

Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 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 (Text with EEA relevance)

CHAPTER 1

SUBJECT MATTER, SCOPE AND DEFINITIONS

Article 1

Subject matter and purpose

1 This Directive establishes a legal framework for the environmentally safe geological storage of carbon dioxide (CO₂) to contribute to the fight against climate change.

2 The purpose of environmentally safe geological storage of CO₂ is permanent containment of CO₂ in such a way as to prevent and, where this is not possible, eliminate as far as possible negative effects and any risk to the environment and human health.

Article 2

Scope and prohibition

1 This Directive shall apply to the geological storage of CO₂ in the territory of the Member States, their exclusive economic zones and on their continental shelves within the meaning of the United Nations Convention on the Law of the Sea (Unclos).

2 This Directive shall not apply to geological storage of CO₂, with a total intended storage below 100 kilotonnes, undertaken for research, development or testing of new products and processes.

3 The storage of CO₂ in a storage site with a storage complex extending beyond the area referred to in paragraph 1 shall not be permitted.

4 The storage of CO₂ in the water column shall not be permitted.

Article 3

Definitions

For the purposes of this Directive the following definitions shall apply:

1. 'geological storage of CO₂' means injection accompanied by storage of CO₂ streams in underground geological formations;
2. 'water column' means the vertically continuous mass of water from the surface to the bottom sediments of a water body;

3. 'storage site' means a defined volume area within a geological formation used for the geological storage of CO₂ and associated surface and injection facilities;
4. 'geological formation' means a lithostratigraphical subdivision within which distinct rock layers can be found and mapped;
5. 'leakage' means any release of CO₂ from the storage complex;
6. 'storage complex' means the storage site and surrounding geological domain which can have an effect on overall storage integrity and security; that is, secondary containment formations;
7. 'hydraulic unit' means a hydraulically connected pore space where pressure communication can be measured by technical means and which is bordered by flow barriers, such as faults, salt domes, lithological boundaries, or by the wedging out or outcropping of the formation;
8. 'exploration' means the assessment of potential storage complexes for the purposes of geologically storing CO₂ by means of activities intruding into the subsurface such as drilling to obtain geological information about strata in the potential storage complex and, as appropriate, carrying out injection tests in order to characterise the storage site;
9. 'exploration permit' means a written and reasoned decision authorising exploration, and specifying the conditions under which it may take place, issued by the competent authority pursuant to the requirements of this Directive;
10. 'operator' means any natural or legal, private or public person who operates or controls the storage site or to whom decisive economic power over the technical functioning of the storage site has been delegated according to national legislation;
11. 'storage permit' means a written and reasoned decision or decisions authorising the geological storage of CO₂ in a storage site by the operator, and specifying the conditions under which it may take place, issued by the competent authority pursuant to the requirements of this Directive;
12. 'substantial change' means any change not provided for in the storage permit, which may have significant effects on the environment or human health;
13. 'CO₂ stream' means a flow of substances that results from CO₂ capture processes;
14. 'waste' means the substances defined as waste in Article 1(1)(a) of Directive 2006/12/EC;
15. 'CO₂ plume' means the dispersing volume of CO₂ in the geological formation;
16. 'migration' means the movement of CO₂ within the storage complex;
17. 'significant irregularity' means any irregularity in the injection or storage operations or in the condition of the storage complex itself, which implies the risk of a leakage or risk to the environment or human health;
18. 'significant risk' means a combination of a probability of occurrence of damage and a magnitude of damage that cannot be disregarded without calling into question the purpose of this Directive for the storage site concerned;
19. 'corrective measures' means any measures taken to correct significant irregularities or to close leakages in order to prevent or stop the release of CO₂ from the storage complex;

20. 'closure' of a storage site means the definitive cessation of CO₂ injection into that storage site;
21. 'post-closure' means the period after the closure of a storage site, including the period after the transfer of responsibility to the competent authority;
22. 'transport network' means the network of pipelines, including associated booster stations, for the transport of CO₂ to the storage site.

CHAPTER 2

SELECTION OF STORAGE SITES AND EXPLORATION PERMITS

Article 4

Selection of storage sites

1 Member States shall retain the right to determine the areas from which storage sites may be selected pursuant to the requirements of this Directive. This includes the right of Member States not to allow for any storage in parts or in the whole of their territory.

