

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

Answers to the questions included in the outline of the letter to the member states dated April 1, 2016, noted by the Director-General of the European Commission's Directorate-General for Climate.

### **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?*

In connection with the organisational restructuring of the Mining Inspectorate supervising the activity, on 1 February 2022, together with the amendment of Government Decree No. 145/2012 (3 July 2012) on the geological storage of carbon dioxide, Decree No. 29/2022 (I. 31.) SZTFH on the detailed rules for geological structures suitable for the storage of carbon dioxide of energy and industrial origin entered into force.

*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.*

The website of the authority responsible for authorising the geological storage of carbon dioxide referred to in point 3 contains information on the subject and how to contact them. The authority will provide all necessary information to interested parties in response to enquiries about the subject.

*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.*

Dr. Kálmán Czakó, kalman.czako@sztfh.hu, +36 30/799-5009 ; Mining Officer

Supervisory Authority of Regulatory Affairs, Directorate of Mining Supervision, Mining and coordination department

In 2013, an assessment of the geological structures potentially suitable for the geological storage of carbon dioxide and their capacity was carried out, but has not been updated since then. Under national legislation, storage capacities must be reassessed every 5 years.

*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 no such questions.

### **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 specific limitations have been introduced by the national authorities. Since the implementation of the Geological Storage Directive (May 2012) the assessment of potential storage sites has been following the principles of the main potential assessment activities in Europe. The potential sites should have adequate depth and should be sealed by impermeable strata. They should have porosity and permeability suitable for CO<sub>2</sub> injection.

*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?*

In Hungary depleted hydrocarbon reservoirs and saline formations have been selected as potential CO<sub>2</sub> storage sites. Detailed analysis of depleted hydrocarbon reservoirs has been carried out since 2012. As a result, 12 sites with over 100 Mt potential cumulative CO<sub>2</sub> storage capacity have been identified. Detailed storage capacity estimation, and risk assessment has been carried out and is continuously renewed for the selected sites. Furthermore, new potential reservoirs are under consideration.

Saline formations represent an even larger potential than depleted hydrocarbon reservoirs, however, the level of knowledge is significantly lower, resulting in higher risk in their case. The overall estimated storage capacity is over 1000 Mt. However, further research is essential to increase the knowledge about these formations.

*7. Are there information about environmental and/or health risks relating to the geological storage of CO<sub>2</sub> in accordance with the applicable Community legislation available to the public?*

Public data has been provided for CO<sub>2</sub>Stop project (CO<sub>2</sub> Storage Potential in Europe - Project No. ENER/C1/154-2011-SI2.611598) [https://setis.ec.europa.eu/european-co2-storage-database\\_en](https://setis.ec.europa.eu/european-co2-storage-database_en)

The GIS data provided for the CO<sub>2</sub>Stop project is available at the website of the European Geological Data Infrastructure (EGDI) <https://www.europe-geology.eu/>

### **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?*

There is no such area.

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

No exploration permit has been issued.

### **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.*

Up to now no permission request has been submitted. However, the MOL Hungarian Oil and Gas Public Limited Company and the energy utility (MVM) are intensively exploring the opportunity to apply CC(U)S technologies to reduce their emissions.

### **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<sub>2</sub> (Article 21)*

As no storage request has yet been received, there was no need to take action, but the Authority and the Government are working to ensure that this is done in line with European legislation.

*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?*

The Authority has no information on this.

*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)*

It was not necessary to take such action.

#### **Transboundary cooperation (Article 24)**

*14. Is there any experience or plans for transboundary CO<sub>2</sub> transport or CO<sub>2</sub> storage sites or storage complexes? Please provide details on the status of preparations, if any.*

The Croatian Hydrocarbons Agency, the Croatian Transmission System Operator (Plinacro) and the Hungarian Transmission System Operator (FGSZ) have established a working group to transport CO<sub>2</sub> from Croatian-Hungarian border sites and store it permanently in Croatian storage facilities, which will allow long-term CO<sub>2</sub> storage for emitters in Croatia and Hungary. The project is in the preparation phase.

#### **CO<sub>2</sub> 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/EU4? In case of negative assessment, have the combustion plants set aside suitable space irrespectively? Please provide detail for each permit according to Annex 2.*

No combustion plants with a rated electrical output of 300 MW or more has been licensed since the last implementation report.

#### **Further questions**

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

Currently there are no other national projects supporting CCS demonstration. However we have information about increased activities within MOL and MVM, who are intensely exploring their CC(U)S opportunities to reduce their emissions and to provide storage as a service. Recently, a document assembled by the CCS4CEE project was published summarizing the future plans of stakeholders in Central Eastern Europe about CCS deployment ([https://ccs4cee.eu/wp-content/uploads/2023/04/Hungary\\_final\\_summary\\_ENG.pdf](https://ccs4cee.eu/wp-content/uploads/2023/04/Hungary_final_summary_ENG.pdf)).

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

The Government has no information on this.

*18. Are there other plans to support further appraisal of CO<sub>2</sub> storage sites, to prepare for CO<sub>2</sub> transport infrastructure or for CO<sub>2</sub> hubs and clusters?*

The change in the EU regulatory environment and the subsequent strong increase in quota prices under the emissions trading system and the changes confirmed the raison d'être of carbon dioxide capture technologies, so we also want to assess the possibilities of the practical application of these technologies, promoting their introduction and then their spread.

During the review of the National Energy Strategy and the National Energy and Climate Plan, we pay special attention to exploring the potential inherent in CCS technology.