



**Tithe an
Oireachtais
Houses of the
Oireachtas**

**An Comhchoiste um Chumarsáid, Acmhainní
Nádúrtha agus Talmhaíocht**

Tuarascáil

Taiscéaladh Ola agus Gáis Amach ón gCósta

Bealtaine 2012

**Joint Committee on Communications, Natural
Resources and Agriculture**

Report

Offshore Oil and Gas Exploration

May 2012



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Chairman's Foreword

Ireland's offshore oil and gas exploration industry has operated with limited success over the last 40 years. In recent years the exploration developments off the West coast of Ireland have brought the workings of the industry to the forefront of the public mind. Recent news reports seem to indicate further possibilities for a viable oil discovery off the South coast. Therefore, as well as being a priority issue for the Committee's Work Programme, it is also an opportune time for the Joint Committee on Communications, Natural Resources and Agriculture to publish this report.

The Joint Committee held a number of meetings with relevant stakeholders to address the best way to approach the development of our offshore oil and gas exploration industry into the future and to make recommendations to the Minister for Communications, Energy and Natural Resources. The Committee's key concerns were to;

- Ensure that the development of petroleum resources is carried out to benefit the Irish people as a whole and that this is what should form the basis of petroleum exploration policy in Ireland;
- Make sure that this is achieved by balancing the need of maximising State revenue with incentivising offshore oil and gas exploration.

The Joint Committee came to a mutual understanding during the process of speaking to stakeholders and drafting this report that focus should be given to the following factors which have not been given due prominence in discussions about this area of policy;

- that it should be recognised that there have been major changes in the field of offshore exploration including huge advances in technology which facilitate exploration and which also greatly improve the drilling success rate, in addition to the availability of better geological data;

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- how important it is that the State ensures that transparency, simplicity and forward planning are kept to the forefront in legislation, licensing and planning; and
- that in moving forward from recent controversies that local communities are involved in a comprehensive consultative process from the earliest practicable stage and that they benefit in a defined way from the resources being explored.

I wish to put on record my sincere thanks to the officials from the Department of Communication, Energy and Natural Resources, representatives from the Commission for Energy Regulation; Irish Offshore Operators' Association (IOOA); SIPTU; Pobal le Chéile; Pobal Chill Chomáin; Comhairle don Iarthar / Council for the West and Pro Gas Mayo, and for taking the time to attend meetings of the Committee. The preparatory work and cogency of all of the contributions made were extremely helpful.

Special thanks are due to H.E. Mr Roald Naess, Ambassador of Norway, for his kind assistance in meeting with us informally to discuss the Norwegian experience and for also organising that Ms Mette Agerup, Assistant Director of the Norwegian Ministry for Petroleum and Energy would attend a full meeting of the Committee to give us very important insights into how best to plan for the future of the industry.

The Committee is indebted to the ever helpful and efficient support of the Oireachtas Library and Research Service and to the Committee Secretariat who ensured that everything ran smoothly for all of meetings held.

May I finally thank my fellow members of the Joint Committee on Communications, Natural Resources and Agriculture, and, in particular, the members of the sub-group of the Committee, who met on a number of occasions to tease-out specific issues raised. I think it is fair to say that all of the Committee members adopted a very positive approach in bringing forward, what I believe, is a very important and worthwhile publication.



Andrew Doyle T.D.
Chairman

Membership of the Joint Committee on Communications, Natural Resources and Agriculture

Deputies:

Tom Barry (FG)
Michael Colreavy (SF)
Pat Deering (FG)
Andrew Doyle (FG) [Chairman]
Martin Ferris (SF)
Noel Harrington (FG)
Martin Heydon (FG)
Colm Keaveney (LAB)
Mattie McGrath (IND)
Michael McNamara (LAB)
Michael Moynihan (FF)
Eamon ÓCuív (FF)
John O'Mahony (FG) [Vice-Chairman]
Ann Phelan (LAB)
Thomas Pringle (IND)

Senators:

Michael Comiskey (FG)
Paschal Mooney (FF)
Mary Ann O'Brien (IND)
Brian Ó Domhnaill (FF)
Pat O'Neill (FG)
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Recommendations

Article 10 of Bunreacht na hÉireann states that

“all natural resources, including the air and all forms of potential energy, within the jurisdiction of the Parliament and Government established by this Constitution and all royalties and franchises within that jurisdiction belong to the State subject to all estates and interests therein for the time being lawfully vested in any person or body”.

In Ireland, whilst companies are awarded licenses for petroleum exploration and production, the State owns its natural resources. As such, these should be protected and developed to the benefit of its citizens.

Having deliberated over various aspects of petroleum exploration and production, the Joint Committee proposes the following recommendations. These are based on the Joint Committee’s meetings and/or available research.

In particular, the Joint Committee has identified five key themes:

- Developing petroleum resources to the benefit of the Irish people as a whole should form the basis of petroleum exploration policy in Ireland;
- To achieve this we must balance the need of maximising State revenue with incentivising offshore oil and gas exploration;
- Recognising two major changes in the field of offshore exploration being huge advances in technology which facilitate exploration and which also greatly improve the drilling success rate, and better geological data;
- Ensuring that transparency, simplicity and forward planning are kept to the forefront in legislation, licensing and planning; and
- Ensuring that local communities are involved in a comprehensive consultative process from the earliest practicable stage and that they benefit in a defined way from the resources being explored.

The eleven recommendations are:

1. Having good basic law in which policy principles are enshrined can greatly assist a country in developing and benefiting from its petroleum resources.

There should be a clear and transparent fiscal and licensing regime, which provides certainty for the State and industry alike.

The Joint Committee recommends that a simple and transparent system be put in place which is underpinned by clear law. To this end, the *Petroleum and Other Minerals Act, 1960* should be reviewed.

2. Retrospective changes to fiscal and licensing terms can risk long-term reputational damage. Existing agreements should be adhered to irrespective of changing circumstances.¹

In contrast, future agreements can reflect policy changes necessitated by significant changes in the policy context and circumstances, for example a large increase in the number of commercially viable finds or the size of fields.

3. Recognising that fields may be subject to corporation tax and profit resource rent tax (PRRT), the State should seek to maximise tax revenues from petroleum exploration and production without deterring petroleum investment.

In this context, the Joint Committee believes that the overall tax take should, in the case of future licenses, be increased to a minimum of 40%.² The PRRT should increase from existing levels according to a sliding scale based on the rate of profit (i.e. to give an overall tax take of 40% for small commercial discoveries, 60% for medium commercial discoveries and 80% for very large commercial discoveries).

This approach, but based on lower rates of PRRT, was advocated in the 2007 Indecon review (see page 71 of that report) and is also highlighted in the Ernst &

¹ In response to PQ [2623/12] the Minister stated “the percentage of Ireland’s designated continental shelf that is currently licensed for exploration or leased for production of hydrocarbons is 4.4%. The percentage of the area of sedimentary basin (i.e. geologically significant for hydrocarbons) within the designated continental shelf that is currently licensed for exploration or leased for production of hydrocarbons is 9.3%”. See <http://debates.oireachtas.ie/dail/2012/01/18/unrevised2.pdf>

² This applies to profitable fields which have a corporation tax liability.

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Young *Global Oil and Gas Tax Guide 2011* (see Appendix 4 to this report). A possible revised scale of PRRT rates as set out above and corresponding profit ratio model is shown in table 1 (see page 16 in the Executive Summary to this report).

Any future changes to the fiscal terms should be clarified before subsequent licensing rounds to ensure certainty around the regime for the investing companies.

4. The Joint Committee strongly believes that the State should keep fiscal and licencing terms under constant review. Specifically, the Joint Committee recommends that there should be reviews of the fiscal and licencing terms before each Licensing Round takes place.
5. The obtaining of geological data from all licensees is of paramount importance. For this reason, the Joint Committee believes the State should consider applying the principle of unitisation to future explorations activities. This would entail mandatory unified operations for a field extending over different contractual zones by different operators and offers advantages including better resource management. The benefits of having at least two participants in a license area should be fully explored and considered.
6. The State could explore and consider ways of controlling production volumes as part of its resource management. For example, Norway uses production permits to ensure a flat production rate in order to ensure that as much as possible is produced from a field.
7. The Joint Committee recommends that consideration be given to the prohibition of flaring of gas³.
8. There should be a clear and comprehensive process of public consultation beginning at the first substantive stage in offshore oil and gas exploitation, i.e. when the Plan of Development is drawn up setting out the basis for the project, the reasons behind the selection of the appropriate development option and a comprehensive and technical outline of the project and how it would operate.

³ This generally refers to the process of burning-off surplus gas from a well either as a means of disposal or as a safety measure to relieve well pressure.

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Public consultation should be based on a simple and transparent system, which would make it clear that those local communities affected by offshore oil and gas exploration would benefit directly from any rewards generated from the oil and gas resources. This should be ensured by giving a statutory commitment that qualifying local communities shall be compensated financially through infrastructural and social development. Provision should also be made for the development of a Cost Benefit Analysis focusing exclusively on the local community and this should also be provided as part of the public consultation process.

9. The Joint Committee recommends that the Minister for Communications, Energy and Natural Resources draw up a strategic policy document for petroleum exploration. This could dovetail or feed into, where appropriate, with other strategic policy documents and consultations such as the current public consultation *Our Ocean Wealth*.⁴
10. The Joint Committee recommends to the Minister for Communications, Energy and Natural Resources that he consider whether his Department should have on-going contact with other countries, such as Norway and Portugal, with a view to establishing a forum to exchange ideas on best practice on various aspects of petroleum exploration and production.
11. The Joint Committee recommends that the Minister for Communications, Energy and Natural Resources establish a forum, comprising key stakeholders⁵, to improve communications between stakeholders and maximise the potential for Ireland's hydrocarbon resources for the benefit of all Irish people. The government should develop a policy, in consultation with this forum, to ensure that employment opportunities are maximised within the State.

⁴ See <http://www.ouroceanwealth.ie/Pages/default.aspx>

⁵ Such stakeholders would include third level institutions, the oil and gas companies, trade unions, Government nominees, and environmental and community representatives. Page 77 of this report refers.

Executive summary

The Joint Committee made harnessing hydrocarbon, mineral and renewable energy resources one of the major topical issues that it would examine in its current work programme. In this context, it engaged with various stakeholders to hear their views on offshore exploration during its examination of this very important policy area.

The tax regime applied to petroleum exploration and production emerged as a central theme during much of the Joint Committee's hearings. This issue can be essentially summarised as follows – how to maximise the return for the Irish people by balancing the need for exploration with the need to ensure a tax regime which provides a good return?

From a national perspective, the Joint Committee wishes to establish whether the tax regime is too generous to the petroleum industry as some commentators have suggested. For these reasons, a large part of this report focuses on the fiscal terms. The Joint Committee is cognisant of the rate of exploration success to date in Ireland and perceptions of prospectivity off our shores. It nonetheless believes that the case for increasing the minimum overall tax take to 40% (i.e. corporation tax plus PRRT) and applying revised profit resource rent tax (PRRT) rates of 15%, 35% and 55% on a phased basis depending on the rate of profit is warranted in the case of new licenses.

The Joint Committee has explored a range of different views and research in coming to this conclusion. Those views and research are set out in this report. While acknowledging the validity of these other views the Joint Committee placed considerable weight on three factors which they believe are of the greatest significance:

- The price of oil, in particular, has reached an historically high level (see figure 5 on page 43 of this report);
- Both oil and gas reserves are, to a significant degree, located in parts of the world which are subject to political instability (the recent oil price increases as a result of the situation with regard to Iran being a case in point); and
- Technological innovation in recent years has led to great advances in pinpointing oil and gas fields and in the extraction of these finds. Parts of the Atlantic Ocean which

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were once considered unviable are now yielding hugely significant finds (the Tupi oil field find in 2006 some 200 miles off the coast of Brazil⁶ being an example).

As industry commentators themselves have said:⁷

“New technologies are also playing a key role in the multi-billion dollar deep water exploration and production industry which is continuing to be fuelled by the development of new technologies capable of reducing operational costs and risks, as well as the finding of reservoirs with high production wells. Wells are getting more complex – deeper, hotter and higher-pressured, with ever increasing reach.”

Other issues the Joint Committee identified as being of importance were the dividends to be reaped if Ireland were to experience a major discovery and addressing the concerns of local communities particularly in relation to community consent and consultation.

Until a certain level of exploration activity and commercial success is achieved, the opportunities for capitalising on Ireland’s resources are limited. The Department of Communications, Energy and Natural Resources (DCENR) employs a strategy of encouraging exploration in Ireland and the Joint Committee recognises its work in attracting an increased level of interest in the most recent licensing round. The Joint Committee is, however, also cognisant of the need for local communities to be considered in the process of petroleum exploration and production, for them to also benefit from the gains accruing and accordingly for them to be involved in the decision-making process from the earliest practicable stage.

Notwithstanding the relatively modest level of development of the petroleum industry here, Ireland should seek to position itself to capitalise on any benefits that would arise in the event of a major discovery in this country. In this context, the DCENR should continue to encourage exploration and in the expectation that a big discovery may one day be made, have a clear scheme outlined in a strategy document to capitalise to the maximum on such benefits.

This report focuses on a number of key policy areas regarding petroleum exploration. The key elements of this report can be summarised as follows below.

⁶ See <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/06/AR2009120602442.html>

⁷ See http://www.energyglobal.com/sectors/pipelines/articles/2010_innovation_in_offshore_oil_and_gas_energy_sector.aspx

The petroleum industry in Ireland

Ireland has serious disadvantages with regard to offshore petroleum exploration compared to other locations. There has been a relatively low level of petroleum exploration here to date since exploration began in 1970.

Changes to the fiscal terms have sought to increase exploration activity, which is regulated by the DCENR.

The most recent licensing round in 2011, which adopted a new approach of opening up Ireland's entire Atlantic seabed and offered two year licensing options, did, however, produce the highest number of proposed awards of any Frontier Round.

Petroleum tax regimes

Research suggests that a country's tax/royalty system should be kept simple as complicated systems can be associated with problems including reduced transparency and difficulties in calculating future profit scenarios for companies.

Credibility and predictability are also important features of the tax/royalty system.

Companies and governments alike can benefit from a long-term planning horizon. Changing regimes mid-way through a project may risk long-term reputational damage, which could outweigh any short-term gains.

Research also suggests that the petroleum tax system should respond to changes in the oil price, with the price response ideally an integrated part of the tax system.

A neutral or progressive tax regime can help alleviate industry fears that taxes would fail to decrease when the price of oil falls.

Taxation in Ireland

Ireland's fiscal regime for the petroleum industry consists of a combination of a corporation tax and a profit resource rent tax (PRRT).

The regime has been amended over the years with the stated aim of encouraging petroleum exploration. Most recently, a profit resource rent tax (PRRT) was introduced in 2007 to ensure a greater return to the State from its natural resources, while maintaining the

incentive for companies to explore offshore Ireland. The objectives of this move, which included a rate in excess of the Indecon proposal for a PRRT, would appear laudable.

Text box 1: Selected extracts of Ernst & Young *Global Oil and Gas Tax Guide 2011* chapter on Ireland

Corporation tax is charged on taxable income. This is determined by starting with income according to accounting principles and then adjusting it for certain add-backs and deductions required under the tax legislation. Expenses are generally allowed if they are incurred “wholly and exclusively” for the purposes of the trade but certain expenses are not permitted under the legislation, such as capital expenditure.

[...]

PRRT only applies to exploration licenses and reserved area licenses awarded on or after 1 January 2007 and licensing options. PRRT operates on a graded basis by reference to profitability and, in particular, by reference to the profit ratio achieved on the specific field for which a license has been granted. The profit ratio is defined as the cumulative after-tax profits on the specific field divided by the cumulative level of capital investments on the specific field.

[...]

PRRT applies to taxable field profits, which are defined as the amount of the petroleum profits of the taxable field for the accounting period after making all deductions for, and giving or allowing all reliefs for, corporate tax purposes.

Source: Ernst & Young (2011), pp. 194 - 195

There is a popular perception that Ireland is failing to maximise the full financial potential of its oil and gas resources.

While Ireland’s tax take is lower than other countries such as Norway, to date Ireland has not demonstrated it has equivalent proven resources. Other factors such as physical conditions also need to be considered.

There is a clear trade-off between risk and return. As the Joint Committee heard during its meetings, there is a positive correlation between the capacity to produce oil and how much tax the State can take in.

Potential changes to the fiscal regime include per unit taxes and windfall taxes. Production sharing agreements are another option.

Whilst some of the witnesses who appeared before the Joint Committee favoured altering the fiscal regime including through the introduction of Production Sharing Contracts (PSCs), others warned that this option may not be suitable for offshore Ireland. It was argued that

such a system appears to be more appropriate for onshore areas with a higher probability of success.

Ireland's potential for petroleum exploration

Ireland's petroleum potential is currently relatively unproven. Prospectivity is driven by knowledge which in turn can be increased by exploration. The Joint Committee is encouraged by developments regarding oil and gas finds off the coast of Cork and it is likely that Ireland's ability to attract significant mobile international exploration investment will improve in the context of such discoveries, the high price of oil and technological innovation.

As such, it seems reasonable to suggest that the level of exploration is an important factor in Ireland's potential success in this industry. Successful countries have higher levels of exploration activity. For these reasons, maintaining an attractive environment for exploration is an important policy objective.

Ireland is hindered by there being some deficiencies in data. It is important that efforts be maintained to fill such gaps in data. In this context, the Joint Committee was interested to hear of collaborative work with the Canadian authorities.

It is likely that the lack of sufficient exploration in Ireland to date has somewhat hindered progress in terms of developing expertise and infrastructure. It seems unlikely that employment levels would rise significantly until exploration activity also rises to a reasonably significant level. The same can likely be said for the demand for specialist port services.

That said, it is important that policy-makers plan ahead and ensure Ireland is in a position to fully maximise the full benefits of any future discoveries that may be made here by having the capabilities to provide the necessary expertise and infrastructure at the various stages of petroleum exploration and production.

Therefore, the importance of an indigenous oil and gas industry should be examined in any national strategy on the sector, including all ancillary benefits. In that context, the Joint Committee notes that no specific strategy document exists focusing exclusively on offshore petroleum exploration and production. The Joint Committee requests the DCENR to consider whether this should be addressed.

Debate over the estimated worth of Ireland’s petroleum reserves

The risk-reward balance is a critical factor in relation to tax terms, in that the reward must be adequate to encourage exploration investment.

Setting higher tax rates could potentially reduce the risk of granting exploration rights at too low a price. The Joint Committee recognises that increasing the tax rate may impact on the level of exploration investment given that this investment is mobile and companies may decide to move to locations with more favourable prospects.

The challenge for policy makers is, however, to try to minimise risks to future State income by fixing the terms at an optimum level that takes account of a range of public policy objectives.⁸

Accordingly, based on the price of oil and the great advances made in technological innovation the Joint Committee believes that a phased increase in the overall tax take should be applied to new licences. Accordingly, as per recommendation 3, the Joint Committee recommends a phased and increased rate for PRRT perhaps modelled on the situation set out below.

No increase in the current corporation tax rate of 25% is recommended.

Table 1: Current system of PPRT and possible alternative model for PPRT in Ireland

	Profit ratio			
	<1.5	>1.5 but <3.0	>3.0 but <4.5	>4.5
<i>Current</i> PRRT system rates	0%	5%	10%	15%
<i>Possible alternative</i> model for PRRT	15%	15%	35%	55%

In the context of any future significant oil or gas discovery the fiscal regime should be open to further review.

⁸ These points were made by the DCENR in its appearance before the Joint Committee in September 2011.

Case studies – Norway and Portugal

The experience of other countries can provide a vital learning experience in terms of maximising the full potential of petroleum resources.

In this context, the Joint Committee asks the DCENR to consider whether it should have on-going contact with other countries, such as Norway and Portugal, with a view to establishing a forum to exchange ideas on best practice on various aspects of petroleum exploration and production.

During its meeting with the Norwegian Ministry for Petroleum and Energy, the Joint Committee was informed about a number of areas of good practice in that country's petroleum industry. These included having good resource management, a comprehensive consultation process, all data submitted to the relevant State authorities and applying the principle of unitisation as explained in section 8.1.

The Joint Committee also heard that Norway set out a basic law at the beginning and has avoided making significant changes since then. The stability of its regime is important.

The Joint Committee recommends that Ireland investigate ways in which it could emulate similar policies to those in Norway, bearing in mind the differences between the two countries.

Community interests

Whilst a key question for policy-makers at the national level is to consider whether the State is maximising its take without unduly deterring industry, there are also many important issues to consider at community level. These include the vital issues of how to best ensure community consultation and consent, which can be considered to be independent by all of those concerned.

Essentially, when a resource is found, there should be a system in place to ensure agreement on how this is developed in such a way that it maximises the take for the State and its citizens at the same time as being sensitive to local needs in the host community. Past experiences have negatively impacted on trust in various bodies and it would be in the common interest for this situation to be reversed. In the context of the above, the Joint Committee suggests that the DCENR investigate models of best practice such as those in

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Norway as it is vital that policy-makers address the concerns of local areas in relation to discoveries.

The Joint Committee notes that there have been some moves towards a system in which the roles of promoter, regulator and health and safety are more clearly defined and separated where potential conflicts between these roles may arise. The Joint Committee believes that consideration should be given to how these issues might be progressed further if necessary. Again, the experiences of other countries could prove useful in this regard.

Finally, the Joint Committee notes that the European Commission, in October 2011, proposed a new law aimed at ensuring that European offshore oil and gas production respects the world's highest safety, health and environmental standards.⁹ Accordingly, the Joint Committee asks the DCENR to keep them apprised of the development of this proposal and its implications for Ireland. The Joint Committee was interested to hear that the Norwegian Ministry of Petroleum and Energy bases its safety system on goal setting rather than specific rules.

⁹ See EC press release. Available at:
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1260&type=HTML>

1. Introduction

The Joint Committee on Communications, Natural Resources and Agriculture Economic Regulatory Affairs (hereafter the 'Joint Committee') was established following Orders of Dáil Éireann on 8 June 2011 and of Seanad Éireann on 16 June 2011. Between September 2011 and March 2012, the Joint Committee met with a range of stakeholders involved with the oil and gas sector as listed below.¹⁰

- Department of Communications, Energy and Natural Resources (DCENR)
- Irish Offshore Operators' Association (IOOA)
- Services Industrial Professional and Technical Union (SIPTU)
- Pobal le Chéile
- Pobal Chill Chomáin
- Comhairle don Iarthar / Council for the West
- Pro Gas Mayo
- Commission for Energy Regulation (CER)
- H.E. Mr. Roald Naess, Ambassador to Ireland and Ms Mette Agerup, Assistant Director of the Ministry for Petroleum and Energy, Kingdom of Norway.

This report is largely based on the submissions of these organisations / individuals, and the transcripts of their subsequent appearances before the Joint Committee.

By way of general background to this report, and with a view to putting wider energy issues into context, the following two paragraphs outline Ireland's energy supply and mix.

The Sustainable Energy Authority of Ireland (SEAI [formerly SEI]) publication (by Howley, Ó Gallachóir & Dennehy (2009)) entitled *Energy in Ireland; Key Statistics 2009* provides details of Ireland's energy mix and rate of consumption for the year 2008. During that year, imported petroleum (gas and oil) accounted for 81% of our energy supply and Ireland's overall import dependency was 89%. Renewable energy use grew by 21% during the year

¹⁰ All of the Joint Committee's debates are available on the Oireachtas website at <http://debates.oireachtas.ie/committees/>

and accounted for 4.5% of total final consumption. Fossil fuels accounted for 96% of all energy used in Ireland in 2008. Within the energy mix, oil remains dominant with a share in total primary energy requirement (TPER) of 55% in 2008, an increase from 47% in 1990 (it peaked at 60% in 1999). The percentage share of natural gas in the TPER rose 4.6% to 27% in 2008. Between 2005 and 2008 natural gas has increased 8.9% each year while oil has decreased by 0.6% per annum.

The Department of Communications, Energy & Natural Resources (DCENR) and stakeholders such as the Irish Offshore Operators' Association (IOOA – the petroleum exploration and production [E&P] industry's lobby group in Ireland) are anxious to reduce our dependence on imported fossil fuels through increased production of our offshore petroleum resources. Despite a fiscal system aimed at encouraging industry, however, successful exploration off Ireland's shores has been among the lowest in the world.

While many important issues arise in relation to petroleum exploration it is beyond the scope of this report to address all of these. This report focuses on a selection of issues primarily related to the fiscal and licensing regime in Ireland.

Following on from the above introduction, this report is structured as follows:

Statistics on the petroleum industry in Ireland: providing some key statistics on licensing rounds, exploration and the level of company activity in Ireland.

The petroleum industry in Ireland: an overview of its history, the licensing and regulatory framework and finally reviewing the experience of licensing rounds for petroleum exploration offshore Ireland and detailing the low uptake of licenses here and the reasons for this.

Petroleum tax regimes: setting out models for fiscal regimes and how petroleum tax regimes should work based on academic research.

Taxation in Ireland: describing the current fiscal regime before addressing the issue of how Ireland's tax regime compares to that of other countries. It also identifies possible changes which could potentially be made to the Irish tax regime.

Ireland's potential for petroleum exploration: giving an overview of the estimated potential for oil and gas reserves offshore Ireland and assessing Ireland's infrastructure and expertise in the oil and gas sector.

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Debate over the estimated worth of Ireland's petroleum reserves: discussing the view by Shell to Sea and others that Ireland is 'giving away' its natural resources and breaking down the figures they have used for estimating the worth of potential oil and gas finds.

Case studies – Norway and Portugal: looking at the approach taken by Norway in governing the fiscal aspects of their exploration and production industries. Norway is often cited as a model example of how the exploration industry can be managed to the best advantage to the country.

It also looks at Portugal which has a less well developed offshore oil and gas sector.

Community interests: discussing some of the key concerns expressed by stakeholders in their meetings with the Joint Committee, including community consent and consultation.

2. Statistics on the petroleum industry in Ireland

This section sets out selected statistics on the petroleum industry in Ireland as such background information is pertinent to subsequent sections of this report. This provides an outline of the background of the licensing and exploration history against which Ireland's licensing terms are set. It also details the level of company activity in Ireland. This data is sourced from the Department of Communications, Energy and Natural Resources.

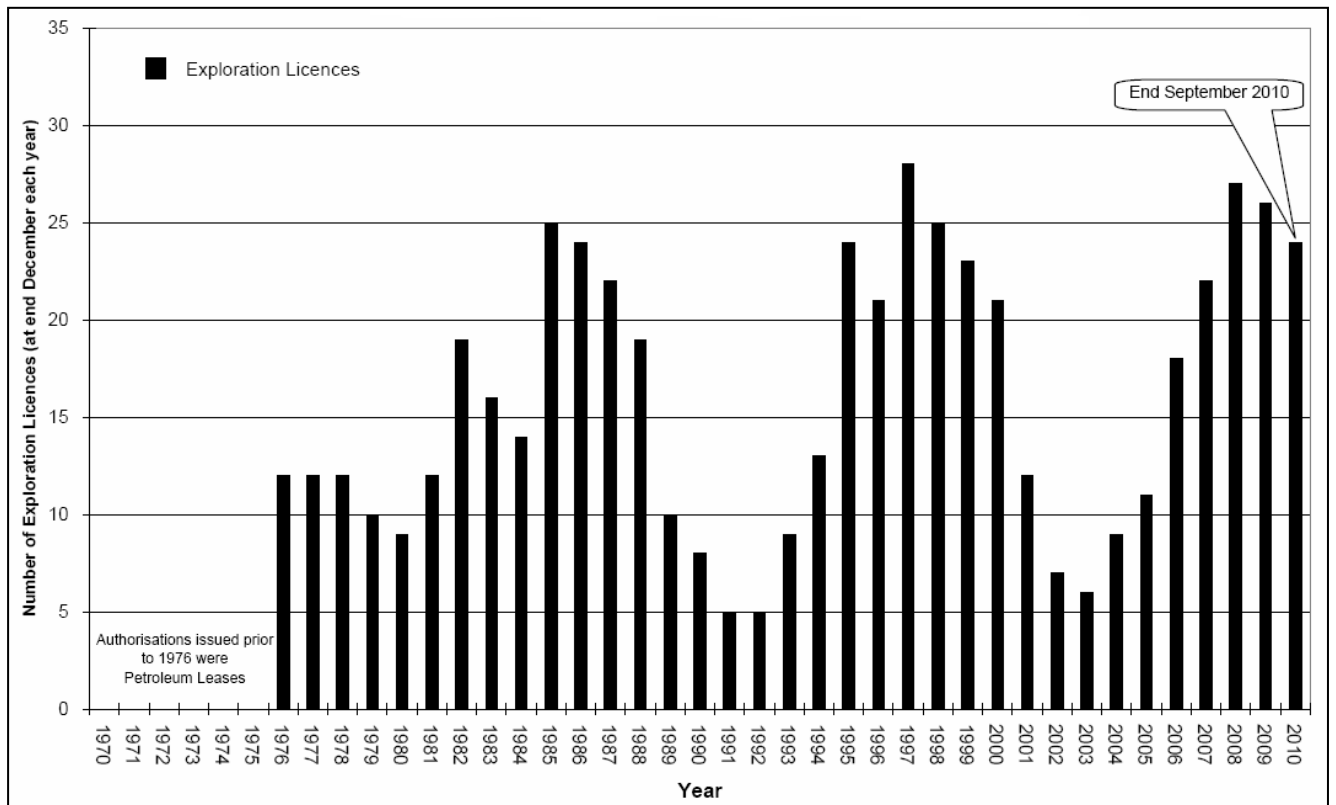
2.1 Licensing

Figure 1 over illustrates the number of exploration licenses approved in Ireland between 1970 and the end of September 2010. It shows that the number of exploration licenses has followed a cyclical pattern over the years with periods of increased activity generally followed by periods of reduced activity. The DCENR has suggested that there is some correlation between this pattern and changes made to the fiscal terms in 1987 and 1992. Specifically, the number of licences increased during the 1980s following changes made including the abolition of royalties. The number of exploration licences was at its lowest ever level in 1992, at which point the corporation tax rate for petroleum exploration and production was reduced to a rate of 25%.

The number of licenses increased for a number of years after that before starting to decline again in 1998. Activity had increased since 2004 but appears to be somewhat falling off more recently.

Licenses are held for a number of years depending on the type of license, meaning they go through a natural life span from one phase to the next. As the DCENR explained during its appearance to the Joint Committee, "if the opportunity or the results are not there, then the group of companies will just walk away and relinquish the licences, as they are required to do if they are not doing work".

