



The European Network
of excellence on the
Geological Storage of CO₂

National and international legislation and regulations with respect to CO₂ geological storage

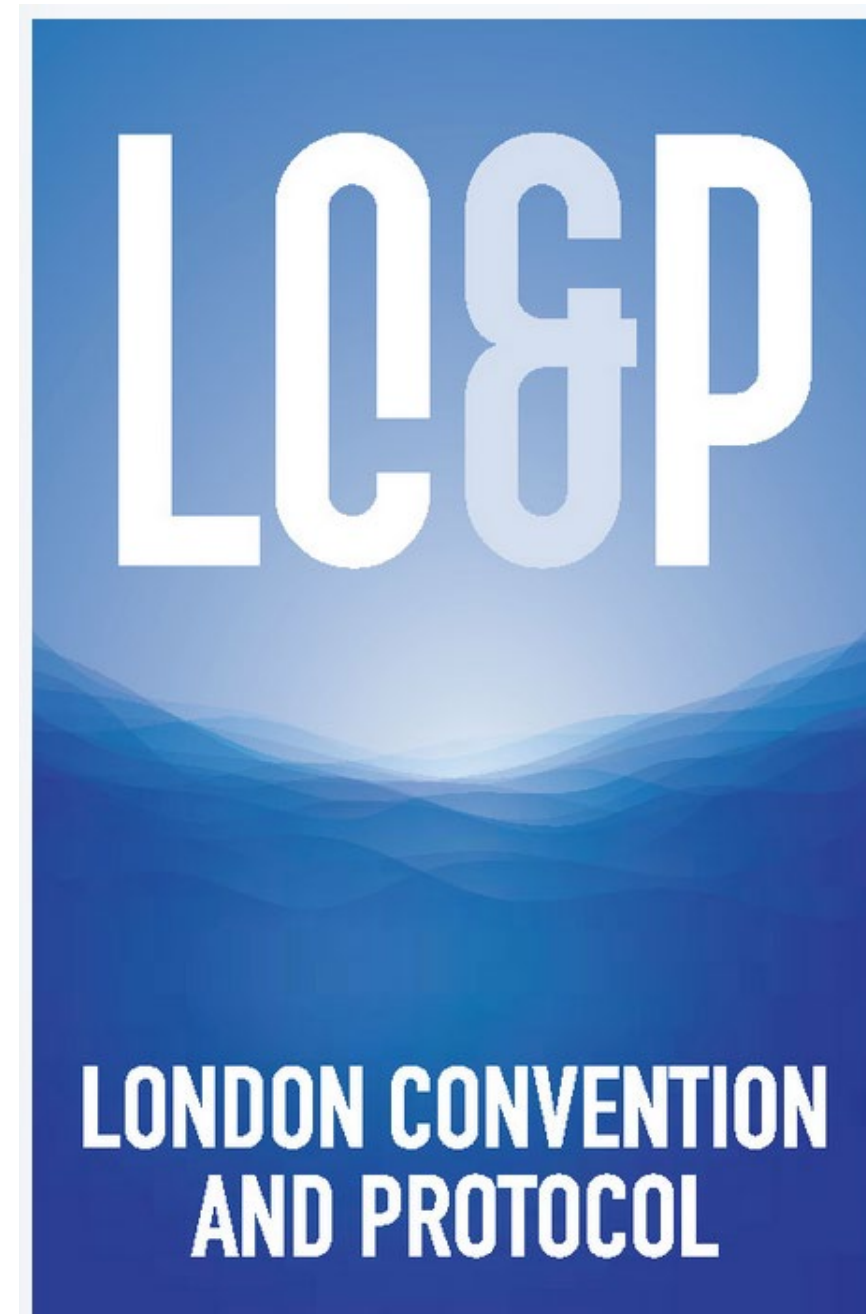
Heike Rütters, BGR

21st February 2022 CO₂GeoNet Webinar



International legislation

London Convention (1972) & London Protocol (1996/2006):