2 Member States which intend to allow geological storage of CO₂ in their territory shall undertake an assessment of the storage capacity available in parts or in the whole of their territory, including by allowing exploration pursuant to Article 5. The Commission may organise an exchange of information and best practices between those Member States, in the context of the exchange of information provided for in Article 27.

3 The suitability of a geological formation for use as a storage site shall be determined through a characterisation and assessment of the potential storage complex and surrounding area pursuant to the criteria specified in Annex I.

4 A geological formation shall only be selected as a storage site, if under the proposed conditions of use there is no significant risk of leakage, and if no significant environmental or health risks exist.

Article 5

Exploration permits

1 Where Member States determine that exploration is required to generate the information necessary for selection of storage sites pursuant to Article 4, they shall ensure that no such exploration takes place without an exploration permit.

Where appropriate, monitoring of injection tests may be included in the exploration permit.

2 Member States shall ensure that the procedures for the granting of exploration permits are open to all entities possessing the necessary capacities and that the permits are granted or refused on the basis of objective, published and non-discriminatory criteria.

3 The duration of a permit shall not exceed the period necessary to carry out the exploration for which it is granted. However, the Member States may extend the validity of the permit where the stipulated duration is insufficient to complete the exploration concerned and

where the exploration has been performed in accordance with the permit. Exploration permits shall be granted in respect of a limited volume area.

4 The holder of an exploration permit shall have the sole right to explore the potential CO₂ storage complex. Member States shall ensure that no conflicting uses of the complex are permitted during the period of validity of the permit.

CHAPTER 3

STORAGE PERMITS

Article 6

Storage permits

1 Member States shall ensure that no storage site is operated without a storage permit, that there shall be only one operator for each storage site, and that no conflicting uses are permitted on the site.

2 Member States shall ensure that the procedures for the granting of storage permits are open to all entities possessing the necessary capacities and that the permits are granted on the basis of objective, published and transparent criteria.

3 Without prejudice to the requirements of this Directive, priority for the granting of a storage permit for a particular site shall be given to the holder of the exploration permit for that site, provided that the exploration of that site is completed, that any condition set in the exploration permit has been complied with, and that the application for a storage permit is made during the period of validity of the exploration permit. Member States shall ensure that no conflicting uses of the complex are allowed during the permit procedure.

Article 7

Applications for storage permits

Applications to the competent authority for storage permits shall include at least the following information:

1. the name and address of the potential operator;
2. proof of the technical competence of the potential operator;
3. the characterisation of the storage site and storage complex and an assessment of the expected security of the storage pursuant to Article 4(3) and (4);
4. the total quantity of CO₂ to be injected and stored, as well as the prospective sources and transport methods, the composition of CO₂ streams, the injection rates and pressures, and the location of injection facilities;
5. a description of measures to prevent significant irregularities;
6. a proposed monitoring plan pursuant to Article 13(2);
7. a proposed corrective measures plan pursuant to Article 16(2);

8. a proposed provisional post-closure plan pursuant to Article 17(3);
9. the information provided pursuant to Article 5 of Directive 85/337/EEC;
10. proof that the financial security or other equivalent provision as required under Article 19 will be valid and effective before commencement of the injection.

Article 8

Conditions for storage permits

The competent authority shall issue a storage permit only if the following conditions are met:

1. the competent authority, on the basis of the application submitted pursuant to Article 7 and of any other relevant information, is satisfied that:
 - (a) all relevant requirements of this Directive and of other relevant Community legislation are met;
 - (b) the operator is financially sound and technically competent and reliable to operate and control the site and that professional and technical development and training of the operator and all staff are provided;
 - (c) in the case of more than one storage site in the same hydraulic unit, the potential pressure interactions are such that both sites can simultaneously meet the requirements of this Directive;
2. the competent authority has considered any opinion of the Commission on the draft permit issued pursuant to Article 10.

Article 9

Contents of storage permits

The permit shall contain at least the following:

1. the name and address of the operator;
2. the precise location and delimitation of the storage site and storage complex, and information concerning the hydraulic unit;
3. the requirements for storage operation, the total quantity of CO₂ authorised to be geologically stored, the reservoir pressure limits, and the maximum injection rates and pressures;
4. the requirements for the composition of the CO₂ stream and the CO₂ stream acceptance procedure pursuant to Article 12, and, if necessary, further requirements for injection and storage in particular to prevent significant irregularities;
5. the approved monitoring plan, the obligation to implement the plan and requirements for updating it pursuant to Article 13 as well as the reporting requirements pursuant to Article 14;
6. the requirement to notify the competent authority in the event of leakages or significant irregularities, the approved corrective measures plan and the obligation to implement

- the corrective measures plan in the event of leakages or significant irregularities pursuant to Article 16;
7. the conditions for closure and the approved provisional post-closure plan referred to in Article 17;
 8. any provisions on changes, review, updating and withdrawal of the storage permit pursuant to Article 11;
 9. the requirement to establish and maintain the financial security or any other equivalent pursuant to Article 19.