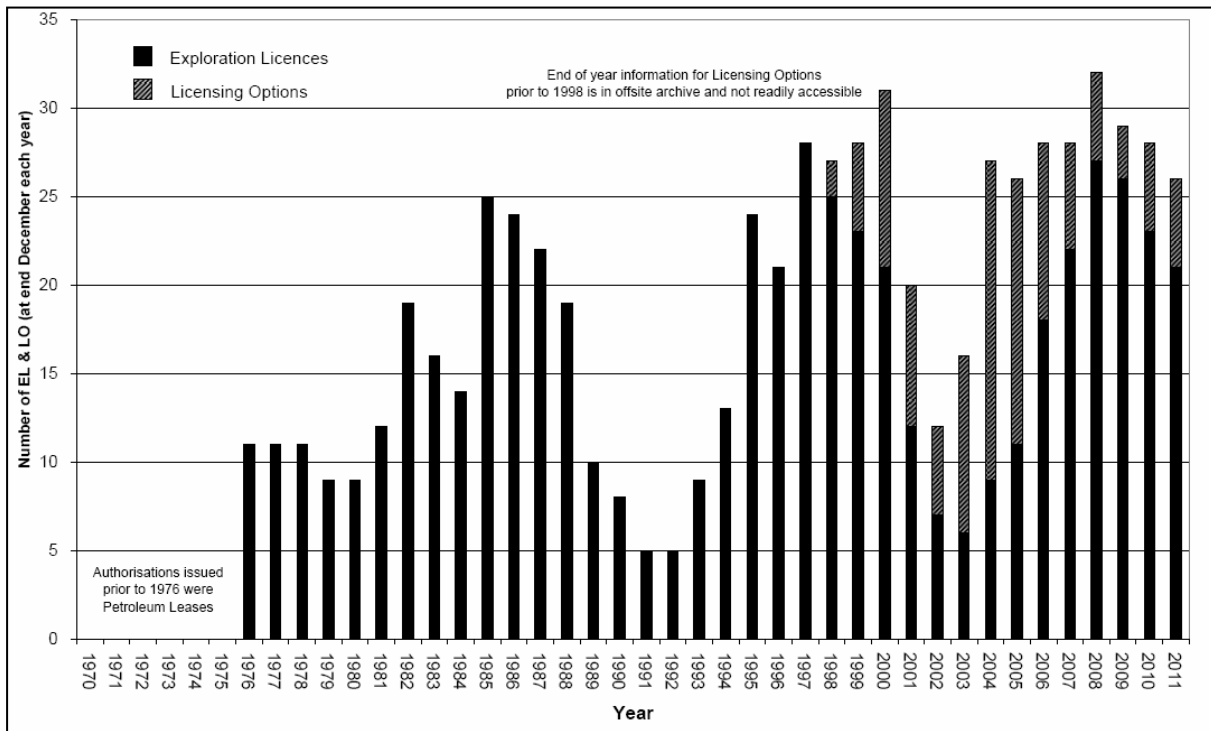
Figure 1: Number of exploration licenses, 1970 – end September 2010



Source: Department of Communications, Energy and Natural Resources website available at <http://www.dcenr.gov.ie/NR/rdonlyres/DCC9B3AE-05AA-4F16-A404-11275E3ABB47/0/HistogramsDecember2010.pdf>

Figure 2 shows the breakdown of licenses into exploration licenses and licensing options since 1970 when exploration first began in Ireland. Licensing options, which are for a period of two years, essentially offer a low cost opportunity to enter the sector.

Figure 2: Number of Offshore Exploration Licences and Licensing Options at end December each year, 1970 - September 2011



Source: Department of Communications, Energy and Natural Resources presentation to the Joint Committee available at <http://www.oireachtas.ie/parliament/media/committees/cnranda/Manly.pdf>

Of the exploration licenses currently held, 13 of these come under the pre-2007 fiscal regime while 10 exploration licenses come under the post-2007 terms which introduced an additional PRRT.

2.2 Explorations and discoveries

Table 2 summarises the number of wells drilled in Ireland to date. It shows that 182 wells have been drilled to date, of which 129 have been exploration wells.¹¹

Table 2: Wells drilled in Ireland

Well class	Number
Appraisal	29
Development / Production	24
Exploration	129
Total	182

Source: Department of Communications, Energy and Natural Resources personal communication

Figure 3 below illustrates the number of wells drilled offshore Ireland. There have been relatively few wells overall as shown by figure 3 and in particular since 2009 with those drilled being exploration/appraisal wells rather than development wells.

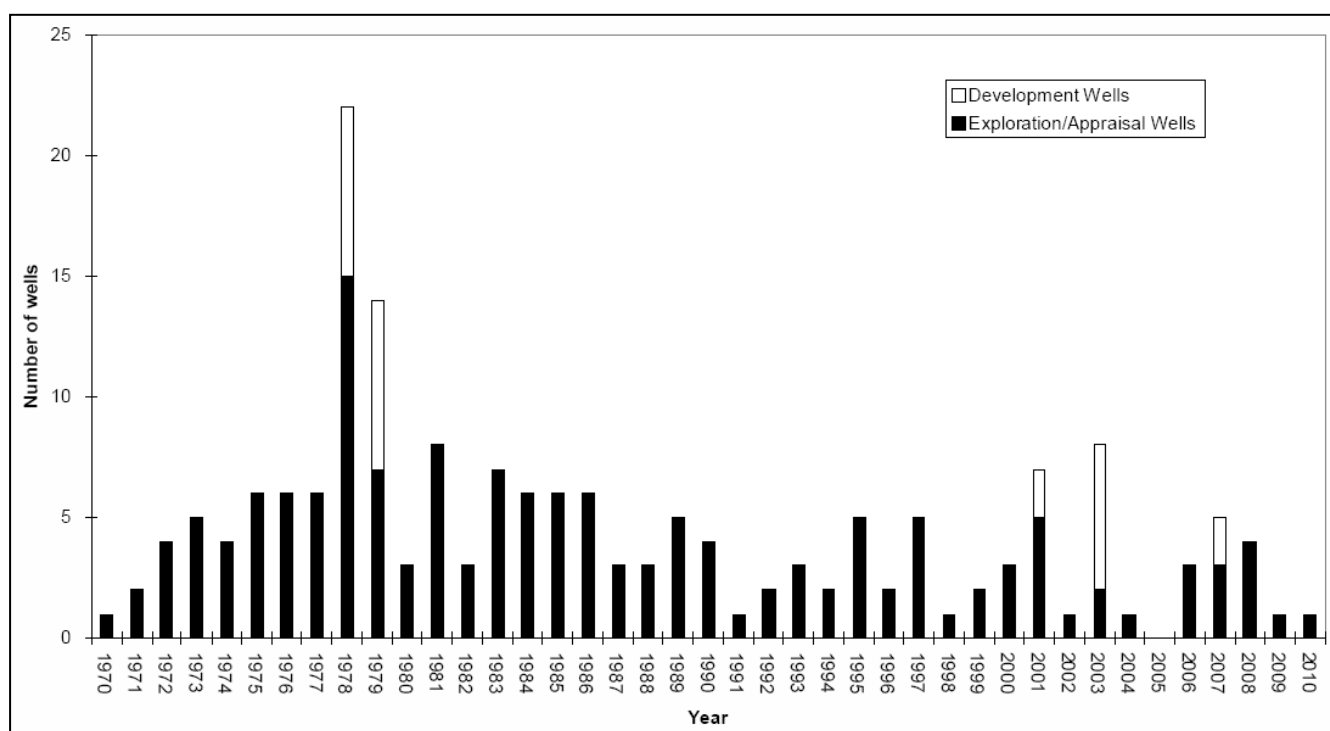
In its appearance before the Joint Committee on 27 September 2011, the DCENR expressed its disappointment at the low level of drilling in Ireland to date (typically one well per year). In its view, if more wells were drilled each year there would be a greater prospect of success:

“We are typically doing one well per year and that is extremely low. We need tens if not hundreds of wells to have any crack. I would be happy if we had about five wells per year. We would then have a reasonable chance of making some discoveries or improving on potential”.¹²

¹¹ There are several stages involved when a discovery is made, including drilling appraisal wells.

¹² The full transcript of this Committee meeting is available at <http://debates.oireachtas.ie/AGJ/2011/09/27/00004.asp>

Figure 3: Number of wells spudded and drilled offshore Ireland, 1970 – 2010



Source: Department of Communications, Energy and Natural Resources website available at <http://www.dcenr.gov.ie/NR/rdonlyres/DCC9B3AE-05AA-4F16-A404-11275E3ABB47/0/HistogramsDecember2010.pdf>

The Petroleum Affairs Division (PAD) of the Department of Communications, Energy and Natural Resources makes certain technical information available to *bona fide* exploration companies as soon as the confidentiality period has expired (which is generally no more than five years from acquisition).

This information includes seismic data, which is used in assessing the hydrocarbon potential of an area.

Table 3 (over) sets out data on seismic surveys undertaken since 1965.

Table 3: Seismic surveys, 1965 – 2011

Year	2D (line km)	3D (km ²)
1965	260	0
1968	1,072	0
1969	3,662	
1970	3,958	0
1971	10,299	0
1972	23,273	0

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1973	25,317	0
1974	7,473	0
1975	27,096	0
1976	13,554	0
1977	13,654	0
1978	4,038	0
1979	8,574	0
1980	8,124	0
1981	25,874	0
1982	14,186	138
1983	11,379	0
1984	24,083	0
1985	7,066	200
1986	5,863	0
1987	1,624	0
1988	2,593	0
1989	4,076	0
1990	4,294	0
1991	4,156	0
1992	4,062	0
1993	11,615	200
1994	3,384	400
1995	13,802	200
1996	19,324	724
1997	25,876	690
1998	17,539	3,254
1999	3,822	538
2000	2,769	2,444
2001	0	1,087
2002	0	408
2003	1,196	793
2004	0	413
2005	2,250	0
2006	3,210	840
2007	2,741	

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2008	2,211	
2009	1,354	379
2010		300
2011		1,111
Total	370,703	14,118

Source: Department of Communications, Energy and Natural Resources personal communication

In terms of discoveries of oil and gas, table 4 below sets out all of the commercial discoveries made to date in Ireland (all are gas). It shows that there have been relatively few commercial discoveries since the 1970s and none since Corrib in 1996 (the recent Barryroe well not being officially confirmed yet as a commercial find).

Table 4: Commercial discoveries

Field	Details
Kinsale	Discovered 1971
Ballycotton	Discovered 1989
Seven Heads	Discovered 1973 but not considered commercial at the time. Went into production in 2003.
Corrib	Discovered 1996. Under development.

Source: Department of Communications, Energy and Natural Resources personal communication

In addition, there have been a number of 'non-commercial' discoveries. These 14 discoveries are outlined in table 5 over.

Table 5: 'Non-commercial' discoveries

Field	Details
Dowra (onshore)	Discovered 1963
Barryroe	Discovered 1973 (drilled 2011/2012 by Providence Resources, however further appraisal drilling required to determine if commercial)
Ardmore	Discovered 1974
Burren	Discovered 1978
Connemara	Discovered 1979

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Spanish Point	Discovered 1981
Helvick	Discovered 1983
Galley Head	Discovered 1985
Dunmore	Discovered 1985
Dooish	Discovered 2002
Old Head of Kinsale	Discovered 2006
Schull	Discovered 2007
Hook Head	Discovered 2007
Bandon	Discovered 2009

Source: Department of Communications, Energy and Natural Resources personal communication

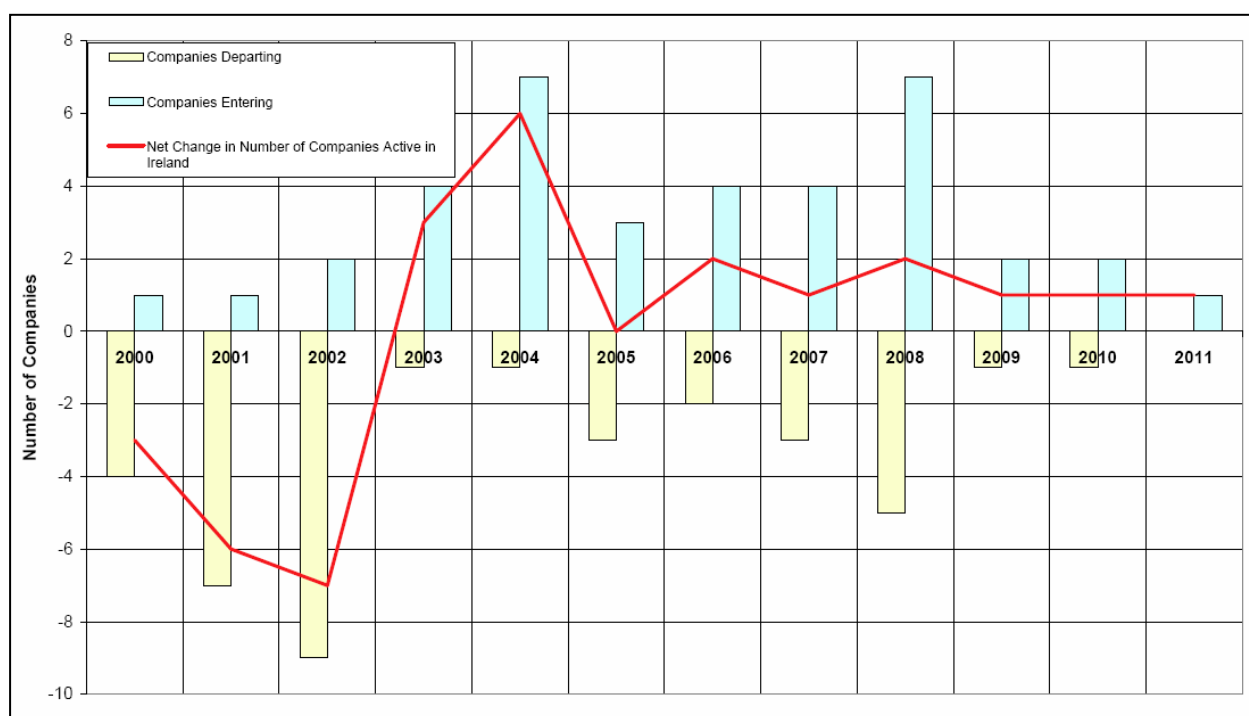
Appendix 3 of this report provides further information on significant hydrocarbon discoveries made onshore and offshore Ireland as provided by the DCENR.

2.3 Exploration companies

Figure 4 (below) sets out the number of exploration companies in Ireland between 2000 and September 2011. It shows that Ireland is just about managing to avoid a net loss and that there was only one new entrant in 2011 (exploration companies departing Ireland are shown in yellow below the horizontal line while companies entering Ireland are shown in blue).

The trend in the net change in the number of companies active here does not suggest that exploration companies find Ireland a particularly attractive location for their activities.

Figure 4: Number of exploration companies in Ireland, 2000 – September 2011



Source: Department of Communications, Energy and Natural Resources presentation to the Joint Committee

3. The petroleum industry in Ireland

This section looks at the petroleum industry in Ireland – specifically the history of petroleum development, exploration and production in addition to licensing and regulation. It concludes with some analysis of licensing rounds to date in Ireland.

3.1 History of petroleum development, exploration and production

Ireland has serious disadvantages with regard to offshore exploration for oil and gas reserves compared to other locations. These include deep water, harsh climatic conditions, lack of infrastructure and distance from shore. Despite this, Marathon Oil commenced exploration in Ireland in 1970 and declared a commercial natural gas find near Kinsale Head located in the Celtic Sea Basin offshore south west in 1971 (refer to figure 6: Significant basins offshore Ireland). In 1975, Bord Gáis Éireann was established as a limited company and signed a contract with the exploration company for the supply of natural gas from the Kinsale field at a bulk discounted rate for a 20 year term.

Marathon had discovered gas off Kinsale under a one-off deal with the then government for the development of the field. After the general election of 1973, the incoming government attempted to change the terms of the agreement.

In 1975, the government introduced the Ireland Exclusive Offshore Licensing Terms for oil and gas exploration. These terms included a 50% maximum State participation stake in any commercial find, production royalties of between 8% and 16% and the application of a corporation tax rate of 50%.

An election was held in 1977 before the then government could establish a State-owned Irish Petroleum Corporation. The new government established the Irish National Petroleum Corporation (INPC) in 1979 but precluded it from engaging directly in exploration or production.¹³ The underdevelopment of the INPC over the following years meant Irish expertise in the petroleum industry was never sufficiently developed.

In 1985, the 1975 exploration and production terms were changed by the then Minister of Energy through reducing state royalties and in 1986 he introduced further changes by abolishing State participation rights for marginal fields. In 1987, there was another change of government and a different Minister of Energy. Later that year, the then Minister announced new fiscal terms that included the exemption of all oil and gas production from royalty payments, a 100% tax write-off against profits on capital expenditure for exploration, development and production extending back 25 years and the abolition of all other State participation in oil and gas development. Five years later, in 1992, the then Minister for Finance cut the corporation tax from 50% to 25% and incorporated the 1987 fiscal terms into the Finance Act. The 1992 terms also state that oil or gas can be delivered at market prices.

The changes were introduced to improve conditions for oil and gas exploration in Ireland but this did not transpire and only 26 wells were drilled between 1993 and 2004. In addition, as a result of the licensing and fiscal changes, the oil companies were perceived to have substantial power over Ireland's oil and gas reserves.

¹³ The INPC was set up because of the trend at the time for oil-producing states to deal directly with oil-consuming countries having their own national oil companies.

Currently, there are four commercially viable gas producing fields – Kinsale, Ballycotton and Seven Heads (satellite fields to the Kinsale field) and the Corrib (not yet operational).¹⁴ In March 2012, Providence Resources announced the discovery of what it believes to be the first commercially viable oil flow rate in Ireland.¹⁵

Text box 2 (over) summarises the discoveries of oil and gas made to date in Ireland. The DCENR concluded in its appearance before the Joint Committee that the basic message is that while many discoveries have been made, very few of them have been of commercial interest never mind commercially viable. The text box shows that the companies that initially made the discoveries have not remained in Ireland, with the sites subsequently being taken over by different companies.

Text box 2: History of oil and gas discoveries in Ireland

- **Kinsale** and **Ballycotton** gas fields (Cretaceous) were discovered by Marathon in 1971 and 1989, respectively, but are now held by Petronas Star Energy.
- **Seven Heads** gas (Cretaceous) was discovered by Esso in 1973 but it was Ramco who brought it into production in 2003; both companies left although ExxonMobil has recently re-entered the scene WOI; the Barryroe oil discovery (Cretaceous) lies beneath Seven Heads gas and was also made by Esso. A Providence-led partnership now holds Barryroe and plans drill an appraisal well later this year.
- **Connemara** was discovered by BP but they failed to achieve commerciality; Statoil had a go in the mid 90s, drilled a couple of new wells and actually started producing oil into a storage tanker before flow rates died off. Island Oil & Gas obtained a licence over Connemara in 2004 and this has now passed to San Leon who purchased their assets.
- **Spanish Point** gas condensate discovery was made by Phillips Petroleum but also failed to prove commerciality and relinquished the area. Chevron was granted a licence in the mid 90's and shot more seismic but could not prove up a viable commercial opportunity; they too relinquished the acreage. Spanish Point is currently held by Providence and partners who are trying to progress towards a development. We expect an appraisal well to be drilled there next year. **Burren** is a small lower Cretaceous oil discovery on the same licence, also originally discovered by Phillips.
- **Corrib** gas field (Triassic Sherwood Sandstone) was discovered in 1996 by Enterprise Oil whose assets were subsequently taken over by Shell. Curiously the

¹⁴ In 2011, it was anticipated that production at the Corrib project was at least two years away. More recent reports suggest that gas will not flow from the terminal onto the country's network until late 2014 or early 2015.

¹⁵ The Barryroe well off the coast of Cork is reported to have flowed oil at a rate of 3,500 barrels of oil per day (bopd), exceeding the 1,800 barrel rate it said was needed for the oil field to be commercial (RTÉ News, 2012).

main objective of the Corrib discovery well was not the Sherwood Sandstone; big seismic data quality issues existed and have still not all been fully addressed

- **Dooish** gas condensate discovery was made by Enterprise/Shell 2002-2003 and was only the second well drilled in the Irish sector of the Rockall Basin; the first was a dry hole. Dooish is currently considered sub-commercial i.e. is not a stand-alone development.
- **Bandon** discovered by Serica in 2009 was another surprise –oil found in a non target reservoir in an area thought gas-prone.
- In March 2012, Providence Resources announced the discovery of what it believes to be the first commercially viable oil flow rate in Ireland at **Barryroe**.

Source: Department of Communications, Energy and Natural Resources presentation to the Joint Committee and L&RS

3.2 Licensing and regulation

In Ireland, the Energy White Paper 2007 provides the policy background to offshore exploration.¹⁶ This states that the primary strategic goal of Government is “creating a stable attractive environment for hydrocarbon exploration and production”.

Specific licensing and fiscal regimes are used to deal with petroleum exploration and production.

The Petroleum Affairs Division (PAD) of the Department of Communications, Energy and Natural Resources is responsible for the promotion, regulation and monitoring of the exploration and development of oil and gas onshore and offshore Ireland. The DCENR describes its policy objective as being “to maximise the benefits from exploration and production of indigenous oil and gas resources”.¹⁷

The DCENR also plays an important role in relation to data and information. It maintains the national archive of petroleum data and information including confidential data. As the Department informed the Joint Committee, operators and contractors are required to submit all technical data and information relating to all authorisations and exploration surveys. This includes real time data on wells on a daily basis.

¹⁶ The White Paper is available at <http://www.dcenr.gov.ie/NR/rdonlyres/54C78A1E-4E96-4E28-A77A-3226220DF2FC/30374/EnergyWhitePaper12March2007.pdf>

¹⁷ Department of Communications, Energy and Natural Resources appearance before the Joint Committee on 27 September 2011. Available at <http://debates.oireachtas.ie/AGJ/2011/09/27/00004.asp>

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Whilst the DCENR has responsibility for policy in relation to the exploration and development of oil and gas onshore and offshore Ireland, the *Petroleum (Exploration and Extraction) Safety Act 2010* provides the Commission for Energy Regulation (CER) with responsibility to regulate the activities of petroleum undertakings with respect to safety through the establishment of a Petroleum Safety Framework. L&RS (2010, p. 2) points out that the independent mediator during the Corrib dispute, Mr Peter Cassells, had noted:

“the unsatisfactory position where the same unit in the Department of Communication, Energy and Natural Resources was also charged with promoting gas and oil exploration was also charged with monitoring the construction and inspection regime of the pipeline. In light of these concerns he recommended that authority for up-stream safety should be reposed with the CER”.

Tranches of the Irish Atlantic Margin basins are offered to industry in licensing rounds every year or every other year while other areas remain closed. The Minister determines which new areas will be available for bid and advises industry 6-12 months ahead of announcing the closing date. These regular licensing rounds are used to encourage investment into petroleum exploration offshore Ireland.

The primary legislation governing the exploration of petroleum is the *Petroleum and Other Minerals Act, 1960*.¹⁸ Under the Act, there are three types of Exploration Licence authorisations:

- Standard Exploration Licence for water depths up to 200m which is issued for six years;
- Deepwater Exploration Licence for water depths exceeding 200m which is issued for 12 years; and
- Frontier Exploration Licence for areas so specified by the Minister which is issued for periods of not less than 16 years.

In essence, a licensing round is usually open for 12-18 months with the duration of the licenses depending on the type of licenses issued.

For Standard and Deepwater Explorations Licences the holder is obliged to carry out a work programme which must include the drilling of a least one exploration well in the first phase.

¹⁸ The full list of legislation relevant to offshore oil and gas exploration and development is available on the DCENR's website at <http://www.dcenr.gov.ie/Natural/Petroleum+Affairs+Division/Statutory+Basis/>

For a Frontier Exploration Licence the holder must commit to at least one exploration well in order to proceed to the second phase. The area of an Exploration Licence shall be expressed in terms of blocks and/or part blocks of the Williams Grid.

Prior to any licensing round, the PAD must undertake a Strategic Environmental Assessment (SEA) to identify any significant impacts likely to arise from the proposed plan or project. This is a requirement under *Council Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment* which was transposed into Irish law by *European Communities (Strategic Environmental Assessment) Regulations, 2004* (S.I. 435 of 2004) and *Planning and Development (Strategic Environmental Assessment) Regulations, 2004* (S.I. 436 of 2004).

An SEA was conducted for the Slyne/Erris/Donegal Basin, the Porcupine Basin and the Rockall Basin. The SEA process integrates environmental considerations into planned licensing rounds and subsequent offers of Frontier Licences.

The location of drilling is effectively led by industry in that companies must be willing to explore particular areas. The Department explained to the Joint Committee that it can lead by offering licenses in particular bases at a given time but that the emphasis is on determining where they can obtain the best level of interest.

3.3 Licensing rounds in Ireland

This section looks at both the uptake of licensing rounds to date in Ireland and the reasons for the current low uptake rate.

3.3.1 Uptake of licensing rounds

According to the 2007 Indecon report which was commissioned by the DCENR, applications for licensing rounds between 1995 and 2006 peaked in 1997 at 16 but have remained low since then. The numbers of licenses awarded are lower still with a peak again in 1997 when 11 licenses were awarded (until the 2011 round – see below).

Recent licensing rounds for acreage include the Slyne / Erris / Donegal Basin Round in 2006, the Porcupine Basin Round in 2008 and the 2009 Rockall Frontier Licensing Round where an expanded area was offered to include the north-western margin of the Rockall Basin. In announcing the expanded area, the then Minister stated that:

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“this is the first time since 1997 that such a major part of the Rockall Basin has been the subject of a licensing round. Recent technical studies have indicated a significant petroleum potential within the Rockall Basin. It is timely, therefore, that the oil and gas exploration industry be offered an opportunity to commit to invest in new exploration programmes in the basin” (DCENR, 2008).

The 2009 Rockall Basin licensing round closed on 23rd April 2009, however, with only two applications for licenses – one from a group comprising Providence Resources Plc (as operator) with OMV (Exploration) GMBH and Sosina Exploration Ltd as partners and a second from Serica Energy Ltd, a UK registered company.

One Frontier Petroleum Exploration License was awarded - to Serica Energy. Under the previous round (the 2008 Porcupine Basin Round), four exploration licenses were awarded.

These figures for exploration licenses applied for and awarded reflect poorly when compared with our nearest neighbours in the UK where a recent offshore licensing round received 350 bids (144 licenses awarded) (IOOA, 2011a).

The latest licensing round for Irish waters – the *2011 Atlantic Margin Licensing Round* was announced by former Minister Conor Lenihan in June 2010. This licensing round differs from previous rounds in that it opens up Ireland’s entire Atlantic seabed – the Irish Atlantic Margin – for exploration (apart from existing licensed areas) rather than specific basins or blocks as was offered in previous rounds.

This new approach was taken with the intention of increasing the rate of exploration activity offshore Ireland. The largest licensing round to date, it covers over 250,000 km² comprising 996 blocks and 558 part blocks. Also of significance, this licensing round allows exploration companies a two-year license so they can assess if their blocks are worth further exploration (McGreevy, 2011). The closing date for applications was 31st May 2011.

In October 2011, Minister Pat Rabbitte announced the key results of the 2011 Licensing Round:

- 15 applications were received by the deadline, with some companies submitting more than one application;

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- The total area covered by the applications was just over 15,000km², with water depths ranging from less than 200m to more than 2,500m;¹⁹
- A total of 12 companies were involved in the applications and of these seven companies are new to Ireland;
- There were four applications that were directly competing for two specific areas and could only result in two Licensing Options being offered;
- 13 Licensing Options are being offered subject to the applicants' formal acceptance of the terms and conditions, including work programmes;
- These awards will comprise one Licensing Option in the Rockall Basin, two Licensing Options in the Slyne Basin, nine Licensing Options in the Porcupine Basin and one Licensing Option in the Goban Spur Basin. Overall, therefore, there is a relatively good geographical spread from North to South; and
- Despite the overlaps, all companies that submitted applications are being offered acreage, though not always the full areas applied for (DCENR, 2011).

The outcome of the 2011 Round may suggest that the strategy of offering two-year Licensing Options rather than offering Frontier Exploration Licenses has had a positive result. The number of proposed awards is the highest of any Frontier Round, the first of which was in 1994. The companies involved in the Round included both new entrants to Ireland, together with companies already very active in the Irish offshore (DCENR, 2011).

In its appearance before the Joint Committee, the DCENR noted that a quarter of the areas awarded must be relinquished after 2 years and not all Options are expected to progress to Licences.

The seven new companies that will be offered acreage are: Antrim Energy; Bluestack Energy; Europa Oil & Gas; First Oil Expro; Petrel Resources; Repsol Exploration; and Two Seas Oil & Gas Ltd. The five companies already active in Ireland are: Providence Resources Plc; Chrysaor; Serica Energy; Sosina Exploration and San Leon Energy (DCENR, 2011).

Although more successful in attracting applicants than previously, an article in the Financial Times (Smyth, 2011) did, however, highlight the fact that none of the world's major oil players applied.

¹⁹ 15,000 km² constitutes 6% of the area on offer and 2% of the entire Irish designated offshore area.

Comhairle don Iarthar / the Council for the West, in its presentation to the Joint Committee, suggested the following explanation for this:

“The clear and logical answer is that the major companies are committed to making their investment in exploration areas that offer a better prospect of success, even in areas which do not offer licensing terms as attractive as Ireland”.

Onshore the Department granted Licensing Options to two companies over parts of the Lough Allen basin. The Licensing Options are designed to allow the companies assess the natural gas potential of the acreage largely based on desk-top studies of existing seismic and well data.

In November 2011, Providence Resources began drilling at its license at Barryroe in the North Celtic Sea Basin offshore southern Ireland. The company recently announced the discovery of the first commercially viable oil flow rate in Ireland at that site. At the time of writing, it was also reported that Barryroe produced more gas than expected although exactly how commercially viable this might be remains to be seen (RTÉ, 2011).

In the DCENR’s view, Ireland’s available potential is not being fully explored and the existing large data gaps is one of the key issues that needs to be addressed in relation to petroleum exploration. It attributes the lack of applications for deeper water areas in the latest licensing round to the lack of data.²⁰

3.3.2 Reasons for low uptake

Tordo (2010) offers a number of reasons, in general, why licensing rounds may not be successful, including low prospectivity, high political risk, poor legal and regulatory framework, harsh fiscal terms, lack of contextualisation, and poor planning. She goes on to note that some of these factors are easier to change than others:

“while low prospectivity and high political risk may be difficult to change, it is usually possible to improve laws and regulations, fiscal terms and planning of the licensing round. Indeed, such improvements may be necessary to ensure an adequate level of competition and efficiency of the allocation system” (Tordo, 2010, p. 40).

The area that Ireland is trying to promote with the recent licensing rounds is deep water in the Atlantic off the west coast. There are many difficulties associated with exploration in this

²⁰ See DCENR’s appearance before the Joint Committee on 27 September 2011.

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area including harsh working conditions, remoteness, high costs and deep waters (in the Atlantic Margin water depths are 7-8 times greater than that of the North Sea). Although technologies used in deeper waters are improving, the associated costs are relatively high.

Coupled with the lack of infrastructure (gathering pipelines, processing facilities etc) on the west coast, this represents higher risks to industry and means that it is harder to justify the investment in infrastructure and exploration without the discovery of large enough fields.

The delays in bringing the Corrib gas to shore and the low success rate of drilling to date is reported to have also discouraged industry (IOOA, 2011b).

In its appearance before the Joint Committee, the IOOA suggested that delays and uncertainties in relation to infrastructural development in Ireland is a negative factor and makes it more difficult to attract investment.

It also indicated that from an industry perspective, “the extreme difficulties and delays in bringing a discovery into production are well appreciated internationally”.

In its presentation to the Joint Committee, Pro Gas Mayo, which is a voluntary group, also suggested that the Shell experience has led to reputational damage in terms of planning, protest and delays.

Based on the ratio of previous exploration to commercial discoveries used by Fox (2003 cited in Indecon (2007), p.57), Ireland has a 4.8% overall success rate for a commercial find. Thus, taking account of the success rate in Ireland and the cost structure of oil and gas exploration, the attractiveness of investing in the Irish Atlantic Margin diminishes (Indecon, 2007).

The fiscal terms introduced in 1992 were intended to increase exploration activity but this did not happen with only 23 exploration wells drilled between that date and 2007.

The review of the tax regime and the additional profit resource rent tax added in 2007 was intended to ensure a greater return to the State from our own natural resources, while maintaining the incentive for companies to explore offshore Ireland (DCENR, 2007).

Although the tax regime is very attractive, Ireland has not been able to entice investors or, more importantly, prove reserves (Indecon, 2007). Section 5 looks at Ireland’s fiscal terms in greater detail.

