

Oil and Gas as part of the Solution for Energy **Security** and Clean Energy Transitions



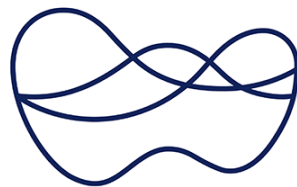
Joint GOT – EOR TCP Workshop

Norwegian Petroleum Directorate, 24 November 2022

Starting at 09:00 CET

Hybrid event

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Oil and Gas as part of the Solution for Energy Security and Clean Energy Transitions

Joint GOT – EOR TCP Workshop

Norwegian Petroleum Directorate

24 November 2022

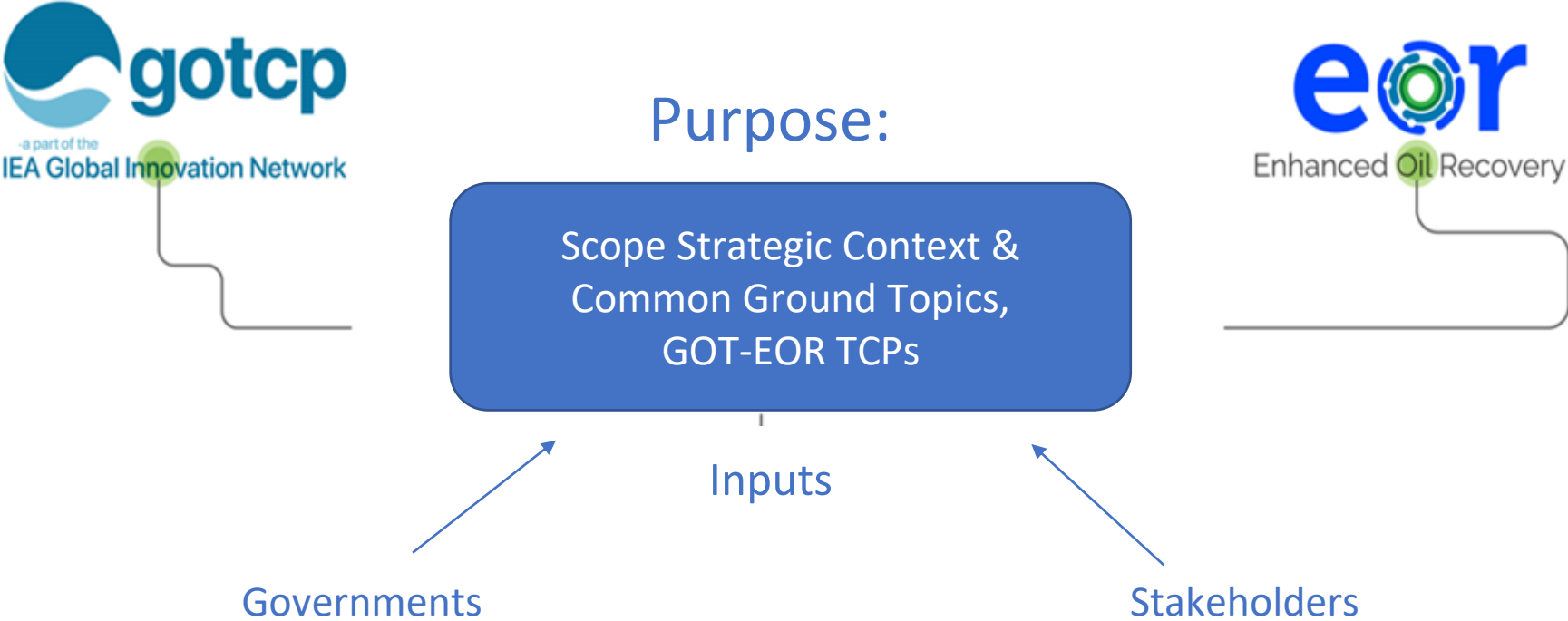
Welcome and Background

Jostein Dahl Karlsen

CEO, Gas and Oil Technology Collaboration Programme

- A part of the IEA Global Innovation Network

Purpose of event



Energy Security & Transition Challenges post Ukraine

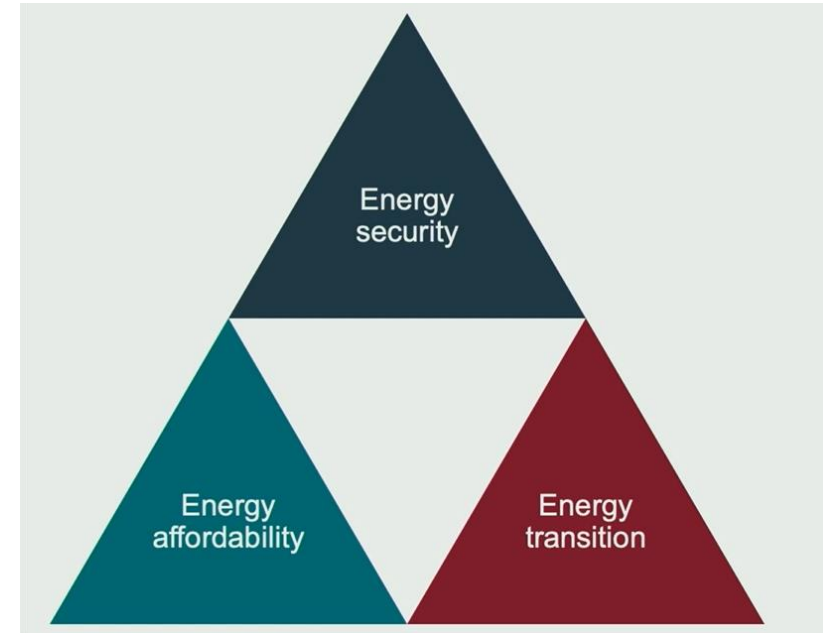
**Net Zero
by 2050**

Crunch time

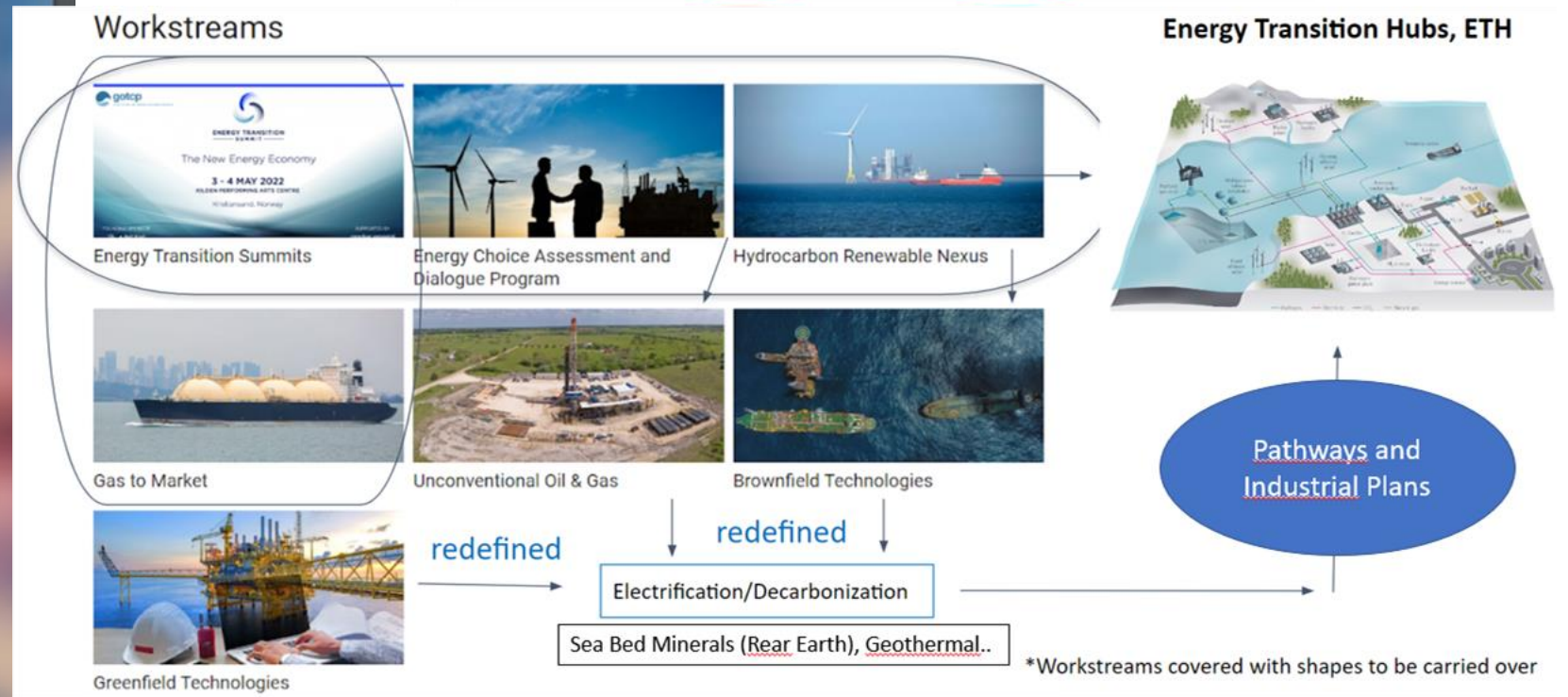
Russia is turning off the gas.
What should governments
in Europe do?



