

# Ocean Hyway Cluster

*- making green waves*

E-Forum — “A French Norwegian Approach to Decarbonisation of the Industry”

CEO Stein Kvalsund

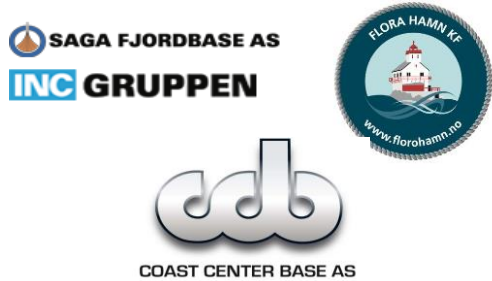
- Networking, both national and international
- Contribute to the realization on concrete, industry-based projects
- Influence policy and regulations, both on regional, national and international level
- Increase knowledge about hydrogen
- Promote our cluster members



## Finance, Public Sector & Regulators



## Ports & Supply Bases



## Ship Owners



## Clusters

Maritime Battery Forum



## Ship Design & Yards



# Arena Ocean Hyway Cluster

## Research & Education



## Energy & Hydrogen Production



## Equipment & Service Suppliers



# Ocean Hyway Markets/pilot vessel



HYINFRA



Cluster project:

# HYAQUA

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Arena Ocean  
Hyway Cluster



Arena Ocean  
Hyway Cluster

# Background and Motivation

The fleets operating in the fisheries and aquaculture sector form part of the largest and most important in Norway

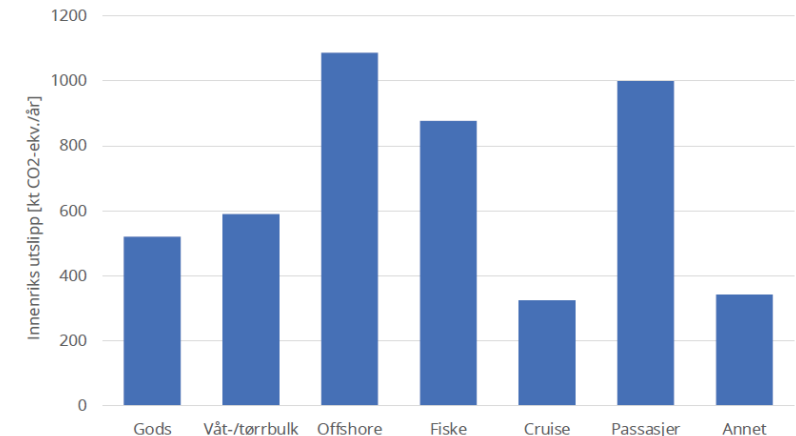
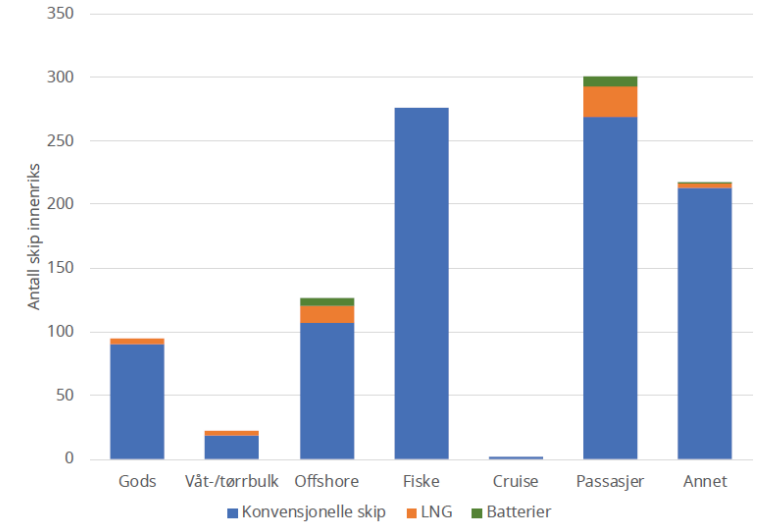
- Significant emissions of CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>x</sub>
- Need for modernisation (especially fishing)
- Increased interest (and need) for low- and zero-emission technology

**Uncertainty regarding technical and economic feasibility when using different zero-emission technologies for the different vessel types**

**The fishing fleet is one of the largest, but least modern**

- Significant emissions (~ 900kt CO<sub>2</sub> eq / year domestic in 2017)
- In addition, there are special vessels for aquaculture (live fish carriers, service vessels ++)
- Mostly conventional technology (diesel)
- Some vessels with battery and LNG

