

# Northern Lights

A European CO<sub>2</sub> transport and storage network

---

*Connecting Europe Facility*

Emil Yde Aasen, Business developer

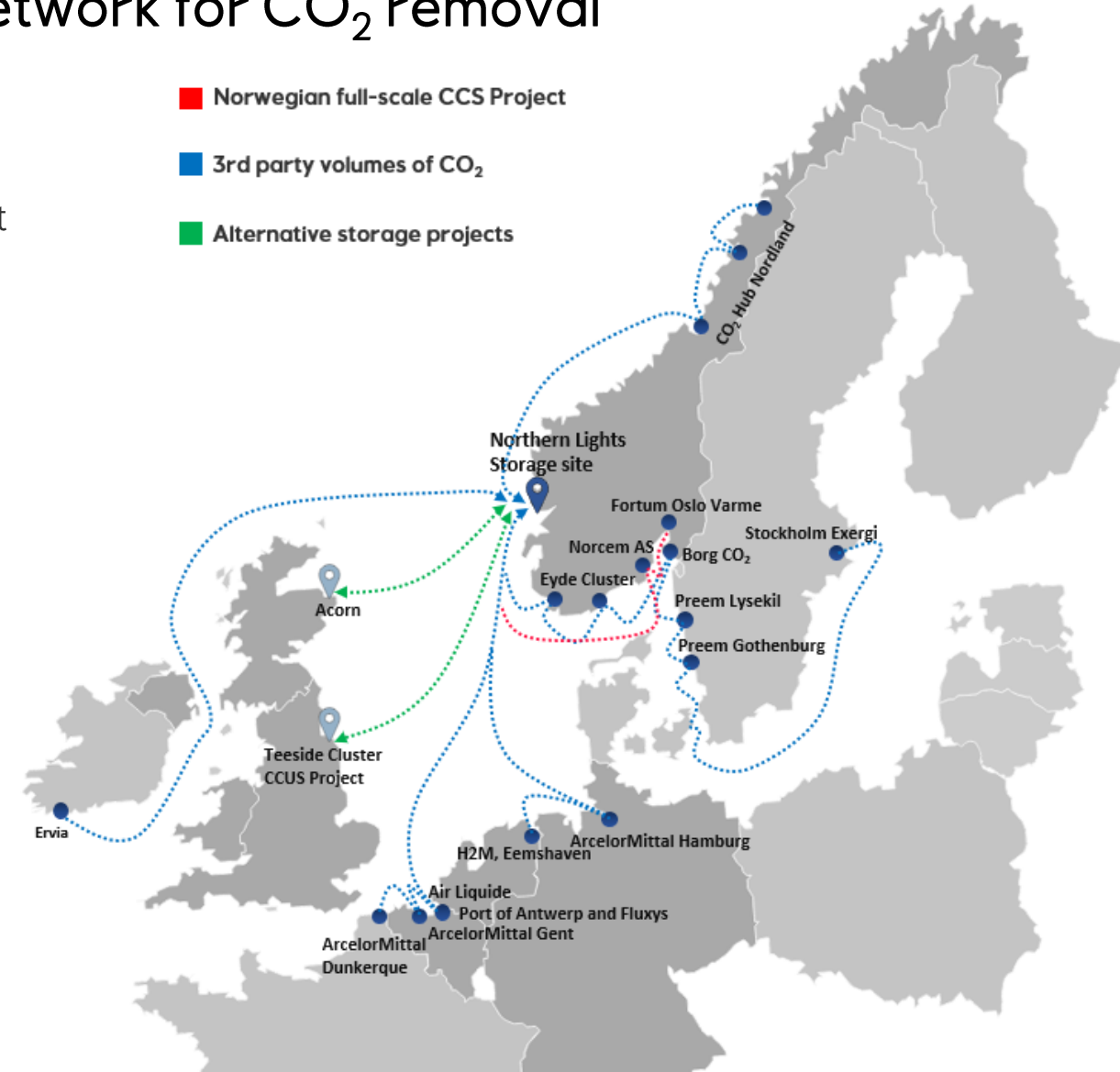
Frode Nebell, System engineering manager

