



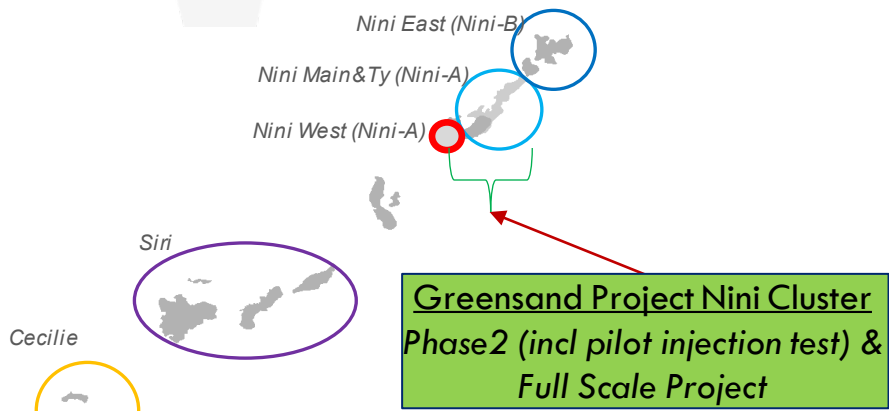
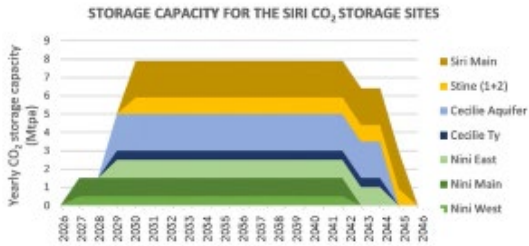
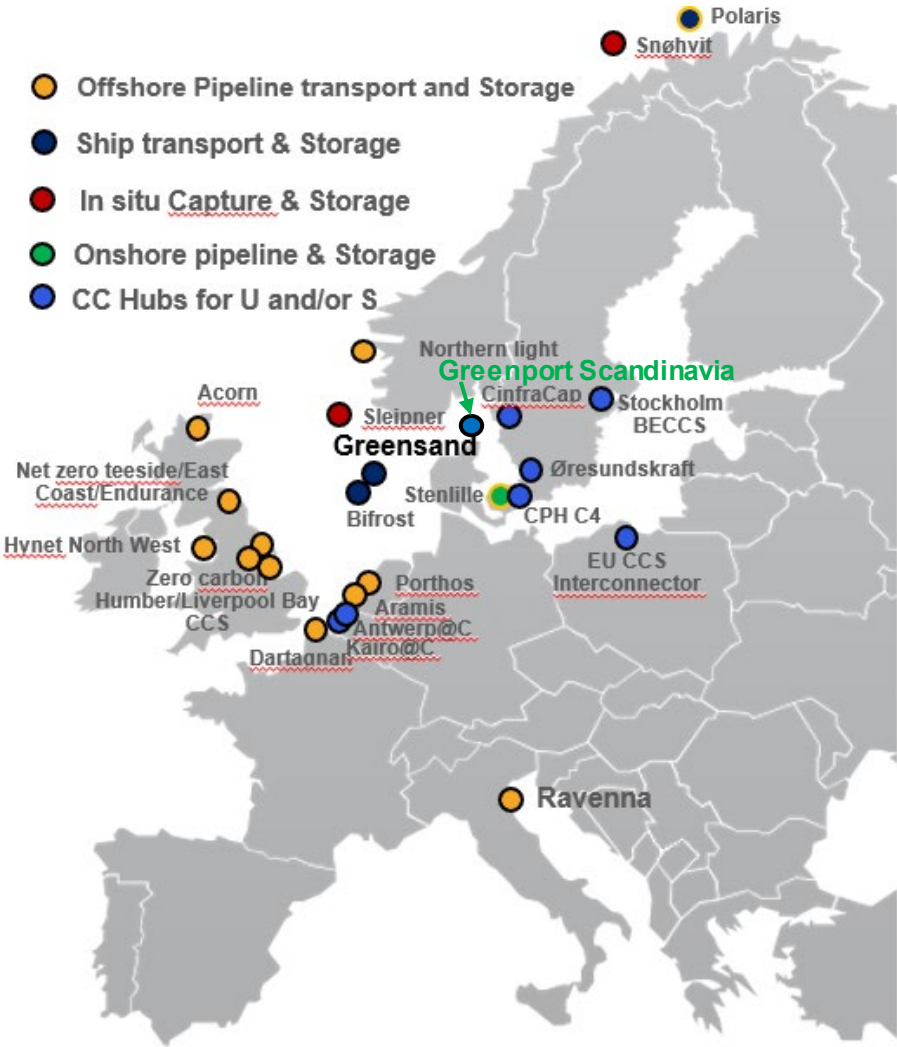
Greensand Project Status

