

Green Shipping Programme

Pre-BBQ seminar – Nor Shipping

June 6, 2023



Green Shipping Programme

1600	4	Welcome	Harald Solberg, NSA
	4	Review of the agenda by the moderators	Anne Sophie Sagbakken Ness, DNV Eirill Bachmann Mehammer, DNV
1610	9	Green Shipping Programme – an overview	Narve Mjøs, DNV
1620		Pilot Project studies	
	4	Ammonia Powered Bulk Carrier - retrofit	Atle Sommer, Grieg
	4	Ammonia powered tanker – newbuild	Tomas Ryberg, Equinor
	4	Ammonia safety handbook – first and free	Linda Hammer, DNV
	4	Methanol powered container vessel - retrofit	Magne Aunebakk, SinOceanic
	4	Towards zero emission for fast passenger ferry	Per Erik Olsen, Color Line
	4	Green shipping in public procurements	Sofie Vold, Ministry of Climate and Environment Eivind Dale, DNV
	4	Zero emission fuel in LNG infrastructure	Leiv Arne Marhaug, GasNor
	4	Logistics 2030	Kai Just Olsen, ASKO
	4	Financing of green infrastructure – institutional investors	Gjermund Grimsby, KLP
1705	10	Q&A	
1715	25	Break	
1740		Pilot projects under realization – from start to now	
	4	Autonomous electric ferries	Tom Eystø, Massterly
	4	An all-electric and autonomous transport system	Kai Just Olsen, ASKO
	4	Zero-emission bulk transportation: Cargo owners in lead	Per-Kenneth Øye, Felleskjøpet
1755	5	Q&A	
1800	15	Roundtable: From study to realization	Gjermund Grimsby, KLP Atle Sommer, Grieg Lars Erik Marcussen, Heidelberg Materials
1815	30	NSA invites for drinks and mingling	
1845		The end	

