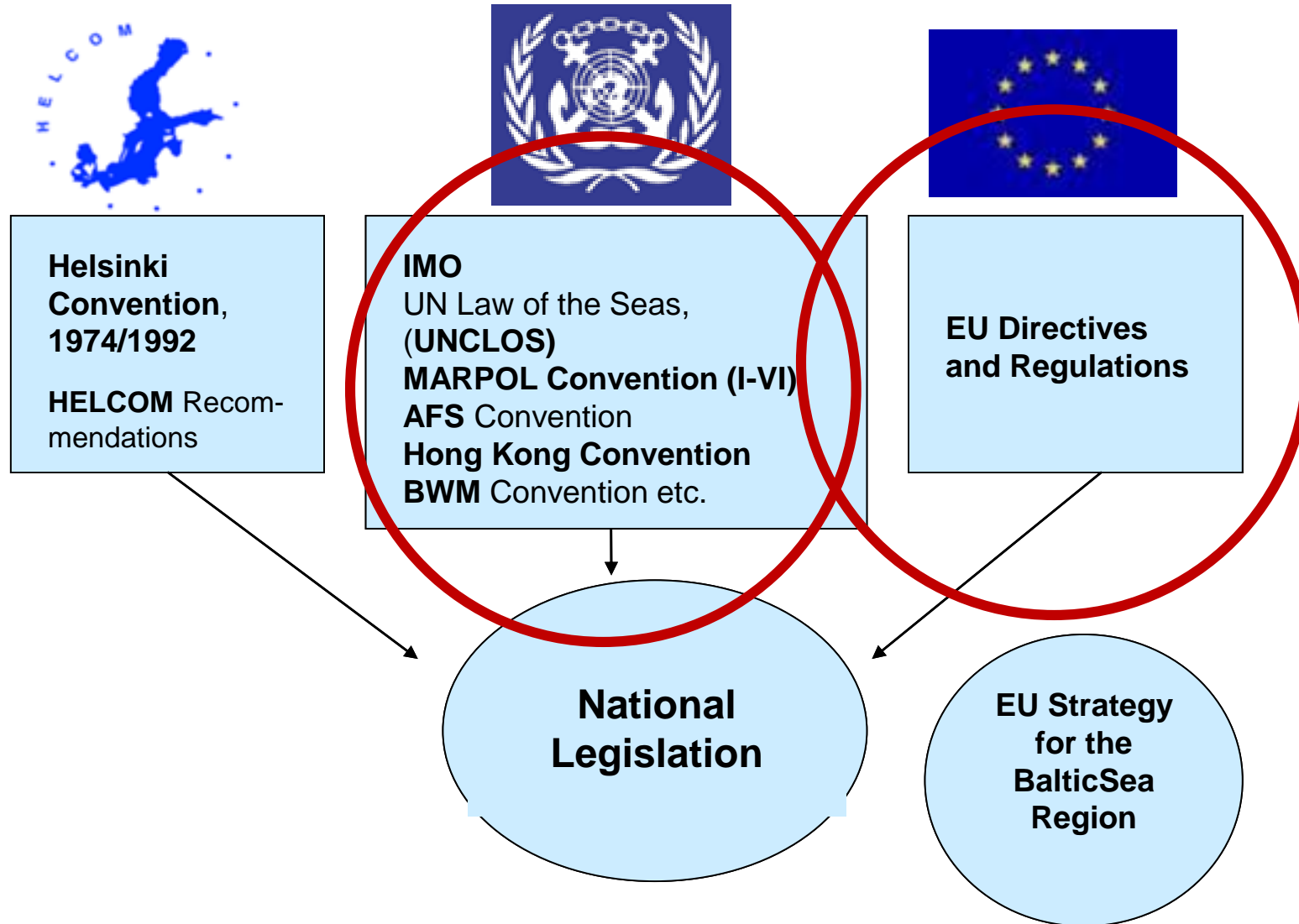
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Regulatory Framework and Competencies

