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SCOTTISH STATUTORY INSTRUMENTS

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**2011 No. 24**

**ENVIRONMENTAL PROTECTION**

**The Storage of Carbon Dioxide (Licensing  
etc.) (Scotland) Regulations 2011**

<i>Made</i>	- - - -	<i>20th January 2011</i>
<i>Laid before the Scottish Parliament</i>	- - - -	<i>24th January 2011</i>
<i>Coming into force</i>	- -	<i>1st April 2011</i>

The Scottish Ministers make the following Regulations in exercise of the powers conferred by sections 19, 21 and 104(2) of the Energy Act 2008<sup>(1)</sup> and section 2(2) of the European Communities Act 1972<sup>(2)</sup> and all other powers enabling them to do so.

These Regulations make provision for a purpose mentioned in section 2(2) of the European Communities Act 1972 and it appears to the Scottish Ministers that it is expedient for references to EU instruments, or provisions of those instruments, in these Regulations to be construed as references to those instruments or provisions as amended from time to time.

*General*

**Citation, commencement and interpretation**

1.—(1) These Regulations may be cited as the Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011 and come into force on 1st April 2011.

(2) In these Regulations—

- (a) any reference to a numbered section is to that section of the Energy Act 2008; and
- (b) any reference to an EU instrument, or a provision of such an instrument, is a reference to that instrument or provision as amended from time to time.

(3) In these Regulations—

“appraisal term” has the meaning given by regulation 3(2)(a);

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(1) 2008 c.32. In accordance with section 18(2) the licensing authority is the Scottish Ministers.

(2) 1972 c.68. Section 2(2) was amended by the Scotland Act 1998 (c.46) (“the 1998 Act”), Schedule 8, paragraph 15(3); the Legislative and Regulatory Reform Act 2006 (c.51), section 27(1) and the European Union (Amendment) Act 2008 (c.7), Schedule (1), paragraph 1. The functions conferred upon a Minister of the Crown under section 2(2) of the European Communities Act 1972, insofar as within devolved competence, were transferred to the Scottish Ministers by virtue of section 53 of the 1998 Act.

“the authority” means the Scottish Ministers as licensing authority under section 18(2);

“CO<sub>2</sub>” means carbon dioxide;

“corrective measures plan” has the meaning given by regulation 7(6);

“the Directive” means 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](#)(3);

“the Environmental Liability Directive” means Directive [2004/35/EC](#) of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage(4);

“the ETS Directive” means Directive [2003/87/EC](#) of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive [96/61/EC](#)(5);

“financial security” includes—

- (a) a charge over a bank account or any other asset;
- (b) a deposit of money;
- (c) a performance bond or guarantee;
- (d) an insurance policy; and
- (e) a letter of credit;

“general exploration licence” means a licence granted by the Secretary of State under section 18(1) which authorises only activities within section 17(2)(c) and the establishment or maintenance of an installation for the purpose of such activities and which—

- (a) does not grant to the holder the sole right to carry out exploration of a controlled place, and
- (b) is issued in combination with—
  - (i) a licence under section 4 to explore any controlled place with a view to carrying on activities within section 2(3)(a) to (d) and establish or maintain an installation in a controlled place for the purposes of such exploration, or
  - (ii) a licence under section 3 of the Petroleum Act 1998(6) to search for petroleum in any area below the low water line or in the seaward areas as defined by regulation 3(1)(a) of the Petroleum (Production) (Seaward Areas) Regulations 1988(7);

“injection” means injection of carbon dioxide into a storage site;

“legislation” means legislation in force in the United Kingdom (whether passed, or made, before, after or at the same time as the commencement of these Regulations);

“licence” means a licence (other than a general exploration licence or a Scottish exploration licence) granted by the authority under section 18(1) in respect of activities within section 17(2) (a) to (d) (and “licence holder” is to be construed accordingly);

“licensed area” means the area within which activities are authorised under a licence;

(3) O.J. No. L 140, 5.6.2009, p.114.

(4) O.J. No. L 143, 30.4.2004, p.56; amended by European Parliament and Council Directives [2006/21/EC](#) (O.J. No. L 102, 11.4.2006, p.15) and [2009/31/EC](#).

(5) O.J. No. L 275, 25.10.2003, p.32; amended by European Parliament and Council Directives [2004/101/EC](#) (O.J. No. L 338, 13.11.2004, p.18), [2008/101/EC](#) (O.J. No. L 8, 13.1.2009, p.3) and [2009/29/EC](#) (O.J. No. L 140, 5.6.2009, p.63).