Green Shipping Programme

- a public-private partnership programme

Narve Mjøs, VP DNV, Programme Director



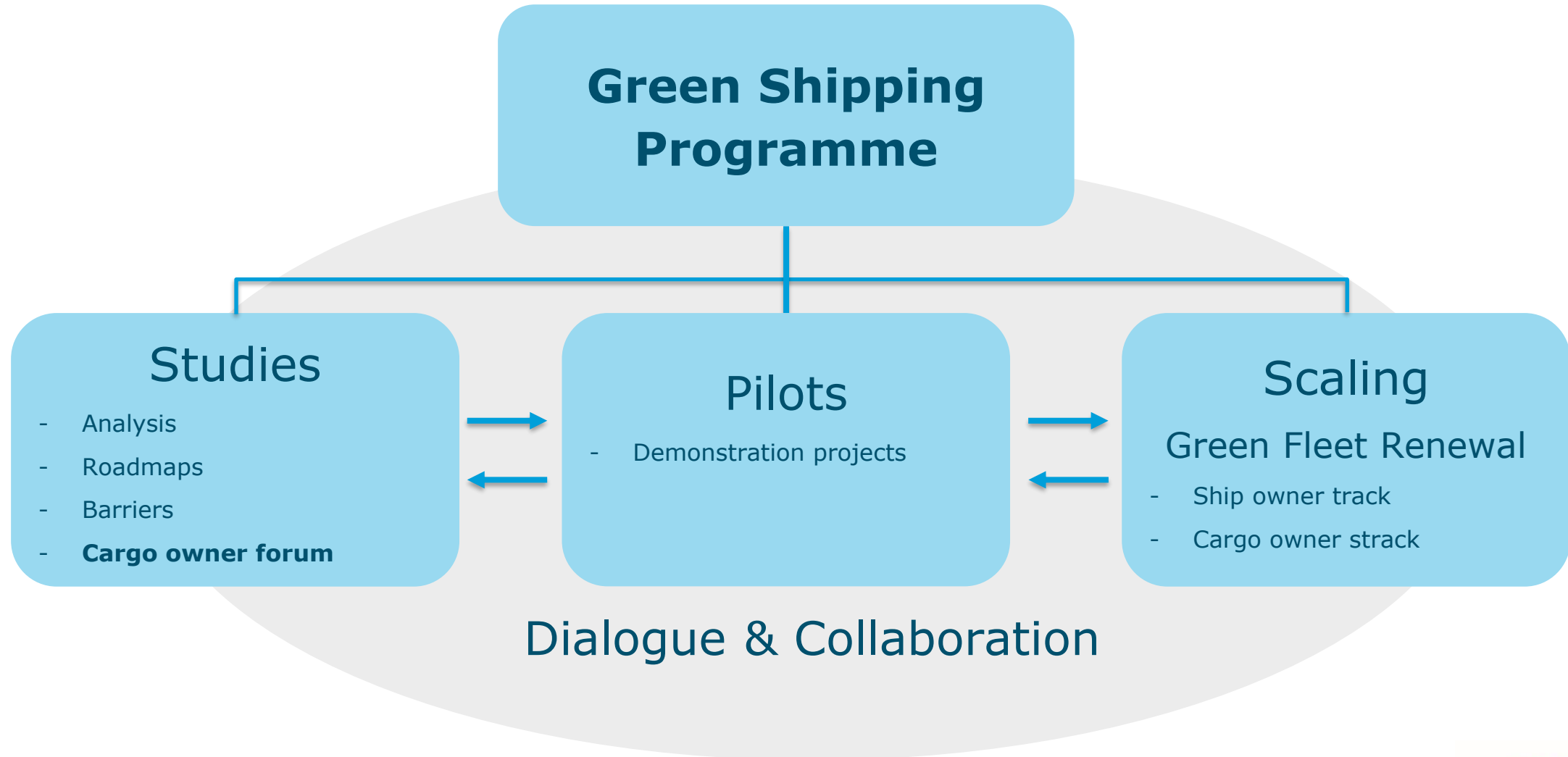
Green Shipping Program

- A paradigm shift in maritime
 - Emissions will be regulated and get a cost
 - Green demands from the market, investors, employees and the public
 - Climate change and new requirements - a significant business opportunity
- Establish the world's most efficient and environmentally friendly shipping
- Large, "profitable" emission reductions
- Sustainable logistics solutions
- Green jobs
- Increased competitive advantage
- Front runner in green shipping

