



# Ocean Week

## Green Coastal Shipping Program

- positioning Norway in the lead

**Narve Mjøs, leading GCSP and Director DNV GL**

08 May 2018

## Maritime Game-changers

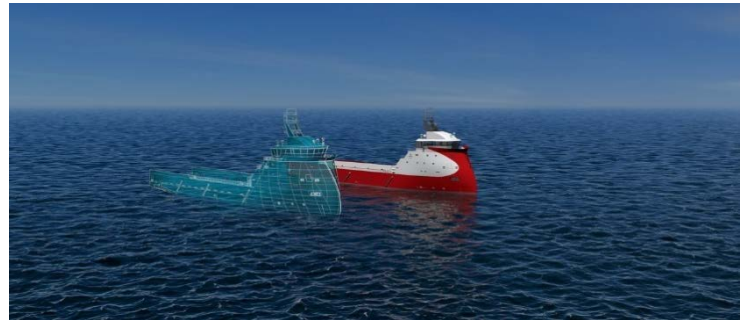
Decarbonization and environmental awareness



Major shifts in transport demand



Digitalization and innovation



# International environmental requirements – time line towards 2030

## Implemented

## Local emissions

Core ports in Chinese area 0.5% sulphur

All ports in Chinese area 0.5% sulphur

Chinese DECA 0.5% sulphur

0.5% global sulphur cap

Baltic / North Sea NECA

Ballast Water Convention - entry into force

EU CO2 Monitoring, Reporting and Verification

Global fuel consumption Data Collection System

EEDI phase 2

## Climate change

EEDI phase 3

2017

2018

2019

2020

2021-2024

2025-

## Under way... possible

EU Recycling

IMO GHG strategy

BC, noise, bio-fouling and VOC regulation?

Operational requirements to CO2 emissions

Carbon pricing / MBM

EEDI Phase 4

HK Recycling convention

Additional ECAs established?

# Public perception of shipping

## Health risks of shipping pollution have been 'underestimated'

One giant container ship can emit almost the same amount of cancer and asthma-causing chemicals as 50m cars, study finds

● Climate change threatens 50 years of progress in global health, study says



*The Guardian, 2009*



SKIP: MV Maersk «Mc-Kinney Møller» var verdens største containerskip i 2013, med en lengde på 400 meter. Foto: REUTERS/Michael Kooren

## Stemmer det at utslippene fra et containerskip tilsvarer 50 millioner biler?

Faktisk.no har undersøkt påstanden.

*Dagbladet, 2018*

Conclusions from Faktisk.no:

- The container vessel annually emits:
  - as much SO<sub>x</sub> as 100 million cars
  - as much NO<sub>x</sub> as 3 million cars
  - as much CO<sub>2</sub> as 56 000 cars

Sulfur limits for fuel

- Car: 10 ppm
- Ships in general: 35,000 ppm
- Ship in ECA: 1,000 ppm (S. Norway)

# Maritime sector



- 90% of the cargo transported in the world is at sea
- Maritime transport is generally the most environmentally friendly mode of transport
- Ships have high energy consumption and emissions to air
- A paradigm shift
  - CO2 emissions will be regulated and get a cost - directly or indirectly
  - Global, regional, national and local requirements for emissions of hazardous gases will come
  - Climate change and new requirements - the world's best business opportunity

