

**PROPOSED PROHIBITION OF FRACKING ETC. (SCOTLAND) BILL  
CLAUDIA BEAMISH MSP**

**SUMMARY OF CONSULTATION RESPONSES**

This document summarises and analyses the responses to a consultation exercise carried out on the above proposal.

The background to the proposal is set out in section 1, while section 2 gives an overview of the results. A detailed analysis of the responses to the consultation questions is given in section 3. These three sections have been prepared by the Scottish Parliament's Non-Government Bills Unit (NGBU). Section 4 has been prepared by Claudia Beamish MSP and includes her commentary on the results of the consultation.

Where respondents have requested that certain information be treated as confidential, or that the response remain anonymous, these requests have been respected in this summary.

In some places, the summary includes quantitative data about responses, including numbers and proportions of respondents who have indicated support for, or opposition to, the proposal (or particular aspects of it). In interpreting this data, it should be borne in mind that respondents are self-selecting and it should not be assumed that their individual or collective views are representative of wider stakeholder or public opinion. The principal aim of the document is to identify the main points made by respondents, giving weight in particular to those supported by arguments and evidence and those from respondents with relevant experience and expertise. A consultation is not an opinion poll, and the best arguments may not be those that obtain majority support.

Copies of the individual responses are available on the following website: [www.frackingbanbill.com](http://www.frackingbanbill.com).

## **SECTION 1: INTRODUCTION AND BACKGROUND**

Claudia Beamish MSP's draft proposal, lodged on 3 November 2016, is for a Bill to ban unconventional oil and gas extraction, including by means of hydraulic fracturing.

The proposed Bill aims to ban the onshore extraction of unconventional oil and gas, including by means of hydraulic fracturing, often referred to as "fracking". Unconventional oil and gas extraction encompasses shale oil, shale gas, coalbed methane, and underground coal gasification.

The consultation document, which accompanied the draft proposal, set out to demonstrate how the exploitation and burning of further oil and gas reserves without any current commercially viable method of storing the carbon dioxide (CO<sub>2</sub>) emissions created, together with fugitive emissions of other greenhouse gases from the extraction process, and the potential displacement of the development of renewables, would all create barriers to Scotland transitioning to a low carbon economy.

By prohibiting UOG extraction, the intention was that the proposed Bill would also prevent other potential problems, such as water and air pollution and, seismic activity, and adverse impacts on health, communities, and the economy.

The consultation document was prepared with the assistance of NGBU. This document was published on the Parliament's website, from where it remains accessible:

<http://www.scottish.parliament.uk/parliamentarybusiness/Bills/101886.aspx>

The consultation period ran from 4 November 2016 to 17 February 2017.

The following organisations and individuals were sent copies of the consultation document, or links to it, by the member's office:

- Crichton Carbon Centre
- Friends of the Earth Scotland
- GMB
- Ineos Shale
- National Farmers Union Scotland
- Nourish Scotland
- Plantlife
- Platform
- Pete Roche – Energy Consultant
- Royal Society for the Protection of Birds
- Scottish Catholic International Aid Fund
- Scottish Renewables
- Scottish Trade Unions Congress
- Scottish Wildlife Trust
- Prof Zoe Shipton, Head of Civil and Environmental Engineering, University of Strathclyde

- Stop Climate Chaos Scotland
- Professor Peter Strachan, Strategy and Policy Group Lead at Aberdeen Business School
- Tearfund
- UK Onshore Oil and Gas
- Unison
- Unite the Union
- World Wildlife Fund

The member also attended two public meetings in connection with her proposed Bill – one a public meeting organised by Edinburgh Eastern Constituency Labour Party on 16 January 2017 and a meeting held by East Lothian Fabian Society on 23 January 2017.

The consultation exercise was run by Claudia Beamish MSP's parliamentary office.

The consultation process is part of the procedure that MSPs must follow in order to obtain the right to introduce a Member's Bill. Further information about the procedure can be found in the Parliament's standing orders (see Rule 9.14) and in the *Guidance on Public Bills*, both of which are available on the Parliament's website:

- Standing orders (Chapter 9):  
<http://www.scottish.parliament.uk/parliamentarybusiness/26514.aspx>
- Guidance (Part 3):  
<http://www.scottish.parliament.uk/parliamentarybusiness/Bills/25690.aspx>

## SECTION 2: OVERVIEW OF RESPONSES

In total, 1,067 responses were received and the vast majority were submitted via “Smart Survey” (an online survey which allows responses to be completed and submitted online).

There were 648 (61%) anonymous submissions and 58 (5%) submissions where confidentiality was requested.

There were 30 (3%) responses from organisations and 1,037 (97%) from individuals.

The responses can be categorised as follows:

### Organisations

- six from representative organisations (including Unison, the Scottish Cooperative Party, GMB Scotland and UK Onshore Oil and Gas (UKOOG))
- one from a private sector organisation (Ineos Shale)
- 19 from third sector organisations<sup>1</sup> (charitable, campaigning, social enterprise, voluntary or non-profit, such as Friends of the Earth Scotland, WWF Scotland, RSPB, the Scottish Wildlife Trust)
- four from other categories (e.g. clubs, local groups, groups of individuals)

### Individuals

- 12 from politicians (MSPs, MPs, peers, MEPs or Councillors)
- 26 from professionals with experience in a relevant subject
- 16 from academics with expertise in a relevant subject and
- 983 from members of the public.

321 (30%) were identical or near-identical responses which appear to have been the product of a coordinated campaign by Friends of the Earth Scotland, all of which supported the proposed Bill.

There were four late responses from Unite the Union, Mel Kelly, Janet Moxley and Gavin McColl. These have not been included in the analysis below, but are available on the member’s website.

Because of the volume of responses received, an index of all individual respondents has not been included with the summary, but is available on the member’s website. Where individual responses are referred to in the summary, the number allocated to the response on the member’s website is followed by the identity number generated by “Smart Survey” and the respondent’s name, or “anonymous”, indicated. A list of organisations which responded is set out in the Annexe to the summary and these have also been reproduced in a separate list on the member’s website.

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<sup>1</sup> Two organisations in this category requested that their responses remained anonymous and one organisation submitted two responses (Frack off Fife)

The numbers of respondents who (in their answers to Questions 1) supported the proposal to ban unconventional oil and gas extraction are set out below. It should be noted that some respondents appeared to have misread or misunderstood the question and answered “opposed” to the proposal to ban UOG extraction when their later comments made clear that what they opposed was UOG, and that they were in fact supportive of a ban.

The exact number of respondents who answered in this way is unknown; however, the Member’s office contacted those where a possible misunderstanding had been identified and asked whether they wished to amend their submissions. No submissions were changed without the respondent’s express consent. NGBU is aware of 34 responses where the respondent’s submission was altered as a result of this process – with 33 requesting a change from “opposed” to “support” in relation to question 1, and one respondent clarifying that they had indicated “support” when in fact they had intended to indicate “opposed”.

It should also be noted that there was a significant degree of replication in the responses to different questions, with a number of themes recurring throughout. An overview of some of the topics raised in the questions is provided in the section relating to question one.

Respondents referred to the extraction processes covered by a variety of general terms, including “fracking”, “unconventional oil and gas (UOG) extraction” and “shale”. In general, the term “UOG extraction” has been adopted in this summary.

### **Key themes**

Arguments for and against key issues were presented, and these were often reflected in responses to different questions. The main themes arising, from both perspectives, included:

- whether there was a need to legislate for a ban on UOG extraction, or whether the Scottish Government’s approach was preferable.
- the potential impact of UOG extraction on climate change
- the benefits or otherwise of renewable energy
- the use of imported gas
- the need for a mix of energy sources
- the potential impact associated with UOG extraction on local areas
- safety, monitoring and regulation of processes
- the economic advantages and disadvantages which might result from UOG extraction
- environmental impacts, including air pollution, water contamination, loss of habitat, seismic activity and health issues.