(6) 1998 c.17 to which there are amendments not relevant to these Regulations.

(7) S.I. 1988/1213; amended by S.I. 1992/2378; there are other amendments that are not relevant to these Regulations.

“monitoring plan” has the meaning given by regulation 7(5);

“operator” means the person who carries on or controls activities within the meaning of section 17(2) at a storage site;

“post-closure plan” has the meaning given by regulation 12(3) or (4);

“provisional post-closure plan” has the meaning given by regulation 12(2);

“Scottish exploration licence” means a licence granted by the Scottish Ministers under section 18(1) which authorises only activities within section 17(2)(c) and the establishment or maintenance of an installation for the purpose of such activities and which does not grant to the holder the sole right to carry out exploration;

“storage permit” means a consent granted under a licence, authorising the use of a place as a storage site; and

“target date” has the meaning given by regulation 10(3)(a).

(4) The following expressions have the meanings given by Article 3 of the Directive (and cognate expressions are to be construed accordingly)—

“closure” of a storage site;

“corrective measures”;

“CO<sub>2</sub> plume”;

“CO<sub>2</sub> stream”;

“exploration”;

“hydraulic unit”;

“leakage”;

“migration”;

“significant irregularity”;

“significant risk”;

“storage complex”;

“storage site”;

“substantial change”;

“waste”;

“water column”.

## *Licences*

### **Limitations on licensing powers**

2. A licence may not be granted for the purpose of storing CO<sub>2</sub> in the water column.

### **Applications for a licence**

- 3.—(1) An application for a licence must be—
  - (a) made in writing and sent to the Scottish Ministers; and
  - (b) accompanied by a fee of £2,100.
- (2) The application must include either—

- (a) a request that the licence specify a period (the “appraisal term”) during which the licence holder has the right to carry out exploration in the licensed area before making an application for a storage permit; or
- (b) if no such period is requested, a statement of the reasons why such exploration is not considered necessary.

### **Appraisal or initial term**

- 4.—(1) The appraisal term must not exceed the period necessary to—
- (a) generate the information necessary to select a storage site; and
  - (b) prepare the documents required for an application under regulation 6.
- (2) Subject to paragraph (1), the appraisal term may be extended by the authority at the written request of the licence holder, under the conditions laid down by the licence, provided that the authority is satisfied that any exploration so far carried out has been in accordance with the licence.
- (3) If the licence does not include an appraisal term—
- (a) the licence must specify a period as the “initial term” for the purpose of paragraph (4) (a); but
  - (b) that initial term may be extended under the conditions laid down by the licence.
- (4) The licence expires—
- (a) at the end of the appraisal term or the initial term, if no application for a storage permit is made before that date; or
  - (b) if an application for a storage permit is refused, when that refusal is notified to the licence holder.

### **Content of a licence**

5. A licence must include the provisions in Schedule 1.

### *Storage permits*

### **Applications for a storage permit**

- 6.—(1) The licence holder may, under the conditions laid down by the licence, apply to the authority for a storage permit in respect of a place within the licensed area.
- (2) Where the licence includes an appraisal term, the application may not be made unless any necessary exploration has been completed, and the terms and conditions of the licence have been complied with.
- (3) An application must contain—
- (a) the name and address of the proposed operator;
  - (b) evidence of the matters referred to in regulation 7(1);
  - (c) in relation to the CO<sub>2</sub> that is to be contained within the storage site—
    - (i) the total quantity that is to be injected and stored;
    - (ii) a proposed date on which injection is to commence;
    - (iii) the prospective sources and transport methods;
    - (iv) the composition of the CO<sub>2</sub> streams that are to be injected;
    - (v) the proposed injection rates and pressures; and

- (vi) the proposed location of the injection facilities;
  - (d) a description of measures to be taken to prevent any significant irregularities;
  - (e) a proposed monitoring plan drawn up in accordance with Annex II to the Directive and that takes into account the obligations imposed on the operator under legislation implementing Article 14 of the ETS Directive;
  - (f) a proposed corrective measures plan;
  - (g) the proposed provisional post-closure plan drawn up in accordance with regulation 12(1);
  - (h) the information required to be provided in relation to the storage site under legislation implementing Article 5 of Council Directive [85/337/EEC](#)(8); and
  - (i) details of a financial security that will satisfy the requirements in paragraph 7(1) of Schedule 2, including proof that (if the storage permit is granted) such a security will be in force before the proposed date on which injection is to commence.
- (4) The authority must forward to the European Commission—
- (a) the permit application (within one month of receipt); and
  - (b) any other related material that the authority proposes to take into account when it seeks to make a decision on the award of a storage permit.

