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# OFFSHORE NATURAL GAS STORAGE AND LIQUEFIED NATURAL GAS IMPORT FACILITIES

Improving the regulatory framework for offshore natural gas storage and offshore LNG unloading – a consultation

AN ENERGY REVIEW CONSULTATION

NOVEMBER 2006

## Why is DTI conducting this consultation?

This is consultation is closely linked to a number of other consultations that were proposed in the Energy Review report: The Energy Challenge, published in July 2006. The measures set out in the report help to take forward our commitment to meeting the two major long-term challenges in UK energy policy:

- tackling climate change by reducing carbon dioxide emissions; and
- delivering secure, clean energy at affordable prices, as we move towards increasing dependence on imported energy.

The consultations will help formulate our position on a range of energy issues to be published in the Energy White Paper in 2007.

The Government is considering legislating to establish a clear regulatory framework for the offshore storage of natural gas in non-hydrocarbon features such as salt caverns, as well as in partially depleted oil and gas fields. New legislation would also provide for the unloading of Liquefied Natural Gas (LNG) offshore. A clear framework will ensure that the market is better able to provide the infrastructure facilities that can make a major contribution to secure gas supplies for all consumers.

The Government considers that these changes will bring clarity to the current offshore arrangements, which do not explicitly provide for the range of gas infrastructure that the market is seeking to develop.

A preliminary consultation was carried out through the DEFRA Marine Bill consultation, which closed on 23 June 2006. This consultation seeks views on the more detailed policy options that the DTI is considering.

## Issued 24 November 2006

## Respond by 16 February 2007

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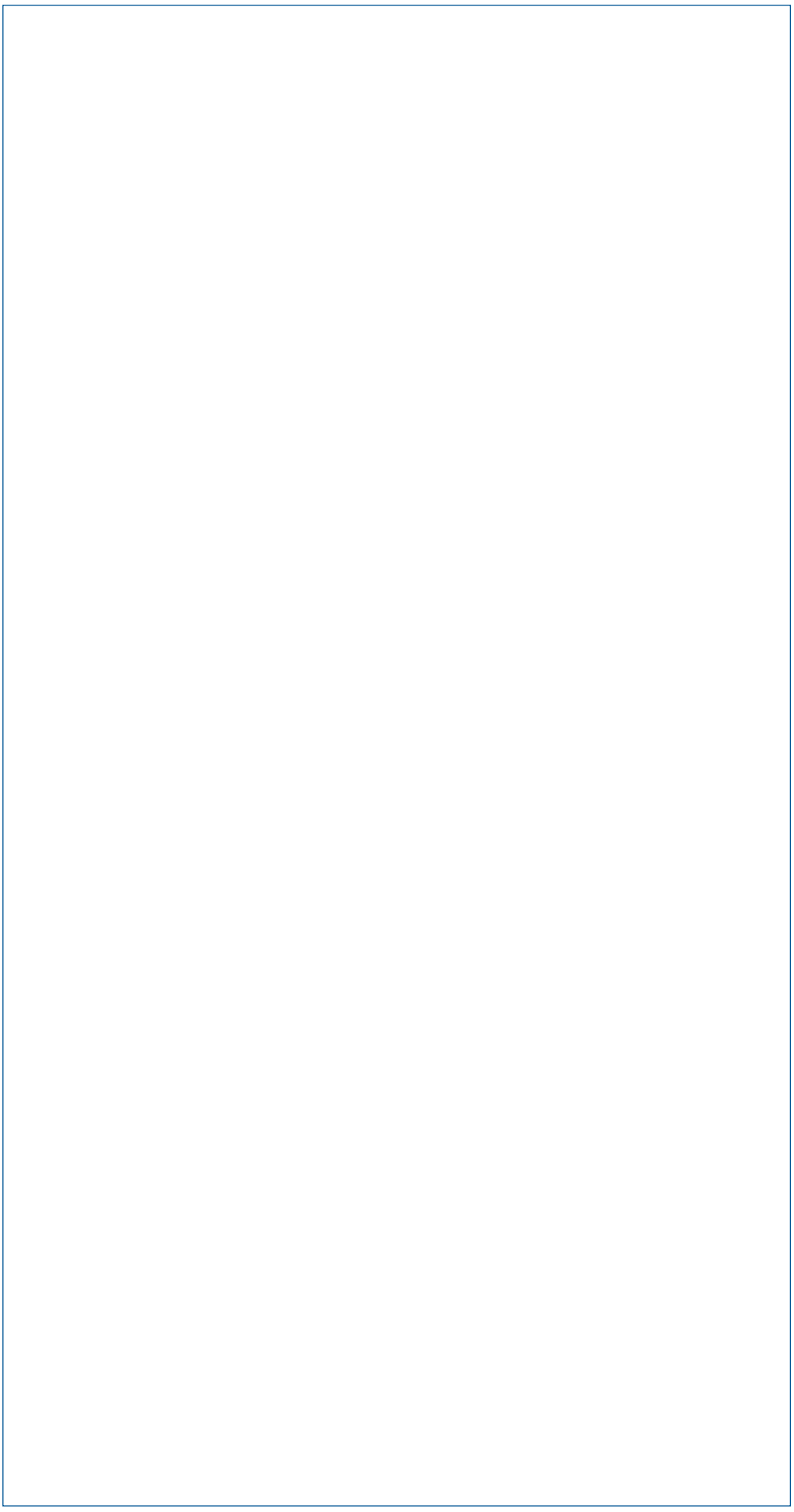

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# Foreword by the Secretary of State

Energy is a vital part of every aspect of modern life in Britain and for our continued economic prosperity. The Government's Energy Review highlighted the challenges we face in addressing climate change and ensuring security of energy supplies. A key part of responding to this challenge is improving the planning and consenting regime for energy infrastructure projects.

At the beginning of 2006 the Government announced measures to simplify and streamline the gas infrastructure consents processes onshore and offshore. Our gas supply situation is changing; during the Energy Review, analysis showed that, under some scenarios, the UK might import around 80 – 90% of its gas requirements in 2020. If all the measures in the Review were fully implemented, it was estimated that our gas consumption could be up to 17% lower in 2020, thus reducing imports. So while the Government is committed to working closely with the industry to maximise economic recovery of gas (and oil) from the UKCS, we shall need, nonetheless, to import substantially more gas in coming years.

Meeting this challenge, and enabling secure gas supplies for all consumers, means that more gas supply infrastructure is required to import, transport and store gas until it's needed, a point that was clearly set out in my Statement of Need, laid before Parliament on 16 May 2006.

We shall be consulting on appropriate measures to simplify the current onshore regime in light of the recommendations on planning made by the Government-commissioned Barker Review of Land Use Planning and Eddington Transport Study, due to report later this year.

Offshore, there is an equally pressing need for a consents framework that is clear, fit for purpose and reduces burdens on business so that the diverse gas infrastructure we need can be delivered on time.

The current offshore provisions give rise to uncertainty. Developers wishing to store gas offshore or to unload Liquefied Natural Gas to a platform offshore, for it to be piped to the UK mainland, face a complex nexus of regimes, that was not designed with these activities in mind, and one which places a real burden on developers.

This consultation presents proposals to provide a user-friendly framework that will help to facilitate the development of new infrastructure, and help secure diverse gas supplies in the future.

We will draw the results of this and other consultations together into a new Energy White Paper next year.

**The Rt Hon Alistair Darling MP**

November 2006

# Executive summary

The Government has four long-term goals for energy policy:

- to put the UK on the path to reducing carbon dioxide emissions by 60% by 2050;
- to maintain reliable energy supplies;
- to promote competitive markets in the UK and beyond; and
- to ensure that every home is adequately and affordably heated.

Earlier this year we undertook a major review of the country's progress toward achieving these goals and what further action may be required in light of the major long term challenges of climate change and delivering secure, clean, affordable energy as we move towards increasing reliance on imported energy. The Government's response to the review, The Energy Challenge, was published in July and was a large, evidence-based package of measures and further action on both energy supply and demand side.

Actions to reduce carbon dioxide emissions include a major drive on energy efficiency. We will also promote cleaner energy and encourage all low carbon technologies. To secure energy supplies we will aim to set the right investment framework and act internationally to liberalise markets in the EU.

There are a number of public consultations directly related to the Review, and others, including this one, which are closely related to that work, running over the next few weeks. The outcomes of these will feed in to an Energy White Paper in 2007.

## Offshore Natural Gas Storage and Liquefied Natural Gas Import Facilities – a consultation

Indigenous gas production from the United Kingdom Continental Shelf (UKCS) is declining. The UK will move from a position of virtual self-sufficiency, to being 80-90% reliant on imports by 2020. To meet this challenge, our regulatory framework must encourage the market to provide new gas infrastructure that this shift may require.

In May[1] the Secretary of State announced measures to review the current regulatory framework in the UK for gas supply infrastructure onshore and offshore. This consultation document outlines the existing offshore legislation, sets out its limitations in this area, and makes proposals for new legislation.

A consultation paper examining the rationalisation of the onshore consents processes will issue in due course.

This offshore consultation paper examines two types of development: offshore natural gas storage under the seabed in partially depleted oil/gas fields or in non-hydrocarbon features (e.g. salt caverns), and the offshore unloading of Liquefied Natural Gas (LNG).

Gas storage facilities offshore could help provide more secure gas supplies for all consumers. Storage allows more flexibility, enabling the market to respond to seasonal peaks in demand by building up gas stores in the summer, which can then be retrieved from storage in the winter, when gas prices are higher.

LNG imports have the potential to form an increasing proportion of our gas supplies. The UK needs to consider how to facilitate new LNG technologies, such as offshore unloading, to help meet commercial interest in supplying the UK.

Offshore infrastructure developers currently face undesirable regulatory uncertainty, as well as a complex regulatory framework. This increases risks and costs, which can present a barrier to entry, or a barrier to agreeing project financing. The end result could be less imported and stored gas when we need it.

This consultation presents proposals to clarify and modernise legislation to provide a fit-for-purpose offshore regime that will help play a part in securing the UK's gas supplies well into the future.

This consultation document is aimed at those in the energy industry, in non-Governmental organisations, or individuals who have a commercial or personal interest in the development of the UK offshore gas market and the development of a new regulatory framework for these types of activity.

[1] This followed a previous announcement by the Secretary of State: Debate on Security of Supply, 12 January 2006, Hansard, Cols: 486-534.

## How to respond

When responding, please state whether you are doing so as an individual, or representing the views of an organisation. If responding on behalf of an organisation, please make it clear whom the organisation represents and, where applicable, how the views of members were assembled.

Responses can be submitted by post or email by 16 February 2007 to:

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We would also be pleased to meet with you and hear your views on the issues raised. If you would like to arrange a meeting, please contact Ruth French using the contact details above.

We are sending this document to all the key interested parties of this consultation. We would welcome suggestions of others who may wish to be involved in this consultation exercise. A list of consultees is at Annex C.

## Additional copies

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In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

## Help with queries

Questions about the policy issues raised in the document can be addressed to Ruth French or Ricki Kiff at the address on page iii.

If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

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A copy of the Code of Practice on Consultation is in Annex A.

# Consultation Questions

The consultation asks the following questions; these are repeated in the main text, and in order to fully understand them, we suggest that it is necessary to read that text and its associated Partial Regulatory Impact Assessment, attached at Annex B: In addition to views on the questions below, we would welcome your analysis of any unintended consequences or other implications arising from our proposals. Your views on the costs and benefits of the options referred to in the Partial Regulatory Impact Assessment, and indeed on any alternatives to regulation would be welcomed.

### Offshore gas Storage

Q1. Does the current regulatory framework present a disincentive to the development of offshore gas storage infrastructure development or not in your view? Why?

Q2. What could the implications (positive or negative) be of no change to the current regulatory framework in your view?

Q3. Would the ability to store natural gas in porous space under the seabed extending beyond the current 12 nml limit be a significant advantage to developers, even if no changes were made to the regulatory framework?

Q4. Are there any additional non-regulatory solutions that should be considered? Please provide details.