Article 10

Commission review of draft storage permits

1 Member States shall make the permit applications available to the Commission within one month after receipt. They shall also make available other related material that shall be taken into account by the competent authority when it seeks to make a decision on the award of a storage permit. They shall inform the Commission of all draft storage permits and any other material taken into consideration for the adoption of the draft decision. Within four months after receipt of the draft storage permit, the Commission may issue a non-binding opinion on it. If the Commission decides not to issue an opinion, it shall inform the Member State within one month of submission of the draft permit and state its reasons.

2 The competent authority shall notify the final decision to the Commission, and where it departs from the Commission opinion it shall state its reasons.

Article 11

Changes, review, update and withdrawal of storage permits

1 The operator shall inform the competent authority of any changes planned in the operation of the storage site, including changes concerning the operator. Where appropriate, the competent authority shall update the storage permit or the permit conditions.

2 Member States shall ensure that no substantial change is implemented without a new or updated storage permit issued in accordance with this Directive. Annex II, point 13, first indent of Directive 85/337/EEC shall apply in such cases.

3 The competent authority shall review and where necessary update or, as a last resort, withdraw the storage permit:

- a if it has been notified or made aware of any leakages or significant irregularities pursuant to Article 16(1);
- b if the reports submitted pursuant to Article 14 or the environmental inspections carried out pursuant to Article 15 show non-compliance with permit conditions or risks of leakages or significant irregularities;
- c if it is aware of any other failure by the operator to meet the permit conditions;
- d if it appears necessary on the basis of the latest scientific findings and technological progress; or
- e without prejudice to points (a) to (d), five years after issuing the permit and every 10 years thereafter.

4 After a permit has been withdrawn pursuant to paragraph 3, the competent authority shall either issue a new storage permit or close the storage site pursuant to Article 17(1)(c). Until a new storage permit has been issued, the competent authority shall temporarily take over all legal obligations relating to acceptance criteria where the competent authority decides to continue CO₂ injections, monitoring and corrective measures pursuant to the requirements laid down in this Directive, the surrender of allowances in cases of leakage pursuant to Directive 2003/87/EC and preventive and remedial action pursuant to Articles 5(1) and 6(1) of Directive 2004/35/EC. The competent authority shall recover any costs incurred from the former operator, including by drawing on the financial security referred to in Article 19. In case of closure of the storage site pursuant to Article 17(1)(c), Article 17(4) shall apply.

CHAPTER 4

OPERATION, CLOSURE AND POST-CLOSURE OBLIGATIONS

Article 12

CO₂ stream acceptance criteria and procedure

1 A CO₂ stream shall consist overwhelmingly of carbon dioxide. To this end, no waste or other matter may be added for the purpose of disposing of that waste or other matter. However, a CO₂ stream may contain incidental associated substances from the source, capture or injection process and trace substances added to assist in monitoring and verifying CO₂ migration. Concentrations of all incidental and added substances shall be below levels that would:

- a adversely affect the integrity of the storage site or the relevant transport infrastructure;
- b pose a significant risk to the environment or human health; or
- c breach the requirements of applicable Community legislation.

2 The Commission shall, if appropriate, adopt guidelines to help identify the conditions applicable on a case by case basis for respecting the criteria laid down in paragraph 1.

3 Member States shall ensure that the operator:

- a accepts and injects CO₂ streams only if an analysis of the composition, including corrosive substances, of the streams and a risk assessment have been carried out, and if the risk assessment has shown that the contamination levels are in line with the conditions referred to in paragraph 1;
- b keeps a register of the quantities and properties of the CO₂ streams delivered and injected, including the composition of those streams.