4. Petroleum tax regimes

Indecon (2007) explains that there are a number of categories of fiscal regimes in operation worldwide and typically these differ on the basis under which rents are distributed between governments and E&P companies. Four broad categories of fiscal terms can be identified, namely:²¹

- Concession agreements (also called licences or tax/royalty systems);
- Production sharing contracts;
- Risk service contracts; and
- Service contracts.

Text box 3: Explanations of the four broad categories of fiscal regimes

Concession agreements are “the oldest and most common type of petroleum agreement and the terms are often fixed by law. The oil company receives the right to explore for, produce and market petroleum in exchange for payment of royalties and taxes. In its simplest form, the oil company will bear all costs but, in many cases, the government retains the right to participate as a partner in development and production and will then usually (but not always) pay its share of development and operating costs. There may also be other payments made to the government, such as signature or production bonuses, but these are relatively uncommon in concession agreements” – DCMNR (2006).

A second category of fiscal regime is a *production sharing contract (PSC)*. Typically a PSC “is agreed between the risk taking oil company (normally called the contractor) and the government, often through the state oil company. The three main elements are cost recovery, production split and taxation; bonuses are also a common feature and royalty and participation are also sometimes seen, although the government is assured of a minimum level of revenue through the production split.”

The third category is a *risk service contract*, where a contractor receives payment in cash as cost reimbursement and service fee respectively, and is similar to a PSC. Finally a *service contract* is a contract “whereby the contractor is paid a fee for his technical services in developing and operating a field.”

Source: Indecon (2007), p. 9

Ireland operates a licensing system which is a concessionary type of system.

Different countries will clearly have varying fiscal regimes for petroleum exploration and production. Before looking at Ireland’s system, we review what could be considered

²¹ As in *Ireland Fiscal Terms Review, A Report and Proposal from the Petroleum Affairs Division (PAD)*, Department of Communications, Marine and Natural Resources, August 2006.

optimal regime according to Osmundsen (2008) who states that an ideal petroleum tax and licensing system:

- Attracts the most efficient companies;
- Induces all socially profitable fields to be exploited in an optimal way; and
- Captures the petroleum rent²² i.e. the gain from exploiting the petroleum resource.

The State on behalf of its citizens owns the natural resource (i.e. the petroleum reserves).

The Government's main objective is to maximise the revenue from the production of oil and gas and use this revenue for public sector expenditure and investment. The Government may have secondary objectives, such as increasing the number of jobs, enhancing local investment, demonstrating control over natural resources. These secondary objectives may interfere with the main objective to some extent.

The Government must in order to maximise its revenue from the resource set up a system that attracts sufficient investment from efficient firms that exploit the socially profitable fields but also fairly shares the profits from exploiting the resource.

Setting optimal tax and licensing policy is difficult due to many constraints. Policy-makers can know less about costs, reservoirs and markets than oil companies. This information gap can be exploited by oil companies to extract more of the petroleum rent than is socially optimal.

The solution is for governments to invest in information gathering and monitoring and design policies to increase the incentive for companies to convey the correct information to governments. Norway has adopted a policy that requires copies of all information from petroleum activities to be submitted to the relevant authorities free of charge.

Osmundsen (2008) suggests that the tax/royalty system to be put in place should be simple.

²² The petroleum rent is the gain from exploiting the petroleum resource i.e. as petroleum is not manufactured (it is basically found) the profit from its exploitation is to some extent unrelated to the effort and cost of exploitation, i.e. the cost of bringing a small field and a large field into production is probably not that different even though the large field will have much higher profits. This is essentially an unearned profit and often referred to in economic literature as a rent.

Some systems are too complicated and thus, make the calculation of future profit scenarios for companies difficult. Complicated systems also reduce transparency, give rise to perverse incentives and increase the risk premium a company puts on a project.

In addition, the nature of the production of oil and gas reserves means that both the government and companies need a long-planning horizon. Companies need good incentives for the entire life-cycle of the project and changing regimes mid-way through a project may lead to reputational damage.

Gains from short-term opportunism can be outweighed by long-term reputational damage which deters future investment.

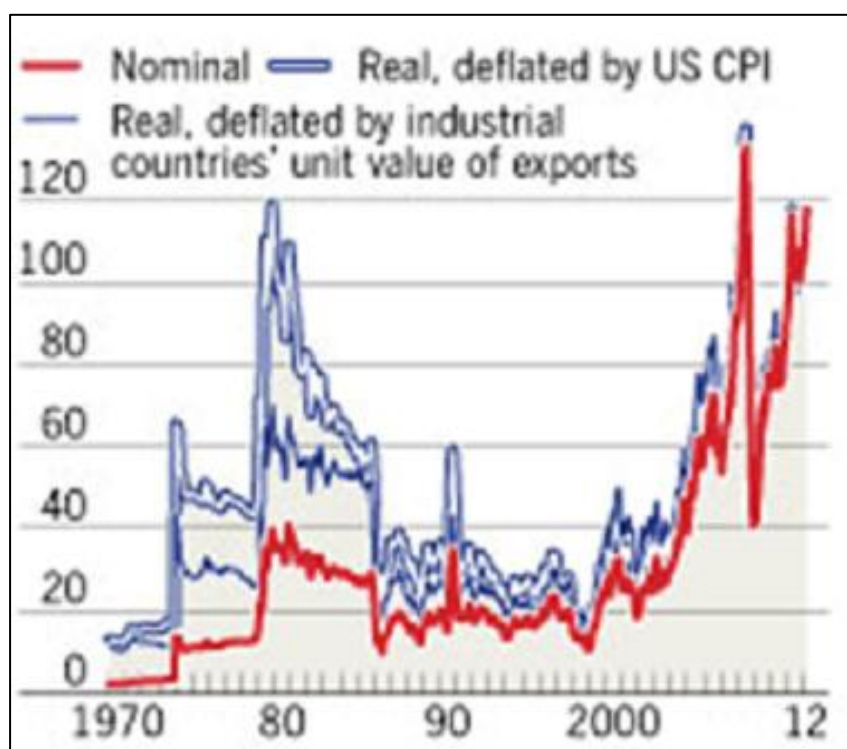
Osmundsen (2008) also states that the petroleum tax system should respond to changes in the oil price. This maintains a fair distribution of the profit resource rent. The price response regime should be known in advance, i.e. it should be an integrated part of the tax system. It should not be introduced on an ad-hoc basis in response to an unexpected increase in the oil price.

The price of oil, together with the current worldwide proven resources, are key drivers of oil exploration. These factors will help determine how economically attractive a specific exploration project will be. The two primary factors that impact the price of oil are:

- supply and demand; and
- market sentiment.

Other factors will also have an influence. For example, Wolf (2012) suggests that the tightening of sanctions on Iran is playing a part in the rise in oil prices (see figure 5).

Figure 5: Nominal and real oil prices, 1970 – 2012



Source: Wolf (2012)

A major fear of oil and gas companies is that taxes increase when the oil price rises but fail to decrease when the price falls. This suggests that a neutral or progressive tax regime should be put in place.

A neutral regime would take the same share of profit regardless of the profit and thus, revenue automatically increases as prices and profits increase – though the overall tax share stays the same.²³ A progressive regime would increase the tax as the profit or price rises.

²³ According to the Norwegian Petroleum Directorate (2011), its petroleum taxation system is “designed to be neutral, so that an investment project that is profitable for an investor before tax will also be profitable after tax”.

5. Taxation in Ireland

This section first outlines the current system of tax in Ireland before going on to assess whether Ireland's tax regime can rightly be described as generous. Tax terms on exploration and production are dealt with under tax law and not in the lease.

5.1 Current system of tax and royalties

With changes to the fiscal regime in 1992, revenue from oil and gas exploration and production for the Government was limited to 25% corporation tax with 100% write-offs against exploration, development and production costs. This system has been heavily criticised as ceding Irish natural resources to foreign oil companies,²⁴ but was defended on the basis that extracting resources from Irish waters is very difficult²⁵ and oil companies need encouragement to explore our offshore:

“The current licensing terms are merely a reflection of the relative difficulties experienced by those prospecting for hydrocarbons in Irish waters in the past. In other words they are set to attract the only companies in the world capable of finding and drilling our natural resources and thus benefiting the Irish consumer [...] The rationale behind the current terms is to encourage exploration in the Irish offshore. Despite the fact that some people view them as excessively generous, there have been very low levels of exploration over the last 30 years and much of our offshore remains under-explored” (DCENR, 2006).

In December 2006, independent expert advice on the licensing system was carried out by Indecon to examine: “whether additional revenues from potential discoveries are feasible and whether this would require a more flexible fiscal regime” (Indecon 2007, p.i).

This was the first review of the terms for exploration licenses in 15 years. In addition, high oil prices, the modest increase in exploration activity and the level of public debate on petroleum exploration and Ireland's dependence on imported gas also played their part in the decision to review whether Ireland should alter its tax terms.

The Indecon review considered whether changes in the current Irish fiscal and other licensing terms were appropriate to ensure a fair share of petroleum rent for the State and a

²⁴ See, for example, O'Toole (2005) *State must stand up to oil moguls*. The Irish Times, 16 August 2005. Available at <http://www.irishtimes.com/newspaper/opinion/2005/0816/1122072819257.html>

²⁵ Some such difficulties include water depths, harsh climatic conditions, lack of infrastructure and distance from shore.

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timely evaluation of petroleum potential, while continuing to encourage offshore exploration in Ireland. A second objective was to investigate whether the current fiscal regime could be made more progressive or 'dynamic', to accommodate future changes in the prices of oil and gas as well as the cost of deep-water field exploration and development (Indecon, 2007, p.i).

Taking into account the review of the DCENR in 2006²⁶, Indecon (2007) recommended the levying of a supplementary corporate profit resource rent tax of between 5-10% where the ratio of profits to capital investment exceeds 1.5.

Significantly, the Indecon review argued against making the new profit resource rent tax retrospective or making any future adjustment retrospective. According to the DCENR's presentation to the Joint Committee, the 2007 tax terms are not retrospective due to the potential impact on exploration investment and also any potential negative impact on the predictability of Irish tax policy in general.

Similar concerns arose in the United Kingdom last year after their Government altered elements of the tax terms applied to the oil and gas sector in its Budget 2011, specifically:

"it reduced fuel duty and cancelled the fuel duty escalator so long as the oil price remains above a certain figure (the Budget gave an indicative figure of \$75 a barrel, but the exact figure will be determined in consultation with the industry). This measure will be paid for by a 12% increase in the supplementary rate of corporation tax on the oil and gas industries" (House of Commons Treasury Committee, 2011, p. 64).

The UK Select Committee expressed its fears over this decision to suddenly increase the supplementary oil and gas levy by 12% without warning despite previous assurances to the contrary:

"We recognise that it will not be possible or desirable to consult on every tax increase ahead of the decision being made. Moreover, if the Government wishes to adjust duty rates in order to dampen the effects of oil price rises on end users, compensating revenue will need to be found elsewhere. The decision to increase the supplementary oil and gas levy by 12% without warning, less than a year after the Government had undertaken to provide a "stable" tax regime in the sector, may weaken the Government's credibility in seeking to establish a stable tax regime in this and other areas. Such reversals of policy in the absence of changes of circumstances that would

²⁶ That review recommended that a "Variable Royalty Rate (profit ratio based) be introduced in conjunction with the existing 25% corporation tax as a clear, fair and enduring strategy for rent extraction. In other words, the smaller and less profitable a field is, the more benign the tax regime (4% royalty plus 25% tax). As profitability increases, so the government take a larger share of revenue, up to a top royalty rate of 15% (plus 25% tax)" (Indecon, 2007, p. ii).

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warrant them is bad for business confidence and the credibility of government policy making. We note that the Government “is now talking to the industry quite intensively” and urge it to make sure that industry is properly consulted on the design of the “stabiliser”. Colleagues on other committees may well wish to keep the effect of this tax change on investment under review” (House of Commons Treasury Committee, 2011, pp. 62-63).

In its appearance before the Joint Committee, the DCENR noted the key findings of the Indecon review in relation to the attractiveness as Ireland’s tax regime:

“Their key findings, which were twofold, are outlined in the following two slides. They were that the Irish tax terms are relatively attractive for companies which make a discovery and the key issue for industry is prospectivity. Balancing these two factors, Indecon concluded that the attractiveness of Ireland as a location for exploration diminishes compared with the analysis of the country’s post-tax position. If a company makes a discovery it does well but the chances of discovery are not high and, as such, it is a relatively high risk investment.

The principal conclusion of Indecon was that while there was a potential for the Government to capture a higher share from more profitable fields, this potential should not be overestimated”.

To date, only four companies out of 156 have benefited from Ireland’s tax terms with the remaining 152 not enjoying any benefit.

Text box 4: Summary of Indecon recommendations

- No change to terms for exploration finds where ratio of profits to capital investment is not more than 1.5
- For more profitable finds, recommended a new supplementary corporate profit resource rent tax of between 5-10% (new licences only)
- New profit resource rent tax would mean a combined corporate tax / resource rent tax on profits of up to 35%
- Recommended that if significant commercial oil or gas fields are discovered in future that additional increases in the rate of the resource rent tax should be applied to new licences

Source: Department of Communications, Energy and Natural Resources presentation to the Joint Committee

Due to Irish concerns over *inter alia* the control private companies now had on Ireland’s oil and gas resources and the length of time for which they could retain this control, the licensing terms for petroleum exploration and production were changed in 2007. In August 2007, a new licensing round was announced by the then Minister. It was announced that the new licenses would be subject to a “profit resource rent tax” (in addition to the corporate tax

of 25% which currently applies) in the case of any petroleum lease entered into following on from an exploration licence awarded by the then Minister after 1 January 2007. The write-off for exploration and development costs was maintained.²⁷ The then Minister stated that:

“The basis for this decision was to ensure a greater return to the State from our own natural resources, while maintaining the incentive for companies to explore off our shores. I believe these changes achieve this balance” (DCENR, 2007).

The additional tax can be levied up to 15% depending on the profitability of the field and thus, in addition to the 25% corporate tax could subject companies to up to 40% tax liability. It will operate on a graded basis of profitability whereby once the cost of exploration has been recovered and the field goes into profit, then, depending on the rate of profit, taxation could be as high as 40% as follows:

- an additional 15% tax in respect of fields where the profit ratio (profit ratio is defined as rate of profits less 25% corporate tax divided by the accumulated level of capital investment) exceeds 4.5;
- an additional 10% where the profit ratio is between 3.0 and 4.5;
- an additional 5% where the profit ratio is between 1.5 and 3.0; and
- no change where the profit ratio is less than 1.5 (DCENR, 2007).

As such, the new tax went beyond the 5-10% profit resource rent tax recommended by Indecon. When calculating whether the rate of 5%, 10% or 15% applies, the only costs contemplated are those which are field specific.

These changes only apply to any discovery or production achieved from Exploration Licences granted after 1st January 2007 and due to the long lead in time with exploration and discovery it would be 10 to 15 years before the State sees any revenue as a result of the changes.

²⁷ Certain exploration expenditure (occurred in Ireland) over the previous 25 years is allowable against profits in the event of a commercial petroleum production project. The vast majority of exploration companies operating in Ireland do not benefit from this concession due to the lack of commercial discoveries.

Other non-fiscal changes announced by the Minister included:

- reducing the overall length of certain licences;²⁸
- requiring licensees to surrender acreage earlier;²⁹
- revising all fees in line with the Consumer Price Index;
- reducing the confidentiality period (from 5 to 4 years) relating to data acquired by licensees and furnished to the Department;
- changing drilling commitments and work programmes; and
- reducing the time (from 2 years to 1 year) allowed for the submission of a plan for development from the date of the Petroleum Lease.

The new “profit resource tax rent” announced by former Minister Eamon Ryan in August 2007 was effected through the *Finance Act 2008* which introduced a new chapter into Part 24 of the *Taxes Consolidation Act 1997*.

Text box 5: History of Ireland’s fiscal terms

- **1975:** Corporation Tax 50%, Royalties 12.5%, production bonuses and right to State participation
- **1987:** Royalties abolished (following lead of UK and Norway) plus no State participation and write off of development capital cost
- **1992:** Corporation tax rate reduced to 25% (below the general rate of 50%) following steep decline in activity
- **2007:** Additional “Profit Resource Rent Tax” of 5% to 15% introduced and linked to profitability of discoveries
- Tax is paid on profits after write off of exploration and development costs.

Source: Department of Communications, Energy and Natural Resources presentation to the Joint Committee

In short, the system of 25% corporation taxation put in place in 1992 by then Minister for Finance still applies today, albeit with the variations introduced by the then Minister in 2007 which are based on the profitability of a field. This new system provides for the imposition of, in addition to the 25% corporate tax, a profit based tax of up to 15%, thus potentially

²⁸ Deepwater licences will be reduced from 12 years to 9 years and the minimum period for a frontier licence will be reduced from 16 to 12 years. The Minister will be empowered to vary both the duration of the individual phases of a licence as well as the overall duration of the licence.

²⁹ The licensing terms now include an automatic relinquishment of 50% of the area covered by a licence at the end of the first phase of all exploration licenses and a further 50% at the end of the second phase of Deepwater and Frontier Licenses.

yielding 40% revenue for licenses issued after 1 January 2007. Licences issued before that date are still subject to the 1992 scheme. The abolition of royalties and state participation introduced by the then Minister in 1987 still applies.

All four commercial discoveries to date in Ireland pre-date the 2007 tax changes.

5.2 Is Ireland's tax regime generous?

Ireland's current regime meets most of the requirements of an optimal system (as defined by Osmundsen). It is a profits based regime and since 2007 a degree of progressivity for new production licences has been added whereby the tax rate increases with the profitability of the scheme. The major issue is the tax rate, i.e. the Irish tax rate is 25% rising (depending on profitability) to 40%. Many, including Shell to Sea, consider these rates low.

The question of whether Ireland's tax regime with regards to petroleum exploration and production is generous enough to amount to a 'giveaway' is open.

Ireland only taxes the profits of such enterprises. There is no per unit tax or levy as in other countries and Ireland's tax rate is relatively low. The State also does not take an ownership stake in the field or demand royalties. Thus on this basis, Ireland's tax regime is generous in comparison to that of other countries. There are, however, others factors to be considered as discussed below.

Table 6 (reproduced from the House of Commons Scottish Affairs Committee (2007, p Ev 38/39) shows the percentage of the profits (measured by net present value at a 10% discount rate) taken by government in the form of taxes, royalties etc based on a typical 100 million barrel oil field development in 2005.

This is said to be a convenient way of comparing the effect of different tax regimes which vary considerably in their structural features and can be very complex.

As the DCENR highlighted to the Joint Committee, comparisons based on production, however, would likely rate Ireland towards the bottom of the table given our low rate of gas production and zero oil production. It is important to bear such nuances in mind when attempting to compare Ireland's terms to those of other countries.

Table 6 shows that Ireland has the most generous tax and royalty regime of the countries included in the House of Commons' paper. The table shows the situation in 2005. Even

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with the tax changes in 2007 Ireland would still probably have the lowest government share of revenues of the countries analysed. Other countries in 2005 such as Norway (75.72%), Netherlands (49.64%), UK (41.13% (approx. 51% post 2005) have higher government shares of profits than Ireland.

It should be remembered, however, that various factors, including physical conditions, should be considered when looking for countries with which to compare Ireland's tax regime.

Table 6 does not include countries such as France, Spain and Portugal – countries with more similarities to Ireland in terms of petroleum exploration. This topic is taken up in more detail later in this report.

Table 6: Government share of standard oil field profit, 2005

101 mmbbl Standard Field: Government Take NPV@10%: Existing Investor				
<i>Base Price</i>		<i>High Price</i>		<i>Rank</i>
Ireland	25.00%	Ireland	25.00%	1
Papua New Guinea	38.03%	Papua New Guinea	34.56%	2
South Africa	40.42%	South Africa	35.35%	3
USA (GoM deepwater)	40.75%	USA (GoM deepwater)	37.46%	4
UK (shelf)	41.13%	UK (shelf)	39.33%	5
UK (Southern Gas Basin)	41.13%	UK (Southern Gas Basin)	39.33%	6
Mozambique	43.78%	Mozambique	40.46%	7
Pakistan	47.68%	Pakistan	46.29%	8
Netherlands (offshore)	49.64%	New Zealand	48.35%	9
New Zealand	51.47%	Italy	48.81%	10
Philippines	51.63%	Argentina	49.46%	11
Canada (East Coast)	52.34%	Netherlands (offshore)	50.27%	12
Bolivia	52.43%	Morocco	50.44%	13
Italy	52.68%	Chad	51.95%	14
Morocco	53.67%	Canada (East Coast)	53.65%	15
Chad	54.09%	Philippines	53.66%	16
Argentina	56.15%	Bolivia	55.73%	17
East Timor-Australia JPDP	57.49%	Canada (Arctic)	57.30%	18
Netherlands (onshore)	59.82%	Netherlands (onshore)	59.17%	19
Canada (Arctic)	60.14%	Australia (offshore)	59.54%	20
Australia (offshore)	63.03%	USA (Alaska)	59.69%	21
Colombia	63.44%	Mauritania	64.50%	22
Peru	63.85%	China (offshore)	64.53%	23
Denmark	65.69%	Namibia	65.04%	24
Mauritania	66.71%	Denmark	65.12%	25
Namibia	67.33%	Colombia	65.79%	26
USA (Alaska)	67.49%	East Timor-Australia JPDA	67.29%	27
China (offshore)	68.80%	Malaysia-Thailand JDA	69.19%	28
Malaysia-Thailand JDA	72.20%	Peru	69.45%	29
Tunisia	74.12%	Brunei	71.47%	30
Norway	75.72%	Tunisia	71.49%	31
Bangladesh	76.26%	Brazil (deepwater)	73.05%	32
Congo (Brazzaville)	78.24%	Brazil (shelf)	73.20%	33
Syria	78.49%	Venezuela	73.36%	34
Brunei	78.50%	Congo (Brazzaville)	73.51%	35
Angola (deepwater)	78.81%	Syria	73.99%	36

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Equatorial Guinea	80.18%	Norway	75.06%	37
Ecuador	81.80%	Bangladesh	76.16%	38
Venezuela	82.54%	Equatorial Guinea	76.61%	39
Brazil (deepwater)	82.55%	Ecuador	78.38%	40
Brazil (shelf)	82.75%	Cameroon	80.99%	41
Cameroon	83.76%	Sudan	82.58%	42
Sudan	85.41%	Angola (deepwater)	83.96%	43
Cambodia	89.53%	Kazakhstan	86.77%	44
Gabon	89.55%	Gabon	88.35%	45
Kazakhstan	90.08%	Egypt	88.55%	46
Indonesia	91.19%	Oman	88.55%	47
Angola (shelf)	91.33%	Indonesia	88.76%	48
India	91.72%	Cambodia	88.77%	49
Cote d'Ivoire	92.40%	Nigeria (deepwater)	90.23%	50
Oman	92.44%	Thailand	91.02%	51
Egypt	92.44%	Algeria	91.09%	52
Nigeria (deepwater)	92.79%	Cote d'Ivoire	91.27%	53
Algeria	94.00%	India	91.48%	54
Thailand	95.54%	Qatar	93.75%	55
Qatar	97.88%	Angola (shelf)	94.07%	56
Vietnam	98.36%	Vietnam	94.66%	57
Libya	98.94%	Yemen	95.96%	58
Yemen	99.42%	Azerbaijan	97.23%	59
Trinidad & Tobago	99.90%	Trinidad & Tobago	97.34%	60
Turkmenistan	101.78%	Libya	98.76%	61
Myanmar	102.71%	Myanmar	99.71%	62
Azerbaijan	110.68%	Turkmenistan	101.51%	63
Malaysia	111.13%	Malaysia	105.30%	64
Nigeria (shelf)	112.08%	Nigeria (shelf)	111.03%	65

Source: House of Commons Scottish Affairs Committee (2007)

The Irish Government has to trade off the tax rate with other major considerations. There is a major information gap in estimating Ireland's potential recoverable resources and the cost of exploration to reduce this information gap is considerable.

Ireland has had only a handful of commercially viable gas finds and one very recent commercially viable oil flow rate, and must put in place incentives to find more. It is also competing with countries to attract investment.

Ireland is considered high cost and low reward and thus, a generous tax regime is an advantage when companies are evaluating where to invest. That said the government must strive to achieve the maximum tax revenues from petroleum exploration and production without deterring petroleum investment.

In this context, while the Joint Committee is cognisant of the rate of exploration success to date in Ireland and perceptions of prospectivity off our shores it nonetheless believes that

the case for increasing the minimum tax take and applying revised PRRT rates which increase according to a sliding scale based on the rate of profit should be fully explored in the case of new licenses.

Another alleged unfairness of the tax regime is that oil and gas companies can write off their expenses against tax, i.e. that they will not pay any tax on profits until the costs of exploration and production are met.³⁰

All companies are, however, allowed to write their expenses off against tax and while the regime with regards to capital costs for gas/oil exploration and production is more generous than for normal companies (i.e. they get a much longer period between when the cost is incurred to offset against future profits than normal companies) this reflects the long-term nature of the industry where exploration and production are upfront costs and it may be decades before any revenue from production is realised. The DCENR has explained to the Joint Committee that the write-off against corporation tax is not the same as the State paying the cost of a well:

“On the general corporation tax rate of 25%, all exploration expenditure in Ireland can be written off. That is not the same as a situation where the State would put the money in up front. I will leave aside the difficulties associated with finding such money. A company obtains relief on tax on the amount of money involved. It is not a payback for the cost of a well. What happens is that the cost of the well can be offset against the 25% tax rate”.

Other studies have also looked at the relative attractiveness of various fiscal regimes.

Probability estimates enable an analysis of expected monetary value of oil and gas exploration. As part of its analysis, Indecon completed new modelling on alternative prospectivity assumptions.³¹ It uses the Expected Value (EMV) of an exploration prospect which is calculated from the Net Present Value (NPV) of the field if successful, the exploration cost and the Probability of Success (PoS). Its country rankings include some countries not featured at all in table 5 above and with whom Ireland may have more similarities in this context.

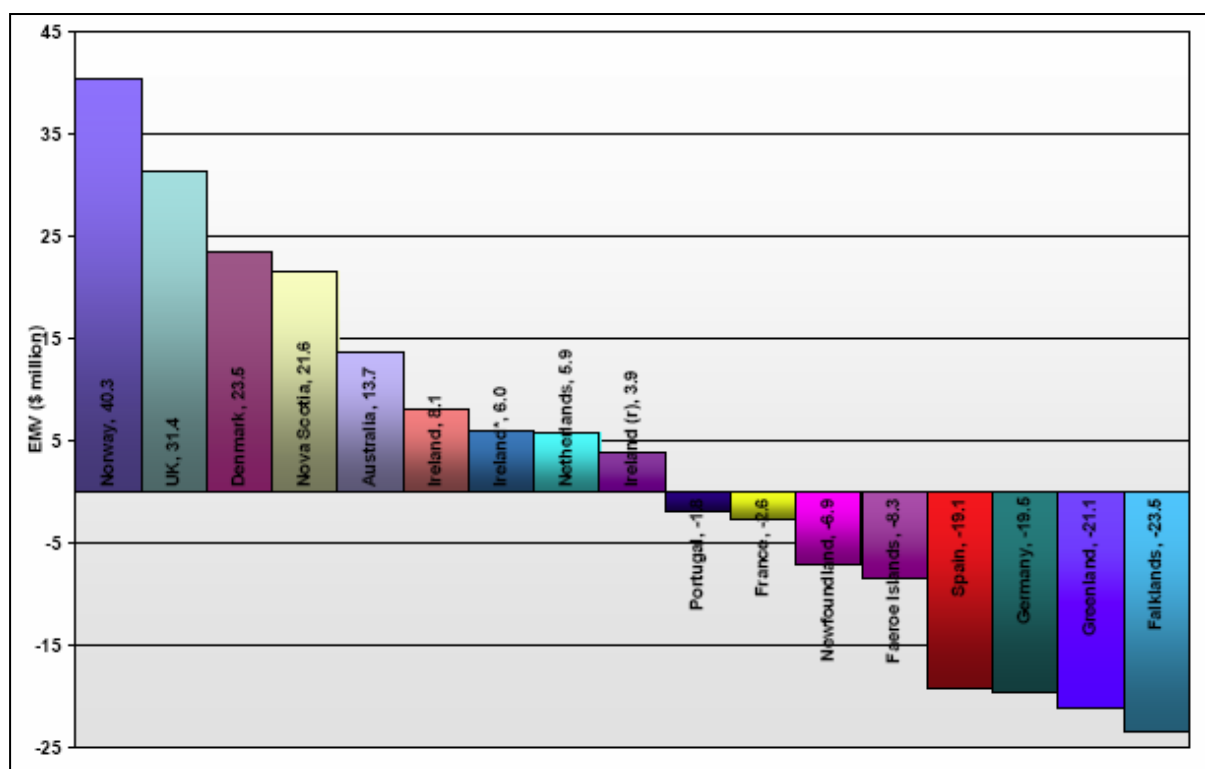
³⁰ Exploration expenditure anywhere in Ireland can be written off against tax. The DCENR informed the Joint Committee that costs relating to exploration which takes place elsewhere or other costs incurred by other companies are not considered.

³¹ It notes that “the previous DCMNR report did not, however, explicitly present results on prospectivity or the chance of finding oil and gas which is a key issue from the perspective of risk/reward ratios (Indecon, 2007, p. v).

The overall expected monetary values of oil and gas finds taking account of expected post-tax NPVs and the prospectivity of a find as calculated by Indecon are presented in figure 6 below.

Figure 6 indicates that within Europe Norway, UK and Denmark have higher EMVs than Ireland. This ranking does not change with the introduction of a supplementary resource rent tax but if the proposed royalty regime was introduced the EMVs for Ireland would also fall behind the Netherlands.³²

Figure 6: Overall Expected Monetary Values (EMVs) by country – baseline case



Source: Indecon (2007), p.vii

Notes: the royalty proposal in the Indecon report is presented as Ireland (r), the 25% tax rate is used under the heading Ireland.

The trade-off between risk and return as manifested in the scale of the presence of major companies here implies Ireland is not giving away its oil and gas resources. McGreevy (2011), writing in the Irish Times, highlights comments made by a professor of geology at

³² Indecon uses different prices for oil in its analysis although it should be noted that these do not alter Ireland's relative advantage compared to other countries given that for example oil price increases would affect all countries. In other words the different price scenarios do not change the position of Ireland compared to other countries.

UCD on the fairness of Ireland's licensing terms:

"Irish licensing terms are "absolutely fair" and competitive, according to Pat Shannon, professor of geology at UCD. "If they were overgenerous we would have every big company in the world in here. The fact that we don't have companies queuing up means that they don't see Ireland as a giveaway. To me that is the bottom line".

Concerns regarding the rate of government take were frequently raised during the Committee's meetings on petroleum exploration by both members of the Joint Committee and some witnesses. Specifically, SIPTU made reference to both the Indecon review and a 2007 report by the US Government Accountability Office which studied 142 fiscal systems in relation to Ireland's ranking in terms of government take of the countries studied.

As already explained in this report, Ireland introduced an additional PRRT of 5% to 15% which is linked to profitability of discoveries in 2007.

Figure 2 showed the number of exploration licenses in Ireland. This forms an important part of the background against which changes to the fiscal terms were framed. Peaks in the mid-1980s coincided with the introduction of significant changes to the terms in 1987. Increased activity in the 1990s again followed changes to the terms. In its appearance before the Joint Committee, the DCENR explained the connection between the number of licences and changes to the fiscal terms in the following terms:

"The first peak occurred in the mid-1980s when the 1987 changes were introduced. The 1987 and 1992 changes were introduced because declines in the number of licences had been anticipated on the basis of the nature of exploration licences where the lead in and lead out are done over a number of years. The number of licences peaked in the 1980s and drilling was either successful or unsuccessful. One then moves on to 1992 when the number of exploration licences was at its lowest ever level. This figure increased after 1992 and throughout the 1990s but started to decline again by the end of the decade".