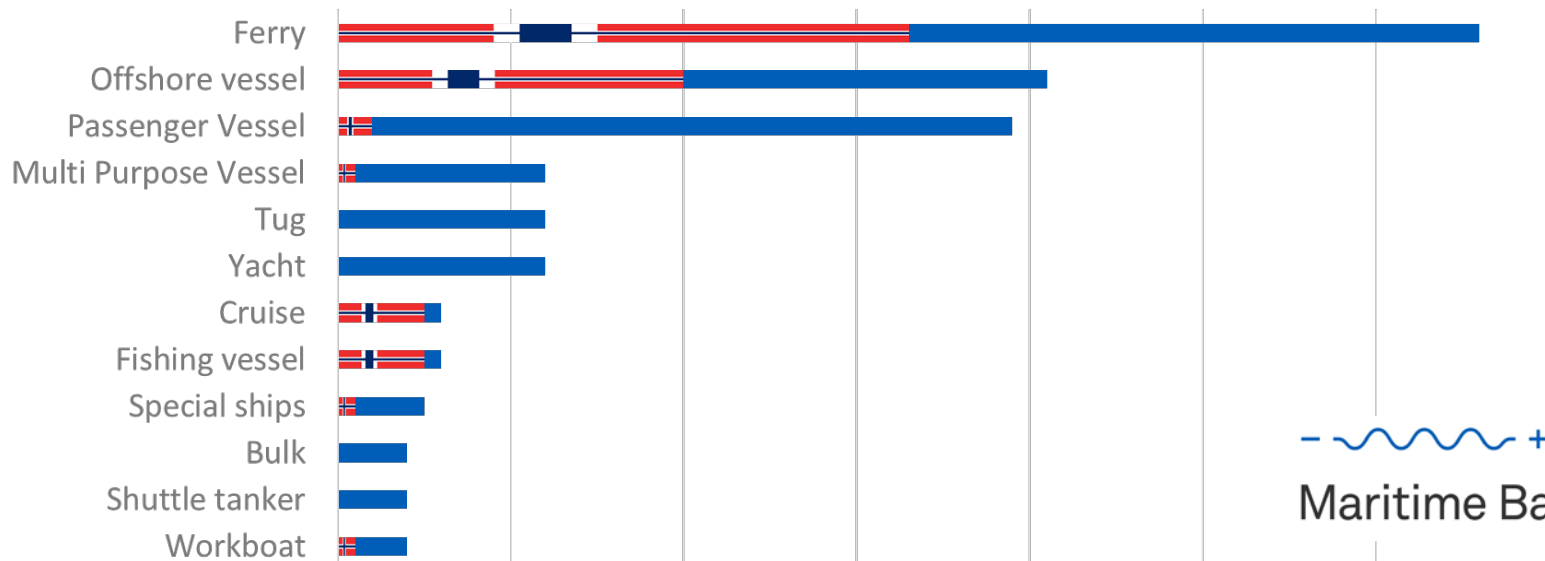
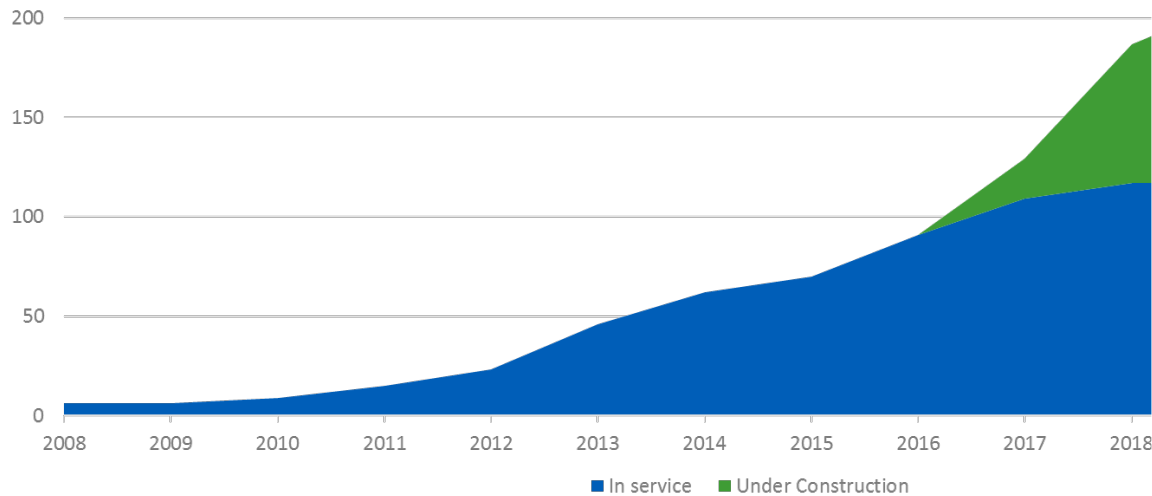