### SECTION 3: RESPONSES TO CONSULTATION QUESTIONS

This section sets out an overview of responses to each question in the consultation document.

#### **Question 1: Which of the following best expresses your view of the proposal to ban onshore unconventional oil and gas extraction in Scotland?**

There were 1,067 responses to this question. 934 (87%) were supportive of the proposal to ban UOG extraction; 12 (1%) were neutral; 114 (11%) were opposed to a ban; and 7 (less than 1%) were unsure.

(There were 321 responses based on the Friends of the Earth coordinated campaign – if these were not taken into account, there would be 746 (82%) respondents who agreed with the proposal.)

Many of the arguments in favour of, and counter arguments to, the proposal set out in responses to this question covered areas which also relate to later questions in the consultation and for this reason may be replicated or expanded on to some extent. Other areas which featured in responses to question 1 are not specifically referred to where they are dealt with in greater detail in later questions (including, for example, specific comments on pollution (question 4 – which also covers health problems and habitat concerns).

Of the 30 organisations who responded, 25 supported the proposal, three were opposed and two were neutral in their views.

#### *Legislating for a ban*

Those favouring the proposal to legislate for a ban, rather than any other action to prohibit UOG extraction, included the submissions which reflected the terms of the campaign coordinated by Friends of the Earth:

“With powers over onshore oil and gas licensing being devolved to the Scottish Parliament, Holyrood can and should legislate to ban this unnecessary and destructive industry ... Legislating on this important issue sends a powerful message about the need to take our climate change obligations seriously, both under national legislation and the Paris Agreement, and transform our energy systems in order to do so.”

#### *Overlap with Scottish Government consultation*

Ineos criticised the timing of the member’s consultation: as the Scottish Government was already consulting on this issue Ineos was of the view that it was “difficult to ascertain the need for a secondary consultation process running concurrently. It is also notable that this proposal was published prior to the release of the evidence contained in the independent studies commissioned by the Scottish Government. As such, the consultation document makes no reference to these findings, and instead provides a

representation of hydraulic fracturing that does not take into account all of the most recent research”.

UKOOG questioned the aims and terms of the consultation:

“We ... believe that this secondary consultation is not reasoned, provides a very biased viewpoint, completely ignores UK and Scottish regulations and at certain points provides inaccurate portraits of research undertaken in other countries. It also ignores the warnings of independent experts about extrapolating isolated incidents in other countries with very different regulatory regimes.” (UKOOG)

#### *Impact on climate change*

Many who supported the proposed ban felt that UOG extraction would be damaging to the environment – in particular, it would have a detrimental effect on Scotland’s ability to meet its climate change targets and reduce carbon emissions. SERA UK, for example, argued that:

“At a time when Scotland is committed to a low-carbon future, with an ambitious target to cut emissions to 66% of 1990 levels by 2032, UOG extraction would lock the country into a dirty energy infrastructure that is tied to fossil fuels. At the heart of the historic Paris climate agreement reached last year between 196 governments is a commitment to reach a net-zero emissions global economy in the second half of this century. Scotland would be travelling in completely the wrong direction if it chose now to embrace a new fossil fuel – especially one with so much uncertainty and risk over its local environment impact”.

In contrast, Ineos questioned the statement in the consultation document that: “the climate change argument against hydraulic fracturing is irrefutable”, and the argument that that the development of a shale gas industry in Scotland was incompatible with climate change ambitions. It was of the view that:

“The evidence does not support this analysis. Instead, with appropriate regulation and best practice, shale gas is not only compatible with tackling climate change, but can be a key enabler of the transition to a low-carbon society. Extracting shale gas is not about using more fossil fuels, but displacing coal, and using our own gas rather than imports, to deliver decarbonisation in the most effective manner available.”

#### *Renewable energy*

A number of respondents focused on the potential benefits of investing in renewable energy as an alternative to UOG:

“Scotland's most lucrative untapped energy resources are not going to be realised by UOG extraction but rather by investing more in renewable energy sources where Scotland has a large percentage of Europe's total potential energy generation. ... Scotland stands to gain more by directing resources to renewable energy creation where specialised skills and knowledge will benefit the economy for years to

come and where Scotland can lead Europe to green targets.” (90-47999152, Joshua Daly)

“An economy heavily dependent on fossil fuels is vulnerable to market changes, a boom and bust economy ... As renewable and green technologies mature, the demand for fossil fuels will continue to fall, it is not a sustainable industry. There are now more people employed in the solar industry in the US than the gas and oil industry, proving that jobs and a strong economy come with a carbon zero economy. Plus the jobs are long term and sustainable.” (655-52421376, Joanne White)

For GMB, a direct comparison between gas and renewables investment presented an apparently false choice: “Regardless of whether it is extracted on or off-shore, gas is, and will remain, a key part of Scotland’s energy mix for some time to come. Renewables cannot plug the energy gap, or even guarantee to keep our lights on in the foreseeable future”. (GMB)

#### *Imported gas*

There were a substantial number of references to the fact that the use of gas as an energy source was likely to be around for some time to come and, in this context, the benefits or otherwise of UOG which was sourced in Scotland rather than imported were debated.

UKOOG contended that gas was the only real solution for the provision of domestic and commercial heat, and was therefore an important energy source in the short to medium term.

According to the Royal Society of Edinburgh, importing gas “results in no obvious local environmental problems and would likely prove cheaper than producing gas domestically. Multiple import options exist for Scotland to meet its energy demand”.

The Society recognised, however, that such action would leave Scotland “vulnerable to political instability and unforeseen circumstances in the countries from which it imports. Furthermore, relying on production abroad where the Scottish and UK Governments have no control over health and safety standards or environmental controls raises moral questions. Transportation of fuel also results in significant emissions”.

#### *Need for a mix of energy sources*

There was a view that there was a need to maintain Scotland’s energy security by allowing access to a range of energy options and ensuring “that a good proportion of our supply is based in this country”. (10-47743882, Graham Dane) from whichever source it was derived.

#### *The impact on local areas*

Concerns were expressed about the risks associated with UOG extraction on local communities. A particular concern was that UOG extraction would take place in or near former mining areas with tunnelling that ran under or near residential areas.

One anonymous resident of such an area found it “reprehensible” that UOG extraction might occur “under the house and estate in which I live. Our land has already been weakened by coal mining and I believe no research has been done in these areas to see what damage/weakness/rusting etc., has happened due to this and which would have a detrimental effect on further 'movement' of the earth.” (91-48001674-Anonymous)

In the response from UKOOG in relation to issues which might be of concern to local communities, detailed comments were put forward about the safeguards, which would be put in place to address concerns, such as:

- national and local authority policies and standards, such as traffic assessments
- consultation with local communities
- noise monitoring
- measures to ensure that operators were required to remediate the effects of any damage or pollution to the environment.

#### *Safety, monitoring and regulation*

There were mixed views about the general evidence available about the safety of UOG extraction.

Some respondents argued that the science relating to UOG extraction was unclear or that the longer term impact of UOG extraction was uncertain and that the “precautionary principle” should be observed. Some felt that there would be insufficient monitoring and regulation of UOG extraction activities and for this reason the safety of plants could not be guaranteed:

“I ... believe that SEPA is woefully under-resourced to be able to monitor and manage safe environmental practices of the UOG industry. It does not currently have sufficient financial resources or enough specialists able to effectively monitor and regulate this industry.” (298-51167241, Anonymous)

The industry representative body claimed that: “Regulators and Government have already undertaken a comprehensive assessment of the potential risks of hydraulic fracturing in the UK and have concluded that the regulatory measures are sufficient.” (UKOOG)

Others felt that those opposed to UOG extraction were overly risk averse and that there was a need to develop new technologies. Some respondents felt that there was not enough scientific evidence to justify a ban:

“There is no scientific evidence to support the ban. Gas and oil extracted will be valuable in the short term for producing energy, and in the long term as precursors to producing valuable synthetic organic chemicals.” (44-47764331, Anonymous)

Another respondent argued that:

“Banning the exploration of this potential resource seems premature when there is no evidence that it cannot be undertaken safely and environmentally soundly in the Scottish context.” (86-47887541, Anonymous)

#### *Economic factors*

The potential economic advantages of UOG extraction were challenged. One response mentioned that UOG extraction would just lead to “rich oil guys” getting richer (133-48063253-Anonymous) and another response referred to “corporate greed” (115-48007482, Kathleen Anderson).

