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ON COMMUNICATIONS, CLIMATE ACTION
AND ENVIRONMENT

Detailed Scrutiny of the Petroleum and Other Minerals Development
(Amendment) (Climate Emergency Measures) Bill 2018

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Author biography

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Dr Slevin is the author of *Gas, oil and the Irish state: Understanding the dynamics and conflicts of hydrocarbons management* (2016, 2017) (Manchester University Press) and has previously presented her research to the Joint Oireachtas Committee on Communications, Natural Resources and Agriculture (2011). She contributed to the Wood Mackenzie review of the Irish state's licensing regime (2013) and has been an invited speaker in various public, media and academic events. Dr Slevin holds a PhD in Sociology (University College Dublin), MA in Adult and Community Education (first class honours) (Maynooth University), H Dip in Adult and Community Education (first class honours) (Maynooth University) and a BA Hons in Community Development (first class honours) (Letterkenny Institute of Technology). She completed postgraduate studies in 'Energy, Environment and Sustainable Development' with the University of Oslo, Norway.

Executive summary

Anthropogenic climate change is the most pressing challenge our world faces, necessitating urgent action. As fossil fuel exploitation is inseparable from the increasing greenhouse gas emissions that contribute to climate change, reducing greenhouse gas (GHG) emissions is an integral component of climate change mitigation. Creating a sustainable, healthy world for current and future generations entails a fundamental transformation of how societies use energy, moving from our dependency on fossil fuels to clean renewable energy, in tandem with reduced consumption and measures to aid energy efficiency.

To offer a deeper analysis of connections between hydrocarbon management and climate change, this submission comprises four distinct sections. Section 1 details the broader context in which to understand climate change and decisions about gas and oil exploitation; section 2 gives an overview¹ of the evolution of the Irish approach to indigenous gas and oil and concludes with a summary of changes in Ireland's licensing regime. In doing so, this section presents key information necessary for a discussion of interconnected issues that make further exploitation of Irish hydrocarbons untenable. Section 3 outlines the main environmental, social, economic, political and ideological issues surrounding Irish hydrocarbon management. The final section summarises the interconnected nature of issues surrounding hydrocarbon exploitation, consumption and climate change.

1. Wider context

Detailing the multi-level factors underpinning the *Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018*, this submission makes clear international, national and local level imperatives driving change. Ireland's current patterns of energy production and consumption are not sustainable and this author believes that a key starting point for efforts to decarbonise our society and economy is the adoption of the *Climate Emergency Measures Bill*.

Ultimately, responding to climate change requires 'a rapid transition from fossil-fuel energy, agro-food and transport, to low-carbon systems based on green technologies' (Healy and Barry, 2017); Ireland can learn from France, New Zealand, Belize and Costa Rica as countries which have all recently announced bans on oil and gas exploration.

2. Evolution of the Irish state's approach to Irish hydrocarbon management

Tracing the evolution of the Irish model of hydrocarbon management, this submission calls attention to interconnected social, political, ideological and economic forces which have shaped how Irish gas and oil are managed. Offering a succinct history of Irish hydrocarbon management from 1959 to 2014, this section concludes with a summary of changes in Ireland's licensing regime (see *table 1: Summary of changes to Ireland's licensing system (1959-2014)*). In doing so, this section presents key information necessary for a discussion of interconnected issues that make further exploitation of Irish hydrocarbons untenable

3. Problematic nature of the Irish model of hydrocarbon management

Researching Irish hydrocarbon management reveals the influence of global trends, shifts in Irish political economy, impact of dominant ideologies (notably neoliberalism), and flaws in decision-making processes around indigenous oil and gas exploitation. As reflected in public discourse and pressures to review licensing terms at key junctures, benefits from the state's current approach to hydrocarbon management are strongly contested. *Table 2: current authorisations* outlines the number of authorisations granted under the 1992 and 2007 Licensing Terms and the 2014 amendments to taxation. Referring to '18 significant discoveries' outlined in JCCNRA (2012), this table problematises authorisations that have been held by companies for long periods of time, raising questions about the licensing regime. For example, the latest *Acreage Report* (PAD, 31 March 2018) illustrates that the authorisation for the Barryroe oil discovery remains a Standard Exploration Licence (1/11), with no reference to plans to transfer this authorisation to a petroleum lease or

¹ A detailed study of Irish hydrocarbon management is available in Slevin, A. (2016). *Gas, oil and the Irish State: Understanding the dynamics and conflicts of hydrocarbon management*. Manchester: Manchester University Press.

lease undertaking, thus allowing Providence to maintain control over that area of acreage without immediate plans to bring the well into production.

Specific issues with the Irish licensing system are: choice of the regime; uniquely low tax terms; flaws in licensing, policy and planning frameworks underpinning hydrocarbon management. Ireland's **licensing system entails the privatisation of state resources**, whereby ownership of gas and oil is transferred from the state to the companies in exchange for a pre-agreed financial return. Ireland's licensing regime is at odds with other countries as production sharing and service contracts are the most popular approach to hydrocarbon management globally (Easo, 2009; Johnston, 2008; Kaiser and Pulsipher, 2006; Slevin, 2016). Both approaches (PSCs and SCs) ensure strong state control with service contracts ensuring the state retains full ownership of its resources, permitting companies to undertake hydrocarbon exploitation as a service to the state (Easo, 2009, pp. 37-8). Wider benefits accrue from higher shares of taxes, royalties, associated onshore and offshore services, and guarantee supply to a state; benefits which Justin Keating sought to achieve through the 1975 Licensing Terms.

Ireland's licensing regime is an outdated approach which means companies are under no obligation to sell produced Irish gas and oil back to the state and if they choose to do so, sales are at full market prices. The Irish licensing regime for gas and oil does not guarantee security of supply. If oil is produced offshore Ireland, companies are not obliged to sell the resources to the state; the oil can be transported in tankers to other countries. Similarly, plans for the Shannon Liquid Natural Gas processing plant may mean future gas supplies will be exported to other countries without benefitting the state in terms of access to indigenous gas. Security of supply fallacies need to be challenged and recognition given to the weak position the state holds in relation to Irish gas and oil.

Four different types of fiscal terms are applied to Irish hydrocarbons:

- a) Marathon's agreement applies to the Kinsale (and Ballycotton) petroleum lease.
- b) The 1992 Licensing terms apply to the Corrib and Seven Heads Petroleum Leases, 6 Frontier Exploration Licences and 2 Standard Exploration Licences. Hydrocarbons produced through these authorisations are subject to a 25% tax rate, against which all costs can be offset. This rate of taxation is one of the lowest in the world.
- c) 2 Lease Undertakings, 12 Frontier Exploration Licences and 4 Standard Exploration licences are subject to the 2007 licensing terms. 2 Lease Undertakings under these terms are also being considered. In an examination of international studies of government take (share of revenues a state receives from hydrocarbon exploitation), this author examined research on 153 fiscal regimes and found Ireland had the second lowest rate of returns (Slevin, 2016). Indeed 79% of the countries studied demanded government take of at least 50% - twice the rate applied in the 1992 terms and higher than returns demanded under the 2007 terms.
- d) A 2014 review of Ireland's licensing regime resulted in an increase in taxation for authorisations granted after 2014. The 25% corporate tax rate remains, joined by a petroleum production tax which could result in taxation up to 55% (after costs accrued over a previous 25-year period have been offset). 1 Frontier Exploration Licence, 31 Licensing Options and 18 Petroleum Prospecting Licences were granted after June 2014 and will be subject to those terms, if extraction is permitted. Johnston (2010) estimated average government take globally to be around **70 per cent** – nearly three times the rate of government take under the Irish 1992 Licensing Terms and significantly higher than the 2007 and 2014 modifications (Slevin, 2016, p. 124).

