

Information meetings 27th August and 2nd September 2020

Green Transport of Gravel and Grain by Sea



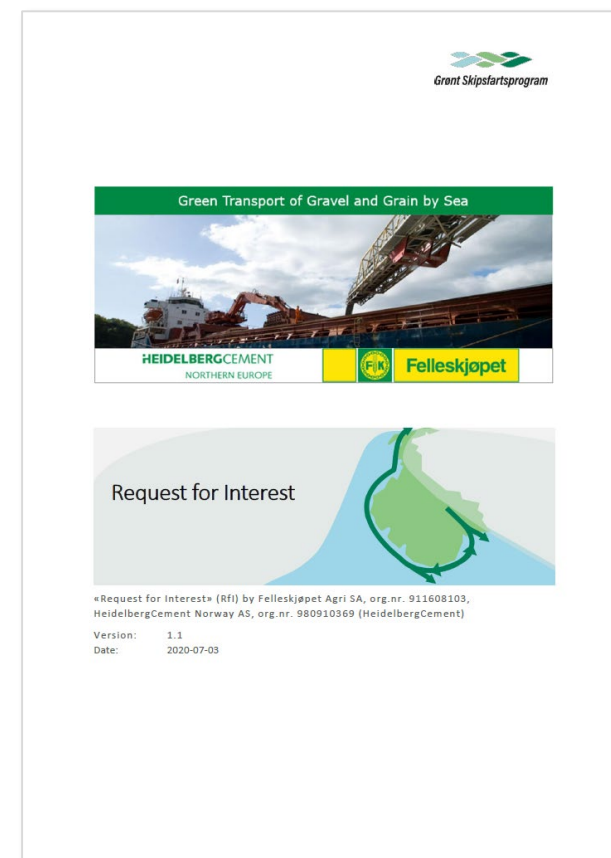
HEIDELBERGCEMENT
NORTHERN EUROPE



Felleskjøpet

Agenda

- 1. Welcome. Introduction**
- 2. Our ambitions and expectations**
- 3. Tender process**
 - a. Phases and selection
 - b. Dialogue during the tender – project web site
- 4. Request for Interest**
 - a. What do we mean by “zero emissions” (chapter 2.3), what solutions do we accept?
 - b. Information about separate fuel tender
 - c. What is expected level of detail of “Requirements to the Issue of Interest” (chapter 3) ?
- 5. Question & Answer**
- 6. Meeting closure**



HeidelbergCement - Ambitions and Expectations

Ambitions and Expectations



Felleskjøpet

Felleskjøpet Agri – the cooperative and group



Felleskjøpet
Agri is a
cooperative
owned by
44 000 farmers



The main
objective is to
strengthen
our members'
finances, in
both short and
long terms.
This is the
basis of
everything we
do



Felleskjøpet
secures our
owners a
durable and
predictable
transaction of
grain, in
addition to
favourable
purchasing
conditions



We are **the**
major supplier
of technology
and operational
goods to
Norwegian
agriculture



Felleskjøpet is
present in all of
Scandinavia,
thus **securing**
cooperation
and the
Norwegian
farmer

Our business in Norway

- More than **100 stores**
- **40** workshops and Machine Centres
- **12** feed factories
- **42** grain receival points
- **2** Seed factories
- **2** Fertilizers package plant
- **3** Mills
- **33** Bakeries
- Servicing also external
 - 150 Cooperating salespoints (franchise)
 - Wholesaler for 400 external Pet-shops



Felleskjøpet have used Sea Transport from The start 125 Years ago



Kambo 1919



Kambo 2019

Logistics Felleskjøpet

24 Warehouses

Transport Planning Department

250 heavy trucks directly planned from FKA + approx. the same from spedition companies

2 Ships (sidegate) in regular traffic from Bergen-Kirkenes

Several bulkship weekly for transporting grain, fertilizers and Raw Materials

Logistics Department procure Transport for approx. 1 billion NOK a year



Our strategy for sustainability - **More, Better, Cleaner** -



Green Focus in Felleskjøpet

• United Nations

- food production must increase by 70 percent until 2050 to take care of the growing population.
- In the next 40 years we must produce equal to what we have produced in 6000 years.
- This must be done with as little impact on the environment as possible
- Felleskjøpets goal is to aid the farmers to produce; more, better, cleaner.