Safe CO₂ Offshore Transport and Storage Project in the North Sea

A CCS project by INEOS Energy, Wintershall Dea and Nordsøfonden

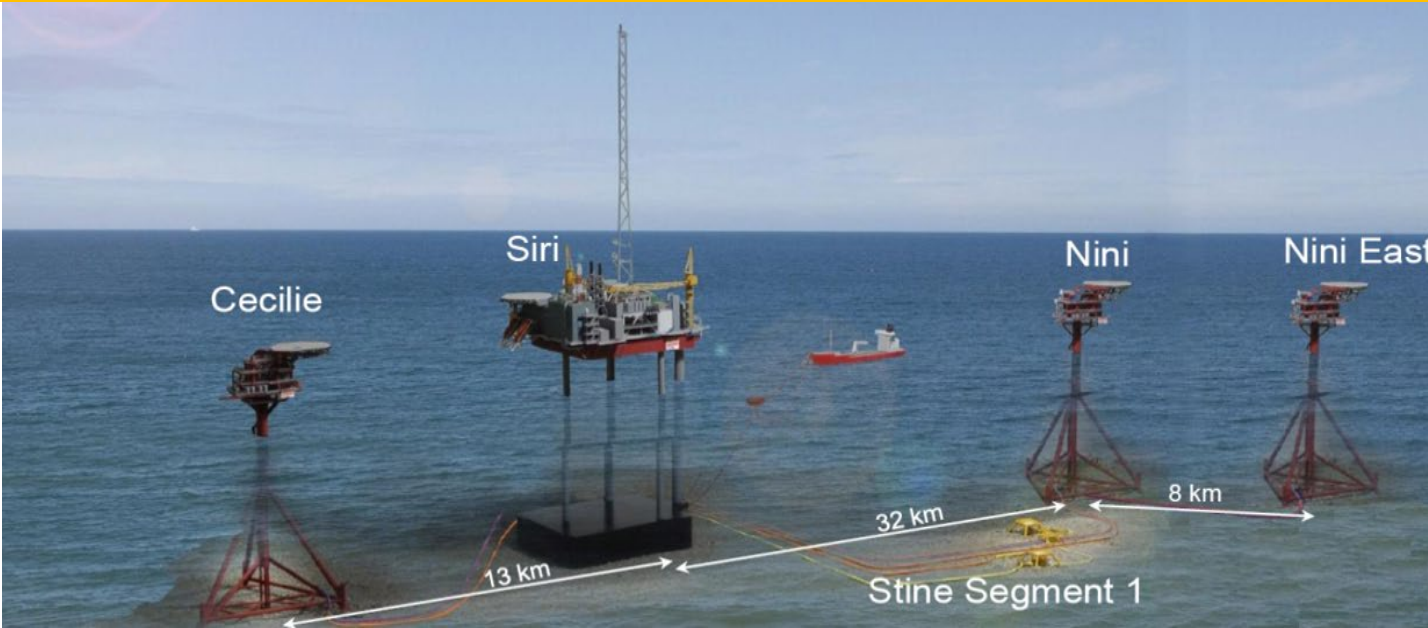
Visit www.projectgreensand.com

