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William Powell AM
Chair, Petitions Committee
National Assembly for Wales
Cardiff Bay
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Dear William,

Petition: P-04-422 Fracking

Thank you for the opportunity to provide our views on the petitioner`s document `All that glitters` (June 2014) and on the specific comments about the lack of guidance provided by Natural Resources Wales.

The petitioner`s document covers a range of themes and over-arching issues, many of which, such as national energy policy, planning and access rights, are within the remit of other bodies to consider and address. The attached document, Appendix 1, sets out the specific role of Natural Resources Wales in relation to unconventional onshore oil and gas activities and processes in Wales.

In discharging our role and duties we recognise that the prospect of exploiting any potential unconventional onshore oil and gas reserves in Wales is of considerable interest to Welsh citizens and, as an organisation, we aim to ensure that our evidence base and decision making process is robust and transparent.

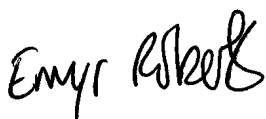
As outlined in our response to your Committee on 20 May 2014, we believe that our regulatory and enforcement roles help to ensure that onshore oil and gas operations in Wales are managed in a way that protects public health and the environment. We are clear on our approach to the regulation of exploratory

activity and the range of permits, consents and licences required by developers (see attached document – Annex 1). We have met with the majority of the companies who hold the 24 PEDL licences across Wales to discuss and confirm our regulatory approach.

To date, NRW has received five applications for a permit in relation to onshore oil and gas exploratory activity. We are thereby able to provide bespoke advice and guidance to operators and decision makers on how best to satisfy regulatory requirements.

We are therefore confident that the current approach to environmental regulation is appropriate for protecting public health and the environment from the risks associated with exploratory onshore oil and gas activity in Wales. As the industry develops and moves to appraisal testing and full scale commercial production other issues may emerge which may require revisions to our approach or new legislation.

I hope the information I have provided with this letter assures you that Natural Resources Wales is clear on its role, remit and approach to environmental regulation of onshore oil and gas development in Wales. If you have any further queries, please do not hesitate to contact me or Ceri Davies the Executive Director of Knowledge, Strategy & Planning who leads on this technical area for NRW.



Yours sincerely
Emyr Roberts

Prif Weithredwr

Chief Executive

Appendix 1

Unconventional Onshore Oil and Gas Activities and Processes and the role of Natural Resources Wales

Summary of unconventional onshore oil and gas activities and processes

The process of testing, delineation and drilling are integral to all forms of hydrocarbon reservoir development. Oil and gas are moved to the surface from underground reservoirs either through natural pressure or through induced pressure by means of pumps or hydraulic fracturing (fracking).

The distinction between conventional and unconventional oil and gas reflects differences in how the oil or gas is held underground, either freely in an underground reservoir (conventional) or within rocks (unconventional).

Unconventional gas can take a number of forms:

- Shale gas – natural gas trapped in fractures and pore spaces within fine grained sedimentary shale rocks;
- Coal bed methane (CBM) – methane held within the coal by adsorption;
- Underground Coal Gasification (UCG) – igniting and partially combusting coal in situ and extracting the gasification products (known as syngas).

The regulatory regime covering conventional and unconventional oil and gas is exactly the same. For ease of explanation we use the term “onshore oil and gas” rather than draw the distinction between conventional and unconventional oil and gas.

The technologies used to extract the gas require the drilling of boreholes. Where there is insufficient natural permeability, both shale gas and coal bed methane extraction can be enhanced by using a technique known as hydraulic fracturing or “fracking”. Fluid¹ is pumped into the borehole at pressure to create and increase fractures in the shale to release gas and in coal beds to release methane.

Underground coal gasification requires the drilling of two boreholes into the coal seam. Through one borehole water/steam and oxygen are injected and ignited to partially combust the coal. The syngas (the resulting gases) are extracted through the second borehole.

¹ A combination of water, sand and chemicals.

Shale gas and coal bed methane techniques have been widely deployed in America. Underground coal gasification has been deployed in Australia, India and Scotland. Application of these technologies in the UK has been very limited, and unconventional gas is not yet contributing to the UK energy mix. The technology is being applied in an exploratory way to determine the availability of resource.