<https://northernlightscs.eu/>

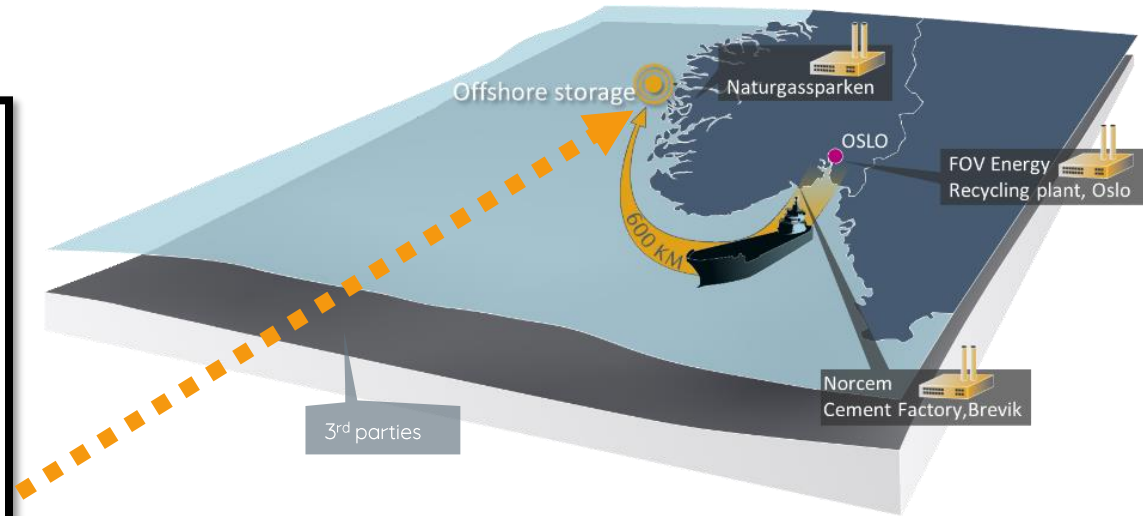
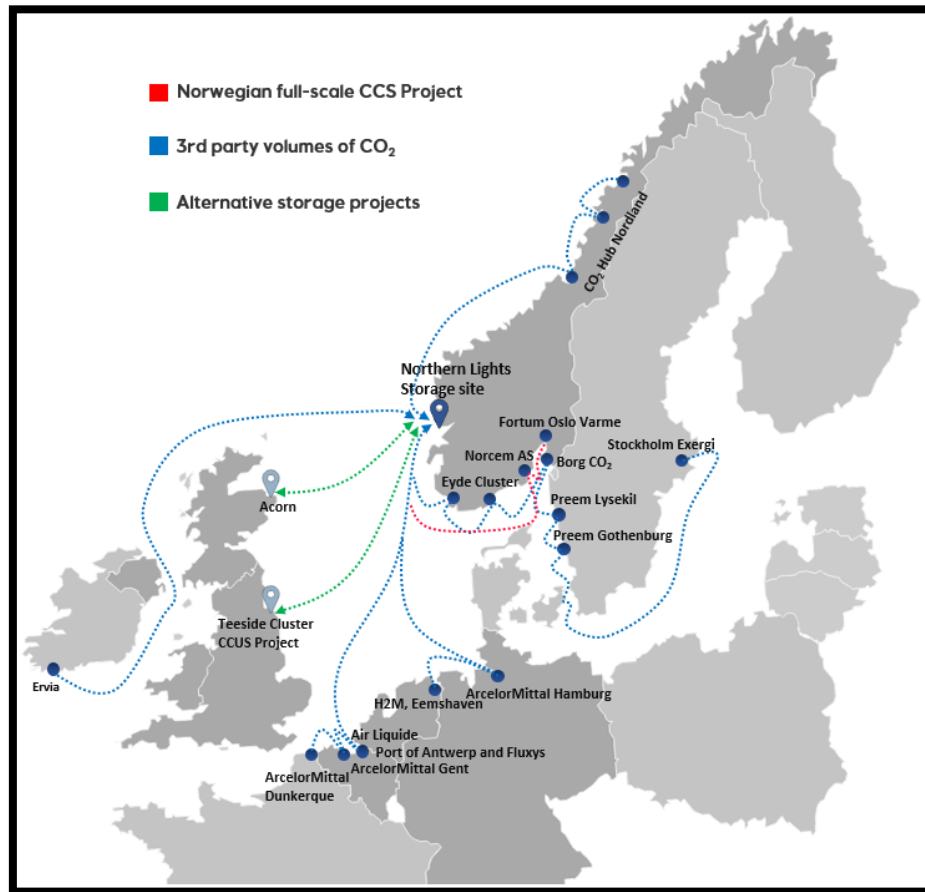


