



CO₂GeoNet

The European network of excellence
on the Geological Storage of CO₂

State-of-play of CO₂ storage in Europe

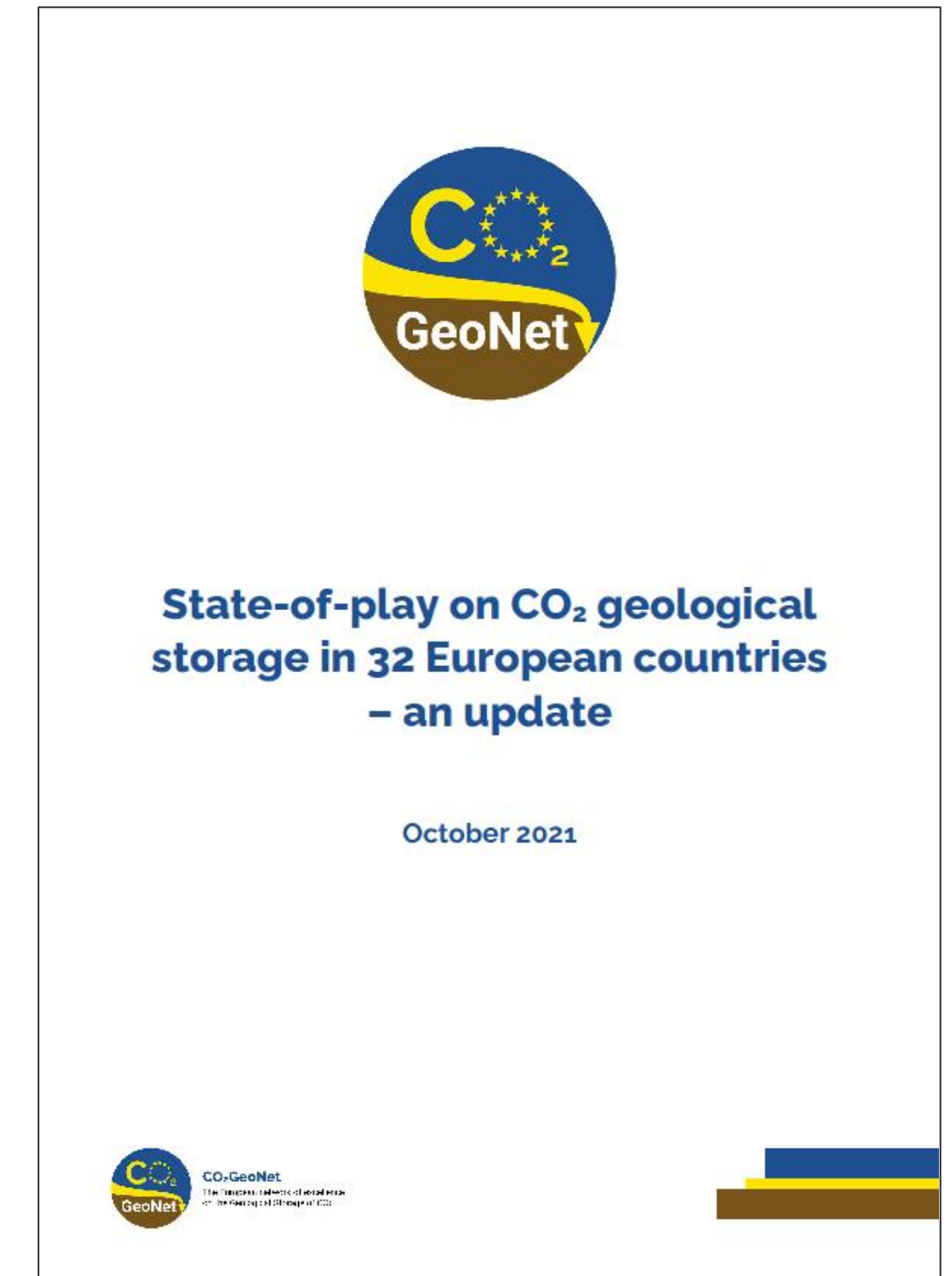
Heike Rütters, BGR,

on behalf of the drafting team (HR, Vít Hladík (CGS), Aleksandra Koterias (GIG), Cornelia Schmidt-Hattenberger (GFZ), Jan Tveranger (NORCE), Ceri Vincent (BGS), Walter H. Wheeler (NORCE))