- IMO, EU, National legislation



Regulatory Framework and Competencies

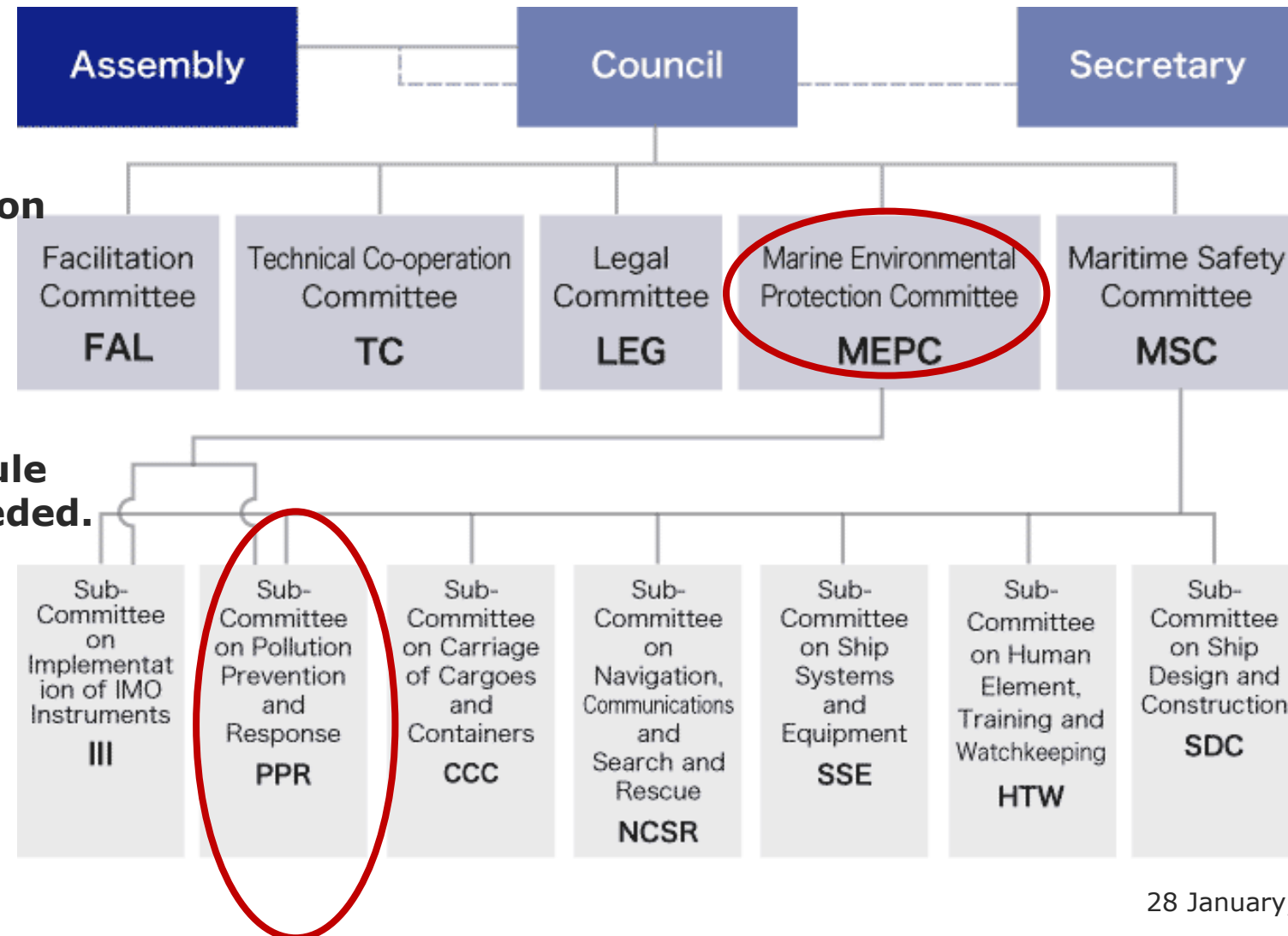
- IMO, EU, National legislation



IMO
International Maritime
Organization

IMO

- 174 member states
- Assembly highest decision making body
- 40 Council members
- Elected every 2nd year
- Council elects the SG
- IMO decision making is based on the majority rule i.e. consensus is not needed.



Regulatory Framework and Competencies

- IMO, EU, National legislation

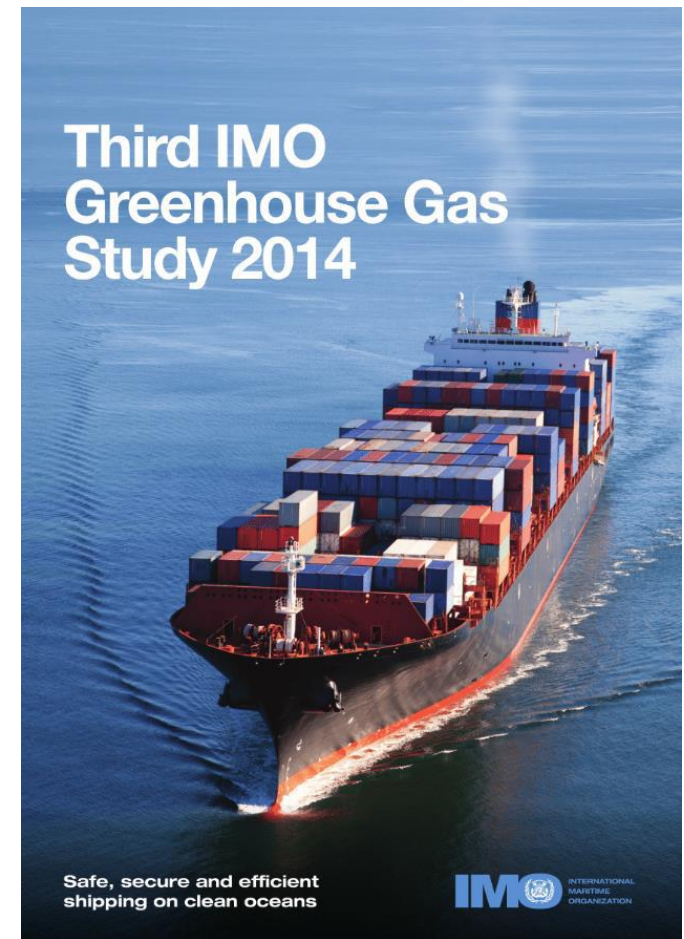


EU

- In EU we do have legislation of our own and it can be more tightened than global ones, e.g. EU MRV – IMO DCS
- EU – regulations are also implementing IMO regulations (e.g. EU's Sulphur Directive MARPOL- Annex VI regulations on sulphur content of fuel and AFS regulation - International Convention on Control of Harmful Antifouling Systems on Ships).
- European Commission (EC) is making proposals to regulate environmental impacts from shipping to be adopted by the European Parliament and the Council -----□ in these issues so called EU competence;

