Member State report on Implementation of Directive 2009/31/EC on the geological storage of carbon dioxide ("CCS Directive")

OUTLINE

Changes, reviews and updates of national implementation legislation

1. Are there any changes to national legislation, permitting system or competent authorities that have taken place since the last report on implementation of the CCS Directive in your country?

No changes have taken place since the last report on implementation of the CCS Directive.

2. Are there processes in place for storage permit applicants to engage pro-actively with the competent permitting authorities regarding relevant applications? If yes, please provide details.

There are no formal processes for potential CO2 storage permit applicants. However, meetings and information sessions were organized between a petroleum license holder and NAMR as Competent Authority with regard to the intention to store CO2 in a depleted hydrocarbon field and submit an application under the Innovation Fund Large Scale 2023 Projects.

3. Please provide the name, email address and telephone of the contact point at the competent authority responsible for fulfilling the duties established under the Directive.

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4. Are there any issues that the competent authority would like to discuss with other competent authorities in relation to the practical implementation of the Directive and in particular the

national permitting procedures in the Information Exchange Group under the auspices of Article 27(2)?

There are certain aspects that are of interest to the Competent Authority at this stage:

(a) Specific requirements in onshore vs offshore permitting;
(b) Assessment of the CO2 geological storage potential;
(c) Transition from hydrocarbon production to permanent CO2 storage covering permitting process and field decommissioning;
(d) Promoting depleted oil and gas fields as storage sites and reuse of existing infrastructure where it is technically feasible and economically viable;
(e) Further clarification regarding the calculation of the financial guarantees and example of best practices;
(f) Appropriateness of financial instruments for covering different obligations and use of insurances as a financial mechanism.

Selection of areas for storage sites (Article 4)

5. Which areas are determined from which storage sites may be selected pursuant to Article 4(1) until April 2023?

No areas have been banned for CO2 geological storage purposes if it is proved that they meet the criteria provided by the CCS Directive. Considering the long-term tradition of the petroleum industry in our country at first attention will be given to depleted oil and gas fields since saline aquifers require more exploration.

6. Will additional areas be determined from which storage sites may be selected in the period until the next report at the end of 2027, if so, which geological type of areas are considered (e.g, saline aquifers, depleted or not depleted gas & oil fields, mafic rocks) from a geological point of view and what are the next steps?

More attention will be given to saline aquifers and transition from EHR production to permanent storage.

7. Are there information about environmental and/or health risks relating to the geological storage of CO_2 in accordance with the applicable Community legislation available to the public?

Together with the submitted application, information about the environmental and/or health risks related to the geological storage of CO2 will be provided to the public in accordance with Community legislation.

Exploration permits (Article 5)

8. Are there areas or specific sites where no exploration permits are required to generate the information necessary for the selection of storage sites, pursuant to Article 5?

Evaluation is performed on a case by case basis. For many depleted oil and gas field there is sufficient information and further exploration may not be needed.

9. How many exploration permits have been given pursuant to Article 5 since your last reporting?

No exploration permits have been granted until this moment.

Storage permits applications (Article 10)

10. Member States shall make the permit applications available to the Commission within one month after receipt. Are there any plans of potential operators to apply for storage permits pursuant to Article 7? If yes, please provide an approximate timing.

It is estimated that towards end 2023/Q1 2024 an application for a storage permit will be submitted for a depleted hydrocarbon site by the companies applying to the Innovation Fund Large Scale 2023 Projects.

Third-party fair and open access (Article 21)

11. What measures – if any – have been taken to ensure that potential users are able to obtain fair and open access to transport networks and to storage sites for the purposes of geological storage of the produced and captured CO_2 (Article 21)

Discussions are ongoing to develop procedures/secondary legislation based on EU guidance and best practices involving Cas for CO2 geological storage, CO2 transport, potential operators

12. Are you aware that prospective transport operators and/or storage operators have refused access to their facilities on the grounds of lack of capacity?

Not the case.

13. What measures – if any – have been taken to ensure that the operator refusing access on the grounds of lack of capacity or a lack of connection makes any necessary enhancements as far as it is economic to do so or when a potential customer is willing to pay for them? (Article 21)

Discussions are ongoing to develop procedures/secondary legislation based on EU guidance and best practices involving Cas for CO2 geological storage, CO2 transport, potential operators

Transboundary cooperation (Article 24)

14. Is there any experience or plans for transboundary CO2 transport or CO2 storage sites or storage complexes? Please provide details on the status of preparations, if any.