# Maritime industry is important to Norway

- Global and competence based
- 110,000 employees
- Export industry
- Leading on green technologies



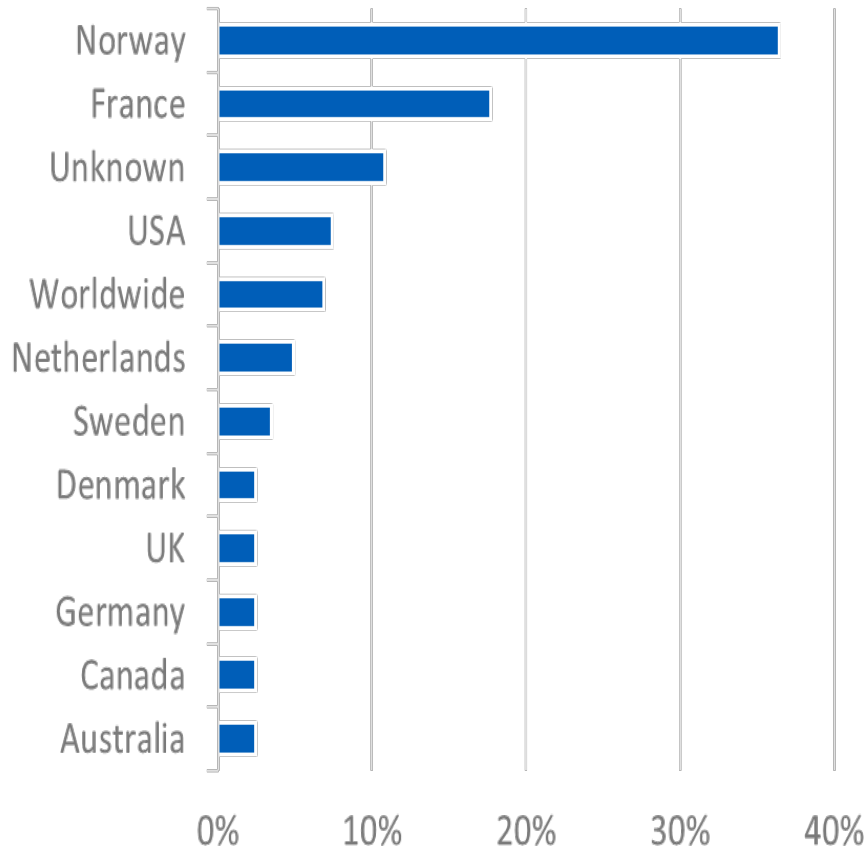
# The development of battery-powered ships in the world



