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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on Implementation of Directive 2009/31/EC on the Geological Storage of Carbon Dioxide

1. INTRODUCTION

Directive 2009/31/EC of the European Parliament and of the Council on the geological storage of carbon dioxide[1] (so-called Carbon Capture and Storage Directive – hereinafter 'CCS Directive') establishes a legal framework for the environmentally safe geological storage of carbon dioxide (CO_2). The CCS Directive aims to ensure that there is no significant risk of leakage of CO_2 or damage to health or the environment, and to prevent any adverse effects on the security of the transport network or storage sites.

This report constitutes the second CCS Directive implementation report covering the period May 2013 - April 2016. It covers the progress since the first implementation report.[2] A report on review of the CCS Directive was adopted in 2015[3]. This report is based on the reports submitted by Member States. Twenty six Member States[4] submitted reports in time to be considered in this report.

2. GENERAL PROGRESS IN TRANSPOSITION

All Member States have notified transposition measures to the Commission. To date, the Commission considers that the legislation of sixteen Member States is fully conforming to the Directive. Exchanges are still ongoing with the remaining Member States to bring their legislation fully in line with the requirements of the Directive.

3. SPECIFIC IMPLEMENTATION ISSUES IN THE MEMBER STATES

3.1. Selection of storage sites

Compared to the previous reporting period, Member States have generally not determined any new areas from which storage sites may or may not be selected. Only Poland has determined one storage area. Five German federal states are preparing decisions or have passed laws limiting or banning underground storage of CO_2, including for research purposes.

Those Member States that intend to allow storage on their territory have to carry out assessments of the available storage capacity. New assessments of the available storage have been carried out, are ongoing or planned in Bulgaria, Germany, Greece, Hungary, Italy, the Netherlands, Sweden and the United Kingdom.

More detailed information is provided in the Annex to the report.

3.2. Exploration and storage permits applications

Applications for exploration permits have been filed only in Spain. One project applied for a storage permit in the UK: the Peterhead CCS project. The Commission delivered an opinion

[1] Directive 2009/31/EC of the European Parliament and of the Council on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006, OJ L 140, 5.6.2009, p. 114-135

[2] COM(2014)99, Report from the Commission to the European Parliament and the Council on the Implementation of Directive 2009/31/EC on the geological storage of carbon dioxide

[3] COM(2015)576, Report on review of Directive 2009/31/EC on the geological storage of carbon dioxide, Annex accompanying the document Report from the Commission to the European Parliament and the Council Climate action progress report

[4] Austria, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the Czech Republic, the United Kingdom

on the draft storage permit in January 2016[5]. An application for a storage permit is under evaluation in Italy and an application is expected to be submitted for the Q16 Maas field as part of the ROAD project in the Netherlands.

3.3. Feasibility for CCS retrofitting for new large scale combustions plants

The CCS Directive requires that when applying for licence, operators assess the technical and economic feasibility of carbon capture, transport and storage. If the assessment is positive, space on the installation site must be set aside for the equipment necessary to capture and compress CO_2.

Assessments were carried out in Belgium (one), the Czech Republic (one), Germany (five), Romania (six), Poland (ten), Slovenia (one) and Spain (five). Assessments found that CCS is not economically feasible. Some further difficulties were found for some of the plants – no suitable storage sites in Belgium and Estonia or technical incompatibility with the flexible operation of a plant.

However, even if the assessments were not positive, many of the permitted power plants are setting aside land for the equipment to remove and compress CO_2 and are designed in such a way that CCS can be connected later on without major layout modifications, e.g. in the Czech Republic, Estonia, Germany and Poland.

The legislation in the United Kingdom goes beyond the requirements of the Directive and grants permissions to power plants only if they can prove that they will meet the technical and economic feasibility conditions during the life-time of the power station. Permits for 14 power plants have been approved based on guidance provided by the authorities[6]. The economic assessments show that it is economically feasible that CCS could be retrofitted to the proposed power plants given an appropriate carbon price.

3.4. Research projects with relevance to the CCS Directive

Even if demonstration and commercialisation of CCS has not advanced during the reporting period, a number of Member States, as well as the EU, continue to support or plan to further support research activities to improve the technology and knowledge of underground storage of CO_2 – Belgium, the Czech Republic, Germany, France, Hungary, Malta, Lithuania, the Netherlands, Slovakia, Spain and the UK. Some countries (e.g. Estonia, the Netherlands, Slovakia, Poland) report exploring alternatives to geological storage of CO_2 through various CO_2 utilisation options. See Annex for further details.

3.5. CO_2 transport and storage networks

There are two active CCS regional networks working to develop common, transboundary solutions for the transport and geological storage of CO_2 - the North Sea Basin Task Force with the UK, the Netherlands, Norway, Germany and Belgium and the Baltic Sea Region CCS network with Estonia, Germany, Finland, Norway and Sweden. These networks may facilitate the transparent and non-discriminatory access to CO_2 transport networks and CO_2 storage sites for operators in Member States where there is no possibility of underground storage. Belgium, the Netherlands, the UK and France are also exploring possibilities of developing hubs for industrial and power CO_2 emissions in the areas of the ports of Amsterdam and Rotterdam, Grangemouth, Tees Valley and Fos-sur-Mer.

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[5] C(2016)152, Commission Opinion on a draft permit for the permanent storage of carbon dioxide in the depleted Goldeneye gas condensate field located in blocks 14/28b, 14/29a, 14/29e, 20/3b, 20/4b and 20/4c on the United Kingdom Continental Shelf

[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf and www.gov.scot/resource/doc/917/0095764.doc

4. CONCLUSIONS

The provisions of the CCS Directive have been consistently applied across the reporting period in the EU Member States.

Some Member States have advanced in their assessments of storage capacity but further and more detailed assessments will be needed should there be CCS projects starting.

Despite the lack of positive assessment for technical and economic feasibility for CCS retrofitting, newly built power plants are generally going beyond the legal requirements and are setting aside land should the conditions change in the future.