Briefing Note: Legislation to Ban Fracking in Ireland, June 2017

Petroleum and Other Minerals Development (Prohibition of Onshore Hydraulic Fracturing) Bill 2016

(changed from Prohibition of the Exploration and Extraction of Onshore Petroleum Bill 2016)

What would this bill do?

This Bill would make it illegal to look for, raise or extract petroleum from Ireland's onshore by means of hydraulic fracturing.

There is currently no policy on fracking in Ireland or onshore extraction of oil and gas in Ireland.

What is fracking?

Fracking or 'hydraulic fracturing' is a process of oil and gas extraction. It is usually referred to as unconventional extraction, because in contrast to conventional oil or gas wells an additional process or an additional intervention is needed to increase the permeability of the rocks that the oil or gas is trapped in to allow it to flow.

The fracking technique includes pumping water, chemicals and sand at high pressures into wells drilled deep into the ground to fracture rock and increase its permeability, thus allowing oil or gas to flow.

This bill bans the process of pumping fluid at high pressure into rock, and thus would prevent petroleum from being extracted from Ireland's onshore.

What has happened in the legislative process to date?

The Bill was originally proposed by Tony McLoughlin TD (Fine Gael), as a private members Bill (October 2016).

It has since undergone pre-legislative scrutiny by the Joint Oireachtas Committee on Communications, Climate Action and Environment. This process involved a public consultation, representations to the Committee from the Environmental Protection Agency, and the publication of a report on the Detailed Scrutiny of the Bill.

The Bill received unanimous support from all parties and none at the Second Stage, Committee Stage, Report and Final Stage in the Dáil, and was passed by the Dáil on May 31st 2017.

Why ban Fracking?

There are significant local and global impacts associated with the fracking industry. Fracking threatens public health, environmental health, tourism and farming industries and contributes to climate change. The risks of fracking are too high to allow this industry to take root in Ireland.

The fracking industry is already here. They are just waiting for the opportunity to start. If there is no ban on fracking, this industry will be successful and they will start opening up Leitrim, Roscommon, Sligo, Clare and other parts of Ireland to oil and gas extraction with significant negative impacts on the people, communities, land and water nearby and will prevent Ireland from taking any meaningful action on climate change.

- **Climate Change**

Minister Naughten has said "*climate change is the defining challenge of our time and it is during our time that the obligation exists for us as a nation to take action".* Now is the chance to put these words into action.

The newest data released by Nasa, the UK Met Office, and NOAA (January 2017)[1] show that 2016 was once again the warmest year on record, with record temperatures recorded on both land and sea. The world is now 1.1°C warmer than the temperatures experienced before the industrial revolution, when large scale burning of fossil fuels began. The effects of this climate change are already being felt with more intense storms, severe flooding, heat waves, coral bleaching, wild fires, and drought across all continents. In 2016 Arctic sea ice fell to its lowest annual average extent on record and Antarctic sea ice to the second smallest extent on record.

The extraction of fossil fuels through fracking and unconventional extraction from Ireland would result in generating greenhouse gas emissions and would lock us into a future that continues to depend on fossil fuel use for our energy needs. This is not compatible with a climate safe future, and is not compatible with our commitments at local, national, European and International levels to stop contributing to climate change. The unfortunate reality is that Ireland's emissions are rising, we are going to miss our EU targets by at least 11%, and since 2012 we have not had a national plan to reduce emissions.

The International Energy Agency, 2012 World Energy Outlook Report's[2] analysis of global fossil fuel reserves states that "*No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal*". Thus, there are far more fossil fuels contained in this world, than this world has the capacity to extract, and still remain a safe place for people to live.

In terms of climate pollution, methane leakage rates and burning gas from fracking activities makes it one of the most climate polluting forms of fossil fuel energy. Data from the USA shows that if methane leakage rates are taken into consideration, greenhouse gas emissions from fracked gas are at best as bad as emissions from coal, and at worse significantly higher than coal emissions [3].

- **Trade Deals CETA and TTIP**

If we are serious about our climate commitments, we must legislate now to prevent the fracking industry from taking hold in Ireland.

With the forthcoming trade deals, particularly CETA, if fracking is allowed to start Ireland, it is likely we would never be able to stop it, regardless of the known damage to the environment and climate that would occur.

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[1] UK Met Office 2016 Record Breaking Year for Global Temperature
http://www.metoffice.gov.uk/news/releases/2017/2016-record-breaking-year-for-global-temperature

NOAA/NASA Annual Global Analysis 2016 https://www.nasa.gov/sites/default/files/atoms/files/noaa-nasa_global_analysis-2016.pdf

[2] The International Energy Agency, World Energy Outlook 2012 report
http://www.worldenergyoutlook.org/weo2012/

[3] McKibbon 2016, Global Warming's Terrifying New Chemistry, The Nation
https://www.thenation.com/article/global-warming-terrifying-new-chemistry/

- **Public health**

At each stage of unconventional oil and gas development emissions that can impact human health are released into the air and water. Research is ongoing into the impact of fracking on public health, and the body of evidence demonstrating adverse impacts is growing at a rapid pace.

This Bill is thus motivated by the Precautionary Principle of the Treaty of the Functioning of the European Union (Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union 2012/C 326/01) which provides for the Precautionary Principle in Article 191(2) – and which underpins all EU Environmental legislation and consequently associated Irish legislation, in stating:

> *"2. Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay."*

There has been a ban on fracking in New York since 2014 when the results of a Department of Health research found the risks associated with fracking on public health to be too high. Since then, there has been a significant increase in the number of research studies from areas across the United States where fracking activities have been ongoing over the past 5-10 years. The growing body of most recent peer reviewed scientific evidence detailing the impacts of unconventional extraction on public health is collated by the Concerned Health Professionals of New York[4] in the third 'Compendium of Scientific, Medical and Media research demonstrating risks and harms of fracking' (November 2016). The Compendium summarises 100 recent studies on the impacts of fracking, and states that the majority of which indicate risks and adverse impacts.