Article 13

Monitoring

1 Member States shall ensure that the operator carries out monitoring of the injection facilities, the storage complex (including where possible the CO₂ plume), and where appropriate the surrounding environment for the purpose of:

- a comparison between the actual and modelled behaviour of CO₂ and formation water, in the storage site;
- b detecting significant irregularities;

- c detecting migration of CO₂;
- d detecting leakage of CO₂;
- e detecting significant adverse effects for the surrounding environment, including in particular on drinking water, for human populations, or for users of the surrounding biosphere;
- f assessing the effectiveness of any corrective measures taken pursuant to Article 16;
- g updating the assessment of the safety and integrity of the storage complex in the short and long term, including the assessment of whether the stored CO₂ will be completely and permanently contained.

2 The monitoring shall be based on a monitoring plan designed by the operator pursuant to the requirements laid down in Annex II, including details on the monitoring in accordance with the guidelines established pursuant to Article 14 and Article 23(2) of Directive 2003/87/EC, submitted to and approved by the competent authority pursuant to Article 7(6) and Article 9(5) of this Directive. The plan shall be updated pursuant to the requirements laid down in Annex II and in any case every five years to take account of changes to the assessed risk of leakage, changes to the assessed risks to the environment and human health, new scientific knowledge, and improvements in best available technology. Updated plans shall be re-submitted for approval to the competent authority.

Article 14

Reporting by the operator

At a frequency to be determined by the competent authority, and in any event at least once a year, the operator shall submit to the competent authority:

1. all results of the monitoring pursuant to Article 13 in the reporting period, including information on the monitoring technology employed;
2. the quantities and properties of the CO₂ streams delivered and injected, including composition of those streams, in the reporting period, registered pursuant to Article 12(3)(b);
3. proof of the putting in place and maintenance of the financial security pursuant to Article 19 and Article 9(9);
4. any other information the competent authority considers relevant for the purposes of assessing compliance with storage permit conditions and increasing the knowledge of CO₂ behaviour in the storage site.

Article 15

Inspections

1 Member States shall ensure that the competent authorities organise a system of routine and non-routine inspections of all storage complexes within the scope of this Directive for the purposes of checking and promoting compliance with the requirements of the Directive and of monitoring the effects on the environment and on human health.

2 Inspections should include activities such as visits of the surface installations, including the injection facilities, assessing the injection and monitoring operations carried out by the operator, and checking all relevant records kept by the operator.

3 Routine inspections shall be carried out at least once a year until three years after closure and every five years until transfer of responsibility to the competent authority has occurred. They shall examine the relevant injection and monitoring facilities as well as the full range of relevant effects from the storage complex on the environment and on human health.

4 Non-routine inspections shall be carried out:

- a if the competent authority has been notified or made aware of leakages or significant irregularities pursuant to Article 16(1);
- b if the reports pursuant to Article 14 have shown insufficient compliance with the permit conditions;
- c to investigate serious complaints related to the environment or human health;
- d in other situations where the competent authority considers this appropriate.

5 Following each inspection, the competent authority shall prepare a report on the results of the inspection. The report shall evaluate compliance with the requirements of this Directive and indicate whether or not further action is necessary. The report shall be communicated to the operator concerned and shall be publicly available in accordance with relevant Community legislation within two months of the inspection.

Article 16

Measures in case of leakages or significant irregularities

1 Member States shall ensure that in the event of leakages or significant irregularities, the operator immediately notifies the competent authority, and takes the necessary corrective measures, including measures related to the protection of human health. In cases of leakages and significant irregularities which imply the risk of leakage, the operator shall also notify the competent authority pursuant to Directive 2003/87/EC.

2 The corrective measures referred to in paragraph 1 shall be taken as a minimum on the basis of a corrective measures plan submitted to and approved by the competent authority pursuant to Article 7(7) and Article 9(6).

3 The competent authority may at any time require the operator to take the necessary corrective measures, as well as measures related to the protection of human health. These may be additional to or different from those laid out in the corrective measures plan. The competent authority may also at any time take corrective measures itself.

4 If the operator fails to take the necessary corrective measures, the competent authority shall take the necessary corrective measures itself.

5 The competent authority shall recover the costs incurred in relation to the measures referred to in paragraphs 3 and 4 from the operator, including by drawing on the financial security pursuant to Article 19.

Article 17

Closure and post-closure obligations

1 A storage site shall be closed:

- a if the relevant conditions stated in the permit have been met;
- b at the substantiated request of the operator, after authorisation of the competent authority; or

- c if the competent authority so decides after the withdrawal of a storage permit pursuant to Article 11(3).