There are a number of phases in the development of onshore oil and gas, although not all phases may apply to underground coal gasification:

- Licensing
- Exploration – likely to involve the drilling of one borehole to assess the level of resource available at the specific site.
- Appraisal – likely to include a small element of production with an increase in the number of boreholes, to assess the technical feasibility and costs of extracting the oil or gas at the specific site.
- Production – full scale commercial production. This is likely to require a large number of boreholes and associated surface operations.
- Abandonment and site remediation.

At each stage, the developer will be required to secure separate planning permissions, environmental permits and other notifications. The cumulative environmental impact at each phase is likely to be different. Should a developer receive permissions and permits for the exploratory phase of work, the cumulative impact will be considered when determining whether to issue permissions and/or permits for the appraisal or production phase.

Activity across Wales is currently focused on exploration for shale gas and coal bed methane.

Overview of current regulatory tools and advice

The regulatory framework governing onshore oil and gas is complex, and requires licensing and permissions from a number of organisations (see Annex 1, the

required consents and Annex 2 for a list of regulators and other bodies). The Department of Energy and Climate Change (DECC) control the extent and pace of onshore oil and gas development across England and Wales through the issue of Petroleum Exploration and Development (PEDL)² licences under the Petroleum Act 1989. This matter is not devolved to Welsh Ministers. Once a developer has secured a PEDL licence they must seek additional permissions from the local planning authorities, Natural Resources Wales, Coal Authority, British Geological Society and HSE before exploratory work can start. The full list of permissions required is set out in Annex 1.

The UK Government has published the UK Regulatory Roadmap³ which provides a useful overview of the process for shale gas and coal bed methane. The road map highlights the regulatory and other statutory bodies, relevant legislation and regulations, and identifies required actions and best practices for onshore oil and gas exploration in the UK. The Roadmap provides the whole picture on the current UK exploratory regulatory regime.

On 22 January 2014, the European Commission published a Recommendation⁴ setting out minimum principles for the regulation of high volume hydraulic fracturing used in hydrocarbon exploration and production. The purpose of the Recommendation is to ensure that the public health, climate and environment are safe-guarded, and that the public is appropriately informed, should unconventional onshore gas resources be exploited across the EU.

NRW has been working closely with Welsh Government, DECC (Office of Unconventional Oil & Gas) and DEFRA in addressing and responding to the Recommendation. In particular, we have undertaken a detailed review of how the current regulatory regime addresses the Recommendations. The Commission will review the effectiveness of the Recommendation eighteen months after its

² <https://www.gov.uk/oil-and-gas-petroleum-licensing-guidance>

³ <https://www.gov.uk/government/publications/regulatory-roadmap-onshore-oil-and-gas-exploration-in-the-uk-regulation-and-best-practice>

⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014H0070>

publication (August 2015), at which point it will decide whether to propose new legislation.

Our regulation, compliance and enforcement roles help to ensure that onshore oil and gas operations in Wales are managed in a way that protects public health and the environment. In addition to a PEDL, an Underground Coal Gasification (UCG) licence where appropriate, planning permission from the relevant Local Planning Authority (LPA), confirmation from the HSE that well designs and operating procedures are satisfactory, any operator would also require environmental permits from Natural Resources Wales before any operations could start. The precise nature of the permits required depends on the activities proposed and site specific circumstances. There are potentially eleven permits, consents and permissions required from Natural Resources Wales for onshore oil and gas activities in Wales (see Annex 1).

In common with other industry sectors there is no specific regulation for UOSOG. However, Natural Resources Wales is satisfied our existing regulatory tools will help ensure that exploratory onshore oil & gas activities are managed in a way that protects public health and the environment. This position will be reviewed over time as new information and data is generated.

The role of NRW regarding unconventional onshore oil and gas

Natural Resources Wales undertakes five main roles in relation to unconventional onshore oil & gas activities;

Advisory:

We give advice and guidance to developers on the potential environmental and landscape impacts at a site, which may need to be addressed in a permit application and/ or an Environmental Impact Assessment; we are a statutory consultee to planning authorities on planning permissions for surface operations at a site; and we provide advice on consenting activities which may have an impact on the integrity of designated sites.

Regulatory:

As an environmental regulator we will assess individual onshore oil & gas proposals against a number of different pieces of legislation, and if appropriate, issue permits, licences & consents. In issuing these permits Natural Resources Wales will have to screen for and carry out a Habitats Regulation Assessment for any consents that are likely to have a significant impact on Natura 2000 (N2K⁵) sites.

Monitoring and Compliance:

Monitor compliance at each site to ensure that the environmental risks are properly managed through audits, site inspections, spot check monitoring and reviewing operator records and procedures.

