



L&RS Note

Cost estimate: Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018 (PMB)

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Abstract

This *Note* aims to provide an indicative cost estimate of the proposal contained within the [Petroleum and Other Minerals Development \(Amendment\) \(Climate Emergency Measures\) Bill 2018](#). This Private Members' Bill seeks to effectively prohibit the Minister for Communications, Climate Action and Environment from approving the issuance of petroleum exploration licences (or undertakings or leases) once the monthly mean average of carbon dioxide in the atmosphere exceeds 350 parts per million.

This *Note* is intended only to aid debate on the proposal contained within this Bill. The assumptions and calculations underlying the estimates and the analysis contained within were prepared by the L&RS using secondary sources.

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Summary

- This *Note* provides an indicative exchequer cost estimate for a proposal included in the [Petroleum and Other Minerals Development \(Amendment\) \(Climate Emergency Measures\) Bill 2018](#). This Private Members' Bill (PMB) was introduced in Dáil Éireann by Deputies Bríd Smith, Richard Boyd Barrett, Gino Kenny, Paul Murphy, Ruth Coppinger, and Mick Barry of the Solidarity–People Before Profit (PBP) alliance on 30 January 2018;
- The cost estimate detailed in this *Note* relates to the proposal to effectively prohibit the issuance / granting by the Minister for Communications, Climate Action and Environment under the [Petroleum and Other Minerals Development Act 1960](#) of oil and gas exploration licences in Ireland. If enacted, Ireland would become the fifth country to either propose or implement such a ban. Specifically, the Bill proposes that no application for a licence (or undertaking or lease) be approved for the purpose of petroleum exploration once the monthly mean average of carbon dioxide in the atmosphere exceeds 350 parts per million¹;
- The Bill is currently undergoing detailed scrutiny by the Joint Committee on Communications, Climate Action and Environment under Standing Order 141 of Dáil Éireann. A detailed scrutiny report is expected to be published by the Committee before the Christmas 2018 recess;
- Under the existing guidelines for detailed scrutiny of PMBs by Committees, the scrutiny of each Bill may involve a financial assessment whereby the financial implications of each Bill and enforcement / compliance costs are identified. These implications / costs are also included in the Explanatory Memorandum provided by the sponsor(s) to aid debate on the Bill;
- While exact, direct exchequer costs are difficult to quantify and are sensitive to a number of factors, this *Note* includes a range of estimates compiled using a proportionate calculation based on publicly available data relevant to Ireland and comparable proposals in other countries². The estimates also incorporate the L&RS's own calculations; in this context, the direct exchequer cost estimate is between **€8m and €50m**;
- If this Bill is enacted, financial savings may also be made such as increased use of renewable indigenous sources of fuel and reduced health care costs associated with better air quality. However, potential savings have not been costed in this *L&RS Note*;
- This *Note* is intended only to aid debate on the proposal contained within this Bill, and closely related proposals which are currently under discussion. The assumptions and calculations underlying the estimates and the analysis contained within were prepared by the L&RS using secondary sources;
- A summary of Irish oil and gas policy is provided in Appendix 2 of this *Note*.

¹ Section 1 of the Bill provides that the Minister must not grant a licence or a lease or give an undertaking when the monthly mean level of atmospheric carbon dioxide (CO₂) measured at Mauna Loa Observatory exceeds 350.12 parts per million (ppm). In May 2018, the monthly mean average was 411.25 ppm. It is currently considered unlikely that this level will be reached any time soon based on the world's current trajectory and continued rise in emissions, as published by the [National Oceanic and Atmospheric Administration \(NOAA\)](#).

² The announced / proposed ban in New Zealand, in particular.

Note on L&RS cost estimates

The following analysis is intended to be indicative and non-exhaustive. It may also aid the development of future policy options closely related to the proposal included in this Bill. Any cost estimate(s) identified and detailed in this *Note* refer to *potential* direct exchequer (State) costs / revenue associated with implementing the proposal(s) either contained within the Bill, or referred to by the Bill sponsor in the Explanatory Memorandum which accompanied the Bill. No alternative proposals have been suggested.

However, all policy proposals also incur indirect costs, which may be substantial, though the nature and magnitude of such impacts cannot be predicted or costed with absolute certainty without further detail, including costs to third parties, industry (staff and compliance costs) and the ultimate cost to consumers. This *Note* uses a case study-focused, evidence-based approach to provide an indicative cost of each proposal based on a detailed examination of available statistics and comparative information using secondary sources. A general summary of the potential economic implications of the proposal(s) contained within this Bill is supplied in Appendix 1. Appendix 2 provides a summary of Irish oil and gas policy to date including recent developments. Appendix 3 details the authorised company fees, as supplied by the Petroleum Affairs Division (PAD) of the Department of Communications, Climate Action and Environment.

Analysis (summary)

In terms of implications on exchequer revenue and economy-wide impacts, the effective ban of all further exploration of oil and gas in Ireland may:

- Reduce potential exchequer revenue arising from future exploration / discoveries and income tax receipts;
- Impact disproportionately on certain regional economies and local employment;
- Impact on companies currently active in the industry or likely to be involved in the future; and/or
- Potentially increase Ireland's energy / fuel bill (by increasing imports of natural gas);

The following is a summary of the cost estimates detailed in this *Note*:

Table 1: Summary of L&RS cost estimate – proposal to effectively ban oil and gas exploration in Ireland (approximations) based on 2016 data

Cost type	Costs	Estimate (full year)
Exchequer cost	A. Exchequer revenue foregone / impact	€8m-€50m
Economy-wide costs	B. Impact on Gross Value Added (GVA) / employment	Up to €984m
	C. Impact on future investment and company turnover	Up to €250m
	D. Import substitution costs	€475m-€530m
Total	A-D	€1.7bn-€1.8bn

The above Table summarises two categories of cost – the direct impact on the exchequer (A) and the wider economy-wide cost (B-D). Cost (A) reflects both the impact on exploration authorisation income, production authorisation income and impact on corporation tax receipts (including those companies currently extracting natural gas which are liable to pay the higher 25% rate).

The economy-wide costs reflect a broader view of the wider direct, indirect and induced impacts of the oil and gas industry on the Irish economy in terms of Gross Value Added (GVA), the industry as a whole and, ultimately, on import costs.

Much of the above costs (A) – (D) are non-exhaustive and refer to an estimated cost in a single year only. Certain figures are indicative maximum figures (assuming that industry (i.e. natural gas) production ultimately reduces to zero. The Bill, however, does not propose to remove licences from existing holders though many prospecting and exploration licences may be rendered worthless as a petroleum lease will not be granted). However, such a ban would also have a number of benefits including promotion of energy self-sufficiency and renewable fuels, and the positive impact on human health of a reduced level of fossil fuel use in Ireland's energy supply. The benefits and savings have not been costed in this *L&RS Note*.