# Northern Lights PCI application: Start of our contribution to a European network for CO<sub>2</sub> removal

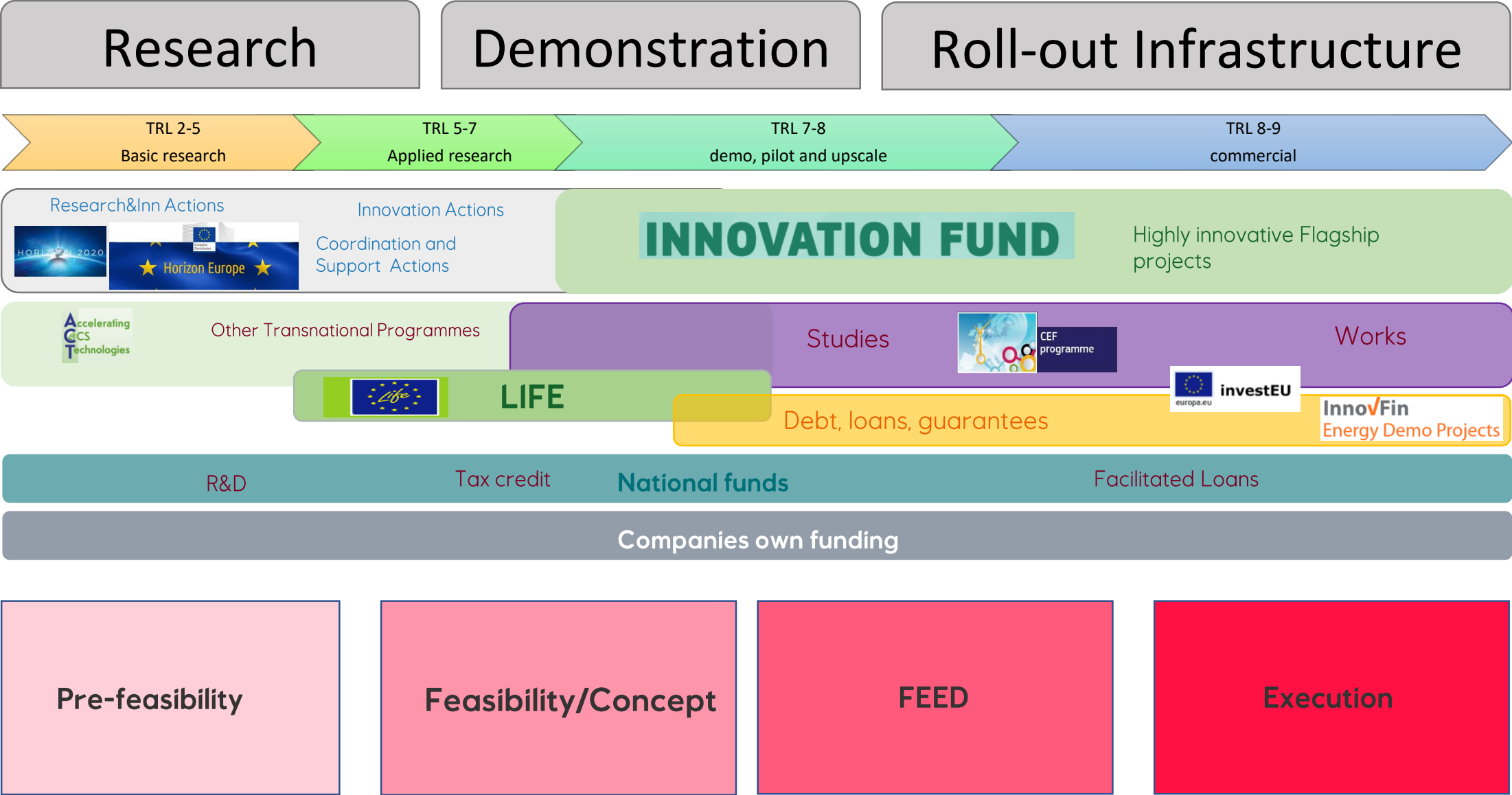
- EU PCI application submitted 01.03.2019
- Projects of Common Interest (PCI) are infrastructure project that link the energy systems of EU countries
- 15 partners from 7 countries
- Included on fourth PCI list by EU Commission, January 2020, together with 4 other CCS projects