The «energy trilemma»



GOT Reframing into a focus on Zero Emission Hubs



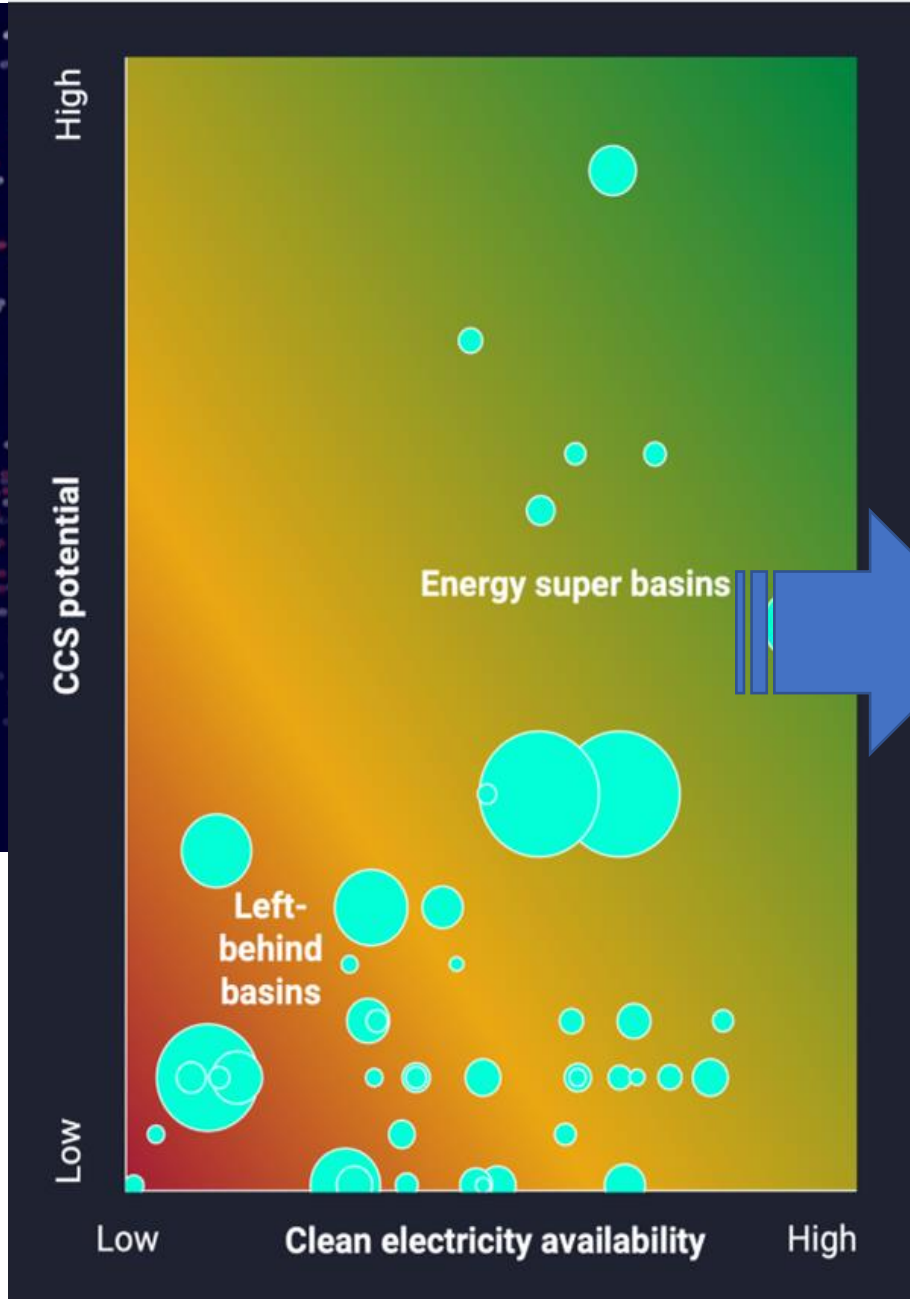
HORIZONS

Energy super basins:

Where the renewable, CCS and upstream stars align

July 2022

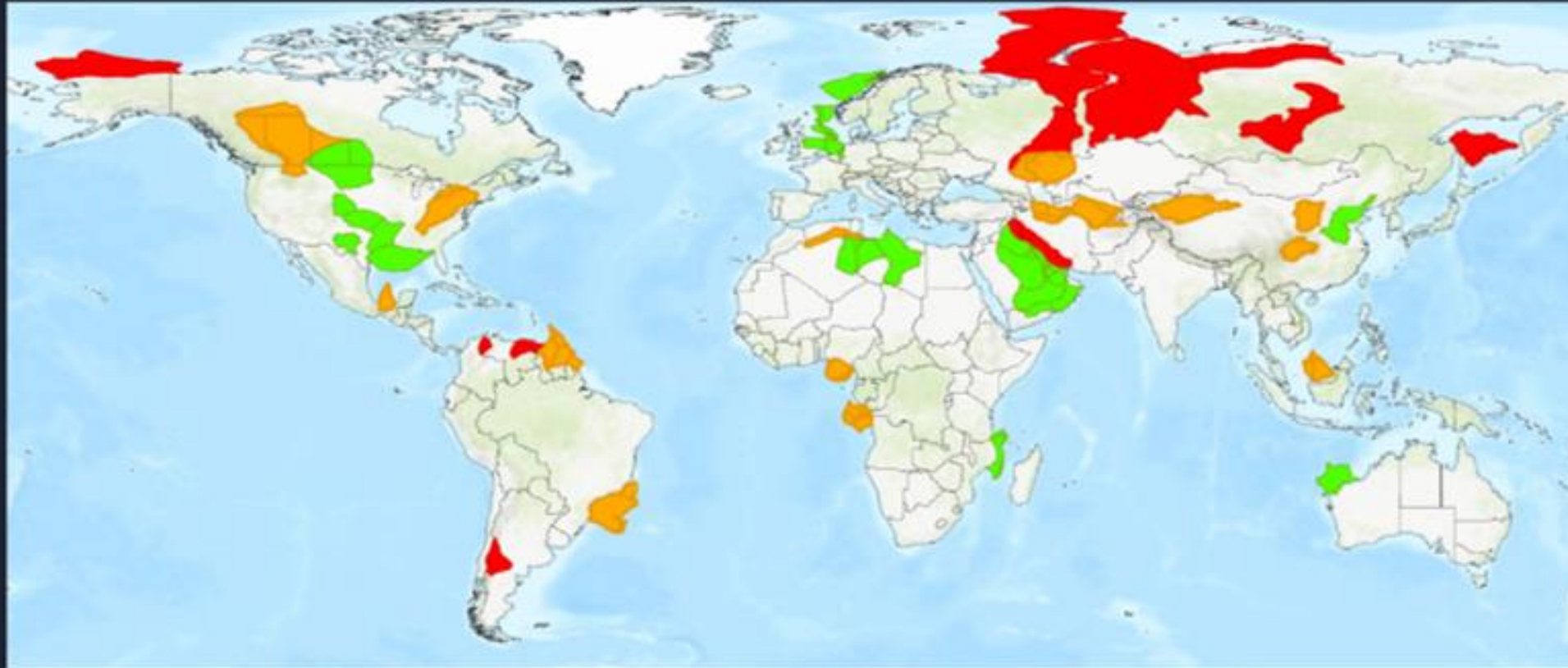
Source: WoodMcKenzie




National/regional
Technology
Readiness
Key!