Maritime Battery Forum

# Country of operation of battery-powered ships

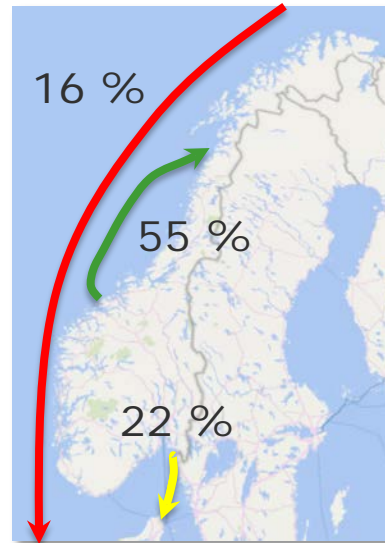
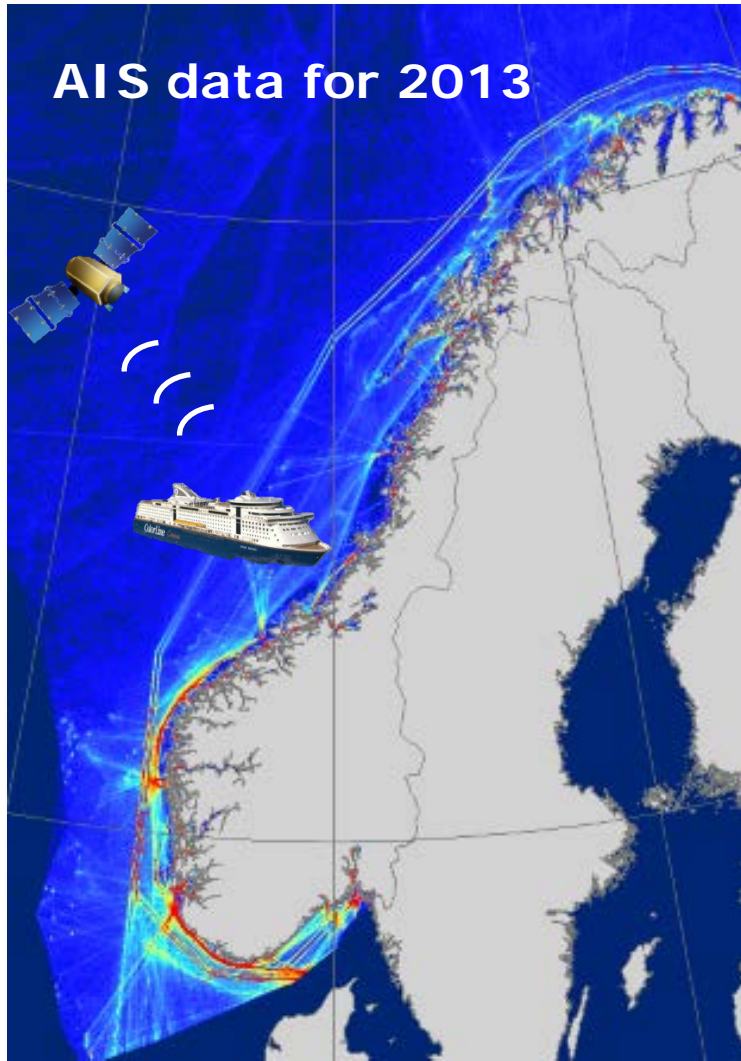
Top 10 countries of operation