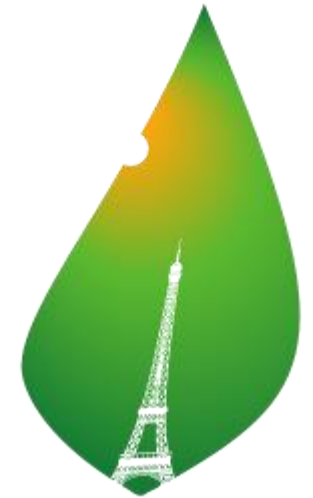
Third IMO GHG Study in 2014

- In 2012, CO₂ emissions from international shipping were approx. 800 million tonnes accounting for **2,2% of global CO₂ emissions**
- c. 300MT of fuel oil used by shipping in 2012
- negligible energy demand for shipping is met by sustainable low/zero carbon energy
- alternative energy sources and/or alternative fuels are key to reducing GHG emissions
- demand is the key driver for growth in emissions
- **under a business-as-usual scenario, shipping emissions could increase between 50 % and 250 % by 2050**
- **Fourth IMO Greenhouse Gas Study is to be finalized in autumn 2020 (MEPC76).**



Paris Agreement 2015

- The Paris Agreement's long-term temperature goal is to keep the increase in global average temperature to **well below 2 °C above pre-industrial levels; and to pursue efforts to limit the increase to 1.5 °C**, recognizing that this would substantially reduce the risks and impacts of climate change.