### **Grant of storage permits**

- 7.—(1) Before granting a storage permit the authority must be satisfied that—
- (a) the storage complex and surrounding area have been sufficiently characterised and assessed in accordance with the criteria set out in Annex I to the Directive;
  - (b) no part of the storage complex extends beyond the territories of the member States;
  - (c) under the proposed conditions of use of the storage site, there is no significant risk of leakage or of harm to the environment or human health; and
  - (d) the conditions in paragraph (3) are met.
- (2) For the purposes of paragraph (1)(b), the territory of a member State includes its exclusive economic zone and continental shelf within the meaning of Articles 55 and 76 of the United Nations Convention on the Law of the Sea(9).
- (3) The conditions are that the proposed operator—
- (a) is technically competent (including in the operation of environmental management systems), financially sound and can be relied upon to carry out the functions of an operator; and
  - (b) has in place an appropriate programme of professional and technical development and training.
- (4) Where more than one storage site is contained within the same hydraulic unit, before granting a storage permit for either site the authority must be satisfied that the requirements for the grant of a permit can be met simultaneously.
- (5) In considering the application for the storage permit the authority may—
- (a) approve the proposed monitoring plan; or

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(8) Council Directive [85/337/EEC](#) of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (O.J. No. L 175, 5.7.1985, p.40); amended by Council Directive [97/11/EC](#) (O.J. No. L 73, 14.03.1997, p.5) and by European Parliament and Council Directives [2003/35/EC](#) (O.J. No. L 156, 25.6.2003, p.17) and [2009/31/EC](#).

(9) Cmnd. 8941.

- (b) require the applicant to make such modifications to it as the authority (after consulting the applicant) considers necessary,
- and (if the permit is granted) the monitoring plan is the plan as so approved or modified.
- (6) In considering the application for the storage permit the authority may—
    - (a) approve the proposed corrective measures plan; or
    - (b) require the applicant to make such modifications to it as the authority (after consulting the applicant) considers necessary,
 and (if the permit is granted) the corrective measures plan is the plan as so approved or modified.
  - (7) If the authority is minded to grant a storage permit—
    - (a) the authority must forward a draft of the proposed permit to the European Commission, together with any material taken into consideration that has not already been provided under regulation 6(4); and
    - (b) the authority must before granting the permit consider any opinion on the draft that is issued under Article 10(1) of the Directive.

### **Content of storage permits**

- 8.—(1) A storage permit must include—
  - (a) the name and address of a person who is a licence holder and who is designated as the operator of the site;
  - (b) the precise location and delimitation of the storage site and the storage complex, and any relevant information concerning the hydraulic unit;
  - (c) the operational requirements for storage, including—
    - (i) the total quantity of CO<sub>2</sub> authorised to be stored;
    - (ii) the reservoir pressure limits; and
    - (iii) the maximum injection rates and pressures;
  - (d) the provisions in Schedule 2;
  - (e) any requirements in addition to those in Schedule 2 relating to injection and storage that the authority considers necessary, in particular to prevent significant irregularities;
  - (f) requirements designed to prevent any undue interference with other uses of the area surrounding the storage site;
  - (g) the corrective measures plan;
  - (h) the conditions for closure of the storage site; and
  - (i) the provisional post-closure plan.

### *Powers and duties of the authority*

### **Corrective measures**

- 9.—(1) This regulation applies where—
  - (a) a significant irregularity or a leakage has been detected; and
  - (b) the licence under which the storage permit is granted is still in force,
 but does not apply where the storage permit has been revoked.

(2) Without prejudice to the obligations of the operator under provisions in the storage permit included by virtue of regulation 8(d) and paragraph 6 of Schedule 2, or to the powers of the authority under section 24 (licensing authority's power of direction)—

- (a) the authority may direct the operator to take any corrective measures (and any measures for the protection of human health) that the authority, after consulting the operator, considers necessary; and
- (b) if the operator fails to take the measures directed to be taken, the authority must exercise its powers under paragraph (4).

(3) The measures directed to be taken under paragraph (2)(a) may be additional to, or different from, those envisaged in the corrective measures plan.

(4) Whether or not a direction has been given under paragraph (2) or under section 24—

- (a) the authority may at any time take such measures itself (or arrange for another person to take them on the authority's behalf); and
- (b) the costs of doing so are to be paid by the operator.