Incident management:

We have a role in managing pollution incidents, responding to pollution events and acting to minimise potential impacts on residents and the local environment.

Land owner and manager:

We own land in various parts of Wales where exploration may take place. We are also the land manager of the Welsh Government Woodland Estate which may fall within the boundaries of the PEDL licences issued by DECC. The PEDL licences are issued by DECC as part of a competitive leasing round and allow the holder rights to explore and produce conventional and/or unconventional sources of oil and gas.

⁵ http://ec.europa.eu/environment/nature/natura2000/index_en.htm

If any new proposals come forward for land managed by Natural Resources Wales, we will ensure that there is clear separation of duties, clarity of role and transparency in the way which we administer our functions (as we do for other regimes where we have dual roles).

Our approach to regulation to support natural resource management

Natural Resources Wales is the regulatory authority in Wales for a wide range of environmental legislation. We are responsible for more than 40 different types of regulatory regimes across a wide range of activities. Across these regimes, including the regulation of onshore oil and gas, we are committed to the principles of better regulation, the Regulators' Code and our Regulatory Principles⁶. This necessitates a risk based, outcome focused and evidence led approach to advising and regulating onshore oil and gas developers. Further information on these principles can be found in Annex 3 and the foot notes.

Directives and UK legislation.

We continue to work with Welsh Government, the Environment Agency and SEPA as well as the Office of Unconventional Oil & Gas at DECC to ensure that we are aware of any emerging issues that may require a change in our regulatory approach.

In Wales there is limited opportunity for shale gas exploration due to the local geology. There are greater opportunities for coal bed methane and underground coal gasification exploration. As activity across Wales is focused on the exploration phase, and is currently limited to only a small number of sites, we are able to meet with individual developers to confirm our regulatory approach and understand their plans for developing sites in Wales. This approach enables NRW to fully familiarise itself with site specific issues, how the industry may develop

⁶ <http://naturalresourceswales.gov.uk/content/docs/pdfs/how-we-regulate-you/our-approach-to-regulation-to-support-natural-resource-management.pdf?lang=en>

over time, and how to best deploy our regulatory tools. We are thereby able to provide bespoke advice and guidance to operators on how best to satisfy regulatory requirements.

We have written to the ten companies who hold the twenty-four PEDL licences across Wales, and have already met with the majority of them. To date NRW has received only five applications for a permit in relation to onshore oil and gas exploratory activity.

Following these discussions, we are confident that our current approach to environmental regulation is appropriate for protecting public health and the environment from the risks associated with exploratory onshore oil and gas activity in Wales. As the industry develops, and if it moves to appraisal testing and full scale commercial production, we will review our approach based on the best available information.

Summary

- We believe that our current regulatory tools are appropriate for the regulation of exploratory onshore oil and gas activities.
- We have appropriate access to existing guidance and expertise to enable effective regulation of the exploratory phase (and whenever appropriate, we will publish or link available guidance on our external website).
- We will review the requirement to evolve our regulatory approach should developers wish to attain authorisation for appraisal and production phases.
- We will continue to work with the UK and Welsh Governments and the respective agencies to consider the emerging science on unconventional gas, to ensure that our approach to regulation is based on the best available evidence.

Annex 1 – List of Consents, Licences and Permissions potentially required from Natural Resources Wales (NRW) for exploration of onshore oil and gas activities.

There are potentially eleven licences or consents required from NRW, five of which fall under the Environmental Permitting (England & Wales) Regulation 2010 (as amended) (EPR). The list as follows but not limited;

Types of Permits

Conditions

Groundwater Activity

Unless we are satisfied that there is no risk of inputs to groundwater

Mining Waste Activity

Likely to apply in all circumstances

Industrial Emissions Activity

When the Operator intends to flare more than 10 tonnes of gas per day). If it is less than 10 tonnes of gas per day it is subject to Mining Waste Activity.

Radioactive Substances Activity

Likely to apply in all circumstances where oil and gas is produced.

Water Discharge Activity

If surface water run-off becomes polluted, for example due to a spill of diesel fuel

Licences

Conditions

European Protected Species

May be required where there is potential to have adverse effects. May also be subject to assessment under the Conservation of Habitats

and Species Regulations 2010.