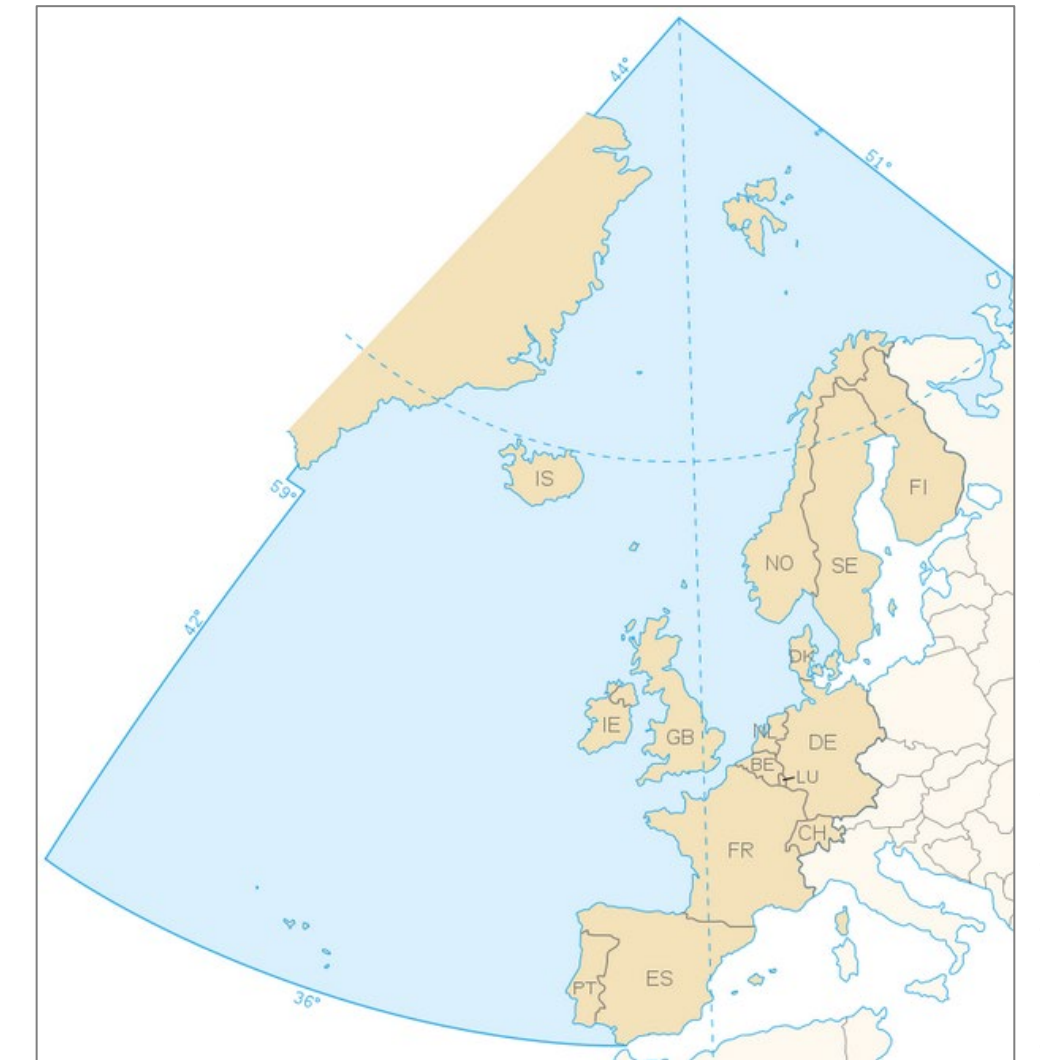


- ⇒ CO₂ not included in so-called “reverse list” (...-2006); CO₂ export prohibited
- ⇒ 2009 Amendment to enable export of CO₂ for geological storage (acceptance by 2/3 of contracting parties required) – as yet only by Denmark, Estonia, Finland, The Netherlands, Norway, Sweden, U.K. (and Iran)
- ⇒ a provisional application of this amendment was accepted at the LC 41/LP 14 meeting (October 2019)
- ⇒ agreement between countries concerned (must be LP parties): “Unilateral Declaration of the Provisional Application of the 2009 Amendment” to be deposited at IMO