Other comments included:

- Any jobs created by UOG extraction would be specialist jobs that people would be brought into the country to undertake.
- It would be better to focus on creating “green” jobs.
- Jobs created by UOG extraction would be offset by reductions in jobs in sectors such as tourism, agriculture and food and drink: “Firstly, it should be up to the Scottish people whether we introduce UOG extraction here. Secondly, UOG extraction would destroy many of our most prized industries – bottled water, whisky and tourism, for example.” (632-52418706, Louise Park)
- The ‘brand’ of Scotland might also be damaged.

In contrast, several points were put forward in favour of the economic benefits which could potentially be derived from introducing UOG extraction: UKOOG referred to the potential for the Scottish economy to benefit by up to £11bn, including up to £6.5 billion of spending in Scotland, creating up to 3,100 jobs, as well as “local communities could be expected to receive up to £1bn in community benefits”.

Other points raised included:

- New skills and expertise could be created in Scotland.
- UOG extraction would lead to increased tax revenues: “We need the jobs and taxes which this will generate.” (44-47764331, Anonymous)
- It was a source of cheap energy.
- It was preferable to some sources of renewable energy such as onshore windfarms which are unsightly and uneconomic.
- It was used as a feedstock for the chemical manufacturing plant at Grangemouth and a domestic UOG extraction industry could have a wider impact on manufacturing in Scotland.

**Question 2: Which of the following best expresses your view of the following statement that could be made about unconventional oil and gas extraction in Scotland: ‘We should be investing in renewables instead of any new fossil fuel sources’**

There were 1,056 responses to this question. 994 (94%) agreed with the statement, 33 (3%) were neutral; 24 (2%) disagreed; and 5 (0.5%) were unsure.

(There were 321 responses based on the Friends of the Earth coordinated campaign – if these were not taken into account, there would be 735 (92%) respondents who agreed with the statement.)

### **Arguments for investing in renewable energy**

The majority of respondents were supportive, arguing in favour of renewable energy.

#### *Availability of renewables*

One of the most common themes in the responses which agreed with investment in renewables related to the availability of sources such as tidal, wind and wave power:

“We have 25% of Europe’s tidal power potential, 25% of wind potential and 10% of wave potential. Think about that, on a continental scale we could be a powerhouse of renewable energy. ... Onshore wind is not only the cheapest renewable power source in the UK, it is also one of the cheapest forms of power full stop in the UK energy mix.”  
(111-48006194, Bidge Graham)

WWF Scotland commented that progress was already being made “to decarbonise our power supply, with almost 60% of our annual electricity demand now met from renewable sources.”

#### *Arguments in favour of renewable energy*

- Employment opportunities would be created.
- UOG extraction would have a limited timespan, whereas renewable energy would last indefinitely.

#### *Benefits of renewables in terms of climate change*

Climate change was a significant issue for many, and the promotion of renewables presented an obvious solution to the challenge of meeting targets:

“We are suffocating this planet with bad emissions into the atmosphere. CO<sub>2</sub> and Methane is many times worse. The products that require gas in their manufacture can easily be made from renewable materials. Those renewable materials need to be promoted immediately.” (98-48004252, Trevor Ross).

In its substantive submission, Friends of the Earth Scotland made a number of points in relation to climate change, including the following:

- That burning fossil fuels was the key driver of climate change emissions.
- The “catastrophic impacts” of global warming.

- Scotland’s responsibilities in terms of the Paris Agreement which “commits nations to ‘holding’ global warming to ‘well below 2°C’ and pursuing efforts to limit warming to 1.5°C; Scotland’s Climate Act requires a reduction of at least 42% in GHG [greenhouse gas] emissions by 2020 and 80% by 2050, and the present Government has committed to strengthening carbon targets in response to the Paris Agreement”.
- It was critical that instead of pursuing a new frontier of fossil fuels we invested in a diversity of renewable energy sources in order to make a speedy transition to a low carbon economy.

#### *Other points*

- There was a need for continued research and technology to ensure that the transition to renewables could take place as quickly as possible.
- Investment in renewables would create “new jobs for young people in new, forward thinking industries. Partnerships with universities and schools could result in Scotland leading the world in exporting ideas/technology in the renewable field – hence assist GDP and economic development.” (779-52576991, Marianne Hughes)

#### **Arguments supporting the continued use of fossil fuels**

Of the minority of respondents who were of the view that there was a continued need to use fossil fuels it was argued that, for Scotland to be reliant on renewables for all of its energy consumption would take decades to achieve, so there would be a continued need for fossil fuels until that time. Ineos claimed that:

“In 2013, renewables represented approximately 13% of total Scottish energy consumption, so, even if we make significant improvements in energy efficiency, we are going to need fossil fuels to maintain modern living standards during the transition to a low-carbon future. Gas is the lowest carbon emitter of the fossil fuels and is best placed to bridge the gap until Scotland’s energy consumption from renewables is reliable.”

#### *Mixed sources of energy*

UKOOG felt that there was no reason why UOG and renewable energy could not provide a combined source of energy. It referred to the US where “wind and solar generation and shale gas production have together grown quickly. Texas is the state with the second highest shale gas production, and the most wind generation. Between 2005 and 2013 electricity generation from wind increased by 678% in the 18 shale gas producing states, making up almost 60% of the total wind generation in the US. Gas and renewables can work together to replace coal and lower emissions.”

#### *Financial costs of renewables vs UOG*

There were conflicting views about the financial costs of renewable energy compared to UOG as an energy source.

The cost benefits were set out by RSPB who felt that the evidence suggested that UOG would be expensive, highly risky and might lock Scotland into a high-carbon generation future and that it would be more cost effective to invest in renewable technologies, many of which could be deployed immediately, with a significantly lower carbon footprint.

Friends of the Earth Scotland was of the view that pursuing UOG might risk directing investment away from renewables, with the prospect of cheap gas having a major impact and, again, locking in dependence on fossil fuels beyond what the climate targets demand.

UKOOG referred to the “subsidy or price support to lower carbon forms of electricity generation including wind and nuclear through consumer bills” from Governments and the fact that the UK shale gas industry had not received the same support. It therefore countered that it was “illogical to assume that money spent on shale would displace money spent on renewables. Yes, there have been some tax changes, but the UK onshore oil and gas industry is still subject to a corporation tax level far in [excess] of any other sector at 30%”.

#### *Other points*

A number of other points were made against the use of renewable sources of energy, and in favour of UOG, such as:

- Renewables also had an environmental impact and were not a “clean” source of energy: “Wind turbines, for example, use large magnets which are made from certain problematic, and rare, minerals.” (141-49115355, Anonymous)
- Gas was a raw material used in manufacturing chemicals which were in a wide range of products.

#### *Need for balanced approach*

Again, some respondents had mixed views and felt that there was a need for a balanced approach to energy sources, and that investment could be made in both:

“It may be that gas is a good companion fuel for more intermittent renewable such as solar and wind, until electrical storage systems are improved.” (86-47887541, Anonymous).

While renewables should be prioritised, it should not be “to the exclusion of all other possibilities. The total economic, environmental energy security picture needs to be considered.” (38-47762735, Anonymous)

Ineos felt that: “to paint the decision to develop a shale gas industry in Scotland as a “fossil fuel v renewables” debate is misleading and inaccurate. The two go hand in hand with gas complementing renewables. For example, gas plays a critical role in the production of wind turbines”.