Maritime Battery Forum

# Where are we today? Emissions in Norwegian territorial waters

## AIS data for 2013



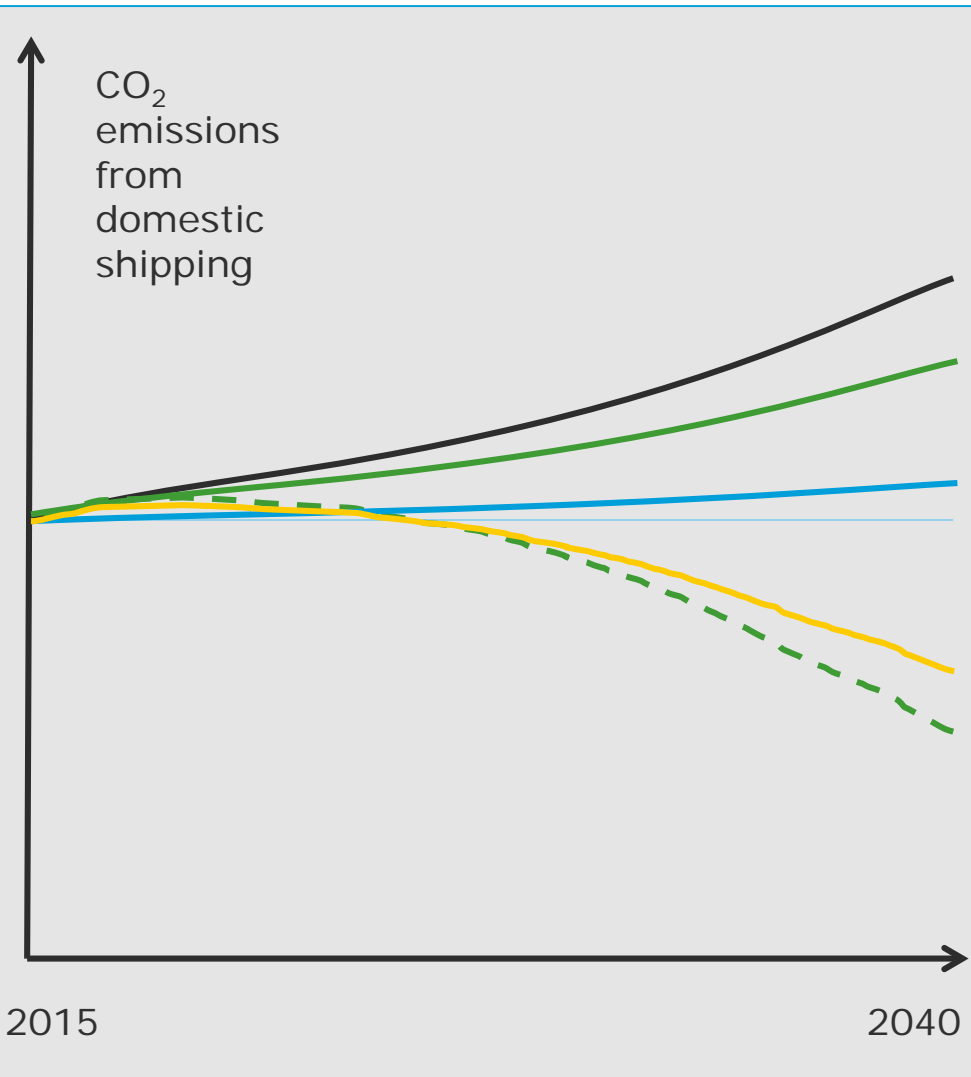
## Three traffic types:

- Thru traffic
- Domestic traffic
- Foreign

## Norwegian domestic shipping:

9% of Norway's CO<sub>2</sub> emissions (4.1 mill. tons)  
34% of Norway's NO<sub>x</sub> emissions (52,000 tons)  
25% of Norway's SO<sub>x</sub> emissions (4500 tons)

## Domestic emissions towards 2040



Projected growth + 50 %  
Baseline growth + 40 %

} Effect of EEDI

With key technical & op. measures + 10%

Scenario: **Alternative fuel** and key technical and op. measures - 40 %

Target - 50 %

**This is an incredible challenge**

# Green Coastal Shipping Program

- A public-private partnership program

Narve Mjøs, leading GCSP and Director DNV GL

08 May 2018



*Grønt Kystfartsprogram*



# Green Coastal Shipping Program

- Cleaner air to all
- Establish the world's most efficient and environmentally friendly coastal shipping, powered by zero and low emission solutions
- Profitable emissions reductions
- Green jobs
- Increased competitive advantage
- Leading international position