(5) Section 24(5) to (8) applies to action taken under paragraph (4) as it applies to action taken under section 24(4).

### **Review, modification and revocation of storage permit**

**10.**—(1) Subject to paragraph (2), where a notification is made in accordance with provisions in the storage permit included by virtue of regulation 8(d) and paragraph 4 of Schedule 2, the authority—

- (a) may make such modifications to the storage permit as the authority considers appropriate; and
- (b) must notify the operator of—
  - (i) the date on which any such modifications are to come into effect; and
  - (ii) the date on which the change may be implemented.

(2) Where it appears to the authority that the matters so notified would amount to a substantial change, the authority must—

- (a) make such modifications to the storage permit as the authority considers appropriate (and make a notification in accordance with paragraph (1)(b)); or
- (b) notify the operator that the change must not be implemented.

(3) The authority must make a notification under paragraph (1)(b) or (2) on or before—

- (a) the date ("the target date") on which the operator proposes to implement a change notified under provisions in the storage permit included by virtue of regulation 8(d) and paragraph 4(1) of Schedule 2; or
- (b) a later date if the authority considers more time is required to allow it to make a notification.

(4) The authority shall notify the operator of the later date—

- (a) no less than one week before the target date; or
- (b) if one or more later dates have already been notified by the authority; no less than one week before the date most recently notified.

(5) This paragraph applies where the authority becomes aware of—

- (a) any (or any risk of) leakages or significant irregularities;
- (b) any breach of the terms or conditions of the storage permit; or

- (c) any scientific finding or technological development which appears to have a bearing on the conduct of operations at the storage site.
- (6) The authority must consider whether to modify or revoke the storage permit—
  - (a) where paragraph (5) applies; and
  - (b) on the date (“the review date”) falling on the fifth anniversary of the grant of the storage permit, and on every tenth anniversary of the review date.
- (7) Following that consideration, the authority may—
  - (a) make such modifications to the storage permit as the authority considers appropriate; or
  - (b) if it decides that modification of the permit would be insufficient in the light of the matters referred to in paragraph (5), revoke the permit.
- (8) Before making any revocation or modification under this regulation, the authority must consult the operator and any other licence holder.

### **Consequences of revocation of a storage permit**

**11.—**(1) This regulation applies where the authority has revoked a storage permit under regulation 10(7).

- (2) The authority must either—
  - (a) close the storage site; or
  - (b) consider any application for a licence (and, if such a licence is granted, for a new storage permit) in respect of the storage site.
- (3) Following the procedure under paragraph (2)(b)—
  - (a) if no new storage permit is granted, the authority must close the storage site (but the existing licence continues in force);
  - (b) if a new storage permit is granted, the existing licence terminates on the date of that grant.
- (4) Until the storage site is closed, or the new storage permit is granted, the authority is deemed to be the operator of the site for the purposes of the following obligations—
  - (a) in relation to the acceptance and injection of CO<sub>2</sub>;
  - (b) in relation to monitoring;
  - (c) in relation to corrective measures;
  - (d) in relation to the surrender of allowances under the ETS Directive; and
  - (e) under Articles 5(1) and 6(1) of the Environmental Liability Directive.
- (5) Where the storage site is closed under paragraph (2)(a) or (3)(a), the authority—
  - (a) is deemed to be the operator of the storage site for the purposes of the obligations referred to in paragraph (4)(b) to (e); and
  - (b) must ensure that the storage site is sealed and the injection facilities removed (but this is without prejudice to the obligations of any person under Part 4 (abandonment of offshore installations) of the Petroleum Act 1998<sup>(10)</sup>).
- (6) The licence holder of the existing licence must pay to the authority any costs incurred in meeting the authority’s obligations under paragraph (4) or (5); and section 24(6) and (7) applies to the recovery of such costs as it applies to the recovery of costs under section 24(5).

<sup>(10)</sup> 1998 c. 17. Section 30 of the Energy Act 2008 applies Part 4 of the Petroleum Act 1998 to carbon storage installations (as defined by section 30(5)).



(7) In this regulation, “existing licence” means the licence under which the revoked storage permit was granted.