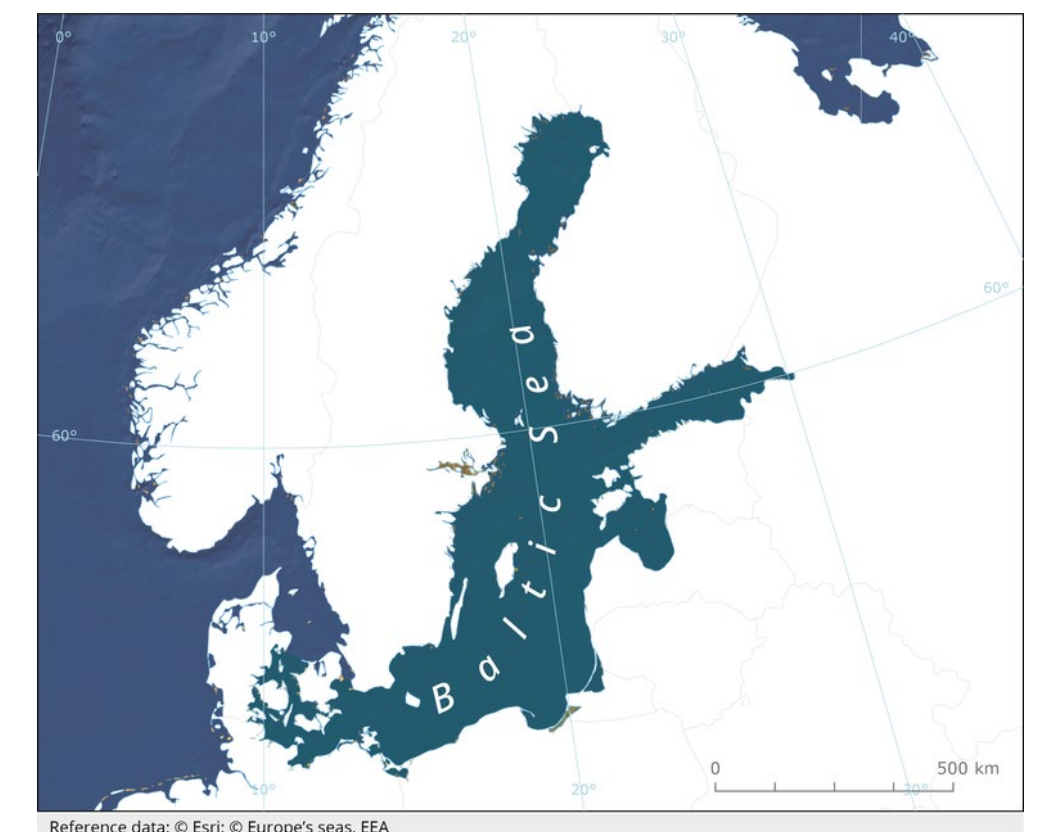
Σ transboundary CO₂ transport for offshore storage now possible

Regional conventions

- **OSPAR Convention (1992):**
= protect marine environment of the North-East Atlantic area;
2007: amendments to the Annexes adopted
⇒ allow the storage of CO₂ in geological formations under the seabed,
⇒ storage of CO₂ streams in the water column or on the seabed prohibited
- **Helsinki Convention (1974, 1992)/HELCOM:**
= protection of the marine environment in the Baltic Sea area;
prohibits the disposal of waste under the Baltic Sea
(as yet, anthropogenic CO₂ not explicitly excluded/exempted)
⇒ amendment required to allow geological storage of CO₂ under seabed



