



SINTEF

# Opening FER Forum

Vegar Johansen, CEO SINTEF Ocean  
Trondheim June 5<sup>th</sup>, 2024

Teknologi for et bedre samfunn





SINTEF

ONE OF EUROPE'S LARGEST **INDEPENDENT**  
**RESEARCH ORGANISATIONS**

**4,0 bill**

NOK turnover

**2200**

employees

**7000**

projects

**3200**

customers

INTERNATIONAL

**652 mill NOK**

NATIONALITIES

**80**

PUBLICATIONS (INCL. DISSEMINATION)

**6200**

CUSTOMER SATISFACTION

**4,5 / 5**





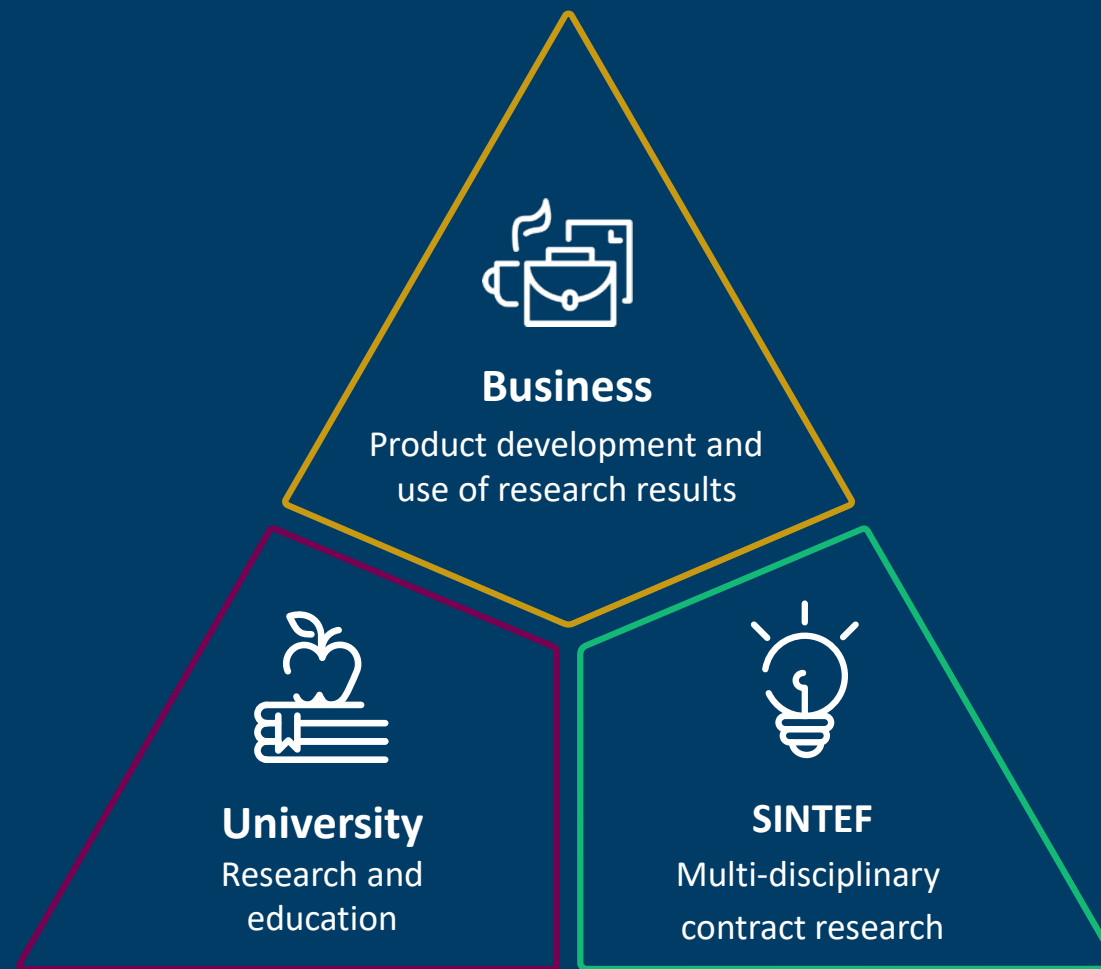
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IMPACT: WE CONTRIBUTE TO