2 After a storage site has been closed pursuant to points (a) or (b) of paragraph 1, the operator remains responsible for monitoring, reporting and corrective measures, pursuant to the requirements laid down in this Directive, and for all obligations relating to the surrender of allowances in case of leakages pursuant to Directive 2003/87/EC and preventive and remedial actions pursuant to Articles 5 to 8 of Directive 2004/35/EC until the responsibility for the storage site is transferred to the competent authority pursuant to Article 18(1) to (5) of this Directive. The operator shall also be responsible for sealing the storage site and removing the injection facilities.

3 The obligations referred to in paragraph 2 shall be fulfilled on the basis of a post-closure plan designed by the operator based on best practice and in accordance with the requirements laid down in Annex II. A provisional post-closure plan shall be submitted to and approved by the competent authority pursuant to Article 7(8) and Article 9(7). Prior to the closure of a storage site pursuant to points (a) or (b) of paragraph 1 of this Article, the provisional post-closure plan shall be:

- a updated as necessary, taking account of risk analysis, best practice and technological improvements;
- b submitted to the competent authority for its approval; and
- c approved by the competent authority as the definitive post-closure plan.

4 After a storage site has been closed pursuant to paragraph 1(c), the competent authority shall be responsible for monitoring and corrective measures pursuant to the requirements laid down in this Directive and for all obligations relating to the surrender of allowances in case of leakages pursuant to Directive 2003/87/EC and preventive and remedial action pursuant to Articles 5(1) and 6(1) of Directive 2004/35/EC. The post-closure requirements pursuant to this Directive shall be fulfilled by the competent authority on the basis of the provisional post-closure plan referred to in paragraph 3 of this Article, which shall be updated as necessary.

5 The competent authority shall recover from the operator the costs incurred in relation to the measures referred to in paragraph 4, including by drawing on the financial security pursuant to Article 19.

Article 18

Transfer of responsibility

1 Where a storage site has been closed pursuant to points (a) or (b) of Article 17(1), all legal obligations relating to monitoring and corrective measures pursuant to the requirements laid down in this Directive, the surrender of allowances in the event of leakages pursuant to Directive 2003/87/EC and preventive and remedial action pursuant to Articles 5(1) and 6(1) of Directive 2004/35/EC, shall be transferred to the competent authority on its own initiative or upon request from the operator, if the following conditions are met:

- a all available evidence indicates that the stored CO₂ will be completely and permanently contained;
- b a minimum period, to be determined by the competent authority has elapsed. This minimum period shall be no shorter than 20 years, unless the competent authority is convinced that the criterion referred to in point (a) is complied with before the end of that period;
- c the financial obligations referred to in Article 20 have been fulfilled;

d the site has been sealed and the injection facilities have been removed.

2 The operator shall prepare a report documenting that the condition referred to in paragraph 1(a) has been met and shall submit it to the competent authority for the latter to approve the transfer of responsibility. This report shall demonstrate, at least:

- a the conformity of the actual behaviour of the injected CO₂ with the modelled behaviour;
- b the absence of any detectable leakage;
- c that the storage site is evolving towards a situation of long-term stability.

The Commission may adopt guidelines on the assessment of the matters referred to in points (a), (b) and (c) of the first subparagraph, highlighting therein any implications for the technical criteria relevant to the determination of the minimum periods referred to in paragraph 1(b).

3 Where the competent authority is satisfied that the conditions referred to in points (a) and (b) of paragraph 1 are met, it shall prepare a draft decision of approval of the transfer of responsibility. The draft decision shall specify the method for determining that the conditions referred to in paragraph 1(d) have been met as well as any updated requirements for the sealing of the storage site and for the removal of injection facilities.

If the competent authority considers that the conditions referred to in points (a) and (b) of paragraph 1 are not met, it shall inform the operator of its reasons.

4 Member States shall make the reports referred to in paragraph 2 available to the Commission within one month after receipt. They shall also make available other related material that shall be taken into account by the competent authority when it prepares a draft decision of approval on the transfer of responsibility. They shall inform the Commission of all draft decisions of approval prepared by the competent authority pursuant to paragraph 3, including any other material taken into consideration for arriving at its conclusion. Within four months after receipt of the draft decision of approval, the Commission may issue a non-binding opinion on it. If the Commission decides not to issue an opinion, it shall inform the Member State within one month of submission of the draft decision of approval and state its reasons.

5 Where the competent authority is satisfied that the conditions referred to in points (a) to (d) of paragraph 1 are complied with, it shall adopt the final decision and notify that decision to the operator. The competent authority shall also notify the final decision to the Commission, and where it departs from the Commission opinion it shall state its reasons.