<https://de.wikipedia.org/wiki/OSPAR>

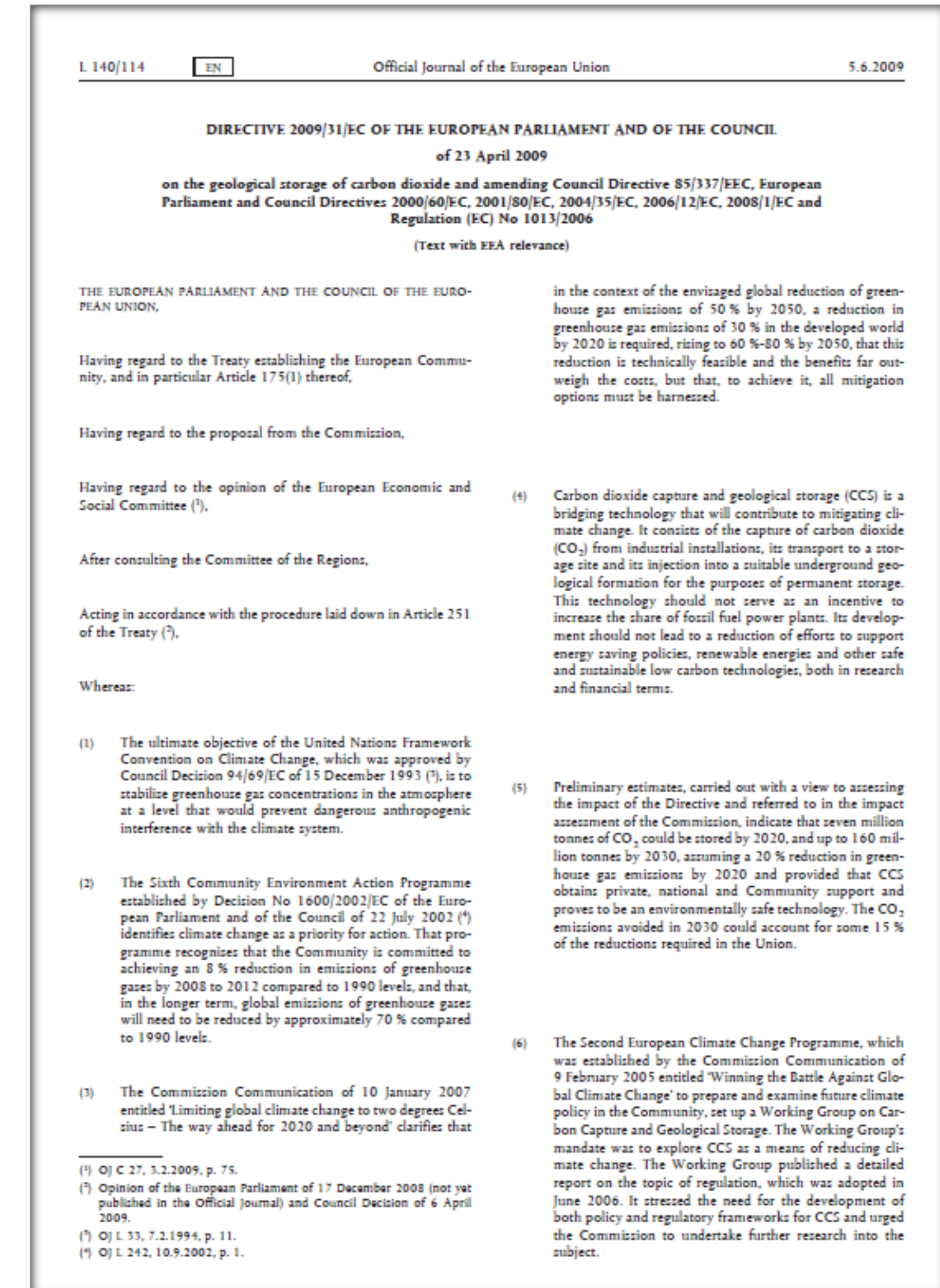


<https://water.europa.eu/marine/countries-and-regional-seas/regional-conventions/helcom-convention>