### *Closure of storage site and post-closure period*

#### **Post-closure plan**

**12.—**(1) Before applying for a storage permit, the licence holder must draw up a proposed provisional post-closure plan that is—

- (a) based on best practice; and
  - (b) in accordance with Annex II to the Directive.
- (2) Before granting a storage permit, the authority must—
- (a) approve that proposed plan, or
  - (b) require the operator to make such modifications to it as the authority (after consulting the operator) considers necessary,

and the provisional post-closure plan is the plan as so approved or modified.

- (3) The authority may—
- (a) approve a proposed post-closure plan submitted to it for approval in accordance with provisions in the licence included by virtue of regulation 5 and paragraph 3(1) of Schedule 1; or
  - (b) require the operator to make such modifications to it as the authority (after consulting the operator) considers necessary,

and the post-closure plan is the plan as so approved or modified.

(4) Where the authority is deemed to be the operator in accordance with regulation 11(4), the post-closure plan is the provisional post-closure plan with such modifications as the authority considers necessary.

#### **Post-closure obligations**

**13.—**(1) This regulation applies after the storage site has been closed and until the licence is terminated.

- (2) The operator must continue to—
- (a) monitor the site in accordance with the provisions in the storage permit included by virtue of regulation 8(d) and paragraph 2 of Schedule 2;
  - (b) comply with its reporting and notification obligations in accordance with the provisions in the storage permit included by virtue of regulation 8(d) and paragraph 3 of Schedule 2 (with the exception of the obligation in the provision included by virtue of subparagraph (5)(b)); and
  - (c) comply with its obligations to take corrective measures in accordance with the provisions in the storage permit included by virtue of regulation 8(d) and paragraph 6 of Schedule 2.

(3) For those purposes any reference to the monitoring plan or the corrective measures plan is to be read as a reference to the post-closure plan.

(4) The operator must seal the storage site and remove the injection facilities in accordance with its obligations under Part 4 of the Petroleum Act 1998.

- (5) The closure of the storage site is without prejudice to the obligations of the operator—

- (a) under legislation implementing Articles 5 to 8 of the Environmental Liability Directive;  
and
- (b) relating to the surrender of allowances under the ETS Directive.

St Andrew's House,  
Edinburgh  
20th January 2011

*JOHN SWINNEY*  
Authorised to sign by the Scottish Ministers

## SCHEDULE 1

Regulation 5

### PROVISIONS TO BE INCLUDED IN A LICENCE

#### **Closure of storage site by the operator**

1.—(1) Subject to paragraph (4), the operator must close a storage site where the conditions for closure referred to in regulation 8(h) of the Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011 (“the Regulations”) are met.

(2) Subject to paragraph (4), the operator may close a storage site if—

- (a) the consent of the authority has been given following an application under sub-paragraph (3); and
- (b) any conditions attached to that consent have been met.

(3) An application for the authority’s consent to the closure of a storage site must—

- (a) be made in writing and sent to the Scottish Ministers; and
- (b) contain the reasons why the operator proposes to close the storage site.

(4) A storage site may not be closed under sub-paragraph (1) or (2) until the terms of the post-closure plan have been determined under regulation 12(3) of the Regulations.

#### **Post-closure plan**

2.—(1) Prior to the closure of a storage site the operator must submit a proposed post-closure plan to the authority for approval.

(2) The proposed post-closure plan must be based on the provisional post-closure plan, subject to any modifications proposed by the operator.

(3) In deciding whether to propose any such modifications, the operator must take into account—

- (a) an analysis of the relevant risks;
- (b) current best practice; and
- (c) any improvements in the available technology.

#### **Post-closure obligations**

3.—(1) After a storage site has been closed and until the licence is terminated, the operator must continue to comply with the obligations in the storage permit to—

- (a) monitor the storage site;
- (b) report and notify leakages and significant irregularities (with the exception of the obligation to provide information on the quantities, properties and composition of the CO<sub>2</sub> streams that have been delivered to and injected into the storage site); and
- (c) take corrective measures.

(2) For the purpose of complying with the obligations referred to in sub-paragraph (1), any reference to the monitoring plan or the corrective measures plan is to be read as a reference to the post-closure plan.

(3) The operator must seal the storage site and remove the injection facilities in accordance with its obligations under Part 4 of the Petroleum Act 1998.

**Extraction of stored CO<sub>2</sub>**

4. The operator must not (and must not permit any other person to) extract stored CO<sub>2</sub> from a storage site except with the prior written consent of the authority and in accordance with any conditions subject to which consent is given.

**Interpretation**

5.—(1) In this licence the following expressions have the meaning given by regulation 1(3) of the Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011—

“the authority”;  
 “corrective measures plan”;  
 “injection”;  
 “licence”;  
 “monitoring plan”;  
 “operator”;  
 “post-closure plan”;  
 “provisional post-closure plan”; and  
 “storage permit”.