# How "The Northern Lights PCI" fits into the "Northern Lights Project"



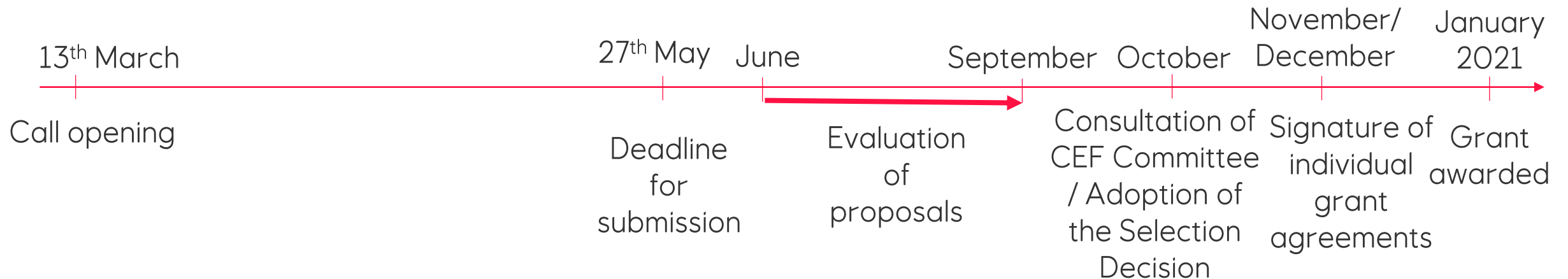
# Main public subsidies for Northern Lights



# Scope and timeline

Funding available for CEF Energy Call 2020: €979.6 million

- Ending energy isolation
- Increasing competitiveness by promoting the integration on the internal energy market and the interoperability of electricity and gas networks across borders
- Enhancing the Union's security of supply
- Integrating energy from renewable sources and developing smart energy networks
- Eliminating energy bottlenecks
- Completion of the internal energy market
- Contributing to sustainable development and protection of the environment, inter alia by the integration of energy from renewable sources and by the development of smart energy networks and **cross-border carbon dioxide networks**
- Providing other benefits, e.g. in relation to the European "Green Deal" objective



## Update from INEA on CEF Energy Call 2020, May 28<sup>th</sup>

### Almost €3.4 billion requested for cross-border energy infrastructure projects

**Creation date:** May 28, 2020

The [2020 CEF Energy call](#) closed yesterday 27 May 2020 with INEA receiving 28 proposals in the areas of electricity, gas, smart grids and cross-border carbon dioxide network (breakdown below).

Admissibility and eligibility of the proposals will now be checked and the proposals will then be evaluated against the specific award criteria of the call. The entire evaluation process, which will involve external experts, is expected to be concluded by October 2020, when the results will be announced.

| Sector       | Proposals received | Requested budget    | Available budget      |
|--------------|--------------------|---------------------|-----------------------|
| Electricity  | 13                 | €2.6 billion        |                       |
| Smart grids  | 1                  | €186.4 million      |                       |
| Gas          | 6                  | €334.6 million      |                       |
| CO2 network  | 8                  | €240 million        |                       |
| <b>Total</b> | <b>28</b>          | <b>€3.4 billion</b> | <b>€979.6 million</b> |