The tax terms for Irish hydrocarbons remain low by international standards and limited economic benefits from hydrocarbon exploitation should not be used to justify continued extraction, particularly when one considers the environmental damage caused by hydrocarbon exploitation.

Flaws in the Irish model of hydrocarbon management are further compounded by **weaknesses in licensing, policy and planning framework** as violently articulated through the Corrib gas conflict.

Deficiencies in Ireland's licensing, policy and planning frameworks include a disjointed approach to sustainability, the facilitation of project-splitting, the exclusion of communities from decision-making, and the prioritisation of narrow, short term economic interests over long term societal and ecological wellbeing.

A further issue surrounds the contradictory roles held by the Department of Communications, Climate Action and the Environment which is tasked with promoting hydrocarbon exploitation, managing activities, functioning as resource owner and, somewhat contradictorily, is tasked with environmental protection when the acts of producing and consuming hydrocarbons result in environmental degradation and contribute to climate change. In other words, the state body responsible for responding to climate change also promotes hydrocarbon exploitation and transfers public resources to private interests, undertaking conflictual roles that do not correspond with any notion of sustainability.

4. Conclusion:

Given the interconnected nature of hydrocarbon exploitation, consumption and climate change, choosing the pathway most conducive to long term sustainability involves complex topics and challenging decisions. Ultimately, long term sustainability entails structural change and, in addition to issues articulated throughout the submission, decision-makers must be cognisant of 'carbon lock-in' which will make decarbonisation more difficult and more expensive (investment in carbon intensive technologies could increase investment costs fourfold) (Healy and Barry, 2017).

Recent policies, legislation and the new planning framework emphasise the necessity of transitioning to a low carbon society. Forcing the continued production of hydrocarbons will not aid that goal – indeed, it will allow us to keep our heads in the sand and deny the impacts we are having on our global environment. All the while ensuring that economic benefits from indigenous hydrocarbon production largely accrue to private interests.

Since the first authorisation for hydrocarbon exploitation was granted in 1959, the Irish State's approach to indigenous gas and oil resources has been characterised by (1) a model of hydrocarbon management premised upon privatisation of common resources; (2) a tax regime that results in some of the lowest economic returns to a state in the world; (3) licensing, policy and planning frameworks unconducive to long-term sustainability. By examining these features of Irish state hydrocarbon management in the context of climate change, this submission supports the *Climate Emergency Measures Bill* and challenges viewpoints which suggest Irish hydrocarbon exploitation should continue on grounds such as so-called 'security of supply' and economic benefits.

Introduction to submission

Anthropogenic climate change is the most pressing challenge our world faces, necessitating urgent action. As fossil fuel production and consumption is inseparable from the increasing greenhouse gas emissions that contribute to climate change, reducing greenhouse gas (GHG) emissions is an integral component of climate change mitigation. Creating a sustainable, healthy world for current and future generations entails a fundamental transformation of how societies use energy, moving from our dependency on fossil fuels to clean renewable energy. Our transition requires rapid decarbonisation in tandem with reduced energy consumption and increased resourcing for renewable energy development, participatory decision-making, community benefits, and altered planning and policy frameworks.

This submission discusses such multi-level factors underpinning the need for *the Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018*. Concentrating on the Irish approach to hydrocarbon management, this submission focuses attention on interconnected environmental, social, political, economic and ideological issues and calls for prompt phasing out of indigenous hydrocarbon exploration, development and production. In doing so, I argue that no further authorisations should be awarded as part of our transition to a zero-carbon society necessary to mitigate against climate change.

1. Wider context supporting the Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018

Energy plays an important role in the functioning of modern societies and ‘all societies require energy services to meet basic human needs’ (IPCC, 2012, p. 7). We live in a world dominated by energy (Roberts, 2005) and societies and economies are dependent on oil and gas (Rees, 2006). Ours is a ‘hydrocarbon society’ (Yergin, 2003) yet our dependency on, and consumption of, hydrocarbons cannot continue unabated. Outlining the global use of fossil fuels (coal, oil and gas), the United Nations Intergovernmental Panel on Climate Change (IPCC) illustrates how the dominance of these energy sources has led ‘to a rapid growth in carbon dioxide (CO₂) emissions...recent data confirm that consumption of fossil fuels accounts for the majority of global anthropogenic GHG emissions’ (2012, p. 7). **Fossil fuel consumption is inseparable from the greenhouse gas emissions that contribute to climate change** and the United Nations Framework Convention on Climate Change (UNFCCC) seeks to stabilise ‘GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’; Ireland is one of 197 countries that ratified the Convention (DCENR, 2015, p. 23).

Globally the UNFCCC, Kyoto Protocol and Paris Agreement form the basis of international efforts to mitigate climate change; within the European Union, the 2020 Climate and Energy Package (2007) and the 2030 Climate and Energy Framework (2014) require member states to change patterns of energy consumption and reduce GHG emissions. The Paris Agreement was adopted at the twenty-first Conference of the Parties to the UNFCCC (COP 21) in 2015 (came into force in November 2016), and aims to strengthen the global response to climate change by:

- I. holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change;
- II. increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and
- III. making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. (DCCAE, 2017)

As outlined in the *Annual Transition Statement 2017*, 'Ireland will contribute to the Paris Agreement via the Nationally Determined Contribution tabled by the European Union (EU) on behalf of Member States which commits to a 40% reduction in EU-wide emissions by 2030 compared to 1990. This 40% reduction comprises a 43% reduction in emissions from the EU Emissions Trading System (ETS) and a 30% reduction in emissions from other sectors by 2020 compared to 2005 levels' (DCCA, 2017).

International imperatives have shaped Irish policy and the *Climate Action and Low Carbon Development Act* (2015), the White Paper *Ireland's Transition to a Low Carbon Energy future (2015-2030)*, National Mitigation Plan (2017), and *Ireland 2040 – Our Plan* (2018) suggest a much needed re-orientation of policy towards a more sustainable future. Recognising the necessity of a 'radical transformation for Ireland's energy system...to meet our climate policy objectives', the White Paper states that by 2050, 'GHG emissions from the energy sector will be reduced to between 80% and 95% compared to 1990 levels' (DCENR, 2015, p. 26). 'By 2100 our GHG emissions will have fallen to zero or below' (*ibid.*).

Despite such ambitions, **Ireland had the third highest greenhouse gas emissions in the EU in 2013**, emitting 12.8 tonnes per capita – 45% higher than the EU average of 8.8 tonnes (Central Statistics Office, 2016). Ireland's consumption of fossil fuels is a cause for deep concern given growing GHG emissions during 2015-2016 (EPA, 2017) and the coupling of economic growth with increasing energy use (SEAI, 2017). As FitzGerald points out, 'if the economy does better than forecast, emissions will be even higher than currently anticipated' (2018, p. 2).

Although Ireland has a target of a 20% reduction in GHG emissions by 2020, the country **will 'at best' only achieve a 1% reduction in GHGs** (EPA, 2018). Failures to meet the 2020 target are likely to impact on the 2030 goal of 30% reduction in GHG emissions and 'Ireland is heading in the wrong direction for 2030 and 2050 – emissions are rising when they need to fall quite rapidly' (FitzGerald, 2018, p. 2). Furthermore, 'additional policies and measures, even if implemented rapidly, may not be enough to ensure that Ireland's 2020 emissions reduction target is met' (Climate Change Advisory Council, 2017, p. i).

We are at a pivotal moment and '**business-as-usual' approaches are insufficient** to address the scale of the problems we collectively face. Climate change is already happening, evident in a wide range of diverse impacts on our environment, society and economy (Department of the Taoiseach, 2017, p. 43). Projected impacts of climate change in Ireland include: increasing average temperature; more extreme weather conditions including rainfall events; an increased likelihood of river and coastal flooding; water shortages, particularly in the East of the country; changes in the types and distribution of species; the possible extinction of some vulnerable species (Environmental Protection Agency, 2013, p. 2). As a result of their deliberations on climate change, 97% of Citizens' Assembly participants recommended that climate change be situated at the centre of policy-making in Ireland (Citizens' Assembly, 2017).

Energy and climate change are indelibly linked and, given the contribution of fossil fuels to climate change, processes of energy production and consumption [namely fossil fuel] are simultaneously part of the problem and a potential solution [renewable energy] to some of the challenges we face (Slevin and Leyden, 2018). The Environmental Protection Agency (2018) recently emphasised a 'need for a decisive move away from fossil fuels through significantly improved energy efficiency and the use of cleaner, renewable fuels.' Indeed, the IPCC states that 'concentrations of CO₂ in the atmosphere can only be stabilised if global (net) CO₂ emissions peak and **decline toward zero** in the long term. Improving the energy efficiencies of fossil power plants and / or the shift from coal to gas will not by itself be sufficient to achieve this' (IPCC, 2014, p. 516).

Latin (2012) problematises GHG emissions-reduction targets, suggesting the deferral of stringent GHG emissions-reduction targets until several decades into the future (e.g. 50% reduction by 2050) may prove 'too little, too late' and will compound the 'already-too-high atmospheric GHG concentrations'. Responding to climate change requires 'a rapid transition from fossil-fuel energy, agro-food and transport, to low-carbon systems based on green technologies and new infrastructures, policies, consumer practices, cultural meanings and scientific knowledge' (Healy and Barry, 2017, p. 451).

Radical changes are needed and include robust efforts to decarbonise society hand in hand with leaving hydrocarbon reserves unproduced. McGlade and Ekins (2015) argue that ‘**a third of oil reserves, half of gas reserves and over 80 per cent of current coal reserves should remain unused from 2010 to 2050** in order to meet the target of 2°C’. They add, ‘policy makers’ instincts to exploit rapidly and completely their territorial fossil fuels are, in aggregate, inconsistent with their commitments to this temperature limit’. Such analysis has influenced recent transformations in France, New Zealand, Belize and Costa Rica – countries which have all announced bans on oil and gas exploration.

In December 2017, France became the first country to ban new licences for oil and gas exploration and voted to cease all oil and gas extraction in mainland France and all its territories by 2040 (Dockrill, 2017). France's Ecology Minister Nicolas Hulot said the French ban ensures “consistency between our laws and our climate commitments under the Paris agreement...to remain below the 2 degrees’ Celsius limit, we must leave the majority of fossil fuels underground” (*ibid.*). January 2018 brought the announcement that Belize banned oil exploration in its waters in order to protect the Belize Barrier Reef (Green, 2018). In April 2018, the New Zealand government announced it would not grant any new oil and gas exploration permits in an effort to combat climate change (Reid, 2018) and Costa Rica’s new President plans to ban fossil fuels and become the first fully decarbonised country in the world (Embury-Dennis, 2018). The proactive approaches adopted by these countries indicate a shift towards rapid transitions to low or zero carbon societies and serve as role models for Ireland. A further incentive for Ireland to become more sustainable lies in the large EU fines Ireland faces for failing to meet our legally binding targets on reducing GHG emissions – estimated at more than €450 million in 2020 (O’Sullivan, 2017).

Ireland’s current patterns of energy production and consumption are not sustainable and this author believes that a **key starting point for efforts to decarbonise our society and economy is the adoption of the *Climate Emergency Measures Bill***. By passing this Bill into law, the Oireachtas will build on the *Petroleum and Other Minerals Development (Prohibition of Onshore Hydraulic Fracturing) Act (2017)*, the *Fossil Fuel Divestment Bill (2016)*, existing policies and legislation by clearly signalling its intent to actively mitigate against climate change.

Thus far this submission has focused on the wider context supporting the *Petroleum and Other Minerals Development (Amendment) (Climate Emergency Measures) Bill 2018*; to add further support to the proposed legislation, the following sections illuminates environmental, social, economic, political and ideological flaws within the Irish state’s approach to indigenous hydrocarbon management which emphasise how the Irish approach is incompatible with any notion of sustainability.

2. Evolution of the Irish State's approach to hydrocarbon management

In order to fully articulate the broad spectrum of issues surrounding Irish hydrocarbon management, this section presents an overview² of the evolution of the Irish approach to indigenous gas and oil and concludes with a summary of changes in Ireland's licensing regime. In doing so, this section presents key information necessary for a discussion of interconnected issues that make further exploitation of Irish hydrocarbons untenable (section 3).

1959 Oil Agreement and Petroleum and Other Minerals Development Act (1960)

When Ireland's constitution (Bunreacht na hÉireann) was conceived in 1937, Article Ten established the state's ownership of 'all natural resources, including the air and all forms of potential energy' within its jurisdiction. The current model of gas and oil management has its roots in a 1959 decision which saw Minister Sean Lemass (Fianna Fáil) sign the first agreement to permit an oil company to undertake hydrocarbon exploration in Ireland. The *1959 Oil Agreement* saw the state commit to transferring all rights to Irish hydrocarbons, onshore and offshore Ireland including the seabed and subsoil, to the Ambassador Irish Oil Company for £500 (Quish 1975; McCabe, 2011a; 2011b). A reactive approach to Irish resources is evident from this era, illustrated in the privatisation of common resources prior to any investigation of the socio-economic and political implications of transferring valuable state-owned resources to a subsidiary of a multi-national company.

The state's next step was to create a legal basis for hydrocarbon exploitation as the *Petroleum (Production) Act, 1918* and the *Mineral Development Act, 1940* 'did not provide adequate means for facilitating large-scale exploration' (Jack Lynch, Dáil Éireann, 5 November, 1959) (in Slevin, 2016, p. 51). The subsequent *Petroleum and Other Minerals Development Act (1960)* vested ownership of all petroleum in the state and established the state as the authorising body for hydrocarbon exploration and production, thus providing a legislative context to enable exploration and production of Irish hydrocarbons using a licensing system. Ambassador's exploration licence commenced on 29 March 1960 and after drilling three onshore wells in in Cavan³ in 1962 'had the distinction of finding the first hydrocarbons in Ireland' (Collins, 1977, p. 55).

Following a buy-out of the Ohio Oil company in 1966, Marathon assumed all rights and benefits arising from the 1960 exploration licence. By 1969 the basis for the Irish model of hydrocarbon management was in place. After drilling its third offshore well, Marathon discovered the Kinsale Head gas field in 1971 (Quish, 1975) and Ireland's first commercial hydrocarbon discovery came into production in 1978 (JCCNRA, 2012). Wood, Mackenzie and Co. (1980, pp. 49-50) outlined Marathon's 'favourable tax arrangement with the Irish government' incorporating a 12.5 per cent royalty on sales revenues; depreciation allowed at ten per cent per annum; a depletion allowance of 25 per cent of gross revenues; a tax rate of 30 per cent until 1983, then rising to 40 per cent; and the tax rate which would be reduced by the amount of royalties paid. 'On this basis and allowing for relief against the field abandonment costs, we estimate that no tax will be payable until the latter years of the field's life' (*ibid.*). Marathon was required to sell the gas back to the state at a discounted rate for a twenty-year term (JCCNRA, 2012, p.32 and) the government decided to allocate Kinsale gas to Nitrigin Éireann Teoranta (NET) for the production of ammonia to manufacture fertiliser and the Electricity Supply Board (ESB) to generate electricity (DICE, 1975, p.2).

² A detailed study of Irish hydrocarbon management is available in Slevin, A. (2016). *Gas, oil and the Irish State: Understanding the dynamics and conflicts of hydrocarbon management*. Manchester: Manchester University Press.

³ The flow of gas was not sustained from the 1962 well but the area (Dowra, Co. Cavan) recently attracted interest in potential gas production via hydraulic fracturing.

An amalgam of factors, including pressures to open up Ireland's territory to other companies, global trends in resource nationalisation, a new coalition government, and the influence of groups such as the Resources Protection Campaign and Sinn Féin the Workers' Party, prompted Minister Justin Keating (Labour) to introduce the *Exclusive Offshore Licensing Terms* in April 1975.

The 1975 Licensing Terms

An explanatory paper accompanying the 1975 terms articulated the primary factors underpinning the new regime: the world energy situation, developments in the North Sea, and 'the primary policy considerations' – the state's declaration of public ownership of the hydrocarbons (DICE, 1975). The 1975 terms declared Irish hydrocarbons to be public property and the government as custodians must ensure the 'national interest is the primary consideration in formulating and implementing policies for their development and exploitation' (DICE, 1975, p. 4). 'National interest' referred to the necessity of analysing benefits and problems associated with the petroleum industry with the objective of maximising benefits to the country and mitigating any undesirable outcomes. Advocating a prudent approach, the terms stated 'petroleum should be used to create the conditions which will assure continuing economic and social well-being' (*ibid.*).

Distinct principles underpinned the new policy: the state acting for the people as owners of the resources should be paid for this resource; companies engaging in offshore development on the Irish Continental Shelf should be subject to Irish taxation; since the resources are public property, the state must have the right to participate in their exploitation (DICE, 1975, p. 7). Several mechanisms were introduced to achieve those goals: fees and rentals; royalties of between eight and sixteen per cent; state participation; and a tax rate of fifty per cent, the standard corporation tax of that time (CPI, 2005, p. 53). For the first time, the state established its 'right to participate in the exploitation of its own resources' (DICE, 1975, p. 8) and the state would have a carried interest in exploration and development activities with the state's costs covered by the lease-holding companies. If a commercial discovery was made, the state would be liable for expenses from its share of petroleum. The level of state participation would not exceed fifty per cent and could be reduced in exceptional circumstances.

The terms also considered that 'state participation might be best conducted through a state body which would acquire increasing experience in managing and operating within the industry' (p. 11), suggesting a possible state oil company which might also become involved in downstream operations such as refining. Recognising the oil industry offered manufacturing, servicing and downstream opportunities for Irish businesses, the terms sought to maximise benefits by insisting that all servicing of operations should be conducted from Irish bases and that supplies of petroleum must be made available to the Irish market. Furthermore, section 62 stated 'the licensee shall use goods and services of Irish origin in his activities as far as they are competitive in regard to quality, service, delivery period and prices.' Companies were required to land the resources in Ireland with the dual purpose of bringing the resources to the Irish market while monitoring the oil companies (DICE, 1975).

Several consortia were granted authorisations under the first licensing round in 1975, comprising various state owned companies including Deminex (German), Dutch State Mines, Elf (French), AGIP (Italian); Irish companies such as Ergas (private gas company), Nitrigin Éireann Teoranta (state-controlled fertiliser company); and privately owned oil companies (Quish, 1975, p. 67). The participation of semi-state and private Irish companies was a key feature of each of consortium, demonstrating Keating's efforts to develop indigenous expertise and capacity through the participation of Irish companies in activities. By mid 1975 eleven consortia, comprising thirty-nine companies had been awarded authorisations for over forty blocks offshore Ireland (AIB, 1979, p. 1).

Rollback on Keating's plans

A tumultuous socio-economic and political climate in Ireland (signified by a recession, mass unemployment, and five General Elections between 1977-1989), influenced changes to Irish hydrocarbon management. Global forces also had an impact and a legacy of the 1979 energy crisis and high oil prices was the movement

of companies away from regions such as Ireland that were perceived as high risk and unproven during the 1980s (Shannon, 2009). Furthermore, a report by AIB (1981) suggests the industry were slower than expected in developing technology necessary for deep water activities, due to a slow down in the development of fields in Europe. Advances in deep water drilling technology were crucial for Ireland's offshore and AIB's report implies companies were more concerned with allocating their budgets to hydrocarbon exploitation in lucrative climates than developing the technology necessary to exploit Irish hydrocarbons located in deep waters. Thus shifts in the global energy context impacted on Ireland, particularly the re-allocation of exploration budgets, culminating in a decline in hydrocarbon exploitation offshore Ireland (Slevin, 2016, p. 69).

Successful Ministers responded by seeking to make Ireland's licensing regime more 'attractive' to companies. In late 1978, Minister for Industry, Commerce and Energy Des O'Malley (then Fianna Fáil) declared 'the Irish licensing terms might be considered maximums not minimums and that the department could be flexible, where the terms made production uneconomic they would be reduced to make production viable' (AIB, 1979, p.3). Fianna Fáil Finance Minister George Colley (who precluded the Irish National Petroleum Company from activities related to hydrocarbon exploitation) assumed responsibility for gas and oil in early 1981 and stressed that 'licensing terms were at maximum rather than minimum and whilst Irish participation in consortia was always welcome it would not be a pre-requisite to acceptance' (AIB, 1981, pp. 2–3). A weakening of Keating's plans occurred as Colley sought to make Ireland more attractive to oil companies by reducing requirements to use Irish goods and services or pay the full royalty and taxation rates established in 1975.

In a Fine Gael-Labour coalition government, Minister Dick Spring (Labour) introduced changes to the licensing terms in 1985, allowing him to reduce levels of state participation and royalties when he felt it 'was necessary in order to enable a marginal field to be developed and, at the same time, to provide a reasonable return on the expenditure to be incurred by the licence holders' (Dáil Éireann, 25 April 1985). Reductions in royalties and participation for 'marginal fields' were decided by a 'profitability ratio', calculated by dividing net revenues by capital expenditure (*ibid.*). With Spring's changes, the state retained the right to participate up to 50 per cent in a field, without having its costs carried (Slevin, 2016). Spring modified the licensing terms again in September 1986, removing state participation and his changes illustrate how the licensing regime had shifted from a centre-left orientation in 1975; these changes also reflected the growing influence of neoliberal ideology, an influence which became more pronounced in subsequent amendments to the 1975 Licensing Term (*ibid.*).

The 1987 General Election resulted in a Fianna Fáil government and a new Minister for Energy, Ray Burke (10 March 1987–24 November 1988). Burke was not long in office when he announced new changes to the fiscal regime. Burke removed obligations for companies to pay royalties and allowed companies to offset costs for exploration and development accrued over a previous twenty-five-year period before tax would be paid (DCENR, 2011). Aside from Marathon's Ballycotton gas discovery (brought into production in 1991 as part of the Kinsale authorisation) and a peak of five wells in 1989, Burke's modifications did not impact on drilling rates which remained low: three wells in 1988; four in 1990; down to an all-time low of one in 1991. By the end of the decade no other fields had been deemed commercial and large areas of the Irish offshore were unexplored or under-explored, the cause of which were described as 'serious cost disadvantages compared to the North Sea in terms of water depths, lack of infrastructure and distance from shore' (PAD, 2006a, p. 1).

Marathon's control over Irish acreage in the 1970s had hampered exploratory activities as the company's exclusive rights meant other companies could not conduct the range of activities necessary to comprehensively map Ireland's geology or make commercial discoveries. The level of control and ownership held by Marathon translated into a failure of the state to facilitate petroleum activities by other companies, or a national oil company NOC, during an era when excitement about the potential of the North Sea and surrounding environs was at its peak (Slevin, 2016). Ireland missed out on some of the enthusiasm surrounding hydrocarbon activities experienced by its neighbours (UK and Norway) as its policy regime limited the entry of other companies. The state did not encourage or demand Marathon to conduct the high level of exploratory drilling necessary for discoveries, nor did the state allow other companies to undertake

such activities. Furthermore, Ireland's inability to manage the entry of oil companies in that seminal era has contributed to the dearth of knowledge about Ireland's geology which has persistently plagued more recent efforts to advance offshore activities (Slevin, 2016, p. 180). Wood Mackenzie state that fluctuations in oil prices also shaped fiscal changes in 1987 and 1992 (2014, p. 24).

Nevertheless, the cause of low drilling rates was regarded by decision-makers as unattractive licensing terms and the new Minister for Energy Bobby Molloy (Progressive Democrats) announced new licensing terms for oil exploration in 1992.

The 1992 Licensing Terms

The 1992 *Licensing Terms for Offshore Oil and Gas Exploration and Development* encapsulated the 1985–87 changes, yet contained an ethos and language far removed from that underpinning Keating's 1975 terms. The new terms undid Keating's work, removing royalties, state participation, bonuses and requirements to land gas and oil in Ireland. Ownership and control of produced hydrocarbons would be transferred to private companies in exchange for payment of a 25 per cent tax rate (reduced from 50 per cent in the 1992 *Finance Act*) – against which exploration, development and production costs could be offset (Slevin, 2016, p. 74). Companies were not required to sell hydrocarbons back to the state and if they chose to do so, it would be at full market prices – in stark contrast to the deal negotiated with Marathon which saw Kinsale gas sold at a pre-agreed rate to semi-state companies for industrial (*ibid.*).

When Corrib gas was discovered in 1996, it was under the 1992 Licensing Terms, in contrast to the Kinsale (1971) and Ballycotton (1989) finds licensed under the Marathon licence. The limited economic benefits for wider society from Corrib gas, in tandem with serious flaws in planning and approvals processes (such as the failure to consult with communities), contributed to the Corrib gas conflict which began to emerge in 2001. 2001 also saw seven wells drilled offshore Ireland, two of which were gas producing wells connected to the Kinsale Head gas project. One well was an appraisal well drilled by Ramco which ultimately led to the production of gas from Sevenheads in 2003 (a gas find initially discovered by Esso in 1973) (JCCNRA, 2012a, p. 118).

The jailing of the Rosspoint Five in 2005 focused attention on the disputed location of the Corrib gas terminal and pipeline and served to expand public debate on Irish hydrocarbon management, leading to a review of Ireland's licensing terms by Minister Noel Dempsey (Fianna Fáil) in 2006. Dempsey stated the review's primary objective was to examine whether Ireland's 'terms ensure a fair return to the Irish public in circumstances where energy prices have risen sharply' (Dempsey, 2006). According to the JCCNRA (2012a, p. 48), revision of the terms was underpinned by concerns about the level of control private companies had over Irish gas and oil and the length of time companies could retain this control. Following the 2007 General Election, Green Party TD Eamon Ryan replaced Dempsey as Minister and he announced new licensing terms and a licensing round.

2007 Licensing Terms

In August 2007 Ryan introduced the *Licensing Terms for Offshore Oil and Gas Exploration, Development and Production, 2007*, applied to new authorisations granted after 1 January 2007. The 2007 terms included the introduction of a Profit Resource Rent Tax (PRRT) which would be payable on an incremental basis in the case of 'more profitable fields. For marginal fields PRRT will not be payable' (PAD, 2007). PRRT is applied after costs have been offset and the 25 per cent corporation tax rate has been paid, calculated on a ratio of the remaining profits to levels of capital investment. If the profit ratio is less than 1.5 ('cumulative post-tax profits to the cumulative value of capital investment') the company will not pay PRRT; if the profit ratio is between 1.5 and 3.0, companies are liable to pay a 5 per cent PRRT; companies are subject to a PRRT of 10 per cent if the profit ratio is between 3.0 and 4.5, and if the profit ratio exceeds 4.5, the companies are liable to pay 15 per cent (PAD, 2007).

The PAD (2007) claimed that on the most profitable fields, the return to the state will increase from 25 to 40 per cent, however, the calculation of PRRT means that only very profitable fields would be subject to additional taxation (up to an extra 15 per cent on top of the 25 per cent corporation tax) and it is not likely that a company will pay 40 per cent tax. By only taxing excess profits calculated against levels of capital investment, the PRRT indicates a continued desire to avoid strong state ownership or control while ensuring oil companies reap the largest share of revenues, thereby demonstrating a distinct ‘free market’ orientation with minimal state intervention. The 2007 terms also resulted in some non-fiscal changes such as requiring licensees to surrender acreage earlier and the length of some exploration licences were reduced. In doing so, companies would be encouraged to make decisions on activities quicker, potentially leading to an increase in drilling rates and commercial discoveries (Slevin, 2016, p. 80). The ‘profit resource tax rent was effected through the *Finance Act 2008* which introduced a new chapter into Part 24 of the *Taxes Consolidation Act 1997*’ (JCCNRA, 2012, p. 50).

The revision of Ireland’s fiscal regime in 2007 seemed to be in line with global trends in resource management whereby several states demanded a greater share of revenue from hydrocarbon production. However, as the 2007 terms did not strengthen the Irish state’s control over its resources, the changes are minimal in comparison to the nationalisations in Ecuador and Bolivia. Furthermore, the PRRT is only applicable to licences granted after 1 January 2007, will only bring additional revenues (after tax and other costs have been offset) in the case of large fields, and rates of government take in Ireland remained among the lowest in the world (discussed in the next section). While a marginal improvement on the 1992 terms through the increase in taxation, the 2007 terms are a world apart from the 1975 terms and its ‘primary policy considerations’ – public ownership and maximum benefits for the country (Slevin, 2016, p. 82).

Reviews by JCCNRA (2011-12) and Pat Rabbitte (2013-14)

The post-2008 banking crisis, recession, government-imposed austerity measures, and the ongoing Corrib gas conflict contributed to socio-economic and political turmoil in Ireland. The 2011 General Election resulted in a Fine Gael–Labour coalition government, a new Minister (Pat Rabbitte, Labour) and increased debate in the Dáil around the management of Irish hydrocarbons.

Sinn Féin’s motion to implement a new approach to hydrocarbon management (defeated after much debate in the Dáil), and the decision of the Joint Committee on Communications, Natural Resources and Agriculture (JCCNRA) to review Ireland’s licensing system, reflected intense public discussion on Irish gas and oil. The JCCNRA report encapsulated five themes: (1) developing petroleum resources to the benefit of the Irish people as a whole should form the basis of petroleum exploration policy in Ireland; (2) to achieve this, a balance should be struck between the need for maximising state revenue with incentivising offshore oil and gas exploration; (3) recognising two major changes in the field of offshore exploration as huge advances in technology which facilitate exploration and greatly improve the drilling success rate, and better geological data; (4) ensuring transparency, simplicity and forward planning are kept to the forefront in legislation, licensing and planning; (5) ensuring 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 exploited (2012a, p.9). The JCCNRA made some recommendations which could have improved the quality of the existing regime, for example, the suggestion that the *Petroleum and Other Minerals Development Act, 1960* be reviewed. Other recommendations included: an increase in the PRRT; reviews of the fiscal and licensing terms before each new licensing round; a clear and comprehensive process of public consultation; and the establishment of a forum of key stakeholders to influence policy formation (JCCNRA, 2012a, pp. 10–12).

Despite cross-party support for the JCCNRA review, the Minister for Communications, Natural Resources and Agriculture (Pat Rabbitte) did not participate in the JCCNRA deliberations and did not implement the JCCNRA’s recommendations. He did, however, announce plans to conduct his own review. Whilst the JCCNRA review was ongoing, in March 2012 Providence Resources announced the discovery of what it believed to be the first commercially viable oil flow rate in Ireland.

In an appraisal well (48/24-10z) drilled in 335 ft. of water in the North Celtic Sea Basin, Providence found oil (DCENR, 2012). This block was the location of Marathon's first 'oil show' in August 1974 which had a flow rate of 780 barrels per day (bpd) (Collins, 1977). In 2012, 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 (JCCNRA, 2012a, p. 34). A report in the *Irish Examiner* suggested this oil find was in excess of 1 billion barrels (Keane, 2012). However, the latest *Acreage Report* (PAD, 31 March 2018) illustrates that **the authorisation for Barryroe remains a Standard Exploration Licence (1/11), with no reference to plans to transfer this authorisation to a petroleum lease or lease undertaking**, thus allowing Providence to maintain control over that area of acreage without immediate plans to bring the well into production.

In May 2013, Minister Rabbitte announced plans to 'seek further independent expert advice on the fitness for purpose of Ireland's fiscal terms with a focus on the level of fiscal gain achievable for the state and its citizens, and equally importantly, on the mechanisms best suit to produce such a gain' (Dáil Éireann, 3 July 2014). One might argue that two reviews in little over a year, involving many of the same people, is duplicitous and a questionable use of resources; nevertheless, Rabbitte persisted and following a public procurement process engaged industry-body Wood Mackenzie to undertake the evaluation.

Wood Mackenzie recommended Ireland keep its concession system and replace the PRRT (introduced in 2007), with a new petroleum production tax (PPT), charged on a field-by-field basis. Companies would be required to make a minimum payment (5 per cent of PPT) every year 'which would function like a royalty' and the overall PPT rates would be higher than the PRRT system, but lower than the rates recommended in the JCCNRA review. Corporation tax would remain the same at 25 per cent, although PPT payments would be deducted before the calculation of tax. Combining PPT and corporate tax, profitable fields could result in a government share of a maximum rate of 55 per cent, compared with a maximum rate of 80 per cent suggested in the JCCNRA review. In addition, Wood Mackenzie advised 'there should be no introduction of mandatory state equity participation or a production sharing contract system at this time. Instead, both of those options should be properly investigated as part of a thorough review of options for the optimal development of the petroleum sector' (2014, p. 38). To date, no independent investigations of those options occurred. The terms introduced by Minister Rabbitte apply to authorisations awarded from June 2014 and were applied in the *Finance Act 2015*.

A comparison of licensing terms introduced throughout the history of Ireland's model of hydrocarbon management is presented below in *table 1: Summary of changes to Ireland's licensing system (1959-2014)*.

Table 1: Summary of changes to Ireland's licensing system (1959-2014)

	1959 Oil Agreement	Kinsale lease (1971)	1975 Licensing Terms	1992 Licensing Terms	2007 Licensing Terms	2014 review
Minister	Sean Lemass (Fianna Fáil)	Patrick Lalor (Fianna Fáil)	Justin Keating (Labour)	Bobby Molloy (Progressive Democrats)	Eamon Ryan (Green Party)	Pat Rabbitte (Labour)
Government	Fianna Fáil	Fianna Fáil	Fine Gael & Labour	Fianna Fáil & PDs	Fianna Fáil & GP	Fine Gael & Labour
Royalties	7.5 %	12.5 %	8 to 16%	Removed	None	None
Tax	12.5 %	30% to 1983, rising to 40%	50%	25%	25% CT + 5 to 15 % profit resource rent tax (max 40%)	25% CT + petroleum production tax (max 55 %)
State participation	None	None	Up to 50% carried interest in exploration and development; state pays own way when production begins.	Removed	None	None
Bonuses	None	None	Payable when production exceeded 200,000 bpd.	Removed	None	None
Duration of Exploration Licence	Up to 20 years	N/A	6 years (option of an additional 3 years)	Standard: 6 years Deepwater: 12 years Frontier: min.15 years	Standard:6 years Deepwater: 9 years Frontier: 12 years	Details not available
Petroleum Lease Duration	21 years and so long as petroleum was produced in commercial quantities	21 years and so long as petroleum was produced in commercial quantities	28 years (with possibility of extension)	Decided by Minister	Decided by Minister	Details not available
Territory	Island of Ireland & its seas	Kinsale gas field & connected acreage	Designated blocks (specified in each authorisation)	Designated blocks specified in each authorisation	Designated blocks specified in each authorisation	Details not available
Other comments		Marathon was required to sell gas to State at a rate agreed with the Minister (reduced rate for 20 years).	Companies were required to: use Ireland as base for servicing; land gas/oil in Ireland; sell hydrocarbons back to the country; use Irish goods and services. In 'emergency situations' State could take control of petroleum for its own use.	Companies not required to sell resources back to State, etc. The changes encapsulated in the 1992 terms were a result of policy changes between 1978 and 1987 by Labour and Fianna Fáil ministers.	Changes leading to these were terms were initiated prior to 2007 General Election by Noel Dempsey (Fianna Fáil).	Changes encapsulated in <i>Finance Act 2015</i> .

Amended from Slevin (2016). *Sources:* Dáil Éireann (November 5, 1959); OECD (1973); Quish (1975); DICE (1975); Robinson and Riddihough (1975); DCMR (1992); DCENR (2007), Wood Mackenzie (2014). Rabbitte (18 June, 2014).

3. Problematic nature of the Irish model of hydrocarbon management

Researching Irish hydrocarbon management reveals the influence of global trends, shifts in Irish political economy, impact of dominant ideologies (notably neoliberalism), and flaws in decision-making processes around indigenous oil and gas exploitation. As reflected in public discourse and pressures to review licensing terms at key junctures, benefits from the state's current approach to hydrocarbon management are strongly contested. *Table 2: current authorisations* outlines the number of authorisations granted under the 1992 and 2007 Licensing Terms and the 2014 amendments to taxation.

Table 2: Current authorisations

(Adapted from *Acreage Report 31 March 2018, JCCNRA (2012), acreage reports and six-monthly reports to the Oireachtas (2007-2018)*)