(2) The following expressions have the meanings given by Article 3 of 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 (and cognate expressions are to be construed accordingly)—

“closure” of a storage site;  
 “corrective measures”;  
 “CO<sub>2</sub> plume”;  
 “CO<sub>2</sub> stream”;  
 “exploration”;  
 “hydraulic unit”;  
 “leakage”;  
 “migration”;  
 “significant irregularity”;  
 “significant risk”;  
 “storage complex”;  
 “storage site”;  
 “substantial change”;  
 “waste”; and  
 “water column”.

## SCHEDULE 2

Regulation 8(d)

### PROVISIONS TO BE INCLUDED IN A STORAGE PERMIT

#### Acceptance and injection of CO<sub>2</sub>

1.—(1) In order to be injected into the storage site the CO<sub>2</sub> stream must consist overwhelmingly of carbon dioxide, and must satisfy the conditions in sub-paragraph (2).

(2) The stream—

- (a) must contain no waste or other matter added for the purposes of disposal;
- (b) may only contain incidental or trace substances (to the extent permitted by any legislation applicable to those substances) if the concentrations of all such substances are below the levels that would—
  - (i) adversely affect the integrity of the storage site or the relevant transport infrastructure; or
  - (ii) pose a significant risk to the environment or human health.

(3) In sub-paragraph (2)—

- (a) “incidental substance” means a substance which has become associated with the CO<sub>2</sub> either at its original source or as a result of the process of capture or injection; and
- (b) “trace substance” means a substance which has been added to the CO<sub>2</sub> in order to assist in the monitoring and verifying of its migration after injection.

(4) Before accepting and injecting the stream the operator must ensure that the conditions in sub-paragraphs (1) and (2) can be met, by carrying out—

- (a) an analysis of the composition of the stream, and in particular of any corrosive substances that may be present in it; and
- (b) an assessment of the risk that the stream will fail to comply with those conditions.

(5) The operator must maintain a register, at a place and in a manner approved by the authority, of the quantities and properties of the CO<sub>2</sub> streams that have been delivered to, and injected in, the storage site (including the composition of those streams).

#### Monitoring

2.—(1) The operator must carry out a programme of monitoring of the storage complex and injection facilities, for the purposes specified in sub-paragraph (3).

(2) Such monitoring must include (where possible) the monitoring of the CO<sub>2</sub> plume and (where appropriate) of the surrounding environment.

(3) The purposes are—

- (a) the comparison of the actual and modelled behaviour of the CO<sub>2</sub> (and the naturally-occurring formation water) in the storage site;
- (b) the detection of any significant irregularities;
- (c) the detection of any migration of CO<sub>2</sub>;
- (d) the detection of any leakage of CO<sub>2</sub>;
- (e) the detection of any significant adverse effects on the surrounding environment, and in particular on—
  - (i) drinking water;

- (ii) human populations; and
  - (iii) users of the surrounding biosphere;
  - (f) the assessment of the effectiveness of any corrective measures taken;
  - (g) updating the assessment of the safety and integrity, both short-term and long-term, of the storage complex (including the assessment of whether the stored CO<sub>2</sub> will be completely and permanently contained).
- (4) The monitoring must be based on the monitoring plan.
- (5) The monitoring plan must be updated in accordance with Annex II to the Directive and in any event within five years of the approval of the original plan, in order to take account of—
- (a) changes to the assessed risk of leakage;
  - (b) changes to the assessed risks to the environment and human health;
  - (c) new scientific knowledge; and
  - (d) improvements in best available technology.
- (6) The updated plan must be submitted for approval by the authority.
- (7) The authority may—
- (a) approve that plan; or
  - (b) require the operator to make such modifications to it as the authority (after consulting the operator) considers necessary,
- and the updated monitoring plan is the plan as so approved or modified.
- (8) Sub-paragraphs (5) to (7) apply to the further updating of an updated plan as they apply to the updating of the original plan.