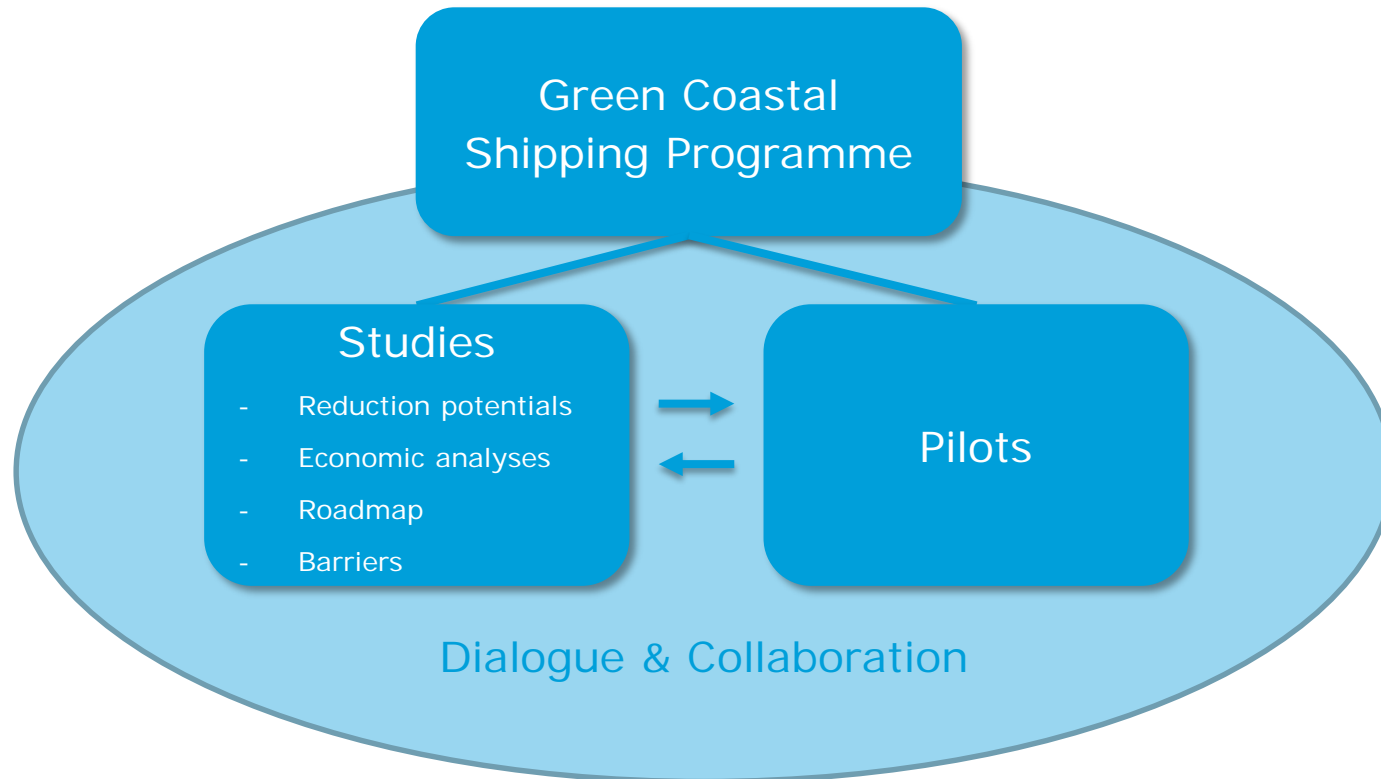
## Participation – Phase 3

The program shall be an effective instrument for the implementation of the government's strategies