Energy super basins map



 Energy super basins

 Potential energy super basins



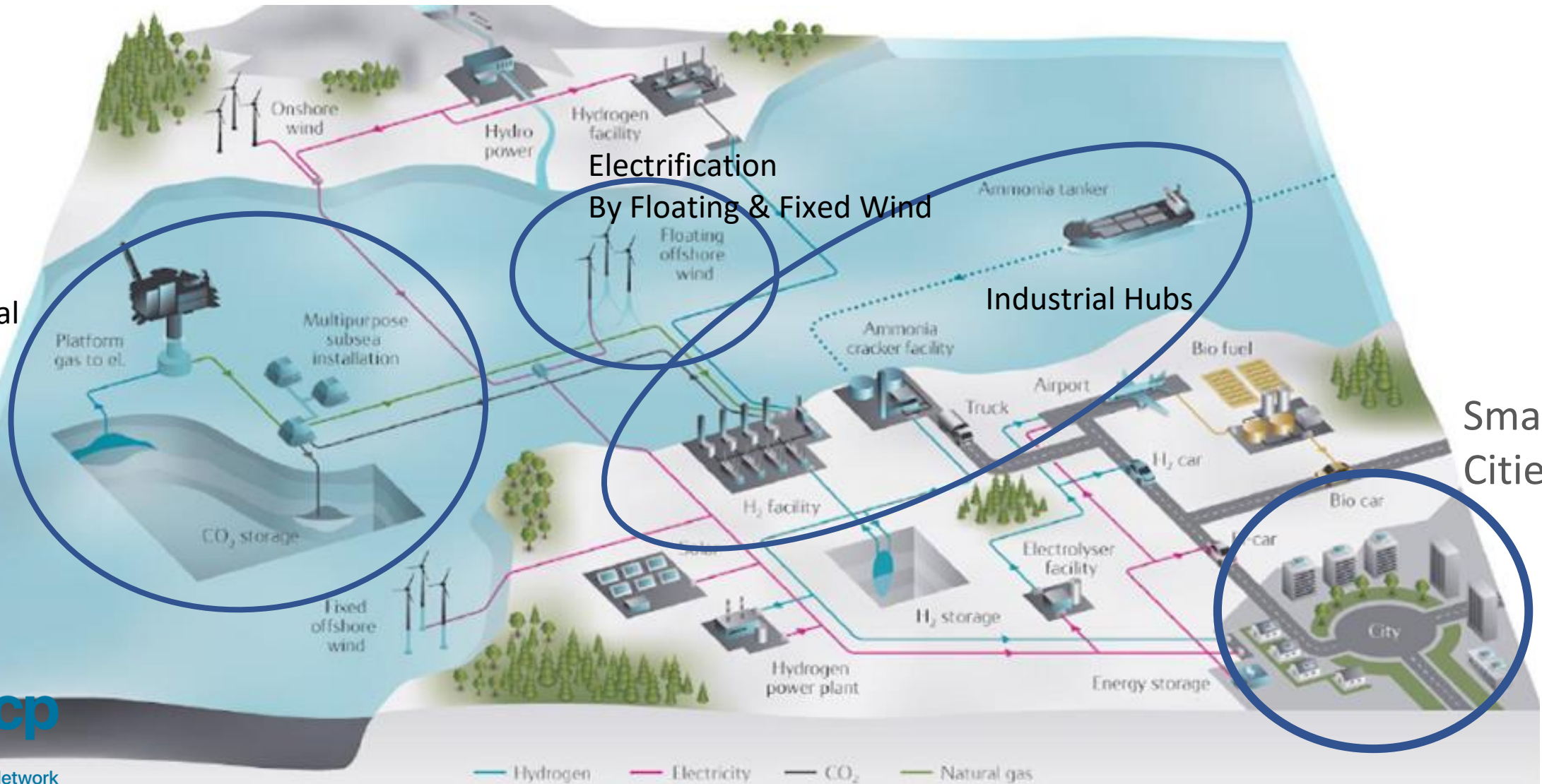
Zero Emission Vision: strategic elements in hubs