### **Reporting and notification of leakages and significant irregularities**

- 3.—**(1) The operator must send to the authority a report in respect of each reporting period containing the information specified in sub-paragraph (5).
- (2) The report must be sent to the authority no later than 4 weeks after the end of the relevant reporting period.
- (3) Unless the authority determines otherwise under sub-paragraph (4), the reporting periods are the period of one year beginning with the commencement of injection and each subsequent yearly period.
- (4) At any time before the commencement of injection, or during a current reporting period, the authority may notify the operator that (beginning with the next reporting period) reporting periods are to be a period of less than one year that is specified in the notice.
- (5) The information referred to in sub-paragraph (1) is—
- (a) the results of the monitoring carried out in accordance with the provisions of this storage permit (including details of the monitoring technology employed);
  - (b) the quantities, properties and composition of the CO<sub>2</sub> streams delivered to, injected by, and registered by the operator in accordance with the provisions of this storage permit;
  - (c) proof that the financial security to be maintained in accordance with the provisions of this storage permit has come into effect and remains in force; and
  - (d) any other information requested by the authority that the authority considers relevant for the purposes of assessing compliance with the conditions of the storage permit or for increasing knowledge of the behaviour of the CO<sub>2</sub> stored at the storage site.

(6) If the operator becomes aware of any leakages or significant irregularities, the operator must immediately notify the authority.

(7) If the operator becomes aware of any leakages, or of any significant irregularities which imply the risk of leakage, the operator must immediately notify the person who is the regulator in relation to the storage site for the purposes of legislation implementing the ETS Directive.

### **Notification and implementation of changes**

4.—(1) The operator must notify the authority of any change planned in the operation of the storage site, including any changes concerning the operator.

(2) A notification under sub-paragraph (1) must specify the date on which the operator proposes to implement the planned change (“the target date”).

(3) Except where sub-paragraph (4) applies, such a notification must be made at least three months before the target date.

(4) If the change solely concerns the operator, the notification must be made at least four weeks before the target date.

(5) The change may not be implemented before the later of—

(a) the target date or any date notified under regulation 10(4)(b) of the Regulations; and

(b) the date notified by the authority in accordance with regulation 10(1)(b)(ii) of the Regulations.

(6) The change may not be implemented if the authority makes a notification to that effect under regulation 10(2)(b) of the Regulations.

(7) Notwithstanding sub-paragraphs (5) and (6), the change may be implemented on or after the later of the dates mentioned in sub-paragraph (5)(a) if the authority has not before then made a notification under regulation 10(1)(b)(ii) or (2)(b) of the Regulations.

### **Review, and modification or revocation of the permit**

5. The permit is to be reviewed, and where necessary modified or revoked, by the authority in accordance with regulation 10 of the Regulations.

### **Corrective measures**

6.—(1) If the operator becomes aware of any leakages or significant irregularities, the operator must take the necessary corrective measures and measures for the protection of human health.

(2) Subject to regulation 9 of the Regulations, the measures taken must include those set out in the corrective measures plan.

### **Financial security**

7.—(1) The operator must maintain a financial security that—

(a) is of an amount (“the secured amount”) sufficient to ensure that the obligations specified in sub-paragraph (5) can be met; and

(b) is in force before the commencement of injection.

(2) The financial security remains in force until—

(a) the licence is terminated; or

(b) if the storage permit is revoked, until—

(i) a new storage permit is granted; or

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

- (ii) if the storage site is closed following such revocation, until the licence is terminated and the financial contribution obligation is fulfilled.
- (3) Following receipt of a report in respect of a reporting period made by the operator in accordance with the provisions of this storage permit, the authority is to assess whether the secured amount is appropriate in the light of—
  - (a) the assessed risk of leakage; and
  - (b) the estimated costs of meeting the obligations specified in sub-paragraph (5).
- (4) If, following that assessment, the authority decides that the secured amount is to be adjusted—
  - (a) the authority must notify the operator of the new amount that is required; and
  - (b) where the secured amount is less than that new amount, the operator must ensure that it is increased to the new amount within 3 months of receiving that notification.
- (5) The obligations are—
  - (a) all obligations of the operator arising under the storage permit, including those arising in respect of the closure of the storage site and during the period between such closure and the termination of the licence;
  - (b) the obligation to pay the authority's costs under regulation 9(4)(b) or 11(6) of the Regulations; and
  - (c) any obligations of the operator arising in respect of the storage site under legislation implementing the ETS Directive.
- (6) Where the storage permit is revoked—
  - (a) the obligations of the operator under this paragraph continue in effect until the licence is terminated; but
  - (b) the assessment by the authority under sub-paragraph (3) is to be made at such intervals as the authority may determine.