Licensing terms	Type of authorisation	No. of authorisations	Comments on authorisations ⁴
Marathon licence	Petroleum Lease	1	Production from Kinsale (gas, discovered in 1971, production started in 1978) and Ballycotton (gas, discovered in 1989, production in 1991)
1992 Terms	Petroleum Lease	2	1. Corrib gas (discovered in 1996, production in 2015) 2. Seven Heads (gas discovered in 1973, production in 2003)
	Frontier exploration licence	6	FEL 1/04 – Connemara (oil discovered in 1979, Island Assets Porcupine & partners have held an authorisation since 2004) FEL 2/04 – Burren (oil discovered in 1978, Providence have had authorisation since 2004) FEL 2/04 – Spanish point (gas condensate, discovered in 1981, Providence authorisation since 2004) FEL 1/06 – Bandon (oil, discovered in 2009. Serica is the operator and has held the licences since 2006)
	Standard exploration licence	2	SEL 4/05 – Old Head of Kinsale (gas discovered in 2006, licence held by Island Expro & partners. 'Lease undertaking application' has been under consideration since 2011) SEL 5/05 – Schull Discovery (gas discovered in 2007, licence held by Island Expro & partners. 'Lease undertaking application' has been under consideration since 2011)
2007 Terms	Lease Undertaking	2	1. Dunmore (oil; discovered in 1985. Providence have held authorisations for this discovery since 2000). Dunmore is one of 4 discoveries that were licenced under SEL 2/07 (see below) 2. Helvick (oil, discovered in 1983. Arcon, the predecessor of Providence was granted an authorisation in 1994. Providence has held SEL 2/07 since 2007, preceded by other authorisations dating back to 1998)
	Frontier exploration licence	12	
	Standard exploration licence	4	SEL 1/07 – Providence, extension under consideration (since 2014) SEL 2/07 – Hook Head (oil, discovered in 2007 by Providence. Lease undertaking being considered, since 2013) SEL 1/11 – Barryroe (oil field discovered in 1973, Providence / subsidiary Exola have held licence since 2011)
2014 Terms	Frontier exploration licence	1	
	Licensing options	31	12 follow-on applications received
	Petroleum Prospecting Licences	18	LO 16/30 contains the Ardmore discovery, previously licenced to Providence/ Arcon under SEL 2/07 (1996-2013)
Total number of authorisations		79	

⁴ Using data from DCENR reports and presentations, the JCCNRA report (2012) outlines 18 'significant discoveries' offshore and onshore Ireland. This table refers to those discoveries which are currently covered by authorisations; names of the discoveries are demarcated in bold type.

Choice of regime

Ireland utilises a licensing system through which the resource-owning state grants licences and authorises oil companies to conduct exploration and production activities. If hydrocarbons are discovered and produced, **ownership of the resources is transferred from the state to the companies** in exchange for a pre-agreed financial return (Slevin, 2016). Licensing systems reflect a neoliberal ideology in terms of the privatisation of resources and a liberal attitude towards state management and regulation, and Stevens (2002, 2008) outlines a faltering in such a neoliberal approach in recent times. Stevens articulates several factors which contributed to a growing recognition that state intervention in energy is necessary: the Asian financial collapse (1997–99); Russia's economic collapse (1998); a rising awareness that while many economies grew, poverty alleviation was struggling; the growing questioning of whether such a strategic sector could simply be 'left to the market' (a view reinforced by problems with electric power in California (2002–3)); concerns over climate change and the need to control greenhouse gas emissions'; and rising oil and gas prices (2008, p. 8)

Ireland's licensing regime is at odds with other countries as production sharing and service contracts are the most popular approach to hydrocarbon management globally (Easo, 2009; Johnston, 2008; Kaiser and Pulsipher, 2006; Slevin, 2016), emphasising the outmoded approach adopted by the Irish state. Production sharing contracts and service contracts are premised upon a French legal concept that resources should be owned by the state for the benefit of its citizens (Allen and Seba, 1993; Johnston, 1994). Both approaches ensure strong state control with service contracts ensuring the state retains full ownership of its resources, permitting companies to undertake hydrocarbon exploitation as a service to the state (Easo, 2009, pp. 37-8). Wider benefits accrue from higher shares of taxes, royalties, associated onshore and offshore services, and guarantee supply to a state; benefits which Justin Keating sought to achieve through the 1975 Licensing Terms.

Ireland's licensing regime is an outdated approach which means companies are under no obligation to sell produced Irish gas and oil back to the state and if they choose to do so, sales are at full market prices (in stark contrast to Justin Keating's efforts to rectify this state of affairs). The Irish licensing regime for gas and oil does not guarantee security of supply. The wisdom of a state having to buy back its own resources is to be questioned, particular as this model of resource management results in significantly less benefits to a state compared with production sharing and service contracts. If oil is produced offshore Ireland, companies are not obliged to sell the resources to the state; the oil can be transported in tankers to other countries. Similarly, plans for the Shannon Liquid Natural Gas processing plant may mean future gas supplies will be exported to other countries without benefitting the state in terms of access to indigenous gas. Security of supply fallacies need to be challenged and recognition given to the weak position the state holds in relation to Irish gas and oil.

Globally states are increasingly asserting stronger control and ownership over their resources, with national oil and gas companies bearing responsibility for production. The Irish state should also reassert control over its resources with the goal of keeping these resources unproduced on environmental grounds, following the example of France, New Zealand, Belize and Costa Rica, particularly as the fiscal returns to the Irish state from hydrocarbon exploitation are among the lowest returns to a state in the world.

Uniquely low tax terms

In the words of an oil company, Ireland's 'corporate tax regime (25%) [is] regarded as one of the best in the world' (Serica Energy, 2013). Research on fiscal terms emphasises the uniquely low financial returns to the state from Irish gas and oil.

The 1992 Licensing terms apply to the Corrib and Seven Heads Petroleum Leases, 6 Frontier Exploration Licences and 2 Standard Exploration Licences. Hydrocarbons produced through these authorisations are subject to a 25% tax rate, against which all costs can be offset. **This rate of taxation is one of the lowest in the world.** Johnston's 2008 study of 45 fiscal regimes situated Irish terms at the **bottom of the list** with the

nearest terms resulting in 40% tax to the state (Peru). Similarly, DCMR (2006) research established the 1992 terms as being the lowest to a state globally.

Following public outcry about these low tax rates, the 2007 terms were introduced and these also apply a 25% tax rate. Large fields may be subject to a petroleum profit resource tax of 5-15%, after costs have been offset. 2 Lease Undertakings, 12 Frontier Exploration Licences and 4 Standard Exploration licences are subject to the 2007 licensing terms. 2 Lease Undertakings under these terms are also being considered.

In an examination of international studies of government take (share of revenues a state receives from hydrocarbon exploitation), **this author examined research on 153 fiscal regimes and found Ireland had the second lowest rate of returns** (Slevin, 2016). Indeed 79% of the countries studied demanded government take of at least 50% - twice the rate applied in the 1992 terms and higher than returns demanded under the 2007 terms. The generosity of the Irish state to oil companies is evident in an Oireachtas Library and Research Service report (2011) which found 'Ireland has the most generous tax and royalty regime'.

A 2014 review of Ireland's licensing regime resulted in an increase in taxation for authorisations granted after 2014. The 25% corporate tax rate remains, joined by a petroleum production tax which could result in taxation up to 55% (after costs accrued over a previous 25-year period have been offset). 1 Frontier Exploration Licence, 31 Licensing Options and 18 Petroleum Prospecting Licences were granted after June 2014 and will be subject to those terms, if extraction is permitted.

Johnston (2010) estimated average government take globally to be around 70 per cent – nearly three times the rate of government take under the Irish 1992 Licensing Terms and significantly higher than the 2007 and 2014 modifications (Slevin, 2016, p. 124). The tax terms for Irish hydrocarbons remain low by international standards and limited economic benefits from hydrocarbon exploitation should not be used to justify continued extraction, particularly when one considers the environmental damage caused by hydrocarbon exploitation. In the interests of sustainability, resources should be invested in renewable energy sources that will support Ireland's transition to a low carbon economy. Such changes need to happen sooner rather than later if Ireland is to have any hope of meeting GHG reduction targets. 'If this transition [from fossil fuel-based energy sector to a clean, low-carbon system] is delayed it may make a 'hard landing' more likely (Department of the Taoiseach, 2017, p. 45).

Licensing, policy and planning frameworks

Flaws in the Irish model of hydrocarbon management are further compounded by weaknesses in licensing, policy and planning framework as violently articulated through the Corrib gas conflict.