**Question 3: Which of the following best expresses your view of the following statement that could be made about unconventional oil and gas extraction in Scotland: “This is a valuable new source of energy that could stimulate the economy and create jobs”.**

There were 1,055 responses to this question. 64 (6%) agreed with the statement; 37 (4%) were neutral; 933 (88%) disagreed; and 21 (2%) were unsure.

(There were 321 responses based on the Friends of the Earth coordinated campaign – if these were not taken into account, there would be 734 (83%) respondents who disagreed with the statement.)

#### *Impact on employment*

There were conflicting views as to whether UOG extraction in Scotland could stimulate the economy and create employment. Some of the arguments on both sides are also set out in the section on question 1.

UKOOG said that an “independent report produced by KPMG for the Scottish Government in November 2016 stated that up to £11bn could be spent, of which £6.5bn would be spent in Scotland, with an additional £4bn created in tax receipts across the UK”.

RSPB cited the same report but from a different perspective, highlighting that “even in its high scenario ... the UOG industry would represent 0.3% of Scottish GDP, which it [the report] describes as “not a large contribution to the Scottish economy”. The report estimated that, “at its peak, the UOG industry would create 1400 jobs – direct, indirect and induced – but there is no indication of the quality of these jobs, or how they might displace jobs in other industries. Of skilled jobs created, the report states that “while these jobs are created in Scotland, skills limitations may mean they are filled internationally” and that “upskilling the current workforce may take a significant amount of time.”

#### *Alternative employment in the renewables industries*

According to WWF Scotland, there were already estimated to be over 20,000 people employed in the renewables industries in Scotland “helping to deliver local jobs and economic benefits throughout Scotland. If we focus on securing more of our energy needs from renewables we can continue to grow this number and the associated societal benefits”.

Similarly, RSPB argued that, while recognising that a UOG industry would create jobs, “if investment and training is to be targeted in order to stimulate the economy, it would be preferable to put it towards the renewable energy sector, which we would expect to have a longer lifespan and a shorter lead time than UOG”.

#### *Impact on existing skilled workforce*

Proponents of the economic benefits of UOG extraction argued that it would improve Scotland’s finances and job security and provide skills and export

opportunities with the economic difficulties being faced in the North Sea: “Scotland has an abundance of highly capable engineering and manufacturing companies who could service the onshore oil & gas sector and this will provide alternative opportunities as the North Sea oil & gas industry declines over the next couple of decades.”(150-50565074, Anonymous)

However, it was also argued that: “It will only be menial temporary jobs if there are any jobs at all”. (687-52467768, Lisa Shires)

#### *Economic impact on other sectors*

UKOOG referred to the benefits UOG extraction could have on sectors such as petrochemicals which would not have to import their raw materials, and to “the impact of Scotland developing and exporting its skills and resources to supply shale companies across the UK and Europe”. UKOOG referred to the comments by the Independent panel of experts for the Scottish Government that: “Suitable petrochemical feed-stocks from the North Sea are declining, in particular ethane and other light hydrocarbons. The potential availability of these feed-stocks from unconventional oil and gas resources in Scotland could have a beneficial impact on Scotland’s petro-chemical industry in the long term”

This contrasted with the view that UOG development could have a detrimental impact on local businesses, agriculture and tourism because of perceived environmental risks in particular.

#### *Financial costs of extraction as economic disincentive*

The longevity of UOG extraction was questioned: “Fracking is not a long-term economic prospect. The value of oil and gas depends not so much on how much is (potentially) available, but on the energy and cash costs of getting the product out of the ground, refined and to the market. If it costs more money to extract and process it than it can be sold for, extraction will stop. If it takes more energy to get oil/gas out than is sold then extraction will stop. The midland valley geology is full of faults and fractures, old mine and shale-oil workings, all of which make fracking economically marginal.” (738-52544616, Sheila Currie)

#### *Implications for local communities*

Ineos argued that revenue generated from UOG could be used to support local communities: it had “developed an industry leading community benefits package ... [and] committed to giving six per cent of shale gas production revenue to residents, landowners and local communities”.

Linda Hurrell, however, was not convinced:

“We know that payments to the community by UOG companies are likely to be dwarfed by outsourced costs of road repairs, road accidents, localised poor health via noise, light and air pollution, fall in property prices, accidental toxic spills, and the worst case of contamination of ground water, general increase in methane in the

atmosphere taking action against climate change in the wrong direction.” (806-52594856, Linda Hurrell)

*Other positive economic impacts*

- Creating a shale gas production industry would assist in securing Scotland’s energy security.

*Other negative impacts*

- In the long term Scotland could fall behind other countries which were investing in renewable energy research and technology. The potential short term economic gain would be lost (Scottish Wildlife Trust).
- No amount of economic benefit could justify the environmental impacts from UOG extraction: “.....If we accept unconventional gas extraction then we are as guilty as those who seek only profit as an outcome. Let us invest in the economy and jobs that seek a future based on sustainable partnership with nature which supports renewable jobs and an ethical stance that enlightens others internationally.” (South Lanarkshire Against Unconventional Gas (SLAUG))

**Question 4: Which of the following best expresses your view of the following statement that could be made about unconventional oil and gas extraction in Scotland: “There are too many risks relating to pollution of the earth, water and air, and increased seismic activity.”**

There were 1,056 responses to this question. 1003 (95%) agreed with the statement, 10 (1%) were neutral; 38 (4%) disagreed; and 5 (0.5%) were unsure.

(There were 321 responses based on the Friends of the Earth coordinated campaign – if these were not taken into account, there would be 735 (93%) respondents who agreed with the proposal.)

There was a range of polarised arguments presented for and against the statement about the environmental risks of UOG extraction. There were also claims and counter-claims in relation to evidence and research presented on different aspects of pollution associated with UOG extraction.

The environmental risks perceived by those who agreed with the statement are illustrated in the response from Friends of the Earth Scotland who were of the view that:

“There is growing evidence that UOG extraction is linked to numerous potential adverse environmental and health impacts. Communities living near gas fields report a wide range of symptoms, while academic studies point to very serious medium and longer-term effects, and researchers in the US have warned that the unconventional oil and gas industry is an ‘uncontrolled health experiment on an enormous scale’. Studies on the adverse health and environmental impacts of UOG are

too numerous to discuss thoroughly here, but we have highlighted some key findings ...”

UKOOG was of the view that: “As an industry, we firmly believe that firstly the regulations in the UK and Scotland are fit for purpose and the introduction of green completions, baseline monitoring, operational monitoring and post operational monitoring already committed to by the industry will have a significant impact on fugitive emissions as they have done in other countries. Secondly, many of the reports, particularly from the USA, combine leaks from sites and distribution systems. In the UK, we already have data from distribution systems and it is extremely low.”

#### *Air pollution*

The potential risks of air pollution, in particular, methane leakages or so-called “fugitive emissions” were highlighted by a number of respondents.

The Scottish Wildlife Trust believed that the risk would need to be mitigated by monitoring by the operator and reporting on local air quality and that leakages of methane gas would also increase Scotland's greenhouse gas emissions and contribute to climate change.

In contrast, the levels of monitoring to which the process would be subject were emphasised by responses from industry representatives. Ineos referred to the fact that regulators tightly monitored the build quality and operation of oil and gas wells already and that:

“We know that by using established industry engineering designs and procedures throughout our drilling operations, we can safely manage methane. In the case of Nitrogen, this is an inert gas present in the air we breathe, approximately 78% of dry air is nitrogen.”

#### *Water contamination*

Much was made by the majority of respondents to this question, to the potential contamination of water and soil from UOG processes and there were conflicting views presented by respondents on both sides of the argument, illustrated by the following points.

Reference was made in many responses to evidence in other countries, particularly the United States. For example, according to Friends of the Earth Scotland:

“A 2014 study by the Pennsylvania Department of Environmental Protection revealed that 243 private water supplies had been contaminated or had lost flow and dried up as a result of nearby drilling and fracking operations over seven years, with pollutants including methane, metals and salts. The US Environmental Protection Agency has also recently concluded that UOG extraction has contaminated drinking water, reversing a controversial earlier position in response to mounting evidence.”