## **Interpretation**

### **8. In this storage permit—**

- (1) “the Regulations” means the Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011.
- (2) The following expressions have the meaning given by regulation 1(3) of the Regulations—
  - “the authority”;
  - “corrective measures plan”;
  - “the Directive”;
  - “the ETS Directive”;
  - “financial security”;
  - “injection”;
  - “legislation”;
  - “licence”;
  - “monitoring plan”;
  - “operator”; and
  - “storage permit”.
- (3) The following expressions have the meanings given by Article 3 of the Directive (and cognate expressions are to be construed accordingly)—



“closure” of a storage site;  
“corrective measures”;  
“CO<sub>2</sub> plume”;  
“CO<sub>2</sub> stream”;  
“leakage”;  
“migration”;  
“significant irregularity”;  
“significant risk”;  
“storage complex”;  
“storage site”; and  
“waste”.

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## EXPLANATORY NOTE

*(This note is not part of the Regulations)*

These Regulations make provision for partial implementation of Directive [2009/31/EC](#) of the European Parliament and of the Council on the geological storage of carbon dioxide (“the Directive”). They implement the requirements of the Directive with regard to the licensing regime.

Part 1, Chapter 3, of the Energy Act 2008 (“the Act”) establishes a licensing regime for the storage of carbon dioxide in areas within UK territorial waters, and in areas beyond those waters which have been designated as a Gas Importation and Storage Zone within the meaning of section 1(5) of the Act (“the offshore area”). Section 17 of the Act prohibits the storage of carbon dioxide (with a view to its permanent disposal) except in accordance with a licence granted under section 18. Under section 18 the Scottish Ministers are the licensing authority for the territorial sea adjacent to Scotland, and the Secretary of State is the licensing authority for all other areas of that sea. These Regulations relate to licences granted by the Scottish Ministers.

Regulation 2 prevents the licensing of carbon dioxide storage in the water column.

Regulation 3 sets out the requirements for applying for a licence. The application must specify length of time required for exploration (“the appraisal term”) or the reason why exploration is not required.

Regulation 4(1) to (3) imposes on the licence authority an obligation to specify the length of the appraisal term or, where there will be no exploration, to specify the length of time within which an application for a storage permit must be made (“the initial term”). These terms can be extended. Under regulation 4(4) the licence expires when the appraisal term or initial term expires if no application for a storage permit has been made by the or when an application for a storage permit is refused.

Regulation 5 provides that the provisions in Schedule 1 apply to a licence under which a storage permit is granted.

Regulation 6 deals with the making of an application for a storage permit, and specifies the information required.

Regulation 7 sets out the criteria on which the licensing authority must be satisfied before granting a storage permit.

Regulation 8 sets out what must be contained in a storage permit, which includes the provisions in Schedule 2.

Regulation 9 provides that, in the event of a significant irregularity or leakage, the licensing authority may direct the operator to take corrective measures or it may undertake those measures itself. In the event that the operator fails to comply with the direction the licensing authority must take corrective measures.

Regulation 10 provides that the licensing authority may review, modify or revoke a permit where an operator notifies an intention to make a change in the operation of a storage site or where the authority becomes aware of irregularities, a breach of the terms and conditions of the permit or technical or scientific development which has a bearing on the operation of the site.

Regulation 11 deals with the consequences of a storage permit being revoked. The licensing authority may close the storage site immediately or consider applications for a new licence and storage permit. The authority is deemed to be the operator of the site for certain purposes until the site is closed or a new storage permit is granted, and is entitled to be reimbursed for costs incurred.

Regulation 12 deals with the submission and approval of post-closure plans, which are drawn up in accordance with Annex II of the Directive.

Regulation 13 deals with liabilities of the operator after the site has been closed. The operator must continue to monitor the site, and to comply with its reporting and notification obligations and its obligations to take corrective measures. The operator must seal the site and remove the injection facilities.

Schedule 1 contains provisions which apply to any licence which has a storage permit granted under it. They deal with the circumstances in which the storage site must be closed by the operator, the submission of the post-closure plan and the liabilities of the operator after the site has been closed.

Schedule 2 contains provisions which must be included in any storage permit. Paragraph 1 deals with the acceptance and injection of carbon dioxide and identify the conditions the carbon dioxide stream must meet before injection can take place. Paragraph 2 deals with a mandatory programme of monitoring for specified purposes. Paragraph 3 contains obligations to make regular reports and to notify irregularities.

A regulatory impact assessment of the effect that these Regulations will have on the costs of business and the voluntary sector is available from the Scottish Government Energy Markets Unit, Department of Enterprise, Energy and Tourism, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU.