



Site Exploration: Are We Developing a Sensible Regulatory Regime?

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Site Exploration under the EC Draft Directive

Further knowledge about the underlying geological character of potential storage sites and their surroundings is likely to be needed before any long-term storage can be permitted. Within the European Community current regulatory proposals concerning surveying are based on the granting of exploration permits. The question is whether this is a sensible or realistic approach.

Under the proposed EC Directive, Member States may only grant permits for carbon storage where they are satisfied that a geological formulation presents *'no significant risks of leakage and if no significant environmental or health impacts are likely to occur'* (Art 4(1)). Annex I of the Draft Directive provides further, more detailed criteria for assessing the suitability of geological formations.

If a Member State feels it already has sufficient information to satisfy these requirements in relation to selecting suitable sites, it may move directly to the granting of storage permits. This could be the case with depleted oil or gas reservoirs where much might already be known about the nature of the site, but is far less likely where larger, underground aquifers and similar sites are being considered.

When are Exploration Licences Necessary?

Where a Member State feels that exploration is needed to generate the information required, it must ensure that no such exploration takes place without a permit (Art 5). Procedures for the granting of such permits must be open to anyone possessing the necessary capabilities and are for a limited area and a maximum of two years, renewable once. The policy justification for these maximum time-limits is obscure. A permit gives the sole right of exploration within the area it covers.

The UK Energy Bill provides very general powers for the granting of licences in connection with the storage of carbon dioxide. Certain specified activities (see C117) can only be carried out with a licence and these include exploration with a view to carrying out storage of carbon dioxide under the sea-bed for permanent disposal.

A single licence could cover both exploration and final storage, or these could be granted separately.

The Bill is intended to be sufficiently flexible to meet any requirements of the EC Directive once agreed.

The Petroleum and Gas Model: Is it the Right Analogy?

The concept of exploration and exploitation licences is a familiar model in oil and gas regulation. In the UK, for example, the Secretary of State has the right to grant licences on behalf of the Crown to search for oil and gas under the sea as well as to drill for and extract it.¹ *Exploration licences* only grant the holders powers to explore by means of geological surveys and drilling to limited depths, and are granted on a non-exclusive basis over wide areas other than those falling within an existing Production Licence.² Model clauses for licence conditions for an exploration licence are contained in regulations.³ Far more common are *Seaward Production Licences* which encompass the whole cycle of development on an exclusive basis including exploration (normally four years), appraisal and development (four years) and production (eighteen years).⁴

Possible Problems with the EC Draft Directive

- The core issue is whether there will be sufficient incentive for parties to apply for individual exploration licences where this is required because the Member State has insufficient knowledge about the characteristics of potential storage sites. The Draft Directive provides for exclusive rights to explore and licences are therefore likely to be confined to specific areas. In that sense they are more akin to the exploratory stages of a Production Licence under the UK Petroleum Act rather than the non-exclusive Exploration Licence. The Preamble to the Draft Directive justifies exploration licences being granted on a limited and exclusive basis as being necessary to "protect and encourage exploration investments".⁵ This seems to imply that a market driven model is envisaged. Yet there is no guarantee that the holder of a exploration licence will be entitled to a storage licence should the site prove suitable.⁶ This can be contrasted with proposals for CCS

legislation in the State of Victoria, Australia where the grant of an exploration permit would give an exclusive right subsequently to apply for a CCS injection permit.⁷ Within the European Union, EC Public Procurement rules might prohibit any such approach in that the award of a storage licence could not be restricted to certain parties, unless explicitly provided for in the Directive.⁸ The Draft Report for the European Parliament on the Directive has already identified that “*there will be no incentive for carrying out exploration work on a commercial basis unless the likelihood exists that those who do it will also be able to undertake CO₂ storage or be recompensed for their investment.*”⁹

- The Draft Directive would not allow for the granting of a combined exploration and storage licence (equivalent to a Sea Production Licence under Petroleum Act 1998 licencing exploration, development, and exploitation). A Member State can only grant storage licences in areas where there is sufficient knowledge already known about the geological characteristics of the site and this may only be possible to obtain under Exploration Permits.
- The Draft Directive does not contain details on who owns the intellectual knowledge derived from the exploration. Model clauses for Exploration Licences under the Petroleum Act provide that information derived from the exploration including statements of any petroleum found in the course of drilling is supplied to Government, but will not be disclosed to third parties without their consent.¹⁰ After five years from the date of submission, the information may be published by the Government.¹¹ It is questionable whether this model is entirely suitable for knowledge about CCS storage sites.
- Unless the Government is prepared to pay licensees to carry out exploration, the process is highly dependent on parties being willing to undertake the commercial risks involved in exploration with little certainty that they will be able to reap the eventual rewards from storage. It may be that those Member States with substantial storage possibilities will in fact use the permitting procedure to fund a programme of substantive exploration research, but this does not follow explicitly from the structure of the Directive. The Directive is silent on the question as to whether fees are payable to Governments for an exploration permit (the Petroleum and Gas Model) or whether holders of permits

