# Grassroots Social Resistance Movements:

## The Influence of Conflict Narratives in Relation to Mining Policy Development in Australia and the United Kingdom

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Community survey sign indicating that 100% of people in Corndale agree that there should be no CSG development in their area in the Northern Rivers region, NSW, Australia.

Image: Author's own

# Declaration

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# Abstract

The development of unconventional gas is widely disputed and has generated a global anti-fracking movement protest. Using a qualitative approach, this study seeks to explore if and how the anti-fracking movements in Australia and the UK influence the mining policies and politics around fracking.

Using thematic and narrative analysis, I argue that the anti-fracking movement is a social movement that has three characteristics: (i) key pro- and anti- narratives, (ii) use of the discretionary principle and (iii) deployment of a range of protest mechanisms to drive and shape conflict about unconventional gas, which in turn affects policy. Pro- and anti-fracking narratives across Australia and the UK have impelled a range of circumstances. The anti-fracking narratives have spurred social conflict and organised protest. Pro-fracking narratives have motivated governments to exercise their discretionary power to favour industry by establishing governance regimes that facilitate industry projects, inhibit community engagement, and criminalise protest. A social movement has grown in response to these inherent tensions. The anti-fracking movement is galvanised by community identity, values, and perception, thus building opposition to fracking through numerous forms of protest.

The resolutions for this conflict lie in their reconciliation between community and government. The analysis concludes that governance regimes that afford greater public participation, consideration of community concerns in decision-making and knowledge production will work towards resolving the social problems of the industry and thus the tensions at the heart of the anti-fracking movement.

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## List of Acronyms and Abbreviations

| | |
|---|---|
| **ABC** | Australian Broadcasting Corporation |
| **APPEA** | Australian Petroleum Production & Exploration Association (Aust) |
| **Aust** | Australia |
| **BBC** | British Broadcasting Corporation |
| **BSA** | Basin Sustainability Alliance (QLD) |
| **CHPNY** | Concerned Health Professionals of New York (US) |
| **Chsh** | Cheshire |
| **COAG** | Council of Australian Governments |
| **CSG** | Coal seam gas |
| **CSR** | Corporate social responsibility |
| **DCLG** | Department for Communities and Local Government (UK) |
| **DEWHA** | Department of Environment, Water, Heritage and the Arts (Aust) |
| **EA** | Environment Agency (UK) |
| **EDO QLD** | Environmental Defenders Offices Queensland |
| **EIA** | Environmental impact assessment |
| **EIS** | Environmental impact statement |
| **EITI** | Extractive Industries Transparency Initiative (Global standard - voluntary) |
| **EPBC Act** | Environmental Protection and Biodiversity Conservation Act (Aust) |
| **FIFO** | Fly-in-fly-out |
| **FIO** | Freedom of information |
| **FITS** | The Foreign Influence Transparency Scheme Bill (Aust) |
| **Fracking** | Hydraulic fracturing (unconventional gas extraction process) |
| **GDP** | Gross domestic product |
| **HREC** | Human Research Ethics Committee at the University of Adelaide |
| **HSE** | Health and Safety Executive (UK) |
| **KNAG** | Knitting Nannas Against Gas |
| **Lancs** | Lancashire |
| **LNG** | Liquefied natural gas |
| **Mnch** | Manchester |
| **MP** | Member of parliament |
| **MPAs** | Mineral Planning Authorities (UK) |
| **NGO** | Non-government organisation |
| **NSM** | New social movement theory |
| **NSW** | New South Wales |
| **NT** | Northern Territory |
| **OGA** | Oil and Gas Authority (UK) |
| **PEDLs** | Petroleum Exploration and Development Licenses (UK) |
| **PLCA** | Protect the Limestone Coast Alliance (South Australia) |
| **PSR** | Physicians for Social Responsibility (US) |
| **Qld** | Queensland |
| **RET** | Renewable energy technology |
| **SA** | South Australia |
| **SCER** | Standing Council on Energy and Resources (Aust) |
| **SERG** | Shale Environmental Regulator Group (UK) |

| | |
|---|---|
| **SLO** | Social licence to operate |
| **TRS** | The Royal Society (UK) |
| **TRAE** | The Royal Academy of Engineering (UK) |
| **UK** | United Kingdom |
| **US** | United Sates |
| **Vic** | Victoria |
| **WA** | Western Australia |
| **Yksh** | Yorkshire |