The issue of Ireland's fiscal terms was also taken up by Comhairle don Iarthar / Council for the West in its appearance before the Joint Committee during which it concluded:

"The terms on offer in Ireland - a tax on profits between 25% and 40% - compare favourably with most countries other than Norway which is in an unique position because of its geology which offers a high probability of success".

It also suggested that the emphasis of the debate in Ireland has wrongly focussed on the licensing terms rather on the employment potential of the sector:

"In Ireland, we have missed the point because of the concentration of the media and the political establishment on the licensing terms. Instead of looking at the tax returns,

or lack of them, we should be looking at the jobs or, in our case, the lack of them. The oil and gas industry are highly labour intensive. In Norway up to 250,000 are employed either directly or indirectly in the oil and gas industry and it is that employment and the taxes generated on the back of those jobs that is the mainstay of the Norwegian economy. The tax take from oil and gas is the icing on the cake.

Let us imagine the transformation that could take place in this country if we could develop the oil and gas industry to create even 100,000 jobs. That is the challenge facing this country; instead of debating the merits or otherwise of the oil and gas licensing regime, we should be debating how we can harness our offshore resources to create those 100,000 jobs”.

In April 2011, Minister Rabbitte outlined the rationale for Ireland’s tax terms given the current circumstances:

“The rationale underpinning Ireland’s tax policy approach in the area of oil and gas production is simple. The oil industry is a global industry and Ireland competes not only with other European countries but with other regions of the world to attract exploration investment to Ireland. As a result, Ireland cannot set its tax terms in isolation or we would risk discouraging all potential investment.

Industry decisions on where to invest in exploration are principally driven by two key factors — geology and economics. Where the industry views an area as being highly prospective, it will be prepared to invest in exploration even if the tax terms are relatively tough. Of course, the opposite is also true. While the Irish offshore has recognised petroleum potential, it is rather under-explored when compared with other offshore areas such as Norway or the UK. The high level of successful exploration in the UK and Norwegian offshore areas has resulted in exploration companies being prepared to invest heavily in exploration in those countries, despite the fact that these states’ tax take, as previously stated, is much higher than in Ireland. For example, in excess of 1,200 exploration and appraisal wells have been drilled to date in Norway and in excess of 4,000 in the UK. This compares with a total of 156 in Ireland. When Deputy Adams states that the multinationals have not walked away, he is correct. When the prospects are high, they have not walked away. However, they have long since drastically limited their involvement in our waters, which can be rather turbulent, as no one knows better than Deputy Ferris”.³³

In addition, during the same Dáil Motion, the Minister highlighted that the number of producing fields and wells drilled are important considerations when comparing countries’ tax terms though the size of producing fields is also highly significant:

“The statistics are more dramatic when it comes to producing fields. The UK has in excess of 300 producing fields and Ireland has only three with a fourth in development. The number of wells drilled or the number of producing fields do not tell the full story since the size of producing fields can vary significantly. For example, the giant Troll

³³ Energy Resources: Motion. 19 April 2011. Available at <http://debates.oireachtas.ie/dail/2011/04/19/00022.asp>

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field offshore Norway is in the region of 50 times the size of the Corrib gas field. The bottom line is that if Ireland's petroleum tax terms were fixed at the same level as those of the UK or Norway, then we could expect no exploration investment would locate in Ireland. That would mean no new exploration wells and no new oil or gas discoveries. Those who maintain our tax terms are too low might be satisfied but I remind them that 60% of zero is still zero".

These statements obviously predate the announcement of the first commercially viable oil flow rate in Ireland at Barryroe earlier this month. This is a welcome development in terms of demonstrating the hydrocarbon potential present offshore Ireland and should increase interest in Ireland as a potential hydrocarbon investment location. Under the circumstances it would be prudent to keep Ireland's tax terms under review and respond appropriately to any significant changes in prospectivity here. A careful balance between risk and return must be achieved. Section 6.1 discusses the issue of changing Ireland's tax regime in the case of the discovery of significant commercial oil or gas fields.

The IOOA responded to the question of why there is increased interest in offshore Ireland when the tax rate increased in its presentation to the Joint Committee:

"On the point raised by Deputy Ferris on why, given that the tax rate has increased, there is increased interest in offshore Ireland, the reason is that the type of licence has been changed by the Department. It no longer obliges people to take out full exploration licences which carry onerous and expensive work programmes. It has given companies two year licensing options which do not carry onerous work programmes; they require a certain amount of work but nothing in comparison to drilling a well".

The IOOA has seen its member numbers decline over the years. In 1985, the association had 17 members compared to four at present (its membership now stands at eight). Although somewhat anecdotal this points to the challenging nature of operating in Ireland.

The Department maintains that with the benefit of hindsight, the 1975 tax terms were set too high based on overly optimistic assessments of Ireland as the next North Sea, a proposition which has thus far failed to materialise. Even with the changes made in 1992, the net number of companies in Ireland remains low as does the level of exploration activity and the number of commercially viable finds.

The Norwegian Ministry of Petroleum and Energy outlined views on the tax terms and retrospectively changing terms when it appeared before the Joint Committee in March 2012. It highlighted the importance of the resource base in this context:

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“Regarding the tax regime and the Norwegian state’s participation level, we own the resources and find the right balance in this regard. That is decided on the basis of the resource base. If one discovers much oil and gas, then one becomes attractive to the oil companies and stricter conditions can be applied. It is as easy as that. We have never, however, changed any conditions after they were set. If we put down some conditions for production and we regretted them later, we stuck to them anyway. We have always tried to put as much into law because it applies to everyone. The oil companies are very competent and can outmanoeuvre a government easily, especially one without expertise in this area. As much as possible must be put into the law to ensure the oil companies will know what the deal is and understand the law applies to them like it does to everyone else”.

When it appeared before the Joint Committee, SIPTU expressed the view that a change in the licensing terms which might include the imposition of royalties, State equity stakes and increased taxes should be considered.

Another concern in relation to petroleum exploration is that big oil companies are sitting on discoveries and waiting for the optimum time to develop them. Discoveries which are under appraisal under an existing license will have agreed work programmes and timelines in place. This provides clarity on the issue of when a company is obliged to move onto the next phase of its operations including possibly drilling a well and so on. Companies must comply with their work programmes otherwise there would be implications for the lease. This point was also addressed by the IOOA in its appearance before the Joint Committee:

“It is a fact that 3% of the total area off Ireland’s coast is under licence. If all the recent offers are accepted - it is by no means certain that they will be - this figure will increase to 5%. The terms of licences are specifically designed, as departmental officials have explained to the committee, to prevent people holding on to acreage”.

In addition, the issue of data and the DCENR’s capacity to analyse this arose during the course of its meeting with the Joint Committee. As the latter explained:

“In the petroleum affairs division, PAD, we have the capacity to analyse data which is streaming at us all the time. We get the same data as the companies and we talk to them. We say: “Have you got this? Did you see that log? Have you seen this trend in the reservoir?” etc. A dialogue takes place on an ongoing basis. It would be a phenomenal effort for anybody to try to cheat on this, particularly in circumstances where people are aware of the data expected. The latter will point out instances in which certain data were not provided, etc. It is usually the case that one has more data than one can handle. In such circumstances, we are quite satisfied”.

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In this context, the Joint Committee was interested to hear about collaborative work between the DCENR and Canada:

“Petroleum research is crucial in laying the technical platforms for planning and promoting the sector. I referred to Canada and we have active research ongoing with the Canadians to examine how we could correlate the geology across the Atlantic”.

Vast areas of the Irish offshore area remain available for industry to explore. Knowing the best areas to target is a key issue.

The issue of trying to identify the areas with greatest potential for discovery or so-called ‘sweet spots’ was frequently raised during the Committee’s meetings on petroleum exploration.

One industry perspective on this was expressed during the Committee’s meeting with IOOA:

“The industry, collectively, has spent €3 billion over the last 40 years chasing what it thought were the sweet spots, so the question is in a sense unanswerable until somebody actually makes a discovery and demonstrates - primarily in oil rather than gas - a major find, most likely off the west coast. One can only find the sweet spot by drilling wells. A classic example of this was when a lot of wells were drilled in the Celtic Sea in the 1970s. People thought the sweet spot was there, but they have since moved to the west coast. They were in Porcupine Bank, based out of Fenit, the Slyne Trough and the Rockall Trough. Each generation, as exploration proceeds, moves into new areas”.

5.3 Potential changes to the Irish tax regime

This section looks at three issues – per unit taxes, windfall taxes and production sharing agreements.

Per unit taxes

A per unit tax (such as a landing tax³⁴) is a tax charged on each unit of gas/oil taken from the field. In many countries such per unit charges are not taxes but royalties, i.e. the company has to pay such per unit charges for the privilege of exploiting a State’s natural resources. Ireland removed its royalty regime in 1987 and replaced it with the special corporation tax on

³⁴ The term ‘landing’ tax was used in times past for taxes on fish, i.e. a tax on the amount of fish landed. Currently, landing taxes in addition to referring to fish can refer to airport taxes. In the USA when discussing oil production taxes the term severance tax is used. This can be a per unit tax but can also be a tax on profits.

profits from such enterprises.³⁵

From the reply to Parliamentary Question No. 333 of 5th November 2008 it seems that the production leases issued for the Corrib Gas Field and the Sevens Heads Gas Field oblige the companies to pay all taxes properly due but do not set out what these taxes are. Thus, it would seem possible to introduce such a “landing” tax through the Finance Act or change the tax regime with regards to profits from such fields.

The reason for not doing so and the reason that the more recent changes to the special corporation tax regime that applies to gas and oil production companies were not made retrospective is the possibility of reputational damage.

As mentioned above uncertainty increases the risk to the profits of a project. If a country changes the tax or royalty regime after a production lease has been issued the production company may pull out. Even if they did not pull out (and in general if they have invested substantially they would probably not) they might reduce future investment including in the plant that already exists. Other companies may review their plans to invest and again may decide not to invest or reduce their investment. It is not just that the new regime will reduce their profits that will deter investment but that the regime can be (and was) changed arbitrarily during a project’s lifetime. Such potential changes can increase the risk premium that companies use when evaluating future projects.

Windfall taxes

An alternative may be a windfall tax. Many countries have introduced windfall profit tax on companies (usually based around exploiting natural resources) who receive unexpected profits resulting from some event not controlled by those who are profiting. Thus, an unexpected rise in oil prices could (and has) induced countries to tax the unexpected profits of oil production companies that result.

³⁵ In its appearance before the Joint Committee, the IOOA argued that royalty systems (or those purely based on quantity of product) are unfair as they fail to take no account of how difficult it might be to develop a field or the costs of doing so with companies paying the same regardless of whether the development was easy or hard. The current system, in its view, is more equitable as it is based on taxation in terms of returns the companies get and reflects the cost of developing the product.

The most recent change to the Irish tax regime for gas and oil production companies can be seen to some extent as a windfall profit tax, i.e. the tax rate rises in line with the profitability of the field.

Windfall taxes can, however, induce companies to (temporarily) reduce production to avoid the tax especially if the tax is seen as temporary or it ends when prices fall (Rao, 2010). The Irish regime, however, where the tax rate increases with profitability, is already in place and is permanent and thus avoids such concerns.

Production sharing

There is currently no provision in place the Government to take a production share. Such production sharing arrangements are one of a number of public policy options.

If Ireland were to introduce this option and retain the current tax rate, this would alter the balance and could have implications in terms of attractiveness to industry.

The DCENR has suggested that adopting this type of model would have implications for the tax rate:

“If one opted for that model, one would be faced with an either-or scenario and one would reduce the tax rate and take one’s production share. It is part of the menu of options available”.³⁶

The Indecon review considered alternative regimes including Production Sharing Contracts but rejected it noting its disadvantages include the establishment of an Irish state oil company and much more complex administration.³⁷ The IOOA in its appearance before the Joint Committee in November 2011 explained that:

“Production sharing agreements are relatively common in the industry but they usually take place on onshore areas where there is a high probability of success, in other words the Government knows precisely what is there and can estimate costs with considerable accuracy. They are used in places like north Africa and the Middle East where there is a high probability of success. They are not common in deep water, offshore, uncertain, high-cost areas”.

³⁶ Appearance by DCENR before the Joint Committee.

³⁷ The main options considered were:

- 1) A production Sharing Contract (PSC) using production split based on trenches of production;
- 2) A variable royalty rate dependent on the ratio of profits to costs;
- 3) A fixed royalty rate; and
- 4) A supplementary corporation profit resource rent tax to apply to more .profitable finds.

SIPTU noted in its presentation that more than half of the governments with hydrocarbon production worldwide use production sharing contracts unlike the licensing system in Ireland which is a concessionary system (according to a report by the Independent Petroleum Association of America in 2008). Johnston, Johnston and Rogers (2008) states that while slightly over half of the governments with hydrocarbon production worldwide use PSCs, nearly half of the countries worldwide use a concessionary (or royalty/tax) system. It also provides examples of countries using each type of system as follows in text box 6.

Text box 6: Examples of countries using PSCs or concessionary systems

Production sharing contracts: Malaysia, India, Nigeria, Angola, Trinidad, the Central Asian Republics (of the FSU), Algeria, Egypt, Yemen, Syria, Mongolia, and China.

Concessionary system: the US, UK, France, Norway, Australia, Russia, New Zealand, Colombia, South Africa, and Argentina.

Source: Johnston, Johnston and Rogers (2008)

In looking at the different policy options involved, the SIPTU delegation highlighted that there could also be a hybrid system where production sharing agreements coexist with the existing licensing system.

As already noted, there could then be implications in terms of the tax rate.

In its presentation to the Joint Committee, SIPTU highlighted the importance of looking at ownership issues and outlined its recommendations should Ireland maintain the current system:

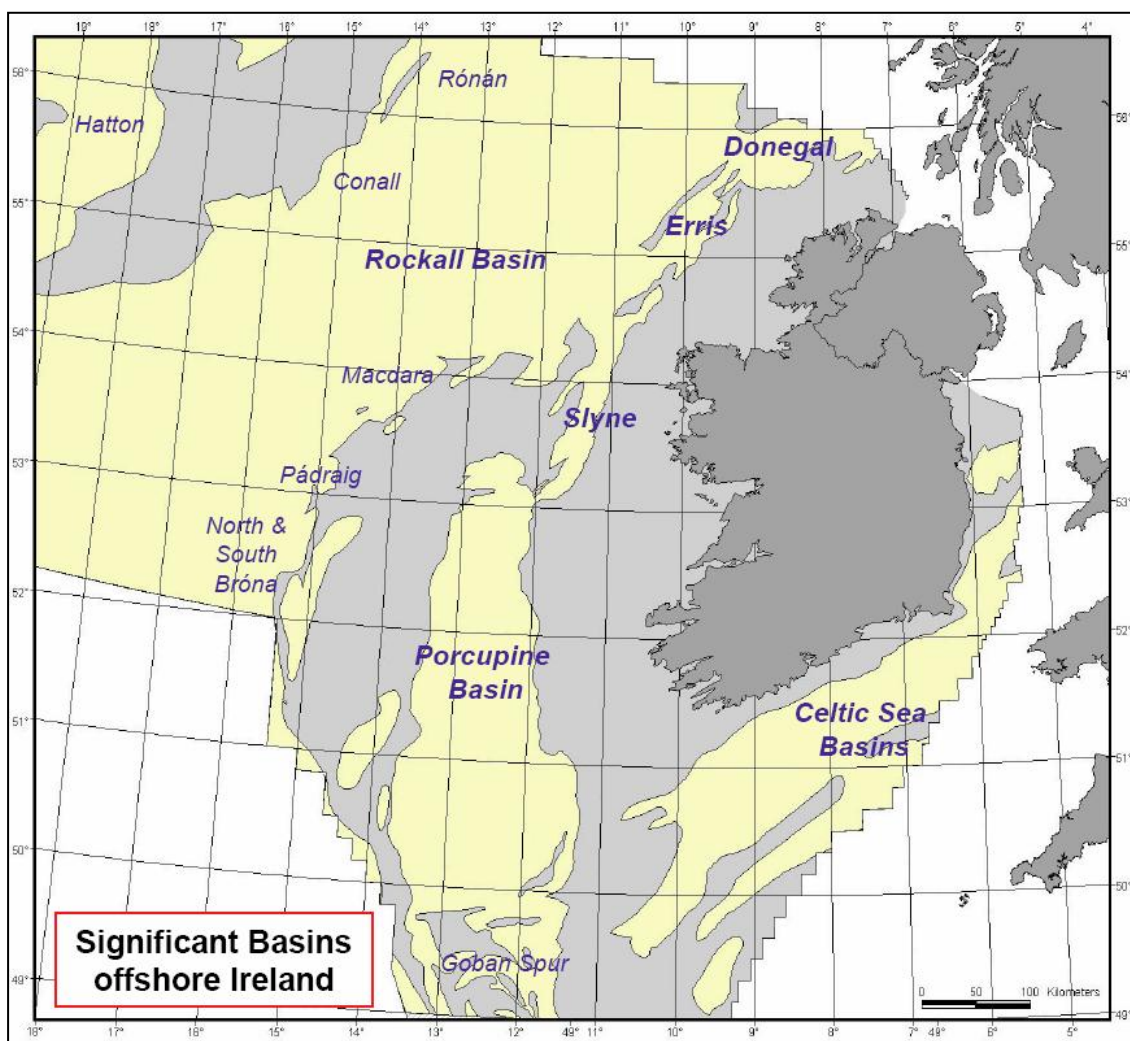
“there are options for Ireland that can involve State participation either through a carried interest which can be introduced through the licensing terms or else we can look at developing a hybrid system where there are production sharing contracts alongside the existing licensing system. In our report we outlined three systems. We examined the licensing system and suggested that if Ireland continued to use the present system that the State would look at increasing rates of taxation, possibly introducing tiered bonuses and royalties”.

6. Ireland's potential for petroleum exploration

6.1 Exploration

There are four Irish Atlantic basins on the Irish Atlantic Margin lying SW-W-NW offshore Ireland. These are the Rockall Basin, the 'North' Porcupine Basin, the 'South' Porcupine Basin and the Slyne / Erris / Donegal Basin. The Corrib gas field is located in the Slyne basin. To the south offshore Ireland lies *inter alia* the North Celtic Sea basin, where Kinsale Head gas was discovered (see figure 7 below).

Figure 7: Significant basins offshore Ireland



Source: DCENR website at http://www.dcenr.gov.ie/NR/rdonlyres/0F59CAC5-7346-4195-817E-A78BD99C4772/0/2009IrishRockallRoundtechnicalandothersupportinginformation_web.pdf

According to the IOOA (2010), there are substantial untapped petroleum reserves off the coast of Ireland.

This potential can only be realised, however, if we significantly increase the level of exploration. This view is reiterated in a DCENR press release (16th June 2010) associated with the 2011 Atlantic Margin Licensing Round where it was estimated that Atlantic waters offshore Ireland are “likely to be rich in petroleum reserves. There are potential reserves of 10 billion barrels of oil equivalent [bboe] (oil or gas) in the Irish Atlantic Margin” (DCENR, 2010).

The Department also acknowledged that Irish Atlantic waters have, however, traditionally been inhospitable to petroleum exploration with approximately 150 wells being drilled in the past 30 years and a less than 1 in 30 success ratio (discovery of commercial fields) (IOOA (2010) quotes 130 wells being drilled since 1970 at a cost in the region of €3 billion).

At the *Atlantic Ireland 2010 Conference* in Dublin, the DCENR reiterated this view and highlighted that based on independent studies, “source rock modelling, prospect evaluation and analogue basin review show a risked yet to find potential of at least 10 billion barrels of oil equivalent” (Murphy & Vernon, 2010).

It is interesting to note that deepwater exploration and production has advanced globally in recent decades and this type of activity has been the key driver of production growth over much of the past decade (Deutsche Bank, 2010).³⁸ According to one report:

“Thus where drilling at around 1000m’s offshore Nigeria in the mid to late 1990s was perceived as cutting edge, today drilling at depths of towards 2000m’s could almost be described as commonplace” (Deutsche Bank, 2010, p. 219).

The importance of developing deepwater has been outlined in the following terms:

“Moreover, in a global oil market that is expected to increase its production capacity by around 2% on average over the period to 2015, supply from the deepwater is expected to advance by closer to 9% with barrels sourced from depths of over 400m estimated to account for almost 10% of global supply by 2015 compared with only 2% in 2000. As such, from a supply and consequently oil price perspective, continued development of the DW would appear to be absolutely central to the oil industry’s ability to meet the anticipated growth in demand of an energy hungry world” (Deutsche Bank, 2010, p. 220).

³⁸ Three areas currently dominate the world’s deepwater oil fields; the United States Gulf of Mexico (GoM), Brazil and the West African states of Angola and Nigeria.

In its appearance before the Joint Committee, the DCENR noted the following in relation to the scale of costs and probability of success involved with wells:

“I will not belabour them, but would point out that our technical success rate is about one in nine.³⁹ That is not particularly great, but I would not downgrade it completely. The cost of a well is also included, at €30 million to €120 million. It is over €100 million if we go into the deeper water basins to the west”.⁴⁰

To date, Ireland has not carried out its own seismic surveys. The costs of doing so are not insignificant and the technology is expensive. The Department has estimated that the cost of shooting one survey is several million euro.

At the same conference, according to a talk by Botsford of Petroleum Geo-Services (PGS – a Norwegian firm that helps oil companies to find oil and gas reserves offshore around the world), there are proven oil and gas reserves in the Irish Atlantic Margin.

The Porcupine Basin has a proven oil prone source rock as indicated by the Connemara, Spanish Point and Burren discoveries; gas has been detected in the Corrib field in the Slyne/ Erris Basin and a gas and condensate source rock as proven by the Doorish well is present in the Rockall Basin (Botsford, 2010).

Other speakers at the *Atlantic Ireland 2010 Conference* also indicated that Ireland’s Atlantic basins “hold the potential for major oil and gas discoveries in water depths ranging from 150 to over 2,500 metres” (Carolan & Woodason, 2010). As did Vinall who made a comparison with the UK and concluded that:

“there is significant potential remaining in both regions, but with higher competition for acreage in the UK, Ireland has the potential to offer greater scope for exploration and to an extent this is supported by lower taxes on production. This, however, has to be tempered against the perception of risk in Ireland and internal company barriers to new country entry” (Vinall 2010).

PAD produced two promotional brochures for industry on the Porcupine & Rockall basins and on the Slyne / Erris / Donegal basins in 2006 and 2005 respectively under the title

³⁹ There is a difference between the technical success rate and the commercial success rate with the former broadly referring to the probability of finding some petroleum even if not in significant quantities. The DCENR estimates that the commercial success rate is 1 in 42. This is significantly lower than the technical success rate particularly off the west coast (which is one in seven). Industry tends to focus on the commercial success rate.

⁴⁰ Appraisal wells are roughly estimated to cost €10 million to €20 million. This estimate was provided by the DCENR during its meeting with the Joint Committee.

Atlantic Ireland, an exciting petroleum province. With regard to the Rockall and Porcupine basins, PAD identifies both as being under-explored and with proven hydrocarbon systems (PAD, 2006). The second brochure identifies that the Slyne / Erris / Donegal basins are also under explored with a number of proven emerging play types and state that using modern technology and evaluation methods, the three basins can be effectively and efficiently explored (PAD 2005).

Perceived risks associated with the Irish Atlantic Margin have, however, led us to lag behind our UK counterparts. In addition, all of the potential estimated to lie in the Irish Atlantic Margin can only be realised if exploration is increased and despite all of the potential spoken about to date, successful drilling has been limited and extensive areas offshore Ireland remain unexplored or under-investigated.

It is important to bear in mind that the 10 bboe is an estimate of the “yet to find” potential based on petroleum systems studies (i.e. it is an estimate of what might be present but has not yet been found and not a confirmed figure for petroleum finds). There is a lack of knowledge regarding if the oil is in fact there or where exactly to find it. Exploration can fill data gaps and hence improve the reliability of estimates of Ireland’s resources. This is, however, an expensive process as noted elsewhere in this report and would require significant expenditure.⁴¹ In essence, and as the Joint Committee heard during with meetings with the IOOA, “areas of potential become resources only when one drills them, and to drill them one needs to attract investment”.

Some commentators have raised the issue of whether the State should participate in petroleum exploration. Given the country’s current economic difficulties, however, the main issue with this would be the likely costs involved. If the State were to take an equity stake in new finds, this would likely mean the State would have to meet some of the investment costs. This factor would have to be considered in any potential policy change.

In a Dáil Motion on energy resources in April 2011, Minister Rabbitte commented on the cost of greater State involvement:

“The cost of drilling even 100 exploration wells in the Atlantic could be well in excess of €10 billion. Deputy Ferris argues for a more proactive role by the State but at €80 to

⁴¹ The Department estimates that drilling a single hole in the Atlantic seabed costs between €30 million and €120 million.

€100 million spend per hole drilled I am unsure where the money could be found for that at this time.

[...]

Having regard to the high risk of unsuccessful exploration, it is difficult to make the case that the Irish taxpayer should invest billions of euro in an intensive exploration effort at this time. Instead, this should be left to the industry, which can include exploration in the Irish offshore as part of a balanced international exploration portfolio".⁴²

Some commentators have raised the question of the best time to attempt to extract resources and if indeed Ireland might be best served by not attempting to do so at present. The DCENR has questioned the logic of such suggestions that Ireland would be better off leaving its resources in the ground until circumstances become more favourable:

"It is sometimes suggested we should leave the resources in the ground until the level of exploration interest increases and that companies would come here even if there were a higher tax rate. Again, when we do not know if the resources are actually there and if they are there, we do not know where they are, and when we consider the timescale involved in the exploration, development and production phases, that would not seem to be a strong policy approach to take because we would be putting off something we do not know would ever be achieved".

Gathering adequate data is also another important issue as it is through exploration and the resulting data that Ireland can improve the reliability of its resources estimates. In its appearance before the Joint Committee, the DCENR explained the process by which it acquires data:

"Generally speaking, when we have a round process - we do not do one every year but may leave two or even three years between rounds - the idea is that we can show there is an intention to license a particular area to the seismic and geophysical contractors. The contractors are acquiring the data, not the companies, and if they see a commercial opportunity or if they believe there may be customers to buy their data they will acquire it. Much of our effort goes into promoting the potential of the area, in organising licensing rounds and so on. There is a type of timeline and a framework in which we can get the contractors to play their part. We are not always successful. Sometimes the contractors do not acquire data. We will go into a new wave of trying to encourage them. To acquire that data ourselves would be extremely expensive.

To make that sort of quantum leap forward we need to have new wells, as Mr. Manley said. We need wells to provide solid information about the geology or the hydrocarbons in these areas, which can be tied into the seismic data. On its own, the seismic data can be used for a lot but it needs to be calibrated with well data. One

⁴² Energy Resources: Motion. 19 April 2011. Available at <http://debates.oireachtas.ie/dail/2011/04/19/00022.asp>

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hopes that with more drilling activity we can succeed in paving the way for a better and more effective exploration of the Irish offshore. We will never get as much as we want in any round we hold and that would also be typical in other regions”.

Companies are obliged to make real time data available to the DCENR although the latter does not currently have a physical presence on rigs, an issue which some Members of the Committee were interested in. If a company makes a discovery, it needs to get permission from the DCENR before it carries out subsequent activities.

The IOOA in its appearance before the Joint Committee pointed out that sometimes the DCENR asks companies to acquire data that it sees as valuable for the promotion of an area subsequently if a company decided to relinquish the acreage. It expressed its view that this area is more regulated than people might first think. For example, when a company relinquishes a licence it is obliged to:

“give all the data, including most of the reports generated to the Department, which has work programmes involving requests for the reports. It is a regulated, structured process. I know those involved get all the data but I am unsure how one could demonstrate this physically to a person looking in from the outside”.

The issue of focusing on renewables rather than on our potential petroleum resources was also raised during the DCENR’s presentation to the Joint Committee:

“On the question of leaving resources in the ground and focusing on renewables, again, from an Irish perspective, this would not make sense. If we know we will be burning some fossil fuels for a long time to come, it makes more sense, if we can, to utilise our indigenous resources and gain revenue from this, rather than importing oil or gas”.

The question of where gas would be landed has also provoked discussion amongst interested parties with some expressing concern that the gas might not be landed in Ireland. The ESRI has suggested that, in *A Review of Irish Energy Policy*, if a large gas field were to be found off the west coast it could well be a better prospect for the investor to land the gas in Great Britain, with potentially negative consequences for Ireland. There are, however, as the DCENR informed the Committee, a number of reasons why this is implausible:

“The question of where gas will be landed is often discussed and a number of points arise. The first concerns physics. The pressure will fall in a pipeline the further gas has to travel; therefore, it is in the interests of the company and the State that gas is landed onshore in close proximity to where a discovery is made offshore. The second point is a practical one in terms of regulation, namely, for any discovery the Minister has to approve the plan of development, which is a tool for the State in influencing how a project is advanced. The final point is also a practical one in that the interconnectors

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between Ireland and the United Kingdom flow in one direction; therefore, there is no technical means of piping gas from the island”.

Furthermore, if a company can obtain the market price for gas in Ireland, it would not have any incentive to pay transport costs to move the product off the island, as noted by the DCENR.

In its presentation to the Joint Committee, the Department concluded that Ireland has significant potential but very limited exploration activity with too few wells and low response to licensing rounds. In its view, there are encouraging signs but a considerable increase in drilling levels over many years will be required to establish whether any or all of Ireland’s potential can be proven. Until this happens, it would appear reasonable that Ireland’s fiscal terms are aimed at encouraging industry. The relatively low number of exploration companies in Ireland, which is outlined in section 2.3 of this Discussion paper, illustrates that Ireland faces a challenge in attracting the industry to this country.

The DCENR has highlighted to the Joint Committee that the State will re-examine its tax terms if prospectivity changes. This is stated in the 2007 White Paper on energy which explains that “if prospectivity improves substantially, the fiscal terms will be subject to review for future licences in that context” (Department of Communications, Marine and Natural Resources, n.d., p. 31). The Indecon review also holds the view that the State should re-examine the terms if prospectivity changes. Specifically, it recommends that “if in the future significant commercial oil or gas fields are discovered that additional increases in the rate of the resource rent tax should be applied to new licences” (Indecon, 2007, p viii). On this basis, it would appear that the terms would likely be re-examined in response to changes in prospectivity.

It has also been reported that Minister Rabbitte has acknowledged that companies that find oil or gas onshore could be subject to a different tax regime from those which explore offshore as the costs of onshore exploration are lower:

“In response to a query from The Irish Times, the Minister added: ‘It seems to me that the risks, and thus the costs as between onshore and offshore exploration and drilling, are so vast that there may be a case for the tax regime to reflect that difference’” (McGreevy, 2012).

Some members of the Joint Committee were interested in whether terms could be changed retrospectively. In addition, a representative of Pobal Chill Chomáin called for a complete and retrospective review of licensing terms. As already highlighted in section 5.1 of this

report, the Indecon review argued against making the new profit resource rent tax retrospective or making any future adjustment retrospective. The DCENR highlighted the reasons why the 2007 tax terms are not retrospective (i.e. due to the potential impact on exploration investment and also any potential negative impact on the predictability of Irish tax policy in general). Furthermore, there are constitutional issues associated with introducing legislation retrospectively. Although not prohibited, the accepted view is that enacting laws which have retrospective effect is inherently unfair and unjust. This is particularly true in a commercial environment where it is likely to create enormous legal uncertainty and introduce substantial risk into doing business in Ireland.