• The farming industry in Norway is responsible for 8 percent of the total Co2 emissions.

- Felleskjøpet is working on a broad field making the farming industry greener.
- Felleskjøpet have already many solutions for the farmers towards green buildings, solar power, machinery, it-solutions, new raw metarials etc.



• But we are also looking into Felleskjøpets Co2 Emissions

- Transport stands for 65% of Felleskjøpet total.
- Our strategi is to reduce this by 50% within 2030. Then we need to start now.



Green Focus Transport

- **Goal: reduce Co2-emissions by 50% before 2030**

1. Reduce Transport by higher capacity utilization

- Better Planning – New transport Management system
- Building larger Hub capacity
- Introducing new more versatile equipment
- Using Modular trucks

2. Use more Ship Transport for large volumes

3. Alternative diesel fuel

- HVO
- Biodiesel

4. LBG Trucks

- We are now testing two trucks running on LBG



Green Focus Transport

- **Goal: reduce Co2-emissions by 50% before 2030**

- 5. Reserved 50 Nicola Tre – Hydrogen-Electric Heavy Trucks European Version

- Felleskjøpet is not a truck owner today but take this step to speed up the development.
- Transport Buyer must take larger responsibility - sending signal to OEMs and trucking companies.
- We also follow closely development by other manufacturers old and new
- 50 Nikola trucks will reduce Co2-emissions by 15%.



Green Focus Transport

- **Goal: reduce Co2-emissions by 50% before 2030**

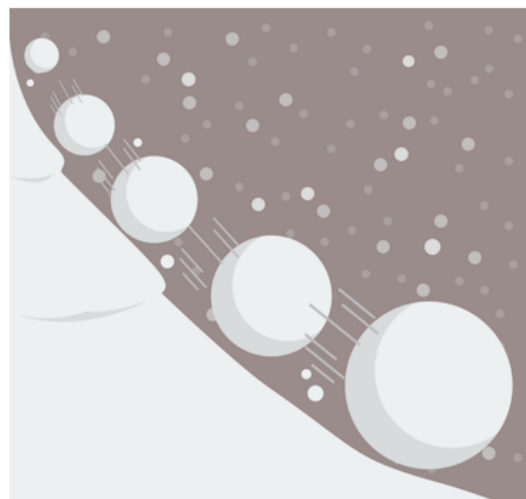
6. Worlds first LNG plug-in hybrid cargoship

- We made a 10 year contract with shipowner “Ulvan Rederi” to make this
- This ship will reduce emissions of Co2 25% and NOX 95 %.
- The plan is that the ship will be delivered Q4 2020.
- The ship can without any adjustments go on LBG
- The propulsion is electric and it is possible to change the LNG-generator with Hydrogen fuel cells in the future.



Worlds first Zero Emission Bulk carrier

- Felleskjøpet has transported grain for over 100 years.
- Now we transport about 300 000 tonnes a year from the Oslofjord to the West coast
- The goal is to do this with as low emissions as possible
- This project is essential to reach our goals and we stay committed.
 - If we find a solution that is viable we will commit for a long term contract
- As cargo owners we take responsibility and try to press the evolution forward
- We hope that this project will be a little snowball that starts rolling for a total fleet renewal.



Green Shipping Programme

- a public-private partnership programme



Grønt Skipsfartsprogram

Green Shipping Programme

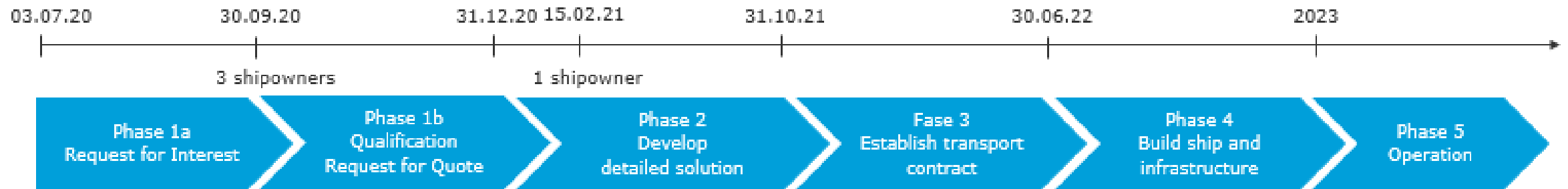
Establish the world's most efficient and environmentally friendly shipping

