

ENERGY ACT 2008

EXPLANATORY NOTES

Chapter 3: Storage of Carbon Dioxide

Summary and Background

47. Carbon Capture and Storage (CCS) is a process involving the capture of carbon dioxide from the burning of fossil fuels, its transportation, and storage in secure spaces, such as geological formations, including under the seabed. CCS can be applied to a range of industrial processes including coal-fired and gas-fired electricity generation. It has the potential to reduce carbon dioxide emissions of standard coal-fired generation by up to 90%. The Stern Review¹ highlighted the potential role that CCS could play in tackling climate change, with the potential to contribute up to as much as 28% of global carbon dioxide mitigation by 2050. However, CCS has not yet been applied to commercial-scale electricity generation.
48. The Government is committed to the development of CCS with electricity generation. The Government launched a competition in November 2007 to support a CCS demonstration project in the UK. This will be one of the first demonstrations anywhere in the world. The objective is for the demonstration project to be operational by 2014. The demonstration cannot proceed without an appropriate legislative regulatory regime being in place.
49. Most of the activities involved in CCS are standard industrial processes and can be readily regulated by established legislation. However, permanent storage of carbon dioxide is a novel activity, and existing legislation to control depositions below the surface of the land and seabed is not well suited to licensing the storage of carbon dioxide. This Chapter of the Act establishes a framework for the licensing of carbon dioxide storage and the enforcement of the licence provisions. It also applies existing offshore legislation (for example the decommissioning legislation in the Petroleum Act 1998) to offshore structures used for the purposes of carbon dioxide storage. Chapter 1 of Part 1, amongst other things, asserts the UK's rights to the use of the offshore sub-surface space for the storage of carbon dioxide.
50. The framework is limited to the offshore area. This is due to the fact that this area is likely to be of primary interest to developers in the short-term. Moreover, storage of carbon dioxide onshore requires amendment of existing EU Directives. Whilst such amendment forms part of the Commission's proposal for a Directive on the geological storage of carbon dioxide presented in January 2008, the details of any Directive finally adopted will be a matter for agreement within the EU Council and the European Parliament. Whilst the agreed text of the Directive is expected to cover both onshore and offshore areas, there is a risk that the Directive may not be agreed in time to fit in with the timeframe of the CCS demonstration project. The provisions in this Chapter are intended to provide sufficient flexibility for the EU regime to be readily implemented once agreed at the European level in relation to the offshore area.

¹ *The Stern Review – The Economics of Climate Change*, Nicholas Stern, 2006

51. Following a Legislative Consent Motion agreed by the Scottish Parliament, the provisions of this Chapter apply to the territorial sea adjacent to Scotland (0 to 12 nautical miles) where the Scottish Ministers will have the relevant legislative, licensing and enforcement powers. The practical arrangements as well as any cross-boundary issues arising in connection with the provisions of this Chapter to that area are intended to be addressed in a Memorandum of Understanding to be entered into between the Secretary of State and the Scottish Ministers.

Commentary on Sections

Activities requiring a licence

Section 17: Prohibition on unlicensed activities

52. This section prohibits the following activities from being carried out, except in accordance with a licence granted under section 18:
- storage of carbon dioxide with a view to its permanent disposal;
 - conversion of a natural feature (for example, a saline aquifer) for such storage;
 - exploration for a carbon dioxide storage site; and
 - establishment or maintenance of an installation for any of those purposes.

Temporary storage of carbon dioxide will also require a licence, if such temporary storage is an interim measure prior to its permanent disposal.

53. *Subsection (3)* sets out the area within which activities are subject to those controls. It consists of the territorial sea adjacent to the United Kingdom (the territorial sea extends 12 nautical miles from baselines established under the [Territorial Sea Act 1987 \(c. 49\)](#)), together with any area designated as a Gas Importation and Storage Zone (see section 1).

Licensing

Section 18: Licences

54. This section allows the licensing authority (or any authority to which the relevant function has been transferred under section 34) to grant licences for the purposes of this Chapter. The licensing authority in relation to the activities of storage, conversion or exploration within the territorial sea adjacent to Scotland is the Scottish Ministers; otherwise, the licensing authority is the Secretary of State. However, where the activity concerned is only partly within Scottish territorial waters (for instance where a carbon dioxide store straddles the boundary between Scottish and English territorial waters) the licensing authority may be either the Scottish Ministers or the Secretary of State. In such a case, references to the “licensing authority” are to be construed as references to the Authority that exercises the relevant power to grant a licence or to consider a licence application. The licensing authority for an installation will always be the Authority that licensed the activity for which the installation is maintained or established.
55. A licence granted under section 18 will permit, under the terms and conditions laid down in the licence, the carrying out of one or more of the activities mentioned in section 17. However, in order to make use of the sea, the seabed or spaces under the seabed for the purpose of these activities, an operator would in addition have to obtain a lease or authorisation from The Crown Estate, who administer the relevant rights to the offshore area. *Subsection (3)* accordingly allows the geographical coordinates covered by the licence to be linked to those covered by the lease or authorisation from The Crown Estate (see also section 20 (4)).