Taxation is essentially a justifiable interference with a person's constitutionally protected property rights. In order to justify a retrospective interference with such rights, the interference would need to be both just and proportionate, and the objective would have to be for the purpose of avoiding "an extreme financial crisis or a fundamental disequilibrium in public finances" (Brady, 2009). Whilst it could be argued that legislation imposing tax retrospectively is necessary to raise badly needed funds for the State, such a move could be deemed to be disproportionate to the objective. If challenged the State could struggle to establish that an extreme financial crisis or a fundamental disequilibrium in public finances existed so as to justify changing the fiscal terms of these licences retrospectively.

In many cases the terms and conditions of a licence will provide a procedure for the review of its operation, but this will not entail a review of the grounds upon which the licence was originally granted. A review does not appear to be possible under the 2007 licensing terms.

6.2 Developing expertise and infrastructure

Relevant expertise and infrastructure are important components for the development of petroleum exploration. It could be argued that the lack of sufficient exploration here to date has somewhat hindered progress in terms of developing expertise and infrastructure. It is important the policy-makers plan in advance in these areas so that Ireland is already positioned to maximise all the benefits available should there be a major petroleum discovery here.

Expertise

Petroleum exploration has provided a number of both direct and indirect employment opportunities in this country. For example the IOOA informed the Joint Committee that:

“The Kinsale Head field, 33 years into its life and in decline, maintains 100 jobs directly with a spend in the local economy of approximately €30 million per year. The Corrib project, at the peak of its construction, employed 1,400 people and, more important, it will provide 130 well paid and secure jobs for the long term. These jobs cannot be helicoptered out of the country at a month’s notice, as we recently witnessed in Waterford”.

The Joint Committee was interested in hearing about the situation regarding Irish employees on rigs given the understanding that these numbers are limited. The Joint Committee was informed that in relation to employment on oil rigs, these are operated by contractors. The connection between levels of development, employment and exploration was explained as follows by IOOA:

“in relation to jobs on oil rigs, the key is generating development and the key to generating development is to increase the rate of exploration”.

Development phases can create a certain number of jobs as evidenced by the Corrib field. The employment benefits of Corrib have been summarised by Pro Gas Mayo in its presentation to the Joint Committee as follows:

- Up to 1,400 people were employed on the project at peak construction in 2009.
- Up to 800 people were staying in local accommodation in the area. There will be 200 people in accommodation until end of construction.
- There will be 130 long term jobs on the project once it is in operation, which will be for a period of about 20 years.

It is unlikely, however, that employment levels would rise significantly until exploration activity also rises to a reasonably significant level. It is nonetheless important that Ireland develop its capabilities in this area. The activities of five third level institutions are critical in this regard.

The Marine Institute’s *Research Programme 7 Offshore Oil and Gas* of the Industry Programme of Sea Change has identified the competencies it believes are required to meet future research and innovation requirements for the oil and gas sector. These are reproduced in table 7 (over).

Table 7: Competencies required to meet future research and innovation requirements for the oil and gas sector, 2013

Objectives 2013	Competencies Required	Assessment
1 Achieve a high international profile for Ireland as an attractive location for offshore activities by developing a range of information products and services that build on the availability of data from the Irish National Seabed Survey.	<ul style="list-style-type: none"> > Hydrography > Seismic modelling > Offshore engineering > Data mining > Environmental impact assessment > Geotechnics > Ocean modelling 	<ul style="list-style-type: none"> R R G G S R R
2 Implement a strong, industry-led, targeted research programme.	<ul style="list-style-type: none"> > Reservoir modelling > Novel seismic imaging > Wireless telemetry > Fibre optic communications > Drill-bit design > Robotics 	<ul style="list-style-type: none"> G R S S G S
3 Develop strong interdisciplinary research expertise in a range of niche areas.	<ul style="list-style-type: none"> > Seismic modelling > Metocean services > Sidescan sonar acquisition and interpretation > Refraction seismic acquisition and interpretation > Gravity and magnetic modelling > Fluid inclusion studies 	<ul style="list-style-type: none"> R R R R R R
4 Achieve a high standard of Environmental Best Practice.	<ul style="list-style-type: none"> > Environmental monitoring > Development of management systems/codes of practice > Advanced monitoring technologies (incl. remote monitoring) 	<ul style="list-style-type: none"> R R G
5 Identify and quantify the Irish methane hydrates resource, and participate in international research programmes to examine the issues surrounding the exploitation of the resource.	<ul style="list-style-type: none"> > Seismic modelling > Environmental impact assessment 	<ul style="list-style-type: none"> R S

* S – Current Strength; R – Requires Strengthening; G – Gap Area.

Source: The Marine Institute (n.d.)

The majority of these competencies require strengthening or they are considered gap areas in the available research expertise. This suggests Ireland would benefit from development in these areas.

In terms of prerequisites for achieving objectives the Marine Institute states the following:

“The non-renewable energy sector (oil, gas, methane hydrates, etc) is governed by international markets and energy prices, and is dominated by multinational Exploration

and Production companies. It is serviced by internationally trading contractors, sometimes owned by the multinationals, which offer a full suite of services, including R&D, and are invariably located far from the producing fields. Success in achieving the stated objectives depends largely on the availability of indigenous energy resources and the attractiveness of Ireland to Multinational Corporations (MNCs) as a base from which to carry out R&D. Clearly, Ireland cannot hope to be a leading R&I performer unless there are major future finds, but can aspire to developing niche knowledge-based specialities and capabilities” (Marine Institute, n.d., p. 71).

Infrastructure

Port infrastructure is another element of developing expertise and infrastructure. The level of interest in the Licensing Round 2011 is encouraging in its recognition of the potential of Irish offshore as a petroleum-producing area. That said, Minister Rabbitte has pointed out that there is likely to be low demand for specialist port services in the near future with drilling activity likely to be serviced by ports on the south coast:

“[...] while I recently made the announcement to which Deputy Carey refers in respect of the outcome of the 2011 licensing round, which resulted in the offer of 13 licensing options in the Atlantic margin, the reality is it will be some time before any of these could turn into exploration drilling. Overall, for the coming years the level of exploration activity requiring specialist port services is likely to be low, with on average only one to two exploration wells drilled in the Irish offshore annually. In the near term, it is expected the majority of drilling in the offshore will take place in the Celtic Sea and is most likely to be serviced by the ports on the south coast” (Reply to Topical Issue Debate by Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D.: 19 October 2011).

The Minister identified Foynes and Killybegs as having locations with the potential to act as service ports for exploration activity off the west coast. Foynes has all the basic port requirements and has traditionally served as the oil and gas exploration support base in the Shannon Estuary. With more activity in the north-west coast in recent years, Killybegs has serviced this work. Moneypoint currently lacks facilities or space on the jetty for handling materials or services that might be associated with the oil exploration industry (Reply to Topical Issue Debate by Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D.: 19 October 2011).

When discussing port development in relation to oil and gas exploration activity, it is important to bear in mind the type of time horizons involved:

“Having regard to hydrocarbon exploration activity for the foreseeable future and the nature of the Moneypoint facility, at this stage it is too early to identify the location that would best serve an eventual oil or gas production location that will hopefully develop in the Atlantic. It is also important to appreciate that once a discovery is made, it will

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take some time to bring it to development. Because of that time lag I must admit that I have not focused on the important point raised by Deputy Carey but I assure him that I will now do so” (Reply to Topical Issue Debate by Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D.: 19 October 2011).

The point about time horizons was taken up by the DCENR in its appearance before the Joint Committee on 27 September 2011:

“If a discovery is made, we have to go through several steps to see how much there may be in it. It invariably means that we start drilling appraisal wells and develop model engineering studies and so on. The final issue is to decide if the project is commercial. Can it be brought to the market? Starting from today, we are talking years before we can get a discovery to market”.

At the same meeting in presenting information on fields and discoveries to the Committee, the Department noted that nearly all of them are being examined by companies, although not the companies that found them. This is because they have apparently moved on as they did not find the opportunity, which only came after a few generations (see text box 2 for a history of discoveries in Ireland).

The Department noted the following when it appeared before the Joint Committee in relation to development of the industry in Ireland:

“On the question of Irish people working on rigs and the development of the industry here, the reality is that very little is happening. Last year, there was, I believe, a rig off the coast of County Mayo in June, July and August. We will not have an industry established in Ireland with full harbour support on an ongoing basis until we achieve a much higher level of activity offshore. Similarly, on refining products, we have to have something to refine before this issue arises. Beyond that, questions will arise concerning the size and type of the find, whether it is feasible or economically advantageous to have a particular type of refinery in Ireland and whether we would want such a refinery. It will be some time before I am in a position to answer the question”.

Forum for development of the petroleum industry in Ireland

During the course of the Committee’s meetings the issue of how to best develop the petroleum industry in Ireland was very much to the forefront. The need for different stakeholders to work together towards this aim was highlighted on a number of occasions. In the Committee’s meeting with the IOOA, **the Chairman, Deputy Andrew Doyle** noted:

“If we are to develop an indigenous oil and gas industry, what has been highlighted is the need to have a dedicated cross-departmental unit working with the Department of Communications, Energy and Natural Resources and the industry”.

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SIPTU in its presentation to the Joint Committee recommended establishing a body comprising key stakeholders. Such a body could be tasked with improving communications between stakeholders and maximising the potential of Ireland's hydrocarbon resources:

“The Oireachtas review should consider the establishment of a body which would involve industry stakeholders, including the oil and gas companies, trade unions, Government nominees, environmental and community representatives in order to improve communications between the various interests and ensure that the maximum potential for Ireland is derived from all aspects of hydrocarbon development”.

There would appear to be merit in such suggestions of establishing a forum and this was acknowledged by a number of Committee members including **Deputies Ó Cuív and Ferris**.

7. Debate over the estimated worth of Ireland's petroleum reserves

7.1 Shell-to-Sea estimates

Shell-to-Sea and others have declared that the Government through the licensing regime (in place since 1992) for the exploration and production of gas and oil in Ireland's territorial waters amounts to a giveaway of €420 billion (Shell to Sea, 2009). They also state that this is likely to be a conservative estimate. They have in more recent times updated this figure to €540 billion (Shell to Sea, 2010).

Setting this statement in context

The figure of €420 billion comes from a combination of the Government's estimate that the Rockall and Porcupine Basins could yield 10 bboe and the average cost of a barrel of oil in 2009 of \$60 (or €42 in 2009, updated to €54 in 2010 and hence €540 billion).

If we accept the 10 bboe figure it would probably be correct to say that in 2009 the amount of oil and gas on the open market was worth €420 billion or €540 billion in 2010. There are, however, a number of issues with this.

The 10 bboe figure is an estimate based on geological surveys of the basins and it is only through active exploration that this estimate can be proven. If such a level of gas/oil did exist it can only be worth €540 billion if it was in a saleable form, i.e. it must be found, extracted and processed. Some of the costs required to bring the petroleum resource from discovery to sale are outlined hereunder:

Exploration: To quote a DCENR press release (DCENR, 2010) "Irish Atlantic waters have traditionally been inhospitable areas for petroleum exploration". Where exploration has been undertaken there has been limited success. While the success rate has improved in more recent years it is well below that of other areas. In addition, finding commercially viable fields is an expensive business. According to the DCENR, the cost of one exploration well can be in the region of €30 million to €120 million depending on location, expected well duration etc (it is over €100 million in the deeper water basins to the west).

Extraction: The cost of extraction especially in the conditions in the Atlantic, which can have both adverse weather and necessitate deep water extraction, means that extraction is also

costly. It is estimated that Shell and its partners will have spent €2 billion on the Corrib field prior to any gas being processed (Deegan, 2009).

Processing: For each unit of gas/oil extracted there is the processing cost which is the on-going cost of extraction as well as the processing of the gas/oil into a saleable product.

End of life: At the end of the process there is a cost for cleaning up the site of the drilling as well as the processing plants on land or sea. There is also compensation of workers made redundant to be considered and the dismantling and making safe of infrastructure.

State levies: In addition, the cost of any government policies on petroleum extraction must be considered. Many governments demand a per unit levy or royalty for each unit of gas/oil extracted or load additional taxes on gas/oil companies. As states usually own the gas/oil this is usually deemed acceptable. In some countries the government mandates that state companies extract the gas/oil or at least have a large stake in the fields and thus the state benefits from the profits as well. As shown previously, the Irish state takes 25-40% of the petroleum company profits in tax.

In 2009, a Department of Communications, Energy and Natural Resources press release states that the estimated tax take for the State from Corrib is approximately €1.7 billion.⁴³

7.2 Other estimates and commentary on Corrib

Other commentators have written about the estimated tax take from Corrib. For example, an article written by Mr. William Hederman, a freelance journalist and photographer, on his website⁴⁴ in July 2011, states that a confidential study carried out by Wood MacKenzie for Shell E & P Ireland Ltd (SEPIL) quoted a tax figure which is roughly one-fifth the size of the Government estimate made five years later (i.e. paying €340 million in tax over the full field life). He has suggested that oil companies could end up paying the Exchequer as little as 7% of the revenue from Irish gas fields.⁴⁵ This figure is a “rough estimate” in Hederman’s

⁴³ The press release is available at <http://www.dcenr.gov.ie/Press+Releases/2009/closing+of+the+Sale+of+Marathon%E2%80%99s+Corrib+Gas+Field+Shareholding.htm>

⁴⁴ See <http://irishoilandgas.wordpress.com/>

⁴⁵ See *Ireland’s share of revenue from its gas fields could be as low as 7%, report shows*. 3 July 2011. Available at <http://irishoilandgas.wordpress.com/2011/07/03/ireland%E2%80%99s-tax-%E2%80%98take%E2%80%99-from-gas-fields-could-be-as-low-as-7-per-cen/>

own words, extrapolated from figures in the Wood MacKenzie study and on the proviso that Corrib had come on stream on schedule in 2005.

Specifically, in response to a written Parliamentary Question asked of the then Minister for Communications, Energy and Natural Resources on 24 September, 2008, the Minister advised that based on estimated recoverable reserves of between 800-900 billion cubic feet, applying the recent market price for gas and allowing for an increase in line with CPI, it is estimated that the total value of the Corrib Gas Field will be in the order of €9.5 billion. With regard to the tax revenue to be generated from the Corrib Gas, based on the assumption that the combined development and production costs will be close to €3 billion then the tax revenue from the Corrib Field would be in the order of €1.7 billion.⁴⁶ It now seems that the expected €3bn cost of the field's development has been confirmed (Mulligan, 2012).

In the same PQ, the then Minister also noted that the value of Corrib depends on combination of factors, each of which could vary:

“The value of the Corrib Gas Field will depend on a combination of factors including, the volume of gas in place, the cost of developing the infrastructure to produce that gas together with the ongoing cost of operating that infrastructure and the price of gas over the life of the field. It will be appreciated that each of these parameters is subject to significant variation and that the timing and profile of production would also have an impact. This calculation is also based on an historically high gas price”.

More recently, the Minister for Communications, Energy and Natural Resources was asked if he would make available the 2003 MacKenzie Wood report on the likely return to the Exchequer from oil and gas exploration companies under existing tax structures. In response, the Minister stated the following:

“I understand that Wood MacKenzie is a commercial service provider for the energy, mining and metals industry, that it evaluates economic indicators as well as market supply and demand price trends, and that it publishes its findings annually which are available to its subscribers for a fee.

As neither I nor my Department subscribe to this service, I do not have a copy of the report referenced by the Deputy. I have been advised in any event that the intellectual property rights to these reports belong to Wood MacKenzie and that contractually the reports cannot be shared by their clients with any third party” (Written Answers - Petroleum Exploration by Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D.: 29 November 2011).

⁴⁶ See Written Answers - Energy Resources. Wednesday, 24 September 2008. Available at <http://debates.oireachtas.ie/dail/2008/09/24/00887.asp>

7.3 Investment decision

Together these costs have to be calculated and considered prior to declaring any well that found gas/oil commercially viable. Given the long investment horizons involved (the Corrib field was discovered in 1996 and it is believed that no gas will flow from the reservoir until late 2014 or early 2015) a large amount of guesswork and estimation is involved including guesswork on the price of gas/oil ten to twenty years into the future. The potential for large errors in such estimates means that only the fields which will be profitable under severe price conditions may be considered, i.e. the company will add a risk premium to its calculations.

Thus, even fields which have a large amount of gas/oil could be considered commercially unviable as the estimated price in ten years may not be enough to cover the cost to extract and process it. If the estimated price rises in the future then the field could be reconsidered. Political instability or perceived arbitrariness in policy making especially towards the oil/gas industry which could increase costs in the future also has to be accounted for and increases the risk premium.

Thus, even if 10 bboe does exist in Irish territorial waters it may not be commercially viable to extract large amounts of it. If the petroleum cannot be extracted at commercially viable rates then it is essentially worthless. These costs are, in part, behind the low take up of various exploration rounds in Ireland. The cost of drilling an exploration well can be prohibitive and large international companies generally are the only ones with the resources to undertake such exploration. These companies have alternative areas where they can drill exploration wells.

8. Case studies – Norway and Portugal

8.1 Norway

“Across the globe, no type of tax on mining causes as much controversy as royalty tax. It is a tax that is unique to the natural resources sector and one that has manifested itself in a wide variety of forms, sometimes based on measures of profitability but more commonly based on the quantity of material produced or its value” (Otto et al., 2006).

The issues of royalties and other taxation of oil and gas production have been dealt with differently across various countries and regions of the world.

Below, we look at the approach Norway has taken to governing the fiscal aspects of their mineral exploration and production industries. Much of this section is based on information provided by the Ministry for Petroleum and Energy, a representative of which met with the Joint Committee in March 2012.

The Norwegian approach is considered as a model example of how the exploration industry can be managed to the best advantage to the country.

In 1972 the Norwegian Parliament (*Stortinget*) voted to establish a state-owned oil and gas company and a Norwegian Petroleum Directorate. The Directorate was charged with the management and control of Norway’s oil and gas resources, building a Norwegian oil community and ensuring state participation.

In 1973, when Mobil discovered the Statfjord field, they were required to bring Statoil (the State oil company) in as a 50% partner in the development of the field which secured Statoil’s future for 20 years.

As a part of the deal Mobil had to train the Statoil employees and this led to the development of an indigenous expert oil industry. By 1975, the Norwegian government was taking up to 90% of the oil profits.

Text box 7: Discussion of Statoil

Statoil was founded in 1972 as the national oil company (NOC) of Norway. Along with Brazil’s Petrobras, Statoil today is a leader in several technological areas including operations in deep water. With its arm’s length relationship to the Norwegian government and partially-private ownership, it is generally considered to be among the state-controlled oil companies most similar to an international oil company in governance, business

strategy, and performance.

Statoil's development and performance have been intimately connected to its relationship with the Norwegian government over the years. The "Norwegian Model" of distinguishing Statoil's commercial responsibilities in hydrocarbons from regulatory and policy functions granted to other government bodies has inspired admiration and imitation as the canonical model of good bureaucratic design for a hydrocarbons sector.

However, the reality is that Norway's comparative success in hydrocarbons development, and that of Statoil, has been about much more than a formula for bureaucratic organization. Belying the notion of a pristine "Norwegian Model" that unfolded inexorably from a well-designed template, the actual development of Norway's petroleum sector at times was, and often still is, a messy affair rife with conflict and uncertainty. But Norway had the advantage of entering its oil era with a mature, open democracy as well as bureaucratic institutions with experience regulating other natural resource industries. Thus far, the diverse political and regulatory institutions governing the petroleum sector-and governing the NOC-have collectively proven robust enough to handle the strains of petroleum development and correct the worst imbalances that have arisen.

Mark Thurber and Benedicte Tangen Istad make the following six principal observations from their research.

First, Norway's policy orientation from the start was focused on maintaining control over the oil sector, as opposed to simply maximizing revenue. As a result, the country was more concerned with understanding and mitigating the possible negative ramifications of oil wealth than with any special advantage that could be gained from it.

Second, the principal means through which Norway was able to exert control over domestic petroleum activities was a skillful bureaucracy operating within a mature and open political system. Civil servants gained knowledge of petroleum to regulate the sector through systematic efforts to build up their own independent competence, enabling them to productively steer the political discourse on petroleum management after the first commercial oil discovery was made. Robust contestation between socialist and conservative political parties also helped contribute to a system of oil administration that supported competition (including between multiple Norwegian oil companies as well as international operators) and was able to evolve new checks and balances as needed.

Third, Statoil did play an important role in contributing to the development of Norwegian industry and technological capability, in large part because it had the freedom to take a long-term approach to technology development. With a strong engineering orientation and few consequences for failure as a fully state-backed company, Statoil developed a culture valuing innovation over development of a lean, commercially-oriented organization. These priorities may not have always contributed to maximization of government revenues in the short run-costs came to be perceived as high in Norway (for various reasons not all related to Statoil) and Statoil was on occasion responsible for significant overruns. However, the focus on innovation contributed to significant technological breakthroughs and helped spur the development of a high-value-added domestic industry in oil services.

Fourth, the formal relationship between Statoil and the government has become more arm's-length as Norway's resources and oil expertise have matured. Under its first CEO, experienced Labour politician Arve Johnsen, Statoil aggressively flexed its political muscles to gain special advantages in licensing and access to acreage. As domestic resources began to mature, Statoil's leadership (starting with Harald Norvik in 1988, and continuing through the tenures of subsequent CEOs Olav Fjell and Helge Lund) focused more on forging an independent corporate identity and governance structure that would

allow the company to compete effectively abroad.

Fifth, notwithstanding changes in their formal relationship, it has remained impossible to sever the close ties between the Norwegian state and a company with the domestic significance of Statoil. These residual ties can manifest in various ways, including: 1) the effect on policy decisions of direct personal connections between Statoil leaders and politicians; 2) persistent "Norway-centric" influences on Statoil's strategy even in the larger context of efforts to internationalize; and 3) public pressure from politicians who continue to see themselves as Statoil's masters. Such pressures can affect large strategic companies, public or private, in any country, but their effect is magnified by Norway's small size and Statoil's importance within it as the largest petroleum developer.

Sixth, Statoil's experience thus far casts doubt upon the conventional wisdom that NOC-NOC connections provide material benefit in opening resource access around the world. To the extent that such linkages are important, Statoil would seem to be among the best-positioned to benefit from them as both a highly competent producer and a company that might be sympathetic to the needs of resource-rich countries. However, there are few instances so far where Statoil's status as an NOC has been an obviously decisive factor in unlocking resources that would otherwise be off-limits.

Source: Reproduction of the executive summary of the Discussion paper on *Norway's Evolving Champion: Statoil and the Politics of State Enterprise* by Mark C. Thurber (Stanford University) and Benedicte Tangen Istad (Stanford University). Available at http://fsi.stanford.edu/publications/norways_evolution_champion_statoil_and_the_politics_of_state_enterprise

Oil and gas are very important to the Norwegian economy. After 40 years of production, Norway has become the world's second largest gas exporter and the seventh largest oil exporter. The petroleum sector is Norway's largest industry responsible for 22% of GDP and 47% of total exports in 2010.

Through direct and indirect taxes the State is ensured a high proportion of the values created from the petroleum sector and in 2010 the petroleum industry was Norway's largest contributor to State revenue (Norwegian Petroleum Directorate, 2011).

The government receives value added through:

- Taxation of oil and gas activities;
- Charges / fees;
- Direct ownership in fields on the Norwegian Continental Shelf; and
- Dividends from ownership in Statoil/Hydro.

Norway is a country which is frequently cited as having managed its revenue generated from extractive industries well.

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The Government Pension Fund Global (often referred to as the Norwegian oil fund) is a government controlled fund owned by the people of Norway that is currently one of the largest sovereign wealth funds in the world. All government petroleum revenue is transferred to the Fund and the Fund is now larger than Norway's GNP.⁴⁷ The fund is invested overseas in a broad range of activities.

The Norwegian State is directly involved in oil and gas production through its shareholding in Statoil (67% - Statoil was floated on the stock exchange in 2001). It was merged with the oil and gas part of Norsk Hydro in October 2007. The State also has direct investments in transport systems (including pipelines) and land-based plants.

The UK abolished royalties on new production in 1982 followed by Norway in 1986 and Ireland followed suit in 1987.⁴⁸ The Netherlands and Denmark subsequently did the same and according to the IOOA (2011b), "royalties have effectively vanished offshore North-west Europe for the reason that, as a levy on production rather than profits, royalties can seriously damage the economics of high-risk, high-cost project". Norway abolished royalties due to the effect on production volumes in that companies did want to exceed set volumes as they would then incur higher set percentages. The artificial level of royalty production was not deemed to promote good resource management, which is a key element of the Norwegian system.

The Ministry for Petroleum and Energy informed the Joint Committee that Norway's tax system was developed in 1975 and has not been changed since then. The Norwegians have a 28% corporation tax and a supplementary 50% corporation tax for oil and gas profits (which they refer to as the natural resource rent) for a marginal government take of 78%. The 78% tax on net profits applies regardless of whether they are produced in deep or shallow waters. Costs from all activities, including exploration, geological mapping, operation, development etc. are deductible against the companies' gross profits.

⁴⁷ See speech by the Norwegian Minister of Foreign Affairs, Jonas Gahr Støre, on 6th January 2012 available at <http://www.regjeringen.no/en/sub/europaportalen/nyheter-europaportalen.html?contentid=668527&id=449646>

⁴⁸ Norway previously operated a royalty system of 6% per 100,000 barrels and 8% per 200,000 barrels.

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Norway does not apply a ring-fencing system.⁴⁹ Rather if companies have income in one area and costs in ten other licence areas, they can deduct all the costs from that revenue as was explained by the Ministry for Petroleum and Energy.

Since 2005, the Norwegian government reimburses some 78% of the cost of an unsuccessful well (IOOA, 2011b). In contrast, the Irish Government does not reimburse the costs of unsuccessful exploration drilling.

According to the IOOA presentation to the Joint Committee on Communications, Natural Resources and Agriculture on 22nd November 2011:

“Norway is averaging about 50 exploration and appraisal wells per year. Norway has 71 producing fields, with a further 64 at various stages of planning and approval, and another 49 discoveries awaiting evaluation” (IOOA, 2011a).⁵⁰

Furthermore, 150 commercial discoveries have been made on the Norwegian continental shelf since 2000 (Norwegian Petroleum Directorate, 2011). In comparison, in Ireland, since 1969, 129 offshore exploration wells and 28 appraisal wells have been drilled and we have only four (Kinsale, Ballycotton, Seven Heads and Corrib) commercial gas discoveries (IOOA, 2011a). As previously noted, in March 2012, Providence Resources announced the discovery of what it believes to be the first commercially viable oil flow rate in Ireland.

The success rate of exploratory drilling in Norway is about one in five. In Ireland in terms of commercial success, it is about one in 40 (IOOA, 2011a).

Based on the information given above, it is clear that there are difficulties when comparing Ireland to Norway with regards to petroleum exploration as the physical situation offshore Norway is so different (i.e. their success rate is so much higher) to Ireland.⁵¹ Both the Department and the IOOA have expressed the view that this is not comparing like with like as it is incorrect to compare Ireland's terms with major producers like Norway or the UK (the

⁴⁹ According to the Ernst & Young (2011, p.194) Global oil and gas tax guide “petroleum activities are ring fenced for tax purposes so that losses from petroleum activities may not be set off against profits from other activities. Similarly, there are restrictions on the group relief of petroleum losses and charges on income incurred in petroleum activities”.

⁵⁰ According to the Norwegian Ministry (2011) there are currently 70 fields in production on the Norwegian continental shelf.

⁵¹ That is not to say that a successful exploration country such as Norway cannot offer important lessons in terms of best practice in for example, consultation and their experience of good resource management. The point, rather, is that comparing Ireland's tax terms to those in Norway may misrepresent the situation in overly simplistic terms.

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UK has 2,343 exploration wells and 375 producing fields compared to Ireland's 126 wells and 4 commercial discoveries).⁵²

This issue was also raised when the Joint Committee met with the Norwegian Ministry of Petroleum and Energy. During that meeting, some Members were interested in the applicability of the Norwegian system to a country like Ireland which has a relatively underdeveloped industry at present. The following was noted in response to this issue:

"Two Members asked if the Norwegian system could be applied in Ireland. The answer to that question is, "I do not think so". We started out slowly. One of the most important things we did was to put in place a law which provides that oil and gas resources belong to the State and that the Ministry in question is permitted to grant licences to oil companies to explore and produce these resources. That was the law in 1965. A royal decree in 1972 developed this a little and was the foundation of the current legislation. We developed this fairly slowly.

We also decided that all documents were to be model documents, meaning the Ministry never negotiates documents or contracts with oil companies. The licence document is non-negotiable. We also require the oil companies to enter into two agreements between themselves when they form joint ventures. One is the joint operating agreement, and the other is the accounting agreement which regulates their application to contribute financially to the activities. Both of these are model agreements and are non-negotiable. The oil companies know this and the agreements are identical to all production licences.

The principles we applied were to negotiate as little as possible, to use model documents and to put as much as possible into legislation. One must establish the main policy principles before one gives away too much acreage to the companies and then one must stick to them. This is our recipe. Of course a complicated system has developed as our expertise has increased. One must go step-by-step.

We also decided that we would not give companies large areas in one licence. This has proved to be smart because oil companies want large areas so they can put them in the bank. Oil companies are not able to explore large areas properly in a sensible period of time. However, they are able to explore smaller areas properly. The largest area we include in a production licence is approximately 500 km² but the areas can be as small as 5 km². The oil fields are not geographically large".

In addition, the representative from the Norwegian Ministry of Petroleum and Energy highlighted the relationship between a country's tax rate and success rate:

"No tax system is like another one. There are many elements. Our tax rate is high but the reward is also high. The system is stable and well-known. It is not arbitrarily changed. If asked the oil companies will say they find this system attractive".

⁵² The state take is 50% in the UK.

Comhairle don Iarthar / Council for the West also cautioned against comparing Ireland to a country with such a well-developed petroleum industry. The scale of exploration is an important consideration in this regard.

On the other hand France, Portugal and Spain have similar success records to Ireland and their tax rates are broadly in line with Ireland's.⁵³

For these reasons, section 8.3 below looks at the example of Portugal which has comparatively low levels of exploration and production and thus, has more similarities to Ireland than Norway would have in relation to petroleum exploration and production.

During its meeting with the Norwegian Ministry of Petroleum and Energy the Joint Committee was informed of a number of good practices employed in the industry there.⁵⁴ A number of these issues are outlined in the paragraphs below.

Good resource management

The Norwegian Ministry of Petroleum and Energy highlighted that the key to Norwegian success is good resource management. A central element has been that the resources are managed to the benefit of Norwegian society as a whole. While the international oil companies have played an important role contributing with capital, competence and the modern technology, the policy in Norway has been to maintain control of exploration and production from start to finish with approval or consent required throughout the process:

“We decided to ensure Norway would be in control of all phases of the activities including seismic data, drilling expression wells, developing oil and gas fields, shutting down fields and removing platforms and installations. Our law has been structured so that each important activity is subject to approval or consent by the authorities, in most cases the Minister of Petroleum and Energy. This has been the case since the beginning and is key to our success story”.

Benefits of a stable system

The Chairman, Deputy Andrew Doyle noted the importance of the stability of the Norwegian regime in his concluding remarks during the Joint Committee's meeting with the

⁵³ The tax rates are 34.4% in France, 27.5% in Portugal and 30% in Spain. This compares to a take of 25% to 40% in Ireland.

⁵⁴ The full transcript of this Committee meeting held on 20 March 2012 is available at <http://debates.oireachtas.ie/AGJ/2012/03/20/00004.asp>

Ministry for Petroleum and Energy. Interestingly, the Ministry for Petroleum and Energy highlighted that Norway has not altered its system much over the last 40 years and has benefited from political consensus on its petroleum policy. The successful components of the Norwegian system have been summarised as follows:

“We have maintained the same system for 40 years without making many changes. We have also had political consensus throughout the past 40 years on petroleum policy in Norway. We try to ensure competition between the oil companies when we award permits for oil and gas resources. We have tried to create a fiscal regime that ensures for the state the biggest share of the revenue while leaving enough to attract companies to remain. This is our recipe, so to speak.

