

## **EXPLANATORY MEMORANDUM TO**

### **The Storage of Carbon Dioxide (Licensing etc.) Regulations (Northern Ireland) 2015**

**2015 No. 387**

#### **1. Introduction**

- 1.1 This Explanatory Memorandum has been prepared by the Department of Enterprise, Trade and Investment (“the Department”) to accompany the Statutory Rule (details above) which is laid before the Northern Ireland Assembly.
- 1.2 The Statutory Rule is made under the powers conferred by section 2(2) of the European Communities Act 1972, as read with paragraph 1A of Schedule 2 to that Act, and is subject to the negative resolution procedure.

#### **2. Purpose**

- 2.1 The purpose of the Regulations is to implement Articles 2.3, 2.4, 3, 4.3, 4.4, 5.1, 5.2, 5.3 and Chapter 3 (storage permits) (except Articles 18 and 20) of Council Directive 2009/31/EC on the geological storage of carbon dioxide (“the Directive”).
- 2.2 The Regulations implement those provisions of the Directive which deal with storage permits, including: (1) the granting of permits for the operation of carbon dioxide storage sites (and related exploration activities); (2) the obligations of the storage operator (for example, in relation to monitoring, reporting and corrective measures) whilst storage activities are taking place; (3) the operator’s continuing obligations for a period after the closure of the storage site; and (4) the inspection of carbon dioxide storage complexes.

#### **3. The Directive and this Statutory Rule**

- 3.1 The purpose of the Directive is to establish a legal framework for the environmentally safe geological storage of carbon dioxide. Such a framework had been established in the UK by Part 1, Chapter 3, of the Energy Act 2008, which extends to Northern Ireland. The Act provided for a licensing regime governing the permanent storage of carbon dioxide offshore, including the UK territorial waters adjacent to Northern Ireland.
- 3.2 In February 2011, the Northern Ireland Executive approved the extension of this regime to onshore areas of Northern Ireland, including its internal waters, by means of UK-wide Regulations (The Carbon Dioxide Storage (Amendment of the Energy Act 2008 etc.) Regulations 2011 (S.I. 2011/2453)) made by the Secretary of State for Energy and Climate Change under section 2(2) of the European Communities Act 1972. The Department is the licensing authority in respect of activities relating to carbon dioxide storage onshore in Northern

Ireland, including its internal waters. The Statutory Rule provides for storage permits to be granted under such licences.

#### **4. Consultation**

- 4.1. The Department has consulted on draft Regulations to implement Articles 2.3, 2.4, 3, 4.3, 4.4, 5.1, 5.2, 5.3 and Chapter 3 (storage permits) (except Articles 18 and 20) of the Directive in Northern Ireland. There were just 5 responses to the consultation all of which offered no comment.

#### **5. Equality Impact**

- 5.1. In accordance with its obligations under section 75 of the Northern Ireland Act 1998, the Department has conducted a screening exercise on the provisions of the Statutory Rule and has concluded that an equality impact assessment is not necessary.

#### **6. Regulatory Impact**

- 6.1. The Department has no plans to make any part of Northern Ireland available for carbon dioxide storage. It also believes that the prospect of anyone wishing to construct a carbon dioxide pipe-line is remote. A Regulatory Impact Assessment has not been prepared for the Statutory Rule because it has no general impact on business, charities or voluntary bodies.

#### **7. Financial Implications**

- 7.1. The Regulations have no financial implications apart from the impact on administrative resources within the Department to implement the Directive.

#### **8. Section 24 of the Northern Ireland Act 1998**

- 8.1. The Department believes that the Regulations are compatible with section 24 of the Northern Ireland Act 1998.

#### **9. EU Implications**

- 9.1. The Regulations implement Articles 2.3, 2.4, 3, 4.3, 4.4, 5.1, 5.2, 5.3 and Chapter 3 (except Articles 18 and 20) of the Directive. The relationship between the individual regulations and the provisions of the Directive is set out in the attached Transposition Note.
- 9.2. The Statutory Rule is made under section 2(2) of the European Communities Act 1972. Statutory Instrument 2008/301 designates any Northern Ireland Department in relation to the environment.

#### **10. Parity or Replicatory Measure**

- 10.1. The Statutory Rule extends to Northern Ireland including the UK internal waters adjacent to Northern Ireland. The Department of Energy and Climate

Change implemented these provisions of the Directive on 1<sup>st</sup> October 2010 and 23<sup>rd</sup> February 2012 by means of Statutory Instruments 2010/2221 and 2012/461 respectively. These instruments apply to storage permits in Great Britain, including the UK territorial seas adjacent to Northern Ireland. They also apply to storage permits in any area beyond the territorial seas that has been designated as a Gas Importation and Storage Zone under section 1(5) of the Energy Act 2008.