The Scottish Wildlife Trust referred to the contamination of groundwater from “flowback” fluids and methane which could impact drinking water quality, surface waters and wetland habitats. Routes for this contamination could include subsurface pathways such as the outside of the wellbore, fractures created during the hydraulic fracturing process or natural cracks.

The potential impact on local communities and longer term impacts were highlighted:

“With roughly 5 million gallons of water used per well, and around 50% of this returned as contaminated waste fluid, what happens to this waste from 1000+ wells expected? Leaks are common from drilling, so gas will be affecting local communities, including the flare-offs from the process. Long term, it has been shown that ALL wells will leak about 10 to 20 years in the future, is that a legacy we want for our future generations?” (121-48007713, Paul Bradley)

The Scottish Wildlife Trust believed that developers should state current and future operation proposals as part of an Environmental Impact Assessment (EIA) to ensure that the total ecological footprint of the development and phased future wells are included as part of the EIA. The Trust believes that planning consent should be refused where the ecological footprint of present activities and or/combined with future proposals would have a significant impact on protected species, protected habitats and ecosystems.

UKOOG set out detailed information about and arguments against the contamination claims, including:

- That “there is not one case of a household on a US public water supply having its water supply contaminated, disrupted or impacted by fracking.”
- That “Methane is very commonly found in groundwater naturally both here in the UK and in the US”.
- That the Chartered Institution of Water and Environmental Management (CIWEM) also agree that risks to groundwater quality are generally considered to be low in the UK.

UKOOG also set out detailed and technical information about well design and construction and regulation, adding that: “The suggestion that 60 percent of shale wells will leak may draw media attention and even scare the general public, but it has no real basis in fact.”

Similarly, Ineos referred to the “rare examples of water contamination in the US were caused by issues such as poor well design, poor disposal of process water and poor capping of wells at the end of useful production; none of which will occur in the UK, because of the development of the technology ...”.

#### *Loss of habitat*

There were concerns that the land required for sites – with the impacts of drilling, construction noise and movement of vehicles – could have adverse impacts on wildlife and habitat.

However, the industry organisations said that any plans for developments would have to be submitted to local planning authorities and the environmental regulator to ensure that the impact of any proposed development on habitats had been considered and that suitable avoidance or mitigation was put in place.

### *Seismic activity*

There seemed to be a general acknowledgement that there was a possibility of some seismic activity as a result of UOG extraction, but that the risk of this happening was low. According to Ineos:

“Fracking can induce small tremors deep underground, but these are very rare and in the vast majority of cases cannot be felt at the surface, and can only be detected by sensitive instruments. Fracking actually carries a lower risk of seismic activity than coal mining (which we already practise in the UK) and geothermal energy (which some opponents of fracking advocate).”

Friends of the Earth Scotland referred to research for the Scottish Government by the British Geological Society which, in their view, confirmed: “that hydraulic fracturing operations can cause earthquakes. While the report indicated that the risk of 'felt' earthquakes was low, smaller tremors can damage well integrity and thereby increase the risk of pollution.”

### *Disruption from transport and noise*

Many individual respondents feared that their local communities would be affected by disruption caused by noise and transport, one of whom drew on existing experience:

“I already live near ... a petrochemical facility from which the noise etc can be very intrusive... I object to the possibility that fracking etc could affect the stability of my house for which I have worked all my life, and for said damage I will no doubt be either prohibited from seeking recompense or be unable to afford to do so or prove that fracking etc caused the possible damage .... I also object to the upset which will be caused by the installation of pipes, compressor stations, etc which will be necessary for the connection to a national distribution network. We already have enough roadworks.” (147-50461129, Anonymous)

Counter arguments presented by UKOOG included:

- Traffic management plans which gave significant detail on traffic movements compared to the existing baseline.
- Public engagement ensures that these plans were discussed with local communities and are often changed to reflect specific local circumstances, for example school opening time.
- As with any project with elements of construction, “there was the potential for noise. The industry however, has sought to develop and apply best practice which exceeds any other industry in the UK. This is shown by the industry voluntarily preparing both Environmental Impact

Assessments (EIA) for sites that involve hydraulic fracturing and Noise Management Plans”.

*Risks to health and wellbeing of local communities*

Those who felt that there was evidence to illustrate that there were significant health risks associated with UOG processes presented arguments which drew on studies to support their views.

Friends of the Earth Scotland referred to a number of studies which, it was claimed, pointed towards health risks, including:

- Public health studies conducted by the New York State’s Department of Health which discussed: “findings of increased symptoms consistent with exposure to chemicals used in gas fracking and drilling reported by people living near gas drilling sites, including skin rashes, nausea and vomiting, abdominal pain, breathing difficulties, coughs, nosebleeds, anxiety and stress, headaches, dizziness, eye and throat irritation.”
- Studies which had “established links between unconventional oil and gas extraction and adverse health outcomes in babies born to mothers living in the vicinity of well pads”.
- Research by Health Protection Scotland which “confirms that despite gaps in knowledge, it is possible to establish that a number of air and water-borne environmental hazards would be likely to occur as a result of unconventional oil and gas operations if they were to go ahead in Scotland. The Public Health Impact Assessment also highlights that workers are exposed to respirable crystalline silica (sand used as a proppant during fracking) at levels ‘sufficient to pose a significant health risk’.”

David McCoy of Medact (a London-based public health charity) acknowledged that some studies “show no association between significant levels of pollution, negative health effects and shale gas activity” but went on: “Several studies have documented evidence of population exposure to potentially harmful pollutants, while a smaller number of studies have shown an association between exposure to hazards and actual negative health effects. Although it is not possible to quantify the health and environmental risk of unconventional oil and gas extraction, there is clearly a potential for negative health impacts.”

However, the UKOOG submission criticised Medact for a study it had completed in 2015, which prompted a letter to the British Medical Journal arguing against fracking on a precautionary principle to protect public health. The letter was signed by twenty prestigious doctors, pharmacists and public health academics. UKOOG said it had thoroughly reviewed the Medact report and concluded that it “fundamentally fails to understand the regulatory system put in place in the UK to cover shale gas exploration, ... the authors ignored and failed to heed warnings by recognised experts of the dangers of incorrectly and inappropriately applying experiences from other countries to

the UK; and the report is at odds with recognised, authoritative experts such as Public Health England (PHE) and the Scottish Government Independent Expert Scientific Panel on Unconventional Oil and Gas”.

A number of responses from individuals also mentioned health concerns associated with fracking, such as how fracking might affect people with asthma or other chronic breathing problems.

However, the GMB urged against scaremongering about health concerns “or exaggeration of claims which cannot be backed up by evidence”.

According to UKOOG, the “independent study for the Scottish Government undertaken by NHS Scotland agreed with the conclusions of Public Health England in 2014. It lists known hazards (that are not unique to unconventional oil and gas), and are already addressed through the current regulatory planning and permitting processes in Scotland”. UKOOG added that the “current regulatory and planning regime in the UK would simply not allow permits or consents to be given without proper review of all hazards and risks, and a series of authoritative, independent experts stating the risks can be managed”.