THE COMMON GOOD AND COMPETITIVENESS



# Innovation through co-operation and expertise





# Our organisation with institutes ensures market relevance and academic strength - in One SINTEF

The foundation  
**SINTEF**

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INSTITUTES

SINTEF  
Community

SINTEF  
Industry

SINTEF  
Digital

SINTEF  
Ocean

SINTEF  
Energy

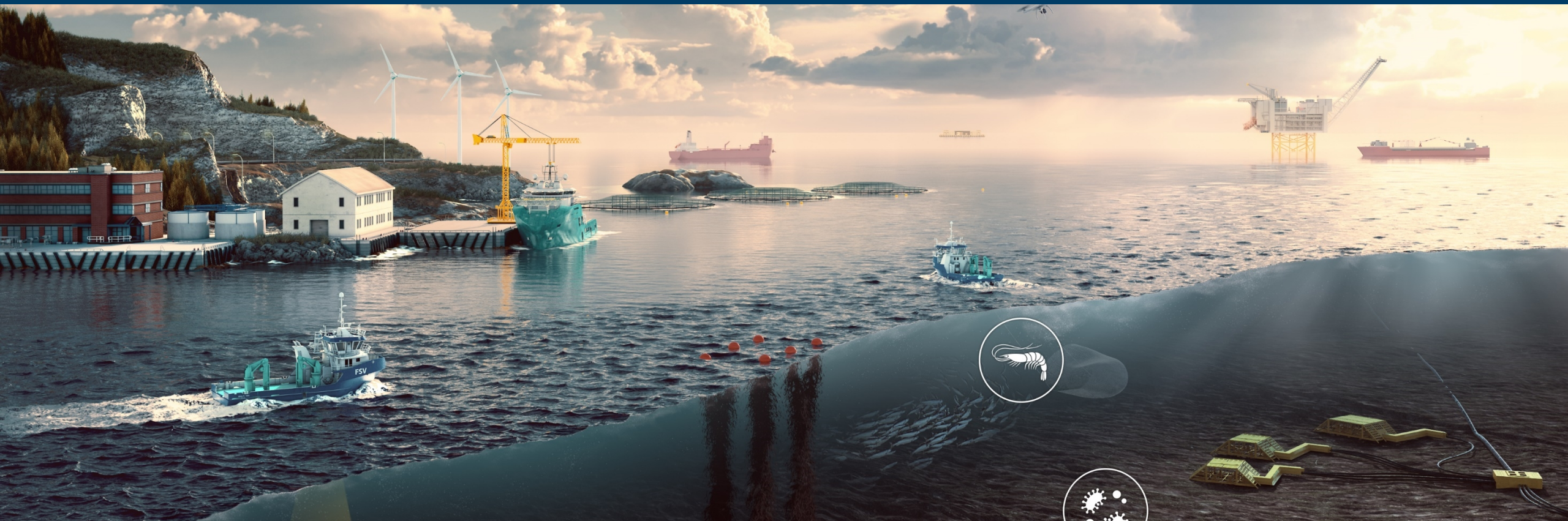
SINTEF  
Manufacturing

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# SINTEF Ocean

Process industry   Offshore energy   Offshore wind   Aquaculture   Maritime transport   Tourism



Fishery   Coastal infrastructure   Environmental technology   New marine resources   Subsea and subsea mining