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

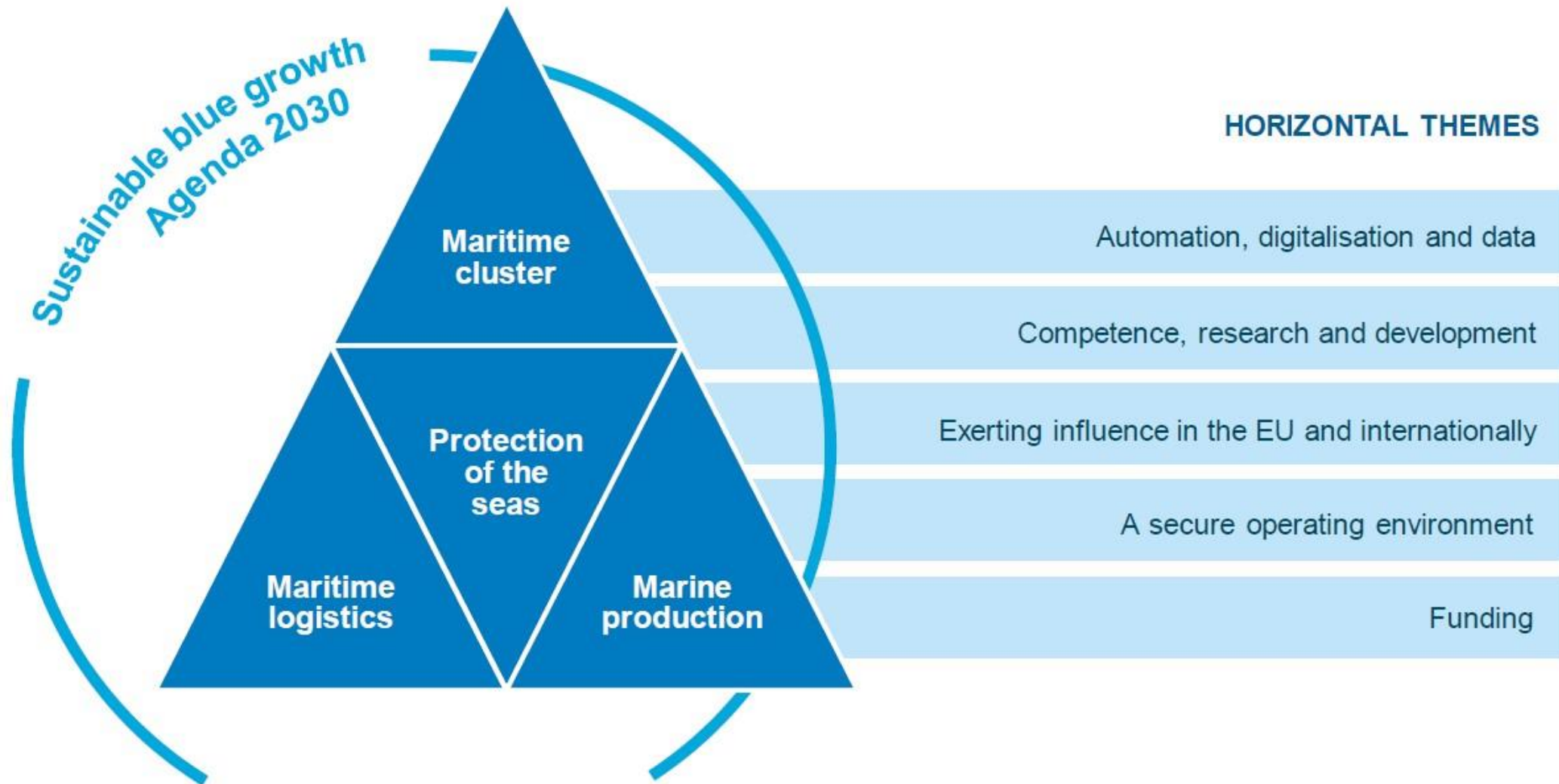


Finland's Government Program in 2019

- **The Government will work to ensure that Finland is carbon neutral by 2035 and carbon negative soon after that.**
- This is in line with the level of ambition of the Paris Agreement.
- **In practice this means that we need to reduce GHG emission by 70 % by 2035 compared to the level in 1990.**
- Our scientists are of the view that the goal is achievable, however, we need to strengthen and speed up our climate Actions.
- **Most reductions need to be achieved from energy sector and transport, including shipping.**



Finland's maritime policy guidelines



IMO's Initial GHG Strategy (2018)



IMO
International Maritime
Organization

VISION

IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible in this century.



IMO's Initial GHG Strategy 2018

Levels of ambition directing the Initial Strategy are as follows:

- .1 To strengthen the EEDI index for **new ships** and **SEEMP** for **existing ones**
- .2 Carbon intensity of international shipping to decline:
-at least 40 % by 2030, 70 % by 2050 compared to 2008
- .3 GHG emissions from int. shipping to peak and declined to reduce total annual GHG emissions by at least 50 % by 2050 compared to 2008

pursuing efforts towards phasing them out as called in the Vision as a point on a pathway of CO₂ emissions reduction **consistent with the Paris Agreement's temperature goals.**