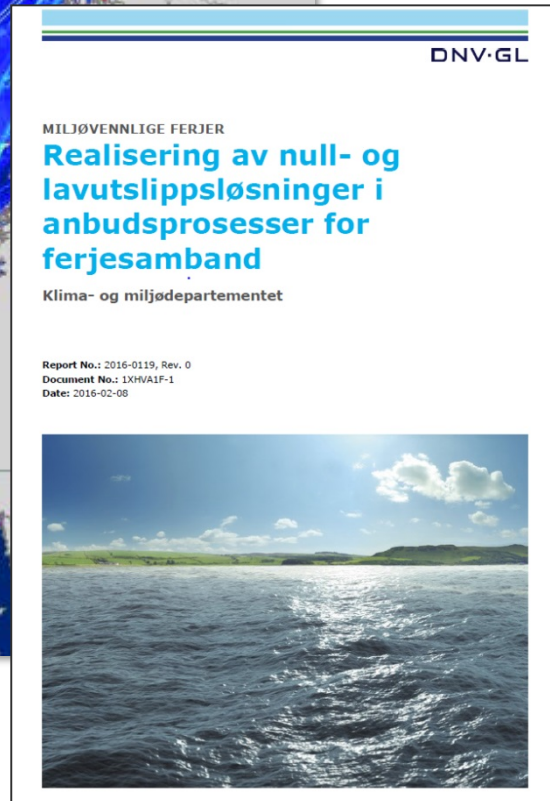
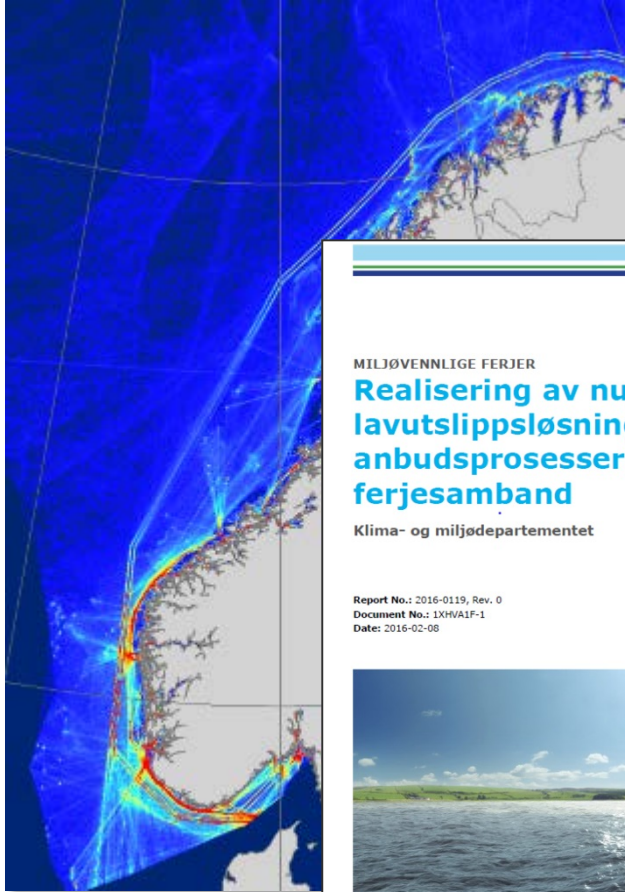


08 May 2018

## In a nut shell



## Two important Phase 1 studies



Study - potential for emission reductions

- Emissions from Norwegian domestic traffic are significant in the climate and environmental accounts for Norway
- The maritime industry will be able to take responsibility for its share of climate and environmental goals
- We need to invest in restructuring

Barrier study for ferries

- Identified barriers
- Outlined solutions and recommendations
- Enabled attractive solutions