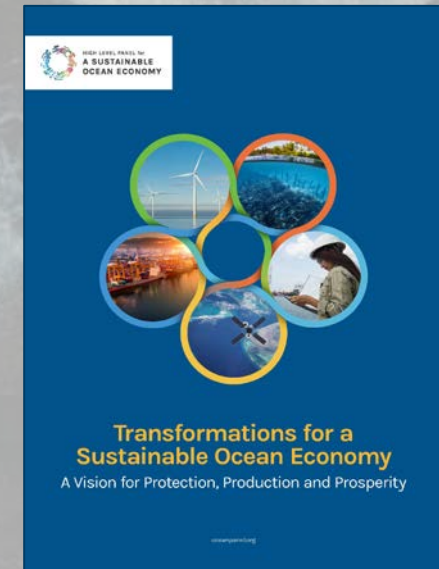
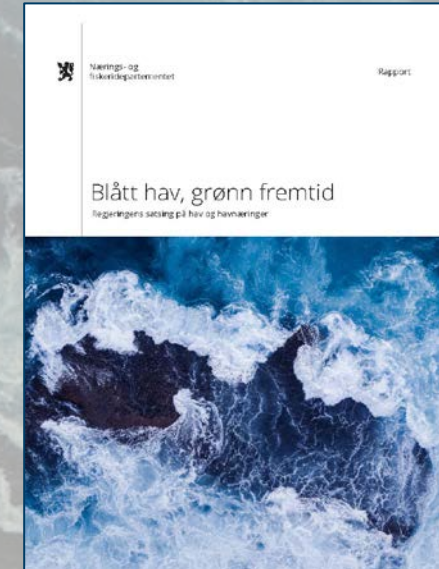
Technology for a better society



# Norway is an ocean nation

Around 70 percent of Norway's export revenues comes from the ocean industries.

The blue economy faces a big global transition in the green shift.