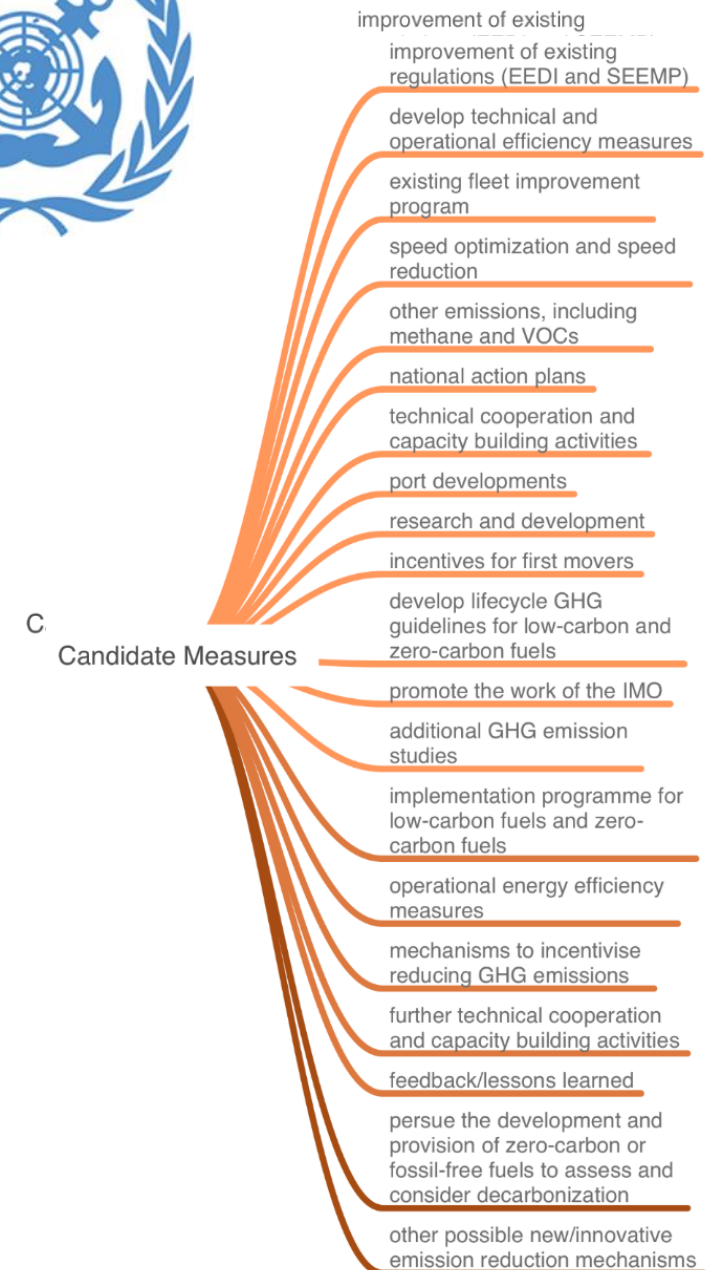
Candidate measures with timelines



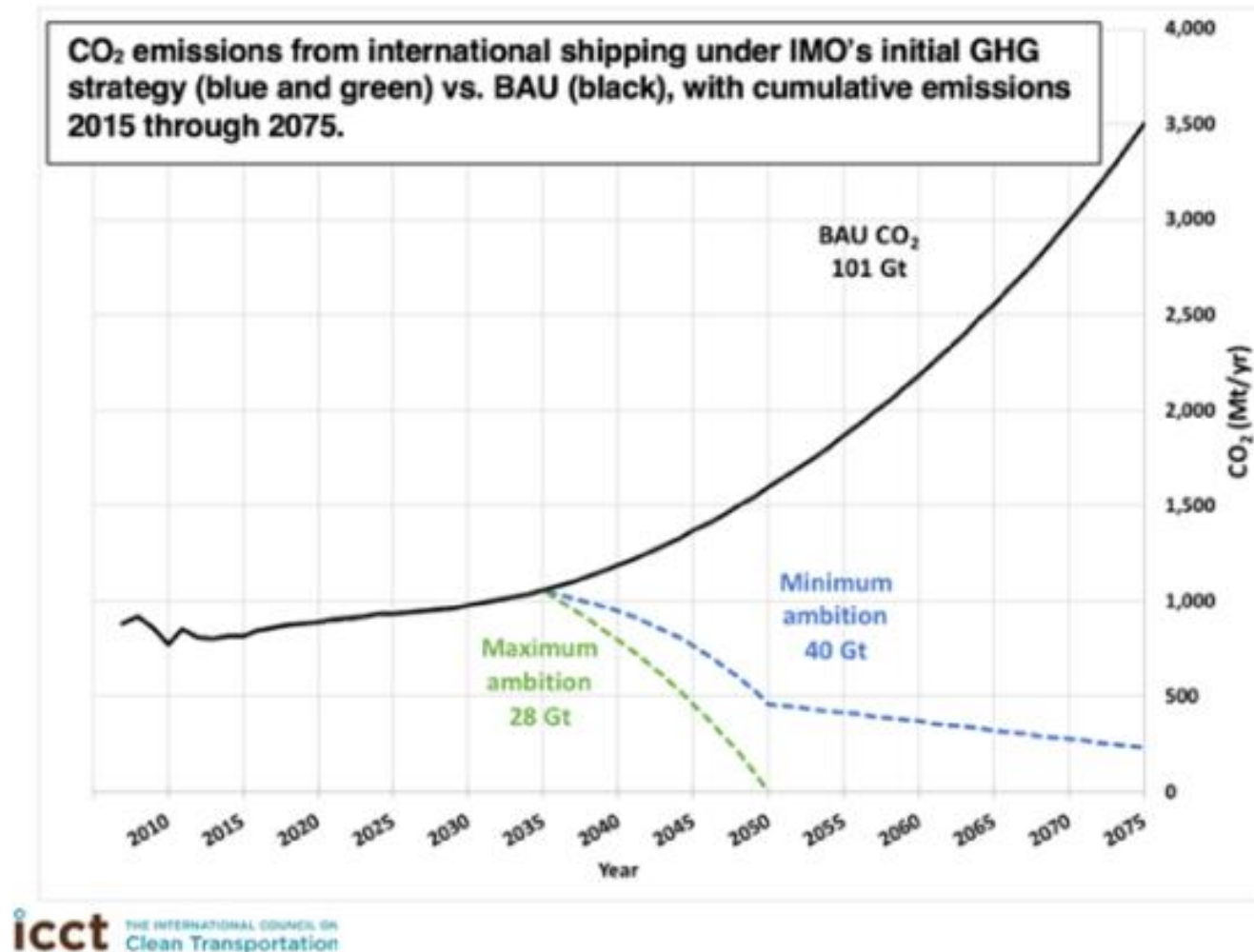
The Initial Strategy identifies a list of candidate measures with the following timelines

- **Short-term measures could be finalized and agreed between 2018 and 2023**
 - The first ones to be finalized by MEPC75 in March-April
- **Mid-term measures could be finalized and agreed between 2023-2030**
- **Long-term measures could be finalized and agreed beyond 2030**

The revised IMO Strategy is to be adopted in 2023.



Reduction of GHG emissions from international shipping according to IMO's Initial GHG Strategy 2018



Short Term Measures (reflections from IMO MEPC 74)

- improve the **energy efficiency** of existing ships building on the EEDI framework -> EEXI
- reduce **methane slip** and emissions of Volatile Organic Compounds (**VOCs**)
- encourage the uptake of alternative **low-carbon and zero-carbon fuels**, including the development of lifecycle GHG/carbon intensity guidelines for all relevant types of fuels
- initiate and support **research and development** activities
- encourage **incentive schemes** for first movers



Short Term Measures (reflections from IMO MEPC 74)



Photo: Eero Hokkanen

1. First short term measures to be decided by MEPC75 (March-April 2020)

- Speed **regulation** as a measure very contested and political at IMO level
- Especially associated **shift power limitation** challenging measure for many countries

2. Guidelines for the mandatory Ship Energy Efficiency Management Plan (SEEMP) already refer to "speed **optimization**"

3. Finland's maritime policy stresses **improved ship-shore information exchanges**

- ➔ vessels can time their arrival in port (just in time arrival)
- ➔ slow down already at sea
- ➔ achieve significant reductions in GHG emissions