Q5. Would you consider it advantageous for any new Offshore Natural Gas Storage Licence to have terms similar to those expected of Petroleum Licence holders? Please explain.

Q6. Are there any further issues to be considered with regard to an Offshore Natural Gas Storage Licence being issued in the vicinity of a currently producing field?

Q7. Are there specific issues of interest to hydrocarbon producers who may be considering changing the main purpose of their activity from gas production to storage which are not addressed in this consultation? Please explain.

Q8. Do you consider that a fit for purpose licensing regime, administered by the DTI, covering the activities outlined above, would provide a clear consents process for developers? Please explain.

Q9. Do you consider that the non-legislative proposals would provide a better solution? Please explain.

Q10. Do the proposals outlined regarding a fit for purpose licensing regime for offshore gas storage present a reduced, unchanged or increased administrative burden for developers?

Q11. Do you have any additional suggestions for simplification of the current regulatory framework for offshore gas storage which might be taken into consideration?

### LNG Offshore Unloading

Q12. Does the current regulatory framework present a disincentive to the development of offshore LNG unloading facilities in your view? Please explain.

Q13. What could the implications (positive or negative) be of no change to the current regulatory framework in your view?

Q14. Would the ability to unload LNG in the area extending beyond the current 12 nml limit be a significant advantage to developers, even if no changes were made to the regulatory framework?

Q15. Are there any additional non-regulatory solutions that should be considered? Please provide details.

Q16. Do you consider that a fit for purpose consenting regime, administered by the DTI, covering the activities outlined above, would provide a clear consents process for developers? Please explain.

Q17. Do you consider that the non-legislative proposals would provide a better solution? Please explain.

Q18. Do the proposals outlined regarding a fit for purpose licensing regime for offshore gas storage present a reduced, unchanged or increased administrative burden for developers?

Q19. Do you have any additional suggestions for simplification of the current regulatory framework for offshore LNG unloading which might be taken into consideration?

Q20. Are there any additional scenarios regarding LNG offshore unloading to which thought should be given?

### Scope

Q21. Are there other offshore activities of this nature, excluding Carbon Capture and Storage, which should be included in the scope of this legislation? Please provide details.

### Decommissioning:

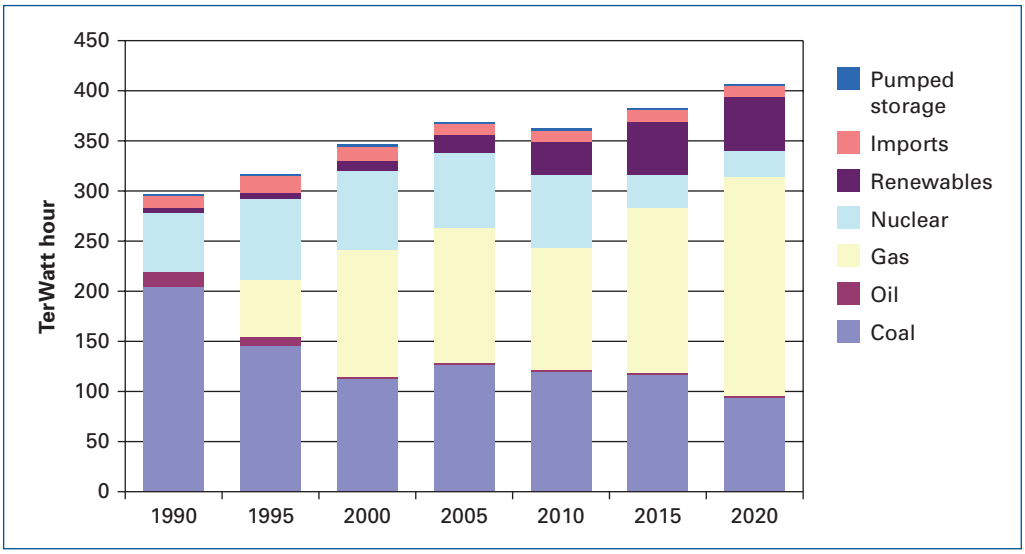
Q22. Do you think the arrangements noted in para 5.3 are suitable, or would you like to see separate decommissioning provisions provided for gas storage installations and LNG unloading platforms. What would you like those new provisions to look like?

# Chapter 1: The importance of gas to our energy needs

1.1 Gas currently accounts for 37%[2] of the energy resources required to generate our heat and power in the UK; more than coal (34%), and more than nuclear (20%).

1.2 It is anticipated[3] that under the current market framework, gas-fired stations, along with some renewables, would replace coal and nuclear power stations that are due to close. Under this scenario, the percentage of the UK's electricity supply provided by gas-fired stations could rise to 55% by 2020. This increased dependence would occur against a backdrop of increasing gas imports.

**Chart 1. Electricity generation mix – projections to 2020**



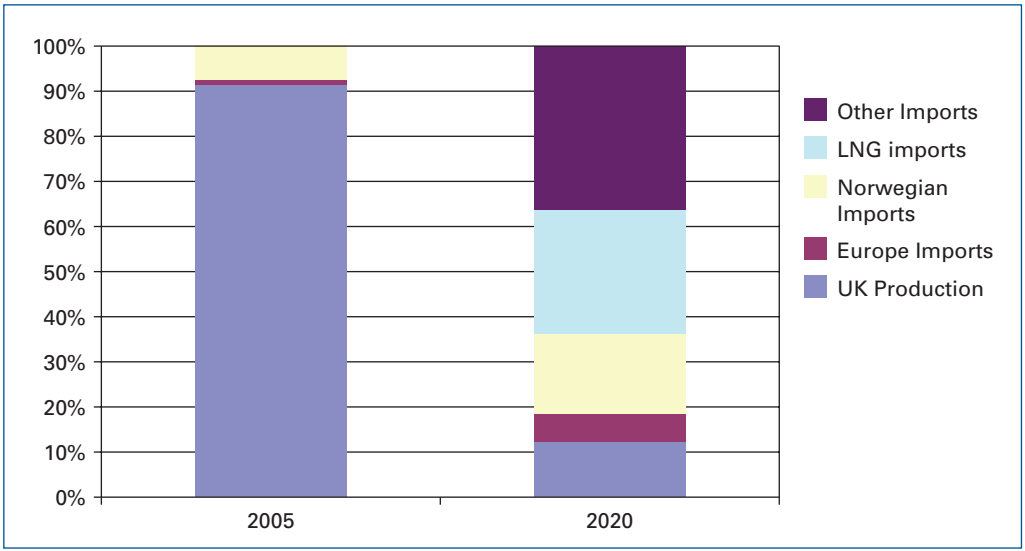

## We need to import more gas to meet UK needs

1.3 Gas production from the UKCS peaked in 2000. It is now expected to stabilise for a year or two and then resume progressive decline.[4] In 2004 we became a net importer for the first time since 1998, and this trend is set to continue. It is expected that UKCS production will fall from approximately 260 million cubic metres (mcm) per day during winter 2006/2007, to around 90 mcm per day by winter 2014/2015.

[2] Energy Review: A Report, DTI, July 2006, pg. 25
[3] Energy Review, ibid, pg. 25
[4] Joint Energy Security of Supply Working Group (JESS), April 2006, pg. 33

1.4 Whilst our indigenous supplies are falling, National Grid forecasts[5] that the UK's demand for gas between 2006 and 2014 is set to increase by 2% per annum, and that we will see an import dependency of 46% by the end of the decade, rising to a possible 80% by 2014-15, from various sources (see Chart 2).

### Chart 2. UK Gas Imports 2005 and 2020




1.5 As we import more gas from abroad, whether via pipelines or LNG tankers, we need new gas supply infrastructure to increase our capacity to import, store and transport our gas efficiently, providing the best possible conditions for maintaining secure gas supplies to consumers.

## The market is responding to our need for secure gas supplies

1.6 UK energy delivery is achieved through a market framework, governed by an independent regulator. Government policy puts in place broad objectives, which are supported by regulation. As with the sector in general, the private sector is best placed to develop the systems that can deliver the additional gas supply infrastructure.

1.7 The market is seeking to respond to the challenge of increased gas imports, with actual and planned investment in gas import terminals and infrastructure, onshore gas storage and related transportation of some £10 billion over 2005-2010. The projects have the potential to make a real difference to our gas supply infrastructure; by 2010, our storage capacity could more than double and our import infrastructure could more than triple.

[5] National Grid: Transporting Britain's Energy 2006, Development of Investment Scenarios, July 2006

But there are concerns that our regulatory environment, onshore and offshore, is not currently able to deal effectively and expediently with gas infrastructure applications.

## Establishing the right regulatory framework

1.8 The Government's commitment to creating the right environment in which the market can deliver was underlined in the Secretary of State for Trade and Industry's Parliamentary Statement of Need for Additional Gas Supply Infrastructure, which was published on 16 May 2006.[6]

1.9 The Government has been clear about the need to create an appropriate regulatory regime for offshore gas supply infrastructure. The then Secretary of State, Alan Johnson, announced on 12 January 2006[7] that the Government would be taking forward measures to increase the potential for gas supply in the UK. He set out plans for the revision of the legal regime covering new offshore gas storage and offshore gas unloading, and noted that as soon as parliamentary time allowed, legislation would be announced to achieve this, if required.

1.10 In addition, the onshore gas consents regime was also to be reviewed and revised. This work is being taken forward in conjunction with broader planning considerations in the context of DTI's recent Energy Review, and Government-commissioned independent planning reviews including the Barker Review of Land Use Planning, and the Eddington Transport Study. Proposals for streamlining the onshore regime do not form part of this consultation, and will be consulted on separately in due course.

### Consulting on a new regulatory framework

1.11 From March to June 2006, the DTI sought initial broad views on the storage of natural gas in sub-seabed geological structures and the provision of facilities to unload gas that has been transported by ship, as well as views on how to license such activities appropriately, by means of the Defra Marine Bill consultation. The outline of a future regime was not consulted on.

1.12 Approximately 1250 responses were received in total by Defra[8], although fewer than 5% responded to questions regarding a proposed licensing regime for such activities. The importance of exploring means to ensure security of gas supply was universally

[6] Secretary of State for Trade and Industry's Statement of Need for Additional Gas Supply Infrastructure was published on 16 May 2006;
[7] Debate on Security of Supply, ibid
[8] Full summary of responses can be accessed at: http://www.defra.gov.uk/corporate/consult/marinebill/responses-summary.pdf

recognised. The activity was generally welcomed, and its previous safe history noted. Some environmental concerns, particularly regarding the water quality as a result of pumping out brine to create salt caverns, were raised, and it was noted that the activities should be subject to the usual environmental assessment procedures.

1.13 Where views were expressed on a regulatory regime, about 60% of respondents stated that new legislation was required to legislate for the storage of natural gas in sub-seabed structures. Opinions were fairly evenly divided as to whether this should be achieved by a separate, fit-for-purpose regime or through an integrated licensing regime, provided for through the forthcoming Marine Bill for example.

1.14 Where new legislation was to be introduced, it was noted that this should not be contrary to the objective of rationalisation. Developers were also concerned as to how this would dovetail with the current petroleum production licensing regime, and wished to ensure that it was designed so as to optimise the production of remaining reserves, and promote the use of existing fields and facilities for storage purposes.

## The flexibility to deal with new developments

1.15 Increasing gas import dependence, and our decreasing ability to rely on additional, flexible supplies from the North Sea during periods of peak demand, as we have traditionally done, means that we have to look at other ways of introducing more flexibility to our gas supply mechanisms. This use of flexibility helps us to reduce the impact of fluctuations in gas supply and demand, and exposure to movements in gas prices, for example due to seasonal pressures.

1.16 One of the ways of mitigating the decline in our flexibility is to consider how we can import and store more gas from other sources for use during peak periods.

## The technology behind the offshore storage developments

1.17 Gas storage onshore, whether in partially depleted oil and gas fields or in subterranean salt caverns, has been used for several decades, with significant activity since the 1960s. Offshore activities are now gaining in popularity, and commercial interest is being expressed in the UK in the development of a number of new offshore gas storage facilities, including both sub-seabed salt caverns and the conversion of partially depleted oil and gas fields.