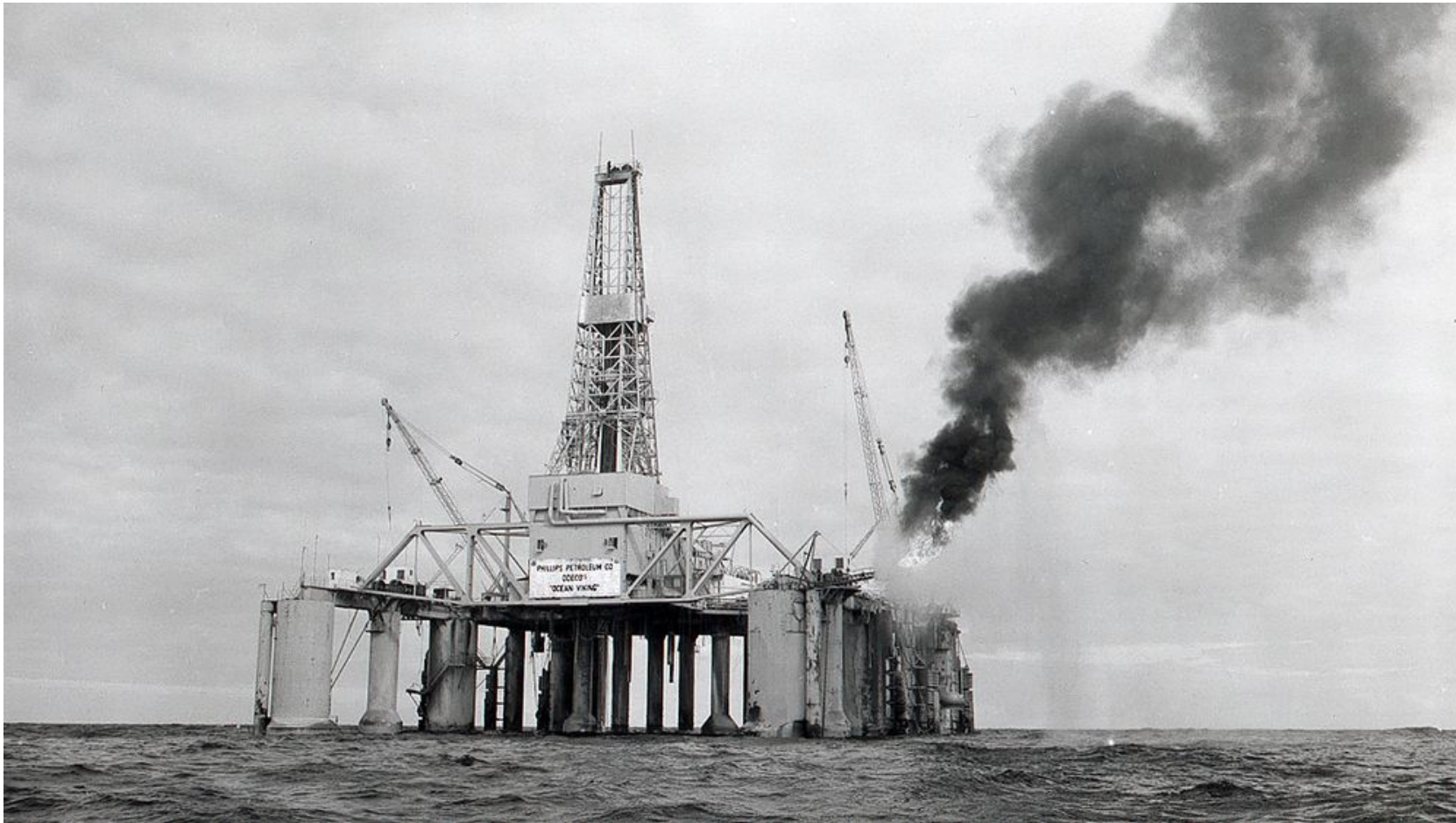






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# Ekofisk oil discovery 1969



*Anders Waale/Norsk Oljemuseum*





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# United Nations Convention on the Law of the Sea (UNCLOS)



**THE LAW  
OF THE SEA**







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## Energy crisis

### World facing 'first truly global energy crisis', report says

© 27 October 2022 · Comments



Russia's invasion of Ukraine will have long-lasting effects on energy supply and markets, a new report suggests.

The International Energy Agency (IEA) said the world faces its first "truly global energy crisis" as a result.

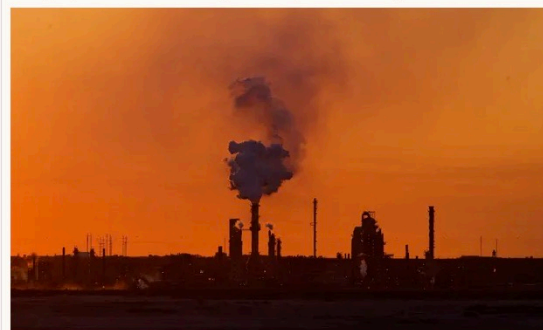
It added that unaffordable energy bills remain a huge problem, driven up as the exports of oil and gas have been restricted.

## Climate crisis

### Central banks raising interest rates makes it harder to fight the climate crisis

*Thomas Ferguson and Servaas Storm*

Higher rates slow the renewable energy transition and shield oil and gas producers from competition by low-carbon producers



Climate crisis and the general drift to a belligerently multipolar world are likely to further stress global supply chains ... Photograph: Bloomberg/Getty Images

## Nature crisis

### Are we living in an age of extinction?

Scientists have warned that we are entering the sixth mass extinction, with whatever we do now likely to define the future of humanity. The other five mass extinctions include the asteroid strike that killed off the dinosaurs and many species in the sea.

"We have no time to wait. Biodiversity loss, nature loss, it is at an unprecedented level in the history of mankind," says Elizabeth Mrema, the executive secretary of the Convention on Biological Diversity.

"We're the most dangerous species in global history."



The destruction of forests is altering ecosystems

Humans are pushing other species to extinction through hunting, over-fishing and cutting down forests and grasslands.

We are almost entirely responsible for extinctions of mammals in past decades, according to one recent study.

## Civil protection

HOME > MILITARY & DEFENSE

### Russia has a plan to sabotage European wind farms, gas pipelines, and internet cables, report say

Sindad Baker Apr 19, 2023, 6:15 PM CEST



Russian Navy research vessel "Admiral Vladimirsky" outside St.Petersburg, Russia in July 2020. The ship is now accused of spying for Russia. Alexei Druzhinin, Sputnik, Kremlin Pool Photo via AP

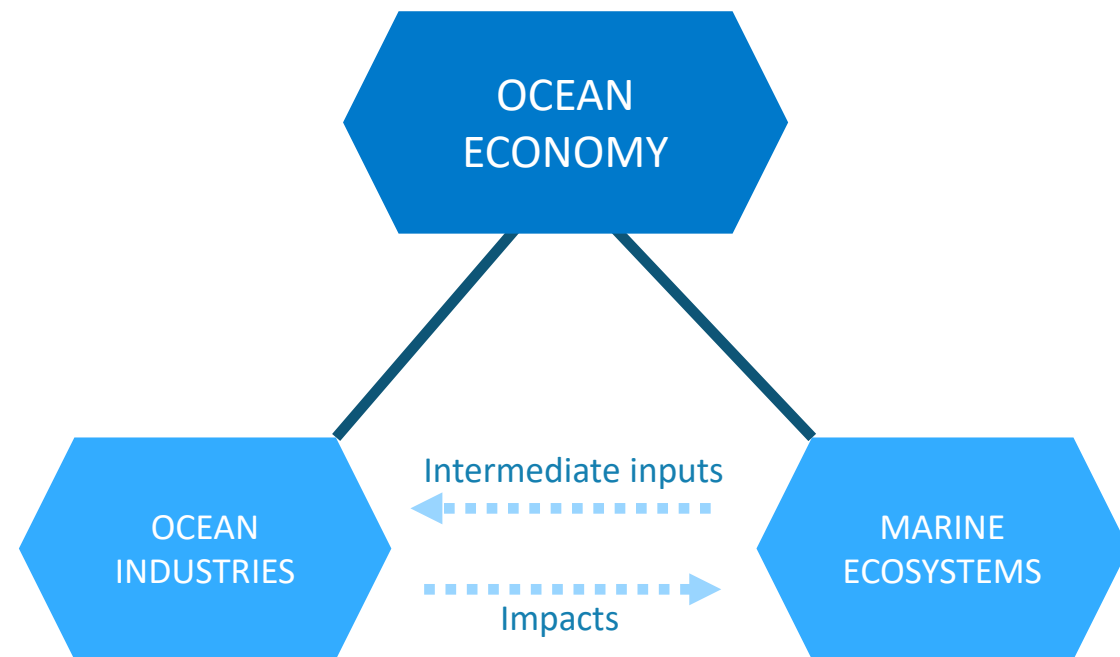
- Russia has been using ships to spy in Nordic waters, a joint investigation by four countries' public broadcasters found.
- They are collecting intel on wind farms, gas pipelines, and power and internet cables, report said.
- Norway's NRK reported at least 50 Russian ships gathered intelligence there in the last ten years.



# UNCLOS is still valid, but the current geopolitical situation challenge existing global agreements

- We need to renew our licence to operate in the oceans

- Ocean's health and ecosystems
  - We need to prove actions
- Value creation based on ocean resources must be shared
- Prove climate solutions based on ocean technologies
- Develop solutions for security, surveillance and defence



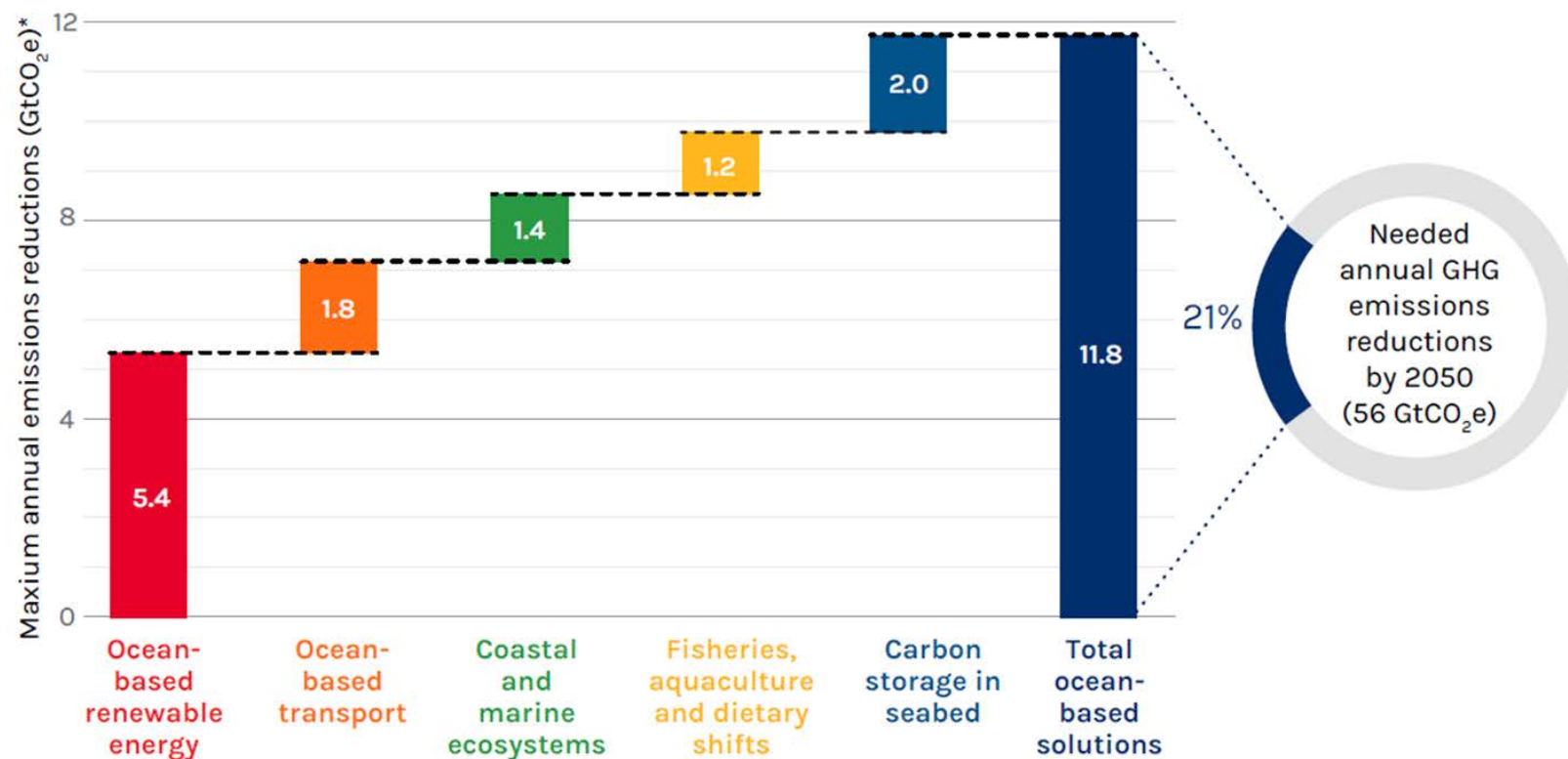
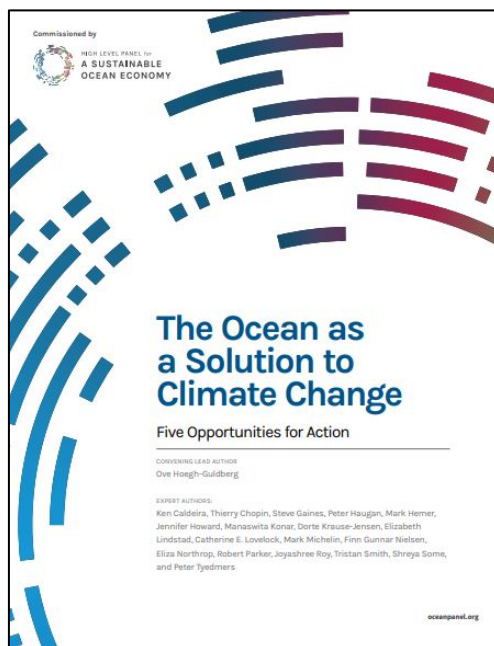
Source: Ocean Economy in 2030 (OECD, 2016)





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# The Ocean as a solution to climate change





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# Significant contributions are expected from the scientific communities to solve the challenges

Combined with the Bipartisan Infrastructure Law, it will reduce greenhouse gas emissions by about 1 gigaton in 2030, or a billion metric tons – 10 times more climate impact than any other single piece of legislation ever enacted.

Inflation Reduction Act



The European  
Green Deal

#EUGreenDeal

"On this basis, the European Commission is proposing to increase the 2030 target for emission reduction to at least 55%."

'We need to go faster'

[https://ec.europa.eu/commission/presscorner/detail/en/SPEECH\\_20\\_1655](https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_20_1655)





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# Continuing development of the petroleum sector, paving the way for new industries

- The scientific foundation developed in the petroleum industry is an excellent basis for further development
- New ocean industries are developed by collaboration across adjoining sectors

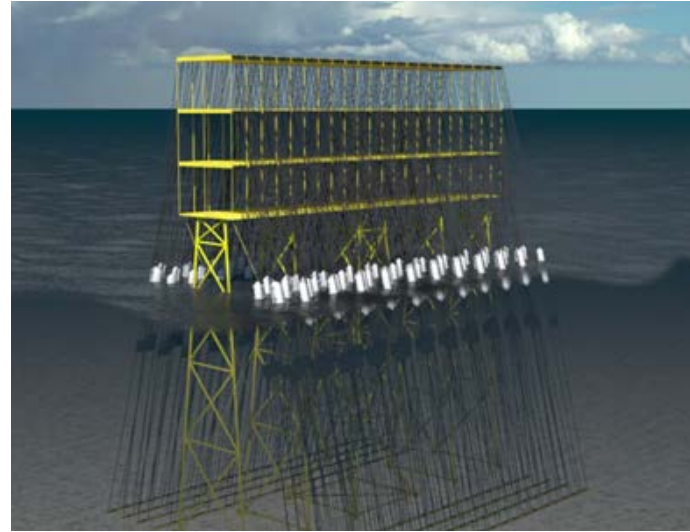


Photo: Jan Arne Wold &  
Roar Lindefjeld, Woldcam/Equinor



Under construction:

# The Norwegian Ocean Technology Centre

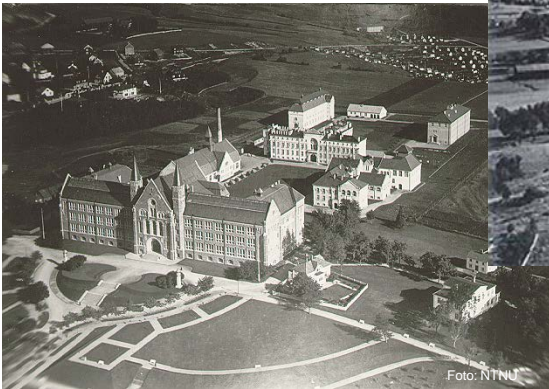
-Will secure Norway's position as a leading ocean nation



- The Norwegian Ocean Technology Centre will be NTNU and SINTEF's new research and teaching centre
- A world-leading lab and center for education, research and innovation.
- The new infrastructure is important to secure Norway's position as a leading port nation.
- Completed in 2028



# A future oriented centre that answers the ocean industries needs



1910 →

Ship technology



1939 →

Fisheries  
Ship technology



1970 →

Oil- and gas development  
Fisheries and aquaculture  
Ocean energy  
Coastal infrastructure  
Ship technology



2023 →

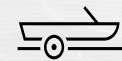
Ocean development and  
monitoring of the environment  
Renewable energy  
Sub sea robotics  
Marine minerals  
Fisheries and aquaculture  
Coastal infrastructure  
Ship technology



An aerial architectural rendering of a modern building complex. The main building has a dark blue facade with vertical glass panels and a green roof. It is surrounded by landscaped grounds with trees, walkways, and a parking area. In the background, a city and mountains are visible under a cloudy sky.

# The Norwegian Ocean Technology Centre

A national centre of knowledge that will contribute to sustainable ocean industries.



**25 laboratories**



**500 employees**



**500 students**





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Technology for a better society