Candidate mid- to long term measures



- implementation programme for the effective **uptake of alternative lowcarbon and zero-carbon fuels**, including **update of national actions plans** to specifically consider such fuels;
- **operational energy efficiency measures for both new and existing ships** including indicators in line with three-step approach that can be utilized to indicate and enhance the energy efficiency performance of ships;
- **new/innovative emission reduction mechanism(s), possibly including Market-based Measures (MBMs), to incentivize GHG emission reduction;**
- further continue and enhance **technical cooperation and capacity-building activities** such as under the ITCP;
- development of a feedback mechanism to enable lessons learned on **implementation of measures** to be collated and shared through a possible **information exchange on best practice.**
- **encourage and facilitate the general adoption of other possible new/innovative emission reduction mechanism(s).**

Finland promoting digitalization and automatization at IMO

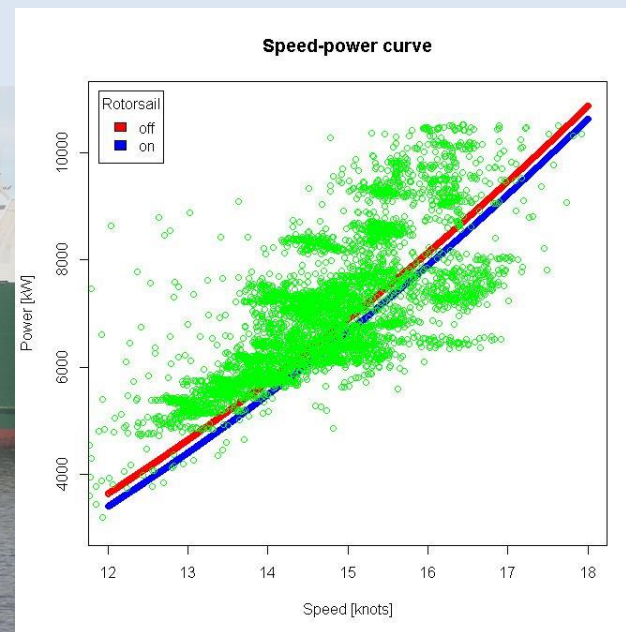
- **New ships built** after 2025 will be 30 % more energy efficient than ships built during years 2000 to 2009 on the average, which is based on the decision by IMO taken already back in 2011.
- **However, bearing in mind the long life cycle of a ship, we need also to look into the present fleet.**
- Benefits from **automatization and digitalization** are clearly demonstrated e.g. by introduction of autonomous ships, which improve maritime safety as they facilitate the reduction of risks caused by human error.
- Furthermore, the opportunities created by digitalization in making ship operations more effective and reducing emissions, should be utilized as far as possible.



- NAPA software was used to measure fuel consumption and propulsion power requirements in different conditions on BORE vessel with two Rotor Sails
- Regression analysis shows, that during the analysis period the Rotor Sail has reduced the propulsion power consumption significantly

- While using two Rotor Sails, the net fuel consumption has reduced in average by