As I have said, we established our petroleum policy at a very early stage. The most important tools in implementing such a policy are the petroleum legislation, which should reflect the policy principles, good resource management, which I have mentioned, and the award system, whereby oil companies are given oil and gas exploration and production rights. Norway has a petroleum Act, a set of regulations and some technical regulations. Important regulations are laid down by royal decree of the King in council. The King of Norway meets the Norwegian Government every Friday. We were asked how we developed our petroleum legislation. It is not as complicated as it seems. We introduced a very simple law in 1963 and a set of royal decrees in 1972. Since then, we have basically kept the system that was put in place at that time. The system was developed into a law in 1985. That law was substituted for another law in 1996”.

The most important tools in obtaining policy aims are petroleum legislation, resource management and the awards system. Text box 8 (over) shows how Norway’s petroleum legislation has developed since 1965.

Text box 8: Development of Norway’s Petroleum Legislation

- Royal Decree 9 April 1965
- Royal Decree 8 December 1972
- Act of 22 March 1985 pertaining to petroleum activities
- Act 29 November 1996 No. 72 pertaining to petroleum activities
- 27 June 1997: Petroleum Regulations
- EU licensing Directive – in effect for Norway from 1 September 1995
- 1999: Directive 97/11 and 2001/42/EC on impact assessments
- 2001: New Chapter 11 regarding Petro
- 2003: New Chapter 9 in the Petroleum Regulations – EU gas market directive
- 2005: New Chapter 2a in the Petroleum Regulations – SEA directive

Source: Norwegian Ministry of Petroleum and Energy presentation to the Joint Committee

Environment considerations and the consultation process

Many members of the Joint Committee were impressed by accounts of Norway's process of consultation, which was outlined to them by the Ministry of Petroleum and Energy in its presentation in March 2012. Responding to how this process evolved, the representative stated:

"It was an evolution. We did not practise public consultation in the early years. We commenced public consultation around 1978 prior to the opening up of new areas to oil and gas activity. Public consultation on concrete project development of oil and gas fields came about as a result of an EU directive which we implemented in the mid-1990s. Under this directive, public consultation on impact assessments is required. It was at this time we commenced real engagement in the public consultation process".

Norway now has a strong culture of public consultation and impact assessments:

"When we award production licences, we engage in public consultation. When we develop oil and gas fields, build pipelines or decommission fields, we provide for impact assessments to be carried out by the oil companies. That has resulted in the Government, over time, acquiring a very good knowledge of Norway's continental shelf, ocean areas, fish currents, coral reefs, environmental treasures, etc. It is a very good system. We decided from the first day to apply a licensing system. The Norwegian Government never signs agreements with oil companies because an agreement makes one bound by a contract. All experience in this sector shows that developments happen as time goes by. In such circumstances, one can regret entering into a contract with an oil company. It cannot be changed unless the company consents to such a change. We have never done that".

As Norway is part of the European Economic Area, it has to implement Directives in its legislation, just as Ireland has to do. This has proved important in terms of its consultation process. Text box 9 summaries the environmental Directives applicable to Norway and other countries including Ireland.

Text box 9: The Ministry of Petroleum and Energy - Main responsibilities relating to environmental issues

- Opening of new areas on the Norwegian Continental Shelf for petroleum activities – strategic impact assessment (directive 2001/42/EC)
- Licensing: Award of production licences
- Development of oil and gas fields: Approve plans for development and operation – impact assessments (directives 85/337 and 97/11/EC)
- Pipelines and other facilities: Approve plans for installation and operation of facilities (pipelines) – impact assessments

- Decommissioning of fields and facilities: Approve decommissioning plans – impact assessments
- Application of petroleum legislation – objective, transparent, timely and non-discriminatory decisions

Source: Norwegian Ministry of Petroleum and Energy presentation to the Joint Committee

In Norway, environmental impact assessments are undertaken before areas of the continental shelf can be opened to petroleum activities. The Joint Committee heard that this is done in “a step-by-step manner in order to ensure that not too many areas which are too large are given over to this use at the same time”. The Ministry of Petroleum and Energy carries out impact assessments on various areas which are presented to the Parliament. The Parliament then decides whether the areas in question should be opened for petroleum activities.

On the issue of consultation, the Joint Committee was interested to hear that Norway engages in extensive consultation with the public on petroleum activities. This is highlighted in text box 10 (over). It shows that the public is consulted for periods of 6 weeks or 3 months at significant stages of the petroleum exploration and development process.

Text box 10: Public consultation in relation to petroleum activities in Norway

- Before opening of new areas on the Continental Shelf for petroleum activities – impact assessment carried out by the Ministry of Petroleum and Energy – 3 months public consultation
- Before announcement of areas for award of new production licences – 6 weeks public consultation
- Before approval of plan for development – impact assessment – 3 months public consultation
- Before approval of plan for installation and operation of facilities (ex: pipelines) – impact assessment – 3 months public consultation
- Before disposal – impact assessment – 6 weeks public consultation

Source: Norwegian Ministry of Petroleum and Energy presentation to the Joint Committee

In its history of petroleum exploration and production, Norway has experienced two serious accidents, one of which was due to engineering errors. As such, the Ministry of Petroleum and Energy believes Norwegian people “know this is safe”.

Geological mapping

Norway has been keen to ensure that oil companies are doing geological mapping as it is the only way they can know whether there is oil and gas resources. The country is responsible for a huge continental shelf which is seven times the size of the country itself. The Joint Committee was informed that just a few parts of it have been opened.

Granting licenses

The Ministry of Petroleum and Energy of Norway is responsible for granting rights to oil companies to explore for and produce oil and gas. Production licenses are awarded in dedicated licensing rounds. The King of Norway has been given authority by the Parliament to take the final decision on licensing.

Text box 11: Characteristics of the Norwegian licensing system

- Discretionary system – awards of production licences in dedicated licensing rounds
- Individual applications or group applications
- Ministry of Petroleum and Energy announces licensing rounds, considers applications, negotiates with applicants, proposes final award to Government, prepares licensing documents
- Production licences normally awarded to groups of companies – ensures plurality of geological and technical ideas, checks and balances
- Production licence: Exclusive right to explore for and produce oil and gas. Licensee becomes owner of petroleum produced
- Ministry decides composition of licence group, operator, work obligation
- Formal award by Government (King in Council) – production licence signed by Minister of Petroleum and Energy
- Condition for award: Companies to form a joint venture and enter into model agreement with Annexes A and B

Source: Norwegian Ministry of Petroleum and Energy presentation to the Joint Committee

An interesting feature of the Norwegian system is that production licenses are usually awarded to groups of companies rather than single companies. This is based on the view that such a system ensures greater control over costs and use of money. This feature also helps ensure that the authorities have access to relevant data as it would be harder for a number of companies to act disingenuously. Companies form a joint venture for the license area and share the costs and responsibilities for that area.

Coexistence with other industries

Figure 9 shows that other Ministries are also involved in the State organisation of petroleum activities in Norway. These include the Ministry of Fisheries and Coastal Affairs which has always played an important role owing to the fact that all petroleum activities in Norway take place at sea. In its presentation to the Joint Committee, the Ministry for Petroleum and Energy highlighted that a basic principle of their oil and gas activities has always been to ensure there is a good coexistence between fisheries, shipping, tourism and other uses of the sea. The Joint Committee was informed that blocks are put out for public consultation for a period of six weeks before inviting oil companies to apply for award of new production licences. If the Ministry of Fisheries and Coastal Affairs or the Ministry of the Environment have grave objections those areas will be taken off the list.

Principle of unitisation In its presentation to the Joint Committee the Ministry of Petroleum and Energy explained the benefits of applying the principle of unitisation:

“I was asked if there was any good advice for the committee. If one awards many licences or rights to companies in neighbouring areas a good piece of advice would be to apply the principle of unitisation. That means that if companies discover an oil and gas field extending across the border of two licences they should not be allowed to start producing oil and gas from each end of that field. They must make a joint group in order that the field can be exploited as one unit. That is an example of good resource management because the Government will be able to control how that resource is produced in the best manner possible. In our experience that is very important.

I took part in the negotiations on the limitation agreement with the Russians for 13 years and in writing the oil and gas provisions of that treaty and the unitisation principle has also been included. We do not allow any development to take place before a unitisation agreement has been entered into between the groups of companies on each side of the field. We force the companies to enter into the agreement before being allowed to develop”.

The Ministry of Petroleum and Energy also advised that copies of all data the oil companies gather, particularly seismic data which are extremely expensive, be submitted to the State free of charge. This allows a country to develop its knowledge of its own geology, which is a considerable advantage when negotiating with oil companies.

In addition, it also commented on the prohibition on the laying of gas pipes. Norway did not start producing gas until 1988 because of a prohibition and lack of a market for it. There was

no pipeline to transport the gas and the Norwegian authorities challenged the companies to create a market if they wanted permission to produce gas:

“We said to the companies that unless they create the market they would not be allowed to produce gas. Since 1988, as I said, 8,000 km of gas pipelines have been built and we did not burn it. That would have been like burning money”.

Norway has also sought to control production volumes as part of its resource management. This can be useful particularly in the case of fields which turn out to be larger than expected. The production permit ensures both a flat production rate and that oil and gas reservoirs are not destroyed.⁵⁵

Text box 12: Resource management tools in Norway

The Petroleum Act requires:

- Copies of all data and materials to be submitted to the Government – ensures the State an overall knowledge of its own geology – upper hand in negotiations with industry
- Prohibition of flaring of gas
- Production of oil – subject to permit from the Ministry – duration normally 6 months/1 year – ensures Government control with production pace
- Production of natural gas – subject to permit from the Ministry – longer duration – ensures Government control with pace of production
- Assignments - subject to consent by the Ministry – ensure Government control with licensees at all times

Source: Norwegian Ministry of Petroleum and Energy presentation to the Joint Committee

8.2 Portugal

Whilst Norway provides a model example of a country which has greatly benefited from its management of its petroleum resources, it might be appropriate to also consider a country with levels of success similar to Ireland.

In this context, this section of the report outlines the situation in Portugal.

⁵⁵ The Joint Committee was informed that “if a field produces too quickly, the pressure will decline meaning the remaining oil and gas could go left untouched in the reservoir. That is our main way of ensuring as much as possible is produced from a field”.

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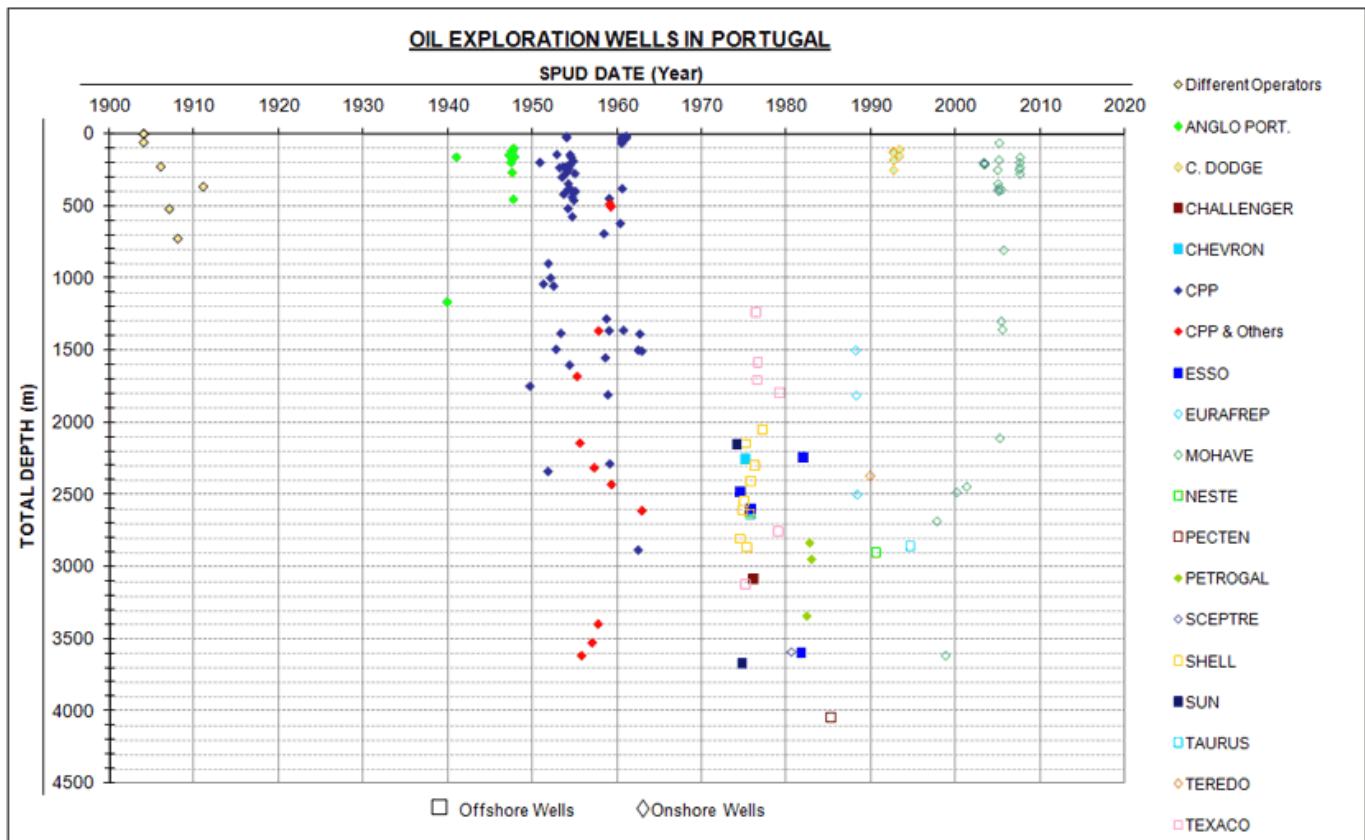
Portugal had an import dependency of 81.23% in 2008, with oil accounting for much of imported energy.

To date, it has no proven resources of oil or natural gas of any significance. At present, there is no indigenous oil and gas production, though some oil exploration activities are conducted (IEA, 2009, p. 67).

Although Portugal holds no proven commercially viable oil reserves it is said to offer offshore oil producing potential.

The Portuguese Directorate-General for Energy and Geology (DGEG) notes that results of exploration work undertaken so far were encouraging and that at least some basins appear to have all the necessary ingredients for potential economic accumulations (i.e. mature source rocks, sealed reservoirs and traps) (DGEG, n.d.). Portugal has experienced a relatively low level of exploration to date. Under new oil legislation, the prospective areas onshore and offshore were divided in blocks in a regular grid, and offered for bidding to the industry in general (DGEG, n.d.). This bidding round resulted in the signing of 30 contracts for offshore areas in 1973 and 1974, with the last of these contracts terminated in 1979 (DGEG, n.d.). According to the DGEG, the rate of offshore exploration decreased considerably after 1979. In 2007, there was a significant increase in oil exploration in Portugal with the signature of 12 new concession contracts (DGEG, n.d.).

Figure 8: Oil exploration wells in Portugal

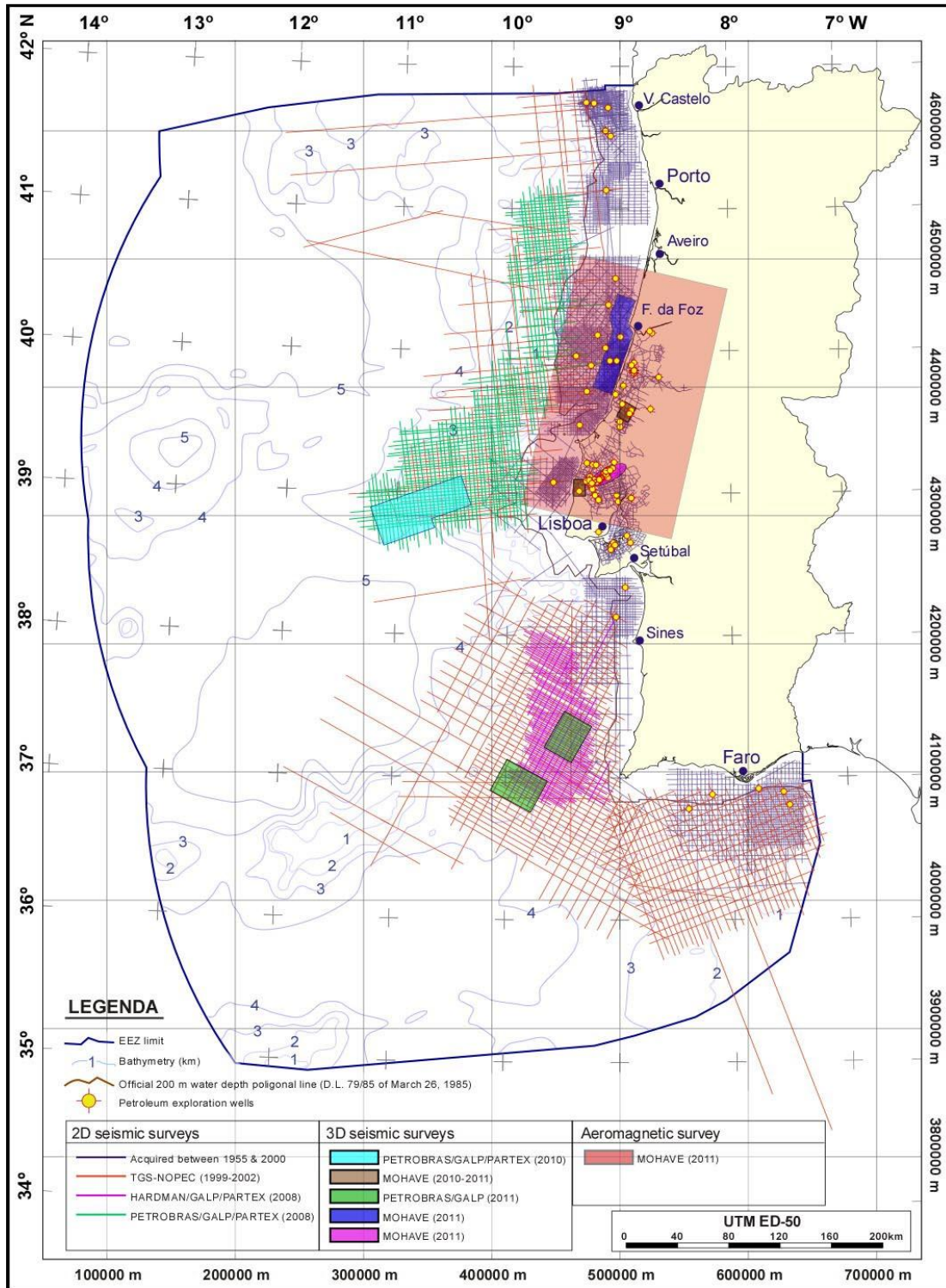


Source: DGEG (n.d.)

Figure 9 (over) illustrates the key locations for petroleum activity in Portugal, including exploration wells. In terms of infrastructure, there are two oil refineries in Portugal – a larger one at Sines and another one at Porto.

Portugal applies a tax rate of 27.5% to petroleum exploration as noted previously in this report.

Figure 9: Map of petroleum exploration in Portugal



Source: DGEG website at http://www.dgeg.pt/dpep/en/info/explorstatus_hres.jpg

9. Community interests

Petroleum exploration is an activity which potentially impacts on many levels. Whilst a key question for policy-makers at the national level is whether the State is maximising its take without unduly deterring industry, there are also many important issues to consider at community level. As such, the Joint Committee was very interested to hear the views expressed by a number of community groups of their direct experiences of petroleum exploration.

A key concern expressed by Pobail Chill Chomáin was the lack of community consent for the Corrib project. Whilst it describes itself as not being opposed to gas, its issue rather relates to the way the project was undertaken. In its view, the solution from the beginning would have been to have a different location for the site.

This group⁵⁶ pointed to experiences in other jurisdictions to explain some of its concerns about the role of the DCENR as both a regulator and promoter of the exploration industry:

“Chapter 3 of the Deep Water report, which has been supplied, describes the Minerals Management Service, which was the US equivalent of the petroleum affairs division of the Department of Communications, Energy and Natural Resources, as a “Cross-Purposes Regulator”. The MMS was both a regulator and promoter of the exploration industry”.

The group also outlined the background to views regarding the unsuitability of the Corrib proposal. In doing so, it contrasted the situation in Ireland with that in Norway where the industry was essentially challenged to educate the authorities there so that they would know what they were doing before granting any licences.

Pobal Chill Chomáin also identified another important issue for local communities - namely the right to go to work. This arose including in the context of the fishermen of Iorras (Erris).

In its presentation to the Joint Committee, Pobal le Chéile, another community group, outlined the problems it sees in relation to the project and its suggested solutions, a number of which are based on best practice in Norway. These are reproduced in text box 13 (over).

⁵⁶ Pobail Chill Chomáin explained that its group was established in response to the proposal to explore the possibility of resolving the Corrib conflict by mutual agreement.

Text box 13: Pobal le Chéile's problems and suggested solutions regarding Corrib

1. Problem: Failure to recognise the status of the Receiving Community, the people of the parish of Cill Chomáin (Kilcommon) as key stake holders and in this project.

Suggested solution: In the case of Corrib and future projects, the receiving community needs to be clearly defined and then given recognition as key stakeholders and included in any consultation process prior to a final solution, similar to the best practice model in Norway.

2. Problem: There has been a gross lack of pre project meaningful consultation with the receiving community in relation to the overall plan of development. This project has always be presented as a *fait accompli* to the local community.

Suggested solution: The developer and the State need to engage in a bone fide consultation process prior to any final plan of development or location being decided upon, once again similar to the best practice model in Norway.

3. Problem: Failure of Government and state departments and authorities to act as independent interlocutors in respect of this project. Political interference in the statutory process has caused a sub-optimal configuration of the project.

Suggested solution: Politicians and Government remain independent of commercial influence and allow the state regulatory bodies to do their job without exerting influence or interference.

4. Problem: No independent review conducted of the overall plan of development to establish the optimum solution and location. This resulted in a flawed and unsustainable plan of development, with no consideration given to the existence of more sustainable alternatives.

Suggested solution: Engage in an open and bone fide consultation process and seek an independent report to establish the optimum solution for all the key stakeholders.

5. Problem: Lack of faith and trust in the Government, state departments and state authorities in relation to this project as a direct result of points 1 to 4. Accusations of corruption in high level government. Lack of political courage. Failure to admit mistakes.

Suggested solution: Honesty, ethics and accountability in government, Strong and confident political leadership required.

6. Problem: The developer has been permitted and encouraged by Government to project split, pursuing a fragmented approach to this development and consent processes. The developer has been also permitted to adopt a minimalist approach taking only commercial considerations into account while continuing to pursue a one sided plan of development in spite of significant opposition. A huge time and financial burden was placed on the members of the receiving community who had genuine concerns.

Suggested solution: Do not allow project splitting or a fragmented consent process.

7. Problem: Lack of trust in the developer due to their past and present record.

Suggested solution: Do not trust oil and gas companies and do not allow them to self regulate. The government must independently and confidently assert themselves establishing a distinct position, objectively considering the needs of all the key stakeholders.

8. Problem: The Developer has been allowed and actively encouraged by Government to pursue a programme of premature investment and thus a policy of divide and conquer, prior to all statutory consents being in place.

Suggested solution: The granting of money from any investment fund should not commence until all required consents are in place.

9. Problem: Short term thinking in relation to the fixed sum investment fund.
Suggested solution: An investment fund for the affected community should be directly related to production volumes and should continue for the entire life span of the project.

10. Problem: Lack of trust in the Gardaí to treat members of the community in a fair and impartial manner.
Suggested solution: Independent observation of the supervision and management of protests. Guarantees and monitoring in relation to impartiality of Gardaí.

11. Problem: Lack of clarity in relation to future expansion.
Suggested solution: Independent government verification of oil company estimates.

Source: Pobal le Chéile submission to the Joint Committee

Both Pobal le Chéile and Pobal Chill Chomáin suggested that there should have been pre-planning community consultation for the project.

In relation to best available technology, Pobal le Chéile highlighted a technology called 'Twister', which Shell is developing. The group described this as:

“a clean way of refining gas which uses centrifugal force. It can be sub-sea mounted so it does not need offshore platforms. It would be suitable for the hostile environment they would be working in off the west coast of Ireland”.

The group noted that this technology uses pressure from the field itself to accelerate the gas to supersonic speeds and it cleans the gas to 95% before it comes near the country. It also pointed to the operation of carbon neutral refineries such as those at Statoil, which it contrasted to the situation in Mayo. In its presentation to the Joint Committee, the Norwegian Ministry for Petroleum and Energy clarified that Norway has two refineries, one of which is being redeveloped with a view to fitting that refinery with carbon capture and storage. An investment decision is due to be taken in 2016.

Some members of the Joint Committee identified the importance of who has responsibility for the different roles of licensing and development and those of safety and public interest.

The *Petroleum Exploration and Extraction (Safety) Act 2010*, which was passed in April 2010, conferred powers on the CER in relation to the latter and would thus, appear to constitute progress in this area.

Pro Gas Mayo presented a different perspective on this issue, and outlined what it sees as being the benefits arising from the project. These include employment and upgrading of certain local infrastructure. Similar benefits were identified by Comhairle don Iarthar / Council for the West.

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Whilst the various groups generally had different points of view, there were some broad areas of agreement amongst them. Broadly speaking, it would appear that all of the community groups could agree with the project in principle subject to health and safety and environmental concerns.

The example of best practice provided by Norway was cited on a number of occasions during the Joint Committee's examination of offshore exploration including during its meetings with the community groups.

The Norwegian Petroleum Directorate (2011) stresses the need for "a predictable and transparent framework" to be in place "in order for the oil companies to make good decisions". It highlights the clarity in its system and how its framework can benefit citizens and industry alike:

"The organisation of the activities, as well as how roles and responsibilities are defined, must ensure proper attention to all important considerations and make sure that the value created benefits society as a whole. This includes consideration for the external environment, health, working environment and safety. We all benefit from a framework that provides the petroleum industry with incentives to meet the State's objectives, while also fulfilling their own goals of maximising company profit" (Norwegian Petroleum Directorate, 2011).

The regulation of the Norwegian petroleum arrangements both onshore and offshore is vested in a number of organisations including the Norwegian Petroleum Directorate and the Petroleum Safety Authority Norway (PSA) (see figure 10). The primary authorities for health and safety regulation are the NPD and the PSA, which was created as an independent and petroleum specific legislative regulator in 2004.

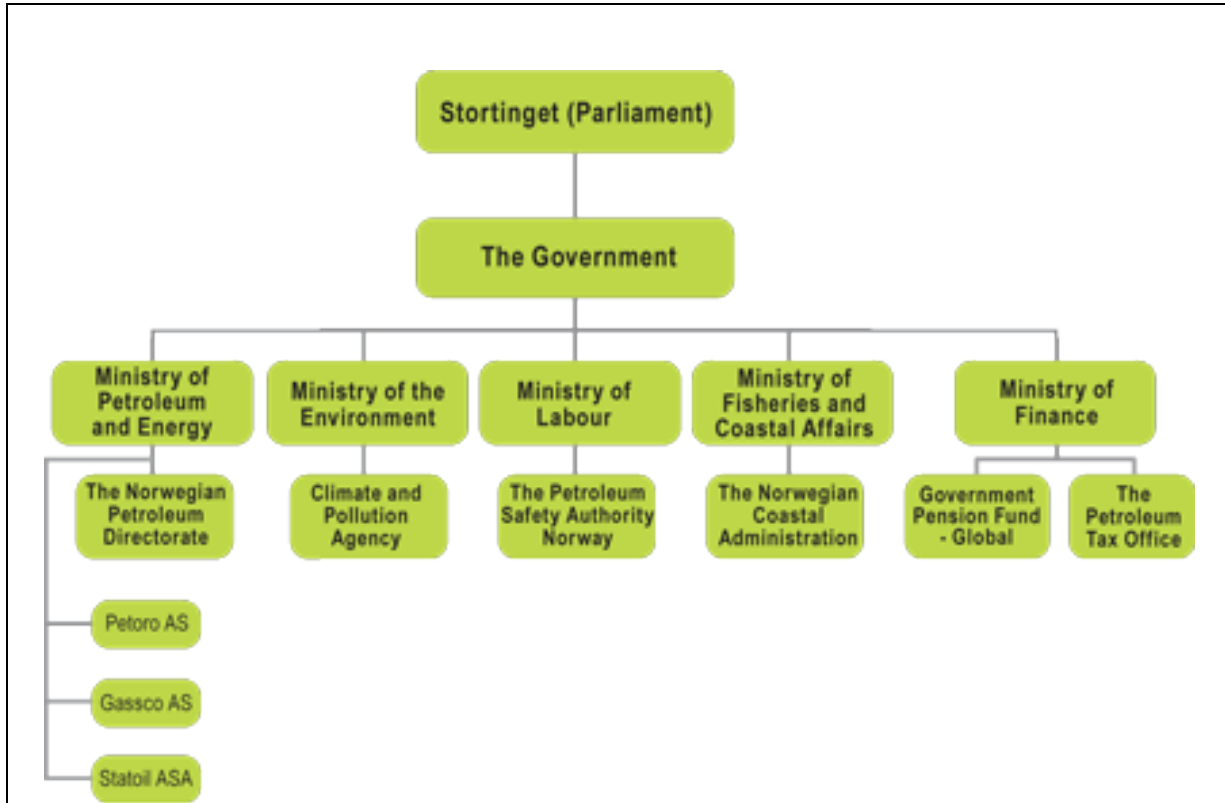
A Commission for Energy Regulation (CER) publication (by GL Noble Denton (2010, p. 59)) explains the functions of the different regulatory bodies and the regime used in Norway:

"The regulation of health, safety and environmental issues across Norwegian industry is administered by three primary authorities. The Petroleum Safety Authority (PSA) is one of these three authorities and is responsible for all safety aspects of petroleum activities either offshore or onshore. Primary legislative regulation covering petroleum activities is administered by the Norwegian Petroleum Directorate (NPD) but this is specifically a fiscal authority and all requirements concerning health and safety have been transferred to the PSA. The regulations administered by the PSA are a mixture of goal setting and perspective regulations that heavily refer to NORSOK standards, which themselves are a mixture of goal setting and prescriptive requirements. There is also a significant emphasis on occupational health and safety.

The Norwegians have changed from an approvals regime, which had the effect of turning the enforcing agency into a virtual guarantor that company activities were

acceptable, to a consent regime. The latter allows the PSA to express confidence that the operator concerned will pursue its activities in compliance with the regulations and with the information in its consent application”.

Figure 10: State organisation of petroleum activities in Norway



Source: Norwegian Petroleum Directorate (2011)

The NPD administers the fiscal and permissioning aspects of petroleum activities in Norway and stipulates some high level requirements regarding the safety related management of the installations and facilities that they administer (GL Noble Denton, 2010). It is the PSA, however, which conducts the detailed regulation of health and safety.