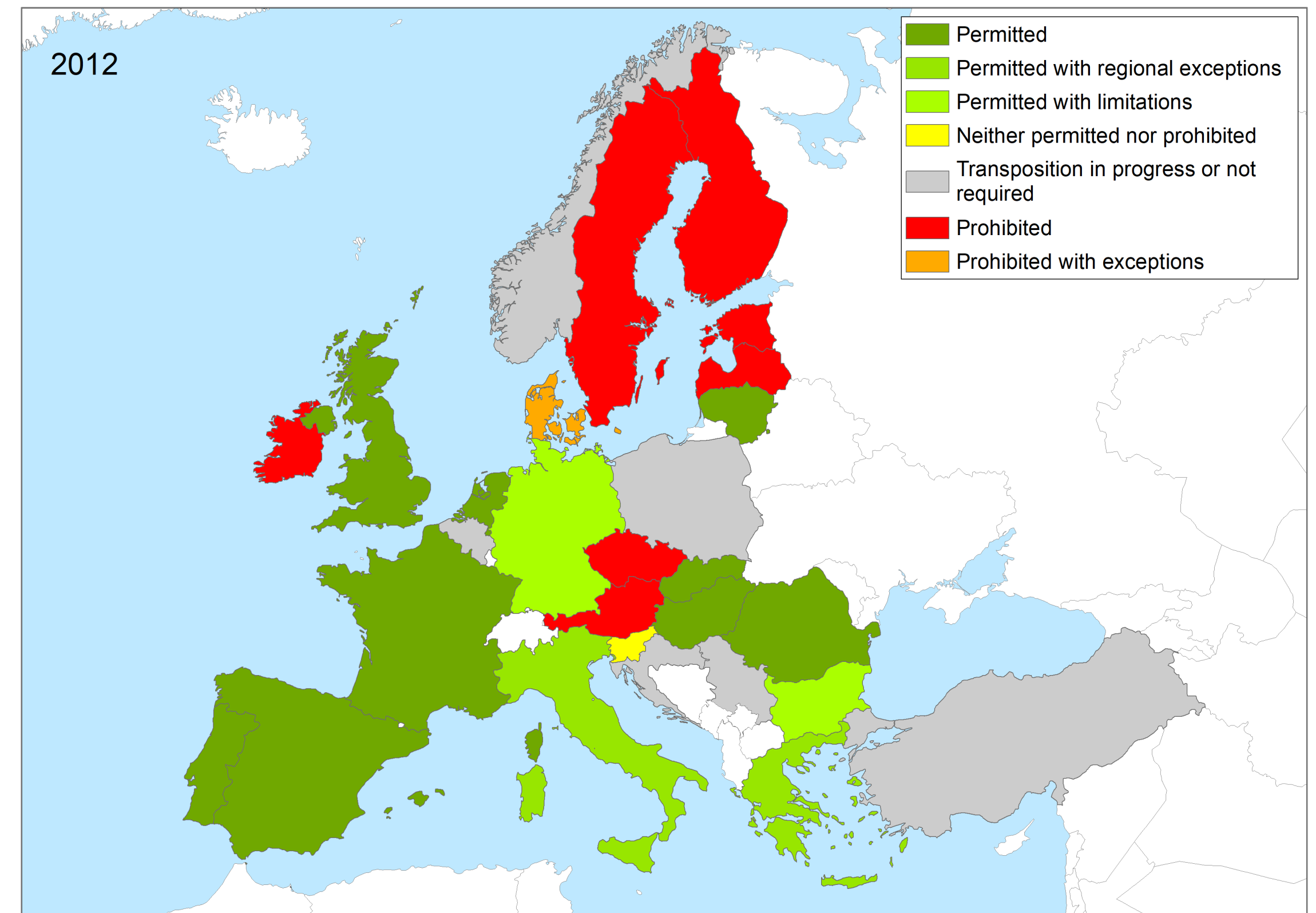
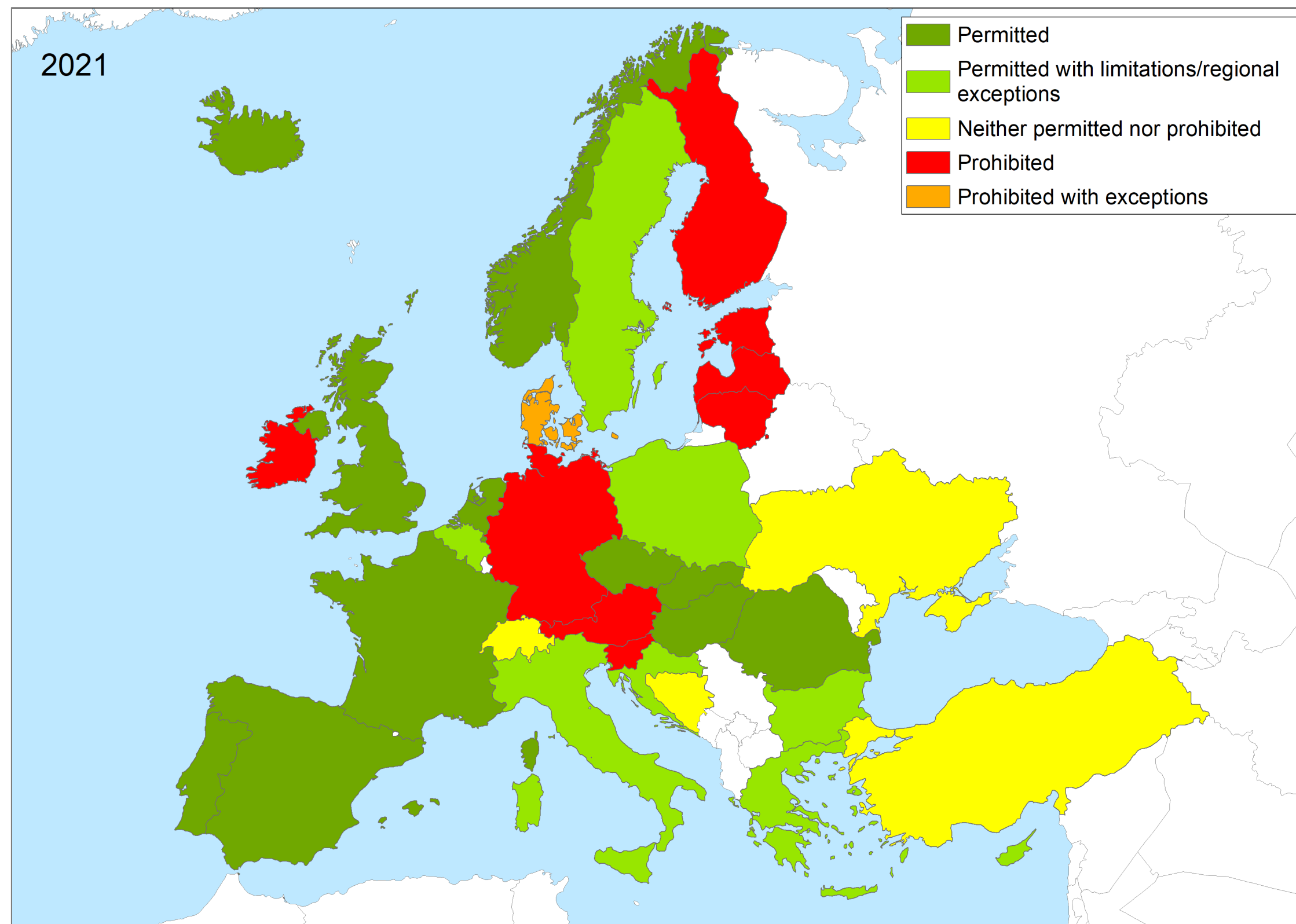