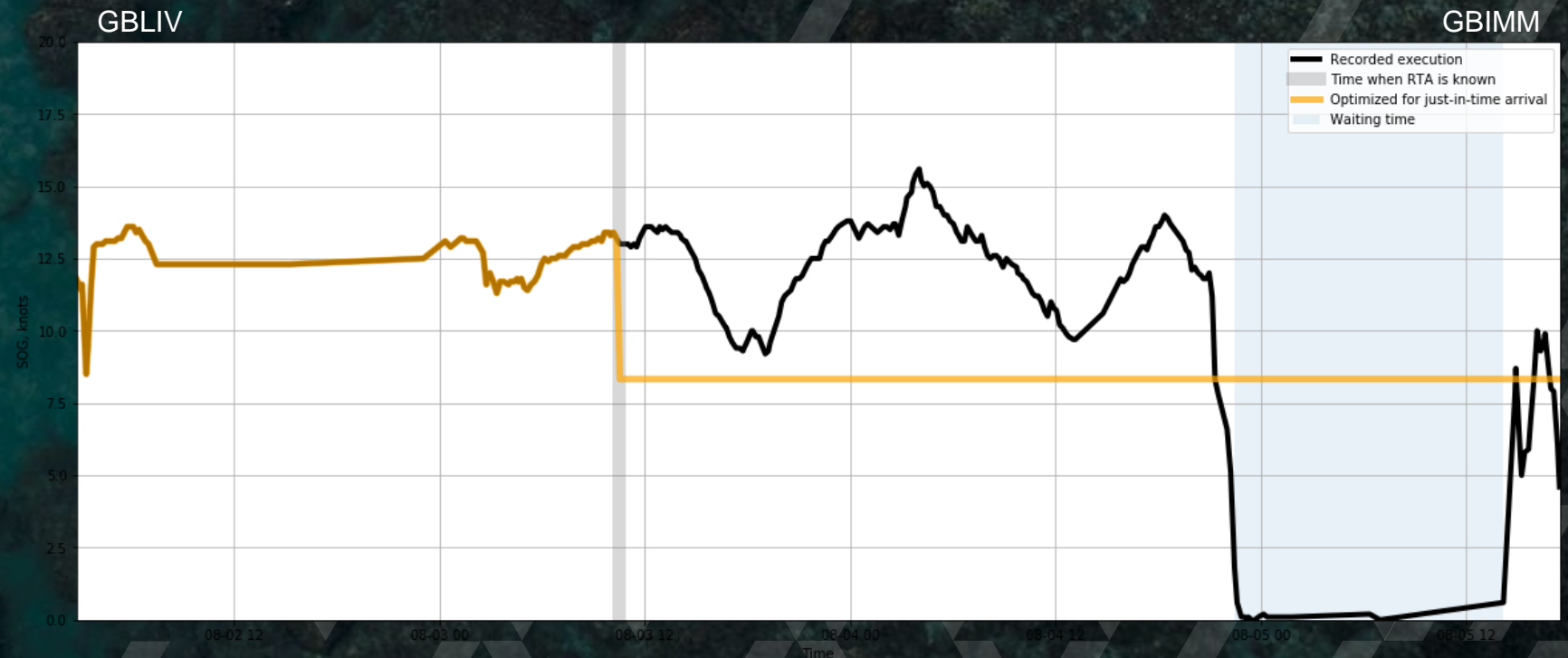
6,1%
per Year



Finland had a lunch presentation at IMO during the ISWG-GHG5 with Wärtsilä and Cargotec on digitalization as a tool to decrease GHG emissions

Simulation algorithm

Speed is reduced for Just-In-Time arrival: **4.8% fuel savings**



European Green Deal



***Striving to be the first climate-neutral continent
- making Europe climate neutral by 2050***

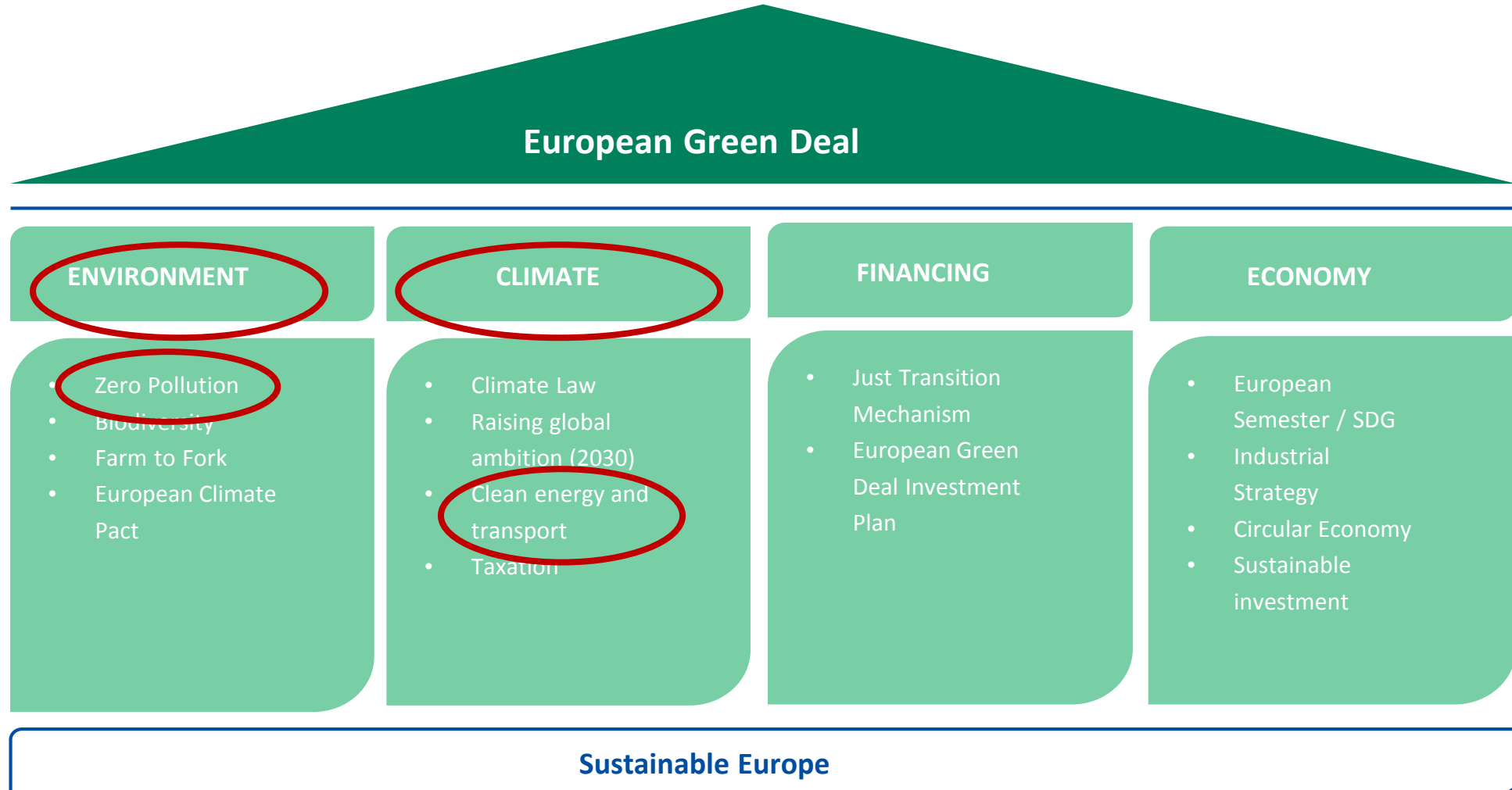
European Green Deal

The President of the European Commission, Ursula **von der Leyen**, said:
"People are at the core of the European Green Deal, our vision to make Europe climate-neutral by 2050.