Water Abstraction License

If the Operator plans to abstract more than 20m³/day for their own use, rather than purchasing water from a public water supply utility company

Consents

Conditions

Groundwater Investigation Consent

To cover drilling and test pumping where there is the potential to abstract more than 20m³/day in the production process

Flood Risk Consent

If the proposed site is near a watercourse or main river

Site of Special Scientific Interest (SSSI's)

Consent required where there is potential to impact these sites

May also be subject to assessment under the Conservation of Habitats and Species Regulations 2010

Permission

Operators must serve a notice to NRW under Section 199 of the Water Resources Act 1991 to "construct a boring for the purposes of searching for or extracting minerals"

Annex 2 – Role of others Regulators and bodies

As well as NRW there are a number of other regulators involved in the control of onshore oil & gas exploration operations;

Department of Energy & Climate Change (DECC)

DECC is responsible for issuing the Petroleum Exploration & Development Licence (PEDL). This licence gives an operator exclusive rights to prospect for all petroleum types (conventional and

unconventional oil & gas) in a licensed area. The licence confers exclusivity in a defined area against other exploration companies, but does not confer any exemption from other legal/regulatory requirements. Licence holders are also obliged to seek DECC's permission before they start any well operations.

Local Planning Authority (LPA)

LPA is responsible for granting planning permission (under the Town and Country Planning Act 1990) for surface related development. It may require operators to submit an Environmental Impact Assessment (EIA), Habitats Regulation Assessment (HRA) and Waste Management Plan with the applications. NRW is a statutory consultee to planning applications.

Health and Safety Executives (HSE)

HSE has a primary responsibility for ensuring safe practices in well design, integrity and construction at given location. They regulate the safety aspects of the drilling work. Operators need to provide HSE with details of the proposed well design that has been examined by an independent, competent well examiner. They must also notify HSE

of their intention to drill (minimum 21 days notice).

Coal Authority

Coal Authority consent is needed for any activity which intersects disturbs or enters coal seams. The Coal Authority is part of DECC. Underground Coal Gasification licences are issued by the Coal Authority

British Geological Survey (BGS)

BGS requires information on: any borehole that is intended to penetrate to a depth greater than 100 feet; or on the deepening of an existing well. Operators are required to keep a record in the form of logs and cores or fragments for a period of six months and must allow authorised officers of BGS to access at all reasonable times

Annex 3 – Our approach to regulation to support natural resource management

The Regulators' Code is part of a package of measures to improve the relationship between regulators and those they regulate and to overcome barriers to growth, by improving the way regulation is delivered.

The Code states that:

- Regulators should carry out their activities in a way that supports those they regulate to comply and grow.
- Regulators should provide simple and straightforward ways to engage with those they regulate and hear their views.
- Regulators should base their regulatory activities on risk.
- Regulators should share information about compliance and risk.

- Regulators should ensure clear information, guidance and advice is available to help those they regulate meet their responsibilities to comply.
- Regulators should ensure that their approach to their regulatory activities is transparent.

This Regulators' Code is not statutory in Wales, although Welsh Government requires us to have regard to it in discharging our regulatory functions. Therefore, we will adopt the Regulators' Code resulting in this being embedded into our regulatory approach.

Our delivery of this Regulators' Code provides a mechanism to deliver a number of our own Regulatory Principles:

1. **Deliver outcomes** – We seek to deliver environmental outcomes, not just deliver regulation, seeking to deliver shared outcomes where we can.
2. **Prepared to challenge** – We will challenge and address barriers where they don't contribute to the environmental outcome.
3. **Be flexible** – We seek to be flexible and tailor the approach to the needs of the recipient, using innovation and novel approaches where appropriate and learning from past experience.
4. **Be intelligent** – We should use all available evidence from a range of sources and seek to ensure the data we collect from those we regulate contributes to the evidence to inform action to deliver outcomes.
5. **Use the full range of tools available** – We seek to apply a wide range of tools, chosen for their effectiveness in delivering outcomes. This includes using the law to deal with those who act illegally, to protect honest business, society and the environment.
6. **Bring the right skills / expertise together** – We seek to ensure we have the skills to use the right tools effectively, or seek access to and work with those who do.
7. **Be clear on what we do and why** – We will seek to ensure everyone understands the role and purpose of the regulator and what our outcomes

are, in such a way that it is easy to see the link between what we are doing and why and to embed a consistent approach.

8. **Be efficient and effective** – We will seek to deliver in an efficient and effective way, working with others where we can, and where this is a good thing to do.