## **11. Additional Information**

11.1. Not applicable.

DIRECTIVE 2009/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE  
COUNCIL ON THE GEOLOGICAL STORAGE OF CARBON DIOXIDE

TRANSPOSITION NOTE

FOR

THE STORAGE OF CARBON DIOXIDE (LICENSING etc.) REGULATIONS  
(NORTHERN IRELAND) 2015

Article	Result to be achieved	Implementation by the Storage of Carbon Dioxide (Licensing etc.) Regulations (Northern Ireland) 2015 and Energy Act 2008.
2	<b>Scope and prohibition</b>	
2.1	Directive applies to storage in territory of the member states.	By section 17(3) and (3A) of the Energy Act 2008 and the definition of “licence” in Reg. 2(3), the Regulations apply to carbon dioxide storage in Northern Ireland, including the UK internal waters adjacent to Northern Ireland.
2.3	Storage complex must not extend beyond area defined in Article 2.1.	Reg. 8(1)(b).
2.4	No storage of carbon dioxide in the water column.	Reg. 3.
3	<b>Definitions</b>	Reg. 2(2)(b) and (4).
4	<b>Selection of storage sites</b>	
4.1	Member States retain the right to determine the areas from which storage sites may be selected.	To be implemented administratively (by decision to make areas available for licence applications).
4.2	They must undertake an assessment of storage capacity.  The Commission may organise an exchange of information.	Implemented administratively.  No transposition necessary.
4.3	Assessment of storage site must be done pursuant to the criteria in Annex I.	Reg. 8(1)(a).
4.4	A formation may only be selected as storage site if there is no significant risk of leakage	Reg. 8(1)(c).

	and no significant environment or health risks.	
5	<b>Exploration permits</b>	
5.1	Where intrusive exploration is determined to be necessary, it must not take place without a permit.  This may include monitoring of test injections	Section 17(2)(c) of the Energy Act 2008 and Regs. 4 and 5(1).  Reg. 2(2)(b) and (4): definition of “exploration”.
5.2	Application procedures to be open to all on the basis of objective, published and non-discriminatory criteria.	Reg. 4, with administrative implementation.
5.3	Duration of exploration permit to be limited, but under certain conditions may be extended.  Granted in respect of “limited volume area”.	Reg. 5(2) and (3).  Co-ordinates will be specified in the licence.
5.4	Holder has exclusive rights.  No conflicting uses of storage complex to be permitted	Exclusivity will be guaranteed by: (1) the rights granted by The Crown Estate, and (2) the fact that concurrent licences will not be granted.  Will not be granted in conflict with other kinds of licence (e.g. petroleum licence).
6	<b>Storage permits</b>	
6.1	No storage site to be operated without a permit;  there is to be only one operator per site;  no conflicting uses of site to be permitted.	Section 17(2)(a) of the Energy Act 2008 combined with provisions of the licence requiring that no storage be carried on without a further consent (see the definition of “storage permit” in Reg. 2(3)).  Reg. 9(1)(a).  Other kinds of licence or consents will not be granted in conflict with storage operations.
6.2	Application procedures to be open to all on the basis of objective, published and transparent criteria.	Regs. 4 and 7.

6.3	<p>Priority to be given to holder of exploration permit, subject to certain conditions.</p> <p>No conflicting uses of complex to be permitted during permit application procedure.</p>	<p>Reg. 7(1) and (2).</p> <p>Conflicting licences or consents will not be granted.</p>
7	<p><b>Applications for storage permits</b></p> <p>Applications must contain:</p> <p>7.1 name and address of potential operator;</p> <p>7.2 proof of technical competence of potential operator;</p> <p>7.3 characterisation of site and complex and assessment of security of storage;</p> <p>7.4 total quantity of CO<sub>2</sub> to be injected and stored, prospective sources and transport methods, composition of streams, injection rates and pressures, location of injection facilities;</p> <p>7.5 measures to prevent significant irregularities;</p> <p>7.6 proposed monitoring plan;</p> <p>7.7 proposed corrective measures plan;</p> <p>7.8 proposed provisional post-closure plan;</p> <p>7.9 information required by Directive 2011/92/EU;</p> <p>7.10 proof of financial security.</p>	<p>Reg. 7(3)(a).</p> <p>Reg. 7(3)(b), with 8(3)(a).</p> <p>Reg. 7(3)(b), with 8(1)(a) and (c).</p> <p>Reg. 7(3)(c)(i) and (iii) to (vi).</p> <p>Reg. 7(3)(d).</p> <p>Reg. 7(3)(e).</p> <p>Reg. 7(3)(f).</p> <p>Reg. 7(3)(g).</p> <p>Reg. 7(3)(h).</p> <p>Reg. 7(3)(i).</p>
8	<p><b>Conditions for storage permits</b></p>	