Greensand Project Overview



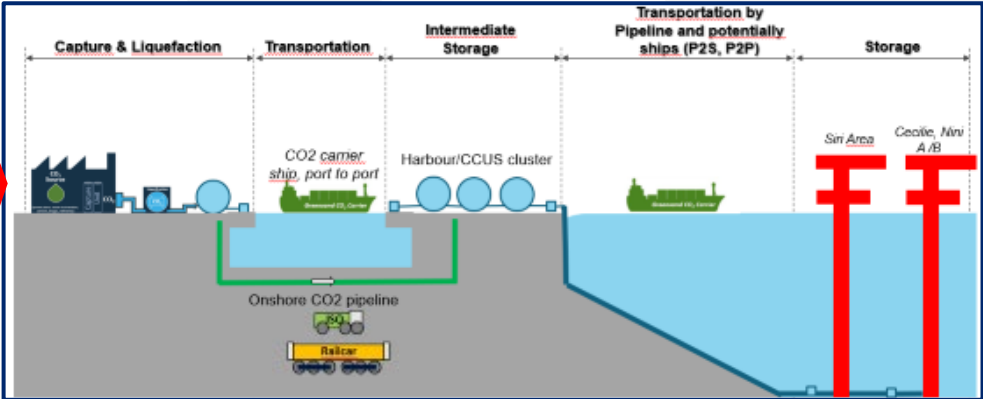
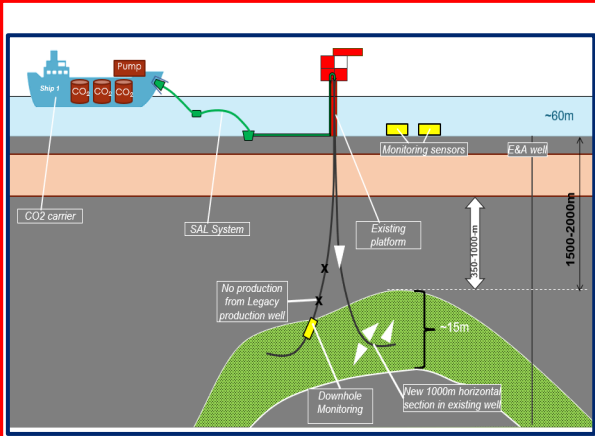
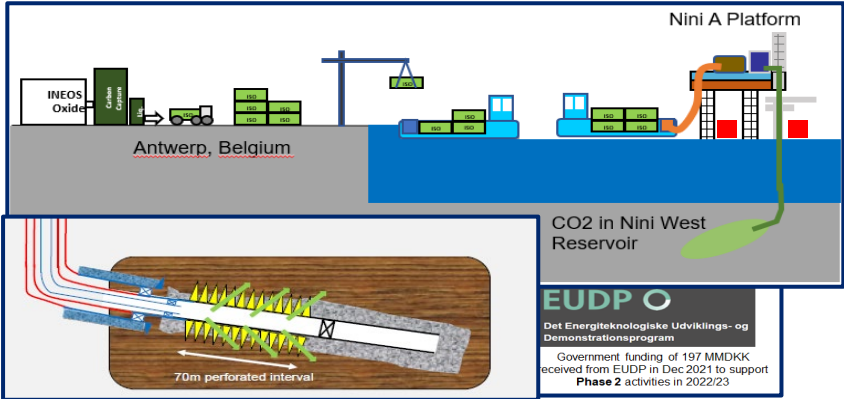
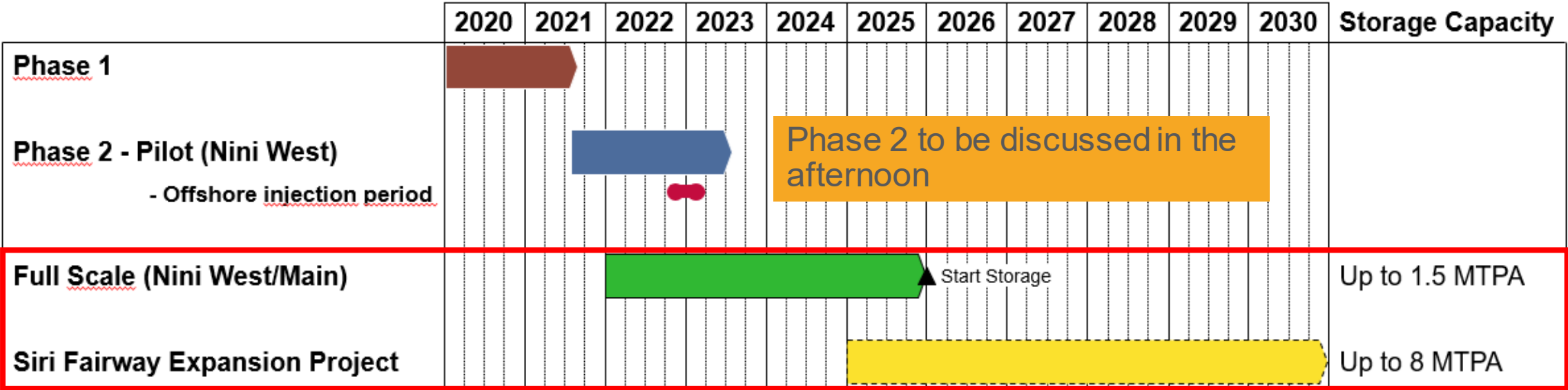
Siri Fairway "Expansion" project