1.18 Gas storage using partially depleted oil and gas fields is achieved by injecting gas into the reservoir at times of low demand e.g. summer. To maintain pressure within the reservoir, a certain amount of gas – known as 'cushion gas' – is left untouched. This gas maintains the pressure within the field and enables the high deliverability of gas from the field during peak consumer demand e.g. winter. The same well is used for injection and production/withdrawal purposes.

1.19 Gas storage in non-hydrocarbon features such as salt caverns is achieved by drilling into layered salt deposits beneath the seabed. The caverns can then be created by dissolving the salt by injecting seawater into the salt strata. Associated infrastructure is then used to inject gas into the cavern for storage and to extract gas before transmission to the onshore gas transmission network through offshore pipelines.

1.20 A British Geological Survey (BGS) report[9] for the DTI suggests that there is strong potential for this type of gas storage in a number of geological formations offshore, in areas such as the Irish Sea and the southern North Sea. Based solely on geological criteria, it also suggests that there is potential for large parts of the offshore Wessex Basin, Peel Basin, Solway Firth Basin, Cardigan Bay Basin and Forth Approaches Basin[10] being able to support such facilities.

## The market for new LNG offshore unloading infrastructure

1.21 LNG is natural gas, liquefied by reducing its temperature to minus 160 degrees Celsius at atmospheric pressure, usually to allow for transportation by ship. This process reduces the volume of gas by a factor of 600. When it reaches its destination, it is stored until use, re-gasified, and injected into pipeline systems.

1.22 There is no doubt that LNG imports will become increasingly important in helping balance supply and demand as UKCS production declines. Current UK gas market arrangements are already delivering a number of competing gas import projects, potentially delivering gas from diverse sources such as Norway, the Netherlands, Russia, Algeria, Qatar and other LNG exporters.[11]

[9] BGS gas storage report: www.og.dti.gov.uk/information/papers/index.htm.
[10] BGS gas storage report, ibid, pg.1
[11] Secretary of State's Second Report to Parliament on Security of Gas and Electricity Supply in Great Britain, July 2006, 4.10

1.23 Worldwide LNG supplies and imports are forecast to double between 2005 and 2010[12]. National Grid's Ten Year Statement[13] notes that 2007 and 2008 should see the delivery of over 30 LNG tankers, including those with capacities of over 200,000 cubic metres, some 50% higher than the capacities of existing tankers. These changes will improve the economics of LNG transportation, making it increasing viable to transport LNG over longer distances.

1.24 Offshore unloading technology already exists in the United States and is being planned for in Italy, where a new LNG offshore import terminal and storage facility is scheduled for start up by the end of 2007, 15 kilometres from the Veneto coast. In the US there are a number of new facilities planned in the Gulf of Mexico and off the coast of California.

## The technology behind the LNG offshore unloading developments

1.25 Unloading of LNG offshore is seen as an attractive option for the market. It involves transporting the LNG and regasifying it onboard the vessel, or at a regasification facility offshore. The gas is offloaded at offshore buoy terminals or platforms, and can be stored on the platform. The platform is attached to sub-sea gas pipelines which transport the gas to shore.

## Consenting to these offshore technologies

1.26 We have been approached by a number of developers seeking clarity on the consents that are required for such developments. Currently we believe this would only be possible by gaining consent through a number of pieces of legislation. As set out in the table below, this could include include the Petroleum Act 1998, the Food and Environment Protection Act 1985 and the Coast Protection Act 1949. If the development were situated within territorial waters, the Transport and Works Act 1992 might be used as an alternative. A lease from The Crown Estate would also be required for any developments within 12 nautical miles (nml). This route is currently being explored by one developer for the purpose of offshore gas storage, but we are not aware of any developer having made applications for the appropriate combination of licences/consents to take forward the development of such a project.

[12] DTI, Energy Challenge, 4.31
[13] National Grid, Gas Transportation Ten Year Statement 2005, 4.4.2

**Table 1. Consenting to offshore activities**

| Activity | Possibly relevant legislation/consents* |
|---|---|
| Gas storage (hydrocarbon features) | Petroleum Act 1998<br>Coast Protection Act 1949<br>Lease from The Crown Estate (within 12nml) |
| Gas storage (non-hydrocarbon features) | Food and Environment Protection Act 1985<br>Coast Protection Act 1949<br>Lease from The Crown Estate (within 12nml) |
| LNG offshore unloading | Food and Environment Protection Act 1985<br>Coast Protection Act 1949<br>Transport and Works Act 1992<br>Petroleum Act 1998<br>Town and Country Planning Act 1990 (where physical connection to mainland)<br>Lease from The Crown Estate (within 12nml) |
| | *List may not be exhaustive |

1.27 It is considered that, in relation to storage in non-hydrocarbon features and LNG offshore unloading, the regulatory framework supported by existing legislation identified in 1.27, whilst probably permitting certain construction works, may have a number of significant shortcomings as to the actual operation of such facilities. Whether this framework is entirely appropriate for the granting of relevant consents is a considerable concern to developers, owing to the clarity that project financiers often require certainty about a consenting processes and timescales before committing funds to a project .

1.28 Any difficulties using existing measures may not become apparent until developers start making applications, but the evidence from early discussions with a number of developers, is that a more robust framework to regulate such developments is important if it is intended to maximise their potential contribution towards security of energy supply.

# Chapter 2: Current regulatory framework:

2.1 The current legislative regime was not designed for the range of offshore gas supply infrastructure that the market is seeking to develop, and does not refer explicitly to these activities. Only one offshore gas storage development is in operation, and gained consent under the Petroleum Act in the 1980s, having previously produced gas in the same field. From that point until now, there has been no market interest in exploring gas storage developments further, nor in LNG offshore unloading, hence there has been no need to revisit the appropriateness of the regulatory framework.

2.2 There is now one developer actively exploring consents processes, and a number of others who have a strong interest in these activities. The common theme is of general confusion, frustration at legal uncertainties, and a desire for urgent change. The Government has committed to considering what measures might be needed to create a fit-for-purpose regime.

2.3 At present, developers are thought only able to undertake a small number of activities (summarised in Table 2). Firstly, where an offshore petroleum field is nearing the end of its life, and a change of use from gas production to gas storage is required, consent may be sought to store gas in the field's porous strata (either onshore or offshore) where the developer holds a production licence.

2.4 Secondly, developers might be able to obtain consent to undertake construction works related to preparing offshore salt caverns, and to injecting gas into the caverns. This activity could possibly be provided for via a number of pieces of existing legislation including the Petroleum Act 1998 (for the pipelines and decommissioning elements), the Food and Environment Protection Act (FEPA) 1985, and the Coast Protection Act (CPA)1949. This legislation would not seem to provide an adequate regulatory framework for the ongoing operation of, and withdrawal of gas from the facility. It is a legally uncertain route, and one which provides a significant burden for developers. Guidance to potential market participants could make this process more straightforward, but will not suffice where legislative gaps exist. It should be noted that only one application is currently required for FEPA and CPA together. It is proposed that these two pieces of legislation will be merged and amended through the Marine Bill.

2.5 There is no simple process to consent to offshore LNG unloading activities presently. The potentially applicable legislation would be the FEPA 1985, the CPA 1949, and some aspects of the Petroleum Act 1998 with some reference to decommissioning and pipeline provisions. The Transport and Works Act 1992 may be alternative in some cases. FEPA is not ideally suited as a consenting vehicle to this type of activity, although the forthcoming Marine Bill could provide an opportunity to widen FEPA's scope to cover such activities.

2.6 As well as obtaining consents for activities, developers need to be granted exclusive rights to use the geological features in question for gas storage, or the relevant parts of the seabed and water column for LNG unloading. The Crown Estate can currently grant leases in an area of the seabed within the 12 nautical mile limit of the territorial sea, but at present, the position beyond that 12 mile limit is not entirely clear. Our proposals consider the benefits of the UK asserting exclusive rights under the United Nations Convention on the Law of the Sea (UNCLOS) 1982 to make use of the seabed, or the water column, for the purpose of establishing gas storage and LNG unloading facilities, in areas of the continental shelf beyond the limit of the UK's territorial waters.

**Table 2. Summary of offshore activities and potential legislative gaps**

| Activity | Currently possible? |
|---|---|
| Gas storage (hydrocarbon fields) | Yes. This has previously been controlled and consented to under the Petroleum Act 1998. However, the scope of the Petroleum Act is more specifically focussed on 'searching and boring for and getting petroleum'. In the case of gas storage, the extraction of the petroleum native to a field will typically only be a byproduct of the storage and extraction of non-native gas. It would therefore seem appropriate that if amendments were to be made to legislation to encompass other activities, storage in depleted fields could be licenced in the same fashion. Beyond 12nml, the ability of The Crown Estate to grant authorisation for the use of the seabed for gas storage is not entirely clear without the UK asserting exclusive rights under UNCLOS and vesting them in the Crown. |

**Table 2.** *(continued)*

| Activity | Currently possible? |
|---|---|
| Gas storage (non-hydrocarbon fields e.g. salt caverns) | In part. The Food and Environment Protection Act 1985 could provide for the imposition of suitable licence conditions for the construction of salt caverns and the injection of gas into the caverns. But it is less clear that suitable conditions can be imposed regulating the ongoing operation of, and withdrawal of gas from, the facility. Beyond 12nml, the ability of The Crown Estate to grant authorisation for the use of the seabed for gas storage is not entirely clear without the UK asserting exclusive rights under UNCLOS and vesting them in the Crown. |
| LNG offshore unloading | In part. Construction of the platform itself might be regulated by conditions imposed underthe Food and Environment Protection Act (FEPA) 1985, the Coast Protection Act 1949, and some aspects of the Petroleum Act 1998, in particular its decommissioning and pipeline provisions. The Transport and Works Act 1992 may be applicable in some cases. There is, however, no clear route to be able to license the ongoing operation of the activity and unloading of gas onto the platform. Beyond 12nml, the ability of The Crown Estate to grant authorisation for the use of the seabed for gas storage is not entirely clear without the UK asserting exclusive rights under UNCLOS and vesting them in the Crown. |

2.7 The current legislative provisions do not set out explicit provisions for these technologies. They provide at best an imperfect framework in which developers are faced with legal uncertainty as to whether the entire range of their proposed activities are regulated. The additional risk that this could pose to developers could be viewed as a disincentive to the market, with potential implications for security of gas supply.

2.8 Consideration has been given to the impact on security of supply of a lack of stored gas or LNG, as well as to the potential impact on gas prices. Lack of investment in, or a delayed start to a project might lead to a tighter demand-supply balance, which could lead to higher gas prices and even gas supply interruptions for some. A 1p per therm increase in the wholesale price of gas (equating to a less than 2% increase in the average 2005/6 spot price) can increase the cost of gas in the UK by £1m per day. The Partial Regulatory Impact Assessment provides more details.

2.9 To ensure that the market is not hindered in its efforts to deliver new offshore gas supply infrastructure, and that developers are not dissuaded from seeking consents due to the burdensome complexity of legislation or legal uncertainties, it has become evident that we need to consider options, including specific legislation provision for these technologies, which might provide certainty and clarity to the market and to the regulator.

# Chapter 3: Scope of the legislation

## Geographical scope

3.1 In relation to Scotland, most aspects of energy, including oil and gas, are reserved matters. Any new offshore legislation would apply to all UK territorial waters (Northern Ireland waters come under the UK licensing regime) and areas extending beyond those waters in which the UK enjoys sovereign rights. FEPA 1985 and CPA 1949 apply to the same offshore areas as for offshore oil and gas licences (namely areas of the continental shelf designated under the Continental Shelf Act 1964, and UK territorial waters), and in addition, apply to internal waters.