*The transformation ahead of us is unprecedented. **And it will only work if it is just - and if it works for all.** We will support our people and our regions that need to make bigger efforts in this transformation, to make sure that we leave no one behind.*

*The Green Deal comes with **important investment needs**, which we will turn into investment opportunities. The plan that we present today, to **mobilise at least €1 trillion, will show the direction and unleash a green investment wave.**"*



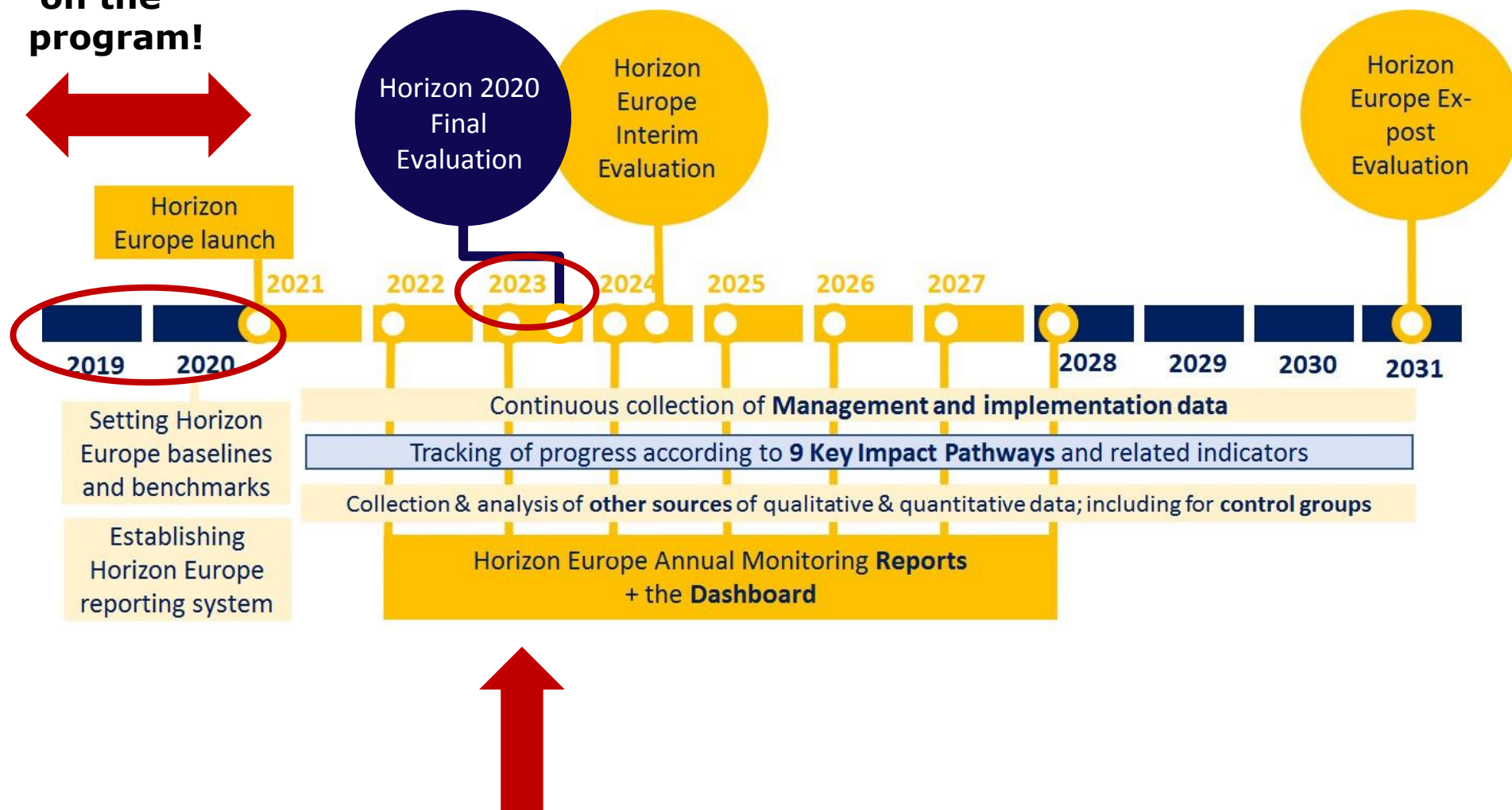
The Commision will propose the first European “Climate Law” by March 2020.

European Green Deal: Proposals related to shipping

- .1 Maritime Sector to be included in the European Emissions Trading System (EU-ETS)
 - **Coordinated with action at global level at IMO.**
 - Impact Assessment by Commission is under development.
- .2 To Regulate access of the most polluting vessels to European ports
- .3 Mandatory use of shore-side electricity for docked ships in European ports
- .4 The regulatory framework for Alternative Fuels and the TEN-T Regulation to accelerate the deployment of zero- and low-emission vehicles and vessels.

Timeline for the Horizon Europe

To influence
on the
program!





Liikenne- ja viestintävirasto

Thank you for your attention!

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