Turning the Siri area into a CO₂ storage hub



Greensand Project Phases and Timelines

Harvesting the economies of scale developing a CCUS Hub



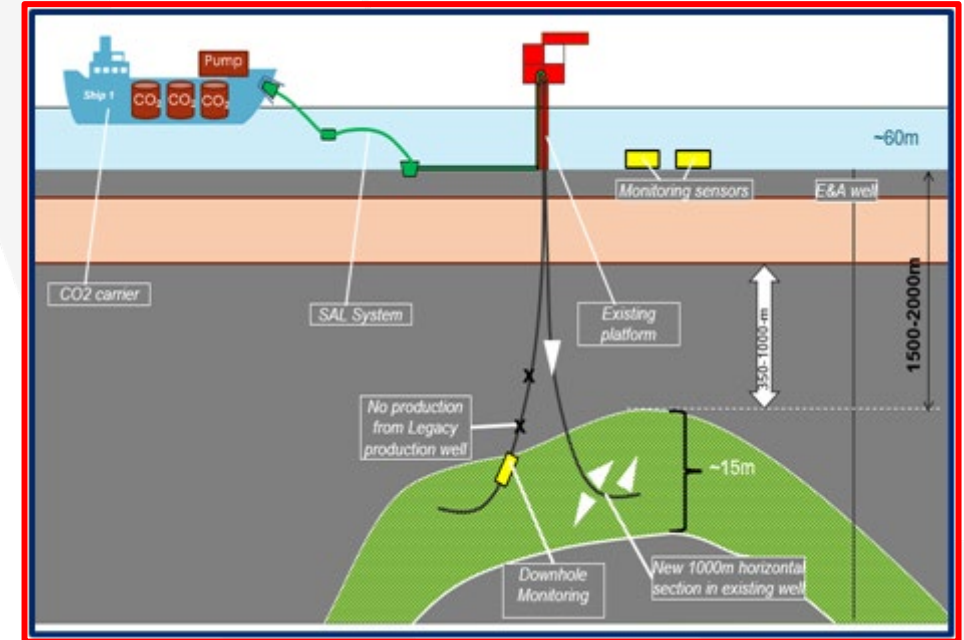
Greensand Project – Full Scale Concept Selection Phase