Analysis (detailed)

Proposal: An effective ban on oil and gas (‘fossil fuel’) exploration licences

There is limited precedence for an outright / effective ban on all oil and gas exploration. To date, four countries have implemented or proposed some variant of a ban (Belize and Costa Rica in Central America, France in Western Europe, and New Zealand in Australasia). The largest country (by population) to legislate for a ban is France, an EU Member State. Some comparative statistics are provided below:

Table 2: An overview of countries which have proposed or implemented bans

Country	Region	Population	Ban announced
Belize ³	Central America	0.348m	Jan 2018
Costa Rica ⁴	Central America	4.9m	May 2018
France	Western Europe / EU	67.1m	Dec 2017
New Zealand	Australasia	4.79m	Apr 2018
Ireland	Western Europe / EU	4.8m	n/a

Table 3 provides an overview of the level of natural gas and crude oil production in those countries listed above.

Table 3: Annual natural gas and crude oil production for countries which has proposed or implemented a ban / limitation on petroleum exploration licences – primary production of energy by resource

Country	Natural gas production (1,000 tonnes of oil equivalent - ToE)	Crude Oil production (tonnes)
Belize	0	102,200
Costa Rica	0	0
France	130,575.6	8,248,000
New Zealand	4.514.2	1,584,100
Ireland	4.201.4	0

Source: All figures 2016 except New Zealand (2017 figures). Ireland and France (Eurostat, [Primary production of energy by resource](#), 2016 figures). New Zealand (MBIE, [Regulatory Impact Statement](#), 2017), Belize and Costa Rica (CIA World Factbook). Conversions used [iea.org](#).

As illustrated by Table 3 above, crude oil and natural gas production in Ireland is different to the other countries in that Ireland only produces natural gas. Therefore, it is not appropriate to make any assumptions or direct comparisons between any of the identified countries and Ireland due to:

- The lack of directly comparable data;
- The small number of sample countries; and
- The different size and resource focus of each respective oil and gas production / exploration industry.

However, from a review of the bans in the above countries, it is possible to identify a number of proposed indicative benefits and costs upon which an illustrative, non-exhaustive analysis of

³ World Bank data.

⁴ Costa Rica, France and New Zealand figures are OECD data.

financial / fiscal implications for the exchequer can be provided. The following section will explore the following costs identified in Table 4 below. It is not within the scope of this *Note* to explore the benefits, or provide a cost estimate for these.

Table 4: Indicative benefits and costs associated with the proposal

Benefits	Costs
<ul style="list-style-type: none"> ▪ Encourages a greater focus on renewables / self sufficient energy to offset imports (Green tech) ▪ Human impact (positive impact on public health) ▪ Improves the environment / standing of living; ▪ Promotes tourism; ▪ Profits shift from private interests; ▪ Keeps money in the country through increased use of indigenous renewable fuels; 	<ul style="list-style-type: none"> ▪ Exchequer revenue foregone; ▪ Impact on employment and Gross Value Added (GVA); ▪ Impact on oil / gas companies and company turnover; ▪ Import (substitution) costs;

A. Exchequer revenue foregone

Exchequer revenue from oil and gas exploration accrues only from natural gas as no commercial oil production has been achieved in Ireland to date.⁵ Revenue is provided by four commercial gas fields - Kinsale (discovered in 1971)⁶, Ballycotton (1989), Seven Heads (1973) and Corrib (1996) and is received in the form of:

- Acreage rental fees;
- Application fees;
- Royalty payments (with the exception of the Seven Heads gas field);
- Corporation tax; and
- Income tax.

Revenue is generated for the exchequer from fees paid by companies at both the exploration and production phases. In all, three petroleum leases cover the four fields. However, it is important to note that exchequer revenue can and does fluctuate significantly year-on-year due to a number of factors, including field production levels, recoverability levels, price of natural gas, etc. Profits from the Kinsale, Ballycotton, Seven Heads and Corrib gas fields are subject to a Corporation Tax rate of 25%. However, the exact corporation tax receipts for all active gas fields are not publicly available due to commercial sensitivities. Instead, the Office of the Revenue Commissioners publishes the broad figure⁷ for 'Mining & Utilities' which includes this data. Table 5.1 provides a breakdown of all exchequer revenue for the industry since 2010.

⁵ NUI Galway / Whitaker Institute (2017) [Ireland's Ocean Economy](#), June 2017, p 36.

⁶ It has been reported that Kinsale gas field reserves are expected to be depleted by 2020-2021. See: Cork Independent (2018) '[Kinsale gas fields to be decommissioned](#)', 16 April 2018.

⁷ Not all corporation tax revenue recorded under the 'Mining & Utilities' classification used by Revenue is attributable to oil and gas exploration. The exact breakdown is not provided due to the comparatively small size of the industry.

Table 5.1: Revenue from granting of licences, grants and undertakings for the exploration and extraction of crude petroleum, 2010-2017

Year	Acreage Rental Fees	Application Fees	Royalties	Corporation Tax ⁸	Total
2010	€1,407,812	€10,700	€2,571,624	n/a	n/a
2011	€2,420,485	€97,284	€3,904,321	€73,850,000	€80,272,090
2012	€2,476,499	€66,880	€3,955,353	€39,960,000	€46,458,732
2013	€1,805,709	€1,890,902	€4,593,123	€76,010,000	€84,299,734
2014	€2,568,065	€34,960	€1,997,749	€108,430,000	€113,030,774
2015	€2,992,211	€121,042	€1,587,755	€102,090,000	€106,791,008
2016	€1,942,775	€39,520	€279,686	€40,370,000	€42,631,981
2017	€2,443,439	€159,624	€682,153	€45,030,000	€48,315,216
Total	€18,056,995	€2,420,912	€19,571,764	€485,740,000	€525,789,671

Source: Oireachtas (2018) [Petroleum and Gas Exploration](#), Dáil Éireann debate, 19 June 2018. Corporation Tax receipts are provided by the Office of the Revenue Commissioners. However, net Corporation Tax receipts from the commercial gas fields alone cannot be provided due to the low number of companies involved in the sector and Revenue's confidentiality obligations. The fees payable for companies holding authorisations for exploration are detailed in Appendix 3 of this Note.

Depending on the overall level of a field's profitability, a company may also be liable for Petroleum Production Tax (PPT) in addition to the existing corporation tax rate of 25%. PPT payments are deductible for the purposes of calculating the amount of corporation tax due. However, PPT applies to revenues from discoveries under petroleum authorisations granted on or after 18 June 2014. As no new discoveries have been made, there has been no PPT paid to date.⁹

However, as proposed, the Bill will only impact on future licences (or leases, or undertakings), not existing ones. As such, income from the producing gas fields may be excluded. The following are figures provided by the Department:

Table 5.2: Revenue from granting of licences, grants and undertakings for the exploration and extraction of crude petroleum, 2010-2017 (excluding producing gas fields)

Year	Acreage Rental and Application Fees
2010	€1,223,370
2011	€1,574,632
2012	€1,630,646
2013	€1,073,271
2014	€1,644,825
2015	€1,413,920
2016	€1,815,546
2017	€2,248,760
2018 (to end-August)	€1,304,118
Total	€13,929,088

Source: Memo to L&RS by the Petroleum Affairs Division (PAD) of the Department of Communications, Climate Action and Environment on 25 October 2018.