**Great potential for emission reductions**



# Potential vessel cases

Well boat and trawler



Image: OHC member Skipskompetanse AS

Workboat



Image: <https://www.skipsrevyen.no/article/nytt-fartoy-til-havkar-drift/>

Image: OHC member Multi Maritime AS

Fish feed carrier



Well boat



Image: OHC member Multi Maritime AS

Gill netter



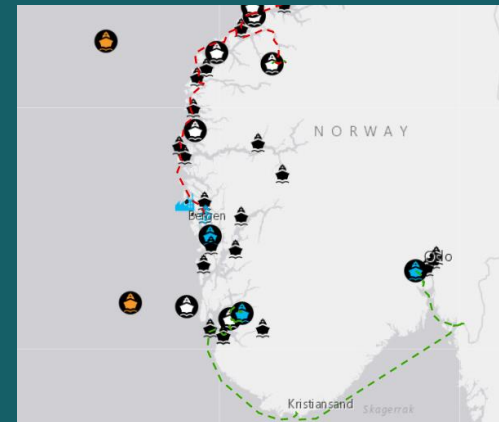
Image: MS Fanøyvåg  
Kilde: <https://www.skipsrevyen.no/batomtaler/m-s-fanoeyvaag/>

# HyInfra

### Overall goal

- To reduce the uncertainty and risk relating to hydrogen infrastructure in the maritime industry

### Interactive map



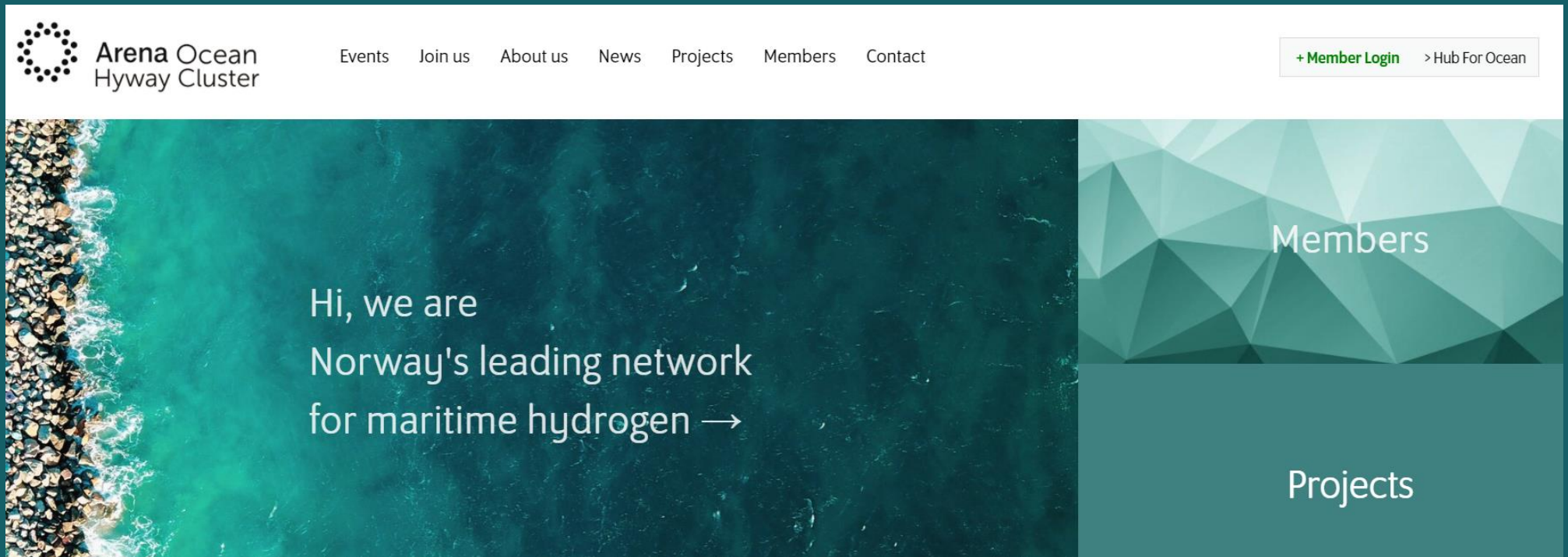
### Reports

- Ship types and relevant fuels
- Future hydrogen demand
- Barriers (safety and regulations)
- Future hydrogen value chain, technology and suppliers





For further information and contact: [www.oceanhywaycluster.no](http://www.oceanhywaycluster.no)



The screenshot shows the top portion of a website. On the left is the logo for 'Arena Ocean Hyway Cluster', which consists of a circular arrangement of dots followed by the text 'Arena Ocean Hyway Cluster'. To the right of the logo is a horizontal navigation menu with the following items: 'Events', 'Join us', 'About us', 'News', 'Projects', 'Members', and 'Contact'. Further to the right, there is a button labeled '+ Member Login' and a link '> Hub For Ocean'. Below the navigation is a large hero section. The left side of the hero section features an aerial photograph of a rocky coastline meeting turquoise water. Overlaid on this image is the text: 'Hi, we are Norway's leading network for maritime hydrogen →'. The right side of the hero section is a dark teal area with a geometric, low-poly pattern. It contains two large, light-colored text elements: 'Members' and 'Projects'.

Arena Ocean Hyway Cluster

Events Join us About us News Projects Members Contact

+ Member Login > Hub For Ocean

Hi, we are  
Norway's leading network  
for maritime hydrogen →

Members

Projects