

# What do we need to know to design the next generation longline vessels

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# Introduction

- Going to provide more questions than answers
- Going to separate in two groups: Coastal vessels and offshore vessels
- Going to address both vessel design and onboard equipment.
- This presentation will mostly be based on experience from the Norwegian fleet.

# The offshore fleet – status in Norway

- Counts about 30 vessels
- Onboard freezing
- Some combined with gillnets
- Mechanized longline
- Size of 30 to 50 meters.

# Offshore fleet - Challenges in vessel design and propulsion

- Overall hull design are more or less standardized
- Propulsion is an important case at this type of vessels due to the large variations in power demand from fishing operations to long distance transit.
- Dynamic positioning during hauling

# Offshore fleet - Challenges related to equipment

- Gaffing is one of the most challenging operations onboard, but will be addressed in a later presentation today.
- Automatic mending of defect hooks in the separator
- Drum based autoline
- Fish handling in the cargo hold

# Coastal fleet – Status

- Hundreds of vessels
- A few vessels full time longliners, most in combination with other gears.
- Fresh fish delivered one or two days after catch.
- Mostly based on hand baited gears.
- Between 9 and 28 meters, most of them between 9 and 15 meters

# Coastal fleet – Challenges related to vessel design and propulsion

- Need for speed?
- One or more hulls?
- Conventional or diesel electric propulsion?
- Only longline or a combination with other gears?

# Coastal fleet - Challenges related to equipment

- Hand baiting or autoline, or maybe something in between?
- Fish handling technology- deliver the fish gutted, round or alive?
- Hauling equipment.



**What do we need to know to get started then?**

# Summary

- Hull design and propulsion related to fuel efficiency
  - We need to acquire exact knowledge of the fuel consumption related to each operation on the vessel. This will be the necessary tool to put together the most fuel efficient technologies and designs.
- Need for speed? (relevant for the coastal fleet)
  - We need an evaluation of pros and cons by speed boats compared to conventional hulls.
- This is a type of vessel with very heavy workload for the crew. There will be a focus on reducing the workload for each crewmember.
  - Several important measures are in progress. What we need to do further is to approach the EHS situation systematically to map which areas we should pay effort in the future.

# Summary

- Baiting the longline.
  - To further develop the automation of the longline we need to know more about which factors that are affecting the efficiency.
  - We need to come up with solutions for the fleet with one and two crewmembers (semi automated longline)