Since 2010, an average of **€1.58m** has been earned for the exchequer from the above fees.

Forecasting Corporation Tax receipts (in general and for this industry) is a speculative exercise but trends may be informative.

⁸ This refers to the total revenue from (net) Corporation Tax receipts from the commercial gas fields and from other companies active in the 'Mining and Quarrying' trade sector as recorded by the Revenue Commissioners. The exact breakdown of receipts from the commercial gas fields is not available.

⁹ Confirmed by the Office of the Revenue Commissioners in correspondence with the L&RS (24 October 2018).

In addition (see later section), 265 people (full-time equivalents – FTEs) are directly employed by the industry, yielding an income tax take of approximately **€6.63m**¹⁰ yielding a total exchequer receipts (in a single year) of **€8.21m**.

Although the Bill recognises that existing gas supplies must be maintained and does not seek to reduce existing supplies or affect current exploration licences, it is possible that were the Bill to be enacted as drafted, an existing licence holder may not be given a lease when the CO₂ measure is over 350 ppm.¹¹ This would, in effect, render existing prospecting and exploration licences worthless as a petroleum lease will not be granted until these levels are achieved. This is why both Tables 5.1 and 5.2 are provided. The 2017 exchequer receipts for all fields are less than **€48.3m** (which includes corporation tax receipts from non-industry sources) + **€6.63m** (employment) = **€54.93m**.

In terms of future revenue prospects for the industry, it is important to note that revenue generated for the exchequer in 2016 and 2017 was low – most likely due to low crude oil prices combined with high operating costs incurred by exploration and extraction companies. The price of crude oil has fluctuated significantly over the past 10 years but forecasts suggest stabilisation is likely over the period 2018-2023. However, fluctuation remains possible making accurate forecast difficult.

Chart 1: Oil price – history and assumptions



Source: OBR (2018) [Economic and Fiscal Outlook](#), March 2018.

The price of natural gas is, like all fuels, determined by demand and supply. However, a high fuel price incentivises switching (where possible) to more economical alternatives, particularly for

¹⁰ PwC forecasts that a single gas field could yield 320-380 jobs per annum, yielding the exchequer €8m in income tax receipts. Using the same methodology, 265 direct jobs (per annum) would yield €6.625m. PwC (2018) Value of the Indigenous Oil and Gas Industry – Interim Findings, October 2018. This report was provided by the Department to the L&RS. The formal report will be launched in the coming weeks.

¹¹ This was detailed in the Government's response to the Bill provided by the Minister of State for Rural Affairs and Natural Resources during [Second Stage debate](#) on 7 February 2018.

power generation, manufacturing, etc.¹² The stabilisation of the oil price is expected to fuel further commercial exploration in the petroleum industry as optimism rebounds following a period of volatility. Any change to Government support or heightened restrictions in the regulatory / planning regime would likely negate this recovery. However, looking back over the past 10 years, stakeholders generally view the lack of commercial discoveries and more attractive opportunities in other countries as greater challenges for the industry in Ireland.¹³ According to a recent PwC survey, active companies are less optimistic about increasing their turnover compared to their belief that the industry will improve its performance relative to recent years.

As with the likelihood of new discoveries and successful, cost effective recoveries, predicting the level of corporation tax receipts is a purely speculative exercise. However, by way of comparison, the UK has estimated that corporation tax receipts from oil and gas production are expected to decline year-on-year while total corporation tax receipts are forecast to remain stable. This is consistent with the fact that oil and gas production from the North Sea province is in long-term decline.¹⁴ The UK, a far bigger and more typical market than in Ireland, has a number of active commercial oil fields while Ireland does not, though the trend is important to note.

Table 6: UK Corporation tax receipts (oil and gas production, total and proportional)

Period	CT receipts (oil and gas production) ¹⁵	Total CT receipts ¹⁶	Proportion of total CT receipts from oil and gas production
2013-2014	£3.6bn	£40.3bn	8.82%
2014-2015	£2,03bn	£43bn	4.71%
2015-2016	£0.56bn	£44.4bn	1.26%
2016-2017	£0.3bn	£49.6bn	0.61%
2017-2018	£1.76bn	£54.6bn	3.22%
2018-2019f	£0.5bn	£56.9bn	0.88%
2019-2020f	£0.4bn	£56bn	0.71%
2020-2021f	£0.3bn	£57bn	0.53%

Net Irish corporation tax receipts in 2017 were €8.201bn¹⁷ compared to corporation tax classified as revenue from ‘Mining & Utilities’ companies of €45.03m, or 0.55% of total receipts.

B. Impact on Gross Value Added (GVA) and employment

All oil and gas industries, as with all commercial industries, generate employment and contribute to the national economy (through taxation receipts) and regional economies (through supporting local employment, retail, etc). The following is an analysis of these components.

¹² US Energy Information Administration (EIA) website – [Frequently Asked Questions about Natural Gas](#).

¹³ PwC (2017) [Oil and gas survey report – 2017](#), June 2017, p. 12.

¹⁴ Irish Offshore Operators’ Association (2016) ‘[BrExit: Potential impact on Irish Oil & Gas industry](#)’, October 2016, .p.2.

¹⁵ HM Revenue and Customs (2018) [Statistics of Government Revenues from UK Oil and Gas Production](#), June 2018.

¹⁶ OBR (2018) [Economic and Fiscal Outlook](#), March 2018, pages 114-115.

¹⁷ Department of Finance (2018) [Annual Taxation Report](#), January 2018, p. 7.

Gross Value Added (GVA)

Determining the contribution of the industry to the economy is difficult as statistics are generally aggregated with the minerals sector data. However, a recent study identified that the industry in Ireland is comparatively very small with a total economic value (Gross Value Added - GVA) of €109.7m (2016). However, that GVA is concentrated in the coastal regions of counties Donegal, Mayo, Cork, Kerry, and Galway, as well as the Southeast region in general. Industry stakeholders have also noted that investment in exploration and petroleum discovery significantly (and disproportionately) benefits ports in the west of Ireland, particularly Shannon Foynes, Port of Cork and Killybegs.¹⁸ The value in output and GVA is estimated as follows:

Table 7: Total economic value / GVA of natural gas – Ireland, 2016

Natural gas sector	Output	GVA
Direct impacts	€558.5m	€181.5m
Indirect and induced impacts	€452.6m	€230.4m
Economy-wide impacts	€984.1m	€411.9m

Indecon (2017) [Economic Review of the Irish Geoscience Sector](#), November 2017, p.50

Employment

The industry comprised 265 FTEs in 2016, a sharp increase of 175, or 212% compared to 2014 due to the Corrib gas pipeline entering operation. Prior to this (2008-2016) the average employment level was less than 100 FTEs.