3.2 Scottish Ministers have legislative competence for FEPA within the territorial waters adjacent to Scotland apart from certain reserved matters such as activities relating to oil and gas exploration and exploitation, including offshore gas storage, (beyond 3nml) and pollution from ships. The CPA does not extend to the territorial sea around Northern Ireland. Ministerial functions under CPA are generally devolved within the territorial waters adjacent to Scotland, but reserved for activities relating to the exploration and exploitation of oil and gas, offshore oil and gas installations and pipelines.

3.3 The application of provisions where applicable to the unloading or storage of non-indigenous gas within the territorial waters adjoining Wales falls within the powers of the Welsh Assembly in relation to the protection of the Marine Environment. However, it is not envisaged that any powers under the proposed new legislation will be transferred to the Assembly.

## Categories of activity to be included in scope.

3.4 The Government intends that any new or revised legislation should include within its scope all new offshore natural gas storage developments in hydrocarbon and non-hydrocarbon features within territorial waters and in areas extending beyond the 12nml limit of the territorial sea. It should also include all LNG offshore unloading developments within the same area.

### Developments already having received consent

3.5 We will ensure that existing consents obtained by developers under the current legislation may (subject to the imposition of any appropriate additional conditions) be converted into consents under the new legislation as regards their future activities.

### Natural Gas Storage

3.6 Any changes to legislation would apply to offshore natural gas storage activities undertaken within non-hydrocarbon features as well as those undertaken within a hydrocarbon feature (which would currently be licensed under the Petroleum Act 1998). Revisions to legislation would apply to offshore natural gas storage in both scenarios, beyond the UK's low water mark. Gas storage onshore, which is currently licensed by the Petroleum Act 1998 would be unaffected by these proposals. Further consideration is being given to onshore consenting regimes for gas infrastructure and will be consulted on in due course.

### LNG Unloading Platforms

3.7 Any new legislation would apply to the UK territorial waters and areas in which the UK has sovereign rights under UNCLOS, beyond the limit of its territorial waters, to make use of the seabed and the water column.

### Carbon Capture and Storage

3.8 This consultation is in relation to the storage of natural gas in the UK offshore area, with its associated security of supply implications, for which DTI has lead departmental responsibility. This consultation is not in relation to the storage of $CO_2$, known as Carbon Capture and Storage (CCS).

3.9 The legal framework for CCS is currently being examined in the context of the relevant international conventions and potential European Union legislation. CCS feasibility, from a UK regulatory and liability point of view, is also being considered by a joint DEFRA/DTI cross-Government Task Force created for the purpose and will consult publicly in due course. If you wish to discuss matters in relation to CCS please contact: Rosita Hill (Rosita.Hill@dti.gsi.gov.uk, tel 020 7215 6394).

# Chapter 4: Potential measures to improve the regulatory framework.

4.1 The previous chapters detailed the background to this consultation, examining why the UK needs to import more gas, and what will be required in terms of new infrastructure to help provide the best possible conditions for maintaining secure gas supplies to consumers.

4.2 This chapter describes proposals that could be considered to improve the regulatory framework for offshore natural gas storage and LNG unloading activities. This consultation and the attached Partial Regulatory Impact Assessment (at Annex B) explore a range of possible options, and seek views from respondents on the most appropriate way forward.

4.3 All new proposals need to be considered in the context of their full costs and benefits, any regulatory risks and burdens, any unintended consequences and the impacts on competition. These considerations are outlined in brief in chapter 4, and full detail on all these aspects is contained in the Partial Regulatory Impact Assessment.

4.4 These proposals are aimed at considering a variety of solutions to provide developers with more clarity, and/or legal certainty about the consents they need to undertake such activities. Some options suggest ways of streamlining the current processes, to create a more fit for purpose framework, or indeed a bespoke regime. They are presented alongside a 'do nothing' option for comparative purposes.

### Offshore gas storage

## Maintaining the current framework

4.5 Chapter 2 mentions the legal uncertainty to developers wishing to build new storage facilities offshore. In the case of hydrocarbon features only, there is some scope for the regulation of storage under the Petroleum Act 1998; but in the case of storage of non-indigenous gas*[14] some uncertainty attaches to the ability of The Crown Estate to authorise the use of the porous space under the seabed beyond 12 nml.

[14]* i.e. gas produced from outside the UK continental shelf

4.6 For storage in non-hydrocarbon features, the current regulatory framework (e.g. FEPA 1985 and CPA 1949) might provide for some (e.g. construction), but not all (e.g. operating) aspects, of storage developments up to and beyond the 12 nml limit of the territorial sea. Within 12nml, there is no doubt that The Crown Estate could lease an area of the seabed for such projects. Beyond this point, it would be safer for the UK to assert rights under UNCLOS to make exclusive use of the porous space under the seabed in areas of the continental shelf beyond the limit of the UK's territorial waters. In the interim, some legal uncertainty would attach to such activities beyond 12nml, which limits the possible storage sites for developers. The Marine Bill could also be used to make necessary amendments to FEPA and CPA.

4.7 If no new regulation were set in place, the Government would consider providing more guidance to market participants, or those seeking to enter the market, in terms of the legislative provisions which might currently be used to consent to activities, and the processes for seeking those consents. It could not, however, provide legal advice on how to obtain consents, and individuals or companies would need to seek their own legal advice on these matters.

4.8 Again, if no new regulation were set in place, asserting the rights of the UK under UNCLOS to make use of the porous space under the seabed beyond the current limit of 12 nml (and vesting of rights in the Crown) would certainly provide a partial solution to the current situation, as it would facilitate developments in a greater area of UK territorial and designated waters. It would probably be quicker than putting new legislation in place, but it would have no impact on reducing the legal complexities faced by developers under current legislative provisions.

**Offshore gas storage**

Q1. Does the current regulatory framework present a disincentive to the development of offshore gas storage infrastructure development in your view? Why?

Q2. What could the implications (positive or negative) be of no change to the current regulatory framework in your view?

Q3. Would the ability to store gas in porous space under the seabed extending beyond the current 12 nml limit be a significant advantage to developers, even if no changes were made to the regulatory framework?

Q4. Are there any additional non-regulatory solutions that should be considered? Please provide details.

## Changing the regulatory framework

4.9 In view of the above difficulties and uncertainties, we are therefore considering a change to the regulatory framework. In the case of natural gas storage in hydrocarbon features, the new framework will build on the current provisions of the Petroleum Act 1998, which govern the production of gas from a hydrocarbon field. The need for a petroleum licence to produce gas would be retained, as the recovery of gas stored in a field will always in practice involve the production of native gas remaining in that field. But it is proposed that, in addition, a new "Natural Gas Storage Licence" would be required. However, since the conditions attached to the petroleum licence will already cover many of the operations related to storage, the regulatory burden involved in that new requirement will be be minimal. Accordingly, the additional licence requirement would be "light-touch", with care being taken not to duplicate existing conditions which are already in place.

4.10 In the case of gas storage in non-hydrocarbon features, no petroleum licence would be required. Accordingly, all the relevant conditions would be attached to a single Natural Gas Storage Licence. For storage in both hydrocarbon and non-hydrocarbon features, a lease or authorisation would need to be sought from The Crown Estate for the relevant features beneath the seabed. The legislation would make it clear that rights to grant such authorisations in areas beyond UK territorial waters are indeed vested in the Crown

4.11 The advantage of making an amendment to an existing regime is that many market participants would already be familiar with it, and environmental regulations pertinent to these type of activities are already procedurally in place and dealt with by the DTI. Administrative burdens should be minimised as current participants or those wishing to develop such infrastructure would have a clear route for obtaining consents. Current or future market participants could be certain that their application would be dealt with by an authority (DTI) with which many will already be familiar.

## An Offshore Natural Gas Storage Licence

4.12 The new provisions would accordingly relate closely to the existing regime under the Petroleum Act 1998 (and might for instance be inserted as a new Part of that Act). Operators will be likely to be already familiar with the Petroleum Act regime, and with the environmental requirements pertinent to these types of activity. As with the case of petroleum licences, Natural Gas Storage Licences will be dealt with by the DTI. Administrative burdens should be minimised as current participants or those wishing to develop such infrastructure would have a clear route for obtaining consents from a single authority.

4.13 A Natural Gas Storage Licence would be granted in the scenarios envisaged, subject to appropriate technical and environmental assessment. It would be issued with terms similar to a Petroleum Production Licence, so we would seek to build on a regime with which many are familiar in order to minimise administrative burdens, ensure enviornmental protection, and establish pre-activity and potential remediation conditions. It would be valid for the period covering exploration drilling and storage/production purposes. If there were no suitability for storage, the licence would have to be relinquished.

4.14 The terms such a licence would be likely to include are set out below:

- The requirement to appoint an operator;
- The requirement for DTI approval to drilling operations;
- The requirement for DTI consent to the erection or construction of relevant production infrastructure;
- The appointment of a fisheries liaison officer;
- The requirement to maintain records and samples, and to provide them to the DTI if requested;
- The requirement for injection and production data for the national hydrocarbon accounts;
- The requirement for DTI approval to assignments of the licence;
- The requirement for DTI consent to injection profiles;
- The requirement for consent to be obtained under the Coast Protection Act 1949, or (if that Act is disapplied, as suggested at paragraph 4.20 below) equivalent conditions ensuring the safety of navigation.

## Conversion of depleting hydrocarbon fields

4.15 Where a storage activity was to be undertaken within a hydrocarbon feature already licenced under the Petroleum Act, the licence issued by the Secretary of State would remain valid. It would be necessary to obtain a Natural Gas Storage Licence in addition to a Petroleum Licence, but there would be no duplication of provisions, and the process would not be burdensome. Developers would need to obtain an authorisation from The Crown Estate for the use of the porous space and it would be obtained on whatever competitive requirements The Crown Estate required, though in

practice it is likely that an authorisation would be awarded without recourse to competition.

## Development of storage facilities over or near to a producing hydrocarbon field

4.16 It is intended that a Natural Gas Storage Licence could be issued in areas already held under a Petroleum Licence of a different company (i.e. a suitable non hydrocarbon feature has been identified for storage over or near a producing hydrocarbon field). The reverse would also be true. Operations of either licensee, such as drilling, will only be consented to if they do not interfere with the activities of another licence holder sharing the same region.

## Use of a currently unlicensed hydrocarbon feature

4.17 Where a developer wished to explore and use an unlicensed hydrocarbon feature for gas storage (i.e. a depleted and relinquished petroleum field or field previously classed uneconomic), the developer would need to apply for a Petroleum Licence. The developer, if successful in the award of that Petroleum Licence, would be awarded the Natural Gas Storage Licence at the same time. The developer would then approach The Crown Estate for an authorisation, which would be awarded without recourse to competition.

## Gas storage in non-hydrocarbon features

4.18 Gas storage in non-hydrocarbon features is a relatively new development offshore, although it has proved successful onshore in the UK and elsewhere. Offshore, we believe that there is no fit for purpose regime, although we believe that it may be possible to regulate this type of activity within territorial waters (to 12 nml) by means of consents under the Coast Protection Act 1949, Food and Environment Protection Act 1985, the Petroleum Act 1988 and with a lease for the seabed area from The Crown Estate. Beyond the territorial limit, where the Coast Protection Act 1949, and the Food and Environment Protection Act 1985 still apply, The Crown Estate does not currently enjoy leasing/authorisation rights. Respondents to the Marine Bill consultation expressed a preference for legislative provisions to cover this type of offshore development.

4.19 Developers wishing to store gas in non-hydrocarbon features under the seabed would need to apply to The Crown Estate for a geographically-bound authorisation to use the feature in question. They would then apply to the Secretary of State for Trade and Industry for a Natural Gas Storage licence for the activity itself.

## Additional consents

4.20 Where navigational issues needed to be addressed, these could either be dealt with under the Coast Protection Act (CPA) 1949 as now (with DTI imposing appropriate conditions in consents granted under the Act), or the need for a separate CPA consent could be removed (with equivalent conditions being imposed by way of conditions contained in the new Natural Gas Storage Licence). The latter option may be preferable, given that future changes to be made by the Marine Bill may see consolidation of the current FEPA and CPA provisions, possibly to be administered in relation to England and UK-wide functions by a new marine management organisation.