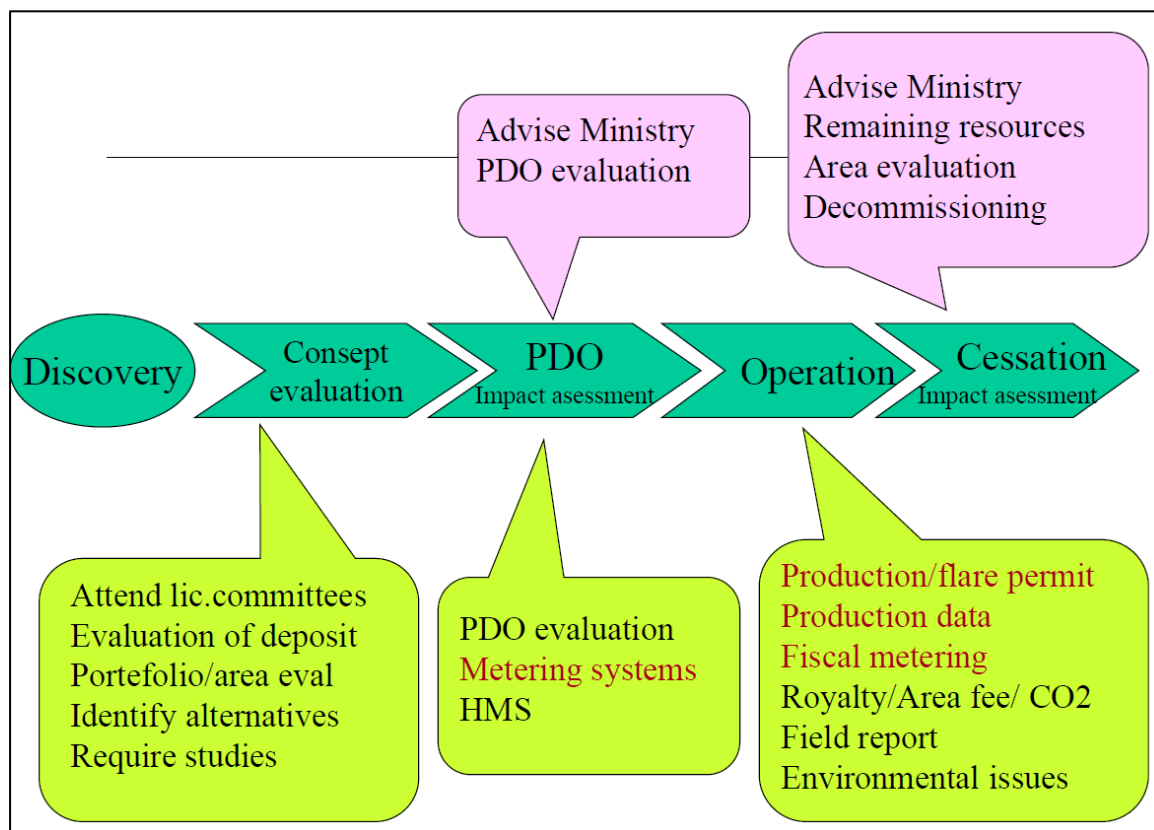
Compliance assessment is “achieved through a process of supervision, which is defined as a combination of audits, verifications, investigations, consents, meetings with industry and surveys etc. that are carried out by the PSA” (GL Noble Denton, 2010).

Before a production licence is awarded for exploration or production in Norway, the area where the activity will occur must be opened for petroleum activities. The Norwegian Petroleum Directorate (2011) notes that in this respect “an impact assessment must be carried out to evaluate factors such as the economic and social effects and the environmental impact the activity could have for other industries and the adjacent districts”.

The impact assessment and opening of new areas are governed by Chapter 3 of the Petroleum Act and Chapter 2a of the Petroleum Regulations.

Figure 11 summarizes the monitoring and approval process in Norway from discovery to cessation.

Figure 11: The monitoring and approval process in Norway



Source: Njå (2010)

More details on the Norwegian regulatory framework are provided in text box 14 (over).

Text box 14: The Norwegian regulatory framework

The Norwegian petroleum resource management regime is characterised by the use of principle-based legislation, as currently reflected in the Petroleum Activities Act 1996 (Norway). This law sets out framework conditions to guide the formulation of acceptable commercial incentives in concession contracts granted to private businesses for undertaking exploration and extraction.

Among the matters prescribed by the legislation are the initial duration of an exploration licence (3 years) and a production licence (10 years), as well as the mandatory obligation for project proponents to submit field development plans for approval by authorities before extraction activities can commence. The legislation also prescribes that '[t]he King may decide that the Norwegian State shall participate in petroleum activities' (Petroleum

Activities Act 1996 (Norway), s. 3.6).

A number of critical matters are determined by mutual agreement of the parties concerned, which often requires intensive negotiations. These matters include the size of the exploration program and the extent of state participation in the project. In effect, state participation involves negotiating a joint-venture agreement covering a number of contractual issues such as the percentage of equity to be held by each party, the management structure and control of operations, and the conditions under which the obligation to invest in resource development would increase.

Despite its contractual basis of regulation, the Norwegian petroleum regime includes mechanisms that enhance transparency through a set of criteria for reporting on concession terms and project incomes. For example, there is public information on the tax payments from individual businesses operating in the Norwegian continental shelf. Further, model contract terms are accessible to the public.

Source: Australian Government Productivity Commission (2009), p. 315

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Appendix 1: Joint Committee – Terms of Reference

a. Functions of the Committee – derived from Standing Orders [DSO 82A; SSO 70A]

- (1) The Select Committee shall consider and report to the Dáil on—
 - (a) such aspects of the expenditure, administration and policy of the relevant Government Department or Departments and associated public bodies as the Committee may select, and
 - (b) European Union matters within the remit of the relevant Department or Departments.
- (2) The Select Committee may be joined with a Select Committee appointed by Seanad Éireann to form a Joint Committee for the purposes of the functions set out below, other than at paragraph (3), and to report thereon to both Houses of the Oireachtas.
- (3) Without prejudice to the generality of paragraph (1), the Select Committee shall consider, in respect of the relevant Department or Departments, such—
 - (a) Bills,
 - (b) proposals contained in any motion, including any motion within the meaning of Standing Order 164,
 - (c) Estimates for Public Services, and
 - (d) other mattersas shall be referred to the Select Committee by the Dáil, and
 - (e) Annual Output Statements, and
 - (f) such Value for Money and Policy Reviews as the Select Committee may select.
- (4) The Joint Committee may consider the following matters in respect of the relevant Department or Departments and associated public bodies, and report thereon to both Houses of the Oireachtas:
 - (a) matters of policy for which the Minister is officially responsible,
 - (b) public affairs administered by the Department,
 - (c) policy issues arising from Value for Money and Policy Reviews conducted or commissioned by the Department,

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- (d) Government policy in respect of bodies under the aegis of the Department,
 - (e) policy issues concerning bodies which are partly or wholly funded by the State or which are established or appointed by a member of the Government or the Oireachtas,
 - (f) the general scheme or draft heads of any Bill published by the Minister,
 - (g) statutory instruments, including those laid or laid in draft before either House or both Houses and those made under the European Communities Acts 1972 to 2009,
 - (h) strategy statements laid before either or both Houses of the Oireachtas pursuant to the Public Service Management Act 1997,
 - (i) annual reports or annual reports and accounts, required by law, and laid before either or both Houses of the Oireachtas, of the Department or bodies referred to in paragraph (4)(d) and (e) and the overall operational results, statements of strategy and corporate plans of such bodies, and
 - (j) such other matters as may be referred to it by the Dáil and/or Seanad from time to time.
- (5) Without prejudice to the generality of paragraph (1), the Joint Committee shall consider, in respect of the relevant Department or Departments—
 - (a) EU draft legislative acts standing referred to the Select Committee under Standing Order 105, including the compliance of such acts with the principle of subsidiarity,
 - (b) other proposals for EU legislation and related policy issues, including programmes and guidelines prepared by the European Commission as a basis of possible legislative action,
 - (c) non-legislative documents published by any EU institution in relation to EU policy matters, and
 - (d) matters listed for consideration on the agenda for meetings of the relevant EU Council of Ministers and the outcome of such meetings.
- (6) A sub-Committee stands established in respect of each Department within the remit of the Select Committee to consider the matters outlined in paragraph (3), and the following arrangements apply to such sub-Committees:
 - (a) the matters outlined in paragraph (3) which require referral to the Select Committee by the Dáil may be referred directly to such sub-Committees, and

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- (b) each such sub-Committee has the powers defined in Standing Order 83(1) and (2) and may report directly to the Dáil, including by way of Message under Standing Order 87.
- (7) The Chairman of the Joint Committee, who shall be a member of Dáil Éireann, shall also be the Chairman of the Select Committee and of any sub-Committee or Committees standing established in respect of the Select Committee.
- (8) The following may attend meetings of the Select or Joint Committee, for the purposes of the functions set out in paragraph (5) and may take part in proceedings without having a right to vote or to move motions and amendments:
 - (a) Members of the European Parliament elected from constituencies in Ireland, including Northern Ireland,
 - (b) Members of the Irish delegation to the Parliamentary Assembly of the Council of Europe, and
 - (c) at the invitation of the Committee, other Members of the European Parliament.

b. Scope and Context of Activities of Committees (as derived from Standing Orders [DSO 82; SSO 70])

- (1) The Joint Committee may only consider such matters, engage in such activities, exercise such powers and discharge such functions as are specifically authorised under its orders of reference and under Standing Orders.
- (2) Such matters, activities, powers and functions shall be relevant to, and shall arise only in the context of, the preparation of a report to the Dáil and/or Seanad.
- (3) It shall be an instruction to all Select Committees to which Bills are referred that they shall ensure that not more than two Select Committees shall meet to consider a Bill on any given day, unless the Dáil, after due notice given by the Chairman of the Select Committee, waives this instruction on motion made by the Taoiseach pursuant to Dáil Standing Order 26. The Chairmen of Select Committees shall have responsibility for compliance with this instruction.
- (4) The Joint Committee shall not consider any matter which is being considered, or of which notice has been given of a proposal to consider, by the Committee of Public Accounts pursuant to Dáil Standing Order 163 and/or the Comptroller and Auditor General (Amendment) Act 1993.
- (5) The Joint Committee shall refrain from inquiring into in public session or publishing confidential information regarding any matter if so requested, for stated reasons given in writing, by—
 - (a) a member of the Government or a Minister of State, or

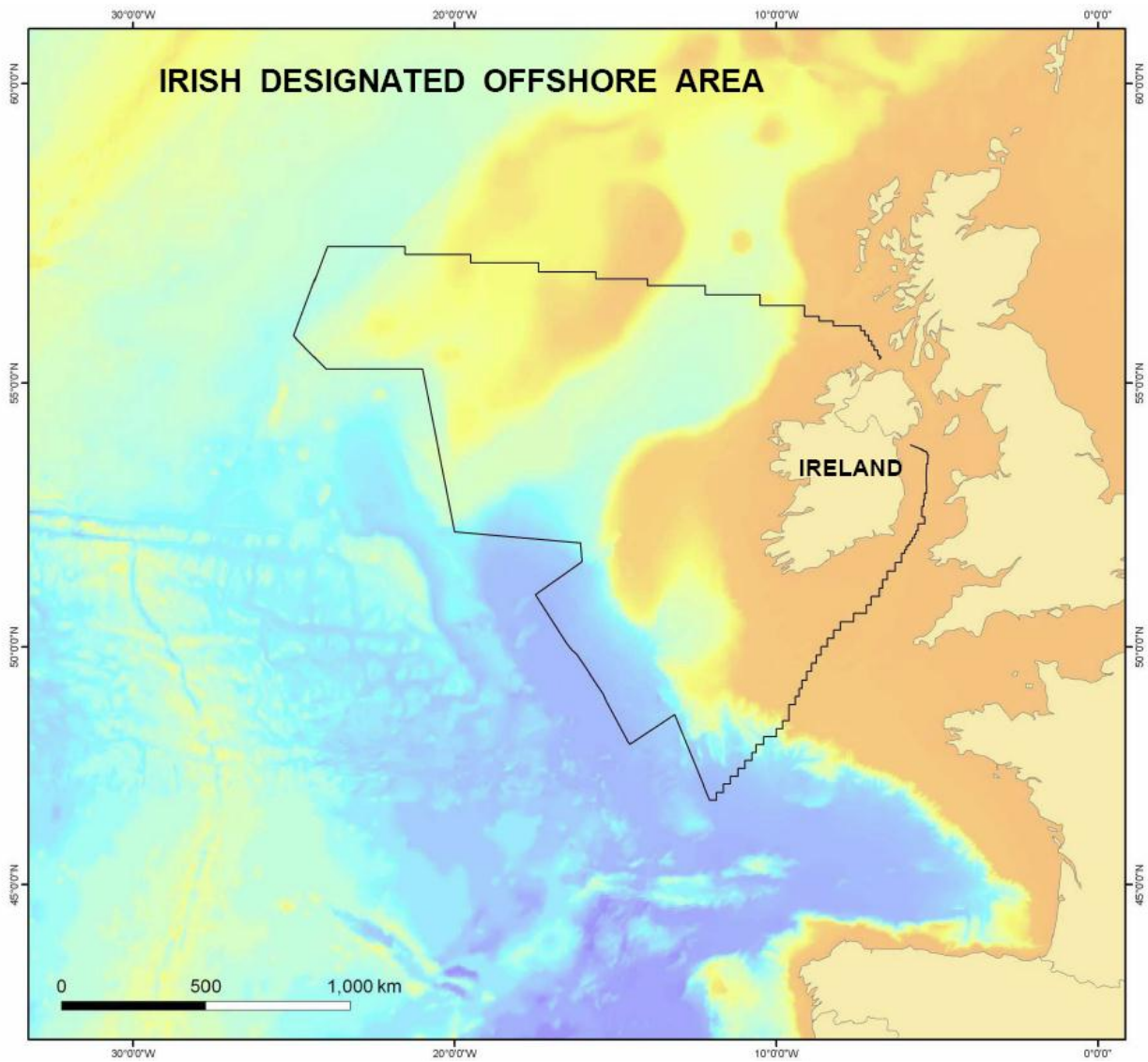
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- (b) the principal office-holder of a body under the aegis of a Department or which is partly or wholly funded by the State or established or appointed by a member of the Government or by the Oireachtas:

Provided that the Chairman may appeal any such request made to the Ceann Comhairle / Cathaoirleach whose decision shall be final.

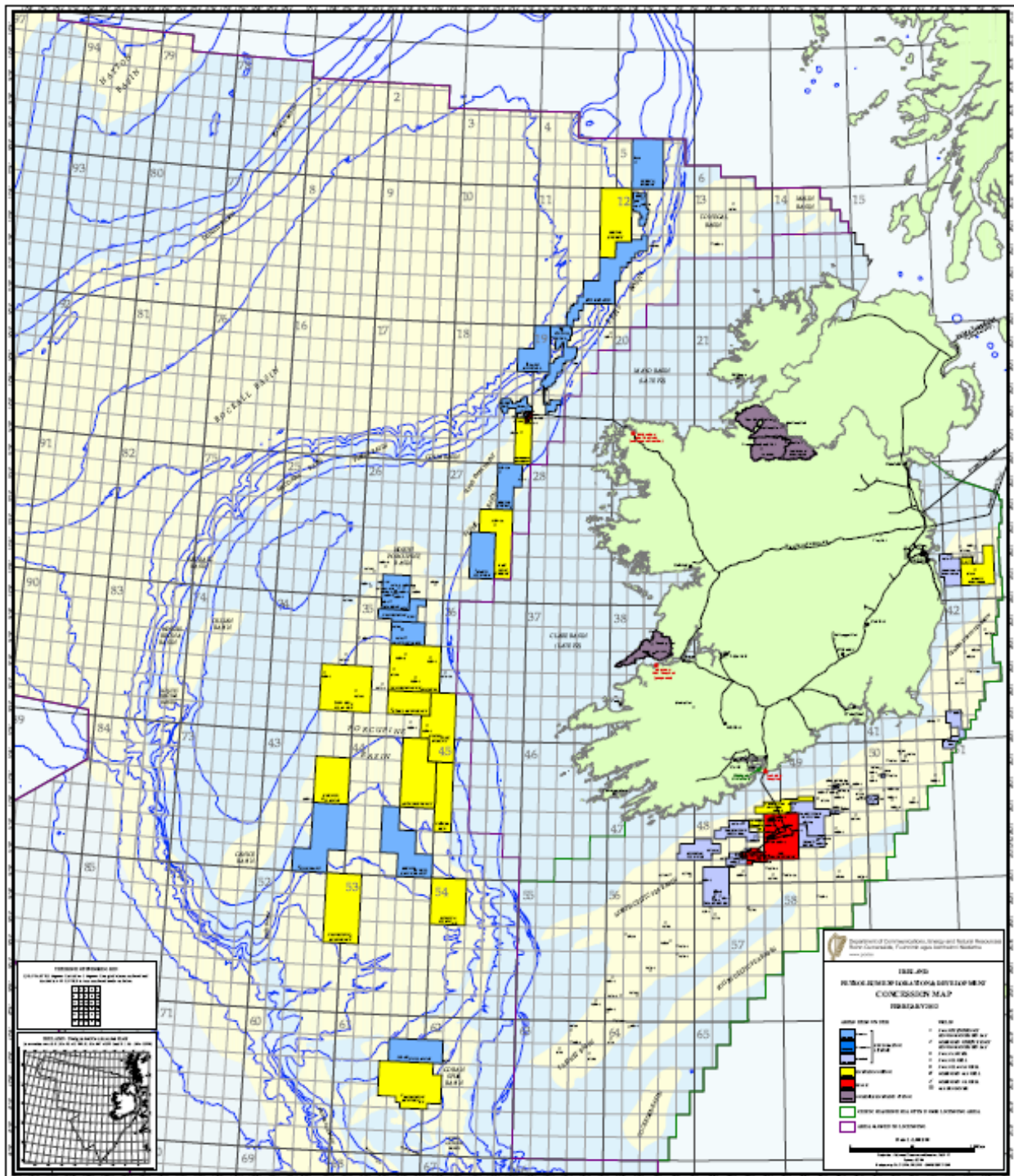
Appendix 2: Maps relating to exploration

Map 1: Irish designated offshore area



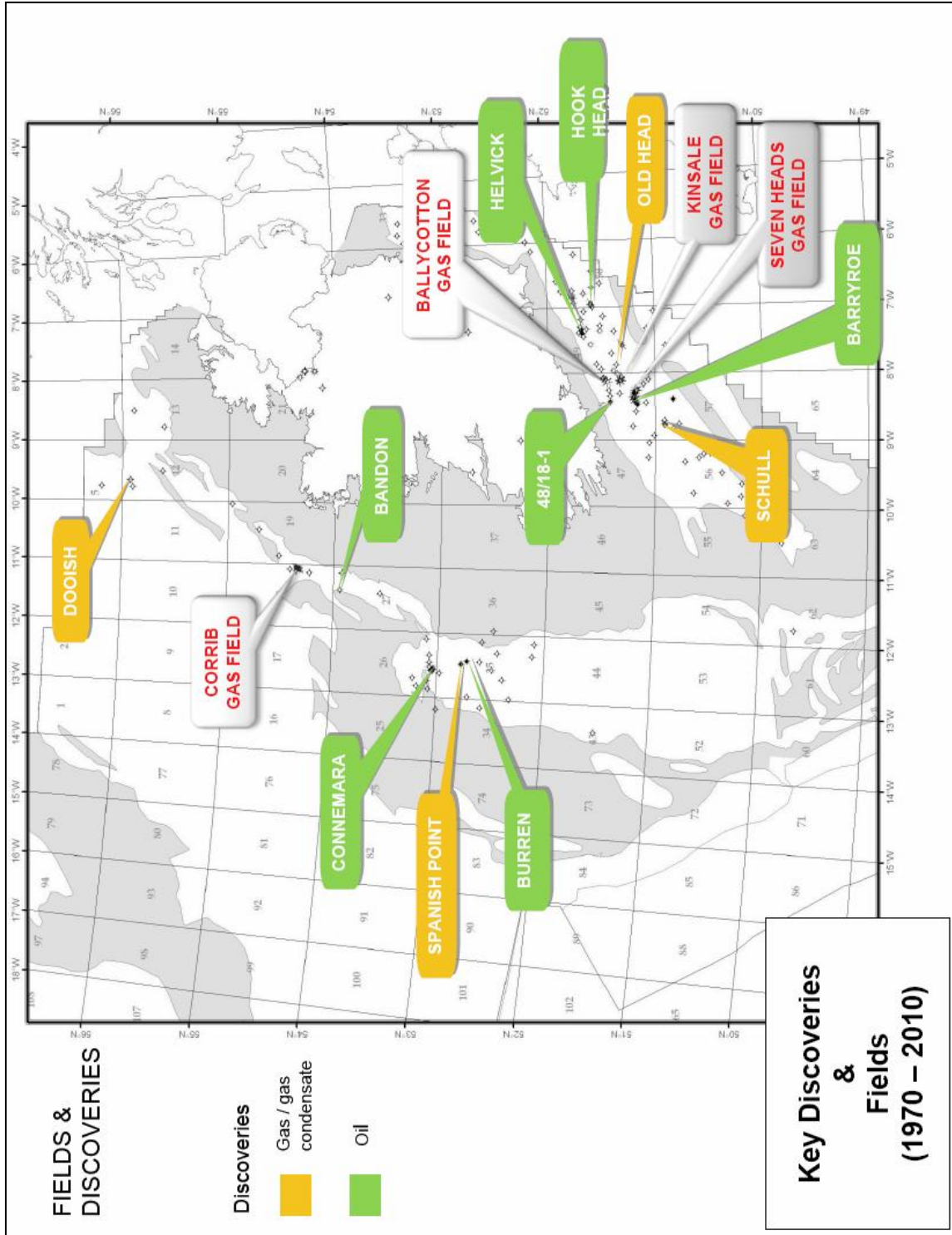
Source: DCENR presentation to the Joint Committee

Map 2: Latest concession map



Source: DCENR website at http://www.dcenr.gov.ie/NR/rdonlyres/3DFED0A0-005E-4412-8E45-EFAFF8912A62/0/A0_Concession_Map_Feb2012.pdf

Map 3: Fields and discoveries, 1970-2010



Source: DCENR presentation to the Joint Committee

Appendix 3: DCENR hydrocarbon discoveries made onshore and offshore Ireland

Petroleum Exploration Authorisations

Licensing Option

A Licensing Option is a preliminary authorisation which gives the holder the first right to an Exploration Licence or Licences over all or part of the area covered by the option.

Licensing Options are awarded for a period of up to three years and do not involve exploration drilling.

Exploration Licences

There are three categories of Exploration Licence:

- Standard Exploration Licence (water depths up to 200 metres);
- Deepwater Exploration Licence (water depth in any part of the area exceeds 200 metres); and
- Frontier Exploration Licence (area with special difficulties relating to physical environment, geology or technology and which is specified and announced by the Minister as a "Frontier Area").

Standard Exploration Licences are issued for a period of six years divided into two phases of three years each. There is a drilling commitment in the first phase of an exploration licence.

Surrender of acreage

50% of the licensed area must be surrendered at the end of the first phase of the licence.

Deepwater Exploration Licences are issued for a period of nine years divided into three phases of three years each and include drilling commitments in the first and second phases.

Surrender of acreage

50% of the licensed area must be surrendered at the end of the first phase of the licence.

50% of the remaining licensed area must be surrendered at the end of the second phase of a licence.

There are no deepwater licences issued at this time.

Frontier Exploration Licences are issued for a period of not less than 12 years and comprises a maximum of four phases. There is a drilling commitment in the second phase of the licence. For a Frontier Exploration Licence of four phases, the licence must be

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surrendered if a second exploration well has not been commenced by the end of the third phase of the licence.

Surrender of acreage

25% of the licensed area must be surrendered at the end of the first phase of the licence.

50% of the remaining licensed area must be surrendered at the end of the second phase of the licence.

Variation of duration/phases of a exploration licence

The Minister may vary the duration of individual phases of an Exploration Licence, the overall term of an Exploration Licence, or both, where he is satisfied that it would be in the public interest to do so.

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Commercial Offshore Discoveries - In Production

Kinsale Head Discovery

Discovery year: 1971
Discovery type: Gas
Status: Commercial discovery
Original authorisation: Petroleum Lease 01 (**PL01**)
Current Authorisation: Petroleum Lease 01
Authorisation Issued: 1970
Current Operator: PSE Kinsale Energy (formally Marathon)
Area: Celtic Sea
Authorisation Status: Active - in production since 1978

Ballycotton Discovery

Discovery year: 1989
Discovery type: Gas
Status: Commercial discovery
Original Authorisation: Petroleum Lease 01 (**PL01**)
Current Authorisation: Petroleum Lease 01 (**PL01**)
Authorisation issued: 1970
Current Operator: PSE Kinsale Energy (formally Marathon)
Area: Celtic Sea
Authorisation Status: Active - in production since 1991

Seven Heads Discovery

Discovery year: 1973
Discovery type: Gas
Status: Original discovered by Esso in 1973, however not considered commercial at that time.
Original Authorisation: Petroleum Lease 08 (**PL08**)
Current Authorisation: Seven Heads Petroleum Lease (**SHPL**)
Authorisation issued: 2002
Current Operator: PSE Kinsale Energy (formally Marathon)
Area: Celtic Sea
Authorisation Status: Active - in production since 2003

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Commercial Offshore Discoveries - Under Development

Corrib Discovery

Discovery year:	1996
Discovery type:	Gas
Status:	Commercial discovery
Original Authorisation:	Frontier Exploration Licence 3/94 (FEL 3/94)
Current Authorisation:	Corrib Petroleum Lease
Authorisation issued:	2002
Current Operator:	Shell E & P Ireland Ltd.
Area:	Slyne Basin
Authorisation Status:	Active - Under development

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Barryroe Discovery (Block 48/24 Celtic Sea) – Licensing History

- (1) Discovery year: 1973
Discovery type: Oil
Discovery Status: Not commercial
Authorisation: Petroleum Lease 08 (**PL08**)
Authorisation issued: 1973
Well Operator: Esso
Authorisation Status: Expired/Relinquished 1994
- (2) Authorisation: Licensing Option 99/3 (**LO 99/3**)
Authorisation issued: 1999
Operator: Ramco Oil and Gas Ltd
Authorisation Status: Expired/Relinquished 2001
- (3) Authorisation: Licensing Option 03/5 (**LO 03/5**)
Authorisation issued: 2003
Operator: Lansdowne Oil and Gas
Authorisation Status: Expired/Relinquished 2005
- (4) Authorisation: Licensing Option 08/1 (**LO 08/1**)
Authorisation issued: 2008
Operator: Lansdowne Oil and Gas
Authorisation Status: Expired/Relinquished 2011
- (5) Current authorisation: Standard Exploration Licence 1/11 (**SEL 1/11**)
(Follow-on authorisation from Licensing Option 08/1)
Authorisation issued: 2011
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Drilled in 2011/2012 with flows of both oil and gas – further drilling required to determine if discovery is commercial.

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Ardmore Discovery (Block 49/14 Celtic Sea) – Licensing History

- (1) Discovery year: 1974
Discovery type: Gas
Discovery Status: Not commercial
Authorisation: Petroleum Lease 10 **(PL10)**
Authorisation issued: 1974
Well Operator: Marathon
Authorisation Status: Expired/Relinquished 1995
- (2) Authorisation: Licensing Option 96/2 **(LO 96/2)**
Authorisation issued: 1996
Operator: Arcon Resource plc
Authorisation Status: Expired/Relinquished 1998
- (3) Authorisation: Licensing Option 03/8 **(LO 03/8)**
Authorisation issued: 2003
Operator: Providence Resources Plc
Authorisation Status: Expired/Relinquished 2007
- (4) Current authorisation: Standard Exploration Licence 2/07 **(SEL 2/07)**
(Follow-on authorisation from Licensing Option 03/8)
Authorisation issued: 2007
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Burren Discovery (Block 35/8 Porcupine Basin) – Licensing History

- (1) Discovery year: 1978
Discovery type: Oil
Discovery Status: Not commercial
Authorisation: Exploration Licence 7/76 **(EL 7/76)**
Authorisation issued: 1976
Well Operator: Phillips Petroleum
Authorisation Status: Expired/Relinquished 1985
- (2) Authorisation: Exploration Licence 4/95 **(EL 4/95)**
Authorisation issued: 1995
Operator: Chevron
Authorisation Status: Expired/Relinquished 1997
- (3) Current authorisation: Frontier Exploration Licence 2/04 **(FEL 2/04)**
Authorisation issued: 2004
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Connemara Discovery (Block 26/28 Porcupine Basin) – Licensing History

- (1) Discovery year: 1979
Discovery type: Oil
Discovery Status: Not commercial
Authorisation: Exploration Licence 4/76 (**EL4/76**)
Authorisation issued: 1976
Well Operator: BP
Authorisation Status: Expired/Relinquished 1984
- (2) Authorisation: Exploration Licence 2/95 (**EL 2/95**)
Authorisation issued: 1995
Operator: Aran Energy
Authorisation Status: Expired/Relinquished 1997
- (3) Current authorisation: Frontier Exploration Licence 1/04 (**FEL 1/04**)
Authorisation issued: 2004
Operator: Island Oil and Gas
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Spanish Point Discovery (Block 35/8 Porcupine Basin) – Licensing History

(1) Discovery year: 1981
Discovery type: Gas Condensate
Discovery Status: Not commercial
Authorisation: Exploration Licence 7/76 (**EL 7/76**)
Authorisation issued: 1976
Well Operator: Phillips Petroleum
Authorisation Status: Expired/Relinquished 1985

(2) Authorisation: Exploration Licence 4/95 (**EL4/95**)
Authorisation issued: 1995
Operator: Chevron
Authorisation Status: Expired/Relinquished 1997

(3) Current authorisation: Frontier Exploration Licence 2/04 (**FEL 2/04**)
Authorisation issued: 2004
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Helvick Discovery (Block 49/9 Celtic Sea) – Licensing History

- (1) Discovery year: 1983
Discovery type: Oil
Discovery Status: Not commercial
Authorisation: Exploration Licence 2/81 **(EL2/81)**
Authorisation issued: 1981
Well Operator: Gulf
Authorisation Status: Expired/Relinquished 1994
- (2) Authorisation: Helvick Lease Undertaking
Authorisation issued: 1994
Operator: Arcon Resources Plc
Authorisation Status: Expired/Relinquished 1997
- (3) Authorisation: Helvick Lease
Authorisation issued: 1998
Operator: Providence Resources Plc
Authorisation Status: Expired/Relinquished (follow on authorisation from Helvick Lease Undertaking)
- (4) Authorisation: Licensing Option 03/8 **(LO 03/8)**
Authorisation issued: 2003
Operator: Providence Resources Plc
Authorisation Status: Expired/Relinquished 2007
- (5) Current authorisation: Standard Exploration Licence 2/07 **(SEL 2/07)**
(Follow-on authorisation from Licensing Option 03/8)
Authorisation issued: 2007
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Galley Head Discovery (Block 48/18 Celtic Sea) – Licensing History

- (1) Discovery year: 1985
Discovery type: Gas
Discovery Status: Not commercial
Authorisation: Exploration Licence 6/82 (**EL 2/82**)
Authorisation issued: 1982
Well Operator: BP
Authorisation Status: Expired/Relinquished 1988
- (2) Authorisation: Exploration Licence 1/90 (**EL 1/90**)
Authorisation issued: 1990
Operator: Bula Oil Ltd
Authorisation Status: Expired/Relinquished 1996
- (3) Authorisation: Licensing Option 00/4 (**LO 00/4**)
Authorisation issued: 2000
Operator: Ramco Oil and Gas Ltd
Authorisation Status: Expired/Relinquished 2001
- (4) Authorisation: Licensing Option 03/6 (**LO 03/6**)
Authorisation issued: 2003
Operator: Lansdowne Oil and Gas
Authorisation Status: Expired/Relinquished 2006
- (5) Current authorisation: Standard Exploration Licence 5/07 (**SEL 5/07**)
(Follow-on authorisation from Licensing Option 03/6)
Authorisation issued: 2007
Operator: Lansdowne Oil and Gas
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Dunmore Discovery (Block 50/6 Celtic Sea) – Licensing History

- (1) Discovery year: 1985
Discovery type: Oil
Discovery Status: Not commercial
Authorisation: Exploration Licence 5/82 (**EL 5/82**)
Authorisation issued: 1982
Well Operator: Gulf
Authorisation Status: Expired 1988
- (2) Authorisation: Licensing Option 91/4 (**LO 91/4**)
Authorisation issued: 1991
Operator: Marathon International Petroleum Hibernia
Authorisation Status: Expired 1993
- (3) Authorisation: Exploration Licence 4/93 (**EL 4/93**)
Authorisation issued: 1993
Operator: Marathon Petroleum Ireland Limited
Authorisation Status: Expired 1997
- (4) Authorisation: Licensing Option 00/1 (**LO 00/1**)
Authorisation issued: 2000
Operator: Providence Resources Plc
Authorisation Status: Expired 2002
- (5) Authorisation: Licensing Option 03/8 (**LO03/8**)
Authorisation issued: 2003
Operator: Providence Resources Plc
Authorisation Status: Expired 2007
- (6) Current authorisation: Standard Exploration Licence 2/07 (**SEL 2/07**)
(Follow-on authorisation from Licensing Option 03/8)
Authorisation issued: 2007
Operator: Providence Resources
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Dooish Discovery (Block 12/2 Slyne/Erris Basin) – Licensing History

(1) Discovery year: 2002
Discovery type: Gas Condensate
Discovery Status: Not Commercial
Authorisation: Exploration Licence 2/94
Authorisation issued: 1994
Operator: Shell
Status: Active Licence - subject to performance of agreed work programme

Old Head of Kinsale Discovery (Block 49/23 Celtic Sea) – Licensing History

(1) Discovery year: 2006
Discovery type: Gas
Discovery Status: Not commercial
Authorisation: Standard Exploration Licence 4/05
Operator: Island Oil and Gas Ltd.
Status: Application for Lease Undertaking

Schull Discovery (Block 57/2 Celtic Sea) – Licensing History

(1) Discovery year: 2007
Discovery type: Gas
Discovery Status: Not Commercial
Authorisation: Standard Exploration Licence 5/05
Authorisation issued: 2005
Operator: Island Oil and Gas Ltd.
Status: Application for a Lease Undertaking

Hook Head Discovery (Block 50/11 Celtic Sea) – Licensing History

(1) Discovery year: 2007
Discovery type: Oil
Discovery Status: Not Commercial
Authorisation: Standard Exploration Licence 2/07
Authorisation issued: 2007
Operator: Providence Resources Plc
Status: Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Offshore Discoveries

Bandon Discovery (Block 27/4 Slyne Basin) – Licensing History

(1) Discovery year:	2009
Discovery type:	Oil
Discovery Status:	Not Commercial
Authorisation:	Frontier Exploration Licence 1/6
Authorisation issued:	2006
Operator:	Serica Energy (UK) Limited
Licence Status:	Active Licence - subject to performance of agreed work programme

Significant Hydrocarbon Discoveries made Onshore and Offshore Ireland.