Table 8: Total (direct) employment – Ireland, 2012-2016

Employment (Full time equivalents - FTEs)	2012	2014	2016 ¹⁹
Direct	85	90	265
Indirect / induced	-	-	306
Total	-	-	571

Source: NUI Galway / Whitaker Institute (2017) [Ireland's Ocean Economy](#), June 2017, p 36, and Indecon (2017) [Economic Review of the Irish Geoscience Sector](#), November 2017, p.50

The above figures include:

- **Direct employment** by companies involved in exploration / extraction and supply chain companies who directly support this activity);
- **Indirect employment** across the supply chain which also exports goods and services overseas; and
- **Induced employment** created by the industry's spending in the wider economy, such as in hotels, catering, ports, etc.

Exploration also incurs construction costs. The Corrib gas field, for example, is reported to have sustained more than 1,250 FTEs during the construction phase over 10 years (2006-2015).²⁰

¹⁸ PwC (2017) [Oil and gas survey report – 2017](#), June 2017, p. 25.

¹⁹ The report by NUIG notes the significant change between 2014 and 2016 is attributable to the Corrib gas pipeline coming into operation in December 2015. The gas field is expected to have a lifespan of between 15-20 years (ending in 2030-2035). It is unclear whether this €300m is reflected in the GVA figures.

Further evidence suggests that a single find could generate a significant level of employment during both construction and operation, between 320-800 per annum (for gas) or 600-1,200 (for oil).²¹

C. Impact on future investment and company turnover

According to a PwC report, aggregate expenditure on exploration activities by the industry in Ireland is expected to be €500m over the period 2018-2019, or approximately **€250m** per year, compared to a spend of €300m for 2016²².

Any change in the regulatory regime will directly impact those companies active in the industry that invest in exploration (in terms of capital expenditure) and discovery (in terms of operating their assets for extraction). These companies also form part of a global supply chain which supports Irish trade. According to the Department of Communications, Climate Action and Environment, the following authorisations are currently held by companies active in the Irish offshore:

- 3 Petroleum Leases;
- 2 Lease Undertakings;
- 15 Petroleum Prospecting Licenses;
- 36 Exploration Licences; and
- 20 Licencing options.

With the exception of the three petroleum leases already granted (covering the four gas fields), companies who have already been granted authorisations by the Minister under the *Act of 1960* will not be able to progress them any further.²³

“The companies who have been granted these authorisations have put considerable resources into meeting the obligations contained in the work programmes associated with them. Progression from Licensing Option to Exploration Licence and between the individual phases of an Exploration Licence, is dependent upon fulfilment by the authorisation holder of work programme obligations. Work Programme Commitments can vary from purchasing existing data or acquiring new seismic data to drilling an exploration well.”²⁴

Historical turnover for the industry is as follows:

Table 9: Total turnover– Ireland, 2008-2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Turnover (€m)	€346.1	€279.4	€212.6	€205.1	€229.9	€215.7	€199.6	€186.1	€597.3

Source: NUI Galway / Whitaker Institute (2017) [Ireland's Ocean Economy](#), June 2017, p 13.

²⁰ Goodbody (2012) [Economic Benefits of the Corrib Gas Project](#), February 2012, p.6.

²¹ PwC (2018) Value of the Indigenous Oil and Gas Industry – Interim Findings, October 2018. This report was provided by the Department to the L&RS. The formal report will be launched in the coming weeks.

²² PwC (2017) [Oil and gas survey report – 2017](#), June 2017, p. 3.

²³ According to a Memo provided to the L&RS by the Petroleum Affairs Division of the Department of Communications, Climate Action and Environment.

D. Import costs

The Corrib and Kinsale gas fields alone account for approximately 50%-55% of domestic gas demand in 2017/18, meaning 45%-50% of Ireland's natural gas requirement is imported. This is marked change from 2014, before the Corrib gas field came into operation, when 96% of natural gas used in Ireland was imported.²⁴ However, production of the Corrib field is expected to decline.²⁵ Ireland currently does not export any of its gas production, and imports the balance of its requirement from Britain via the interconnectors in the Irish Sea. Therefore, based on Ireland's current energy supply, unless more gas is discovered within the Irish offshore and dependant on other factors including oil prices, global fuel supply and political developments (including BrExit), it is likely that Ireland will remain largely dependent on imported natural gas to meet domestic demand.

Appendix 2 of this *Note* refers to Ireland's potential for petroleum exploration, and states the following:

“According to the then Department of Communications, Energy and Natural Resources there are substantial untapped petroleum reserves off the coast of Ireland with Atlantic waters offshore Ireland 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.”

However, the same report also notes that:

“Despite a fiscal system which favours industry, successful exploration off Ireland's shores has been among the lowest in the world — 158 wells (130 exploration wells and 28 appraisal wells) drilled between 1970 and 2013 and only four commercial natural gas discoveries. This is due to a number of reasons including, the inhospitable nature of the Irish Atlantic Margin and the associated costs and risks and the fact that the estimated presence of oil and gas is ‘yet-to-find’ and not based on proven reserves.”

In 2016, natural gas was the single largest input source of fuel for electricity generation in Ireland (48%) followed by wind (22.3%).²⁶ The share of renewables fell to 15.6% from 16.7%.

It is possible (though not inevitable) that Ireland's energy import dependency will increase post-Corrib, regardless of the introduction of a ban, unless more natural gas fields are discovered as the move towards decarbonisation and increase of renewable energy may negate this. It is also possible that Ireland will incur greater import costs for natural gas regardless of the introduction of a ban. The cost of Ireland's total energy imports has fallen from €5.7bn²⁷ (2014) to €4.6bn (2015) to €3.4bn (2016) from a number of factors, including the level of import substitution arising from the coming on stream of the Corrib gas field, and lower global oil prices. Through it is not possible to isolate the impact of each factor, the composition of the €3.4bn may be analysed:

²⁴ Confirmed by the Minister of State at the Department of Communications, Climate Action and Environment in his response to a Parliamentary Question - ‘[Corrib Gas Field](#)’, 27 June 2017.

²⁵ According to the Department of Communications, Climate Action and Environment [website](#) [Accessed 30 October 2018].

²⁶ SEAI (2017) [Energy in Ireland 1990-2016](#), December 2017, p.21.

²⁷ *Ibid.*

Table 10: Ireland – fuel imports (1990-2016)

% of total							'000 tonnes of oil equivalent
Year	Coal products	Crude oil	Other oil products	Natural gas	Renewables	Electricity	Total
1990-1994	27%	29%	44%	0%	0%	0%	6,926
1995-1999	19%	28%	44%	9%	0%	0%	9,706
2000-2004	13%	24%	41%	22%	0%	0%	13,422
2005-2009	11%	22%	40%	26%	0%	1%	14,523
2010	7%	23%	35%	34%	1%	0%	13,276
2011	11%	24%	33%	31%	1%	0%	12,708
2012	11%	26%	30%	33%	1%	0%	11,784
2013	12%	24%	31%	30%	1%	2%	12,316
2014	10%	24%	32%	31%	1%	2%	11,615
2015	12%	30%	29%	29%	1%	0%	12,602
2016	11%	32%	40%	17%	1%	-1%	10,289

Source: CSO (2018) [Environmental Indicators Ireland 2018](#)

The cost of importing natural gas into Ireland therefore amounted to approximately **€1.7bn** in 2014 (31% of the total energy import cost of €5.7bn) and **€580m** in 2016 (17% of €3.4bn) based on an L&RS estimate.