Deficiencies in Ireland's licensing, policy and planning frameworks include a disjointed approach to sustainability, the facilitation of project-splitting, the exclusion of communities from decision-making, and the prioritisation of narrow, short term economic interests over long term societal and ecological wellbeing.

A further issues surrounds the contradictory roles held by the Department of Communications, Climate Action and the Environment which is tasked with promoting hydrocarbon exploitation, managing activities, functioning as resource owner and, somewhat contradictorily, is tasked with environmental protection when the acts of producing and consuming hydrocarbons result in environmental degradation and contribute to climate change. In other words, **the state body responsible for responding to climate change also promotes hydrocarbon exploitation and transfers public resources to private interests, undertaking conflictual roles that do not correspond with any notion of sustainability.**

4. Interconnected issues surrounding hydrocarbon exploitation, consumption and climate change

We are at an important crossroads and need to take radical actions if we wish to create a healthy, sustainable society for current and future generations. Current production and consumption patterns cannot be sustained and 'our energy system has to fundamentally change, both in terms of where our energy comes from and how we use it...if we use less energy it makes it easier to replace our fossil fuels with renewable energy' (NPM, 2017, p. 61).

Erickson *et al.* (2015) emphasise the necessity of structural changes from the perspective of 'carbon lock-in' whereby carbon-intensive technological systems persist over time, 'locking-out' lower carbon alternatives due to interconnected technical, economic and institutional factors. Building carbon-intensive technological systems, such as gas power plants, which are relatively inexpensive to operate, can reinforce political, market and social factors that make it difficult to 'unlock' them and transition to other technologies like renewable energy. They add that although gas may reduce CO₂ relative to coal in the short term, achieving ambitious climate targets is likely to require 'a swift transition away from these gas plants to renewable power' (*ibid.*). 'Significantly, the International Energy Agency (2013) found that continued near-term (through 2020) investment in conventional technologies instead of low-carbon alternatives would increase investment costs fourfold in the longer term' (Erickson, *et al.* (2015) cited in Healy and Barry, 2017).

Referring to the US energy system, Healy and Barry illuminate vested interests surrounding 'carbon lock-in', highlighting the role fossil fuel corporations play in shaping US energy policies and energy transition options, 'effectively ensuring carbon lock-in from which of course they benefit. Overcoming this carbon lock-in requires confronting corporate energy power' (2017, p. 453). Transitions to renewable energy also means changes to investment strategies and McCollum *et al.* (2018) call attention to the deep, structural changes to energy investment portfolios that are needed to meet the lower temperature targets within the Paris Agreement.

This submission argues that environmental, social, economic, political and ideological forces are indelibly linked, as illustrated in *figure 1: interconnected issues surrounding hydrocarbon exploitation and climate change*. These factors contribute to a contested approach to hydrocarbon management and must be considered when considering measures to mitigate climate change.

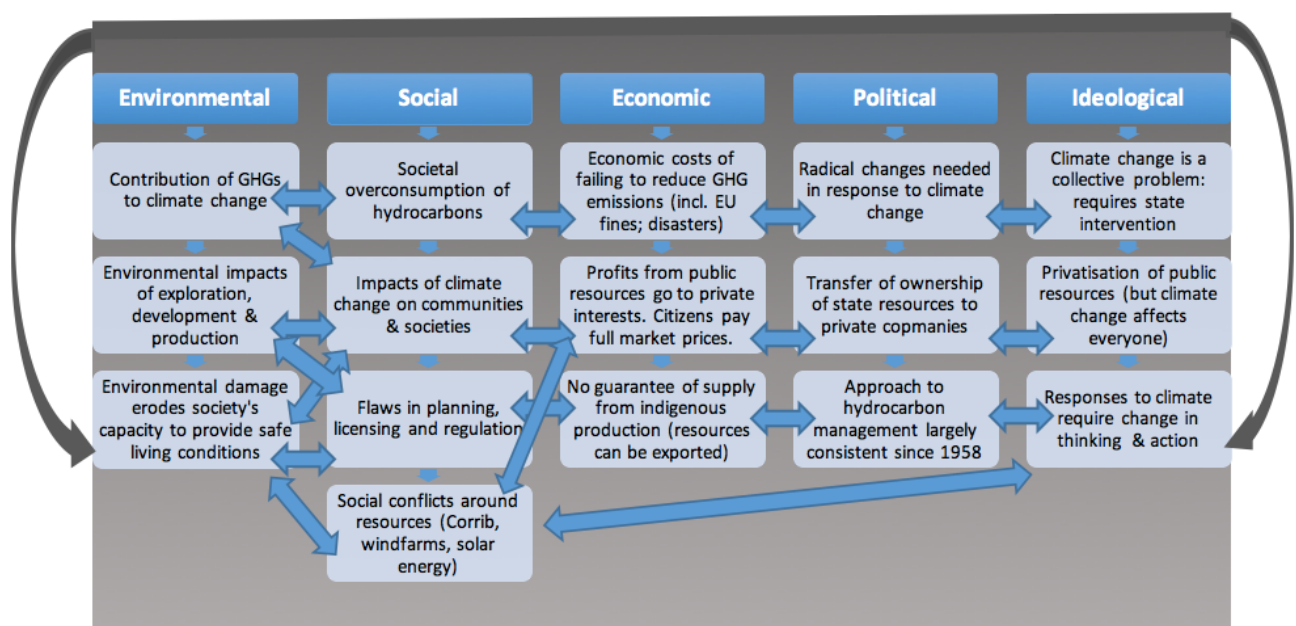


Figure 1: Interconnected issues surrounding hydrocarbon exploitation and climate change

Deficiencies in policy and planning may hamper our transition to a 'low carbon energy future' (DCENR, 2015). As we've learned from the Corrib gas dispute, our planning and policy frameworks have led to the emergence of conflicts and contradictions which include a lack of a statutory obligation to involve communities in decision-making around energy projects; issues of control and ownership of resources remain prominent. Renewable energy development suffers from some of the problems that gave rise to the Corrib gas conflict, notably structural issues within planning and approval processes, which relegate communities to bystander roles, thus generating tensions and preventing community viewpoints from being heard at key stages (Slevin and Leyden, 2018). These flaws in planning and permissions processes need to be overcome to aid our transition to a decarbonised society. Hand in hand with the environmental benefits of reduced fossil fuels consumption and extraction, Benedikter *et al.* (2016) highlight how 'keeping resources in the ground' can help to avoid the social conflicts that frequently surround resource extraction, thus resulting in socio-ecological wins.

Recent policies, legislation and the new planning framework emphasise the necessity of transitioning to a low carbon society. Forcing the continued production of hydrocarbons will not aid that goal – indeed, it will allow us to keep our heads in the sand and deny the impacts we are having on our global environment. All the while ensuring that economic benefits from indigenous hydrocarbon production largely accrue to private interests.

Since the first authorisation for hydrocarbon exploitation was granted in 1959, the Irish State's approach to indigenous gas and oil resources has been characterised by (1) a model of hydrocarbon management premised upon privatisation of common resources; (2) a tax regime that results in some of the lowest economic returns to a state in the world; (3) licensing, policy and planning frameworks unconducive to long-term sustainability. By examining these features of Irish state hydrocarbon management in the context of climate change, this submission supports the *Climate Emergency Measures Bill* and challenges viewpoints which suggest Irish hydrocarbon exploitation should continue on grounds such as so-called 'security of supply' and economic benefits.

There is no second chance when it comes to climate change. We need to act now and act decisively; such actions include banning further hydrocarbon exploitation; reducing energy consumption and properly resourcing the transition to renewable energy in a manner acceptable to all stakeholders.

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