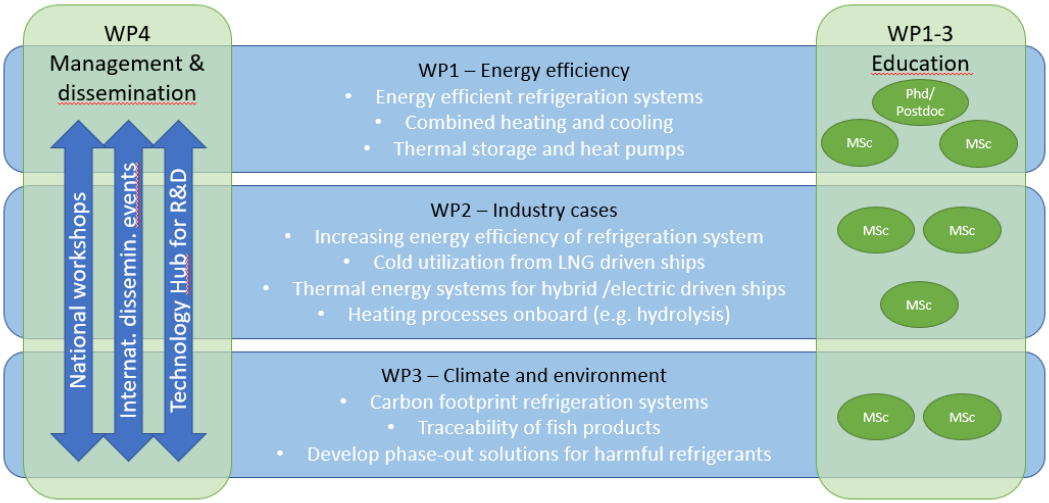
CoolFish

- Energy efficient and climate friendly cooling, freezing and heating onboard fishing vessels

The national and international fishing industry faces major challenges to be able to contribute in reducing climate gas emissions. To cope with this, new fuels and engine technologies for propulsion of fishing vessels are under rapid development. But it is not only the fuel consumption related to propulsion that contributes to the emissions of climate gases. On board there are also energy consuming equipment to keep the catch refrigerated, ensuring product quality. There are also systems for producing the hot water demand on board.



The ambition of the project is to contribute in developing energy efficient and climate friendly systems for cold and heat production onboard fishing vessels. New fuels and engine technologies change the prerequisites for both the need and production of heat and cold on board. This requires new, adapted technology, but also allows for installations of solutions that previously were not economically feasible.

OBJECTIVES

- **Energy efficiency:** To adapt and further develop models and methods for increasing energy efficiency of integrated refrigeration systems to be used onboard fishing vessels.
- **Industry design cases:** To Develop dedicated design layouts for integrated refrigeration and heating systems.
- **Climate and environment:** To increase awareness of the effects on climate and environment of refrigeration systems onboard fishing boats and to suggest better solutions.

A refrigeration plant contributes to global warming in two different ways; consumption of energy (electricity) to drive the plant, and leakage of the so-called refrigerant used in the equipment. The traditionally used refrigerants have a significant global warming impact. Norway is at the forefront of replacing these refrigerants with so-called natural refrigerants, having no negative environmental impact. Further development of these systems will be an important part of the project, as well as global transferring of knowledge and technology.

An additional way to reduce climate impact is to reduce the energy consumption for the production of cold and heat by integrating these systems. Concepts for such integrated solutions have been developed for supermarkets. However, these systems must be adapted to the operating conditions of fishing vessels. This will be made within the scope of CoolFish.

Today, seafood consumers often require information about the product's environmental impact. Therefore, the project also aims to evaluate and adapt the current models used for estimating the carbon footprints of refrigeration plants.

The project, which is led by SINTEF Ocean and includes SINTEF Energy and NTNU as research partners, is carried out in close cooperation with industrial partners from fishing vessel companies, equipment suppliers and ship design companies.

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