UKOOG also challenged a number of other issues raised in the consultation, and provided counter arguments, including:

- The reference in the consultation document to a University of Pittsburgh study which claimed that the greater the exposure to gas wells in terms of proximity and density, the higher the risk of mothers giving birth to low weight babies. UKOOG stated that: “Again, for balance it should be noted their own press release stated “It is important to stress that our study does not say that these pollutants caused the lower birth weights.” In addition, the Magee- Womens Research Institute and Foundation, an organization focused on reproductive biology and women’s health stated that the researchers’ reliance on birth certificates is not scientifically rigorous. The foundation concludes that the University of Pittsburgh researchers’ data do not actually show that development is linked to low birth weights”.
- That “Companies have traditionally been loath to release a lot of detail on the content of the liquid they use”, which, it was claimed “is simply not the case. In the UK, onshore oil and gas developers must detail in their environmental permits the chemicals that they propose to use, which must include the chemical name and no[t] the ‘product name’. These permits are openly consulted on with the public and are also available through the public register. In addition, operators as part of industry best practice guidelines, must publish the chemicals they use, the volumes and concentrations”.
- That “UOG companies dispose of the waste fluid and gas brought to the surface by flaring and venting it into the atmosphere, ‘dewatering’ through evaporation” and that “This again is not the case in the UK”

Some respondents were neutral in their view, for reasons such as: “The effects of fracking are largely unknown or unproven” (134-48079598, Anonymous).

**Question 5: Which of the following best expresses your view of the following statement that could be made about unconventional oil and gas extraction in Scotland “It could be a useful transition fuel in the move towards a low-carbon economy”.**

There were 1,052 responses to this question. 46 (4%) agreed with the statement, 22 (2%) were neutral; 964 (92%) disagreed; and 20 (2%) were unsure.

(There were 321 responses based on the Friends of the Earth coordinated campaign – if these were not taken into account, there would be 731 (88%) respondents who disagreed with the statement.)

#### *Support for UOG as a transition fuel*

The respondents who agreed with the statement that UOG could be a useful transition fuel presented views such as:

- UOG in Scotland is “far less harmful than coal.” (38-47762735, Anonymous)
- “It clearly has potential in the interim.”(65-47773761, Anonymous).
- It would be a missed opportunity for Scotland if UOG did not go ahead: “Projections of future energy scenarios by most respected global institutions indicate that hydrocarbons will continue to provide around 80% of global energy up to 2040 and beyond. For Scotland to ignore the economic opportunity presented under our feet would be a shame.” (150-50565074, Anonymous)
- If “we do not use unconventional gases we will import from Russia or middle east, driver in either case will be the same.” (138-48921278, Anonymous).

#### *Against UOG as a transition fuel*

The majority of respondents disagreed with the suggestion that UOG in Scotland could be a useful transition fuel in the move towards a low-carbon economy:

“That is a complete contradiction in terms! It moves us towards a higher carbon economy not a lower carbon economy. The idea that this provides some kind of bridge, is a fallacy. It extends the problem of dependency on fossil fuels, creates more fossil fuels to worsen climate change and destroys parts of the ecosystem.” (673-52370834, Maeve Gavin)

#### *Production timescales*

Friends of the Earth Scotland highlighted that, in their view, likely production timescales meant that “there is no place for UOG as a transition fuel in Scotland’s energy future”, with production not starting to come on stream until 2026.

### *Need for reduction in energy demand*

The Scottish Wildlife Trust believed that: “By focusing on reducing energy demand, Scotland should be able to move rapidly towards a low carbon economy whilst at the same time safeguarding ecosystems already under pressure from climate change.”

### *Increase in demand for UOG*

It was feared that introducing UOG might “increase demand for gas, at the expense of cleaner fuels. Indeed, if Scotland were to develop its domestic gas and oil extraction industry, it would be in the country’s interests to maximise production, not move to a low-carbon economy.” (SERA UK)

### *Investment in renewables*

- It was questioned why investment should be directed to a new technique that was allegedly proven to be damaging when the money could be invested in cleaner, healthier, more sustainable sources.
- “It could extend the transition period, make the alternatives more expensive and reduces investment in them.” (420-52356999, Tom Franklin)
- Research facilities would be affected if UOG extraction was permitted in the short term. “It will encourage research and funding into renewables to fall by the wayside and we’ll just keep relying on one destructive stop gap after another” (1-47728188, C Laing)
- “There could be a detrimental impact on the environment for future years to come: It is worth understanding that even if fracking is done well, the well casings only have a life of fifty years or so and then they will fail. What then? We store up potential disaster for the future? I can’t believe anyone is even thinking that this technology is a good thing.” (22-47754653, Mares Walter)
- “While gas might have a transitional role to play in the immediate term (for instance in domestic heating or small scale CHP plants connected to district heating), we do not see the need to open up new fossil fuel reserves to do so, especially any unconventional oil and gas resources.” (WWF Scotland)

### **Question 6: What do you think would be the main advantages, if any, of banning unconventional oil and gas extraction?**

There were 669 responses to this question.

Many of the advantages identified by respondents have already been set out in other sections of the summary, so are not repeated in depth here. The advantages identified included:

- More resources available for investment, and research and development in low carbon research and technology and renewable energy - potentially leading to Scotland becoming a leader in these areas.
- Economic benefits in terms of longer term employment.
- Potential avoidance of environmental damage – air pollution, water and soil contamination, seismic activity, dangers to health
- Preservation of habitat and industries such as tourism and agriculture
- Benefits for residents in communities located close to potential sites

In contrast to the arguments provided for banning UOG gas extraction, Ineos commented:

“We are opposed to this proposal and do not believe that banning unconventional oil and gas extraction will be beneficial to Scotland. It would instead represent a missed opportunity for the economy, environment and for Scottish communities as explained in this consultation response. Scotland has an incredible heritage of engineering and scientific endeavour and excellence and this anti-science proposal runs counter to that heritage.”

**Question 7: What do you think would be the main disadvantages, if any, of banning unconventional oil and gas extraction?**

There were 637 responses to this question.

Again, as the disadvantages have been set out in a number of earlier questions, all the arguments are not necessarily repeated here.

Potential disadvantages identified included:

- Potential missed opportunity for reduced fuel costs and long term solution to Scotland’s energy requirements.
- Use of coal fired power stations would be prolonged in order to maintain energy security.
- Reliance on imported gas: “We will have to continue to import gas in increasing quantities with less control over how it is extracted (including the environmental and community impacts of extraction) and more reliant on other countries not increasing prices etc. This may lead to Scottish industries becoming uncompetitive in the global market.” (86-47887541, Anonymous)
- Lack of employment opportunities: “We would be denying the country an opportunity for STEM jobs, development of jobs at INEOS Grangemouth. Fracking has the potential to be a safer and more environmentally friendly way of getting a Scottish gas supply than drilling in the North Sea and off Shetland.” (87-47901255, Kenneth Patrick)
- Reduced energy consumption – without unconventional oil and gas extraction, it might be necessary to focus on renewable energy. “...individuals may have to be more conscious of how much power they

are using day-to-day. This is only a disadvantage in that people may notice a difference in their availability of electricity. .. I believe this would help Scotland seriously transition to renewable energy as individuals would feel the effects of relying on fossil fuels and realise a transition is really necessary.” (153-50868095, Michael Mackenzie)

A significant number of respondents to this question were of the view that there would be no disadvantages of banning UOG extraction. Benefits such as the avoidance of a perceived threat to the environment, greater investment in renewables and research were all reiterated as arguments in favour of the proposal.

**Question 8: Do you think that there are other steps which could be taken (either instead of, or in addition to, legislation) to achieve the aims of the proposal?**

There were 540 responses to this question.

There was significant support for legislation as the principal method of prohibiting fracking.

There was a view held by some that “an outright ban is the only step necessary” (98-48004252-Trevor Ross) and legislation was essential to achieve this aim:

“If the aim is to "ban" unconventional extraction for the sake of it, something like the proposed legislation would work. Care would need to be taken to avoid damaging other industries such as drinking water production and geothermal energy, as well as offshore and onshore gas production which also use "fracking" (with similar potential impacts associated).” (86-47887541, Anonymous)

Similarly, Friends of the Earth Scotland considered that: “Legislating on this important matter sends a powerful message about the need to take our climate change obligations seriously, under both domestic and international law”.