Project Activities in Progress – Proof of industrial scale

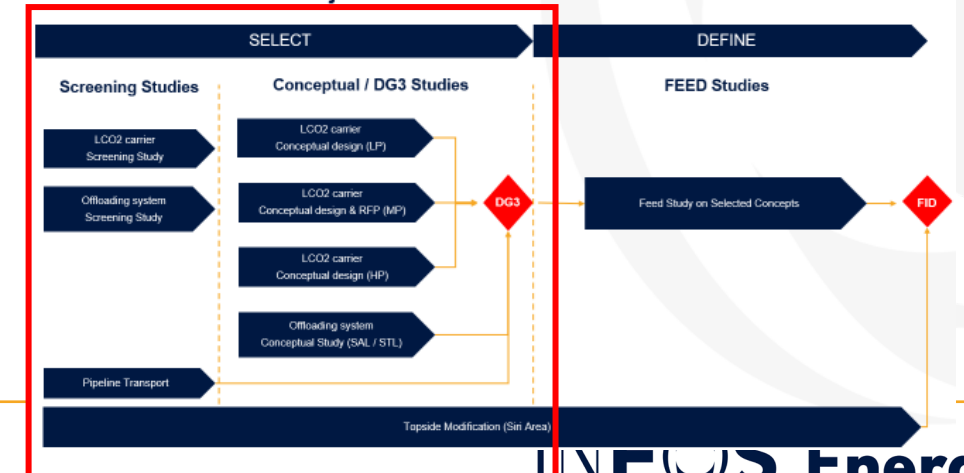
- Well Design – new vs. re-use, P&A philosophy
- Ship design – size, power, P&T
- Ship Offloading System
- Platform modification on Nini
- Metering set-up
- Monitoring Plan – During and post injection
- Permitting – PDO and EIA
- Commercial model vis-a-vis the CCS value chain
- Verification (ISO 27914, EU Directive, National Laws)
- CO2 specification →
- Etc.

*Minimum purity CO2 from Capture Plants to Storage sites must be ≥ 99.9 mol%					
IMPURITIES IMPACTED BY SHIPPING CONDITIONS					
COMPONENT	UNITS	IMPURITIES IMPACTED BY SHIPPING CONDITIONS		NOTES	ISO 27913
		LP	HP		
H2	mol %	At saturation level for shipping temperature and pressure	At saturation level for shipping temperature and pressure	Combined total ≤ 4.0 mol%	≤ 0.75
N2	mol %				≤ 0.0
CO	mol %				≤ 0.2
Ar	mol %				≤ 4.0
Methane	mol %				≤ 4.0
Ethane	mol %				≤ 4.0

IMPURITIES WITH LIMITS RESPECTIVE OF SHIPPING AND PIPELINE CONDITIONS					
COMPONENT	UNITS	IMPURITIES WITH LIMITS RESPECTIVE OF SHIPPING AND PIPELINE CONDITIONS		NOTES	ISO 27913
		UPPER LIMIT	LOWER LIMIT		
C3+ & Other Aliphatic Hydrocarbons	mol%	≤ 0.15 (in total)			≤ 0.15 (in total)
H2O	ppm-mol	≤ 50			≤ 50
O2	ppm-mol	≤ 10		1 & 2	≤ 10
NOx	ppm-mol	≤ 10			≤ 50
SOx	ppm-mol	≤ 10		1	≤ 50
H2S	ppm-mol	5		1 & 4	≤ 200
CO2	ppm-mol	100		1 & 4	-
CS2	ppm-mol	20		1 & 4	-
Mercaptans (Thiols)	ppm-mol	750		1 & 4	-
NH3	ppm-mol	10		1	-
BTX	ppm-mol	200			100
Methanol	ppm-mol	350			350
VOCs (Formaldehyde, Acetaldehyde, Ethanol)	ppm-mol	110			1
Acid Forming Compounds (Cl2, HF, HCl, HCN)	ppm-mol	180			-
Amines	ppm-mol	100			100
Glycols	ppm-mol	1			1
Naphthalene	ppm-mol	100			-
Solid Particulates (Ash, dust, trace, metals)	mg/tm3	1 (in total). (Max size of particulate: 1 µm)		3	≤ 1 µm
Cd	mg/tm3	0.15 (in total). (Max size of particulate: 1 µm)		3	-
Cd + Thallium	ppm-mol	≤ 0.03			-
Dioxins and Furans	ng/tm3	0.02			-
Nitrosamines and Nitroamines	µg/tm3	3			-