Section 19: Requirements relating to grant of licences

56. This section gives the licensing authority the power to make regulations (subject to negative resolution procedure – see section 105) prescribing the conditions that the

applicant may be required to meet in order to obtain a licence, as well as any other requirements that must be satisfied prior to the licence being granted. In particular, the regulations may set out:

- who can apply for a licence;
- how the application for a licence must be made;
- the information which an application must contain and any accompanying documents;
- an application fee; and
- a requirement for the applicant to provide financial security (such as a letter of credit, a fund held on trust, or another form of security) in respect of any obligations arising in connection with the licensed activities.

The obligations in relation to which financial security may be required are not restricted to those laid down by the licence, and may take into account, for example, any liabilities that may arise in connection with a carbon dioxide store (such as any liability that may arise under the EU Emissions Trading Scheme). While such security may not be needed in every case, the intention of requiring such a security would be to protect the public purse against the risk of the licensee failing to meet its obligations arising from its activities under the licence. Where a financial guarantee is required, then it will be required as a condition of the licence being granted, and not as a condition of making an application.

Section 20: Terms and conditions

57. This section gives the licensing authority (or an authority to which the relevant function has been transferred under section 34) a power to grant licences on such terms and conditions as that licensing authority thinks fit. The licensing authority's discretion is, however, subject to its power under section 21 to prescribe, by regulations (subject to the negative resolution procedure – see section 105), the provisions which must be contained in a licence.
58. *By subsection (3)* a licence may include provisions about the following matters (amongst other things):
- the financial security that may be required (in addition to the security required under section 19), or the release of any existing financial security during the licensing period (for instance to reflect a change of circumstances, such as an improvement in the operator's financial standing);
 - a power to allow the licensing authority to review or (after consulting the licence holder) to modify the licence;
 - a power to prevent, or enable the licensing authority to prevent the licence holder, in specified circumstances (such as where there is evidence to suggest that the store poses a significant environmental risk), from carrying on an activity (for example, the continued injection of carbon dioxide).
59. In addition to imposing conditions on the process of injecting carbon dioxide, the licence may also impose obligations on the licence holder after the activity of carbon dioxide injection has permanently ceased. Therefore licences will be able to cover both a period during which injection is taking place, and a subsequent period, during which it is expected the stability of the store would have to be demonstrated through monitoring and other activities prior to termination of the licence.
60. *Subsection (4)* ensures that the commencement and duration of the licence can be linked to that of the corresponding lease or authorisation from The Crown Estate.

61. *Subsection (5)* ensures that a licence can include an authorisation for the transfer of the licence to another person or the inclusion of another person as a party to the licence, subject to any conditions set out in the licence. Such conditions might for instance include obtaining the prior consent of the licensing authority for such a transfer.
62. *Subsections (6) and (7)* ensure that provisions in the licences can include conditions to obtain consent from the licensing authority (or an authority to which the relevant function has been transferred under section 34) for specified acts or omissions. Such consent may itself be granted subject to conditions.

Section 21: Content of licences: regulations

63. This section gives the licensing authority the power to make regulations (subject to negative resolution procedure – see section 105) about the terms and conditions which must be included in licences to be granted under section 18.

Enforcement

Section 22: Offence to carry on unlicensed activities

64. This section makes it an offence for a person to carry out any of the activities listed in section 17 unless that person has a licence issued under section 18, or is a person (such as a contractor or sub-contractor) who carries out the relevant activity on behalf of a licensed person. It is also an offence to cause or permit such unlicensed activities to be carried out (for example by getting a contractor to do so).
65. *Subsection (3)* sets out the penalties for those offences (on summary conviction, a fine not exceeding £50,000 and, on conviction on indictment, imprisonment for a term not exceeding two years or an unlimited fine, or both). These penalties are set at the same level as those in Part 2 of the [Food and Environment Protection Act 1985 \(c. 48\)](#) (FEPA), as amended by the [Environmental Protection Act 1990 \(c. 43\)](#).
66. *Subsection (4)* provides, however, for a lesser penalty in circumstances where the activities in question are limited to exploration (rather than for instance the activity of carbon dioxide storage). On summary conviction, a person will be liable to a fine not exceeding the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland) and, on conviction on indictment, to an unlimited fine.