4.21 Environmental considerations are addressed in Chapter 5.

## Fees

4.22 The Offshore Natural Gas Storage Licence would have an initial application fee, in order that the DTI recovers the cost of processing the application, and a minimal flat rate area rental fee in order to encourage the relinquishment of acreage should it no longer be required. The Crown Estate will charge a rent or licence fee.

Q5. Would you consider it advantageous for a new Offshore Natural Gas Storage Licence to have terms similar to those expected of Petroleum Licence holders? Please explain.

Q6. Are there any further issues to be considered with regard to an Offshore Natural Gas Storage Licence being issued in the vicinity of a currently producing field?

Q7. Are there specific issues of interest to hydrocarbon producers who may be considering changing the main purpose of their activity from gas production to storage that are not addressed in this consultation? Please explain.

Q8. Do you consider that a fit for purpose licensing regime, administered by the DTI, covering the activities outlined above, would provide a clear consents process for developers?

Q9. Do you consider that the non-legislative proposals would provide a better solution? Please explain.

Q10. Do the proposals outlined for offshore gas storage present a reduced unchanged or increased administrative burden for developers?

Q11. Do you have any additional suggestions for simplification of the current regulatory framework for offshore gas storage which might be taken into consideration?

## An Offshore LNG Unloading Licence

4.23 Offshore LNG unloading could provide a viable alternative to developers looking to import LNG swiftly and easily and with the minimum of disruption to communities.

4.24 With no fit-for-purpose regime, developers have no legally secure or simple route to consent to provide for this type of activity. Therefore we propose to legislate to provide a straightforward framework to consent expressly to this type of activity. Developments covered by Town and Country Planning Act 1990 provisions will remain unaffected by a new offshore regulatory regime.

## Consenting to the building of a platform

4.25 Under the proposed new legislation, a licence would need to be obtained from the DTI for the purpose of constructing the offshore platform and its associated pipelines, and the ongoing operation of the facility.

4.26 The licence would be given with conditions such as data reporting for the national hydrocarbon accounts and would only be approved after the considerations of other sea users had been taken in to account.

## Additional requirements and consents

4.27 The Crown Estate would continue to lease an area of the seabed for the 'footprint' of platforms within 12nml, as it does now, but it would also be able to grant authorisations in areas beyond that limit.

4.28 Some platforms may be designed to store gas onboard the platform, before piping it to the UK mainland. The gas could be unloaded directly into an existing pipeline under Third Party Access provisions, or indeed a newly laid pipeline to the UK mainland.

4.29 Consent would need to be obtained under the Coast Protection Act 1949 for any associated navigational issues, as would currently be the case. Future changes to the CPA under the Marine Bill may see consolidation of the current FEPA and CPA provisions.

### LNG Offshore Unloading

Q12. Does the current regulatory framework present a disincentive to the development of offshore LNG unloading facilities in your view? Please explain.

Q13. What could the implications (positive or negative) be of no change to the current regulatory framework in your view?

Q14. Would the ability to unload LNG in the area extending beyond the current 12 nml limit be a significant advantage to developers, even if no changes were made to the regulatory framework?

Q15. Are there any additional non-regulatory solutions that should be considered? Please provide details.

Q16. Do you consider that a fit for purpose consenting regime, administered by the DTI, covering the activities outlined above, would provide a clear consents process for developers? Please explain.

Q17. Do you consider that the non-legislative proposals would provide a better solution? Please explain.

Q18. Do the proposals outlined regarding a fit for purpose licensing regime for offshore gas storage present a reduced administrative burden for developers, or would they not make any difference?

Q19. Do you have any additional suggestions for simplification of the current regulatory framework for offshore gas storage which might be taken into consideration?

Q20. Are there any additional scenarios regarding LNG offshore unloading to which thought should be given?

### Scope

Q21. Are there other offshore activities of this nature, excluding CCS, which should be included in the scope of this legislation? Please provide details.

# Chapter 5: Other issues

## Environmental requirements

5.1 The storage of natural gas under the seabed, and the establishment of LNG unloading platforms, have a potential impact on the marine environment. An important purpose of the current regulatory regime is to safeguard the environment against pollution arising from such activities. It is not intended to weaken those environmental safeguards under the new regulatory regimes proposed in Chapter 4. Applications for a licence under the new regimes would be subject to the same degree of environmental scrutiny as exists at present, and the issue of a licence would have to take into account all relevant provisions of international and EU environmental law. Environment controls should match those of FEPA (if FEPA were to be disapplied), and (post Marine Bill) the Marine Act, so that there is consistency of environmental protection across sectors.

5.2 A number of international conventions apply to the protection of the marine environment:

- The Convention of 1972 on the prevention of marine pollution by dumping of wastes and other matter ("The London Convention") has, as its title suggests, the main aim of controlling dumping at sea. For the purposes of the Convention, dumping does not include the "placement of matter" for a purpose other than mere disposal; nonetheless it must be ensured that such placement is not done contrary to the aims of the Convention, which include the protection and preservation of the marine environment from all sources of pollution. Since 26 March 2006, the Convention has been superseded (as regards the relevant Contracting Parties) by the 1996 Protocol to the London Convention. Under that Protocol, protection is extended to the seabed and subsoil as well as the water column. Again, although the regulation of "placement" other than dumping is not the main aim, this must not take place contrary to the aims of the Protocol.

- The United Kingdom is also a party to the 1992 OSPAR Convention for the Protection of the Marine Environment of the North East Atlantic. In particular, OSPAR sets environmental goals for the offshore oil and gas industry, with the objective of preventing and eliminating pollution

and taking the necessary measures to protect the maritime area against the adverse effects of offshore activities. Thus measures to implement relevant OSPAR Decisions and Recommendations relating to discharges from offshore installations, and measures to implement agreements relating to oil pollution preparedness and response, and emergency pollution and control, would need to be considered.

A number of EU instruments will also be relevant, including:

- Council Directive 85/337 EEC on the assessment of the effects of certain public and private projects on the environment. This Directive requires an environmental assessment to be carried out, in particular, before consent is given to certain pipelines for the transport of gas and installations for storage of petroleum products;

- Council Directive 79/409/EEC on the conservation of wild birds. This may be particularly relevant to LNG unloading installations;

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora;

- Council Directive 96/61/EC concerning integrated pollution prevention and control. This will apply only to the extent that the storage facility includes a combustion installation with a rated thermal input of more than 50 MW.

Among the UK domestic legislation protecting the marine environment, which is currently applicable are the following:

- FEPA 1985 (which is, however, subject to a number of exemptions and exclusions in relation to oil and gas activities and installations);

- The Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999;

- The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001;

- The Offshore Combustion Installations (Prevention and Control of Polution) Regulations 2001;

- The Offshore Chemicals Regulations 2002.

## Decommissioning requirements

5.3 Decommissioning requirements for gas storage installations and unloading LNG platforms are already provided for by Part IV of the Petroleum Act 1998. The provisions for transfer of liabilities and financial security are being discussed with the oil and gas industry and may be amended.

Q22. Do you think this is a suitable arrangement or would you like to see separate decommissioning provisions provided for gas storage installations and LNG unloading platforms. What would you like those new provisions to look like?

## Health and Safety

5.4 Gas storage installations, like the existing Rough facility, would be subject to the requirements of the Health and Safety at Work etc Act 1974 and subordinate regulations. In particular, no such installation may operate without a safety case which has been accepted by the Health and Safety Executive (HSE) for the purposes of the Offshore Installations (Safety case) Regulations 2005. These arrangements will not be affected by the proposals set out in this consultation document, though some minor consequential adjustments may be needed to ensure full consistency with the new regulatory framework.

5.5 Offshore LNG platforms would be largely outside the scope of the 1974 Act and regulations. HSE is reviewing the options for extending the Act to such platforms, including their possible inclusion in the safety case regime, and is likely to produce proposals in the near future. Again any proposals will be consistent with the new regulatory framework that is eventually agreed for offshore LNG unloading.

## Regulation and Third Party Access

5.6 The Third Party Access Regime applicable to "Petroleum", (including regasified LNG, with gas" as defined under the Gas Act 1986) developments in the UK and its designated waters is set out in the Petroleum Act 1998 (sections 17F and G) and the Gas Act 1986 (sections 19-19E) (both as amended by the Gas (Third Party Access and Accounts) Regulations 2000 and 2004, and as extended to the offshore area by the Energy Act 2004).

5.7 Third Party Access requirements for pipelines in offshore areas conveying "petroleum" consented to under Part III of the Petroleum Act 1998 will be negotiated or determined under Sections 17F and G of that Act. Failing agreement between the pipeline owner and the party seeking access, access will be determined by the Secretary of State for the Department of Trade and Industry (DTI).

5.8 The Third Party Access regime applicable to offshore gas storage facilities is contained in Sections 17C – E, of the Petroleum Act 1998 and sections 19A and B and the Gas Act 1986 (as amended). These provide the possibility of exemption by Ofgem from the requirement to provide third party access to storage facilities. Ofgem is also responsible for determining access to such facilities where it has not been possible for the owner and third party to negotiate it.

5.9 The Third Party Access regime applicable to all other developments, including NTS connected pipelines and LNG extending offshore, and/or LNG infrastructure stationed offshore, will be handled under the Gas Act 1986 (as amended) and failing agreement will be determined by the Secretary of State or the Gas and Electricity Markets Authority. In the case of certain pipelines (such as the Langeled South pipeline) on the UK continental shelf, this is subject to Treaty Provisions providing that access shall be determined under the Norwegian Legal System.

# Chapter 6: What happens next?

6.1 Following the end of this consultation, and in light of the comments received, the Government will present proposals and prepare legislation if necessary to provide for a new regulatory framework. It is intended that this would be legislated for as soon as Parliamentary time allows.

6.2 In parallel with publication of the proposals, the views expressed during the consultation will be placed on the DTI website.

# Annex A: DTI Consultation Criteria

## The Consultation Process

The formal consultation period runs from 24 November 2006 to 16 February 2007.

Those wishing to respond to some or all of the issues for consultation should do so in writing before 16 February 2007. Responses are welcome by email, through the response form on the DTI website or in hard copy.

In providing your written response, please let us know of any issues of confidentiality explained at page 7.

All responses that are not subject to a confidentiality provision will be published on the DTI website.

## The Consultation Code of Practice Criteria

1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.

2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.

3. Ensure that your consultation is clear, concise and widely accessible.

4. Give feedback regarding the responses received and how the consultation process influenced the policy.

5. Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.

6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.

The complete code is available on the Cabinet Office's web site, address
http://www.cabinetoffice.gov.uk/regulation/consultation/index.asp

# Annex B: Partial Regulatory Impact Assessment

## Title of proposal

### Improving the regulatory framework for offshore natural gas storage and offshore LNG unloading – a consultation

1. The consultation document, which this partial Regulatory Impact Assessment (RIA) accompanies, is seeking views on improving the regulatory framework to provide for offshore gas infrastructure activities. It is intended to help assess the need for new legislation, specifically dealing with natural gas storage in sub-seabed geological features, and the offshore unloading of Liquefied Natural Gas. This partial RIA assesses the potential costs, benefits and risks of different policy options.

## Purpose and intended effect of measure

### a. Objective

2. To facilitate the development of new types of gas supply and storage infrastructure to be built offshore in the UK from 2007 onwards. A key barrier is the lack of a clear regulatory framework to address the legislative gaps and uncertainities; this consultation considers the options for such a framework.

### b. Background

3. Gas production from the United Kingdom Continental Shelf (UKCS) is declining. The UK is expected to move from a position of virtual self-sufficiency in 2004 to being 80-90% reliant on imports from other gas producing countries by 2020. There is a small possibility of undersupply from 2015 onwards.

4. To meet this challenge, and to help the market deliver the gas that the UK needs, we must ensure that our regulatory framework facilitates the gas infrastructure developments that will help provide secure gas supplies to the UK.