6 After the transfer of responsibility, routine inspections provided for in Article 15(3) shall cease and monitoring may be reduced to a level which allows for detection of leakages or significant irregularities. If any leakages or significant irregularities are detected, monitoring shall be intensified as required to assess the scale of the problem and the effectiveness of corrective measures.

7 In cases where there has been fault on the part of the operator, including cases of deficient data, concealment of relevant information, negligence, wilful deceit or a failure to exercise due diligence, the competent authority shall recover from the former operator the costs incurred after the transfer of responsibility has taken place. Without prejudice to Article 20, there shall be no further recovery of costs after the transfer of responsibility.

8 Where a storage site has been closed pursuant to Article 17(1)(c), transfer of responsibility shall be deemed to take place if and when all available evidence indicates that the stored CO₂ will be completely and permanently contained, and after the site has been sealed and the injection facilities have been removed.

Article 19

Financial security

1 Member States shall ensure that proof that adequate provisions can be established, by way of financial security or any other equivalent, on the basis of arrangements to be decided by the Member States, is presented by the potential operator as part of the application for a storage permit. This is in order to ensure that all obligations arising under the permit issued pursuant to this Directive, including closure and post-closure requirements, as well as any obligations arising from inclusion of the storage site under Directive 2003/87/EC, can be met. This financial security shall be valid and effective before commencement of injection.

2 The financial security shall be periodically adjusted to take account of changes to the assessed risk of leakage and the estimated costs of all obligations arising under the permit issued pursuant to this Directive as well as any obligations arising from inclusion of the storage site under Directive 2003/87/EC.

3 The financial security or any other equivalent referred to in paragraph 1 shall remain valid and effective:

- a after a storage site has been closed pursuant to points (a) or (b) of Article 17(1), until the responsibility for the storage site is transferred to the competent authority pursuant to Article 18(1) to (5);
- b after the withdrawal of a storage permit pursuant to Article 11(3):
 - (i) until a new storage permit has been issued;
 - (ii) where the site is closed pursuant to Article 17(1)(c), until the transfer of responsibility pursuant to Article 18(8), provided the financial obligations referred to in Article 20 have been fulfilled.

Article 20

Financial mechanism

1 Member States shall ensure that the operator, on the basis of arrangements to be decided by the Member States, makes a financial contribution available to the competent authority before the transfer of responsibility pursuant to Article 18 has taken place. The contribution from the operator shall take into account those criteria referred to in Annex I and elements relating to the history of storing CO₂ relevant to determining the post-transfer obligations, and cover at least the anticipated cost of monitoring for a period of 30 years. This financial contribution may be used to cover the costs borne by the competent authority after the transfer of responsibility to ensure that the CO₂ is completely and permanently contained in geological storage sites after the transfer of responsibility.

2 The Commission may adopt guidelines for the estimation of the costs referred to in paragraph 1 to be developed in consultation with Member States with a view to ensuring transparency and predictability for operators.

CHAPTER 5

THIRD-PARTY ACCESS*Article 21***Access to transport network and storage sites**

1 Member States shall take the necessary measures to ensure that potential users are able to obtain access to transport networks and to storage sites for the purposes of geological storage of the produced and captured CO₂, in accordance with paragraphs 2, 3 and 4.

2 The access referred to in paragraph 1 shall be provided in a transparent and non-discriminatory manner determined by the Member State. The Member State shall apply the objectives of fair and open access, taking into account:

- a the storage capacity which is or can reasonably be made available within the areas determined under Article 4, and the transport capacity which is or can reasonably be made available;
- b the proportion of its CO₂ reduction obligations pursuant to international legal instruments and to Community legislation that it intends to meet through capture and geological storage of CO₂;
- c the need to refuse access where there is an incompatibility of technical specifications which cannot be reasonably overcome;
- d the need to respect the duly substantiated reasonable needs of the owner or operator of the storage site or of the transport network and the interests of all other users of the storage or the network or relevant processing or handling facilities who may be affected.

3 Transport network operators and operators of storage sites may refuse access on the grounds of lack of capacity. Duly substantiated reasons shall be given for any refusal.

4 Member States shall take the measures necessary 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, provided this would not negatively impact on the environmental security of transport and geological storage of CO₂.