# CEF Energy 2020 - Applications submitted under the NL PCI

## Northern Lights Phase 2 Studies

Partner: Equinor

## CO2 Export Studies Project

Partners: Equinor, ArcelorMittal, Ervia,

Returkraft, Borg CO2, Fortum Silesia

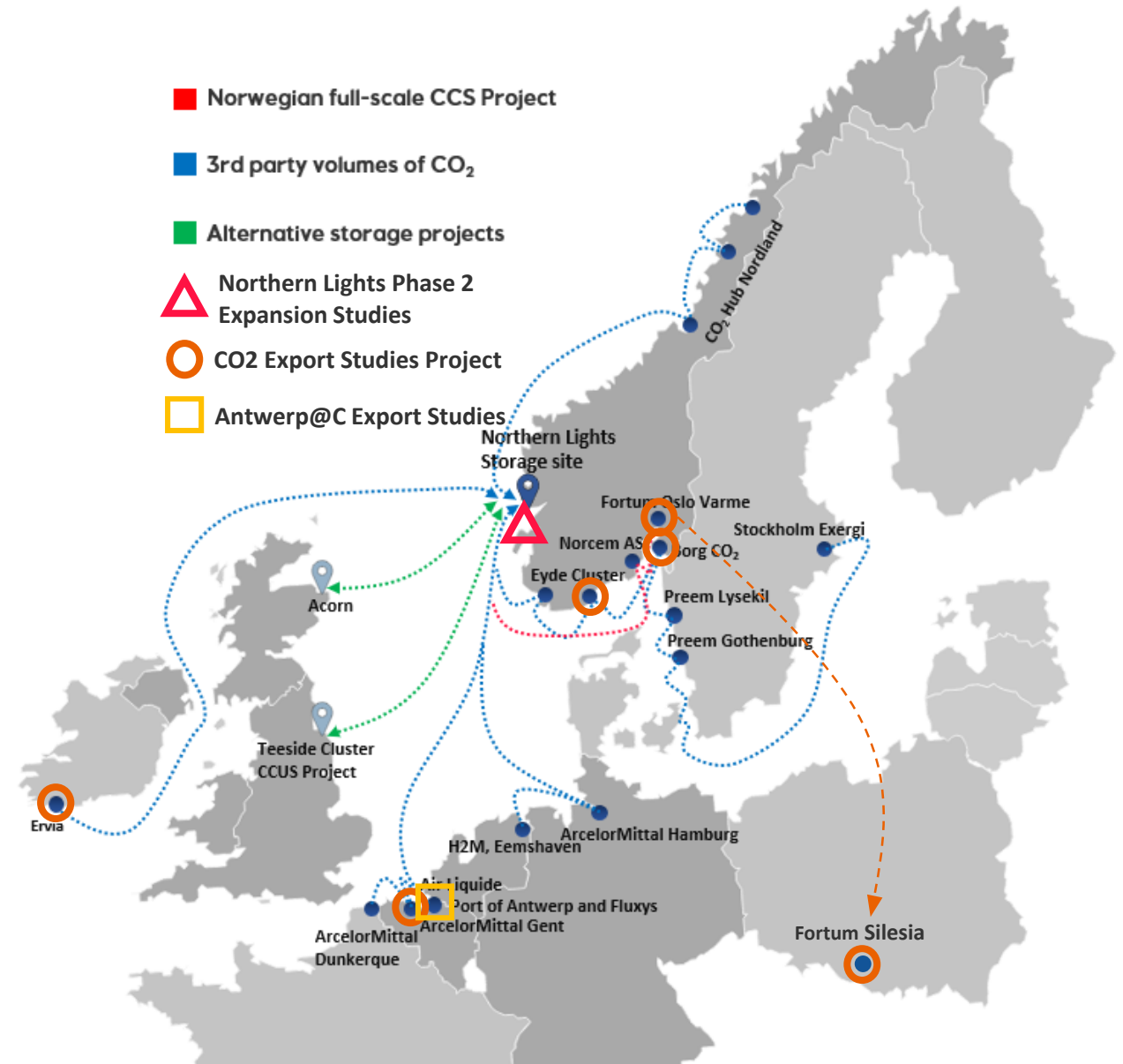
## Antwerp@C Export FEED

Partners: Air Liquide, BASF, Borealis,

ExxonMobil, INEOS, Fluxys, Port of Antwerp

and Total

+ Ervia and Acorn/PBD has applied individually





# CEF Energy 2020 - Applications submitted under the NL PCI

## Northern Lights Phase 2 Studies

Partner: Equinor