Without further exploration and discovery, Ireland's import dependency is likely to rise from its current level of 69%²⁸ (2016) and this will incur additional costs to the exchequer if the fuel mix remains the same, though the exact cost is not possible to fully identify. This is due to a number of factors including the forecasts of future domestic supplies, future changes to the price of natural gas (or alternative fuels), possible change to the energy / fuel mix and the declining level of domestic production of natural gas (with or without a ban being imposed). Future supplies at the Corrib gas field are expected to decline but the full impact of this on the fuel mix is not known. Indicatively, therefore, all things remaining equal, banning future oil and gas exploration may return Ireland to a pre-Corrib level of import dependency for natural gas.

Assuming Ireland imported 96% of natural gas in 2016, this would have added approximately **€475m-€530m²⁹** to the energy / fuel import bill in 2016.

While this *L&RS Note* does not analyse potential savings from the proposed ban, it should be noted that as Ireland, the rest of Europe and the world move towards the global common goal of decarbonisation, with greater use of renewable energy including wind, solar and biogases as well as the electrification of heat and transport, Ireland should be aiming to reduce dependence on imported fossil fuels. Cutting the amount of fossil fuels in Ireland's energy mix moving forward will also reduce Ireland's exposure to EU fines for not reaching greenhouse gas emissions targets into the future.

²⁸ *Ibid*

²⁹ Based on Ireland importing 45%-50% of natural gas supplies to satisfy domestic demand in 2016.

Appendix 1: Policy implication of the Bill (Economic)

Table 10: Economic impacts of a ban on oil and gas exploration

Stakeholder	Detail
Exchequer / Government / Department	<p>Costs</p> <ul style="list-style-type: none"> • Importing fossil fuels is more expensive than utilising indigenous resources; • Greater Government funding of renewables, energy efficiency etc. may be required; • Loss of revenue (taxes and royalties) associated with any new commercial discoveries of oil/gas; and • Loss of jobs associated with any new discoveries of oil/gas. <p>Benefits</p> <ul style="list-style-type: none"> • Fossil fuels are heavily subsidised across the world including in Ireland. Much of this money would be saved if petroleum exploration and peat extraction ceased here; • No longer need to support that section of the Department, reduce / eliminate administrative, licensing and regulatory costs and research costs (if research is just related to where to find oil and gas); and • Ireland's destination as a fossil free country may encourage environmental tourism, this could be developed and promoted – sustainable living etc. • Savings to the health care system as a result of improved air quality and subsequent lower rate of respiratory illnesses.
Oil and gas companies	<p>Cost</p> <ul style="list-style-type: none"> • Loss of future business; • Likely lead to withdrawal from Ireland; and • No incentive to remain active in Ireland. <p>Benefits</p> <ul style="list-style-type: none"> • Incentivises companies to diversify / focus elsewhere.
Consumers	<p>Costs</p> <ul style="list-style-type: none"> • <i>May</i> increase household expenditure on energy bills depending on future subsidies attached to renewable power generation / increasing import dependency;; • If more renewables and less flexible back-up energy generation in the form of fossil fuels on the national grid, this <i>may</i> lead to power cuts; and • <i>May</i> impact on businesses if leads to loss of reliable source of energy. <p>Benefits</p> <ul style="list-style-type: none"> • Health benefits from a cleaner environment (reduced air pollution); • Positive behavioural change; and • Intrinsic benefits from promoting a sustainable environment.

Appendix 2: Irish oil and gas policy

Irish oil and gas (petroleum) exploration and regulation is governed by the *Petroleum and Other Minerals Development Act 1960*. Since the 1970's, natural gas has been found at a number of locations offshore Ireland. To date there are no commercial oil finds offshore Ireland. There is no onshore oil or gas exploration or production in Ireland. Fracking is banned in Ireland since 2017.

Background

There have been four commercial natural gas discoveries since exploration began offshore Ireland in the early 1970s; namely the Kinsale Head, Ballycotton and Seven Heads producing gas fields off the coast of Cork and the Corrib gas field off the coast of Mayo. There have been no commercial discoveries of oil to date.

Ireland has serious disadvantages with regard to offshore exploration compared to other locations. These include water depths, harsh climatic conditions, lack of infrastructure and distance from shore. Despite this, Marathon Oil commenced oil and gas exploration in Ireland in 1960 and discovered natural gas in the Kinsale Field located in the North Celtic Sea basin in 1970. In 1975 Marathon signed an agreement with Bord Gáis Éireann (or BGE, the state-owned body which owned and operated the natural gas transmission and distribution networks³⁰) to supply them with natural gas at a bulk discounted rate for a 20-year term.

Marathon had discovered the Kinsale Field under a one-off deal with the Fianna Fáil government which was believed to be heavily in Marathons favour. After the general elections of 1973 the new government (Fine Gael and Labour) tried to change the terms of this deal to make it more favourable to Ireland.

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%.

The government was voted out of power in 1977 before they had established a State owned Irish Petroleum Corporation and the new Fianna Fáil government reluctantly established the Irish National Petroleum Corporation (INPC) in 1979. The INPC was prevented from engaging in exploration or production. Due to the underdevelopment of the INPC over the following years, Irish expertise in the petroleum industry was never developed.

³⁰ Ervia now owns the natural gas transmission and distribution network in the Republic of Ireland. Gas Networks Ireland (formerly BGE) is the designated subsidiary within Ervia which constructs and extends Ireland's gas network.

The Corrib gas field was discovered in the Slyne basin in 1996 and came on stream in late 2015. It has an estimated producing life of just over 15 years and is operated by Shell Exploration & Production Ireland on behalf of the Corrib partners (Shell Exploration & Production Ireland, Statoil Exploration (Ireland) Limited and Vermilion Resources (Ireland) Limited). It was reported in July 2017 that Shell was to sell its stake in the Corrib gas field with the sale expected to go through by the end of June 2018. At peak production, Corrib has the potential to meet up to 60% of Ireland's gas needs and is expected to supply fuel for up to 20 years.³¹

Future trends

Fossil fuels accounted for 92% of all energy used in Ireland in 2016. Oil continues to be the dominant energy source with a 48% share of total energy in 2016 followed by natural gas with a 29% share. This is due to the fact that Ireland does not have significant indigenous fossil fuel resources and has only begun to realise its renewable energy potential in recent years. However, in 2016, Ireland's indigenous energy production in Ireland reached the highest level ever recorded. With the Corrib gas field coming on stream (natural gas production also reached the highest level ever in 2016). As a result, Ireland's import dependency dropped from 88% in 2015 (at a cost of €4.6 billion) to 69% in 2016 (at a cost of €3.4 billion).³²

The Government (2011-2016) published its White Paper on Energy, *Ireland's transition to a low carbon energy future* in December 2015 which commits Ireland to radically reducing our dependence on fossil fuels and also our greenhouse gas emissions by 2050. The paper acknowledges however, that oil and gas will continue to play a role in Ireland's energy mix well into this century, albeit on a declining basis over time. Ireland's indigenous natural gas supply will play an important role in our security of supply. It is expected that at peak production, gas from the Corrib field will provide up to 42% of our natural gas needs over the first two years of operation.

