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Case Study 1 ⚠ Fracking

Fracking in the UK and Austria: from contestation to constructive interaction?

Alexander Lang

Introduction[1]

Hydraulic fracturing or *fracking* has been gaining significance and causing controversies over the last decade. Since the mid-2000s, the United States of America have been experiencing a so-called *shale gas boom*, resulting in a swift increase of domestic natural gas production and falling energy prices (US EIA 2012, 2014). Fracking has been crucial for this development: Rock formations are fractured by high-pressure injection of a composite fluid into a well, enabling the flow and exploitation of otherwise tightly stored gas (IEA 2012: 33). However, the risks and impact assessments of fracking as well as forecasts of the economic revenue expected from shale gas production are varying and contradictory. Proponents and opponents of the technology and its field of application are engaging in heated discussions in the media, political arenas, or in direct confrontation (Lang 2014a: 4–10).

This case study examines fracking for shale gas production in Austria and the UK.[2] Although the debates in both cases show similar characteristics, the position of certain key actors, the governance approaches, the unfolding of events and their outcomes differ. In Austria, a domestic oil and gas company abandoned its plans to produce shale gas using a newly developed and allegedly clean fracking approach after public protests led to a legislation amendment in 2012 (UVP-G 2012), making an Environmental Impact Assessment (EIA) mandatory for all fracking operations (Lang 2014a: 10–15). In contrast, in the UK, oil and gas companies supported by the government have been pushing the development of a shale gas industry, despite its controversial nature and growing public opposition. After the first application of fracking for shale gas production in 2011, which caused earthquakes, and was followed by an investigation and the implementation of a monitoring scheme (Green et al. 2012, Davey 2012), no new wells have been fracked in the UK. Nonetheless, companies and the government are still pursuing shale gas production (Gosden 2015, Harvey 2015).

This chapter traces the contours of the societal contestation of fracking in Austria and the UK. We analyse how different actor groups make sense of the technology, its

1 This chapter is based on two comprehensive case studies conducted within the Res-AGorA project (Lang 2014a, 2014b).

2 The Austrian case is located in the Weinviertel, a region in the county of Lower Austria; the UK case is especially concerned with incidents around fracking operations in various parts of England. This chapter refers to "Austria" and "the UK" for simplicity, and because fracking in both countries is regulated and discussed at the national level.

implementation in shale gas production, and how they define responsible development. We show how governance attempts and measures deal with fracking and the arising public controversies, but also how they fail to do so in a constructive way. In doing so, we shed light on the challenges, barriers to, and opportunities for practising and promoting Responsible Research and Innovation (RRI), and focus especially on its core principle of constructive and transformative interaction.

The study follows a qualitative approach of sociology (Flick et al. 2004) and is based on comprehensive desk research and a comparative analysis of public and political discourses on fracking and shale gas production in Austria and the UK. Data was collected through systematic desk research and sources included newspaper articles, policy documents, strategy papers, blog entries, and webpages.[3]

Conditions for RRI in the making: actors and interpretations

In order to be able to gain a deeper understanding of the fracking controversy and the impact of different governance measures on the heated public debate, it is necessary to examine the societal conditions, i.e. the landscape of engaged actors, their interpretation of the technology, its implementation, and its impacts in a specific situation.

Actors' landscape: proponents, opponents, and in-betweeners

The actor groups involved can be categorised as proponents, opponents, and in-betweeners, depending on how they understand and evaluate fracking, and how they define a responsible way of dealing with it. Whereas proponents want fracking for shale gas to be implemented because of its alleged benefits, and opponents try to prevent fracking because of its possible negative impacts, in-betweeners are societal actors without a clear pro or contra position. Their decision is contingent on further information about the impacts of fracking and on the implementation of proper regulation and control mechanisms.

In Austria and in the UK, societal actors with a positive attitude towards fracking include oil and gas companies and companies from related industry branches, business associations, and special interest groups, as well as the researchers and engineers involved in the further development of fracking. Unlike the situation in Austria, in the UK, these actors were supported by the country's coalition government of the Conservative Party and the Liberal Democrats. Furthermore, several British newspapers have taken a clear position in favour of fracking (Jaspal and Nerlich 2014), or started pro-fracking campaigns (Davidson 2014); in Austria, newspapers present a more neutral attitude.

The societal actors opposing fracking include established environmental groups, local grassroots anti-fracking movements, and the respective Green Parties. In the UK, there are also newspapers that present fracking in a negative light (Jaspal and Nerlich 2014).

In-between these two standpoints are some political parties, e.g. the UK Labour Party, and research organisations investigating the impacts of fracking. In Austria, the Federal Government – a coalition of Social Democratic and the conservative People's Party – has assumed an intermediate position. As will be described later, the presence of a powerful political intermediary makes a large difference when dealing with the contestations surrounding the introduction of a new technology.

