

International webinar: CO₂ as refrigerant in fishing vessels

CoolFish is a research project which will develop technologies and concepts for more integrated, energy efficient, and climate friendly cooling, freezing, and heating onboard fishing vessels. It will also increase the knowledge transfer between research and industry, both nationally and internationally.

In 2021 we plan to have a series of webinars, starting in May. First webinar will be on Teams 28th of May 9-11 CET. These are the presentations:

- Kristina N. Widell (SINTEF, Norway): **Introduction to CoolFish and other related projects**
- Leif Grimsmo (SINTEF, Norway): **Norwegian fishing vessels, regulations, technology and methods**
- Malikayil Vijayan Baiju (CIFT, India): **Commercial fishing vessels and fish storage – India**
- Alexander Pachai (Johnson Control, Denmark): **Cascade refrigeration system with NH₃ and CO₂**
- Yves Ladam (PTG, Norway): **Examples of CO₂ refrigeration systems installed onboard**
- Thomas Lund (Danfoss, Denmark): **Components and controls for CO₂ HVAC&Ref systems**
- Terje Nybø (Ullstrøm Fepo AS, Norway): **Compressor solutions for the natural refrigerant R744 (CO₂). Availability and development**

Each presentation will last 10 minutes and there will be time for some questions after each presentation.



International webinar:
CO₂ as refrigerant in fishing vessels

Introduction by
Kristina N. Widell



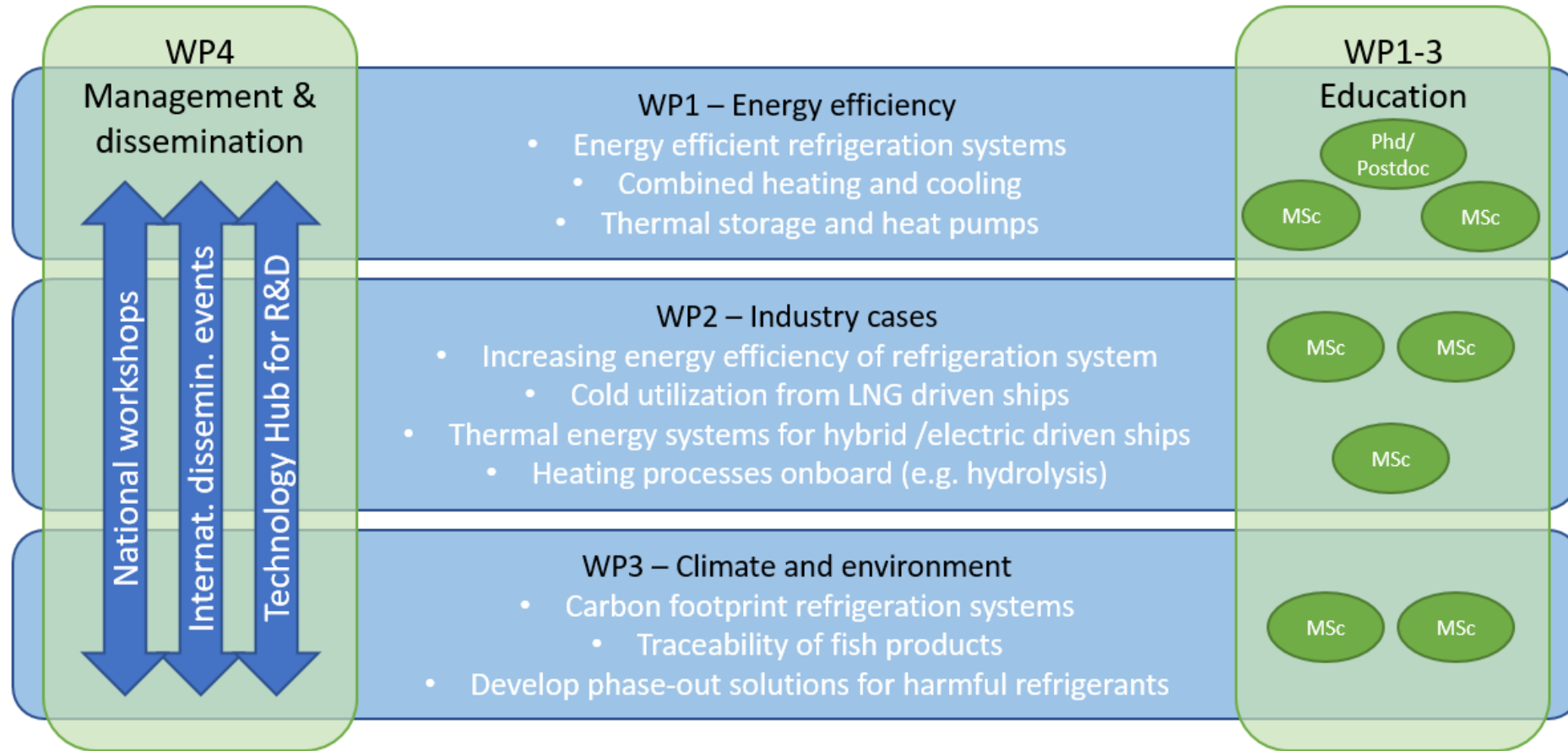
Introduction to CoolFish and other projects

- CoolFish

- Research and innovation project
- Collaboration between SINTEF, NTNU and industry
- CoolFish will develop technologies and concepts for more integrated, energy-efficient and climate friendly **cooling, freezing and heating onboard fishing vessels**. It will also increase the knowledge transfer between research and industry, both nationally and internationally.



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



CoolFish

- Project management group:
 - SINTEF Ocean (leader)
 - NTNU
 - SINTEF Energy Research
- Scientific reference group
 - Int. Institute of Refrigeration – France
 - South Bank University – Great Britan
 - Johnson Controls DK – Denmark
- Industry partners
 - MMC First Process AS
 - Sørheim Holding
 - Danfoss
 - PTG
 - Bluewild
 - Øyangen
 - Norgas
 - Isotherm Inc.



Other projects

- **CruIZE**
 - similar topics as in CoolFish, but with a focus on hotel operations (cooling and heating) on board cruise ships
- **INDEE+**
 - collaboration between Indian and Norwegian universities and institutes
 - develop refrigeration systems with natural refrigerants, as alternatives to those with high global warming impact.
 - three pilot plants with CO₂ in India, for testing and education
 - Supermarket
 - Chiller/hot water heat pump for hotel
 - **Seafood refrigeration onboard fishing vessel**
- **PCM-Store**
 - solutions for integration of cold thermal storages in industrial food processing industry and in supermarket



More information?

- <https://www.sintef.no/en/projects/2019/coolfish/>
- kristina.widell@sintef.no



Your interaction during webinar

- Chat – write comments or questions during or after presentation
 - presenter will answer after the presentation or write answer in chat
- Raise your hand – if you have a question
- Turn on the camera when you speak
- Applaud, thumbs up – acknowledge the presenters
- Microphone – mute when not speaking
- Not recording



Agenda

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Technology for a better society