## CO<sub>2</sub> Export Studies Project

Partners: Equinor, ArcelorMittal, Ervia,

Returkraft, Borg CO<sub>2</sub>, Fortum Silesia

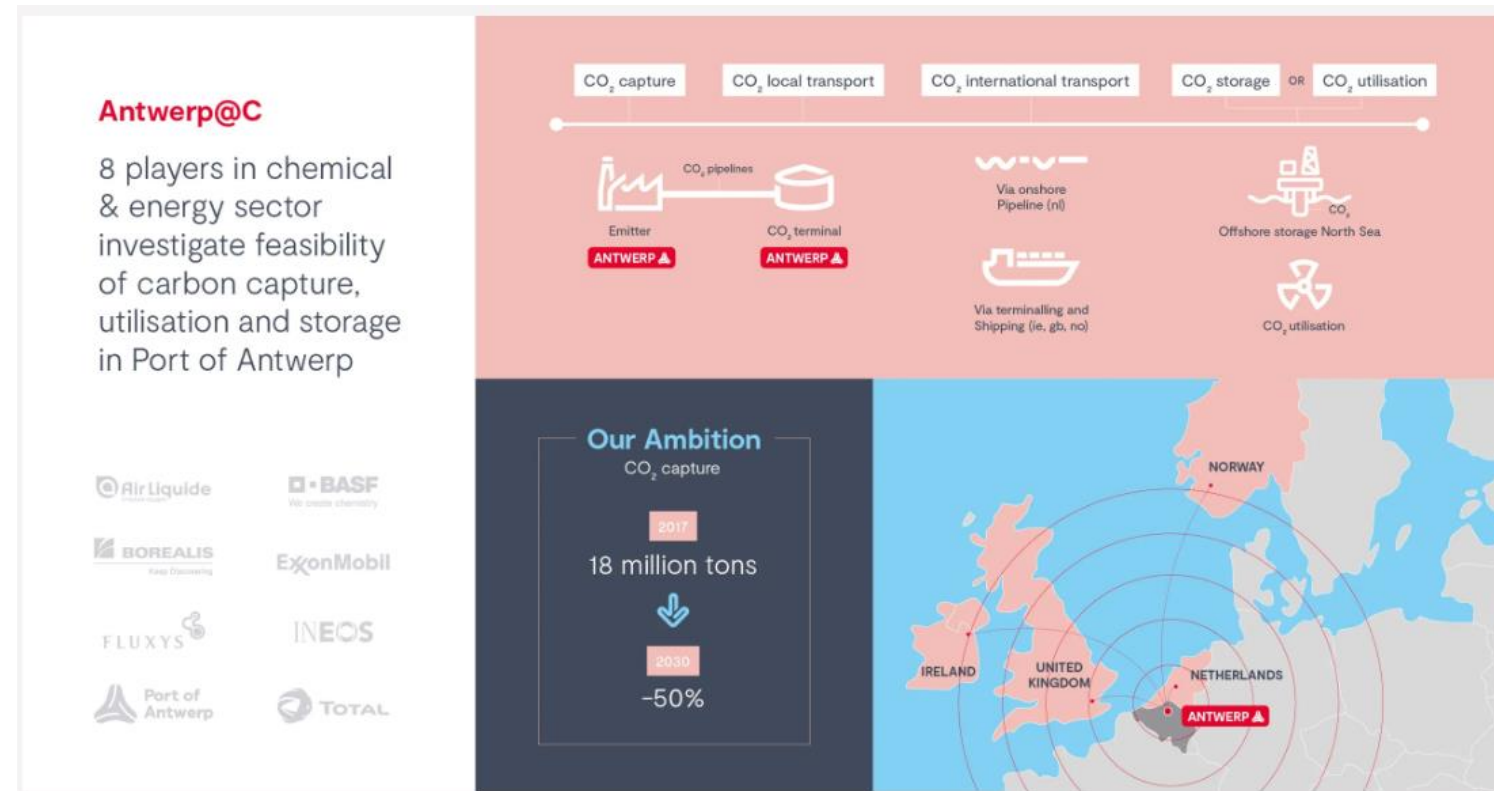
## Antwerp@C Export FEED

Partners: Air Liquide, BASF, Borealis,

ExxonMobil, INEOS, Fluxys, Port of Antwerp

and Total

+ Ervia and Acorn/PBD has applied individually







# CO<sub>2</sub> Export Study Project

Addressing the common building-blocks of CCS

# CO2 Export Studies Project



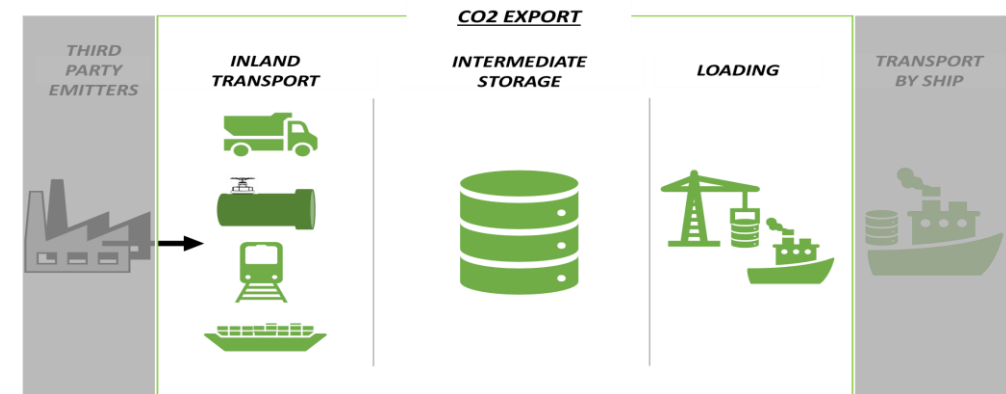
**Partners:** Equinor (on behalf of NL), Ervia, ArcelorMittal, Ervia, Returkraft, Borg CO2, Fortum Oslo Varme/Fortum Silesia