Non - Commercial Onshore Discovery

Dowra Discovery - North West Carboniferous Basin – Licensing History

- (1) Discovery year 1963
Discovery type: Gas
Discovery Status: Not commercial
Company: Ambassador Irish Oil Company
Authorisation: Onshore Exploration Licence 1/60 **(ON1/60)**
Authorisation Status: Expired 1980
- (2) Authorisation: Onshore Exploration Licence 2/01 **(ON2/01)**
Authorisation issued: 2001
Operator: Evergreen Resources Inc
Authorisation Status: Expired 2005
- (3) Authorisation: Onshore Exploration Licence 1/05 **(ON1/05)**
Authorisation issued: 2005
Operator: Finavera Energy
Authorisation Status: Expired 2008
- (4) Current authorisations

There are two petroleum authorisations in the Dowra discovery area:

Authorisation: Onshore Licensing Option 11/2 **(ON11/2)**
Authorisation issued: 2011
Company: Lough Allen Natural Gas Company
Status: Active - subject to performance of agreed work programme
Shale gas potential of area under assessment

Authorisation: Onshore Licensing Option 11/3 **(ON11/3)**
Authorisation issued: 2011
Company: Tamboran Resources PTY Ltd
Status: Active - subject to performance of agreed work programme
Shale gas potential of area under assessment

Appendix 4: Ernst & Young *Global Oil and Gas Tax Guide 2011* chapter on Ireland

Reproduction of pages 193 – 201 of Ernst & Young report

Note page numbers after p131 in this report do not match.

Ireland		193
Ireland		
		Country code 353
Dublin		GMT
Ernst & Young Ernst & Young Building Harcourt Centre Harcourt Street Dublin 2 Republic of Ireland	Tel 1 4750 555 Fax 1 4750 599	
Oil and gas contacts		
Kevin McLoughlin Tel 1 2212 478 kevin.mcloughlin@ie.ey.com	Alan Carey Tel 1 2212 889 alan.carey@ie.ey.com	

A. At a glance

Fiscal regime

Ireland's fiscal regime that applies to the petroleum industry consists of a combination of corporation tax and a profit resource rent tax (PRRT) based on field profitability.

Royalties	None
Bonuses	None
Production sharing contract(PSC)	Not applicable
Income tax rate	Corporation tax rate 25%
Resource rent tax	PRRT rate between 5% and 15%, depending on field profitability relative to capital investment ¹⁰⁸
Capital allowances	D, E ¹⁰⁹
Investment incentives	L, RD ¹¹⁰

B. Fiscal regime

Ireland's fiscal regime that applies to the petroleum industry consists of a combination of a corporation tax and a PRRT.

Corporation tax

Irish resident companies are subject to corporation tax on their worldwide profits (i.e., income and gains). Income from an Irish trade is subject to corporation tax at a rate of 12.5%; however, certain "excepted trades" are subject to corporation tax at a rate of 25%. The definition of excepted trades includes dealing in land, working minerals and petroleum activities.

Non-resident companies are also subject to Irish corporation tax if they carry on a trade in Ireland through a branch or agency. Profits or gains arising for a non-resident person from exploration or exploitation activities carried on in Ireland or in a "designated area," or from exploration or exploitation rights, are regarded for tax purposes as profits or gains of a trade carried on by that person in Ireland through a branch or agency. A designated area is an area designated by order under the Continental Shelf Act 1968. Accordingly, income arising for a non-resident company from petroleum activities is regarded as arising from an excepted trade and is subject to corporation tax at a rate of 25%.

¹⁰⁸ PRRT is not deductible for corporation tax purposes.

¹⁰⁹ D: accelerated depreciation; E: immediate write-off for exploration costs.

¹¹⁰ L: losses can be carried forward indefinitely; RD: R&D incentive.

Chargeable gains accruing from the disposal of "petroleum-related assets" are subject to tax at a rate of 25%. Petroleum-related assets include any petroleum rights, any assets representing exploration expenditures or development expenditures and shares deriving their value or the greater part of their value, whether directly or indirectly, from petroleum activities, other than shares quoted on a stock exchange.

Corporation tax is charged on taxable income. This is determined by starting with income according to accounting principles and then adjusting it for certain add-backs and deductions required under the tax legislation. Expenses are generally allowed if they are incurred "wholly and exclusively" for the purposes of the trade but certain expenses are not permitted under the legislation, such as capital expenditure.

Deductions for expenditure of a capital nature may be available under the capital allowances regime. For the petroleum industry, this is in the form of a 100% deduction for both exploration expenditures and development expenditures that become available when petroleum extraction activities commence (in the case of petroleum exploration expenditures) and when production in commercial quantities commences (in the case of development expenditures). In addition to allowing full write-offs against petroleum profits for exploration and development expenditures, a provision allows for a deduction for expenditures that companies may incur in withdrawing from or shutting down an oil or gas field (see further discussion on exploration, development and abandonment expenditures on the following pages).

Ring-fencing

Petroleum activities are ring fenced for tax purposes so that losses from petroleum activities may not be set off against profits from other activities. Similarly, there are restrictions on the group relief of petroleum losses and charges on income incurred in petroleum activities. The ring-fencing also prevents losses from other sectors of the economy being applied against petroleum profits. This two-way ring-fencing recognizes the unique potential of the petroleum exploration and production industry for exceptionally large costs and losses and also for exceptionally large profits.

Profits from oil and gas activities undertaken by an Irish resident company in a foreign country are subject to tax in Ireland.

PRRT

Irish tax legislation contains provisions for PRRT that applies to petroleum activities. Under these provisions, companies carrying on Irish petroleum activities will be subject to an additional charge to tax depending on the profitability of the fields affected.

The PRRT rate varies from 5% to 15%, depending on the profitability of the field, measured by reference to the capital investment required for that field. PRRT is not deductible for corporate tax purposes.

PRRT only applies to exploration licenses and reserved area licenses awarded on or after 1 January 2007 and licensing options. PRRT operates on a graded basis by reference to profitability and, in particular, by reference to the profit ratio achieved on the specific field for which a license has been granted. The profit ratio is defined as the cumulative after-tax profits on the specific field divided by the cumulative level of capital investments on the specific field.

Each field that falls within the scope of the regime is treated as a separate trade for the purposes of the new tax and is effectively ring fenced, with the result that a company would not be entitled to offset losses from any other activities against the profits of a taxable field for the purposes of calculating the PRRT. It is possible for capital expenditures incurred by one company to be deemed to have been incurred by another group company (with the necessary relationship to the first company) for the purposes of calculating the level of capital investments used in determining the profit ratio. For this provision to apply, an election must be made by the company that originally incurred the expenditure.

PRRT is calculated as follows:

Profit ratio	<1.5	>1.5 but <3.0	>3.0 but <4.5	>4.5
Additional tax	0%	5%	10%	15%

PRRT applies to taxable field profits, which are defined as the amount of the petroleum profits of the taxable field for the accounting period after making all deductions for, and giving or allowing all reliefs for, corporate tax purposes. The one exception is if, in a particular accounting period, the profit ratio for a specific field is in excess of 1.5 and was less than 1.5 in the immediately preceding accounting period in respect of that field. In such a situation, the profits to which the PRRT applies are calculated by reference to the following formula:

$$\{A - (B \times 1.5)\} \times 100 / (100 - R)$$

In this formula, A is the cumulative field profits on the field from 1 January 2007, B is the cumulative field expenditure on the field from 1 January 2007 and R is the general rate of tax for Irish petroleum activities (currently 25%). The purpose of this formula is to reduce the quantum of profits to which the PRRT applies in the period immediately following a period for which the PRRT did not apply as a result of the profit ratio being less than 1.5.

PRRT is collected in the same manner as corporation tax, and returns for PRRT are submitted with the annual corporate tax return.

C. Capital allowances

Development expenditure

Irish tax legislation provides for a 100% allowance for capital expenditures incurred for production and development in connection with a relevant field being worked in the course of carrying on a petroleum trade. The allowance is available for the period when the asset represented by the expenditure is brought into use for the purposes of the trade. The allowance is subject to production in commercial quantities, having started in the field for which the assets were provided.

Assets leased to a person for the purposes of a petroleum trade are treated in a broadly similar manner. The allowance is available to the lessor, provided the burden of wear and tear falls directly on the lessor. The legislation excludes from development expenditure amounts expended on vehicles, land and buildings, machinery or plant or structures for processing or storing petroleum won (other than initial treatment or storage) and the acquisition of, or rights in or over, deposits of petroleum. Interest payments are also excluded.

Exploration expenditure

Irish tax legislation provides for a 100% allowance for exploration expenditures against the profits of a petroleum trade. The allowance is due when petroleum extraction activities begin. Exploration expenditure is defined as a capital expenditure on petroleum exploration activities, but excludes any interest payments. If expenditure qualifies as a development expenditure, it cannot also be an exploration expenditure. To the extent that a loss is created by the exploration allowance, this can be carried forward against future profits of the same petroleum trade.

An allowance is given for successful and abortive exploration expenditures, subject to the abortive expenditure having been incurred not more than 25 years before the commencement of the petroleum trade, against which the profits of such allowance are claimed. However, an abortive expenditure incurred more than 25 years ago on a field that subsequently begins production may still be claimed upon commencement of production.

No allowance for exploration expenditure will be made, to the extent that the exploration expenditure is reimbursed to the claimant. A clawback provision applies by way of a balancing charge on the amounts previously allowed if a disposal or part disposal takes place of an asset representing the amount of the

expenditure, in respect of which the allowance was made. The maximum balancing charge is limited to the amount of the allowances made or the appropriate part of that amount, in the case of a partial disposal.

A person who buys assets representing exploration expenditures connected with a relevant field may claim an allowance if that person carries on a trade that consists of or includes working that field or part of the field. The allowance cannot exceed the exploration expenditure originally incurred or, if less, the price paid for the assets representing that expenditure.

If there is a sale or transfer of assets representing an exploration expenditure before a petroleum trade commences, then the allowance due to the claimant is reduced by the proceeds of the sale or transfer.

A provision applies for granting an allowance for an exploration expenditure against the profits of a petroleum trade carried on by one company if the exploration expenditure was incurred by another company and one company is a wholly owned subsidiary of the other company, or both are wholly owned subsidiaries of a third company. A transferred expenditure is treated as incurred by the transferee company at the time it was actually incurred by the transferor, thus preventing an old abortive exploration expenditure from being used by the transferee any later than it could have been used by the transferor. A provision also applies to avoid duplication of allowances.

Abandonment expenditure

An abandonment expenditure is an expenditure incurred on abandonment activities in relation to a field or part of a field. Abandonment activities in relation to a field or part of a field mean activities of a company that comply with the requirements of a petroleum lease held by the company in respect of closing down, decommissioning or abandoning the field or part of it. This provision includes dismantling and removing pipelines used to bring petroleum to dry land.

A 100% allowance applies for an abandonment expenditure for the chargeable period when the expenditure is incurred. If a loss arises due to an insufficiency of income to absorb the allowance, the loss may be carried back to offset the income from the petroleum activities of the three previous years. An offset is made against later periods in priority to the earlier periods.

A provision is made for a carryforward of unused abandonment losses if a company permanently discontinues one petroleum trade and subsequently commences a new petroleum trade. In these circumstances, the losses are deductible in the first chargeable period of a new petroleum trade carried on by the company.

An abandonment expenditure incurred after a petroleum trade has ceased is brought back into the final period of trading. If this creates a loss, that loss may be carried back for the three years preceding the final year of trading.

D. Incentives

Losses

Tax losses may be carried forward indefinitely against profits of the same petroleum trade. However, if, within a three-year period, there is both a change in ownership (effectively more than 50%) and a major change in the nature or conduct of the trade, then relief for losses carried forward may be denied.

R&D

To encourage expenditure on R&D, a credit of 25% of the incremental expenditure incurred by a company may be offset against its corporate tax liability for the accounting period when the expenditure is incurred. Any excess R&D credits may be carried back against corporate tax of the preceding accounting period. Any remaining excess R&D credits may be refunded by the Irish Revenue over a three-year period.

A limit is placed on the amount of the refund available to a company which is the greater of:

- (i) The corporation tax payable by the company in the previous 10 years
- (ii) The payroll tax liabilities (including employers' social insurance) for the period in which the expenditure giving rise to the claim is incurred

In the case of a company, expenditures on R&D means expenditures that have been incurred on R&D activities carried on by that company in the EEA in a relevant period. The expenditure must qualify for tax relief in Ireland and, in the case of an Irish resident company, it must not qualify for tax relief in any jurisdiction other than Ireland. The R&D credit is in addition to any tax relief that may be available by way of a deduction in computing trading income, or by way of capital allowances.

R&D activities mean systematic, investigative or experimental activities in a field of science or technology and being one or more of basic research, applied research or experimental development. Activities do not qualify as R&D activities unless they seek to achieve scientific or technological advancement and involve resolution of scientific or technological uncertainty.

E. Withholding taxes

Dividends, interest and royalties

Under Irish domestic law, dividends, interest and royalties are, prima facie, subject to a withholding tax of 20%. However, interest paid by a company in the course of a trade or business to a company resident in an EU Member State or in a country with which Ireland has a double taxation agreement is exempt from withholding tax provided the recipient country generally imposes tax on such interest receivable. Furthermore, under Irish domestic law, withholding tax on royalties applies only to certain patent royalties (where Irish Revenue clearance is obtained) and to other payments regarded as "annual payments."

In relation to dividends, exemptions from dividend withholding tax (DWT) are provided for certain non-residents. The principal exemptions are for:

- ▶ Non-resident companies under the control of persons resident in an EU Member State or in a country with which Ireland has a double taxation agreement (provided these persons are not under the control of persons not resident in such countries)
- ▶ Non-resident companies, or 75% parent companies of non-resident companies, the principal class of shares of which is substantially and regularly traded on a recognized stock exchange
- ▶ Companies not controlled by Irish residents that are resident in an EU Member State or a tax treaty country

Third party declarations are no longer required to obtain this exemption. Instead, a self assessment system applies whereby the non-resident company declares that it meets one of the conditions above. DWT does not apply to dividends covered by the EU Parent-Subsidiary directive (subject to compliance with a bona fide parent test).

Branch remittance tax

Branch remittance tax does not apply in Ireland.

Relevant contracts tax (RCT)

RCT is a withholding tax under Irish domestic law that applies to persons engaged in the construction, meat processing and forestry industries. Unfortunately, the RCT provisions are very widely drawn and the definition of "construction operations" brings "operations which form an integral part of, or are preparatory to, or are for rendering complete, the drilling for or extraction of minerals, oil, natural gas or the exploration for, or exploitation of, natural resources" within the ambit of RCT.

The practical implication of this provision is that a principal contractor must use a withholding tax of 35% on payments to subcontractors unless those subcontractors produce a tax clearance certificate (C2) from the Irish Revenue, and certain other administrative requirements are met. The requirement to produce a C2 tax clearance certificate also extends to non-resident subcontractors. The application process for obtaining a C2 certificate requires the subcontractor to demonstrate that its tax affairs (together with the tax affairs of its directors and shareholders) are up to date and that it is fully compliant with all tax filing and reporting requirements.

F. Financing considerations

Thin capitalization and interest quarantining

At present, Ireland does not have legislation dealing with thin capitalization and interest quarantining.

G. Transactions

Asset disposals

If a company that carries on a petroleum trade disposes of an asset representing an exploration expenditure, it is subject to a balancing charge calculated by reference to the proceeds received for the disposal. If the disposal takes place prior to the commencement of a petroleum trade, the exploration allowance to be made to the company when it commences its petroleum trade is reduced by the amount of any consideration in money or money's worth received on the disposal.

A disposal of an asset representing a development expenditure is similarly subject to a balancing charge calculated by reference to the proceeds received for the disposal.

Farm in and farm out

The legislation provides that changes in license interests at the pre-production stage that are approved by the minister for communications, energy and natural resources do not give rise to chargeable gains if their sole purpose is the furtherance of exploration, delineation or development of a licensed area (i.e., an area licensed under the 1975 or 1992 licensing terms or subsequent licensing terms).

The legislation operates by defining a "relevant period" in relation to a disposal as being a period beginning 12 months before and 3 years after the disposal. If the consideration received on a disposal is wholly and exclusively applied within the relevant period for the purposes of either or both petroleum exploration activities, and searching for and winning access to petroleum in a relevant field, the disposal is not treated as a disposal for the purposes of capital gains tax (CGT). Therefore, no chargeable gain (or allowable loss) can arise. On a subsequent disposal of an asset acquired, brought into being or enhanced in value by the application of the consideration received, the consideration is not deductible in calculating the gain on the subsequent disposal (i.e., it does not form part of the base cost).

The legislation also treats the exchange of license interests as not involving any disposal or acquisition. It treats the asset given and the asset received as the same asset acquired, in the same manner as the asset given was acquired.

For an exchange of license interests where one party receives consideration in addition to the license interest taken by that party, the exchange rule set out above does not apply to that party unless the additional consideration is applied in full in the same manner as set out above. In this way, the disposal of the portion of the license interest that is represented by the consideration received is treated as a partial disposal for which the disposal provisions set out above apply.

If a party to an exchange of license interests gives consideration in addition to the license interest, then the portion of the license interest received represented by the additional consideration is regarded as an asset that has a basis equal to the consideration given.

Selling shares in a company (consequences for resident and non-resident shareholders)

Irish tax legislation contains substantial shareholding exemption provisions. However, they do not apply where the shares being sold derive the greater part of their value from exploration or exploitation rights in a designated area. In the absence of being able to avail of the substantial shareholding exemption, a resident shareholder company is liable for CGT on the disposal of shares in a company that holds exploration or exploitation rights in a designated area.

A non-resident shareholder company is also liable for CGT on a disposal of shares in a company that holds exploration or exploitation rights in a designated area. This is because Irish domestic law deems a gain on a disposal of shares that derive their value or the greater part of their value directly or indirectly from exploration or exploitation rights in Irish designated waters to be a gain accruing on the disposal of assets situated in Ireland. This has the effect of bringing the gain into the charge to tax.

H. Indirect taxes**Import duties**

Duties apply to the importation of goods. If goods are imported directly to a rig that is located outside Irish territorial waters, there are no Irish customs duty issues.

However, if goods are brought to the rig via Ireland, then Irish customs duties issues arise (end-use authorizations). On the assumption that correct procedures are put in place, Irish customs duty should not be a cost.

Excise duties

A Community excise regime governs the production, processing and holding of excisable products under duty-suspension, within each Member State of the Community (including Ireland) as well all intra-Community movement of excisable products. The rates of excise duty on mineral oils on mineral oils in Ireland (known as Mineral Oil tax) vary depending on the type of oil.

Excise duty on direct imports into Ireland of most excisable products from outside the fiscal territory of the Community is payable at import unless the products are removed to a tax warehouse. In the case of excisable products dispatched to or received from other Member States, an intra-Community warehousing network allows duty-suspended movement of products to the premises of receipt with excise duty being subsequently paid on release in the Member State of destination. Excisable products on which duty has already been paid and that move to another member state are liable to excise duty in the member state of destination. In such cases the excise duty paid in the Member State of dispatch may be reclaimed.

Carbon tax

Carbon tax at a rate of €15 per tonne of carbon dioxide (CO₂) emitted was introduced in Ireland in 2009 and it currently applies to mineral oils. However, persons who receive, either from a tax warehouse or directly by importation, mineral oils that are exclusively for a use covered by their greenhouse emissions permit, can obtain oils free of the carbon charge.

VAT

VAT applies to the supply of goods and services, the importation of goods and intra-community acquisitions made in the territory of Ireland.

If a company is not established in Ireland and it undertakes activities outside the 12-nautical-mile limit from the shore of Ireland (and thus outside the EU), the supply of those activities is deemed to occur outside the jurisdiction. In these circumstances, the company is not entitled to register for Irish VAT. The supply of goods from Ireland to the offshore location is charged at a zero rate because they are effectively exports.

If goods or services supplied to an offshore company are liable to Irish VAT, then VAT reclaims may be made through the new electronic VAT refund procedure formally called the 8th Directive reclaim process (if the claimant company is established in the EU) or the EU 13th Directive reclaim process (if the claimant is established outside the EU). Alternatively, if an offshore company has an administrative office in Ireland that would constitute an establishment for VAT purposes, it should be allowed to register for VAT in Ireland in order to recover any Irish VAT incurred through its Irish VAT returns.

An offshore company that operates outside the Irish jurisdiction makes supplies that are outside the scope of Irish VAT and, accordingly, any invoices raised by the company are also outside the scope of Irish VAT.

Stamp duty

Stamp duty applies to certain documents that are executed in Ireland or relate to Irish property or relate to something done or to be done in Ireland. Stamp duty is chargeable under different heads with the most significant related to the conveyance or transfer of property on a sale. Stamp duty can represent a significant cost. The rate applicable to transfers of non-residential property for consideration in excess of €80,000 is 6%. The rate of stamp duty applicable to transfers of Irish registered shares is 1%. Stamp duty is payable by the purchaser.

As stamp duty is a tax on documents, if assets such as plant and machinery pass by delivery, and no document evidences the transfer then no stamp duty should arise.

Also full relief from stamp duty can apply to the transfer of property between companies that are 90% associated. The relief must be claimed.

An exemption from stamp duty is provided, for the sale, assignment or transfer of licenses and leases granted under the Petroleum and Other Minerals Development Act 1960. The exemption extends to the sale, assignment or transfer of any right or interest in any such license or lease.

I. Other

Rules for valuation of petroleum in certain circumstances

For accounting periods commencing on or after 1 January 2011, Irish transfer pricing regulations now apply. These regulations apply to intercompany trading transactions to impose the arm's length principle and documentation requirements.

Irish legislation provides rules for the valuation of petroleum disposed of other than by way of sale at arm's length or appropriated to use in activities that fall outside the ring fence (e.g., if the oil is appropriated by a production company for use in its own refinery).

Petroleum disposed of other than by way of sale at arm's length is treated as disposed of for a consideration equal to the market value at the time of disposal. Petroleum that is "relevantly appropriated" for use in activities outside the company's ring fence activities without being disposed of is treated, for the purposes of the ring fence activities and the activities to which it is appropriated, as having been sold and bought, respectively, for a price equal to its market value at the time it is appropriated.

The market value of petroleum at any time is the price that the petroleum could be expected to fetch in a sale on the open market at that time.

Employee taxation

Income tax

Irish tax legislation brings into charge income arising from the exercise of employment in Ireland, whether or not an individual is tax resident in Ireland. This charge extends to both income tax and the universal social charge (USC). The legislation provides that duties performed in a designated area in connection with exploration or exploitation activities are treated as performed in Ireland. Income tax and the USC, therefore, arise on an individual under domestic legislation that may be mitigated or exempted under a relevant double tax treaty.

While not provided for in the legislation, the tax authorities generally ignore a charge if an individual spends less than 30 working days in Ireland (which, for this purpose, includes the Irish Continental Shelf) in a fiscal (calendar) year. There will, therefore, not be any income tax, USC liability or withholding requirement if the individual spends less than 30 working days in Ireland. See the discussion below, however, regarding the social insurance liability (PRSI).

Effective from 1 January 2006, an obligation arises on a foreign employer to withhold income tax, PRSI (where applicable) and the USC under the Pay As You Earn (PAYE) system from individuals that exercise duties in Ireland, regardless of whether those individuals ultimately have a tax liability in Ireland. If the employer is a non-resident and does not comply with this obligation, the entity benefiting from the services in Ireland may be held liable. However, two exemptions from the requirement for the employer to operate Irish PAYE exist.

The first exemption states that PAYE withholding will not be required if:

1. The individual is resident in a country with which Ireland has a double taxation agreement and is not resident in Ireland for tax purposes for the relevant tax year
2. There is a genuine foreign office or employment
3. The individual is not paid by, or on behalf of, an employer resident in Ireland
4. The cost of the office or employment is not borne, directly or indirectly, by the foreign employer for a permanent establishment in Ireland
5. The duties of that office or employment are performed in the state for not more than 60 total working days in a year of assessment and, in any event, for a continuous period of not more than 60 working days

The second exemption states that, effective from 1 January 2007, condition 5 above may be extended to 183 days, but only if conditions 1 through 4 above are satisfied, in addition to a number of other conditions imposed on the employees and foreign employers.

Social insurance

Pay-related social insurance (PRSI) is payable in respect of every individual that exercises duties of employment in Ireland, regardless of the duration. Various classes of contribution apply, depending on the nature of the employment and the level of the emoluments. The most common class is A1 and this imposes a charge of 10.75% on the gross earnings (including benefits) of the employer and 4% on the employee. The first €127 per week is exempt from the employee contribution. There is no ceiling on the earnings liable to the employer or employee contributions.

A charge to PRSI can be avoided only if the employer provides an appropriate authorization from the employee's home country to remain within the home country's social insurance regime. The authorization may be either an E101/A1 form (for EU countries, Iceland, Liechtenstein, Switzerland and Norway) or a Certificate of Coverage (for Australia, Canada (including Quebec), New Zealand, the United States, Japan and South Korea).

In respect to the countries not covered by the E10/A1 or Certificate of Coverage provisions, there may be an entitlement to an exemption from PRSI for the first 52 weeks of a posting in Ireland. Advice should be sought on the specific conditions applicable to this exemption.

**Appendix 5: Illustrative worked example of sample tax calculations
(devised in 2007)**

IRELAND: 2007 Offshore Fiscal Terms
Sample Calculations
(For Illustrative Purposes)

80 million barrel offshore oil field in shallow water (<200m)
Fixed platform with offshore loading to tankers
Oil price = \$60/bbl

(1) Year	(2) Production Rate mbbl/d	(3) Total Revenue \$ million	(4) *Explor & Capital \$ million	(5) Operating Costs \$ million	(6) *Taxable Profit \$ million	(7) Corporation Tax @ 25% \$ million	(8) *Cumul Field Profit \$ million	(9) Cumul Field Expenditure \$ million	(10) Profit Ratio	(11) PRRT %	(12) PRRT \$ million	(13) Total Tax \$ million	(14) Net Cash Flow \$ million
2008			11.7		-11.700		11.700	-1.000	0	0		-11.700	
2009			25.3		-37.000		37.000	-1.000	0	0		-25.300	
2010			144.6		-181.600		181.600	-1.000	0	0		-144.600	
2011			301.9		-483.500		483.500	-1.000	0	0		-301.900	
2012	18.0	394.200	69.4	24.5	-183.200		552.900	-0.331	0	0		300.300	
2013	28.0	613.200		32.7	297.975	99.325	552.900	0.539	0	0	99.325	481.175	
2014	31.5	689.850		35.6	654.250	163.563	552.900	1.247	0	0	163.563	490.688	
2015	31.5	689.850		35.6	654.250	163.563	552.900	1.659	5	85.290	248.853	405.398	
2016	27.6	604.440		32.4	572.040	143.010	552.900	2.435	5	28.602	171.612	400.428	
2017	21.1	462.090		27.0	435.090	108.773	552.900	3.025	10	43.509	152.282	282.809	
2018	16.1	352.590		22.9	329.690	82.423	552.900	3.472	10	32.969	115.392	214.299	
2019	13.9	304.410		21.1	283.310	70.828	552.900	3.856	10	28.331	99.159	184.152	
2020	11.5	251.850		19.1	232.750	58.188	552.900	4.172	10	23.275	81.463	151.288	
2021	7.8	170.820		16.1	154.720	38.680	552.900	4.382	10	15.472	54.152	100.568	
2022	5.3	116.070		14.0	102.070	25.518	552.900	4.521	15	15.311	40.828	61.242	
2023	4.2	91.980		13.1	78.880	19.720	552.900	4.628	15	11.832	31.552	47.328	
2024	2.7	59.130	46.1	11.9	1.130	0.283	599.000	4.273	10	0.113	0.396	0.735	
		4800.480	599.0	306.0	3895.480	973.870					284.704	1258.574	2636.907

- (5) Taxable Profit = (2) - (3) - (4)
- (6) Corporation Tax = (5) * 25%
- (7) Cumulative Field Profit = Sum to date of (2) - (3) - (4) - (6)
- (8) Cumulative Field Expenditure = Sum to Date of (3)
- (9) Profit Ratio = (7) / (8)
- (10) Profit Resource Rent Tax Rate: if (9) < 1.5 then 0; if 1.5 ≤ (9) < 3.0 then 5%; if 3.0 ≤ (9) < 4.5 then 10%; if (9) ≥ 4.5 then 15%
- (11) Profit Resource Rent Tax = (5) * (10)
- (12) Total Tax = (6) + (11)
- (13) Net Cash Flow = (2) - (3) - (4) - (12)

*Exploration costs for other fields and licences are an allowable deduction for Corporation Tax but not for Profit Resource Rent Tax.
Note: Determination of tax payable is a matter for the Irish Revenue Commissioners.



Nótaí / Notes

Nótaí / Notes