# Piloting, piloting, piloting



## Phase 3 activities

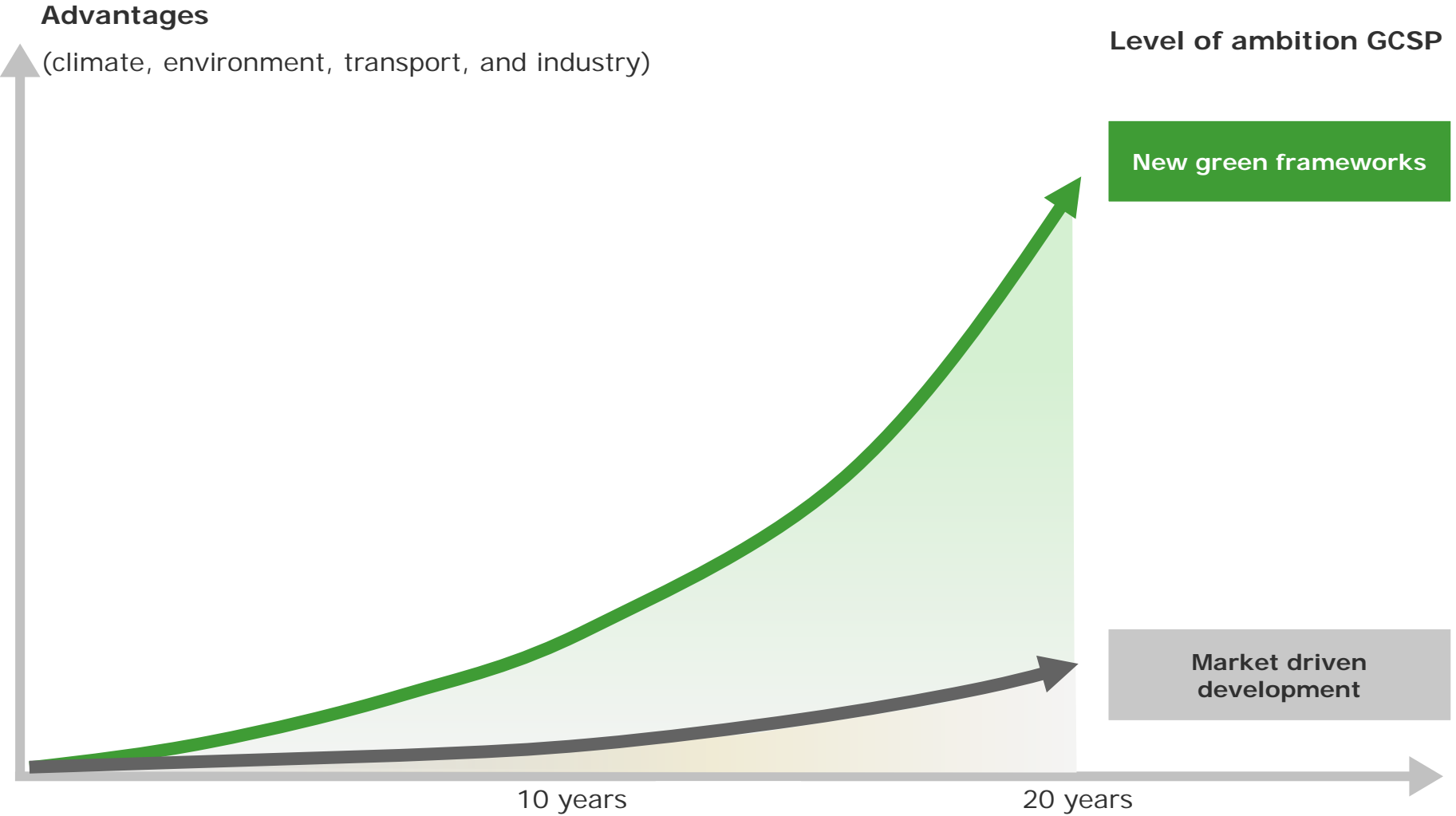
- Implement roadmap for green coastal shipping
- Collaborate with cargo owners / charterers
- Collaborate with the financial industry
- Plug-in hybridization of the coastal shipping
- National plan for green fuel infrastructure
- New Top Executive debate
- Barrier studies

## CHARTING A COURSE FOR GREEN COASTAL SHIPPING

Input to the Norwegian government's commission on green competitiveness  
from the Green Coastal Shipping Programme



# Results are dependent on cooperation between industry and authorities



# Green Coastal Shipping Program – activities

## Project phases



## Working groups

- Partner Group
- GCSP Council
- Pilot Groups
- Activity groups
- Funding Group
- Media Group

## Learnings from the program

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- Set clear goals
- Collaborate and engage
- Focus on policies and business cases
- Calculate and be concrete
- Resolve barriers
- Pilot. Pilot. Pilot

# Summary of Green Coastal Shipping Program

- The program is in the beginning of Phase 3 with growing number of participants
- A new way of collaboration
- The program has received considerable attention
- It has received Lloyd's List Global Environmental Award
- New participants are very welcome



OUR VISION

# GLOBAL IMPACT FOR A SAFE AND SUSTAINABLE FUTURE

Thank you for the attention!

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