**Timeline:** June 2020 – December 2022

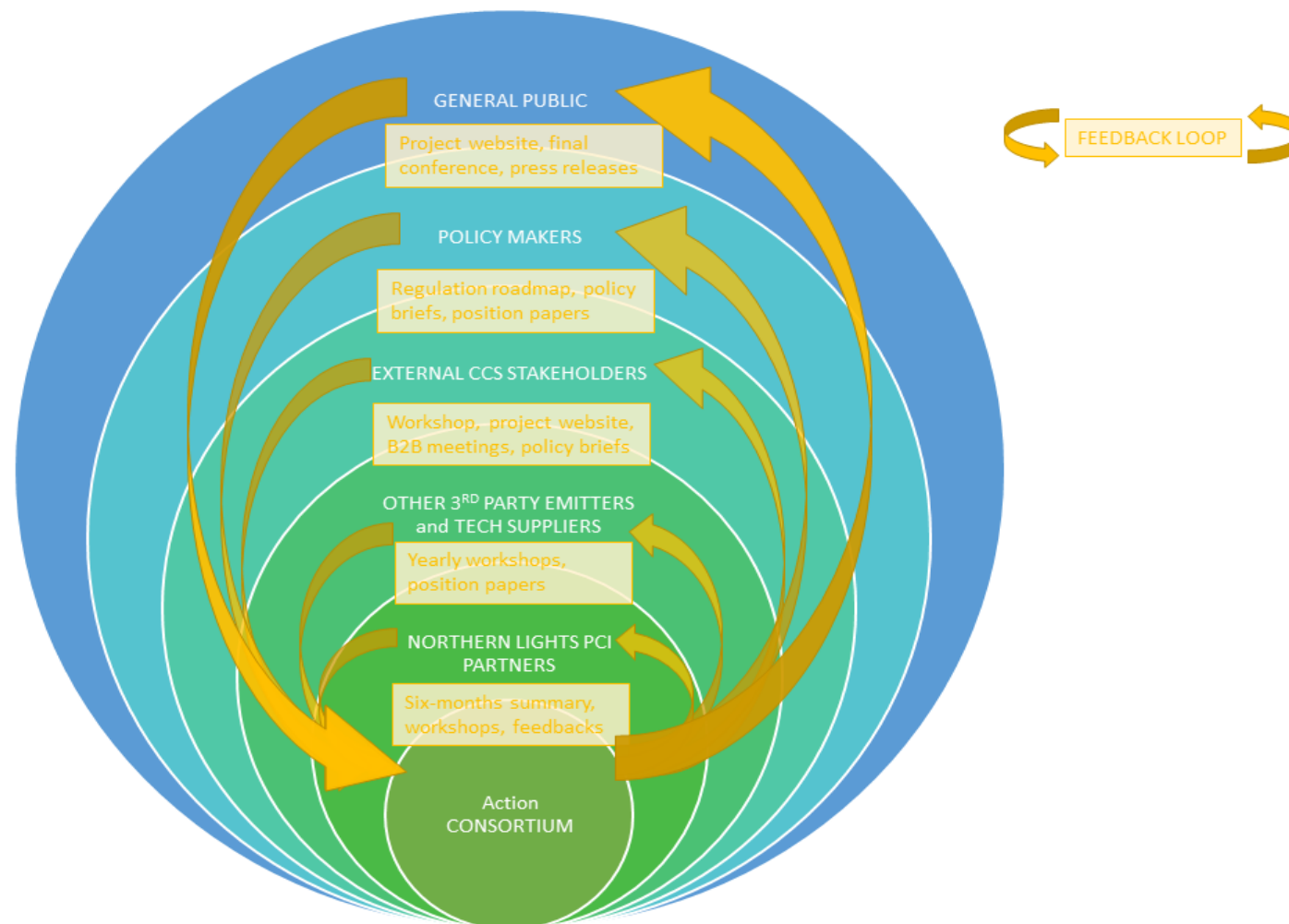
**Objective:** The overall goal is to review and address the most important bottlenecks of CO<sub>2</sub> export in CCS projects (regulatory, technical, economic, logistic), for the involved parties and bring them to pre-concept status to support the progress of the overall NL PCI i.e. the NL service providers and the emitters participating in the Action