Section 23: Offences relating to licences

67. Once a licence has been granted, it will also be an offence to breach certain of its provisions. *Subsection (1)* specifies breaches which will give rise to an offence, and gives the licensing authority a power to specify by order (subject to the negative resolution procedure – see section 105) further kinds of breaches of licences that will amount to an offence. Other enforcement powers will be available in respect of breaches which are not criminal offences: see in particular section 24. The breaches attracting criminal penalties under the present section include:
 - doing something that requires the licensing authority's consent, without obtaining such consent (for example, where the regulatory authority's consent is required before commencing injection of carbon dioxide); and
 - a failure to keep records, notify, or make a return or report, as required by the licence.
68. Only the licence holder will be liable for offences under this section, including where the act or omission in question results from the behaviour, for example, of a contractor. However, *subsection (2)* provides that licence holder will have a defence if it can show that it exercised due diligence in trying to avoid committing the offence. In circumstances where the contractor was responsible for a breach, the licence holder would have to show, for example, that it had exercised due diligence in supervising the behaviour of the contractor.

69. *Subsections (3) and (4)* set out the penalties for those offences. These are identical to those for undertaking a licensable activity without a licence (section 22 (3)) (a fine not exceeding £50,000 and, on conviction on indictment, imprisonment not exceeding two years or an unlimited fine, or both; and lesser penalties in relation to exploration activities: on summary conviction, a fine not exceeding the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland) and, on conviction on indictment, an unlimited fine).
70. *Subsections (5) and (6)* create offences where a person knowingly or recklessly makes a false statement in order to obtain a licence, or any required consent, or fails to disclose information which that person knows, or ought to know, to be relevant to a licence application or to that consent. *Subsection (7)* sets out the penalties for the offences in *subsections (5) and (6)*: on summary conviction, the person found guilty of the offence would be liable to a fine not exceeding the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland), or, on conviction on indictment, an unlimited fine.

Section 24: Licensing authority's power of direction

71. Where there has been a breach of a licence condition, this section enables the licensing authority (or an authority to which the relevant function has been transferred under section 34), to direct that the licence holder takes appropriate steps to remedy the breach. For example, if the licence requires equipment to be maintained to a good standard, a direction may require the equipment to be repaired or replaced. *Subsection (3)* requires the licence holder to be consulted before a direction is made.
72. If the licence holder fails to comply with the direction, the licensing authority (or the Authority to which the function is transferred), may, under *subsections (4) to (8)*, ensure that the necessary action is taken, at the expense of the licence holder, and (if so directed) with the latter's assistance.
73. *Subsection (9)* ensures that this section does not affect any provision made by the licence itself for its enforcement (for instance, the licence may itself give the licensing authority powers of direction in certain circumstances).

Section 25: Failure to comply with a direction under section 24

74. *Subsection (1)* of this section provides that a failure to comply with a direction under section 24 is a criminal offence, with the penalties set out in *subsection (2)*: a fine of up to the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland) on summary conviction, or an unlimited fine for conviction on indictment.

Section 26: Injunctions restraining breaches of section 17(1)

75. This section gives the Scottish Ministers (or an authority to which the relevant function has been transferred under section 34) the power to apply to the Court of Session for an interdict to restrain any actual or apprehended breach of section 17(1) in relation to a controlled place within the territorial sea adjacent to Scotland. In the case of any other such actual or apprehended breach, it gives the Secretary of State (or an authority to which the relevant function has been transferred under section 34) the power to apply to the High Court for an injunction or the Court of Session for an interdict.
76. For example, where there is evidence that a carbon dioxide storage-related activity is being carried out without a licence within the territorial sea adjacent to Scotland, the Scottish Ministers may apply to the Court of Session for an interdict requiring the operator to cease the activity. The Secretary of State, similarly, may apply for an injunction to the High Court (or, where appropriate, for an interdict to the Court of Session) where he becomes aware that such unlicensed activities are being carried out, for instance, in a place outside UK territorial waters but within a Gas Importation and

Storage Zone designated under section 1. The powers created by this section are in addition to any other powers the Scottish Ministers or the Secretary of State may have under this Chapter.