- Profitable emissions reductions
- Sustainable logistics solutions
- Green jobs
- Increased competitive advantage
- Leading international position



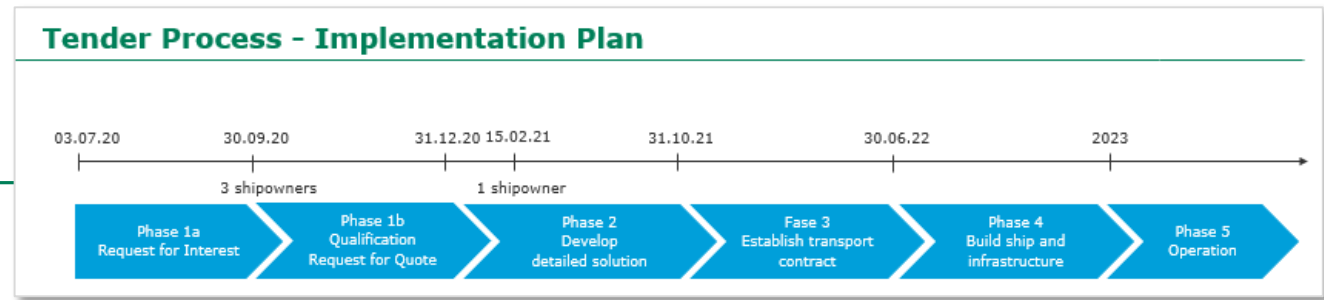
Tender Process – Implementation Plan

- **Tender on transport system/ship**



- **Separate tender on fuel delivery and infrastructure**

Tender Process



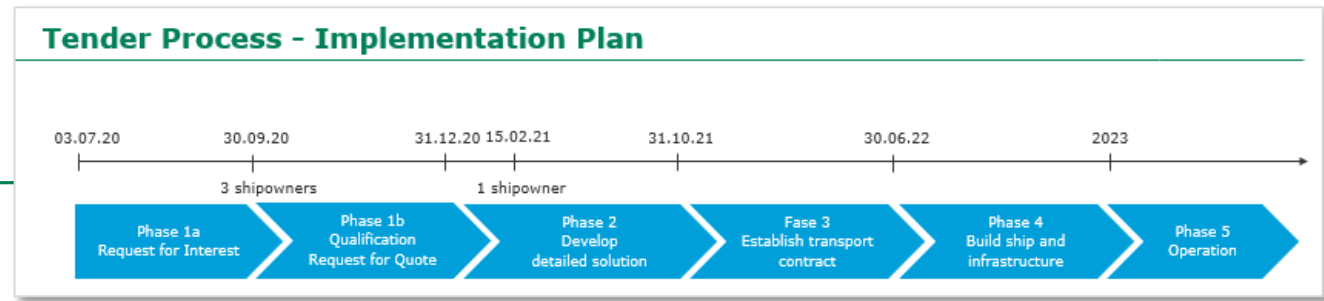
- **Phase 1a, Request for Information (July-Sep 2020)**

- Open bidding competition
- Purpose: Identify best qualified bidder with transport solution fulfilling the requirements of zero-emission operation
- Elevated description of the concept, no price

- **Phase 1b, Request for Quote (Oct-Dec 2020)**

- Selected shipowners/ship operators
- Purpose: Identify the best qualified solution and bidder for development of detailed solution and assignment of the transport contract
- More detailed concept description with main suppliers, budget price of the transport solution

Tender Process



- **Phase 2, Develop detailed solution (Feb-Oct 2021)**
 - 1 selected shipowner/ship operator w/main supplier partners
 - Open books, cooperation tenderer and bidder, based on Request for Quote (phase 1b)
 - Apply for possible project grants
- **Phase 3, Establish Transport Contract (2021-2022)**
- **Phase 4, Build ship and infrastructure (2022-2023)**
- **Phase 5, Operation (2023-)**