5. There is considerable market interest in pursuing projects to enable natural gas to be stored offshore, and to enable Liquefied Natural Gas (LNG) to be imported to UK waters and unloaded into offshore facilities, as well as to onshore terminals in harbours. We have spoken to a number of developers seeking to assess the

feasibility of new offshore developments; a growing number of infrastructure projects are being considered. It is expected that, a number of years in advance of a potential hightening in the gas market early in the next decade, a similar number of projects to those planned today might come forward.

6. But the regulatory framework is currently unclear. We believe it could only allow consents to be granted to certain parts of some proposed developments, and therefore cannot adequately deal with the range of activities that the market is considering. It is also complex. We think there is a strong argument for a revised framework, comprehensively dealing with all types of offshore gas storage and offshore unloading of LNG.

7. Firstly, because there is no one piece of legislation which explicitly covers these activities, consents would have to be applied for under a number of pieces of legislation, with no guarantee of this being a straightforward process. Developers who are starting to assess consenting possibilities are faced with a complex picture. Consents might need to be obtained through a number of pieces of existing legislation, from a number of Government departments (including DTI, DEFRA, and HSE) dependent on the type of project and its distance from shore. Required consents may need to be sought under some or all of the following (this list may not be exhaustive):

- The Petroleum Act 1998
- The Food and Environment Protection Act (FEPA) 1985
- The Coast Protection Act (CPA) 1949
- The Transport and Works Act 1992 (as an alternative to FEPA and CPA)
- The Town and Country Planning Act 1990

8. More importantly, our current legislative regime offshore was simply not designed for these types of project at the interest levels we are now seeing. The market is considering investing in diverse projects, including opportunities for gas storage in hydrocarbon features and in non-hydrocarbon features offshore (for example man-made salt caverns beneath the seabed), and in LNG offshore unloading projects which would see LNG tankers either re-gasifying onboard and piping ashore, or delivering liquefied gas to a floating or fixed platform for the purpose of re-gasification. Additionally there could be interest in LNG imports being stored in offshore structures until it is required.

9. At the moment, few of these options are readily available to developers, due to a number of legislative gaps. Although spaces under the seabed can be the subject of leases by The Crown Estate within the 12 nautical mile (nml) limit of the territorial sea, there is a degree of uncertainty as to which rights to use such spaces under the continental shelf beyond that limit can at present be granted on behalf of the Crown. In addition, there are no specific provisions governing the offshore unloading of Liquefied Natural Gas (LNG), other than the provisions of the Town and Country Planning Act 1990, in the limited cases where these apply. Although the Food and Environment Protection Act 1985 (FEPA) regulates the deposit of substances in the sea and under the seabed, and that Act extends to the continental shelf, a licence under that Act does not amount to the grant of an exclusive right to use a particular space under the seabed to store gas. Furthermore, the licensing scheme under that Act is not suited to the operational control of gas storage, as opposed to the initial injection of gas. The Petroleum Act 1998 can be used for storage in hydrocarbon features if accompanied by a lease from The Crown Estate.

10. The Government announced at the start of 2006 that work would be set in train to review the current regulatory framework in the UK for gas supply infrastructure onshore and offshore. The accompanying consultation document outlines the existing framework for offshore infrastructure, and makes proposals for legislative revision to the offshore regime only. A consultation paper on onshore infrastructure will be issued in due course in the wider context of ongoing reviews across Government that are considering onshore planning regimes.

## Impact on Devolved Administrations

11. In relation to Scotland, most aspects of energy, including oil and gas, are reserved matters. Any new offshore legislation would apply to all UK territorial waters (including Northern Ireland) and areas extending beyond those waters in which the UK enjoys sovereign rights. The application of the FEPA provisions might be used to regulate, where applicable the unloading or storage of non-indigenous gas is within territorial waters adjoining Wales fall within the powers of the Welsh Assembly in relation to the protection of the Marine Environment. However, it is not envisaged that any powers under the proposed new legislation will be transferred to the Assembly.

### c. Rationale for Government intervention

12. These proposals are intended to remove a regulatory barrier to new investment. The current regime does not legislate for the range of activities that developers are seeking to undertake, nor

provide clarity and certainty for developers (see paras 8-10, 23 and 49). New infrastructure will be important as our gas import dependency increases.

13. Where developers are able to proceed within the current framework, they are faced with an array of legislation under which a number of different consents may need to be applied for from different Government departments, depending on the nature of the project. This uncertainty imposes additional costs for potential developers by:

- deterring investment;
- delaying a project's commissioning;
- increasing the cost of finance; and
- Increasing management/staff costs within the firm.

14. Under the current regime, deterred investment and delayed commissioning not only have an impact on the profitability of the project developer but may also impact on the economy through a tighter gas market, especially during winter. A lack of stored gas/LNG due to lack of investment or a delayed start to a project might lead to a tighter demand supply balance and this could lead to higher gas prices and, in theory, even gas supply interruptions for some. Further consideration is given to this point in this RIA.

## Consultation

### a. Government

15. Discussions concerning the proposed policy have taken place with Defra, MoD, FCO, HM Revenue and Customs, Health and Safety Executive, HM Treasury and other interested departments. The Devolved Administrations have also been consulted on the development of the policy options.

### b. Public

16. Initial views on the storage of natural gas in sub-sealed structures were sought through the Defra Marine Bill consultation process, which closed in July 2006.

17. Where views were expressed on a regulatory regime, about 60% of respondents stated that they wished to see new legislation cover the storage of gas in sub-seabed geological features and LNG offshore unloading, either via a separate, fit for purpose regime or a reformed, integrated licensing regime.

18. The proposals in this Partial Regulatory Impact Assessment take into account those considerations, reflecting a desire for legislation to deal explicitly with the activities above. Proposes for amended legislation form one of the options we are consulting on.

19. We would welcome further discussion with stakeholders during the consultation period, and are very pleased with the number of stakeholders who have already made contact with us to discuss their proposals since the Secretary of State's announcement at the start of 2006.

### c. Other

20. The Crown Estate and Ofgem have been involved in the consideration of policy options.

## Options

21. The consultation document considers two specific issues: Offshore natural gas storage in non-hydrocarbon and hydrocarbon features, and offshore unloading of LNG. Options are summarized below.

**Offshore gas storage**

1 Do nothing (i.e. make no change to the existing regimes, but provide additional guidance where necessary)
2 Extend area for developments to beyond 12nautical miles (nml)
3 Introduce new regulatory framework

**Offshore LNG unloading**

1 Do nothing (i.e. make no change to the existing regimes, but provide additional guidance where necessary
2 Extend area for developments to beyond 12nml
3 Introduce new regulatory framework

## Costs and benefits, risks, and impacts on competition and small firms

22. The costs, benefits and likely risks associated with each measure are set out below, alongside any unintended consequences/risks, enforcement and monitoring, and the impacts on competition and small firms.

## Offshore Gas Storage

### Option 1: do nothing

23. Gas storage developments are sanctioned, where possible, through existing legislation (including the Petroleum Act 1998, the Food and Environment Protection Act 1985 and the Coast Protection Act 1949 (as may be amended by the Marine Bill), or additional legislation as appropriate). The Crown Estate is only able to issue a lease where the development is within the 12nml limit of the territorial sea. Developments in non-hydrocarbon features may not be able to proceed due to the uncertainty over current legislative provisions. We could provide guidance to market participants on the range of current legislation under which consents might be sought, and from whom, and on the process for doing so.

### Benefits

24. There are no benefits to security of supply. Where projects do not come forward, there are arguably fewer environmental impacts due to less offshore drilling. Where the legislation can consent to new projects, firms are, arguably, already familiar with the existing processes and hence avoid the costs of familiarisation with a new regime (see Costs section of Option 3).

### Costs

25. If we made no changes to the current framework, developers of storage projects in hydrocarbon features may be able to proceed under their Petroleum licences. Other developers may continue to struggle through the current, imperfect system, creating undue burden on business, or they could make the decision to invest elsewhere. In either case, some uncertainty would attach to developments beyond 12nml. The provision of additional guidance will reduce both the administrative burden and uncertainty arising from the existing framework to some extent, however, it will not eliminate either.

26. A lack of stored gas due to lack of investment or a delayed start to a project might lead to a tighter demand supply balance and this could lead to higher gas prices for around 0.5m industrial gas users (and 21m household customers) and even gas supply interruptions for some. To give some idea of the order of magnitude of an effect on prices, a 1p per therm increase in the wholesale price of gas (equating to a less than 2% increase in the average 2005/6 spot price) can increase the cost of gas in the UK by £1m per day.

27. The probability of an interruption happening is small (for example, the energy consultants Ilex[15] estimate that there is a 1-2% chance of a 3 billion cubic metres (bcm) annual undersupply after 2015). Also, the likelihood that one of the particular project types discussed here might prevent such an interruption is uncertain. However, the potential costs of interruptions are significant.

28. A 1-day gas interruption would cause production to stop in most of the energy intensive sectors. Some sectors might be able to switch to back up fuel for the day but most would require some amount of gas to maintain operations. If 10-20% of gas supplies were maintained this would be enough for a number of sectors to be technically able to continue some level of production. Generally there are low stocks of finished product in most sectors, so even a 1-day interruption leading to production stoppage would affect customers. In a 3-6 week interruption all sectors would be forced to stop or severely curtail production and their customers would be interrupted. The immediate effect of a 3-week interruption might be around 0.1-0.4% of GDP.

29. Deterring investment, where the firm's project appraisal indicates that an investment would otherwise be positive, leads to a lost profitable opportunity. Delaying commissioning can mean that developers miss a key profitable year – for example in winter 2013 when the market is potentially tight, it is possible that there will be high gas prices and a need for significant volumes of stored gas to be placed on the market; whereas a year or so later this need might be less.

30. Uncertainty in terms of whether a project might be allowed to go ahead, its timing or concern that a project might be being developed under an inadequate legislative regime could lead to a higher cost of finance to reflect the risks of high costs and uncertainty over the stream of income.

31. A delay of a year might cost an extra £50,000 – £100,000[16] per project in terms of management time just keeping an eye on the project's progress. Costs are likely to rise depending on the maturity of the project, and the costs of a year's delay to a mature project could be substantially higher. In addition, significant legal advice will be required under the existing regime initially and throughout the development process. Annual costs of a single legal advisor might be around £50,000.[17]

32. As can be seen from the above discussion, generally, the cost of doing nothing is difficult to quantify. We might be looking at a few projects a year coming forward, but this will depend on market conditions. Implementation costs might be of the order of hundreds of thousands of pounds per project per annum in additional administrative costs and higher financing costs throughout the project life. Lost potential profits will also occur, again hundred of thousands of pounds or more per project, though this could be considered to be a transfer between firms (as resulting higher prices would accrue to existing players thereby increasing their profits). The policy costs, in terms of reduced security of supply, and possibly resultant higher prices for consumers (domestic, commercial and industrial), would be much higher but it is not possible to attribute this to particular projects failing to go ahead as a result of legislative problems.

**Risks:**

33. Developers are constrained to using sub-seabed features within the 12nml territorial waters as opposed to the wider range of options that might be feasible if development were permitted beyond this limit. This reduces the potential area for development. Within the 12nml limit there are few fields, and of these, there is then a question as to which are genuinely suitable for gas storage purposes. The big risk then, is that the UK denies itself access to any further meaningful offshore gas storage opportunities. Developers face added cost and uncertainty to their projects due to the complex legislative route that may be needed to seek consents. This could be a barrier to entry or prevent a project being viewed as feasible. Overall there could be fewer storage options for the UK, which may contribute to gas market tightness.

### Option 2: Extend the area in which such activities are permitted, but without revision of consents process

34. We could, potentially without recourse to an Act of Parliament, assert the rights of the UK under the United Nations Convention On the Law of the Sea (UNCLOS) to make exclusive use of the porous space under the seabed in areas of the continental shelf beyond the limit of the UK's territorial waters. These rights would be vested in the Crown and authorised by The Crown Estate.