Some felt that local communities or local government should have more of a say in the decision-making process:

“Whilst making our opposition to unconventional oil and gas extraction clear we would want local communities to be empowered to have a say in whether unconventional oil and gas extraction was allowed in their area if the Scottish Government does not support this bill. We would be looking for improved planning legislation which would ensure that local communities had a right to object and probably veto unconventional oil and gas extraction in their area.” (Scottish Co-operative Party)

More involvement at local government level by “strengthening of the planning regulations, so communities have the ability to reject these proposals themselves without the government then over ruling them.” (561-52381196, Dave Bakes)

Other measures suggested, some of which did not directly relate to the purpose of the proposal to ban UOG extraction included:

- Encouragement for home owners to incentivise investment in renewable energy.
- The establishment of renewable energy taskforces which linked issues of climate and environmental justice to renewable heat and fuel poverty in Scotland. (308-(51363842, Daniel McMahon)
- The development of Grangemouth as a global research hub “for alternative energy strategy” (579-52371140, Anonymous)
- More education and increased awareness about the risks of UOG extraction, making “more unbiased and accessible information available on the topic (online, TV etc.) explaining UOG and its benefits/weaknesses so that individuals can understand the debate in more detail.” (153-50868095, Michael Mackenzie)
- Targeting specific groups when promoting education on this issue: “Young people aged 16 to 35 should be encouraged to engage with this issue, as they will be affected most.” (587-52394686, Anonymous)

Ineos was of the view that there were no other steps which could be taken (either instead of, or in addition to, legislation) if the aim of the proposal was to ban hydraulic fracturing. It was stated, however, that: “If the fundamental aim is to reduce greenhouse gas emissions versus the alternative, as the consultation document suggests, then this aim can be achieved via encouraging the development of an unconventional industry in Scotland.”

**Question 9: Taking account of both costs and potential savings, what financial impact (increase in cost/broadly cost neutral/reduction in cost/unsure) would you expect the proposed Bill to have on (a) Government and the public sector; (b) businesses; (c) individuals.**

*Financial impact on Government and the public sector*

There were 711 responses to this part of the question. 79 (11%) of respondents were of the opinion that there would be an increase in cost for the Government and the public sector; 312 (44%) that the financial impact would be cost neutral; 135 (19%) that there would be a reduction in cost; and 185 (26%) were unsure.

Respondents who felt that there could be an increase in costs to the Government and the public sector cited reasons such as:

- An increase due to a reduction (or potential reduction) in income from tax.
- An increased cost for importing gas as opposed to using gas which could be sourced in this country.

- A cost from the Government having to redress any “losses the PEDL holders will inevitably claim to have made if a ban is imposed”. (59-47769495, Anonymous)
- Costs to the Government arising from “tightening of environmental and planning regulations this would be due to staff costs to make regulation robust. On the other hand, there is the potential saving in longer term to health costs in event of increased illnesses; monitoring of sites and environmental clean-ups.” (576-51715607, Anonymous)

Some respondents felt that they were not suitably qualified or knowledgeable on the subject to offer any in-depth comment.

Other respondents (including the RSPB) expressed the view that, since there is currently no UOG activity in Scotland, a legislative ban would be cost neutral, with significant avoided costs.

#### *Financial impact on businesses*

There were 711 responses to this part of the question. Eighty-four (12%) of respondents were of the opinion that there would be an increase in cost for businesses; 317 (45%) that the financial impact would be cost neutral; 108 (15%) that there would be a reduction in cost; and 202 (28%) were unsure.

A number of respondents felt that the proposed Bill would lead to an increase in costs for businesses, with the proposed ban having a negative effect on the Scottish economy and employment:

- “A missed opportunity for wealth creation and reduction in fuel costs.” (11-47745408, Anonymous)
- “Main impact likely in jobs and industrial development thereby reducing our GDP even further below Greece.” (138-48921278, Anonymous)

Some respondents were unsure of the financial impact on business – one respondent felt that any increased costs would balance out in the long term. (153-ID50868095 - Michael Mackenzie)

#### *Financial impact on individuals*

There were 716 responses to this part of the question. 88 (12%) of respondents were of the opinion that there would be an increase in cost for individuals; 304 (43%) that the financial impact would be cost neutral; 160 (22%) that there would be a reduction in cost; and 164 (23%) were unsure.

A number of submissions referred to higher energy costs for households and “a loss of community benefits packages and local taxes”. (86-47887541-Anonymous).

#### *Other comments*

Many comments were not directed at specific sectors or individuals, but were of a more general nature.

Some comments referred to the complexity of attempting to estimate what the financial implications might be – the Sheffield Climate Alliance argued that:

“a failure to meet internationally agreed emissions targets would have catastrophic impacts on our environment. This would lead to a chaotic and disrupted economy. Thus, measuring these impacts in cost terms is beyond accurate analysis and not meaningful anyway, as people’s lifestyles would have to adapt to conditions far less amenable to the advanced industrial society within Scotland.”

**Question 10: What overall impact is the proposed Bill likely to have on the following protected groups (under the Equality Act 2010): race, disability, sex, gender re-assignment, age, religion and belief, sexual orientation, marriage and civil partnership, pregnancy and maternity?**

There were 720 responses to this question. 260 (36%) thought the proposed Bill would have a positive impact on protected groups; 330 (46%) were neutral (neither positive nor negative); 45 (6%) thought the Bill would have a negative impact and 85 (12%) were unsure.

Of those who thought that there was likely to be a positive impact on protected groups, the most common theme related to the health and well-being of individuals and vulnerable groups – i.e. the potential dangers of UOG extraction for these groups would be avoided if there was a ban.

In particular, many respondents raised the alleged dangers to pregnant women and unborn children.

“It will have a positive effect on all individuals, including the protected groups, particularly pregnant women, who have been shown to produce lower-birthweight (and therefore less healthy) babies in areas with high UOG drilling (851-52645091, Anonymous)

Some respondents referred to the potential effects of UOG extraction on the economically disadvantaged in society:

“It is often children and the vulnerable who are at most risk from dangerous pollutants and in general those who are historically subject to these forms of discrimination have a reduced economic ability to avoid any fallout from environmental accidents via purchase of bottled water (eg lead contamination in American water supply) or through moving to more expensive areas.” (610-52400372, Jemima Louise Johnson)

Some respondents stated that the proposed Bill was unlikely to have a positive or negative impact on protected groups, and would impact broadly similarly on all groups: “All people, regardless of their protected characteristics, stand to gain from protecting the environment in which they live. I feel it is neutral, as we are maintaining the status quo of not having fracking” (561-52381196, Dave Bakes)

**Question 11: In what ways could any negative impact of the proposed Bill on any of these protected groups be minimised or avoided?**

There were 358 responses to this question.

Many respondents indicated that they did not see the relevance of this question or that there were no negative impacts of the proposed Bill on protected groups.

Measures which might be taken to minimise or avoid any negative impact of the proposed Bill on any of these protected groups included:

- Possibly minimum buffer zones of at least two miles from the closest dwelling.
- Increased research about the possible risks.
- Public consultation and involvement in any projects to gauge what effects might occur and how they can be mitigated.

**Question 12: Do you consider that the proposed Bill can be delivered sustainably (without having a disproportionate adverse economic, social and/or environmental impact in the longer term)?**

There were 721 responses to this question.