Security of supply

One of the key Government concerns with the *Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018* is that of security of energy supply. Energy security relates to import dependency, fuel diversity and the capacity and integrity of the supply and distribution infrastructure. Ireland's energy security is closely linked to EU security of supply (SEAI 2017). Globally, according to the US Energy Information EIA, *International Energy Outlook 2017* (IEO2017):

“the global supply of crude oil, other liquid hydrocarbons, and biofuels is expected to be adequate to meet the world's demand for liquid fuels through 2050 there is sufficient

³¹ Brennan, J., 2017. Shells Corrib exit leaves energy giants up to €2.5 billion in the red. 13 July. *Irish Times* [online]. Available at: <https://www.irishtimes.com/business/energy-and-resources/shell-s-corrib-exit-leaves-energy-giants-up-to-2-5bn-in-the-red-1.3152789> [accessed on 15.06.2018]

³² SEAI, 2017. *Energy in Ireland, 1990-2016* [online]. Available at: <https://www.seai.ie/resources/publications/Energy-in-Ireland-1990-2016-Full-report.pdf> [accessed on 15.06.2018]

supplies of oil and gas globally to meet demand to 2050. There is substantial uncertainty about the levels of future liquid fuels supply and demand. EIA reflects some of this uncertainty by developing a Reference case, High and Low Economic Growth cases, and High and Low Oil Price cases in its projections. The oil resources currently in the earth's crust, in combination with expected production of other liquid fuels, are estimated to be sufficient to meet total world demand for liquid fuels in all cases of the IEO2017.³³

Regarding oil, a 2016 article in the Guardian about an Energy Report by a Norwegian Consultancy, Rystad Energy stated that the top three oil producers are the USA, Saudi Arabia and Russia. The report findings predicted that based on the current rate of oil production; there is enough oil for the next 70 years.³⁴

Specifically to Ireland, as outlined above, import dependency has grown in Ireland since the mid 1990's but has dropped from 88% in 2015 to 69% in 2016 with the coming on stream of the Corrib gas field.³⁵

Oil and gas markets and assets

Ireland's retail natural gas sector has been open to competition since 2007. In 2011, BGE deregulated prices for the small business segment of the gas market with the prices of larger business consumers either never having been regulated or deregulated previously. The sole remaining regulated tariff, the BGE gas tariff for its residential consumers, was deregulated from 1st July 2014 (DCENR 2015³⁶).

The Commission for Energy Regulation (CER) is Ireland's independent energy regulator.

There is no strategic gas storage and very limited operational storage capacity in Ireland.

The oil sector in Ireland is fully privatised and deregulated with no direct State support since 2001. The commercial oil assets (oil refinery at Whitegate in Cork) of Ireland are owned by ConocoPhillips. However, the State is responsible for the management of the country's strategic oil reserve stocks as required under EU law. This is the responsibility of state-owned National Oil Reserves Agency (NORA).

³³ EIA, 2017. FAQ: *Does the world have enough oil to meet our future needs?* [online]. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=38&t=6> [accessed on 15.06.2018]

³⁴ Sidahmed, M., and Kasperkevic, J. 2016. Report: US is now world's largest oil reserve but global supply still small *The Guardian* 6 July [online]. Available at: <https://www.theguardian.com/business/2016/jul/06/report-us-world-largest-oil-reserve-global-supply-small> [accessed on 15.06.2018]

³⁵ SEAI, 2017. *Energy in Ireland, 1990-2016* [online]. Available at: <https://www.seai.ie/resources/publications/Energy-in-Ireland-1990-2016-Full-report.pdf> [accessed on 15.06.2018]

³⁶ DCENR, 2015. *Gas* [online]. Available at: <http://www.dcenr.gov.ie/energy/en-ie/gas/Pages/home.aspx#> [accessed on 24.05.2016]

Fiscal, exploration and production regime

In 1985, the 1975 exploration and production terms were changed by then Minister for Energy Dick Spring through reducing state royalties. In 1986, he introduced further changes by abolishing State participation rights for marginal fields. In 1987, Fianna Fáil returned to government and Ray Burke was appointed Minister for Energy. Later that year Minister Burke 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, Minister for Finance Bertie Ahern revised licensing terms including cutting the corporation tax from 50% to 25% and incorporated Ray Burkes 1987 fiscal terms into the Finance Act. The 1992 terms also state that oil or gas can be delivered at market prices. In addition to the revised financial amendments, a more flexible approach was adopted to the awarding of licences and leases (Glynn 2015).

This system was heavily criticised as ceding Irish natural resources to foreign oil companies (O'Toole 2005), but has been defended on the basis that 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” (Dempsey 2006).

Indecon report (2007)

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)

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 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 DCENR³⁷, 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.

As a result, more onerous fiscal terms for petroleum exploration were introduced in 2007. These terms were more favourable to the Irish economy. Fiscal changes were given effect in the *Finance Act 2008* and included a profit resource rent tax. This new tax was in addition to the 25% corporation tax already employed. It operates on a graded basis of profitability whereby once the cost of exploration had 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
- no change where the profit ratio is less than 1.5 (DCENR 2007³⁸)

On our most profitable fields, therefore, the return to the State will increase from 25% to 40%. However, these changes only apply to any discovery or production achieved from Exploration Licences granted after 01 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 these changes. To date no oil or gas has been extracted from Irish waters under the 2007 licensing terms. Based on the Corrib gas field's discovery date of 1996 (production began in late 2015), it falls under the 1992 licensing terms which require payment of 25% corporation tax on profits.

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

³⁷ 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).

³⁸ Department of Communications, Energy and Natural Resources (DCENR), 2007. *Government announces new round of licensing for oil and gas exploration under new licensing terms* [online]. Available at: <http://archive.is/cW3K> [accessed on 24.05.2016]

Wood Mackenzie report (2014)

More recently the DCENR commissioned energy consultants Wood Mackenzie to assess whether Ireland's oil and gas fiscal regime was fit for purpose. Wood Mackenzie published their findings in 2014 in the [Review of Ireland's oil and gas fiscal system](#). Recommendations from the report included:

- The Profit Resource Rent Tax (PRRT) be replaced with a Petroleum Production Tax (PPT) for future licences.
- The PPT rate would be charged on a field-by-field basis and would be calculated on net income of each field. The PPT would also be variable and be determined by the level of profitability by each field – it would be charged on each field's net profits.
- The PPT would include a 'minimum payment' which would function like a royalty.
- PPT rates would be higher than the pre-existing PRRT ones. This would enable a higher Government Share from the most profitable fields.
- Other than allowing PPT payments for corporation tax (CT), no changes were needed to the CT rate.

There should be no introduction of mandatory state equity participation or a Production Sharing Contract (PSC) system at this time.