## Main activities:

1. **Activity 1:** *Regulatory and legal studies on exported CO<sub>2</sub>*
2. **Activity 2:** *Optimization of CO<sub>2</sub> specifications*
3. **Activity 3:** CO<sub>2</sub> export Infrastructure – A library of CO<sub>2</sub> export building blocks and scenarios for CCS
4. **Activity 4:** Dissemination, communication and feedback loop
5. **Activity 5:** Project management by Equinor



# CO2 Export Studies Project



# Northern Lights Phase 2 expansion studies

Building additional transport and storage capacity

## What is phase 2 ?

- Northern Lights will be developed in phases according to demand for transport and storage of CO<sub>2</sub>
- Phase 1 has an annual capacity to transport and safely store 1.5 MTPA
- Phase 2 is development of the infrastructure to fully utilise capacity in the offshore pipeline of around 5 MTPA

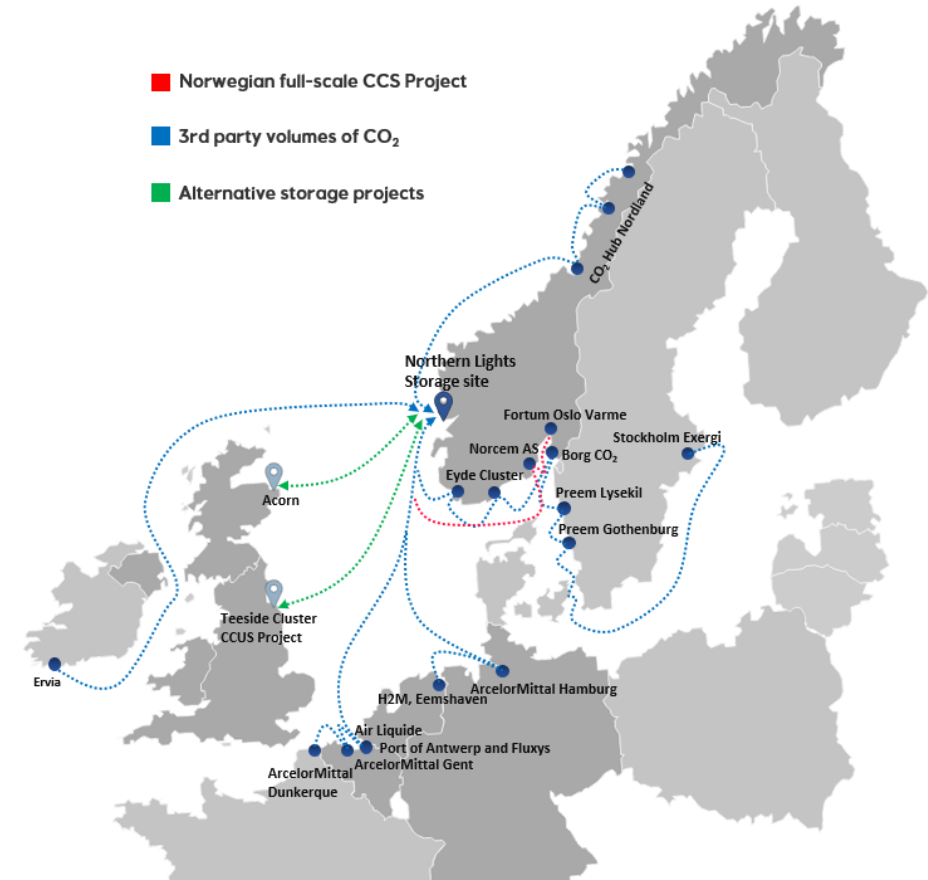
## Phase 2 activities

Included in CEF application for studies:

- Concept and FEED studies for facilities
- Permitting and authority processes

Parallel activities outside of CEF scope:

- Maturing commercial volumes
- Maturing subsurface storage volumes
- Advocacy and stakeholder management



*Maintaining momentum on all these activities is key to build trust in the business model*

# Phase 2 timing