Not so far.

CO2 capture readiness (Article 33)

15. How many combustion plants with a rated electrical output of 300 MW or more have received a permit since the last implementation report? What was the outcome of the assessment under Article 36 of Directive 2010/75/EU? In case of negative assessment, have the combustion plants set aside suitable space irrespectively? Please provide detail for each permit according to Annex 2.

Since the last report on the implementation of Directive 2009/31/ on the geological storage of carbon dioxide, no combustion plants with a nominal electrical power of 300 MW or more have been authorized from an environmental protection point of view.

Further questions

16. What other national programmes are in place or planned to support research, demonstration and deployment of CCS?

At present there is no dedicated national program to support demonstration and deployment of CCS. Still, the research of capture and storage of greenhouse gases is specified in the National Strategy for Research, Innovation and Smart Specialization 2021-2027. Romania, through UEFISCDI (Unitatea Executivă pentru Finanțarea Învățământului Superior, a Cercetării, Dezvoltării și Inovării/Executive Agency for Higher Education, Research, Development and Innovation Funding), is financing research of CCU/CCS technologies under the Clean Energy Transition Partnership (CETP) program.

17. Are there any ongoing national or European research projects that may have relevance to the Directive?

National projects:

PN 23300404 - Dezvoltarea unei metodologii de monitorizare de mediu pentru potențiale situri de stocare a CO2 din România (Development of an environmental monitoring methodology for potential CO2 storage sites in Romania), financed through Core Research Program, Ministry of Research, Innovation and Digitalisation

International projects

CO2Hybrid - Hybrid Solvent – Membrane for post-combustion CO2 capture and utilization, financed through Norway Grants program

18. Are there other plans to support further appraisal of CO_2 storage sites, to prepare for CO_2 transport infrastructure or for CO_2 hubs and clusters?

There is no knowledge of any plans to support further appraisal of CO2 storage sites, to prepare for CO2 transport infrastructure or for CO2 hubs and clusters.

Annex 1: CCS related requests as part of the Commission Notice on the Guidance to Member States for the update of the 2021-2030 national energy and climate plans - C(2022) 8263 final

2.5 Integrating long-term geological storage of CO_2

Member States are encouraged to include in their updated NECPs the efforts planned to enable their industries to capture and store their inherent process emissions permanently in geological storage sites, in accordance with Directive 2009/31/EC. Reaching the climate-neutrality objective requires that EU-wide remaining greenhouse gas emissions and removals from hard-to-abate sectors are balanced within the EU at the latest by 2050 and that the EU achieves negative emissions thereafter.

Several activities, including energy intensive industries, such as cement, iron and steel, aluminium, pulp and paper and refineries, as well as agriculture, have inherent process emissions resulting from the production processes themselves. Carbon capture and storage, or carbon capture and use can provide a key contribution to tackling these sectors' emissions.

Furthermore, it can help remove CO_2 from the atmosphere through carbon removals such as bioenergy coupled with carbon capture and storage (BECCS) and through Direct Atmospheric Carbon Capture (DACCS). BECCS deployment should be approached in the updated NECPs in full consideration of the limits and availability of sustainable biomass**.**

Box 6: Setting objectives, targets and contributions for carbon capture and storage.

Member States are encouraged to provide the following information:

- the annual aggregated projection of inherent process emissions that will have to be abated through CO_2 capture;
- the annual biogenic and direct air CO_2 that will be available for geological storage of CO_2;
- the geological CO_2 storage capacity that can be made operationally available annually;
- annual CO_2 storage capacity that may become available at the end of exploitation of hydrocarbon reservoirs;
- planned CO_2 transport infrastructure;
- public funding support available for investment in CO_2 capture, transport and storage;
- any other measures to support the deployment of long-term geological CO_2 storage opportunities.

Annex 2: Operating licences granted to large combustion installations in accordance with Article 33

Plant operator, name location	Status (planning/construction /operation)	Electrical output	Type of fuel	Date of operating licence, Reference to the licence and assessment	Availability of suitable storage sites	Technical and economic feasibility of transport facilities	Technical and economic feasibility to retrofit for CO_2 capture	Space set aside	Other measures taken or recommended to prepare for future retrofitting	Comments