8.1	Storage permit may only be issued if the authority is satisfied that:	
(a)	all relevant requirements of Directive and other relevant Community legislation are met;	No separate transposition necessary.
(b)	operator is financially sound, technically competent and reliable, and development and training is provided;	Reg. 8(1)(d) and (3).
(c)	interactions within same hydraulic unit are taken into account.	Reg. 8(4).
8.2	Permit may only be issued if the authority has considered any Commission opinion on the draft permit.	Reg. 8(7)(b).
9	<b>Contents of storage permits</b>  Permit must contain at least:	
9.1	name and address of the operator;	Reg. 9(1)(a).
9.2	precise location and delimitation of the storage site and storage complex, and information on the hydraulic unit;	Reg. 9(1)(b).
9.3	operational requirements, quantity of CO <sub>2</sub> authorised to be stored, reservoir pressure limits, maximum injection rates and pressures;	Reg. 9(1)(c).
9.4 (with Art. 12)	composition of CO <sub>2</sub> stream and acceptance procedure; further injection and storage requirements if necessary;	Reg. 9(1)(d) and (e) and Schedule 2, para. 1.
9.5 (with Arts. 13 and 14)	approved monitoring plan; obligation to implement and update it;	Reg. 8(5) and Reg. 9(1)(g) and Schedule 2, para. 2.

<p>9.6 (with Art. 16)</p> <p>9.7 (with Art. 17)</p> <p>9.8 (with Art. 11)</p> <p>9.9 (with Art. 19)</p>	<p>reporting requirements.</p> <p>Obligation to notify authority in the case of leakages or significant irregularities;</p> <p>the approved corrective measures plan and obligation to implement plan in the event of leakages or significant irregularities;</p> <p>conditions for closure and approved provisional post-closure plan;</p> <p>any provisions on changes, review, updating and withdrawal of permit.</p> <p>Requirement for financial security.</p>	<p>Reg. 9(1)(h) and Schedule 2, para 3(1) to (5).</p> <p>Reg. 9(1)(h) and Schedule 2, para. 3(6) and (7).</p> <p>Regs. 9(1)(j) and 8(6), and Schedule 2, para. 6.</p> <p>Reg. 9(1)(k), Reg. 6 and Schedule 1, para 1.</p> <p>Regs. 9(1)(l) and 13(2).</p> <p>Regs. 9(1)(i) and 11 and Schedule 2, paras. 4 and 5.</p> <p>Reg. 9(1)(m) and Schedule 2, para. 7.</p>
<p>10</p> <p>10.1</p> <p>10.2</p>	<p><b>Commission review of draft storage permits</b></p> <p>Procedure for obtaining Commission’s opinion on draft storage permits.</p> <p>Obligation of authority to notify final decision to Commission, and state reasons where it departs from the opinion.</p>	<p>Regs. 7(4) and 8(7).</p> <p>Implemented administratively.</p>
<p>11</p> <p>11.1</p> <p>11.2</p>	<p><b>Changes, review, update and withdrawal of storage permits</b></p> <p>Operator to notify authority of changes; where appropriate the authority must update the permit or permit conditions.</p> <p>No substantial change may be implemented without a new or updated storage permit.</p>	<p>Schedule 2, para 4; Reg. 11(1).</p> <p>Reg. 11(2).</p>