# Chapter 1   Introduction

## 1.1  The Anti-fracking Movement and its Problems with Unconventional Gas Development

Mining in agricultural regions is becoming increasingly fraught with conflict (Taylor and Taylor 2016). Local communities are at odds with the exploitation of mineral and gas resources by governments and mining companies on agricultural land and near local communities (Taylor and Taylor 2016). The conflicts relate to environmental risks and the broader social concerns relating to impacts of the unconventional gas extraction operations on agricultural land, local economies, and communities (Bebbington 2009; Luke et al. 2013). Social movements against hydraulic fracturing, known as anti-fracking movements, have developed in Australia and the United Kingdom (UK). They are grassroots social movements that are responding to a complex range of real and perceived social, economic, and environmental risks and impacts of the development. The anti-fracking movement is grounded in the local communities affected by the industry and founded on traditional environmental activism principles.

Unconventional gas development is established within the global energy market and reflects neoliberalist government agendas (McDonell 2015). Unconventional gas differs from conventional gas because it is found within the geological layers of coal seams, sandstone, and shale, rather than the large reservoirs of conventional gas (Grafton, 2012). Recent technological advances have made the development of those unconventional resources economically viable, especially the process known as hydraulic fracturing, or 'fracking' (Blake 2016). This term 'fracking' has been taken up by many to broadly define the complex range of processes of unconventional gas extraction (Choma et al. 2016; Espig and de Rijke 2016; TRS and TRAE 2012). The simplification in the terminology underscores the multifaceted way in which unconventional gas and its development affect society more broadly.

In Australia, most early protests relate to coal seam gas (CSG) which is extracted extensively in Queensland and NSW (Hardie et al. 2016). However, the industry has spread in recent years across the country and includes exploration into shale and tight gas resources (Espig and de Rijke 2018; Luke et al. 2018a). In the UK, the unconventional gas industry is in its exploration stage and, until recently, a strong anti-fracking movement has worked effectively to hinder the industry's progress there.

As with any natural resource development, its inevitable impacts on local landscapes and communities are the basis of conflicts between affected communities, governments, and industry across the world (Munda 2009). Social and environmental wellbeing are important factors for decision-making relating to these developments (Walton et al. 2013). Alternatively, harm to social and environmental wellbeing is thought to be mitigated by regulatory regimes and the economic benefits of the development (Maloney 2015). However, despite regulatory measures, unconventional gas developments across the world have resulted in a range of social problems. These social problems include the physical imposition of industry practices onto the landscape (Meng and Ashby 2014), public health problems (Finkel and Hays 2013; McKenzie et al. 2012), the high water needs of the process (Espig and de Rijke 2018), earthquakes, and land, air, and water contamination (Annevelink et al. 2016; Choma et al. 2016). It is also argued that this type of extraction detracts from, rather than builds a bridge towards, the development of renewable energy resources (Choma et al. 2016; Sovacool 2014).

## 1.2  The Research Scope and Rationale

The research reported in my thesis adds to the growing area of scholarship that explores the social dynamics of the development of unconventional gas and social movements. The social conflicts that have emerged globally in response to, and at the prospect of, unconventional gas development is representative of the impacts natural resources development have on social wellbeing more broadly. However, the emergence of global social conflicts, and thus social movements, relating to unconventional gas development demonstrates that the associated social problems provide the impetus for resistance. This social movement phenomenon is occurring in a range of countries, environments,

government regimes, and cultures across the world. As such, the anti-fracking movement is representative of, and immersed in, a range of social, political, and economic narratives.

### 1.2.1 Research Aim and Research Questions

The aim of my study is to determine in what ways social movements influence mining policy development and affect outcomes in mining development projects. Using case studies in Australia and the UK, my research seeks to understand whether (and if so how) the conflict between those for and against unconventional gas, (known colloquially as fracking), influence the mining policies and politics surrounding fracking in those countries.

To answer that core question the secondary questions guiding my research are:

1. What are the narratives associated with unconventional gas in Australia and the UK?
2. What role do social movements in Australia and the United Kingdom have in defining the conflict through their narratives related to unconventional gas policy development?
3. What are the broader social and policy implications of the anti-fracking narrative?

The objectives of the study are:

1. To identify the narrative themes in the anti-fracking movement in Australia and the UK.
2. To assess the role played by the anti-fracking movement in Australia and the UK in the broader narratives related to unconventional gas development.
3. To assess the influence of the anti-fracking narrative on unconventional gas policy development.
4. To critically analyse the broader implications for mining development policy.

