

**A fracking good time?
A planned approach to energy resilience in the UK and Ireland**

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1. Introduction and Conceptual Framework

This paper investigates hydraulic fracturing (fracking) as part of the wider debates associated with ensuring effective and secure energy supplies and creating resilient energy systems. The era of cheap oil and gas is over. The global energy economy is dramatically changing, yet the demand for energy is constant. Hydrocarbons are still present, and developing shale gas is presented as one potential solution to prevent the risk of energy insecurity that the UK and Ireland currently face. The energy market is being reshaped. The House of Lords (2014, pg.11) recently reported¹ that on the supply side North Sea oil and gas are declining and there is an urgent need to identify alternative sources of energy.

Legislation² reflects a commitment to reducing carbon emissions by 2020 through reduced use of oil and gas and by supporting the development of low carbon sources such as renewables - onshore and offshore wind power, tidal, wave, solar, and biofuels together with new nuclear sources. Yet renewable energy solutions are expensive and there is a huge investment gap to fill. Gas is emerging as the transitional fuel. The House of Lords (2014, pg. 16) assert that indigenous shale gas could provide an additional source of energy supply which combined with policy changes could ensure competitively priced electricity supplies are maintained. Fracking could enhance the energy security through a decreased reliance on imports and may act as a transition towards renewables-based electricity generation.

Experience shows that fracking is characterised by polarisation of views, deep emotion and community controversy. It represents a contemporary challenge to society and government, amidst many sensitive issues such as the need to engage with a range of stakeholders, the potential environmental implications for water, air quality, induced seismicity, and the nature of complex regulatory arrangements. It is timely to question the appropriate form of intervention to ensure that the public interest is best served.

Specifically in seeking to understand fracking as a challenge to land use planning, Hannigan's (1995) social constructionist perspective of the environment is followed. This locates fracking within the wider discussions on energy resilience and provides a conceptual framework to investigate significant uncertainties around the issue. Given the embryonic status of fracking there are still technical and

¹ The Economic Impact on UK Energy Policy of Shale Gas and Oil

² Such as the UK Climate Change Act 2008 and the UK Energy Act 2013

scientific unknowns and society, the ‘fractivists’ (Smith and Ferguson, 2013), need to understand how to construct a solution to the issue of energy insecurity. Using Hannigan’s (1995) framework, it provides a more critically robust theoretical understanding of the issues and inferences can be drawn about the intended policy direction involved (Peel and Lloyd, 2004, pg. 361).

Firstly we show how fracking has emerged as a highly charged energy debate. Then deploying Hannigan’s (1995) framework, as a way of tracing the evolution of thinking around fracking, we use practical examples to show how the problems associated with fracking are conceptualised. We conclude by arguing that current thinking around fracking lacks theoretical understanding which may act as a barrier to creating a more resilient energy system in the UK and Ireland.

2. Why the fracking controversy?

Early reports of commercial fracking date back to the 1940s in the United States. Now Johnson and Boersma (2013, pg.390) explain the ‘shale gas genie’ is out of the bottle in North America. Shale gas is at its highest level of production since 1989, constituting 35% of total US gas production (House of Lords, 2014, pg. 20). Yet bans on fracking in Europe are in place for France, Bulgaria, Czech Republic, and the Netherlands on a range of social and environmental considerations. The future of shale gas in the UK is uncertain at this stage, despite some exploratory drilling in parts of England.

Summarised by Cooley and Donnelly (2012, pg. 12), hydraulic fracturing refers to the process by which fluid is injected into wells under high pressure to create cracks and fissures in rock formations to improve the production of wells. The fracking fluid consists of water, chemical additives and a propping agent, which holds open the fissures to allow for gas to flow to the surface. After the fracturing process the well pressure is released and the fluid flows back to the surface and can contain a variety of contaminants which is stored on site for reuse or disposal. It is the potential environmental costs and risk associated with the method that is causing considerable opposition and controversy.

Recent geographical research has shown that Britain has substantial shale resources and the current government seem keen to establish a fracking industry within the UK (DECC, 2013). In January 2014 the Prime Minister announced that the UK is “going all out for shale”, which will mean more jobs and economic security for the country. However, the fractivists, local protestors, local authorities and environmental organisations are determined to protect local environments against fracking and are seeking bans on the method citing concerns of groundwater and surface water contamination, air pollution, earthquakes and cancer (House of Lords, 2014, pg 9). Coupled with this is the belief that shale gas will block the transition to a renewables-based future, rather than as a ‘bridge fuel’ (Cooley and Donnelly, 2012). Fracking therefore is a highly contested policy and planning issue.

