

# **Report on Implementation of Directive 2009/31/EC on the geological storage of carbon dioxide, Iceland.**

Prepared by the Ministry for the Environment, Energy and Climate and the Environment Agency in Iceland.

## **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?**

Directive 2009/31/EC was first implemented into Icelandic legislation in 2015.

When the Directive was implemented in 2015, only exploration and research projects regarding storage of CO<sub>2</sub> were permitted but the storage of CO<sub>2</sub> on industrial scale was prohibited. With an amendment to legislation No. 7/1998 on Hygiene and Pollution Prevention in 2021, the storage of CO<sub>2</sub> on an industrial scale was permitted on the whole of Iceland. The legislation has been amended once and currently there is an amendment bill being processed at the national parliament to further ensure that there are no discrepancies between the Icelandic legislation and the Directive.

In December 2022, Regulation No 1430/2022 on the Storage of Carbon Dioxide Underground was published in the National Gazette.

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

Applicants can send in questions via email and request meetings if they have specific problems in mind, or questions about e.g., the composition of the CO<sub>2</sub> stream. According to the Icelandic EIA legislation, Act No 111/2021 on Environmental Impact Assessment of Operations and Plans, there is also the option of pre-consultation (Icelandic: forsamráð) as a part of the EIA process. Before the EIA process begins the operator can request a meeting with the National Planning Agency, the Environment Agency of Iceland, and other relevant authorities. The purpose of the pre-consultation is to review and coordinate the EIA process going forward to increase the quality and efficiency of a project.

### **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.**

The Environment Agency of Iceland, email: [ust@ust.is](mailto:ust@ust.is), phone: +354 5912000.

### **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)?**

It would be helpful to discuss the composition of the CO<sub>2</sub> stream and what it can entail with other competent authorities, especially in relation to other trace elements in the CO<sub>2</sub> source. The Directive is written in such a way that it is very focused on combustion plants and their emissions. It would be interesting to hear from other countries if they are having similar problems in relation with defining the composition of the CO<sub>2</sub> stream. If not, it would be interesting to know what the main obstacles in the permitting process are. It would also be useful to discuss the effects of the permitting procedure on the Water Framework Directive and the Groundwater Directive and how those directives are affecting and or restraining the permitting processes in other countries. Lastly it would be helpful to get information on how ETS/ESR units are accounted for through the CCS Directive.

## **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 such areas have been determined in Iceland. The Icelandic government does not intend to determine areas intended for the storage of CO<sub>2</sub> beforehand. The Environment Agency of Iceland will assess each application individually based on available geological information from the applicant and can require further information and research of the area in question, if needed.

### **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?**

See answer to question no 5. Most of Iceland is made of basalt rock which is well suited for geological storage of CO<sub>2</sub> when applying the Carbfix method.

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

In accordance with the Icelandic legislation Act No. 111/2021 on Environmental Impact Assessment of Operations and Plans where the EIA is implemented into Icelandic law and Act No. 7/1998 on Hygiene and Pollution Prevention, the storage of CO<sub>2</sub> is required to go through an EIA before permits for storage are allocated. The EIA reports, draft permits and all permits that the competent authority (The Environment Agency of Iceland) issues are publicly available online.

## **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?**

No areas have been pre-defined as suitable storage sites. Necessary exploration or assessments of the storage capacity of formations must be done beforehand to determine the suitability of the storage complex area. Having said that, no exploration permits have been allocated.

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

No exploration permits have been allocated.

## **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, provide an approximate timing.**

The competent authority (The Environment Agency of Iceland) has received one application for a storage permit to this date. The relevant application materials have been made available to the EFTA Surveillance Authority and are being reviewed by the Authority. The EFTA Surveillance Authority is waiting for the National Planning Agency's opinion on the EIA of the project which is in process and is yet to be made public.

The Ministry and the Agency are aware of an ongoing plan to apply for a storage permit for another project called Coda Terminal. The project has begun its first steps in the EIA process, and it is foreseen that the storage permit application will be handed in to the Environment Agency, in early 2024.

## **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)**

According to article 33 h. of the act no 7/1998 and article 20 of regulation no 1430/2022, the storage operators are obligated to allow third parties access to transport networks and/or storage sites. The access shall be granted in a fair and transparent manner.

**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?**

No request of access has been put forward as there are still no active storage sites or transport networks in Iceland.

**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)**

See answer to question 12.

## **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 Coda Terminal project, mentioned above in an answer to point 10, will be a cross-border carbon transport and storage hub in Iceland. CO<sub>2</sub>, captured at industrial sites in North Europe, will be transported to the Terminal where it will be unloaded into onshore tanks for temporary storage. The CO<sub>2</sub> will then be pumped into a network of nearby injection wells where it will be dissolved in water before being injected into the fresh basaltic bedrock where it will be permanently stored.

**15. How many combustion plants with a rated electrical output of 300MW 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.**

In Iceland there are no combustion plants in operation that are regulated under Directive 2010/75/EU for combustion plants.

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

The Government of Iceland, Reykjavík Energy on behalf of Carbfix and the heavy industry in Iceland signed a Declaration of Intent in 2019. In the declaration it is stated that it would be explored whether the Carbfix method for the storage of CO<sub>2</sub> could be applied to the emissions from heavy industry in Iceland. There are currently no other national programs in place.

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

No, there are no other research projects ongoing that may have relevance to the Directive.

**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?**

No, there are no other plans in place.