Diverging interpretations of fracking for shale gas

The perceptions and reasoning of the different actor groups encompass a variety of issues, ranging from the basic characteristics of the technology of fracking, through its environmental, economic, and societal impacts, to its regulation and the existing control mechanisms.

Old versus new: Whereas its proponents depict fracking as an established technology, which has been used and developed over decades, its opponents portray it as a fairly new technology. They argue that state-of-the-art fracking combines several technologies in a novel way and that the possible scale of operations has increased tremendously. Thus, they deny that it is possible to draw on decades of experience with fracking, as its proponents claim.

3 A comprehensive list of sources can be found in Lang (2014a, 2014b).

Safe versus unsafe: Proponents acknowledge there are certain environmental and health risks associated with fracking, but estimate them to be manageable and reducible to a minimum through best practice and compliance with existing regulation. Beyond that, they claim that natural gas from shale gas production is the cleanest fossil fuel available, which could be used as an interim energy source on the way to renewable energy production, instantly contributing to the reduction of greenhouse gas (GHG) emissions.

Opponents depict fracking as a technology associated with severe environmental and health risks because of induced seismicity, pollution of water, air, and soil with chemicals from the fracking fluid, toxic material washed out of the fracked rock formations, or fugitive emissions. They do not believe these risks can be eliminated by best practice and technological development, such as a clean fracking approach. On a global scale, they see shale gas production as a delaying factor in the energy transition and a source of GHG emissions.

Sufficient versus insufficient regulation: Assessing the environmental risks of fracking is also based upon the evaluation of existing regulations, their means of enforcement, and the actual compliance of oil and gas companies. Proponents state that there is sufficient regulation in place, that operations are monitored properly, and that companies as well as individual engineers want to act responsibly and are trained to do so.

Opponents criticise the existing regulation as too weak and not clear enough, thus providing loopholes for misconduct. Furthermore, they attest a lack of factual control by governmental bodies, e.g. in the UK, where monitoring is often done by operating or hired companies.

Economic benefits versus disadvantages: Proponents purport that fracking for shale gas production is essential for economic growth and to remain competitive on global markets. This is related to the vision of shale gas production as a means of lowering energy prices and thus (re) strengthening businesses. They claim local economies and populations stand to profit due to the revenue from taxes, creation of jobs, and lowered household energy costs. Furthermore, they also portray this supply of natural gas as a political issue and argue that domestic gas production will secure the supply of energy by decreasing the dependency on foreign fuel sources.

Opponents, on the other hand, predict an economic and social decline because of fracking. They fear that local and sustainable branches of the economy, e.g. tourism or agriculture, and the overall quality of life will suffer from fracking operations, because of environmental pollution, alteration of the landscape, and increased heavy traffic. They doubt that fracking is essential for economic growth and sinking energy prices, and highlight critical prognoses of a "shale gas bubble" that is about to burst. They disagree with the fracking proponents' view of greater independence from foreign fossil fuels, and highlight the problems of being dependent on large, profit-oriented oil and gas companies instead.

De facto governance of fracking: challenges and approaches

There are major challenges to achieving constructive interaction given the context of hostile actors with such a highly polarised interpretation of fracking. These include aligning measures to the concerns of stakeholders, the level of distrust concerning the execution of existing governance mechanisms, and knowledge contestation. However, we will show that the governance of fracking can also be addressed in a way which could be assessed as a step towards RRI.

Responsible regulation and sufficient control?

In both Austria and the UK, there are several governance arrangements that apply to fracking for shale gas, including hard[4] and soft laws.[5] As fracking and shale gas production operations evolve, these governance measures are subjected to change on the one hand, and, are being

4 For Austria, see Lang 2014a: 16–19); for England, see Department of Energy and Climate Change (DECC 2013).

5 In the UK, there is a guideline by UK Onshore Oil and Gas (UKOOG 2013, 2013a) that was issued in cooperation with the DECC, Health and Safety Executive, and Environment Agency, and that serves as a reference point for fracking operations. The Austrian oil and gas company OMV published strategic documents covering various CSR aspects (OMV 2011, 2012, 2012a) as well as health, safety, security, and environmental issues (OMV 2012b). However, all of these are not legally binding.

challenged by different societal and political actors within the debate on the other hand.

The Austrian federal government took up a position in-between the proponents and opponents of fracking and tried to find a consensus. Making EIA mandatory neither fulfilled the demands of proponents (permission), nor opponents (prohibition). Instead, it postponed the final decision. Although it is not clear whether this decision and its outcome – putting fracking plans in Austria on hold – is *responsible*[6] or not, the now obligatory EIA does promote the inclusion of the affected local population and consideration of the wider impacts of and alternatives to fracking operations. These features can be regarded as one step towards RRI.