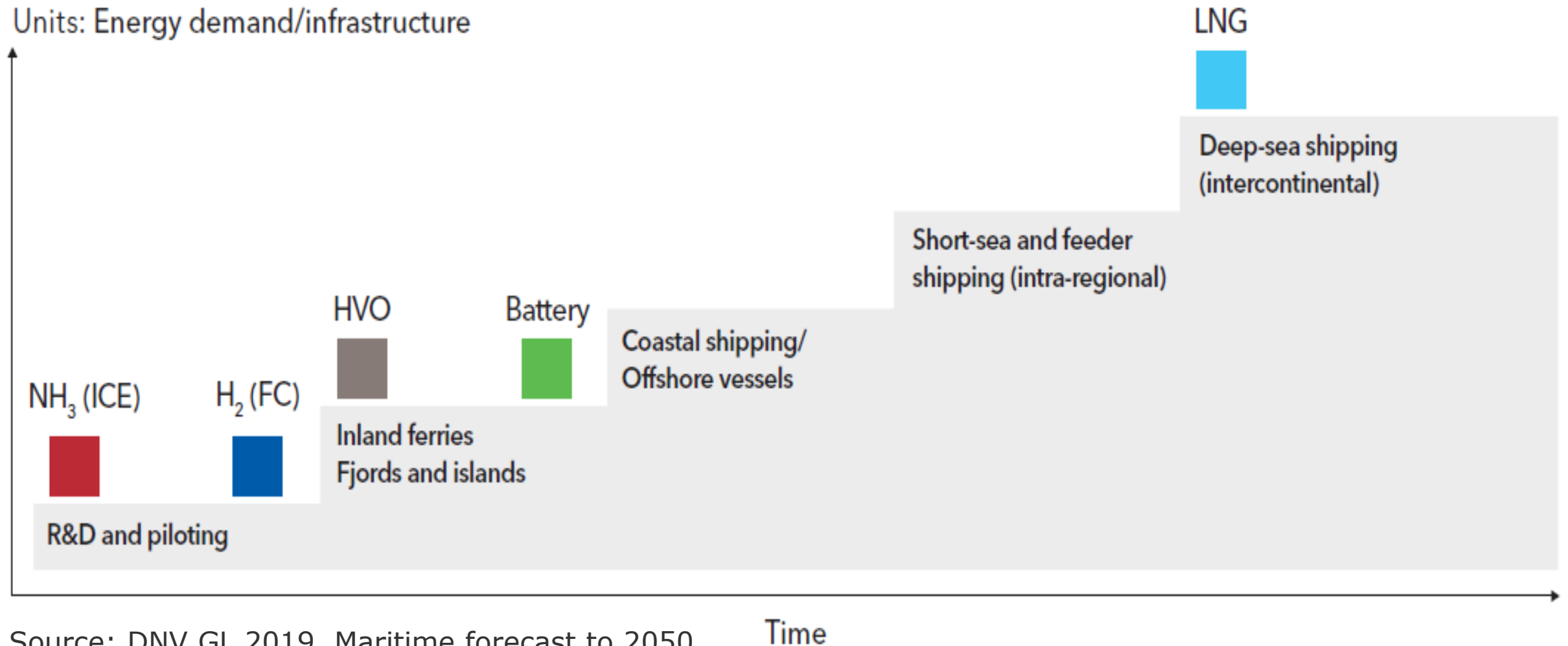




In a nutshell



From fjords to oceans - green technologies must take steps to make the voyage



Pilot overview – 48 pilots

Pilot Legend:

Under realization

Maturing

In progress

Other activities:

Cargo owner forum

Tech. radar

Pilot owner

Cargo owner

Greenbulk

Logistics 2030

Public procurement

Ammonia deep-sea tanker

Offshore wind inst. vessel

EPD for sea transport

Ship owner

Yara Birkeland

Fish farm vessel

LNG bunker vessel

Hydrogen cargo-ship

Ammonia deep-sea bulker

Ammonia sea trawler

Shuttle tanker

Transport of fish

Sail in a box

Bio-gas

Zero-emission high speed ferry

Smart ships

Autonomous drone

Battery HSLC

Bio-diesel ferry

Cruise roadmap

On board CCS

Cargoferry

Fishing vessels

Hydrogen HSLC

Ammonia ferry

Methanol Retrofit

Methanol new build

Infrastructure

Green port

Port Index

Hydrogen

LOHC

Port barometer

Green transition

Env. terminal

Bunkering Stavanger

Finance

Financing 2^o shipping

Green finance

Green infrastructure

Transition financing ports

Transition financing shipping

Transition financing fishery

Other

Next generation bulker

Autonomous ferries


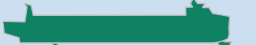





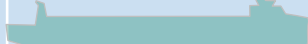

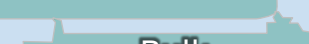




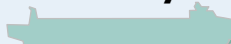
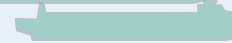
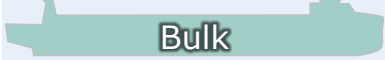
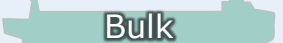


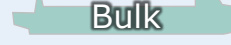






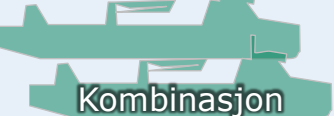



Circular economy

Reuse offshore vessels

Battery ferries Greece



Key Projects in GSP Service Centre for Fleet Renewal – Zero Emission

Felleskjøpet/ Heidelberg  Bulk	Veidekke  Bulk  Bulk	DC Resources  Bulk  Bulk	AT Skog/ Norstone  Bulk	Celsa Nordic  Stykkgoods	Elkem  Bulk  Bulk  Bulk
NOAH/Rekefjord  Bulk  Bulk  Bulk	Finnfjord  Bulk	Omya  Bulk  Bulk  Bulk	Sibelco  Bulk	Franzefoss Minerals  Bulk	Hydro  Bulk  Bulk
Scanbio  Tank	Mowi  Bløggebåt	Nova Sea  Brønnbåt	Lerøy  Brønnbåt	Biomar  Fôrbåt	
ASKO  RoCon	Samskip  Kombinasjon	Ocean Infinity  Container	Freyr  Container		
Equinor  Offshore					



NORSTONE
HEIDELBERGCEMENT Group



Felleskjøpet


Green Shipping Programme

Summary of GSP learnings

- Piloting for scaling
- Collaborate and engage
- Make the green markets to work
 - Green procurements in public sector
 - Smart regulations in private sector
 - Increase CO₂ price
 - Support green fuels until it is competitive
- Identify and resolve barriers
- Coastal shipping can pave the way
- Influence future requirements, policies and incentives



Thank you for the attention!

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<https://greenshippingprogramme.com>



Q&A



Break until 17:40

Q&A



Roundtable discussion with

Gjermund Grimsby, KLP

Atle Sommer, Grieg

Lars Erik Marcussen, Heidelberg Materials

Drinks and mingling