National & Cross National CCS/CCUS

Electrification
By Floating & Fixed Wind

Industrial Hubs

Smart Cities



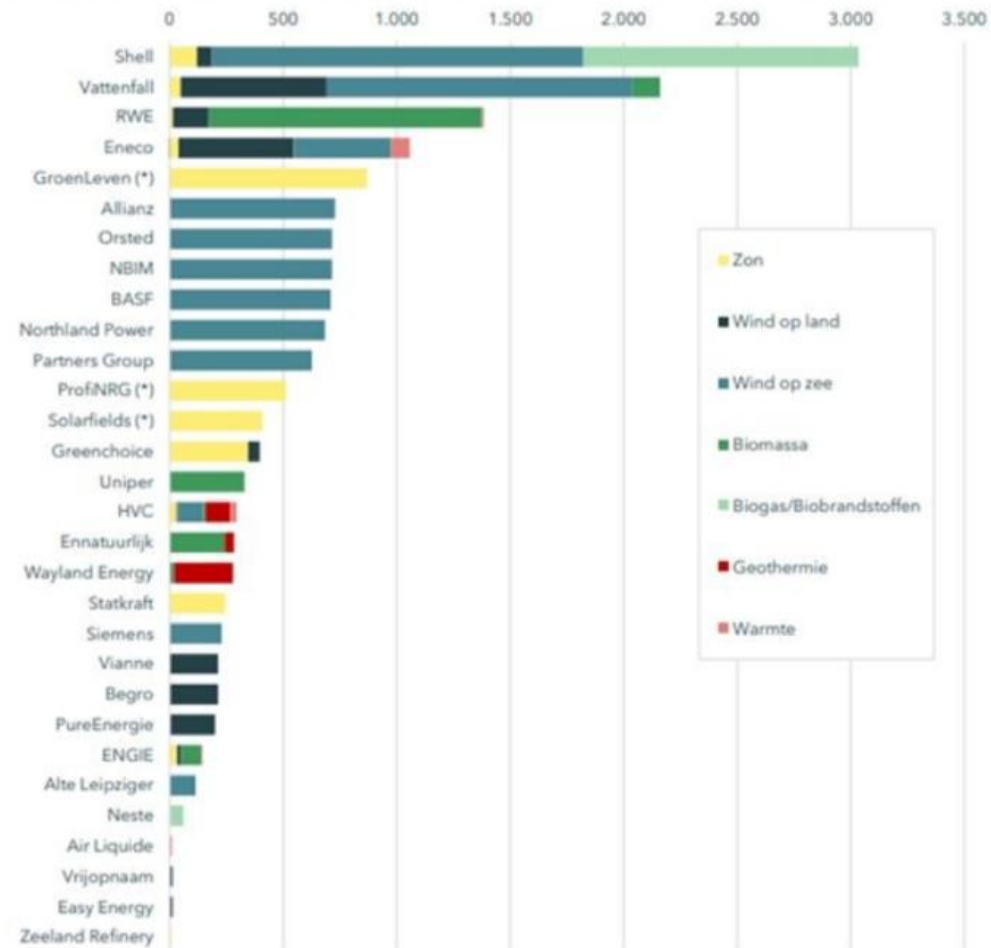
-a part of the
IEA Global Innovation Network

Technology Collaboration Programme

by IEA

The «silent revolution» – oil and gas are RE vanguards

Estimated investments in the Dutch energy transition 2016-2021



Legenda: (*): Eigenaarschap niet volledig duidelijk

Bron: SEO Economisch Onderzoek (2022), gebaseerd op gegevens van RVO (2021a), PBL (2022), & CE Delft (2021)

- Super majors are fast-tracking the renewables space
- Largest offshore wind farm (Hywind) operated by Equinor
- Superior capacity factors of offshore wind (OW) turbines (up to 60 %, vs 30-40 % on land) a key driver to harvest OW

Event outline

A Contextual Keynotes

B Theme 1 a)

Hydrocarbons in the Energy Security & Clean e nergy transition context

C Theme 2) The Hydrocarbon-Renewables Nexus & Decarbonization

Roundtable; Oil and Gas in the perspective of Energy Security

D Theme 1 b)

Hydrocarbons, Energy Security & Clean Energy Transitions cont.

Summary

Per Sogge
Ministry of Petroleum and Energy, Norway

Carl Greenfield

IEA

NN, etc.....

Roundtable

Oil and Gas in the context of Energy Security

Lunch Break

Oil and Gas in the context of Energy Security and Transition

Session resumes at 13:00 hrs CET

Summary remarks

Cesar ...

Close of event