Transposition of EU CCS Directive

- All EU Member States transposed between 2010 and 2014 (including UK).
- Norway (EEA Member) transposed in 2014.
- Iceland (EEA Member): transposed with adaptations to CO₂ mineral storage in basalts.
- Turkey, Bosnia and Herzegovina as well as Switzerland and Ukraine: no dedicated national legislation in place for geological storage of CO₂.



Permissibility as of 2021 cf. 2012



Permitted: 19, prohibited: 9, undefined: 4 countries

Permissibility – recent developments



+ : larger-scale CO₂ storage now permitted offshore in Sweden according to new laws as of 2014 (with some amendments in the following years); was temporarily forbidden until 2013.



+ : CO₂ storage is now permitted as time limit prohibiting CO₂ storage projects exceeding 100 kt CO₂ expired on 1st January 2020.



- : CO₂ storage prohibited since 1st July 2020 by a new law.



- : CO₂ storage prohibited in November 2013 (also applying to CO₂ injection for research purposes).

Permissibility – more complex situations



CO₂ storage is not possible at present (as deadline for filing CO₂ storage permit applications expired on 31st December 2016) & some German Federal states banned CO₂ storage in their territory.



National CO₂ Storage Act generally enables CO₂ storage; at same time, other regulations protecting priority areas for other subsurface uses significantly limit possible locations of CO₂ storage sites.



Only CCS for demonstration purposes allowed; further limitations from the Implementing Acts to the Polish Geological and Mining Law allowing only offshore storage with further limitations
⇒ CO₂ storage permissible only in Cambrian reservoir within Polish EEZ.

Permissibility – anticipated changes



plans to permit large-scale offshore and onshore storage during 2022; since 2011, DK has had a moratorium for CO₂ storage both onshore and offshore except in the case of CO₂-EOR projects; moratorium also affected CO₂ injection for research purposes (< 100 kt); now will ban EOR and phase out hydrocarbon production.