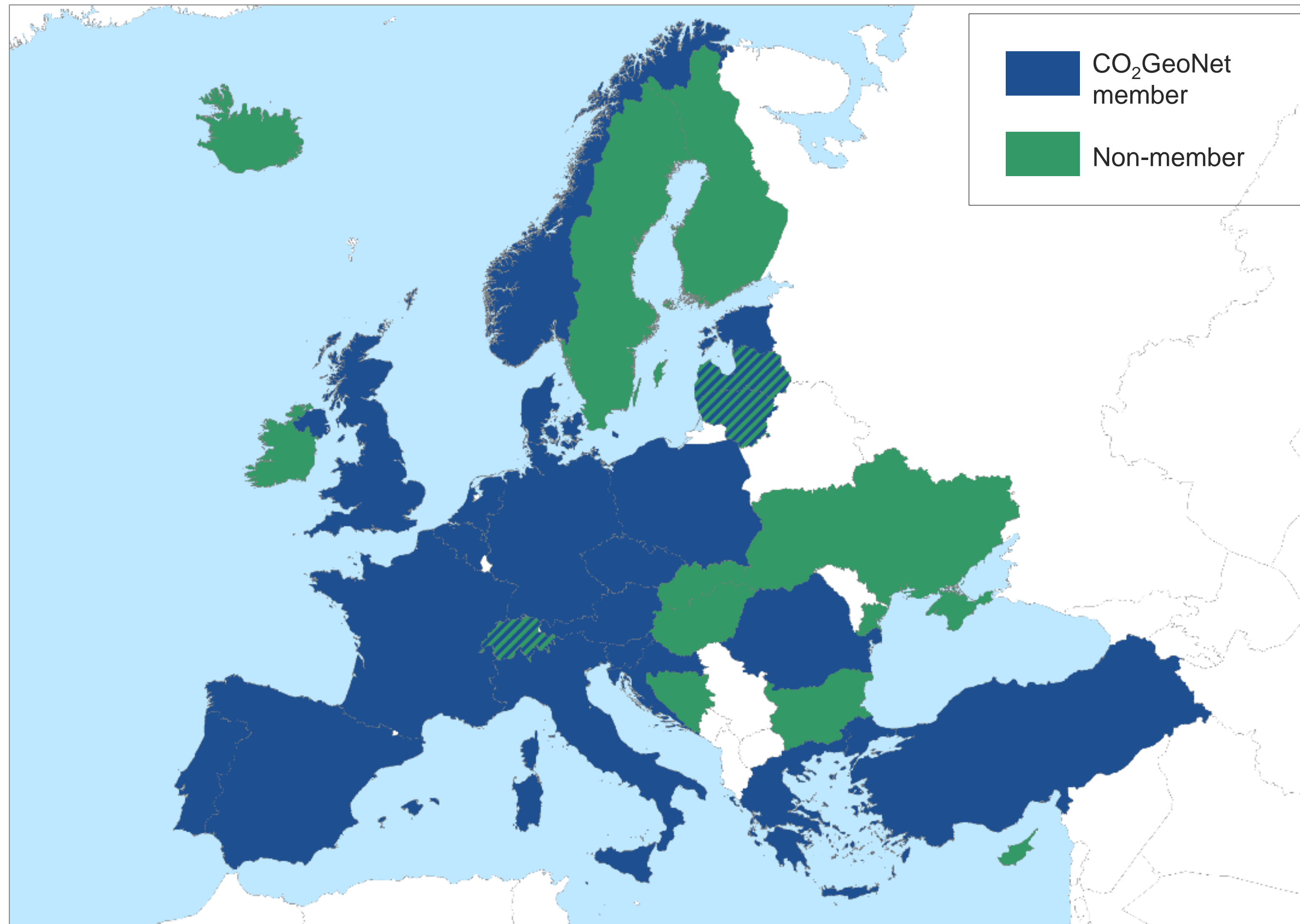
September 21st 2021 CO₂GeoNet Autumn Webinar