*Article 22***Dispute settlement**

1 Member States shall ensure that they have in place dispute settlement arrangements, including an authority independent of the parties with access to all relevant information, to enable disputes relating to access to transport networks and to storage sites to be settled expeditiously, taking into account the criteria referred to in Article 21(2) and the number of parties which may be involved in negotiating such access.

2 In the event of cross-border disputes, the dispute settlement arrangements of the Member State having jurisdiction over the transport network or the storage site to which access has been refused shall be applied. Where, in cross-border disputes, more than one Member State covers the transport network or storage site concerned, the Member States concerned shall consult with a view to ensuring that this Directive is applied consistently.

CHAPTER 6

GENERAL PROVISIONS

Article 23

Competent authority

Member States shall establish or designate the competent authority or authorities responsible for fulfilling the duties established under this Directive. Where more than one competent authority is designated, Member States shall establish arrangements for the coordination of the work of those authorities undertaken pursuant to this Directive.

Article 24

Transboundary cooperation

In cases of transboundary transport of CO₂, transboundary storage sites or transboundary storage complexes, the competent authorities of the Member States concerned shall jointly meet the requirements of this Directive and of other relevant Community legislation.

Article 25

Registers

- 1 The competent authority shall establish and maintain:
 - a a register of the storage permits granted; and
 - b a permanent register of all closed storage sites and surrounding storage complexes, including maps and sections of their spatial extent and available information relevant for assessing that the stored CO₂ will be completely and permanently contained.
- 2 The registers referred to in paragraph 1 shall be taken into consideration by the competent national authorities in relevant planning procedures and when permitting any activity that could affect or be affected by the geological storage of CO₂ in the registered storage sites.

Article 26

Information to the public

Member States shall make available to the public environmental information relating to the geological storage of CO₂ in accordance with the applicable Community legislation.

Article 27

Reporting by Member States

- 1 Every three years the Member States shall submit to the Commission a report on the implementation of this Directive, including the register referred to in Article 25(1)(b). The first report shall be sent to the Commission by 30 June 2011. The report shall be drawn up on the

basis of a questionnaire or outline drafted by the Commission in accordance with the procedure referred to in Article 6 of Directive 91/692/EEC. The questionnaire or outline shall be sent to Member States at least six months before the deadline for the submission of the report.

2 The Commission shall organise an exchange of information between the competent authorities of the Member States concerning the implementation of this Directive.

Article 28

Penalties

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. The Member States shall notify those provisions to the Commission by 25 June 2011 and shall notify it without delay of any subsequent amendment affecting them.

Article 29

Amendments of Annexes

Measures may be adopted to amend the Annexes. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 30(2).

Article 30

Committee procedure

1 The Commission shall be assisted by the Climate Change Committee.

2 Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

CHAPTER 7

AMENDMENTS

Article 31

Amendment of Directive 85/337/EEC

Directive 85/337/EEC is hereby amended as follows:

1. Annex I shall be amended as follows:

(a) point 16 shall be replaced by the following:

16. Pipelines with a diameter of more than 800 mm and a length of more than 40 km:

- for the transport of gas, oil, chemicals, and,
 - for the transport of carbon dioxide (CO₂) streams for the purposes of geological storage, including associated booster stations.;
- (b) the following points shall be added:
23. Storage sites pursuant to Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾.
24. Installations for the capture of CO₂ streams for the purposes of geological storage pursuant to Directive 2009/31/EC from installations covered by this Annex, or where the total yearly capture of CO₂ is 1,5 megatonnes or more.;
2. Annex II shall be amended as follows:
- (a) the following point shall be added to point 3:
- (j) Installations for the capture of CO₂ streams for the purposes of geological storage pursuant to Directive 2009/31/EC from installations not covered by Annex I to this Directive.;
- (b) point (i) of point 10 shall be replaced by the following:
- (i) Oil and gas pipeline installations and pipelines for the transport of CO₂ streams for the purposes of geological storage (projects not included in Annex I).

*Article 32***Amendment of Directive 2000/60/EC**

In Article 11(3)(j) of Directive 2000/60/EC, the following indent shall be inserted after the third indent:

- injection of carbon dioxide streams for storage purposes into geological formations which for natural reasons are permanently unsuitable for other purposes, provided that such injection is made in accordance with Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾ or excluded from the scope of that Directive pursuant to its Article 2(2);

*Article 33***Amendment of Directive 2001/80/EC**

In Directive 2001/80/EC, the following Article shall be inserted:

Article 9a

1 Member States shall ensure that operators of all combustion plants with a rated electrical output of 300 megawatts or more for which the original construction licence or, in the absence of such a procedure, the original operating licence is granted after the entry into force of Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾, have assessed whether the following conditions are met:

- suitable storage sites are available,
- transport facilities are technically and economically feasible,
- it is technically and economically feasible to retrofit for CO₂ capture.