would be paid for by Governments for the work carried out. Frankly, the current draft seems rather confused as to whether the exploration stages should be market or government driven. The proposed structure does not seem to guarantee any comprehensive and comparable exploration to ensure that the best overall sites are identified as possible candidates for storage.

An Alternative Model

A different approach would be to acknowledge more explicitly that in the light of the scale and urgency of the global warming challenge, the acquisition of comprehensive data about the nature of potential storage sites for CCS is an activity to be organised by the public sector rather than left to market forces. The EC Draft Directive could, for example, have provided an express duty on Member States to carry out comprehensive surveys (no doubt commissioning private operators to carry out the actual operations). Data concerning the structure and suitability of sites would then be made publicly available. Subsequent licences for storage would be applied for by the private sector as currently proposed but against the backdrop of a widely available data-set. Alternatively, this exercise could be organised and co-ordinated on a European basis by the European Environment Agency. Some Member States, though, may feel reluctant to pool data concerning what they view as a valuable and exploitable national resource. Equally, the costs and practicalities of carrying out such comprehensive surveys within the time-scales required may mean this approach is simply not feasible.

The emerging regulatory regime for CCS in the European Community largely remains market driven in that its take-up by operators is dependent on the economics of CCS – and the predicted price of carbon – rather than the need to comply with mandatory performance standards.¹² Even if one accepts this as a sensible approach, there are questions whether within that regime model the acquisition of a comprehensive knowledge-base about site suitability should be similarly dependent.

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¹S 3 Petroleum Act 1998.

²Current practice is to grant Exploration Licences for three years and covering the whole of the UK Continental Shelf other than areas covered by Production Licences: Oil and Gas Regulation, Department of Business, Enterprise and Regulatory Reform (BERR), 2008.

³Petroleum Licencing (Exploration and Production) (Seaward and Landward Areas) Regulations 2004/352 Schedule 1.

⁴Licences automatically expire at the end of each term unless the Licensee has made sufficient progress to move onto the next term: Oil and Gas Regulation, Department of Business, Enterprise and Regulatory Reform (BERR), 2008.

⁵Draft Directive, Preamble (16).

⁶Here the EC Exploration Licence does resemble an Exploration Licence under UK law: “There is no guaranteed link between work done under an exploration licence, and obtaining a licence to produce any hydrocarbons found.”: Down S. (2007) *Energy Law in the United Kingdom* in Roggenkamp et al (eds), *Energy Law in Europe*, Oxford University Press.

⁷See para 6.1.1. *Regulatory Framework for the Long-Term Storage of Carbon Dioxide in Victoria*, Discussion Paper, Dept. of Primary Industries, Victoria, January 2008.

⁸For requirements to offer licences without discrimination in connection with searching and obtaining of hydrocarbons see Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorisations for the prospecting, exploration and production of hydrocarbons.

⁹European Parliament Committee on the Environment, Public Health and Food Safety Committee Draft Report on Proposed Directive 5/6/2008 2008/0015 (Rapporteur: Chris Davies). The Draft is due to be adopted by Parliament by the end of September 2008.

¹⁰See clauses 12 and 13 Model Clauses, Petroleum Licencing (Exploration and Production) (Seaward and Landward Areas) Regulations 2004/352 Schedule 1.

¹¹See Clause 15, Model Clauses, *ibid*.

¹²The present policy is to review the take-up of CCS within a market based system before deciding whether mandatory standards might be required: see Commission Communication Sustainable power generation from fossil fuels: aiming for near-zero emissions from coal after 2020, COM (2006) 843 final, para 3.2, January 2007, and Europa Press Release Questions and Answers on the proposal for a directive on the geological storage of carbon dioxide: “To meet GHG reductions beyond 2020, the deployment of CCS will be essential, and by 2015 the technological options will be clearer. So if commercial take-up of CCS is slow, policy-makers will be obliged to look again at the compulsory application of CCS technology.” (<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/36>)