Major areas of risks and harms identified in the compilation of the science include: public health impacts, air pollution, water contamination, occupational health and safety hazards, radioactive releases, inherent engineering problems, impacts from associated infrastructure, and climate change impacts.

As a result of the findings, the Concerned Health Professionals of New York and the Physicians for Social Responsibility call for a halt to all fracking activities[5].

- **Water and land environments**

Research undertaken on behalf of the Sustainable Water Network SWAN demonstrates the risks of water contamination related to unconventional extraction activities in Ireland and recommends its prohibition[6]. SWAN notes,

"Due to the many documented impacts on water attributed to hydraulic fracturing for shale gas, combined with the absence of a coherent effective governance and regulatory framework for the

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[4] Concerned Health Professionals of New York Third Compendium, November 2016, http://concernedhealthny.org/compendium/

[5] Concerned Health Professionals of New York, Press Release November 17th 2016, http://concernedhealthny.org/doctors-release-new-comprehensive-fracking-impacts-report-deliver-over-100-recent-studies-to-governor-wolf/

[6] Craven, K, 2016 on behalf of the Sustainable Water Network "Hydraulic Fracturing – Interactions with the Water Framework Directive & Groundwater Directive and Implications for the Status of Ireland's Waters" http://www.swanireland.ie/resources/fracking-report

industry in Ireland, it is the Sustainable Water Network (SWAN) position that hydraulic fracturing should not be permitted in Ireland"

"*It is SWAN's view that the carrying out of hydraulic fracturing and other shale-gas activities in Ireland is not consistent with the achievement of good status for our surface waters or ground waters, nor with the prevention of deterioration in water status, and therefore should not be permitted in the context of meeting EU Water Framework Directive (WFD) and Groundwater Directive (GWD) objectives."*

In addition, the US EPA research[7] finds widespread pollution of drinking water and groundwater in fracked areas and that chemical and waste water spills occur in between 1-10% of fracked wells.

The Executive Summary of the final version[8] of the report (pg. 10.3) states that "Cases of impacts [on water] were identified for all stages of the hydraulic fracturing water cycle. Identified impacts generally occurred near hydraulically fractured oil and gas production wells and ranged in severity, from temporary changes in water quality to contamination making private drinking water wells unusable". The draft version of this report was withdrawn in controversy and re-written in late 2016 as it was found to not accurately reflect the findings of the main report.

The report was controversial, as the draft executive summary had to be removed and rewritten following a review by the Scientific Advisory Board which found that claims made in the summary that there was 'no widespread, systematic impacts of fracking on drinking water' were unsubstantiated in the research, and therefore subsequently removed from the executive summary.[9]

In particular the report details spills of chemicals and produced wastewater, and notes

".. spills of additives and hydraulic fracturing fluids during the chemical mixing stage of the hydraulic fracturing water cycle have occurred and have reached and impacted drinking water resources." (Ch. 5, abstract, pg. 5.1)

"... Spills were caused most often by equipment failure or human error… The lack of monitoring following spills, along with the lack of publicly available information on the composition of additives and fracturing fluids, containment and mitigation measures in use, the proximity of chemical mixing to drinking water resources, and the fate and transport of spilled fluids limits the EPA's ability to fully assess potential impacts on drinking water resources and their frequency and severity." (Ch. 5, abstract, pg. 5.1)

"In Bradford County, Pennsylvania, a well blowout resulted in a spill of approximately 10,000 gal (38,000 L) of produced water into a tributary of Towanda Creek, a state designated trout fishery. The largest volume spill identified in this assessment occurred in North Dakota, where approximately 2.9

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[7] United States, Environmental Protection Agency, Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States, 2016 https://www.epa.gov/hfstudy

[8] United States, Environmental Protection Agency, Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States, Executive Summary Final Version, 2016 https://www.epa.gov/hfstudy/executive-summary-hydraulic-fracturing-study-final-assessment-2016

[9] United States Environmental Protection Agency, Office of the Administrator Science Advisory Board, August 2016

million gal (11 million L) of produced water spilled from a broken pipeline and impacted surface water and groundwater." (Chap. 10; pg. 10.10)

"Spills and releases of produced water with a variety of causes have been documented at different steps in the production process. The causes include human error, equipment or container failure (for instance, pipeline, tank or storage pit leaks), accidents, and storms. Unauthorized discharges may account for some releases as well. An estimated half of the spills are less than 1,000 gal (3,800 L). A small number of much larger spills has been documented, including a spill of 2.9 million gal (11 million L). Both short- and long-term impacts to soil, groundwater, and surface from spills have occurred." (Chap 7, abstract, pg. 7.1)

And concludes,

"We conclude … that spills do occur in both the chemical mixing and produced water stages of the hydraulic fracturing water cycle, generally in the range of 1 to 10% of hydraulically fractured or active wells." (Chap 10; pg. 10.9)

Regarding wastewater disposal and reuse, the report notes,

"..management of hydraulic fracturing wastewater through aboveground practices [as opposed to underground disposal] has affected the quality of water resources." (Chap 8; abstract pg. 8.1)

"Even where prohibited, unpermitted unlined disposal or storage pits exist. For example, approximately 1,000 unlined storage or disposal pits of oil and gas wastewater are located in the Central Valley Region of California… Unlined pits have been shown to cause contamination of drinking water resources. The presence of BTEX (benzene, toluene, ethylbenzene, and xylenes) and other organics in groundwater are linked to pits in California and New Mexico". (Chap 10; pg. 10.23)