Following on from this, in June 2014, the then Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D., announced that the 40% corporate tax rate on profits be increased to 55% for new licences (DCENR 2014³⁹). In addition, there is to be a minimum royalty of 5% in every year that a field is selling production and the corporation tax on production will continue to be 25% (DCENR 2014). The revised tax terms that were implemented in the [Finance Act 2015](#) apply to authorizations first awarded from 18 June 2014 (DCENR 2016a⁴⁰).

The effect of the changing of the corporate tax rate over the years means the amount of corporate tax for a given petroleum licence/authorisation depends on the year it was awarded. The table below summaries the corporate tax arrangements:

³⁹ DCENR, 2014. "Rabbitte announces new tax regime for Offshore Petroleum". Press release, June 18, 2014 [online]. Available at: <http://www.dcenr.gov.ie/news-and-media/en-ie/Pages/PressRelease/Rabbitte-announces-new-tax-regime.aspx> [accessed on 24.05.2016]

⁴⁰ DCENR, 2016a. *Oil and Gas Tax Terms* [online]. Available at: <http://www.dcenr.gov.ie/natural-resources/en-ie/Oil-Gas-Exploration-Production/Pages/Oil-and-Gas-Tax-Terms.aspx> [accessed on 24.05.2016]

Table 11: Corporate Tax Arrangements for Petroleum

Year	Terms
1975	Corporation Tax 50%, Royalties 12.5%, production bonuses and a right to State Participation
1987	Royalties abolished plus no State participation
1992	Corporation Tax rate reduced to 25%
2007	Additional Profit Resource Rent Tax of 5% to 15% introduced and linked to profitability of discoveries
2014	Petroleum Production Tax (PPT) introduced, replacing Profit Resource Rent Tax in respect of new authorisations. PPT to apply at variable rate of 0% to 40% linked to profitability of discoveries. Minimum annual PPT payment of 5% the gross revenues of a field once production has commenced. PPT permitted as a deduction from Corporation Tax. Marginal tax take rises from 40% to 55%

Source: DCENR 2016a.

Licensing & Regulation

The Petroleum Affairs Division (PAD) of the DCCAE (formerly PAD was under the remit of DCENR) is responsible for the promotion, regulation and monitoring of the exploration and development of oil and gas in onshore and offshore Ireland. This involves the allocation of acreage to exploration companies under various types of licences agreeing appropriate work programmes and the promotion of acreage, either through open access or by a Round system.

As with the minerals industry, separate licensing and fiscal regimes are used to deal with oil and gas exploration and production.

The principal Act governing the exploration and development of oil and natural gas in Ireland is the [Petroleum and Other Minerals Development Act of 1960](#) (the 1960 Act). At the EU level the exploration and development of oil and gas in the continental shelf is the [Hydrocarbon Licensing Directive](#) (Directive 94/22/EC). The 1960 Act when referring to oil and gas collectively, uses the term “petroleum”.

Under the 1960 Act a licence can be petroleum prospecting licence, a licensing option, a reserve area licence or an exploration licence. There are three types of Exploration Licence authorisations:

- a Standard Exploration Licence for water depths up to 200m which is issued for six years;
- a Deepwater Exploration Licence for water depths exceeding 200m which is issued for nine years; and

- a Frontier Exploration Licence for areas so specified by the Minister which is issued for periods of not less than 12 years.

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. 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.

Leases are also provided for under the 1960 Act as follows:

- **Lease undertaking is when** a discovery is made in a licensed area and the licensee is not in a position to declare the discovery commercial during the period of the licence, but expects to be able to do so in the foreseeable future, the licensee may apply for a Lease Undertaking. This is an undertaking by the Minister, subject to certain conditions, to grant a Petroleum Lease at a stated future date. The holder of a Lease Undertaking is required to hold a Petroleum Prospecting Licence which will govern activities under the Lease Undertaking.
- **Petroleum Lease - when** a commercial discovery has been established it will be the duty of the authorisation holder to notify the Minister and apply for a Petroleum Lease with a view to its development.⁴¹

Conditions of petroleum exploration licences

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, and following on from the recommendations of the Indecon report, the licensing terms for petroleum exploration and production were changed in 2007. These changes remain in place and are outlined hereunder:

- Duration of Licences –Deepwater Licences reduced from 12 years to nine years and the minimum period for a Frontier Licence reduced to 12 years. Terms explicitly state the Minister's power to vary both the duration of individual phases of a licence as well as the overall duration of a licence.
- Relinquishment Conditions - the introduction of an automatic relinquishment of 50% of the area covered by a licence at the end of the first phase of all exploration licences and of a further 50% at the end of the second phase of Deepwater and Frontier Licences, regardless of drilling commitments.

⁴¹ Taken directly from DCCA, n.d. *Types of authorisations* [online]. Available at: <http://www.dcca.gov.ie/en-ie/natural-resources/topics/Oil-Gas-Exploration-Production/licensing/types-of-authorisations/Pages/Types-of-Authorisations.aspx> [accessed on 25/09/2017]

- Fees - existing level of rental and application fees retained, subject to annual increases in line with CPI.
- Confidentiality period for Well Data - confidentiality period for well data reduced from five to four years.
- Drilling Commitments & Work Programmes - work programmes required to set out clearly the timing of the works proposed. No change in drilling obligations in the case of Standard and Frontier Exploration Licences. In the case of a Deepwater Licence the first well to be drilled in the first three years of the licence (previously four) and a second well must be commenced by the end of the sixth year (previously eight).
- Moving to Development Phase - time allowed for the submission of a plan of development will be reduced from two years to one year from the date a Petroleum Lease has been signed. It will be provided that a lease undertaking may follow on from either an Exploration Licence or a licensing option and that the information required from the applicant be the same as that required from a company that is applying for an Exploration Licence. Clarification that award of a reserved area licence is not automatic; that the Minister may impose conditions; and that the area concerned must be contiguous with the existing lease area. Categories of Authorisation - all existing categories of authorisation retained (no change) (DCENR 2007).

The Licensing Terms for Offshore Oil & Gas Exploration, Development and Production are available to view [here](#) (DCENR 2007a⁴²).

Renewal of licences / leases under the 1960 Act

Section 13 of the *1960 Act* relates to Petroleum Leases. Subsection 2 (c) deals with the renewal of Petroleum Leases and states that:

such lease may contain a clause providing for the renewal or successive renewals thereof, either unconditionally or subject to such conditions as shall be stated in such lease;

Current levels of petroleum exploration and development

Recent rounds for acreage in the Irish offshore include the 2011 Atlantic Margin Oil and Gas Licensing Round and the 2015 Atlantic Margin Oil and Gas Licensing Round which aimed to build on the success of the 2011 Round. Announced in June 2014, the 2015 Round offered two year licensing options for the Porcupine, Goban Spur, Slyne, Erris, Rockall and Donegal basins. The Minister announced in February 2016 that 43 applicants had been received by the September

⁴² DCENR, 2007a. *Licensing Terms for Offshore Oil and Gas Exploration, Development & Production 2007* [online]. Available at: <http://www.dcenr.gov.ie/natural-resources/SiteCollectionDocuments/Oil-and-Gas-Exploration-and-Production/LicensingTerms%202007.pdf> [accessed on 24.05.2016]

2015 deadline, the largest number of applications received in any licensing round held in offshore Ireland. The Minister stated that “Industry’s response to the Round demonstrates the perceived positive exploration opportunity of Ireland’s offshore and highlights confidence in the Irish regulatory process and the ability of industry to do business in Ireland”.⁴³

All petroleum exploration and development in Ireland during the January-July 2017 (i.e. the particulars of all Authorisations granted by the Minister for Communications, Climate Action and Environment that were current during the reporting period)⁴⁴ are provided for in Table 7.