<p>11.3</p> <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>(e)</p>	<p>The authority must review and where necessary update or (as a last resort) withdraw the storage permit if:</p> <p>it is notified or made aware of leakages or significant irregularities under Art. 16(1);</p> <p>reports or inspections show non-compliance with permit conditions or risks of leakage or significant irregularities;</p> <p>it is aware of any other failure to meet permit conditions;</p> <p>it appears necessary on the basis of scientific findings and technological progress;</p> <p>in any event after 5 years of issue of permit and then every ten years.</p>	<p>Reg. 11(5)(a), (6) and (7).</p> <p>Reg. 11(5)(a) and (b), (6) and (7).</p> <p>Reg. 11(5)(b), (6) and (7).</p> <p>Reg. 11(5)(c), (6) and (7).</p> <p>Reg. 11(6)(b) and (7).</p>
<p>11.4</p>	<p>Consequences of withdrawal of storage permit:</p> <p>authority must issue new permit or close the storage site.</p> <p>Until new permit issued, authority must assume responsibility for injection criteria, monitoring and corrective measures, and liabilities under Arts 5(1) and 6(1) of the Environmental Liability Directive and under ETS Directive.</p> <p>If site is closed, Article 17(4) applies.</p> <p>Costs of the above to recovered from former operator, including by drawing on financial security.</p>	<p>Reg. 12(2) and (3).</p> <p>Reg. 12(4).</p> <p>Reg. 12(5).</p> <p>Reg. 12(6) and Schedule 2, para. 7(5).</p>

12	<b>CO2 stream acceptance criteria and procedure</b>	
12.1	Stream to consist overwhelmingly of CO2:  hence no waste to be added,  but may contain incidental and added trace substances below the levels that would:  (a) adversely affect integrity of the site or transport infrastructure;  (b) pose a significant risk to environment or health;  (c) breach applicable legislative requirements.	Reg. 9(2) and Schedule 2, para 1(1).  Reg. 9(2) and Schedule 2, para 1(2)(a).  Reg. 9(2) and Schedule 2, para 1(2)(b) and (3).  Reg. 9(2) and Schedule 2, para 1(2)(b)(i).  Reg 9(2) and Schedule 2, para 1(2)(b)(ii).  Reg. 9(2) and Schedule 2, para 1(2)(b).
12.2	Commission shall if appropriate adopt guidelines.	No implementation necessary.
12.3	The operator must:  (a) carry out an analysis and risk assessment of the CO2 stream; and  (b) keep a register of the quantities and properties of the streams delivered and injected.	Reg. 9(2) and Schedule 2, para 1(4).  Reg. 9(2) and Schedule 2, para 1(5).
13	<b>Monitoring</b>	
13.1	Operator to monitor injection facilities, storage complex (including where possible the CO2 plume) and where appropriate the surrounding environment, for the purposes listed in (a) to (g).	Reg. 9(2) and Schedule 2, para 2(1) and (2).  Reg. 9(2) and Schedule 2, para 2(3)(a) to (g).
13.2	Monitoring to be based on a monitoring plan drawn up in	Reg. 7(3)(e) and Reg. 9(2) and Schedule 2, para 2(4).

	<p>accordance with Annex II and with guidelines under the ETS Directive, and approved by the authority under Arts. 7(6) and 9(5).</p> <p>Plan to be updated in accordance with Annex II and in any case every 5 years, and re-submitted for approval.</p>	<p>Reg. 9(2) and Schedule 2, para 2(5) to (8).</p>
14	<p><b>Reporting by the operator</b></p> <p>At a frequency to be determined by authority (but in any event at least once a year) the operator must submit the following information:</p> <p>results of monitoring, including technology employed, in the reporting period;</p> <p>quantities and properties of the CO<sub>2</sub> streams;</p> <p>proof of financial security;</p> <p>any other information the authority considers relevant.</p>	<p>Reg. 9(2) and Schedule 2, para 3(1) to (4).</p> <p>Reg. 9(2) and Schedule 2, para 3(1) and (5)(a).</p> <p>Reg. 9(2) and Schedule 2, para 3(1) and (5)(b).</p> <p>Reg. 9(2) and Schedule 2, para 3(1) and (5)(c).</p> <p>Reg. 9(2) and Schedule 2, para 3(1) and (5)(d).</p>
15	<p><b>Inspections</b></p>	
15.1	<p>Competent authorities to organise a system of routine and non-routine inspections of all storage complexes.</p>	<p>Regs. 15 and 16 and Schedule 3.</p>
15.2	<p>Inspections to include visits to surface installations, assessment of injection and monitoring operations and checking records.</p>	<p>Reg. 16 and Schedule 3.</p>
15.3	<p>Routine inspections required annually until three years after closure and every five years until transfer of responsibility to the competent authority.</p>	<p>Reg. 15(1) and (2).</p>