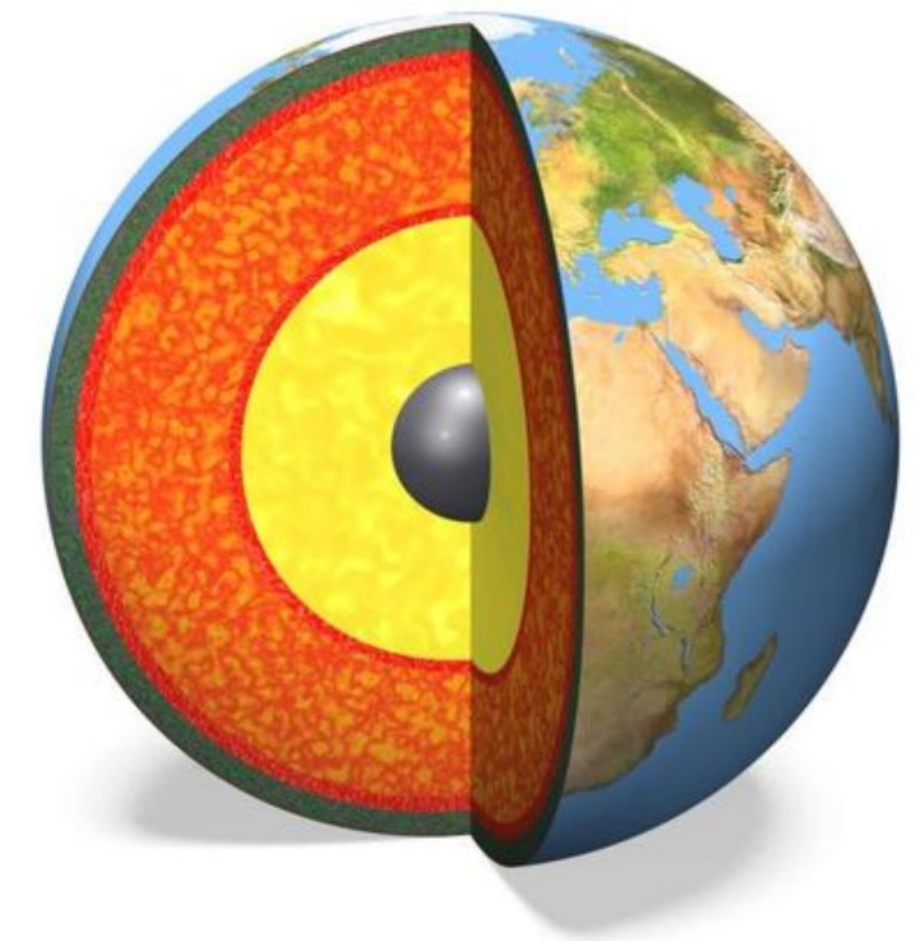


National law is currently under review with plans to permit CO₂ storage; currently CO₂ storage is not permitted on Irish territory, its exclusive economic zone and its continental shelf.

Subsurface ownership and responsibility

- Ownership of subsurface
 - i) lies with the state or the people collectively or
 - ii) lies with the individual landowners (= own the land down to the earth's centre; however, certain raw materials and geological structures bearing them excluded from landowner's claim in many countries).

→ But for example, in Latvia, storage permits from many landowners would be required for onshore CO₂ storage.
- CO₂ storage licensed and regulated on a national/federal/state level (15 countries) or at regional level (4 countries).



Source: imago stock&people

Licensing – practical experiences

- NO: operational industrial-scale CO₂ storage sites (Sleipner, Snøhvit – re-licensed in 2017 and 2018, resp.);
 - NO, NL and UK: storage licences according to provisions of the EU CCS Directive awarded;
DK: one declined storage licence pre-application from 2011;
 - FR, DE, IS, ES: storage licences/permits for smaller-scale and pilot projects based on different national laws;
- ⇒ very limited experience with licensing/permitting procedures for site exploration and for CO₂ storage operation



<https://co2re.co/FacilityData>



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Thank you for your attention !

<http://www.CO2geonet.com/state-of-play/>

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