Table 12: Type and number of licences and leases in operation Jan-July 2017

Number	Type of licence/lease issued
16	Frontier Exploration Licences
6	Standard Exploration Licences
2	Onshore Licensing Options
36	Offshore Licensing Options
15	Petroleum Prospecting Licences
3	Petroleum Leases
2	Lease Undertakings

Prior to any licensing round, 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)*.

A series of five Irish Offshore Strategic Environmental Assessments (IOSEAs) have been completed by consultants on behalf of the DCENR as follows:

- IOSEA 1: Slyne, Erris and Donegal basins (2006);
- IOSEA 2: Porcupine basin (2007);
- IOSEA 3: Rockall basin (2008);
- IOSEA 4: Irish and Celtic Seas basins (2011); and
- IOSEA 5: Atlantic Margin basin (2015).

The SEA process integrates environmental considerations into planned licensing rounds and subsequent offers of Frontier Licences. Further information on the process is available [here](#).

⁴³ DCENR, 2016b. *2015 Atlantic Margin Oil and Gas exploration licensing rounds awards* (press release 11th February 2016) [online]. Available at: <http://www.dcenr.gov.ie/news-and-media/en-ie/Pages/PressRelease/2015-Atlantic-Margin-Oil-and-Gas-Exploration-Licensing-Round-Awards.aspx> [accessed on 24.05.2016]

⁴⁴ DCCAE, 2017. *Petroleum exploration and development in Ireland* [online]. Available at: http://opac.oireachtas.ie/AWData/Library3/6_monthly_Report_to_30_June_2017_130543.pdf [accessed on 15.06.2017]

Irelands potential for petroleum exploration

Based on a number of independent surveys and of the discovery of gas at a small number of locations in the Irish Atlantic Margin, it is likely that there is potential for further petroleum discoveries. According to the then Department of Communications, Energy and Natural Resources (DCENR) there are substantial untapped petroleum reserves off the coast of Ireland with Atlantic waters offshore Ireland *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). However, despite a fiscal system which favours industry, successful exploration off Ireland's shores has been among the lowest in the world – 158 wells (130 exploration wells and 28 appraisal wells) drilled between 1970 and 2013 and only four commercial natural gas discoveries. This is due to a number of reasons including, the inhospitable nature of the Irish Atlantic Margin and the associated costs and risks and the fact that the estimated presence of oil and gas is 'yet-to-find' and not based on proven reserves.

Providence Resources

Providence Resources is an international upstream oil and gas company currently involved in petroleum exploration offshore Ireland as well as overseas. According to their CEO, Tony O'Reilly, Providence Resources "continue to be by far the most active player offshore Ireland in terms of drilling activity, commercial deals and collaborations with world-class partners."⁴⁵

The impetus for the Bill stems from the granting of a Frontier Exploration Licence to Providence Resources enabling them to commence drilling in the Porcupine Basin. However, according to their 2017 Annual Results (May 2018)⁴⁶, while Providence Resources main operational activity for 2017 was the drilling of the 53/6-1 exploration well in Frontier Exploration Licence (FEL) 2/14 in the Porcupine Basin targeting the Druid and Drombeg exploration targets, these attempts were **unsuccessful**.

Initial appraisal drilling of three wells is planned for Barryroe in the Celtic Sea in 2019 (subject to final sign off on farm-out agreement with APEC).⁴⁷

Providence Resources has also applied to covert a Licensing Option (LO 16/27) for Avalon in the Southern Porcupine Basin to a Frontier Exploration Licence. This may be affected by the Bill.

⁴⁵ Providence Resources, 2018. *Ibid*

⁴⁶ Providence Resources, 2018. *2017 Annual Reports* [online]. Available at: <http://www.providenceresources.com/sites/default/files/RNS%20-%20PROVIDENCE%20RESOURCES%20P.I.c.%20-%20FY%202017%20RESULTS.pdf> [accessed on 13.06.2018]

⁴⁷ Providence Resources, 2018. *Ibid*

Appendix 3: Authorised company fees

Exploration authorisation

Companies holding authorisations for exploration are currently subject to a range of fees⁴⁸:

1. Fees payable for an assignment or transfer of interest

An application fee of €1,520 plus an administration fee of €3,040 are payable on application.

2. Fees to be paid on submission of an application

- Petroleum Prospecting Licence €1,520
- Licensing Option €1,520
- Exploration Licence €9,122
- Reserved Area Licence €9,122
- Lease Undertaking €3,040
- Petroleum Lease €9,122

3. Annual Rental Fees to be paid on issue of an authorisation and thereafter on the anniversary date of the issue of the authorisation

- Petroleum Prospecting Licence: €7,601
- Licensing Option: Calculated on the basis of €29 per sq km.
- Standard Exploration Licence: For the first three years of the licence fee is calculated on the basis of €182 per sq km, increasing to €365 per sq km thereafter.
- Frontier Exploration Licence:
 - (a) For the first phase of the licence, fee is calculated on the basis of €29 per sq km.
 - (b) In the second phase of the licence, fee is calculated on the basis of €60 per sq km
 - (c) Fee is calculated on the basis of €121 per sq km for the remainder of the licence.
- Lease Undertaking: For the first year, fee is calculated on the basis of € 1,216 per sq km increasing by €152 per sq. km. in each subsequent year.

Production authorisation

Were a company to have a commercial discovery, they are subject to a specific financial regime as follows:

1. Rental Fees

Calculated on the basis of €2,643 per sq km until the date of first production. From the date of first production fee is calculated on the basis of €4,133 per sq km.

⁴⁸ Fees detailed in a Memo provided to the L&RS by the Petroleum Affairs Division of the Department of Communications, Climate Action and Environment.

2. Taxation

- The rate of tax that will apply to profits arising from any future commercial discoveries made under an exploration licence or licensing option granted prior to January 2007 will be 25%.
- The rate of tax that will apply to profits arising from any future commercial discoveries made under an exploration licence or licensing option granted from January 2007 to May 2014 will be between 25% and 40% depending on the profitability of the field.
- The rate of tax that will apply to profits arising from any future commercial discoveries made under an exploration licence or licensing option granted from June 2014 onwards will be between 25% and 55% depending on the profitability of the field. In addition there is a requirement for a minimum tax payment at a rate of 5% of gross revenues in every year that a field is selling production.
- The level of profits arising from a field depend on a combination of factors including the volume of recoverable gas or oil, the cost of developing and operating the infrastructure, the price of gas or oil over the life of the field, together with the timing and profile of production.



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