35. By licensing such activities beyond 12nmls, developers wishing to store gas in features below the seabed could then apply to The Crown Estate for an authorisation to do so, even where the feature in question lies beyond the 12nml limit of the territorial sea. In the case of gas storage projects in partially depleted hydrocarbon fields, it would also be necessary to obtain a licence under the

Petroleum Act 1998 (or rely on an existing licence). Developers would also have to apply for consents under existing legislation regulating deposits under the seabed, such as FEPA.

### Benefits

36. There could be some limited benefits to security of supply as there would be an increased area of seabed available to be licensed for the purpose of storing gas in its porous space. But there may be no additional benefit if developers are not able to gain consents for their projects through the current regime. If developers were able to gain the appropriate consents, then this route would enable developers to proceed more quickly as opposed to waiting for a new regulatory framework under primary legislation, though we do not believe that this would significantly factor, unless primary legislation were to be delayed.

### Costs

37. The costs for this option would be largely the same as for option 1 (see paras 25-32 above). Creating a larger area in which developers can pursue storage developments could be beneficial, but only if it outweighs the disadvantages that developers face in applying for appropriate consents (compared to operating them under the revised regime). If more developers were not encouraged to apply, then the outcome, in coming years, in security of supply terms, could still be negative, though arguably not worse than under option 1. Administrative burden costs to the developer would be the same for option 1 – of the order of hundreds of thousands of pounds per project.

### Risks

38. Whilst developers would see some benefit, with the potential area they are able to store gas in extended, there would remain a complex legislative route that developers would have to follow to seek consents. This could be a barrier to entry or prevent a project being viewed as feasible. Overall there could be fewer storage options for the UK, which may contribute to gas market tightness.

### Option 3: Introduce new regulatory framework

39. We would assert the rights of the UK under UNCLOS to make exclusive use of the porous space under the seabed in areas of the continental shelf beyond the limit of the UK's territorial sea. The rights would be vested in the Crown by an Act of Parliament, which would also introduce a new regulatory regime. Developers would have to seek an authorisation to use a particular space below the seabed from The Crown Estate, and they would still have to apply

the Secretary of State for Trade and Industry for authorisation to store gas in that space; we propose that this DTI authorisation would take the form of a Natural Gas Storage Licence.

40. By enacting new legislative provisions (for example inserting new provisions into the Petroleum Act 1998) we would set out a new regulatory framework for gas storage in both hydrocarbon and non-hydrocarbon features.

41. For gas storage in **hydrocarbon features**, a Petroleum Licence under Part 1 of the Petroleum Act 1998 would continue to be required, and would be complemented by a Natural Gas Storage Licence (NGSL) obtained from the Secretary of State for Trade and Industry that specifically provided for storage activities. The NGSL would not duplicate the conditions of the existing Petroleum Licence.

42. For gas storage in **non-hydrocarbon features**, a NGSL would need to be obtained from the Secretary of State for Trade and Industry. It would be the case that The Crown Estate would conduct a gas storage tender process, where required, for the offshore methane storage in non-hydrocarbon features[16] in close consultation with the DTI (as is the case with offshore renewable energy), and issue a geographically-bound exploration lease to successful applicants.

43. It would be a condition of The Crown Estate lease that the developer applies to the DTI for a NGSL in order that test drilling for the site could be undertaken. The NGSL will be valid for the period covering exploration and operation purposes so if the site proves suitable for gas storage, the developer will retain the licence; if it is not suitable, the licence will be relinquished.

44. A Natural Gas Storage Licence in either scenario would only be issued if the developer could meet certain environmental and technical thresholds required by the DTI. It would be issued with terms similar to those held in Petroleum Production Licences (although note that these would not be replicated in the case of existing Petroleum Licences being held). The terms would include:

- The requirement to appoint an operator.
- The requirement for DTI approval to drilling operations.
- The requirement for DTI consent to the erection or construction of relevant production infrastructure.
- The appointment of a fisheries liaison officer.

[15] Ilex Consulting (2006):'Strategic storage and other options to ensure long-term gas security'.

- The requirement to maintain records and samples, and to provide them to the DTI if requested.
- The requirement for injection and production data for the national hydrocarbon accounts.
- The requirement for DTI approval to assignments on the licence.
- The requirement for DTI consent to injection profiles.
- The requirement for consent to be obtained under the Coast Protection Act 1949, or (if that Act is disapplied, as suggested at paragraph 4.20) equivalent conditions ensuring the safety of navigation.

### Benefits

45. This option offers a clear consenting regime with appropriate controls on the siting of storage developments, environmental aspects of activities, storage activities and any associated infrastructure, including intra-field pipelines; pipelines to the mainland will be covered by Part 3 of the Petroleum Act 1998 (and the decommissioning of infrastructure by Part 4). The increase in clarity and certainty may facilitate and encourage new projects to come forward thereby increasing security of supply (and reducing the risk of the UK incurring the costs spelt out in paras 25-28 above). The environmental controls that could be included may offer greater protection than the current regime. It offers clarity for developers as to who consents to what, and how the consents are obtained, which reduces project costs and, importantly, project risk and therefore aids the (cheaper) financing of projects (see the cost section of option 1 above). It could avoid an additional burden, if developers were exempted from applying for an additional FEPA consent, wrapping up environmental considerations within the process of awarding the Natural Gas Storage Licence.

### Costs

46. Administrative burdens are intended to be low, as this legislation would be a simplification measure compared to the current framework, where one exists. Whilst there will be the costs of initial familiarisation with a new regime (primarily by legal staff at a cost of some thousands of pounds per potential new entrant[19]), this will need to be balanced against the fact that developers are currently struggling to understand how they might proceed in the

http://www.dti.gov.uk/files/file31788.pdf

[16] Based on a proportion of the working time of 1 senior manager, 2 middle managers, 1 lawyer, 2 engineers and 2 administrative personnel spent on monitoring, consulting on and trying to expediate their project, multiplied by

framework that exists, and whether the legislative gaps could prevent a project from commissioning ultimately. Developers have called for fit for purpose legislation to reduce risk, uncertainty and delays. There are also likely to be additional information requirements, which will not be costless for industry. However, it is intended that this would be a light-touch regime with information requirements kept to a minimum and required in a flexible format which industry would help to develop. It is also intended that there would be a light-touch monitoring regime by government to confirm that key licence conditions are being met.

### Risks

47. This option would require primary legislation. The Government is committed to introducing this, subject to the results of full consultation, as soon as parliamentary time allows. Nonetheless, the delay in legislating for changes could be viewed as a disincentive to developers in the short term, though for most, their timescales for project commissioning would not be thrown off course, if changes were implemented in the next 2 years.

## Conclusion on Offshore Gas Storage

48. Doing nothing would maintain an existing barrier to the development of offshore storage projects beyond 12 nml. Option 2 would provide some additional flexibility to developers, but only if they could gain consents without undue burden, and with legal certainty, under the current system. Option 3 would provide a tailor-made solution for developers. It would both provide a regulatory framework that specifically provided for such activities, and reduce burden on business by streamlining processes, whilst maintaining appropriate environmental controls.

**RIA Question 1**

Are there any other offshore natural gas storage options we should consider?

**RIA Question 2**

Do you agree with the analysis of the benefits, costs and risks? We would welcome any further data/estimates of costs and benefits, particularly in relation to the environmental implications of these proposals and the administrative burdens of option 3.

the wage rates in the Annual Survey of Hours and Earnings, 2005, ONS.

## Offshore unloading of Liquefied Natural Gas

### Option1: do nothing

49. The development of offshore unloading facilities is regulated, where possible, under existing legislation, including the Food and Environment Protection Act 1985, the Coast Protection Act 1949 and parts of the Petroleum Act 1998 (for pipelines and decommissioning of infrastructure), any other applicable legislation. No rights to establish fixed or floating platforms are granted by The Crown Estate beyond the 12nml limit of the territorial sea. Government could seek to provide more clarity and guidance on existing consents processes, and terms of who to apply to and likely timescales, but it could not provide guidance on the legality of consenting routes.

### Benefits

50. There are no benefits for security of energy supply. However there are the avoided costs of familiarisation with a new regime (see the Costs section below), and the time savings, both for market participants and for Parliament, in not pursuing legislative change.

### Costs

51. As projects beyond 12nml would not be able to go ahead, there could be negative implications for security of supply (see paras 25-28). There is a possibility that this void might be filled by other onshore projects (with potential additional environmental concerns). However if maintaining the current regime proved to be a disincentive to market participants, this would probably be at the expense of gas diversity for the UK and hence reduce the UK's security of gas supply. Administrative burdens might be around £20,000[20] per developer, just in terms of legal and management time spent understanding the applicability of the current regime. There might also be tens of thousands of pounds of costs associated with delays – similar to those noted in para 31 above.

### Risks

52. Developers would be limited to the 12nml limit of the territorial sea. They may experience delays in trying to gain consents for activities that are not expressly provided for under current legislation. They may ultimately not be granted consent, if the current legislation is not deemed suitable to consent to such activities.

[17] Based on the Annual Survey of Hours and Earnings, ibid.

### Option 2: Extend the area in which such activities are permitted, but without revision of consents process

53. We could, potentially without recourse to an Act of a Parliament, assert the rights of the UK under UNCLOS to make use of the seabed and water column, for the purpose of establishing LNG unloading facilities, in areas beyond the limit of the UK's territorial waters. The rights would be vested in the Crown, and authorised by The Crown Estate. Developers wishing to establish such facilities could then apply to The Crown Estate for an authorisation to do so, even where the facility in question lies beyond the 12nml limit of the territorial sea. Developers would also have to apply for consents under existing legislation, as in Option 1 above.

### Benefits

54. By authorising the installation and operation of LNG unloading platforms beyond the 12nml limit of the UK's territorial waters, it would provide greater diversity in the siting of such installations, which may benefit from utilising existing infrastructure in UK waters. If developers were able to use existing legislation to consent to such activities, this could provide a quicker route to commissioning such projects, as it would not require primary legislation.

### Costs

55. The costs for this option would be largely the same as for option 1 (see para 51). Creating a larger area in which developers can pursue offshore LNG unloading developments could be beneficial, but only if it outweighs the disadvantages that developers face in applying for appropriate consents (compared to them operating under a revised regime). If more developers were not encouraged to apply for consents, then the outcome could be negative in security of supply terms, though arguably not worse than under option 1. Administrative burden costs to the developer would be the same for option 1.

### Risks

56. Whilst developers would see some benefit, with the potential area they are able to unload LNG in extended, there would remain a complex legislative route that developers would have to follow to seek consents, with no guarantee of consent at the end, and no legal assurances. This could be a barrier to entry or prevent a project being viewed as feasible. Overall it could reduce the potential for diverse import sources to the UK, which may contribute to the risk of increased gas market tightness.

### Option 3: introduce new regulatory framework

57. We assert the exclusive rights of the UK under UNCLOS to make use of the seabed, or the water column, for the purpose of establishing LNG unloading facilities, in areas beyond the limit of the UK's territorial waters. The rights would be vested in the Crown, and authorised by The Crown Estate. There would be a new requirement (provided possibly by additional provisions inserted into the Petroleum Act 1998) for developers to obtain a licence from the Secretary of State (to be given by the Department of Trade and Industry) for the construction of an offshore fixed or floating platform, and its ongoing operation unless it is part of either a Petroleum Licensed development or a Natural Gas Storage Licensed development, and we would remove the requirement for a FEPA Licence. This type of platform could connect by submarine pipeline directly with the UK mainland or with an existing sub-sea pipeline for the purpose of unloading imported LNG.

58. As in the case of gas storage, an authorisation would have to be obtained from The Crown Estate to use a specific area of the seabed or sea for that purpose.

59. The DTI licence would be given with conditions such as data reporting for the national hydrocarbon accounts and would only be approved after the considerations of other sea users have been taken into account.