2 If the conditions in paragraph 1 are met, the competent authority shall ensure that suitable space on the installation site for the equipment necessary to capture and compress CO₂ is set aside. The competent authority shall determine whether the conditions are met on the basis of the assessment referred to in paragraph 1 and other available information, particularly concerning the protection of the environment and human health.

Article 34

Amendment of Directive 2004/35/EC

In Annex III to Directive 2004/35/EC, the following paragraph shall be added:

14. The operation of storage sites pursuant to Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾;

Article 35

Amendment of Directive 2006/12/EC

Article 2(1)(a) of Directive 2006/12/EC shall be replaced by the following:

- (a) gaseous effluents emitted into the atmosphere and carbon dioxide captured and transported for the purposes of geological storage and geologically stored in accordance with Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾ or excluded from the scope of that Directive pursuant to its Article 2(2);

Article 36

Amendment of Regulation (EC) No 1013/2006

In Article 1(3) of Regulation (EC) No 1013/2006, the following point shall be added:

- (h) shipments of CO₂ for the purposes of geological storage in accordance with Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾;

Article 37

Amendment of Directive 2008/1/EC

In Annex I to Directive 2008/1/EC, the following point shall be added:

- 6.9. Capture of CO₂ streams from installations covered by this Directive for the purposes of geological storage pursuant to Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide⁽¹⁾.

CHAPTER 8

FINAL PROVISIONS

Article 38

Review

1 The Commission shall transmit to the European Parliament and to the Council a report on the implementation of this Directive within nine months of receiving the reports referred to in Article 27.

2 In the report transmitted by 31 March 2015, the Commission shall assess in particular, on the basis of experience with the implementation of this Directive, in light of the experience with CCS and taking into account technical progress and the most recent scientific knowledge:

- whether permanent containment of CO₂ in such a way as to prevent and reduce as far as possible negative effects on the environment and any resulting risk to human health and the environmental and human safety of CCS has been sufficiently demonstrated,
- whether the procedures regarding the Commission's reviews of the draft storage permits, referred to in Article 10, and the draft decisions on transfer of responsibility, referred to in Article 18, are still required,
- experience with the provisions on CO₂ stream acceptance criteria and procedure referred to in Article 12,
- experience with the provisions on third-party access referred to in Articles 21 and 22 and with the provisions on transboundary cooperation pursuant to Article 24,
- the provisions applicable to combustion plants with a rated electrical output of 300 megawatts or more referred to in Article 9a of Directive 2001/80/EC,
- prospects for geological storage of CO₂ in third countries,
- further development and updating of the criteria referred to in Annex I and Annex II,
- experience with incentives for applying CCS on installations combusting biomass,
- the need for further regulation on environmental risks related to CO₂ transport,

and shall present a proposal for revision of the Directive if appropriate.

3 Where permanent containment of CO₂ in such way as to prevent and, where this is not possible, eliminate as far as possible negative effects and any risk to the environment and human health, and the environmental and human safety of CCS have been sufficiently demonstrated, as well as its economic feasibility, the review shall examine whether it is needed and practicable to establish a mandatory requirement for emission performance standards for new electricity-generating large combustion installations pursuant to Article 9a of Directive 2001/80/EC.

Article 39

Transposition and transitional measures

1 Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 25 June 2011. They shall forthwith communicate to the Commission the text of those measures.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official

publication. The methods of making such reference shall be laid down by Member States.

2 Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

3 Member States shall ensure that the following storage sites falling within the scope of this Directive are operated in accordance with the requirements of this Directive by 25 June 2012:

- a storage sites used in accordance with existing legislation on 25 June 2009;
- b storage sites authorised in accordance with such legislation before or on 25 June 2009, provided that the sites are used not later than one year after that date.

Articles 4 and 5, Article 7(3), Article 8(2) and Article 10 shall not apply in these cases.

Article 40

Entry into force

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 41

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 23 April 2009.

For the European Parliament

The President

H.-G. PÖTTERING

For the Council

The President

P. NEČAS

Status: This is the original version (as it was originally adopted).

(1) [OJ L 140, 5.6.2009, p. 114.](#)';