Section 27: Inspectors

77. *Subsections (1) and (2)* of this section allow the Secretary of State or (by *subsection (6)*) the Scottish Ministers, or an authority to which the relevant function has been transferred under section 34, to appoint persons to act as inspectors to assist in the carrying out of their functions under this Chapter, and enable the inspectors to be remunerated.
78. *Subsection (3)* gives the Secretary of State or (by *subsection (6)*) the Scottish Ministers the power to make regulations (subject to the negative resolution procedure – see section 105) setting out the powers and duties of the inspectors, and of any other person acting on their directions in connection with a function under this Chapter (such persons may include, for example, surveyors or other contractors instructed by the Secretary of State or the Scottish Ministers). These are likely to include, for example powers of entry, investigation and the right to take samples.
79. *Subsection (5)* enables such regulations to create criminal offences (for example it might be an offence to obstruct an inspector in the exercise of functions under the regulations). Such offences would attract the penalty of a fine not exceeding the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland) or such lesser amount as is specified in the regulations, on summary conviction or, on conviction on indictment, an unlimited fine.

Section 28: Criminal proceedings

80. *Subsection (1)* ensures that an offence arising by virtue of the provisions of this Chapter may be prosecuted in any part of the United Kingdom, regardless of the offshore location at which the offence may have been committed.
81. *Subsections (3) and (4)* ensure that prosecutions for such offences alleged to have been committed in a controlled place (i.e. within the territorial sea or a Gas Importation and Storage Zone) may be brought only by the Secretary of State or a person authorised by the Secretary of State (or an authority to which the relevant function has been transferred under section 34 or a person authorised by such an authority), or by or with the consent of the Director of Public Prosecutions (or the Director of Public Prosecutions for Northern Ireland). Such provision is unnecessary in relation to Scotland, as there all prosecutions are brought by or on behalf of the Lord Advocate.
82. *Subsection (5)* provides that the same restrictions procedure will apply to any prosecution for an offence created by regulations under section 27, except that references to a person authorised by the Secretary of State (or by an authority to which the relevant function has been transferred under section 34) are to be read as references to an inspector.

Registration

Section 29: Requirement for public register

83. This section requires the Secretary of State (or an authority to which the relevant function has been transferred under section 34) to maintain a register containing prescribed information relating to all licences granted under this Chapter, and enables the Secretary of State to prescribe the information that must be included in the register. The information to be included will be prescribed by regulations (subject to the negative resolution procedure – see section 105), and might for example include details of licences issued, revoked or modified, and of any enforcement action taken in relation to those licences. However, provision is made by *subsections (2) to (5)* for certain information to be excluded from the register. Such information may be excluded by

the licensing authority (or an authority to which the function has been transferred under section 34) on the grounds of commercial sensitivity. However, the function of excluding information on national security grounds is given only to the Secretary of State, even where the information relates to a licence granted by the Scottish Ministers. By *subsection (6)* there will be free public access to the register, but a charge may be made for obtaining copies (which would have to reflect the costs of providing them).

84. This section is similar to section 14 of [Food and Environment Protection Act 1985 \(c.48\)](#) (FEPA), which requires the licensing authority to compile and keep certain particulars of FEPA licences and to make them available for public inspection.

Abandonment of offshore installations

Section 30: Abandonment of installations

85. *Subsection (1)* applies the provisions of Part 4 of the Petroleum Act 1998 to offshore structures that are installed for the purposes of carbon dioxide storage activities. As a result, the operators of such installations will be required to decommission them in a timely manner after operations have permanently ceased. By *subsection (2)*, the functions under Part 4 of that Act are to be exercised by the Scottish Ministers in the case of carbon dioxide storage installations licensed by them under this Chapter, and the Scottish Ministers have the power, by regulations subject to negative resolution procedure (see section 105), to make any appropriate modifications of the provisions of Part 4 of the Petroleum Act 1998 as they apply to such installations. By *subsection (3)* the powers of the Scottish Ministers under *subsection (2)* do not extend to installations used for Enhanced Oil Recovery (see the Note to section 33). By *subsection (4)* the Secretary of State has the power to make such regulations modifying Part 4 as it applies to any carbon dioxide storage installation not licensed by the Scottish Ministers.

Termination of the licence

Section 31: Termination of licence: regulations

86. This section gives the licensing authority the power to make regulations (subject to negative resolution procedure – see section 105) setting out the circumstances under which a licence may be terminated (which may be in addition to any termination provisions already contained in the licence). The regulations would also be able to require the licensing authority (or an authority to which the relevant function has been transferred under section 34) to take on the responsibility (including any financial liability) for the management of a carbon dioxide store on or after the termination of a licence. The intention is that regulations will, in particular, set out the conditions (in addition to any licence provisions) that must be met before the Secretary of State, or the said authority, can consent to the termination of a licence.
87. *Subsection (3)* ensures that any provisions of a licence granted under section 18 which relate to the termination of the licence are subject to the provisions made by such regulations.