### Benefits

60. As LNG transportation ships become larger, for reasons of economy of scale, there may be justification for them being able to unload their cargo (and possibly store on the facility for short periods) at distances further from the shore. This would also reduce their turn-around time with the added economic benefit. These unloading facilities might be consented to more speedily than in the case of facilities constructed on land (which would require approval under the Town and Country Planning Act by the adjacent Local Planning Authority. An additional benefit would be the ability to obtain the necessary authorisations to construct such facilities beyond the 12nml limit.

### Costs

61. As for offshore storage, the administrative burdens are intended to be low as this legislation would be a simplification measure as compared to the current framework. Again, there would be some costs associated with initial familiarisation with a

new regime (primarily by legal staff thousands of pounds per potential developer[21]), and some data reporting, but these are likely to be offset by the removal of the current burdens that developers face (see para 51 above). As for storage, there would be a administrative monitoring regime by government to confirm that key licence conditions are being met.

**Risks:**

62. The legislation may not foresee, and therefore enable, some of the wide range of innovative LNG unloading options. However, it is anticipated that the legislation would be drafted widely to allow assessment of all these types of energy projects coming forward.

## Conclusion on Offshore LNG Unloading

63. Option 1 would provide no real benefits to developers or indeed to UK gas supplies, as it would not encourage new market entrants, or make it easier for those currently considering developments. Option 2 would provide more scope for development of unloading platforms beyond the 12nml limit, but would provide little in the way of regulatory certainty. Option 3 would provide both benefits – a regulatory framework, with resultant legal assurances. We do not consider that it would provide an additional administrative burden. A licensing process would also take into account environmental and other factors before awarding licences.

**RIA Question 3**

Are there any other options we should consider?

**RIA Question 4**

Do you agree with the analysis of the benefits, costs and risks? We would welcome any further data/estimates of costs and benefits, particularly in relation to the environmental implications of these proposals and the administrative burdens of option 3.

[18] For storage solely relating to hydrocarbon features, the DTI would continue to manage the process.

**Table 3. Cost/benefits summary table for offshore gas storage and offshore LNG unloading**

| Proposal | Benefits | Costs |
|---|---|---|
| **Offshore Storage** | | |
| Option 1<br>(Do nothing) | – Avoidance of familiarisation costs<br>– Avoidance of public and private sector costs of the legislative process | – Deterring projects leading to a lower level of security of gas supply than would otherwise be the case (potentially leading to higher prices and increased risks of interruptions)<br>– Administrative costs of going through the complicated consents/licensing processes<br>– Higher cost of finance for projects due to: increased risk of refused consent; inapplicability of the project; and likely delays.<br>- £50-100k pa administrative costs of delay per project |
| Option 2 (Extension beyond 12nml) | – Potential increase in security of gas supply if more projects come forward | – Higher cost of finance for projects due to: increased risk of refused consent; inapplicability of the project; and likely delays.<br>– £50-100k pa costs of delay per project |
| Option 3<br>(New regulatory framework) | – Increased security of gas supply as less regulatory uncertainty increases the likelihood of projects coming forward<br>– Avoided cost of the administrative burden of a complicated and possibly inappropriate regime<br>– Avoided costs of delay<br>– Potentially lower finance costs | – Familiarisation (£000s per developer)<br>– Cost of information provision |

**Table 3.** *(continued)*

| Proposal | Benefits | Costs |
|---|---|---|
| **Offshore LNG** | | |
| Option 1<br>(Do nothing) | – Avoidance of familiarisation costs of other options<br>– Avoidance of public and private sector costs of legislative process | – Deterring projects leading to a lower level of security of gas supply than would otherwise be the case (potentially leading to higher prices and increased risks of interruptions)<br>– £20,000pa per new entrant to understand current regime<br>– Higher cost of finance for projects due to: risk of a refusal for consent; inapplicability of the project; and delay<br>– £50-100k pa administrative costs of delay per project |
| Option 2 (Extension beyond 12nml) | – Potential increase in security of gas supply if more, and diverse, projects come forward<br>– Where existing legislation is appropriate this option may provide a quicker consents route that option 3 | – Might deter projects if uncertainty over applicability still exists (increasing risks to security of supply)<br>– £20,000pa per new entrant to understand current regime over the wider geographical area<br>– Higher cost of finance for projects due to: risk of a refusal for consent; inapplicability of the project; and delay<br>– £50-100k pa administrative costs of delay per project |
| Option 3<br>(New regulatory framework) | – Increased security of gas supply as less regulatory uncertainty and a greater geographical area increases the likelihood of projects coming forward<br>– Avoided cost of administrative burden of a complicated and possibly inappropriate regime<br>– Avoided costs of delay<br>– Potentially lower finance costs | – Familiarisation (£000s per developer)<br>– Cost of information provision |

## Business sectors affected

64. Whilst we have had discussions with a number of companies wishing to develop a variety of offshore projects, it would be inappropriate to provide exact details due to commercial sensitivities. We have spoken to both multinational players, and much smaller developers, British based and foreign companies. At this stage we would estimate that the number of interested parties who have discussed their plans with us would run to double figures. We have no way of knowing how many other companies may be in the early stages of project development, as companies are not obliged to discuss their plans with the DTI. We are likely to find that as more companies become aware of the work to improve the offshore consents regime, they will approach the DTI to discuss their plans.

65. Key sectors directly affected by the current situation and any proposals taken forward are likely to be gas producers, storage companies and LNG importers. It is likely that these will not be small firms, though there might be some small innovative firms wishing to take forward such projects, perhaps on a smaller scale. Marine users and marine NGOs will have an interest if more offshore storage and LNG offshore unloading facilities are built. Offshore construction companies could see increased opportunities. Indirectly, if interruptions are less frequent and/or gas prices lower with the proposed changes going ahead, all 0.5m industrial and commercial gas users (and 21m households on the gas network) will be affected. Public services, such as schools, hospitals, government offices etc will similarly be affected if they are gas users.

**RIA Question 5**

Do consultees agree with this identification of firms affected?

## Issues of equity and fairness

66. The proposed legislation does not correct, or introduce, a new inequality. The beneficiaries of the proposed legislation will be the same commercial entities that also bear the cost of application: incurring capital expenditure, and payment of a commercial rent for the use of the licensed site. Therefore no negative aspects of equality and fairness are perceived in the proposed options. It could be argued that the new framework introduces mechanisms by which offshore developers can obtain fairer access to the UK gas market. It is important that all entrants to the market have equal opportunities for market access, and these changes may have benefits in this respect.

## Unintended consequences

67. All gas users, domestic, industrial, commercial and the public sector will benefit from increased security of supply. Firms with proposed projects will benefit from the clarity and increased certainty that the changes will offer. Environmental assessments, embedded in the process, will ensure that full account is taken of the marine environment. Increased use of gas as a fuel may improve the environment in terms of lower $CO_2$ emissions and better air quality if it replaces oil and coal; however where it replaces renewable energy, this effect may be reversed. Care will be taken in the drafting of primary and secondary legislation to ensure that the new regime does not unnecessarily impose a burden on business.

## Consultation with small business: the Small Firms' Impact Test

68. Whilst we expect that the main firms directly affected (ie. developers) are unlikely to be small, there might be some such firms with innovative solutions that could be affected. In view of the aim of the new legislation, which is to provide a clearer regulatory framework for industry, we believe that proposals would result in a smaller burden for industry than is currently the case. Some small firms such as marine users may, however, be directly affected. We have also spoken to a range of firms, including small businesses, with existing proposals. Further pre-legislative consultation working closely with the small group of stakeholders with an interest in such developments, will take place to refine policy options.

**RIA Question 6**

Do small firms have any additional information or comments on likely impact of these proposals?

## Competition Assessment

69. **Storage:** The UK gas storage market consists of both offshore and onshore storage. It is quite concentrated with Rough, owned by Centrica Storage, being the major player accounting for some 75% of storage capacity. However it is envisaged that changes to concerning the regulatory frameworks onshore and offshore would facilitate new entry by increasing regulatory certainty and clarity and thereby reduce the level of concentration in the storage market. These proposals would only change the regime for offshore storage; the regime for onshore storage is also under review, and will be consulted on in due course.

70. The two regimes are not currently comparable in terms of costs or requirements, but they are comparable from the perspective of entry to the GB gas market. It is important that all participants, whether onshore or offshore, can obtain equal access to the market. This will remain a consideration in the development of any new regulatory framework, so that choices are not distorted and that customers ultimately gain the benefit of the most efficient sources of gas.

71. **LNG Unloading:** The upstream gas production and supply market is not concentrated, with perhaps only one or two producers having more than 10% of the market. These proposals are designed to facilitate entry and hence reduce market concentration further. It is expected that this market will be quite innovative but the proposals are designed to ensure that the widest range of projects will be covered. The proposals only affect offshore unloading, there are also on-shore facilities in the UK in place, under construction and being planned. The current regime does properly provide for this new offshore form of LNG importation, and does not provide for it at all beyond 12nml, thus although importers will face different costs and a different regime to operators of onshore facilities, it is anticipated that the proposals will enhance rather than reduce competition.

**RIA Question 7**

Do you agree with this competition assessment?

## Enforcement and sanctions

72. We would expect that any legislation would provide for a basic prohibition on those not licensed to store gas, or construct a platform for unloading that was backed up by a criminal offence. We will be looking at different models for enforcing licence conditions. The Petroleum Act 1998 provides for a revocation of licence in the case of a breach of conditions, but we might also consider providing a Power of Direction in any legislation, which might be backed up by financial penalties.

## Monitoring and review

73. The DTI will monitor the take up of licences or consents issued under the legislation and seek feed back from industry as to the regime's efficacy. This may take some years to fully feed through. Licences might be altered under secondary legislation if changes were needed, depending upon the scope of the relevant enabling power. Any new regime will be kept under regular review to ensure it is, and remains, fit-for-purpose as the UK gas market continues to evolve.

## Contact points

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# Annex C – List of Consultees

**Developers and their representative organisations**

Apache North Sea Limited
Association of British Offshore Industries
BBL Company
BG Group
BP Gas, Power and Renewables
British Energy
Caledonia Oil and Gas Ltd
Canatxx
Centrica
Centrica Storage
Chevron Upstream Europe
CNG Services Ltd
ConocoPhillips
Dragon LNG
E.On UK Plc
EDF Energy
Egdon Resources
Energy Intensive Users Group
Energy Networks Association
ENI
Excelerate
Exxon Mobil
Fife Energy
Gas Forum
Grain LNG
Heren Energy
Hoegh LNG
Interconnector (UK) Ltd
International Association of Oil and Gas Producers
Marathon Oil
Mulberry Capital Ltd
Offshore Contractors Association
Offshore Design Engineering Ltd
Oil and Gas Independent Association
Perenco
Society of British Gas Industries
Scottish and Southern Energy Plc
Scottish Power
Shell
Shell

Society of Britisg Gas Industries
South Hook LNG Terminal Company Ltd
Stag Energy
Star Energy
Statoil
Talisman Energy UK Limited
Total
UK Offshore Operators Association
UK Petroleum Industry Association
Venture Production PLC
Warwick Energy
Wingas

**Users of the marine environment**

Anglo Scottish Fishermen's Association
Associated British Ports
Association of Electricity Producers
British Marine Aggregates Producers Association
British Marine Federation
British Ports Association
British Wind Energy Association
Chamber of Shipping
Harbour and Ports Authorities
Marine Conservation Society
National Federation of Fishermen's Organisations
Scottish Fishermen's Federation
UK Major Ports
Welsh Federation of Fishermen's Associations

**Environment organisations**

English Heritage
Green Alliance
Greenpeace
Marine Conservation Society
Marine Stewardship Council
Natural England
Scottish Environmental Protection Agency
Scottish Natural Heritage

## Government agencies, statutory advisers and other organisations

British Geological Survey
CBI
Energy Institute
Environment Agency
Federation of Small Businesses
Institute of Marine Engineering, Science and Technology
Maritime and Coastguard Agency
National Grid
Ofgem
Parliamentary Maritime Group
Scottish Environment Protection Agency
The Crown Estate

## Devolved Administrations and local government

Department of Environment, Northern Ireland
Local Government Association
Scottish Executive
Welsh Assembly Government

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