



# Sea Sapphire

Powered by Simply Blue Group and Eolus

## Challenges of floating wind in arctic seas

Arctic Passion Seminar,  
Helsinki 15/02/2024



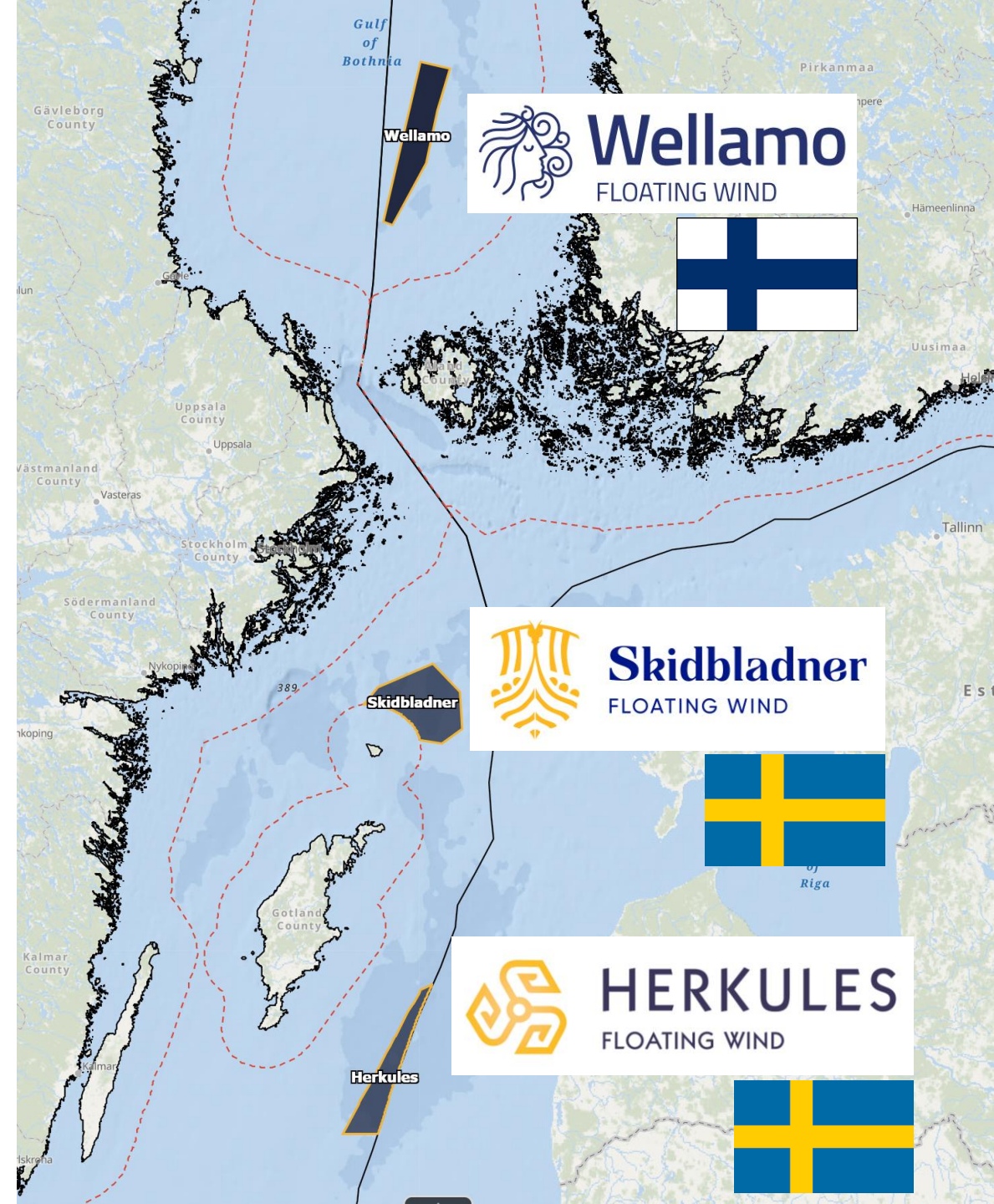
SeaSapphirer – an early phase floating wind project developer powered by:



Leading developer of renewable energy in the Nordics, active in the whole value chain from green field development to construction and operation. Eolus offers attractive and competitive investments in the Nordic and Baltic countries, Poland and the United States. The total project portfolio adds up to 25 GW.