### 1.2.2 Justification and Significance of the Study

There is an expansive research relating to the anti-fracking movement, particularly in the social sciences (Evensen 2018), which reveals the complexities of the social impacts of unconventional gas development. However, as Evensen (2018) argues, despite a plethora of research, there are research gaps in this area, including research focusing on international comparisons and the ways in which actors from different countries interact

about this issue. My research deepens the understanding of mining development and energy production conflicts through its critical analysis of the pro- and anti-fracking narratives. As broad analysis of the anti-fracking in two countries, with their political, societal and industry differences and similarities, it also provides insights into how to learn from those conflicts to find positive ways to address the conflicts associated with unconventional gas development. Furthermore, my research broadens the understanding of the Australian context, as there is currently very little research outside of Queensland and New South Wales.

In doing so, my research contributes to the scholarship regarding social movements and public participation, the social, health and environmental impacts of unconventional gas development, social and environmental impact assessments, and social licence to operate. Understanding the broader and social dynamics of conflicts and debates concerning operational projects such as unconventional gas developments provide decision-makers with important information about the complex social experiences of these developments (Espig and de Rijke 2016).

The development of a deeper understanding of the anti-fracking narratives within the unconventional gas development space contributes to the broader literature surrounding the social dynamics of natural resource policy development, the social paradigm within a transitioning energy market, and the global response to climate change. My research critically explores the relationships among unconventional gas governance and policy, industry, and the public. As such, the study provides a deeper understanding of the tensions in relation to unconventional gas developments and the influence of the anti-fracking movement in Australia and the UK, filling a gap in knowledge on this issue.

## 1.3  Thesis Structure

The thesis consists of four observable sections:

1. Research context (Chapters 1-4)
2. Presentation of the research findings (Chapters 5-7)
3. Discussion (Chapter 8)

4. Conclusions and recommendations (Chapter 9)

Section 1: In Chapters 1-4, I establish the research context. Chapter 1 outlines the context of the anti-fracking movement, and the research scope and rationale. Chapter 2 provides an extensive literature review of the range of scholarship relating to the research topic. Topics of exploration include conflicts over the impacts and governance of natural resource development, including the various narratives pertaining to unconventional gas development, the ideological and political contexts of the development, and the concept of the anti-fracking movement as a social movement. Chapter 3 describes the qualitative methodology, the methods used to collect the research data (desktop study and semi-structured interviews), and the analytical approaches used to analyse the data (thematic analysis and narrative analysis). Chapter 4 explains the broader context of the unconventional gas industry and introduces the case studies, the anti-fracking movements in Australia and the UK.

Section 2: In chapters 5-7 I present the components that make up my key finding: that the anti-fracking movement is a social movement which is built on three characteristics – (i) narratives, (ii) response to governance regimes, and (iii) protest. Chapter 5 articulates the anti- and pro-fracking narratives. The anti-fracking narratives are community-centric and are built on the perception that unconventional gas development is a social problem and thus anti-community. These narratives are constructed around concepts of identity and values which are incompatible with the neoliberal, economically driven concepts that drive the pro-fracking narratives. Chapter 6 describes a range of issues that were perceived by participants in the way unconventional gas is governed (inadequate oversight and monitoring; discretions with policy and regulation; policing discretions; and influence of industry on government decision-making and regulatory capture) that are facilitated by government discretions. These issues are perceived to inhibit the easing of tensions about the development. Through exploration of these issues the chapter then coins a new term, the 'discretionary principle', to describe the overuse of discretionary powers in government decision-making in the development of policy and regulation, and policing. Chapter 7 presents the importance of protest in the anti-fracking movement. The anti-fracking narratives drive the protest associated with unconventional gas developments and in doing so provide the opportunity to address these problems.

Section 3: In Chapter 8, I discuss the practical implications of the research findings, including the value of understanding social movements and conflict for policy development, the various power relationships that are revealed in research findings, and the consideration of these aspects for democracy and the governance of natural resources. I end the chapter by the discussing the ideas these implications yield about possible approaches to resolving the conflict relating to unconventional gas development.

Section 4: Chapter 9 is the concluding chapter and presents the overarching conclusions, provides recommendations for policy and decision-making, and presents my key findings along with the opportunities for future research relating to the social dynamic of unconventional gas development.