A large majority of respondents (583, or 81%) agreed that the proposed Bill to ban UOG extraction could be delivered sustainably, 77 (11%) disagreed and 61 (8%) were unsure

Points made included:

- “The bill would deliver a more sustainable economic impact in the long term. Similarly, the sustainability of social capital and environmental integrity could only be enhanced by the bill.” (Torrance against Fracking, 51994724)
- UOG could be used as a petrochemical feedstock and to create more plastics which, it was claimed, related to “one of the most ubiquitous and persistent problems in our oceans. If anything this is a step towards safeguarding our air, water, community cohesion, health and ecosystems, these are the starting point and red line issues for any 'sustainable development'.” (308-51363842, Daniel McMahon)
- The longer term benefits to the environment would eventually also benefit the economy: “less expenditure required for health and social care and structural works to repair damage caused by fracking etc”. (01-47728188, C Laing).
- Legislation was the only method of guaranteeing the removal of the long term degradation of the environment – an analogy was made to building a house without preparation and a foundation: “If we fail to

start on those things now we are delaying the building of the actual structure that we require. That will inevitably cost more in the long term. A Prohibition bill will enable the more enduring long term approach to energy needs, by starting the foundations of a sustainable source route sooner.”(115-48007482, Kathleen Anderson)

- “Reducing our reliance on non-renewable fuels is the true meaning of sustainability. There are no environmental risks associated with banning something which is potentially harmful.” (297-51172157, Andrew Logie)
- “As we don’t have fracking, and I believe, don’t need it due to existing oil reserves, I see only positive effects in all areas. There should be adequate economic and social benefits – ie employment – in the development of renewables. The positive environmental implications-removal of pollution potential and mitigation of the effects of global warming are what the government should be looking towards, rather than short term financial gain for private commercial interests.” (544-52374813, Peter Stott)

Other respondents feared that the proposal to ban UOG extraction did not reflect a sustainable approach – for example, in relation to resource management, it was in effect “banning an industry before knowing the extent of the reserve it could exploit, and ... available evidence showing it is safe... It is neither meeting today's needs (for gas) nor the needs of the future (ensuring carbon emissions are reduced as far as possible, promoting a zero carbon future etc). It may be that following exploratory works the geology is not appropriate, or the gas cannot be extracted economically, but we are not in a position currently to understand how best to use the resource - even if that is leaving it where it is for now, if our situation allows that as an option”. (86-47887541-Anonymous)

Another respondent noted that: “The environmental impact [of a ban] would also be detrimental with increased shipping and compression costs to import gas to keep life on the move” (138-48921278-Anonymous)

Ineos commented that a sustainable approach would be to develop Scotland’s own gas resources “where we can ensure it has been produced to the highest environmental, as well as health and safety standards. ... the proposed Bill’s aim to ban extraction of shale is to the detriment of Scotland’s economic, environmental and energy sustainability.”

**Question 13: Do you have any other comments or suggestions on the proposal to ban unconventional oil and gas extraction, including by means of hydraulic fracturing?**

There were 417 responses to this question.

Responses to this question repeated many of the arguments to earlier questions in the consultation, so are not replicated in detail here.

In terms of those supporting the proposal for a ban, comments included:

- The need for renewable energy to be progressed.
- The possible environmental impacts from UOG extraction processes.
- The lack of a guarantee that UOG extraction was safe or economically viable.
- The need to protect the environment for future generations.
- Concerns for local communities.

Those who disagreed with the proposal re-iterated reasons such as:

- The opportunity to investigate a new fuel resource in Scotland which could have economic advantages: “It misses an opportunity to pioneer technical excellence in unconventional oil and gas extraction, that could be a valuable export.” (65-47773761, Anonymous)
- The connection between the area of Scotland with UOG potential today and its history of wealth creation and innovation: “To now oppose a safe and economic means of wealth creation in the same area is naïve patronising and shortsighted. It is also hypocritical unless you are content to ban imports from USA and shortly England and contribute to the closure of Grangemouth.” (11-47745408, Anonymous)
- Potential to create employment in the science and engineering sector.

Other comments included:

- The door need not be closed to the possibility of UOG extraction for ever: “If and when technological developments allow for efficient and safe recovery of, say 80 - 90 % of the estimated reserve, then the matter should be revisited.” (152-50863263, TJ Collins)
- More information was required in order to make an informed decision on UOG extraction and there should be a public debate on the matter: “The choice should not be imposed on the public from above, nor should it be left to communities to decide whether they wish to host onshore developments on a case by case basis”. (Royal Society of Edinburgh)

## **SECTION 4: MEMBER'S COMMENTARY**

**Claudia Beamish MSP has provided the following commentary on the results of the consultation, as summarised in sections 1-3 above.**

I would like to take this opportunity to offer my sincere thanks to all those who have taken the time to contribute to the consultation on my proposal. The Non-Government Bills Unit has provided expert guidance at every stage of the process, and 1,067 individuals and 30 organisations submitted considered and thought provoking feedback. These efforts have been an immense help.

This consultation came to a substantial conclusion, with overwhelming support from individuals and organisations in favour of my proposal to prohibit onshore unconventional oil and gas extraction in Scotland. 87% of the 1,067 respondents support the proposal. I note that 321 of the submissions came as part of a campaign led by Friends of the Earth Scotland, all of which supported the proposal. If these were not taken into account, this figure remains high at 82%.

I recognise the point that highlights the Scottish Government commissioned studies, published after the launch of the consultation. These independent studies have been taken into my consideration and have been very insightful.

I remain resolute in my argument that unconventional oil and gas extraction is incompatible with our climate change ambitions. I reject the claim made by Ineos that my proposal is “anti-science,” and welcome the informed submissions, notably from environmental organisations, that echo and expand my argument. This consultation process has further clarified my understanding that “fracking” cannot be considered a transition fuel. Friends of the Earth Scotland expose this as a fallacy by highlighting the likely production timescales for UOG and the incompatibility with the coal industry’s deadlines for Carbon Capture and Storage implementation, and renewable energy growth. SERA UK made another important point, “Indeed, if Scotland were to develop its domestic gas and oil extraction industry, it would be in the country’s interests to maximise production, not move to a low-carbon economy.” I cannot agree that UOG could be of benefit to our environment.

I am delighted to see such a substantial majority in support of renewable energy, with 94% agreeing with the following statement; “We should be investing in renewables instead of any new fossil fuel sources.” The complexity of our energy systems was recognised by many, but I am encouraged that almost all respondents share a vision of a future Scotland powered by clean energy.

A similarly prevailing percentage (95%) of respondents had concerns with risks relating to pollution. A number of submissions were able to illustrate their concerns that health – and while there are gaps in understanding on the links between “fracking” and health, many submissions understandably favour a precautionary approach to this issue.

I welcome the engagement of all respondents, including those opposed, and I am pleased my proposal generated an interesting debate. Common arguments amongst respondents in favour of UOG in Scotland were related to the economic and employment potential, although the Scottish Government's commissioned research by KPMG notes the economic impact would not be particularly large, especially in comparison to the contribution of the conventional oil and gas sector in recent years. I do not disregard the potential for job creation, and consider the points made regarding the existing and potential jobs in the infinite resources, a more compelling argument for Scotland's future.

On 1 June 2016, the Scottish Parliament voted for an outright ban on onshore unconventional oil and gas in order to meet Scotland's climate change goals and protect the environment. The consultation has served to strengthen this mandate, and so it is my intention to proceed with my proposal and seek to introduce a bill to prohibit onshore unconventional oil and gas extraction in Scotland.

Claudia Beamish MSP

## ANNEXE

### Responses from organisations

|  |
|--|
| Cross Party Frack Free                               |
| Cumbernauld and Kilsyth Labour Party                 |
| Fife Labour Group                                    |
| Frack Free EQS (Exmoor, Quantocks, Sedgemoor)        |
| Frack Free Sussex                                    |
| Frack Off Fife                                       |
| Friends of the Earth (Scotland)                      |
| GMB Scotland   |
| Ineos Shale  |
| Livingston Village Community Council                 |
| Medact   |
| North Ayrshire Anti-Fracking Group                   |
| Portobello Against Unconventional Oil and Gas        |
| Quakers in Britain                                   |
| Royal Society of Edinburgh                           |
| RSPB   |
| The Scottish Co-operative Party                      |
| Scottish Wildlife Trust                              |
| SERA Scotland  |
| SERA UK  |
| Sheffield Climate Alliance                           |
| Solidarity   |
| South Lanarkshire Against Unconventional Gas (SLAUG) |
| Stop Climate Chaos Scotland                          |
| Torrance Against Fracking                            |
| UNISON (Scotland)                                    |
| United Kingdom Onshore Oil and Gas (UKOOG)           |
| WWF Scotland   |