In the UK, in contrast, the government has been proposing and pushing fracking argumentatively, by adapting legislation, and by introducing supporting administrative bodies. The government established an Office of Unconventional Oil and Gas to help the industry by simplifying the regulatory process (DECC 2012, 2013). In 2015, it passed the Infrastructure Act, which, among other things, allows companies to drill 300 metres horizontally and below private property without seeking permission of the landowner. The UK government has also pushed financial incentives for local councils, i.e. 100,000 GBP for initial well drilling, 100 per cent of business rates from fracking operations, and one per cent revenue from gas production (UKOOG 2013a).

The approach of the UK government and the oil and gas companies has aggravated public controversy by not adequately addressing the existing criticisms of fracking regulation. Opponents depict the financial incentives as bribes to local councils, which might then be tempted to turn a blind eye to environmental and health concerns. This measure does not address their doubts, including fears of losing local and more sustainable branches of the economy, and triggers the criticism of "tame" safety and environmental regulations. In general, opponents argue that there is a lack of independent monitoring and control, that governmental bodies are inadequately equipped to fulfil this function, and that operational guidelines are insufficient. Anything that can be construed as a "bribe" of local authorities, which play an important role in granting permission to drill and frack, is detrimental to the aim of safeguarding operations.

Knowledge contestation

In their interpretation and assessment of fracking, different actor groups incorporate different stocks of knowledge, because they vary in their evaluation of the available studies, reports, etc. Although both proponents and opponents contest the research methods, data, and results that contradict their own position, the latter more often highlight allegedly flawed research results.

While there are few scientific studies or reports on the specific situation in Austria, there are several for the UK, including reports by the Royal Society and Royal Academy of Engineering (RS / RAE 2012) and Public Health England (Kibble et al. 2014). Nevertheless, this presumed information advantage has not resulted in a more fact-based and calm debate on fracking here. The validity, veracity and comprehensiveness of the presented evidence are still subject to intense questioning, indicating disagreement on whether the available knowledge provides a sufficient basis for informed decision-making.

The adverse attitude of opponents towards studies in favour of fracking is supported by several circumstances: Opponents highlight the personal and financial links between researchers conducting assessments on various aspects of fracking and the oil and gas industry, and portray them as impartial and not trustworthy; in the UK, they use the derogative term "Frackademics". The same applies to research conducted in or authorised by organisations or public authorities linked to political actors with a clear pro-fracking position. Opponents also deem the existing data and research results neither comprehensive nor objective, because they state that certain aspects have not been covered, e.g. the wider impact of shale gas production on climate change or the local economies (Tillmann et al. 2014), and that data is often collected and provided by oil and gas companies.

6 Neither proponents nor opponents assess this decision positively. The former criticise the cessation of operations they deem necessary, and the latter fear renewed attempts to produce shale gas in Austria at a later point in time.

When introduced into the already polarised debate, information that meets some of these criteria tends to increase the societal tensions and conflicts between the involved actors rather than contributing to constructive interaction. Researchers producing studies of this kind, as well as actors referring to them, are accused of partisanship and hiding strategic considerations under the pretext of science, which, in some circumstances, leads to mutual recrimination and eventually a communicative blockade.

Conclusion and lessons for RRI governance

Several matters emerge from looking at the cases of fracking in Austria and the UK that have to be addressed in order to navigate the governance of research and innovation towards RRI. The divergent interpretations of fracking and its impacts lie at the heart of this controversy. The continued contestation of definitions, scientific knowledge, and other information impedes or even prevents constructive interactions between opposing actors, and enhances the division. Looking at the critical opponents' assessment of UK government's governance approaches, a deep-seated distrust of government and the companies involved becomes apparent.

Starting from these analytical results, it is possible to draw more general lessons for RRI governance, and especially for facilitating and enhancing communication between stakeholders involved in debates on R&I developments and decision-making:

- RRI governance measures have to recognise and consider the diverse and diverging interpretations of the issue at stake. Otherwise, in addressing one aspect (e.g. financial participation), they might provoke outrage concerning another important one (e.g. safety and environmental protection).

- Adopting resolutions, laws or guidelines that regulate the implementation of a certain technology are not enough to address societal concerns. It is also necessary to have an authority that monitors and controls companies' compliance with these rules. In this regard, the independence of this authority is essential to ensure societal confidence in its effectiveness.

- The neutrality of researchers and research organisations conducting assessments of the impacts and risks of a technology is crucial to generate accepted knowledge that can serve as the base for meaningful interaction between opposing societal groups. This could be ensured by the independent funding of research by a trusted body not serving the specific interests of certain stakeholders. The research on different aspects and impacts of the technology must have a broad scope aligned to the demands of the stakeholders.

- Aiming to facilitate meaningful interaction does not mean that activities should strive to eradicate controversy. As observed in the Austrian case, public and political controversies can be a driving factor for legislative changes promoting RRI. In this regard, a powerful actor taking up a neutral stance in-between conflicting groups is beneficial as a mediator, because it has the capability to undertake change along a middle way.

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