## 1.4 Conclusion

The development of unconventional gas has become the centre of a global resistance social movement, the anti-fracking movement. The resistance is in response to a complex range of perceived and real social, economic, and environmental risks and impacts of the development. This chapter introduced my study's premise; to establish the influence of the conflict narratives about unconventional gas development on mining policy development. To justify this study, the following chapter presents a review of the literature surrounding the social conflict over unconventional gas development and conceptualising the anti-fracking movement as a social movement.

# Chapter 2   Literature Review

## 2.1  Introduction

The story of the resistance to the unconventional gas development is complex and multidimensional and as such, has been examined in the literature in a range of ways (Evensen 2018). This chapter explores the themes that frame the anti-fracking movement and the broader unconventional gas paradigm. The dimensions examined include social, political, and environmental conflicts over natural resources development, the governance of mining and the environment, the conflict around unconventional gas, and the health, social, and environmental implications of unconventional gas developments. The chapter also explores the anti-fracking movement as a social movement, as a mechanism of protest, and as a process of knowledge production. Using these insights, this review critically examines the broader story of the conflict about fracking, and ultimately establishes the gap in understanding the influences of the anti-fracking movement on mining policy development.

## 2.2  Conflicts over Natural Resource Development and Energy

Mining in agricultural regions is becoming increasingly fraught with conflict. Communities at odds with the increased exploitation of unconventional gas resources by governments and mining companies across the world for energy production in populated and agricultural land include farmers and rural communities disenfranchised by the development in their area, and environmentalists (Whitton et al. 2018). The conflicts are constructed around a range of concerns. They include, concerns over risks to the environment agricultural land, local economies, and local communities, the unevenly spread benefits of the development, and the broader impacts to climate change (Bebbington 2009; Boudet et al. 2014; Luke et al. 2013; Smith and Ferguson 2013).

The anti-fracking movements in Australia and the UK are social grassroots movements that are part of a broader, global anti-fracking movement. They have foundations in both

environmental activism and traditional, often conservative, farming communities (Luke et al. 2018b). Hence, they often involve groups who would normally be considered to have opposing interests (Luke et al. 2018b). This divergence is because the movement is in response to the increasing imposition of unconventional gas mining on agricultural landscapes, attracting both local communities and those aligned with environmentalism and activism.

In the literature, the anti-fracking movement is emerging within a range of subject themes. On one hand, it is explored within a broader picture of conflict regarding natural resource allocation, energy, and land use policy. There is also focus on the environmental and human impacts of the development, public perceptions about unconventional gas, and the role of citizens in decision-making about natural resources that are present within, or near, the areas that they inhabit. However, the movement and its narratives are also positioned within a broader range of scholarship that explores natural resources and energy development conflicts. Policy makers and researchers increasingly acknowledge the complex, and often fraught, relationship of the cultural, social, political, and economic human dimensions with the natural environment (Bebbington et al. 2018a; Boudet et al. 2014; Bradshaw and Waite 2017; Chen and Randall 2013; Clark et al. 2012; Eaton and Enoch 2018; Evensen and Stedman 2018; Gudynas 2018). This relationship between conflict and natural resource development is well represented in the literature (Allen 2018; Bebbington et al. 2008b; Bruckmeier 2005; Colagiuri and Morrice 2015; de Rijke et al. 2016; Galloway 2012; Hudgins and Poole 2014; Idrissou et al. 2013; Kama 2019; Measham et al. 2019; Musemwa 2009; Rasch and Köhne 2016; Veltmeyer 2013).

## 2.2.1 Conflict Theory

Conflict theory, particularly emanating from social theorists Georg Simmel, Karl Marx, and Max Weber, influenced other influential social theorists, such as David Lockwood, Ralf Dahrendorf, Randall Collins, and Jonathan Turner. The term 'conflict' stems from the Latin word *confligere*, which denotes "shock, clash, collision" (Galtung 2008, p. 391). Conflict theory looks at the phenomenon of social conflict and seeks to find out what are the reasons behind it (Hungerford 2008). Conflict, however, is implicitly about power and its

dimensions: power structures, power relations, and unequal distribution of power (Bartos and Wehr 2002; Dahrendorf 1958; Hungerford 2008; Turner 2005; Wieviorka 2013).

Simmel positions conflict at the heart of social life (Simmel 1955). That is, conflict is validated because it socialises citizens and regulates communities, fundamentally working to transform and unite society (Wieviorka 2013, p. 699). The Marxist view places conflict as a structural issue, a consequence of class systems of authority (Turner 2005). This view positions conflict as a class struggle between the upper, middle, and working classes (Turner 2005; Wieviorka 2013) that is bound by private ownership – "those who own the means of production and those who work for the owners" (Bartos and Wehr 2002, p. 38). Consequently, Marx's theory of conflict relates to the discord between the interests and goals of these two groups and is resolved by the emancipation of the workers (Bartos and Wehr 2002, p. 39; Wieviorka 2013, p. 698).