3. The social reconstruction of the fracking problem?

Peel and Lloyd (2004, pg.362) noted that the environment has assumed increasing attention as the focus for intellectual inquiry. Many debates have arisen with regards to public awareness of environmental destruction, waste and pollution, whilst drawing attention to enhanced environmental consciousness. Hannigan (1995) stated that there needed to be a clear and coherent body of thinking which explains how society perceives and recognises a specific environmental issue as a problem? Furthermore how does it calibrate, understand it and respond to that problem, what are the best means of social intervention to deal with the issue? Since fracking is still an emerging area, there is limited appreciation of the issues. Hannigan’s (1995) framework suggests that in order for an environmental issue to be fully socially reconstructed six prerequisites must be met. These are:

- Scientific authority to provide evidence of an issue or problem
- The existence of popularisers who sustain the issue in the public interest
- Media attention in which the problem is framed as novel and important
- The dramatisation of the issue in symbolic and visual terms, and ways to sustain interest in it
- The provision of economic incentives for taking action to provide behavioural change

- The emergence of an institutional sponsor to ensure legitimacy and continuity in managing the issue and the appropriate intervention

Peel and Lloyd (2004, pg. 363) observed that these prerequisites suggest a linear process of recognition, evaluation, reflection and action in terms of promoting an issue for action. Whilst this is an issue in terms of policy design the model does allow the possibility of informing the ways in which appropriate intervention for fracking can be framed. The prerequisites will be dealt with in turn using practical examples for the successful social reconstruction of the ‘fracking problem’.

Scientific authority: The UN Environment Programme (2012) has been used by Friends of the Earth (NI) (2013, pg. 2) to show their views that shale gas is ‘unconventional, unnecessary, and unwanted’:

“Fracking may result in unavoidable environmental impacts even if unconventional gas is extracted properly and more so if done inadequately. (...) increased extraction and use of unconventional gas is likely to be detrimental to efforts to curb climate change”.

Not all professional bodies are convinced of the industry. The Chartered Institute of Water and Environmental Management (2012) has stated that the UK ‘should not encourage fracking as a part of our energy mix until there is more evidence that operations can be delivered safely’. There appears to be no real consensus as to how fracking should be addressed at this stage but scientific evidence alerts to a screed of potential concerns.

Popularisers, the media and dramatization: The existence of popularisers in the fracking debates are clearly evident with the two coming hand-in-hand. The media use campaign groups to act as champions and popularisers to promote the issue in the public eye and to draw attention to the perceived weaknesses in the policy arrangements. Within Northern Ireland there are well established groups³, however, nationally there are very strong opposition groups in Lancashire, Sussex, Somerset and South Wales. These are supported by the environmental pressure groups such as Friends of the Earth and Greenpeace. After the recent House of Lords (2014) report, Greenpeace highlighted a YouGov poll revealed that 74% of Britons oppose plans to allow fracking firms to drill under homes without their permission. Their chief scientist stated that ‘the Lords spent seven months cherry-picking the wafer-thin evidence that fits a foregone conclusion about the benefits of shale gas’ (Parr, 2014). These views reflect the contested nature of the fracking process.

The media produced many dramatic headlines. In relation to small earthquakes⁴ in the North West of England in May 2011, for example, the BBC headlines included: ‘*Fracking tests near Blackpool ‘likely cause’ of tremors*’ and ‘*Small Earthquake hits Fylde Coast at Poulton*’. Most dramatically of all was the arrest in August 2011 of two anti-fracking protesters who targeted Blackpool tower by erecting banners to protest against fracking. More recently, Caroline Lucas, Britain’s only Green MP, was cleared of two charges after her arrest last August for obstructing a public highway and public order offences in protests that took place outside energy firm Cuadrilla’s exploratory oil drilling site near Balcombe, Sussex. In the US there are several high profile media images that are familiar. One is of gas flames coming out of a domestic water tap and another one is of a person drinking a glass of dirty tap water. Such media coverage can have a vivid influence on debates over fracking.

³ Such as *Belfast Not for Shale, Fermanagh Fracking Association, Ban Fracking Fermanagh and Ballinlea Residents Group* (Friends of the Earth NI, 2013).

⁴ Whilst this shows the limitations of the method, these seismic events were later explained by a number of unusual combination of factors such as the specific geology of the site coupled with the pressure exerted by water injection and the Preese Hall-1 well encountered a pre-existing critically stressed fault (Cuadrilla Resources, 2009)

Economic incentives and emerging institutional sponsors: The House of Lords (2014) report notes that indigenous shale gas production in the UK would be cheaper than imported gas, and an internationally competitive industry could be created with investment opportunities bringing much needed new jobs and skills. Michael Fallon⁵ stated on (24th April 2014) that there was a 'huge prize' at stake for the UK through fracking and that money would be made available to kick-start a new industry. Several UK departments and players are responsible for licencing and regulating fracking - the Treasury, the Department of Energy and Climate Change, the Department of Food and Rural Affairs, and the Department of Communities and Local Government all share responsibility for fracking in terms of policy, licensing, regulation and implementation. The consequence of this fragmentation is that no evident institutional sponsor is emerging. The House of Lords' (2014, pg. 94) recommended that the Prime Minister establish a Cabinet Committee, chaired by the Chancellor of the Exchequer to coordinate policy with a mandate to promote well-regulated exploration and development of shale gas.

4. Conclusion

This short paper has used Hannigan's six prerequisites associated with the social reconstruction of the 'fracking problem'. Greater attention is required if fracking in the UK and Ireland is to be advanced. Given the high controversy and public concerns that are evident and that must be confronted, fracking offers a possible contemporary solution to the UK's dependence on imported gas in an uncertain and turbulent energy horizon. The above examples show that while fractivists are active, the general public awareness is relatively low. This represents a major challenge for the societal recognition of the problem and shows the need for more appropriate intervention. This is a case for a planned approach, with a clear institutional sponsor to ensure that the public interest is best served through strategic visioning and appropriate regulation.

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