Miscellaneous

Section 32: Safety zones

88. Sections 21, 23 and 24 of the Petroleum Act 1987 provide for the automatic establishment of safety zones around oil and gas installations and set out offences and the applicable penalties in connection with such safety zones. This section extends those provisions to installations used for carbon dioxide storage. Such safety zones are areas extending 500 metres around the installation, from which vessels are prevented from entering or remaining except in accordance with regulations made by the Secretary of State or a consent given by the Health and Safety Executive. The penalty for such an offence is a fine not exceeding the statutory maximum (currently £5,000 in England, Wales and Northern Ireland and £10,000 in Scotland) on summary conviction and, on

conviction on indictment, imprisonment not exceeding two years or an unlimited fine, or both.

Section 33: Enhanced petroleum recovery: power to make orders

89. Carbon dioxide can be used to improve the recovery of hydrocarbon production in a process known as Enhanced Oil Recovery (EOR) (which may also be applied to the recovery of natural gas). *Subsection (1)* ensures that the provisions of this Chapter do not extend to the use of carbon dioxide for the purpose of EOR, unless they are so extended by an order made by the Secretary of State (subject to negative resolution procedure – see section 105). The intention is to use this power, for example, to ensure that the requirements of this Chapter extend to operators undertaking an EOR activity if those operators wish to claim credits under the EU Emissions Trading Scheme (once carbon dioxide storage projects are included in that scheme). In the circumstances defined by an order under this subsection, a licence under section 18 would be required, as well as an authorisation (or, within the territorial sea, a lease) from The Crown Estate. (The latter requirement would not, however, apply in a case covered by *subsection (3)*.)
90. *Subsection (3)* provides that the Secretary of State may, by the same order and, for example, for the purpose indicated above, extend the application of this Chapter to EOR activities carried out in the area of the Continental Shelf, as defined in section 1(7) of the Continental Shelf Act 1964, where the area in question falls outside any area designated as a Gas Importation and Storage Zone.

Section 34: Power of Secretary of State etc to transfer functions

91. This section gives the Secretary of State or (by *subsection (8)*) the Scottish Ministers the power to transfer to another authority (which must be a public body, for example the Marine Fisheries Agency (or the Marine Management Organisation (MMO) once established) any of the functions conferred on them by this Chapter, with the exception of powers to make regulations or orders. Such a transfer may be made to several different authorities, either of different functions or of the same function in respect of different places. For example, one or more authorities may be given the function of granting licences in respect of all the activities covered by the Chapter, or just some of the activities. This allows flexibility in the choice of the regulatory authorities for carbon dioxide storage. Any transfer of functions under this section will be made by order subject to negative resolution procedure (see section 105).
92. *Subsection (4)* ensures that an order transferring functions to another authority may also provide for the financing of that authority's exercise of the transferred functions, and may require fees collected by the Authority to be paid into the Consolidated Fund (or, in the case of fees collected by authorities exercising functions transferred by the Scottish Ministers, the Scottish Consolidated Fund). The order may also modify section 188 of the Energy Act 2004, and regulations made under that section, in order to reflect the fact that certain functions have been transferred to another authority. That section gives the Secretary of State the power to collect charges in respect of the performance of certain energy-related functions, and is amended by *paragraph 13* of Schedule 1 to the Act so as to include functions of the Secretary of State under Chapters 2 and 3 of this Part, and to extend it to functions of the Scottish Ministers under Chapter 3.
93. *Subsections (5) and (6)* give the Secretary of State or (by *subsection (8)*) the Scottish Ministers a power of direction in relation to the exercise of functions by the authority to which they have been transferred. Before that power of direction is exercised, there is an obligation to consult with the authority concerned (*subsection (7)*).

Section 35: Interpretation

94. *Subsection (1)* contains definitions of terms used in Chapter 3. *Subsection (2)* provides that, for the purposes of that Chapter, the boundary of the territorial sea adjacent to Scotland is determined in accordance with provision made by an Order in Council under

*These notes refer to the Energy Act 2008 (c.32)
which received Royal Assent on 26 November 2008*

section 126(2) of the Scotland Act 1998 (apportionment of sea areas). For example, if the Order in Council provides one set of boundaries of the Scottish territorial sea for a specific purpose (e.g. fisheries) and then a different set of boundaries for all "residual" purposes, then, for the purposes of Chapter 3, the boundaries defined for the "residual" purposes would apply. Alternatively, if the Order in Council defines the boundaries specifically for the purposes of Chapter 3, or generally for all purposes of the Scotland Act 1998, that provision would apply.