Irish leading early-stage developer of transformative marine projects, working with the oceans to enable blue growth in local communities. Projects cover floating wind energy, wave energy, e-Fuels, CCS and sustainable aquaculture. Simply Blue Group has a portfolio of floating wind power projects of more than 10GW.



# Small devoted team, supplemented with external resources



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Floating Offshore  
Project Manager



**Cornelia Hartman**

Offshore Project Manager



**Joanna Moberg**

Offshore Project Manager



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Technical Manager, Sweden  
& Finland

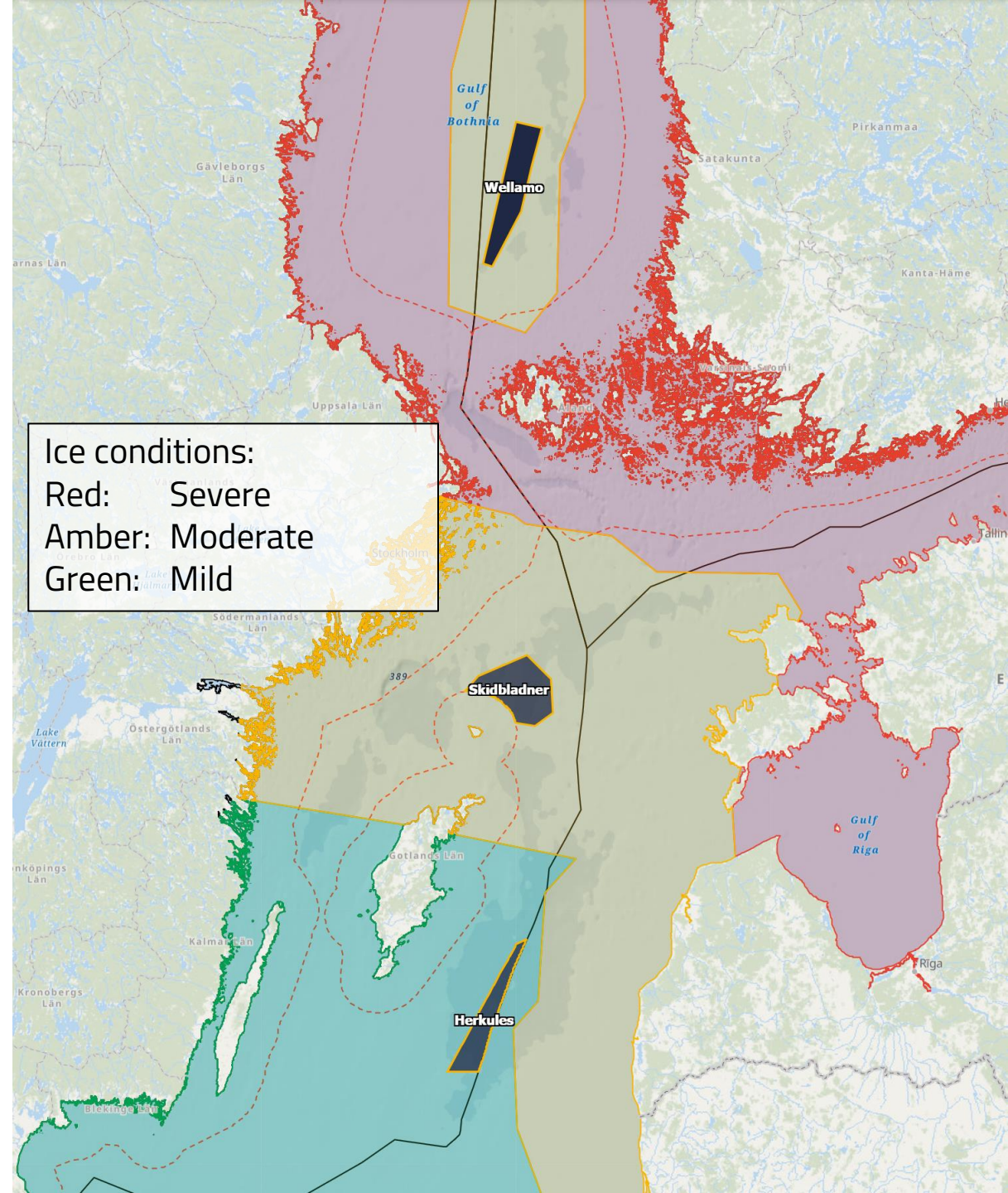


**Timo Lotti**

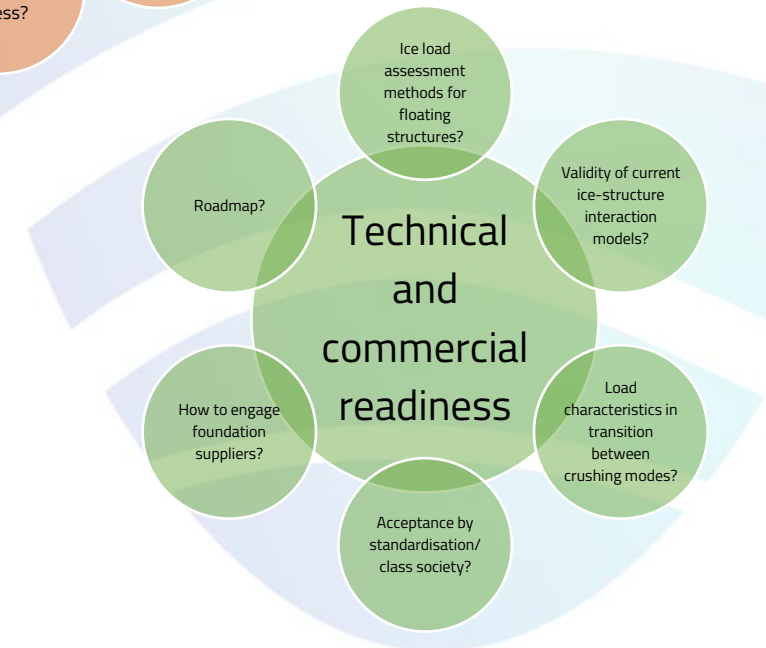
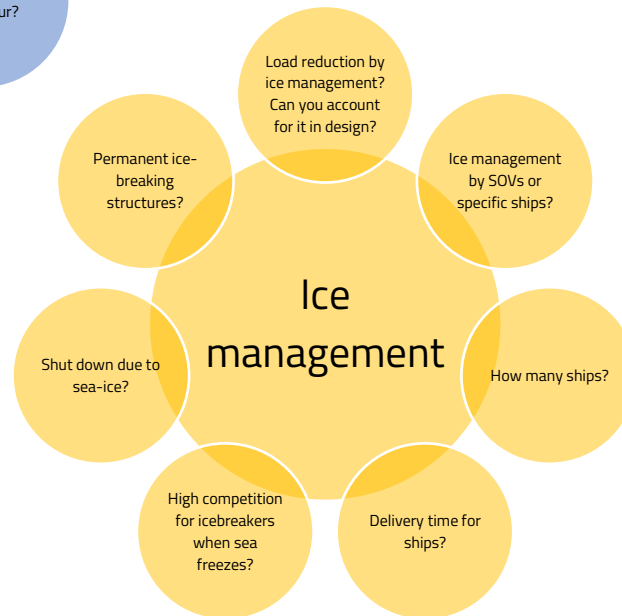
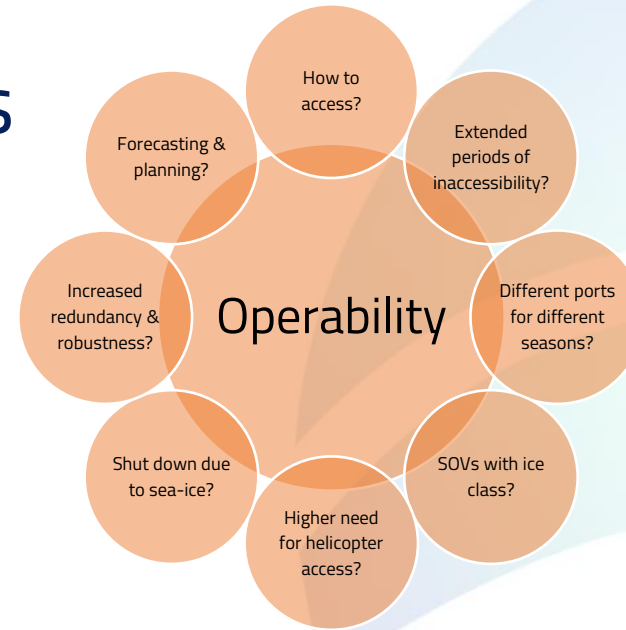
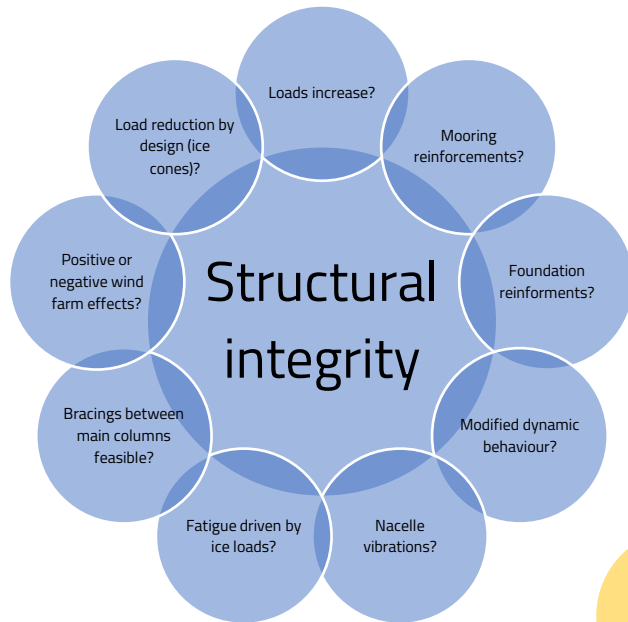
Offshore Project Manager

# Why we are interested in sea ice

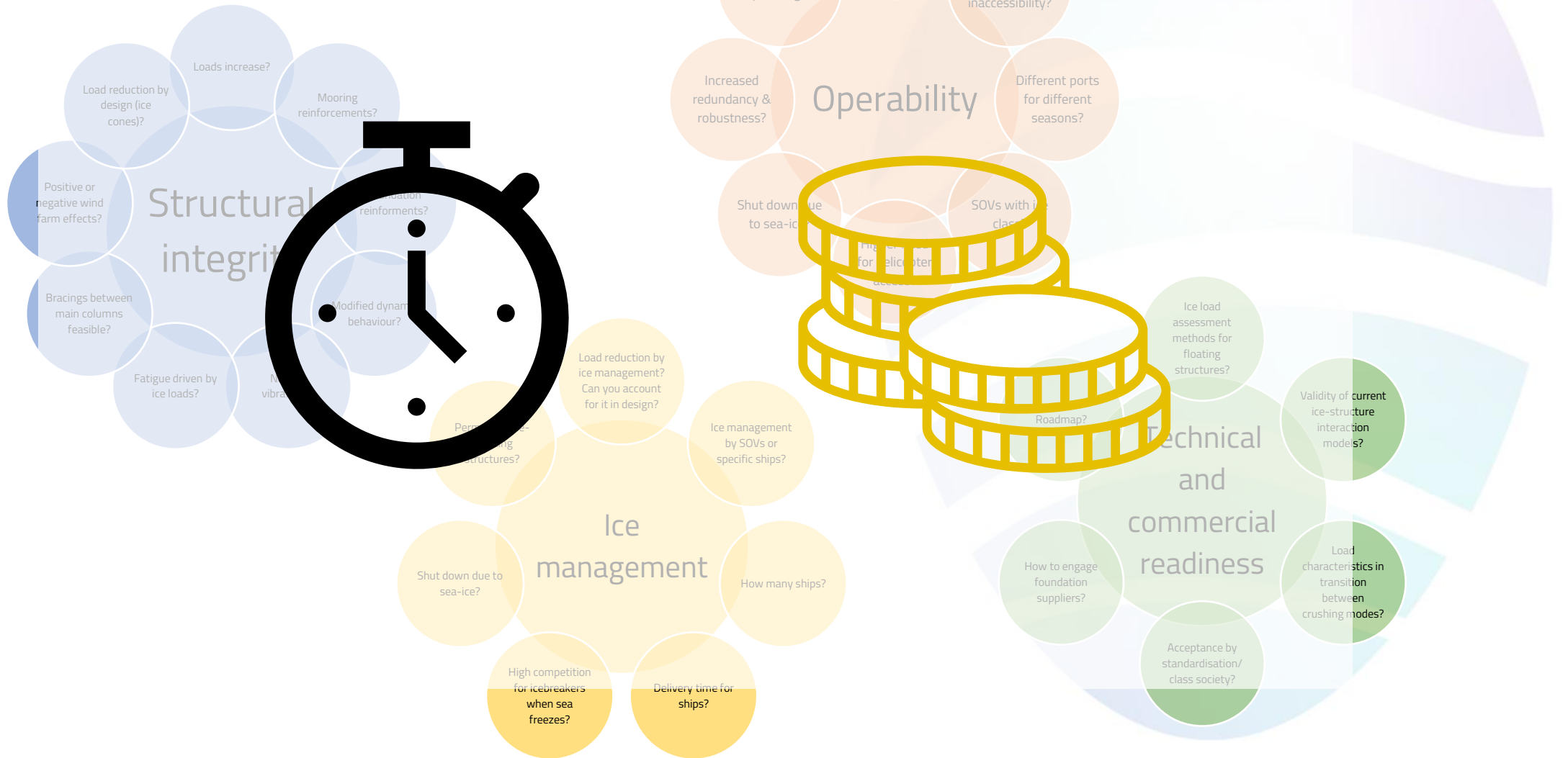
Our wind farms will experience ice!



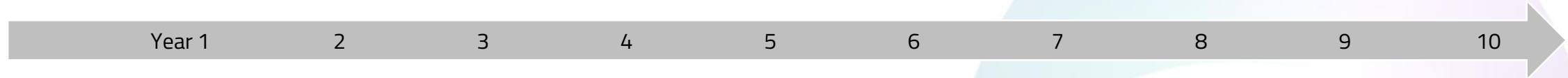
# The challenges/opportunities



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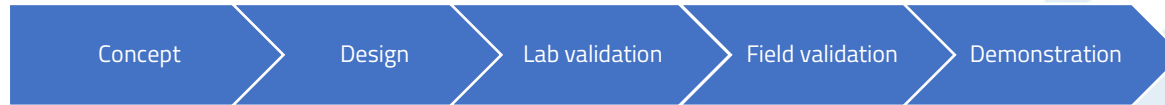


# Path to maturity (project and product development)



## Scenario 1

### Floater development

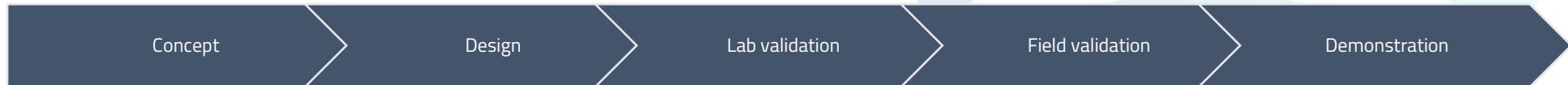


### Wind farm project development



## Scenario 2

### Floater development



### Wind farm project development



## Ice assessment performed

A preliminary ice assessment was launched to increase understanding of:

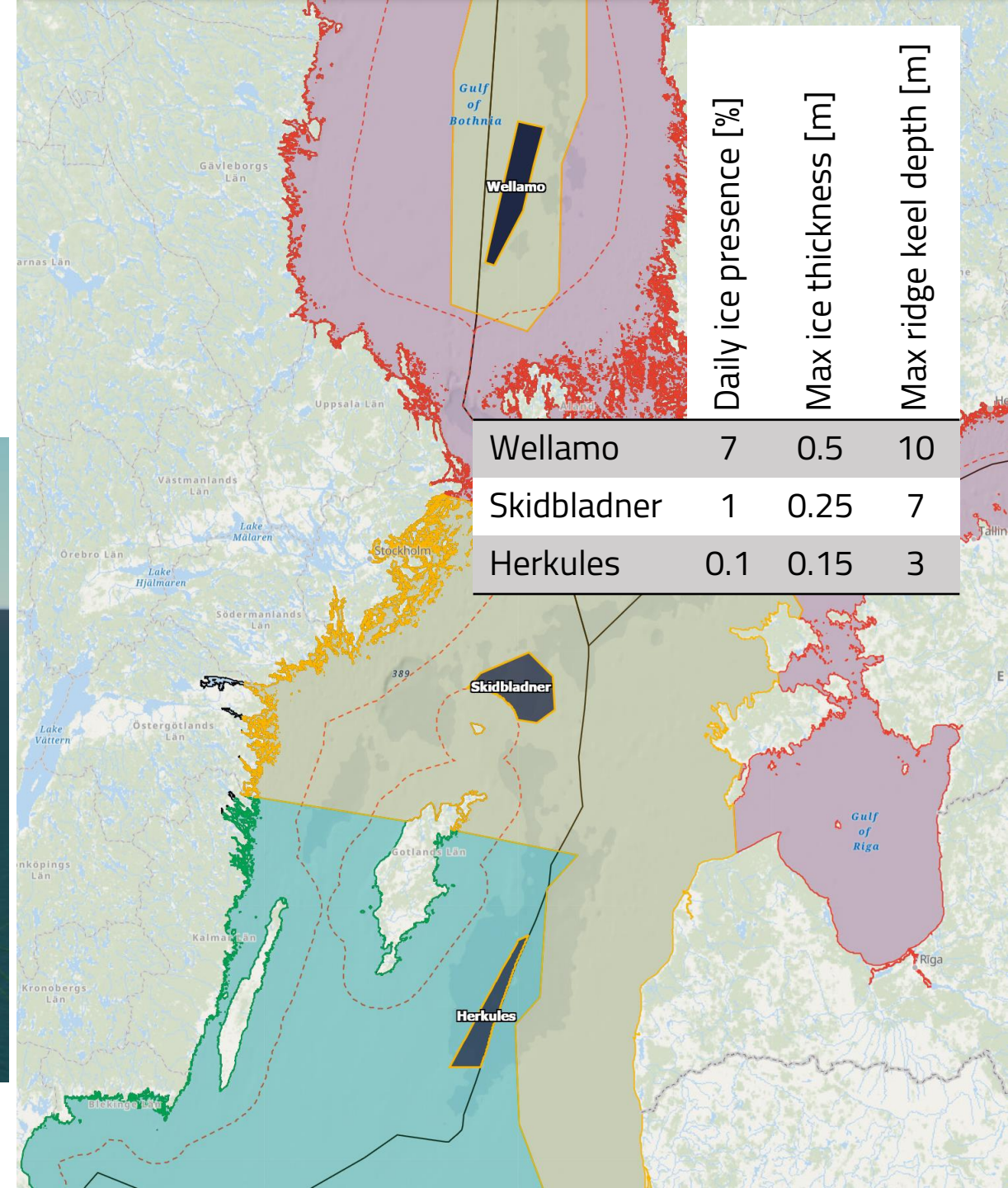
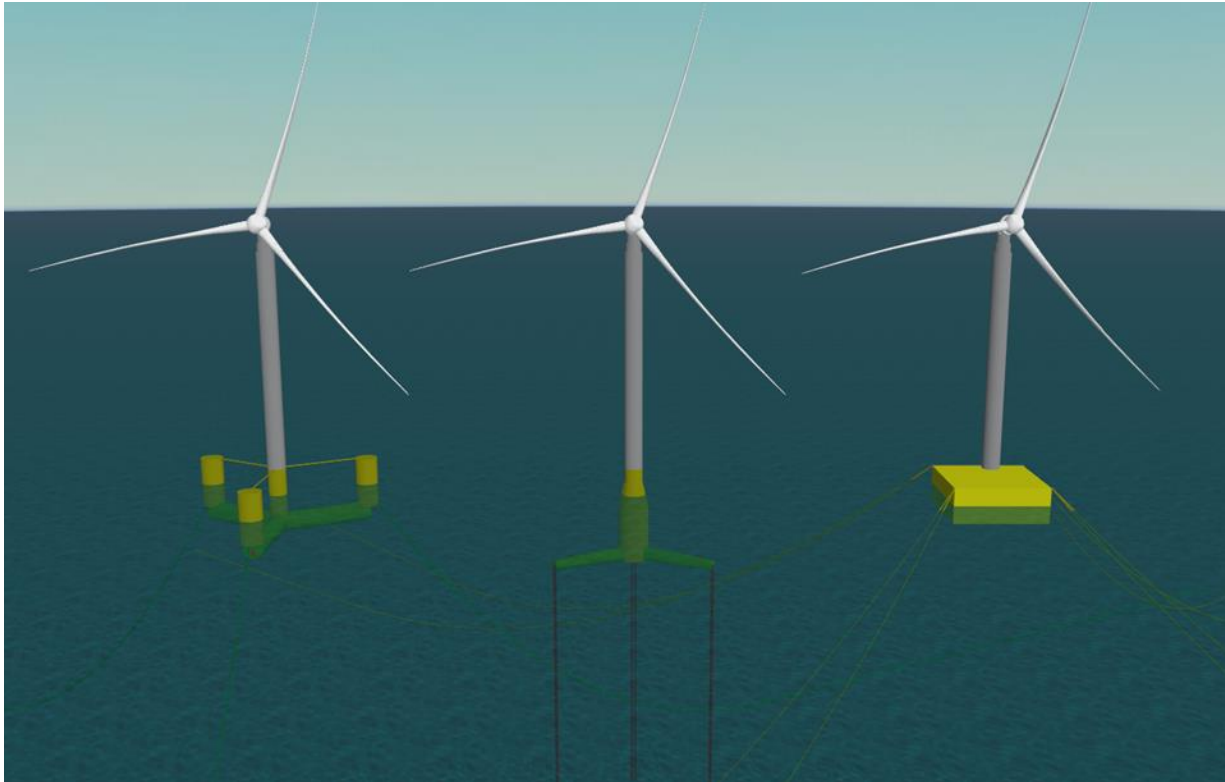
- 1) State of the art regarding ice loading on floating structures.
- 2) Magnitude of ice-loads acting on typical floating foundation types in different ice conditions.
- 3) Impact on global scantling and cost of foundation and mooring due to ice-loading.
- 4) The potential of available mitigation strategies, design as well as ice management.
- 5) Changes in availability and accessibility due to presence of ice.

# Aker Arctic



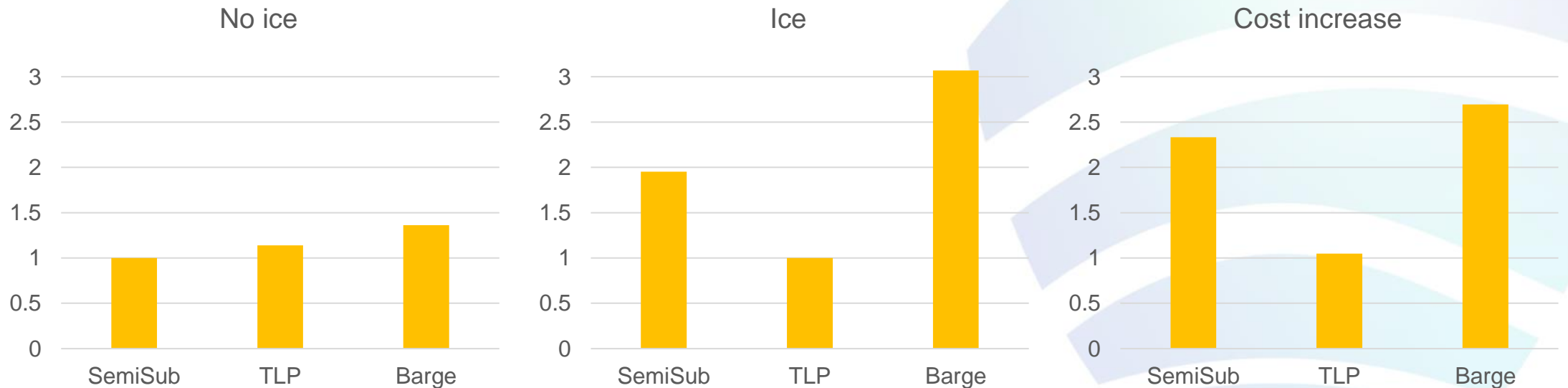


# Three foundations, three locations



# Ice assessment conclusions - Wellamo

CAPEX (per unit) for foundation, mooring and anchors, in open water, with ice and increase due to presence of ice.



Cost w/wo ice are normalized to concept with lowest cost.

Relative increase per concept.

# Concluding remarks

- We have just scratched the surface.
- Foundation manufacturers need to come onboard.
- Multifaceted challenge
  - Smörgåsbord of opportunities
  - Let's work together.





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# Thank you!

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