15.4	Circumstances in which non-routine inspections are to be carried out.	Reg. 15(3) and (4).
15.5	Reports on inspection results.	Reg. 17.
16	<b>Measures in case of leakages or significant irregularities</b>	
16.1	Operator's obligation to immediately notify authority in such cases  and take necessary corrective measures, including measures related to human health;  in leakage or risk of leakage cases, must also notify the Emissions Trading Scheme authority.	Reg. 9(2) and Schedule 2, para 3(6).  Reg. 9(2) and Schedule 2, para 6(1).  Reg. 9(2) and Schedule 2, para 3(7).
16.2	Measures to be taken on the basis of a corrective measures plan approved by the authority.	Reg. 9(2) and Schedule 2, para 6(2), and Reg. 8(6).
16.3	The authority may require corrective and health protection measures to be taken at any time.  These may be different or additional to those in the corrective measures plan.  It may at any time take such measures itself.	Reg. 10(2)(a).  Reg. 10(3).  Reg. 10(4)(a).
16.4	If the operator fails to take the measures, the authority must do so itself.	Reg. 10(2)(b).
16.5	The authority's costs must be recovered from the operator.	Reg. 10(4)(b) and (5).
17	<b>Closure and post-closure obligations</b>	

17.1	Circumstances in which site is to be closed:	
(a)	if relevant permit conditions have been met;	Reg. 6 and Schedule 1, para 1(1).
(b)	on application by the operator;	Reg. 6 and Schedule 1, para 1(2)(a) and (3).
(c)	if the authority decides following withdrawal of storage permit.	Reg. 12(2) and (3).
17.2	Until liability is transferred to the authority, the operator remains responsible (in cases (a) and (b) above) for:	Reg. 6 and Schedule 1, para 3(1).
	monitoring, reporting and corrective measures;	Reg. 6 and Schedule 1, para 3(1).
	liabilities under Arts 5 to 8 of the Environmental Liability Directive and relating to the surrender of allowances under the ETS Directive.	Reg. 14.
	The operator is also responsible for sealing site and removing the injection facilities.	Reg. 6 and Schedule 1, para 3(3).
17.3	Those obligations must be fulfilled on basis of a post-closure plan in accordance with Annex II.	Reg. 6 and Schedule 1, para 1(4) and para 3(2).
	For that purpose, the provisional post-closure plan must (prior to closure) be:	
(a)	updated in the light of risk analysis, best practice and technological improvements;	Reg. 6 and Schedule 1, para 2.
(b)	submitted for approval; and	Reg. 6 and Schedule 1, para 2(1).
(c)	meet the approval of the authority.	Reg. 13(3).
17.4	If site has been closed following withdrawal of the	Reg. 12(5).

17.5	<p>permit, authority must assume responsibility for monitoring and corrective measures, and liabilities under Arts 5(1) and 6(1) of the Environmental Liability Directive and relating to the surrender of allowances under the ETS Directive.</p> <p>Post-closure responsibilities to be fulfilled by the authority on the basis of the provisional post-closure plan, updated as necessary.</p> <p>Costs of the above to be recovered from operator, including by drawing on financial security.</p>	<p>Reg. 13(4).</p> <p>Reg. 12(6) and Reg. 9(2) and Schedule 2, para 7(5)(b).</p>
19	<p><b>Financial security</b></p> <p>19.1 Proof of financial security or equivalent to be presented as part of permit application.</p> <p>This is to ensure that all obligations under the permit and the ETS Directive can be met.</p> <p>The security must be valid and effective before commencement of injection</p> <p>19.2 Security is to be periodically adjusted in the light of risks and estimated costs.</p> <p>19.3 Security is to remain in force:</p> <p>(a) after the site is closed and until transfer of responsibility;</p> <p>(b) after withdrawal of the permit, until a new permit is issued or (where the site is closed) until transfer of responsibility,</p>	<p>Reg. 7(3)(i).</p> <p>Reg. 9(2) and Schedule 2, para 7(1)(a) and (5).</p> <p>Reg. 9(2) and Schedule 2, para 7(1)(b).</p> <p>Reg. 9(2) and Schedule 2, para 7(3) to (5).</p> <p>Reg. 9(2) and Schedule 2, para 7(1)(c).</p> <p>Reg. 9(2) and Schedule 2, para 7(2)(a) and (b).</p>

	provided that the financial contribution obligation under Art. 20 is fulfilled	Reg. 9(2) and Schedule 2, para 7(6).
Annex I	Criteria for assessment of storage complex	Reg. 8(1)(a).
Annex II	Criteria for monitoring plan, and post-closure monitoring	Reg. 7(3)(e) and Schedule 2, para 2(5). Reg. 13(1)(b).