Dialogue during the tender – project web site


- **Project web site**
 - News
 - Q&A – clarification and supplements to the RfI (notification by e-mail)
 - Overview of suppliers
 - RfI document
- **Communication with contact persons**
 - Relevant information published on web
- **Information given by e-mail**
(with links to information on web site)
- **Deadline for questions 20.09.2020**
- **Deadline for delivering RfI response 30.09.2020**

Green Flow of Dry Bulk

Felleskjøpet Agri and HeidelbergCement aim Felleskjøpet Agri and HeidelbergCement aim for a sustainable transport system without emissions of greenhouse gases for a sustainable transport system without emissions of greenhouse gases

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www.dnvgl.no/maritime/gront-skipsfartsprogram/HC-FKgreenbulk/

Project e-mail: HCFK@dnvgl.com

RfI – What do we mean by “zero emissions” (chapter 2.3)

- **RfI chapter 2.3:**

*"The ship(s) is required to have **no greenhouse gas (GHG) emissions at sea and in port**. At this stage, no preference is given to the type of fuel or energy converter."*

- **Project ambition:**

- Drive innovation
- Pave the way for a new generation of green, standardized ships

- **Accepted:** Hydrogen, battery, all solutions without GHG emissions

- **Not accepted:** Biofuels or other solutions with GHG emissions

- **For safety/ «take me home»:** Fossil fuel generator accepted

- Separate tender on fuel delivery and infrastructure



2.3 Zero Emissions

The ship(s) is required to have no greenhouse gas (GHG) emissions at sea and in port. At this stage, no preference is given to the type of fuel or energy converter.

Based on available knowledge to the tenderers, the most likely fuel option is hydrogen, but also other options may be considered, including shore power, sails and wave foils. Pressurized hydrogen, liquified hydrogen, and LOHC (Liquified Organic Hydrogen Carriers) are open options at this stage. Other energy carriers and non-fossil fuels may also be accepted if it does not result in GHG emissions during any operational mode and is likely to be available for use in operation from the start of the service in 2023.

The Tenderer will submit a parallel tender for supply of fuel. The results of this will affect the final ship design, and information regarding this will be shared with bidder. It is the ambition that the fuel used shall be sustainably sourced and produced and have minimal lifecycle emissions.

Fuel for a zero-emission ship will probably cost more than traditional fuels. Bidders must, therefore, propose energy-efficient hull and solutions to minimize fuel use. Optimal sailings speeds, minimal bunkering time and no or small deviations for fuel bunkering must be considered.

RfIH2/I – Request for Interest Hydrogen & Infrastructure

- Parallell to request for ship
- All types of hydrogen at this stage:
Compressed, Liquified, LOHC, Ammonia;
Green and Blue (Grey)
- Shore power in prioritized port
- Endurance: Roundtrip Rogaland-Oslofjord
- Delivery to ship
- Bunkering port: Open
- Bunker contract partner: Open
- About 1 tonn/day
- Dead line: October 9th
- About 10 potential suppliers



What is expected level of detail of “Requirements to the Issue of Interest”

From the RfI, chapter 3:

- 3.1 Confirmation of Interest – intention to deliver the solution
- 3.2 Elevated Description of the Concept
- 3.3 Presentation of the Project Organization and Resources
- 3.4 Company Information
- 3.5 Project References

Documentation of Interest must be submitted to: HCFK@dnvgl.com.

All documents to be sent in a zipped file.

Deadline: 30th September 2020

What is expected level of detail of “Requirements to the Issue of Interest”

From the RfI, chapter 3:

3.2 Elevated Description of the Concept

- *A brief description of the transport solution and the zero-emission ship with main technologies must be provided.*
 - *Possible technology suppliers should be included, but no binding agreements need to be made.*
 - *A concept description of the zero-emission ship including main technologies for energy production, propulsion and cargo handling (see Appendix A)*
 - *An overview of alternative suppliers of design, shipbuilding and main technologies.*

The following requirement decided to be removed:

- *“A description of how the transport will be organised and how third-party cargoes are included to obtain high capacity utilisation and cover seasonal variations and possible periods of available capacity.”*

Question & Answer