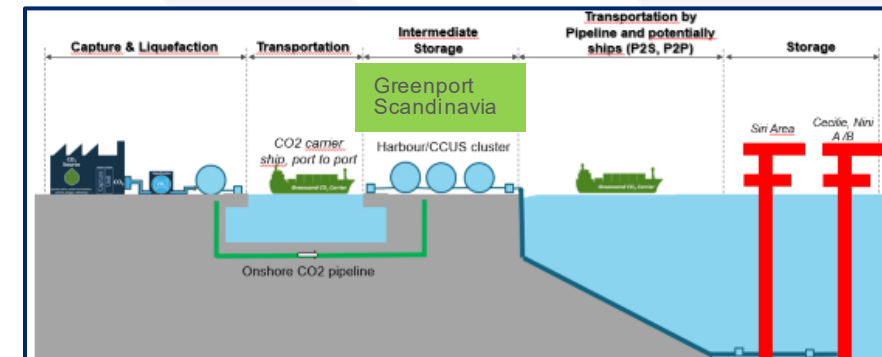
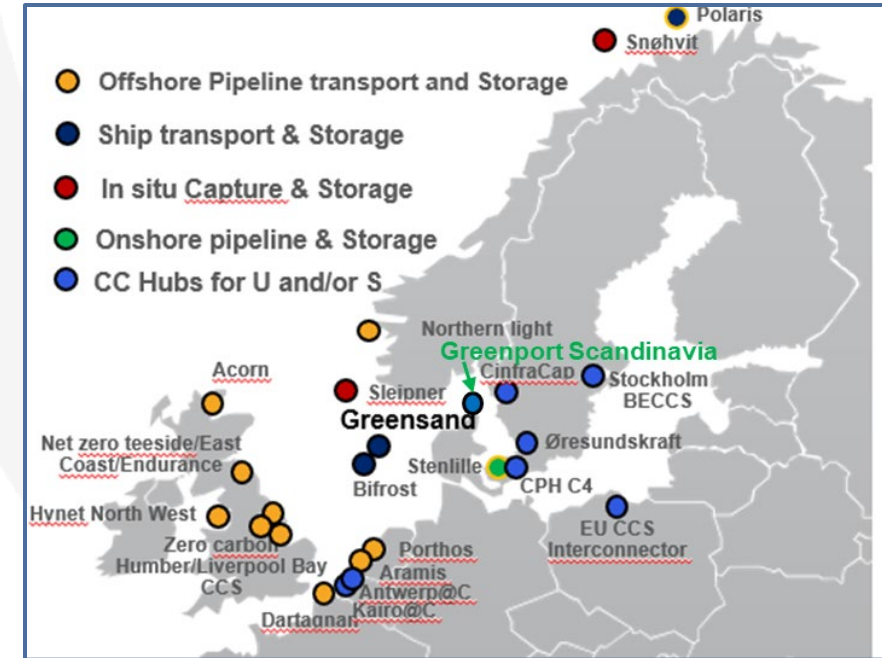
Greensand Full Scale Project Phases



Greensand Project teaming up with Greenport Scandinavia

Creating a CC(U)S hub to Harvest the economies of scale

Port of Hirtshals (PoH) 2.0



Greensand Project teaming up with Greenport Scandinavia

A strong partnership to deliver the GPS Project

MoU partners:

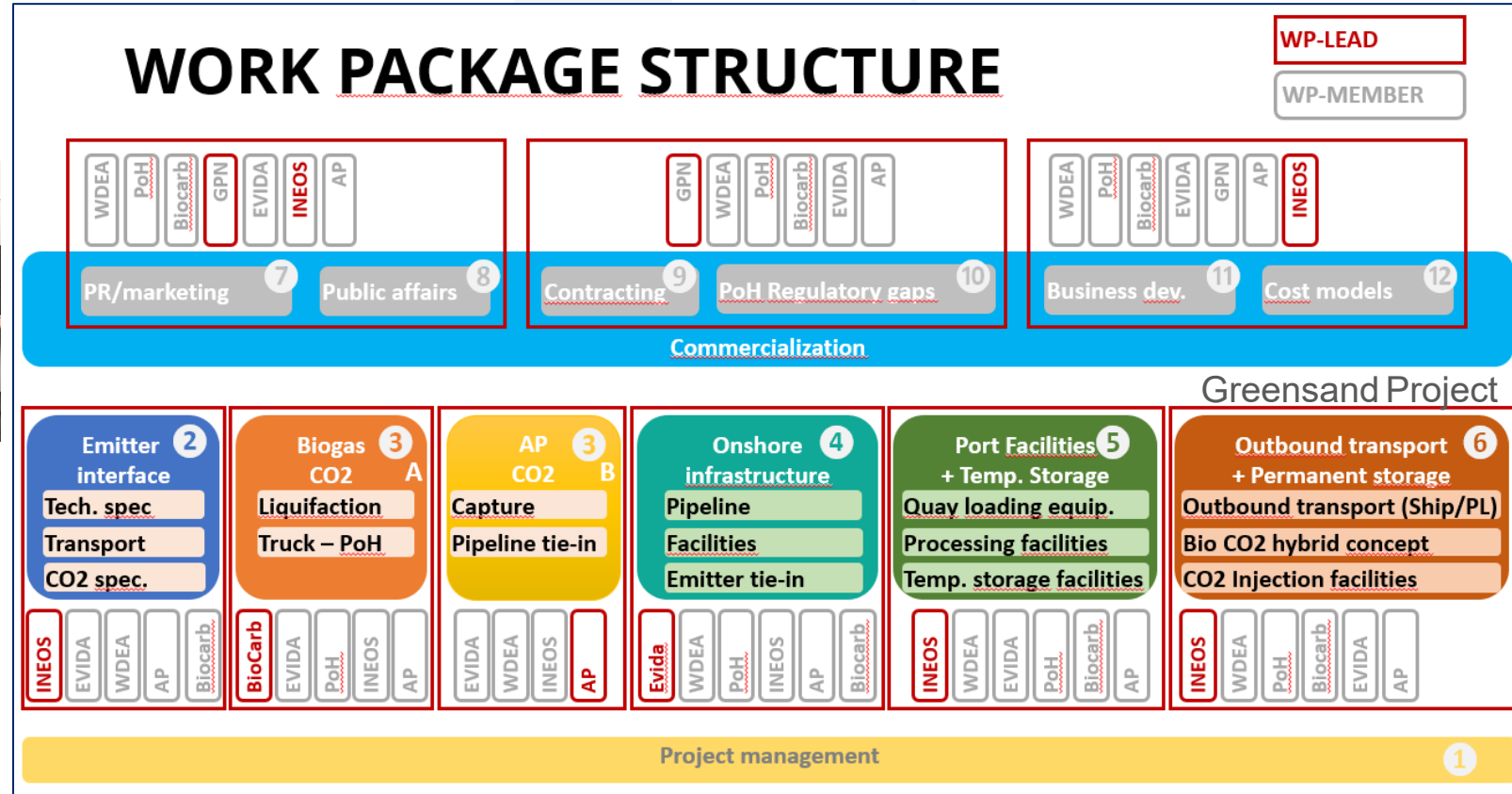
- Greenport North (GPN) – PM office
- Port of Hirtshals
- Evida
- BioCarb Solution
- INEOS Energy
- Wintershall Dea



MoU signing day Dec. 2022

Continuos strengthening through:

- *New Partners*
 - Ålborg Portland
- *Associated Partners*



Greensand & Greenport Scandinavia Ambitions

Road Map to lower unit costs considering risks and market uncertainty

CCS
DKK pr. ton

GPS MoU

Pre- and FEED studies

Greensand Full Scale

Industrial DK+EU Emitters
(Hub establishment)

Industrial DK+EU Emitters
(Hub expansion)

Time

2023-25
GPS Project maturation

2025/26
Industrial Scale
Proof of concept

2027/28
Commercial Scale
Proof of business

2030/31
Expansion
Economies of scale

Greensand Project Status – June 2023

Thank you for your
attention