State of play - Background info

- Overview of state of play on CO₂ geological storage in Europe collated based on questionnaire survey – topics:
 - national CO₂ storage assessment - options, potential and capacity,
 - CO₂ capture, injection and storage projects – large-scale, demonstration and pilot projects,
 - research activities with respect to CCS (and CCU) and research priorities,
 - national climate protection policies, legislation and regulations relevant for CCS,
 - national actors driving CCS forward, public awareness and engagement.
- Report in preparation by CO₂GeoNet Drafting Team
- Today's presentation: State of play as of December 2020



Country participation and coverage



Country coverage =
32 European countries

Storage potential assessment



Full report with updated maps
coming soon!

Note: In some cases, large heterogeneity in categories

- Overall, good to excellent knowledge in most European countries
- Recent updates in many countries \Rightarrow to be reflected in a new, solid up-to-date European Storage Atlas
- Saline aquifers > depleted/-ing HC fields
- Offshore preferred in most coastal countries

Projects - different foci, scales and stages

**Full-chain CCS/
cluster
projects**
NO
(e.g. NO, UK, NL,
DK, IT, FR)

**Capture
projects**
NO, FR, UK,
SE,
DK, DE, NL,
BE,
IS, CH
(e.g. ES,
DE,...)

**CO₂ storage
operations
& projects**
NO, IS, (TR)
(e.g. NO, IS,
UK, NL, DK)

**CCU
projects**
(e.g. EE, DE,
FI, BE, PO)

**Projects of
common interest**
UK, NL, NO,
NL/BE, IE

**Transport pipelines
& research
facilities**
NO, HR, NL
(research:
e.g. NO, FR)

**CO₂-EOR operations
& projects**
HR, HU, TR
(AT, CZ, LT, LV, PL, RO)

National legislation



Recent changes:

- now permitted: SE, CZ
- now prohibited: SI, LT

“Permitted” may include light to severe limitations and /or regional exceptions, e.g.

- offshore only – SE
- exclud. seismic/volcanic areas – IT
- exclud. underground aquifers - GR
- state to define/restrict exploration areas – HR, PL, SK

⇒ light to severe reductions of theoretical storage potential

Public awareness and knowledge of CCS

Full report with updated maps
coming soon!

In most countries:

- awareness/knowledge in general public low to very low,
- increased awareness at stakeholder level in some countries,
- recently increasing media coverage in some countries

Exceptions: NO and IS

Locally, higher public knowledge linked to pilot or demo projects (IE, DE, ES) ⇔ here, also higher acceptance of CCS

Main findings

- Clear progress in the roll-out of CCS/CO₂ storage, but still only Sleipner and Snøhvit projects and Icelandic pilot site for in situ mineral storage in operation.
- Focus shifted from research & pilot-scale testing to larger-scale project planning/implementation (cluster projects, PCI)
- In many countries: capture now focuses on industrial plants and waste-to-energy plants , also on alternative CO₂ sources (e.g. geothermal plants, “blue“ H₂ production, direct air capture);
- Public interest in CCS and media coverage increased recently in many European countries when national climate protection strategies were discussed
- Updates of national storage capacity assessments in majority of countries ⇔ necessity to prepare a new, solid up-to-date European CO₂ storage atlas
- CO₂-EOR is considered in a couple of countries from Eastern and Southern Europe, whereas prolonged oil production seen critical in some other countries

Σ : Wide spread of activity and knowledge levels across Europe ⇒ continued need for pan-European knowledge exchange, research, technology transfer and cooperation

Coming
soon.....



**State-of-play on CO₂ geological
storage in 32 European countries
– an update**

October 2021



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Thank you!

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