Weber's theory of conflict draws on both Simmel and Marx and constructs conflict as a social reality that also pertains to a non-binary, social class system consisting of multiple divisions of class (upper class, white-collar workers, petite bourgeoisie, and the manual working class (Weber 2019). All aspects of society (culture, governmental structures, race, class, resources.) relate to the rise of conflict (Weber 2019). Additionally, Weber recognised that other characteristics of conflict are inherent in society (religious, ethnic, bureaucratic, and governance-related) and is therefore unable to be eradicated (Wieviorka 2013).

Another seminal conflict theory scholar, Ralf Dahrendorf, simply places conflict as a feature of what he termed the vertical differentiation: "the division between those who protect the interest of the whole, and the interests of the remaining group members" (Bartos and Wehr 2002, p. 39). Dahrendorf (1958, p. 177) also presents conflict as a social reality that stems from the separation of social roles, and where dominant roles have both positive and negative effects. Complementing Simmel's idea that conflict is transformative, Dahrendorf argues that conflict is transformative through changes in power-relations (Dahrendorf 1958).

The conflicts arising from natural resource developments are identifiable within Bartos' and Wehr's (2002) contemporary conflict theory of incompatible goals. Bartos and Wehr

propose incompatibility of goals as a key driver of conflict. They argue that while there are many reasons for actors having incompatible goals, these are subsumed into three areas: contested resources, incompatible roles, and incompatible values, depicted in Figure 1. The literature reiterates how these determining factors drive conflicts occurring in relation to natural resource development, as summarised below.

Figure 1: Causes of Goal Incompatibility. Author's own, adapted from Bartos and Wehr (2002)
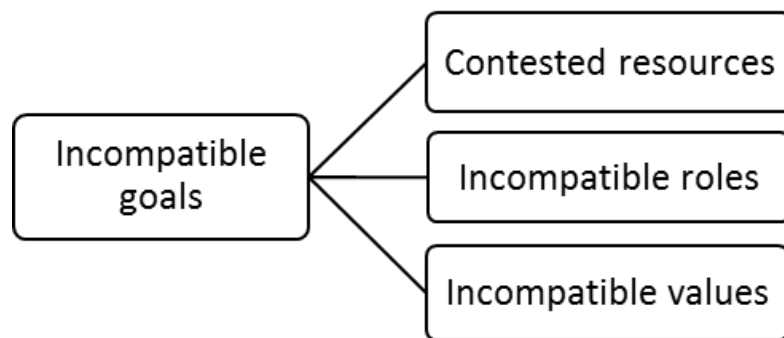


*Contested resources*: This dimension relates to the resources that are contested when one party wants some or all of the resources of another party, or when both adversaries want the same unallocated resource. Resources, in this instance, signify wealth, power, and prestige (Bartos and Wehr 2002, pp. 29-32). The reasons why resources are contested are delineated into issues of justice, absolute deprivation, or belligerence (Bartos and Wehr 2002, pp. 32-37). Natural resource conflicts include contests over political and industrial power relations (Haarstad and Fløysand 2007; Keeling and Sandlos 2016). Unjust decision-making processes for natural resource development, and the impact of the development deriving from imposed changes to land use practices (seen to deprive people of their livelihoods), provide further impetus for conflict (Duus 2013; Hobday and McDonald 2014; Nygaard 2016).

*Incompatible roles*: This dimension relates to the different roles people play within an institution or an organisation. It focuses on the varying roles and positions within the 'power hierarchy' that result in incompatible divisions between the stated goals of the institution and the goals of individuals (Bartos and Wehr 2002, p. 39). Conflict from this perspective is driven by the different interests and agendas of various stakeholders in a given natural resource development. The stakeholders may include government, mining

industries, farmers and the agricultural industry, local communities, and Indigenous communities.

*Incompatible values*: This dimension centres on conflicts arising from "the standards of rightness and goodness that hold a culture and society together" (Bartos and Wehr 2002, p. 41). Values are conveyed as desirable endpoints, or states to strive for or maintain (e.g., equality for all), or as ways of being or behaving (Rokeach, 1973). The various values that lead to incompatible goals may reflect differing personal and group identities held by individuals or groups. Values are influenced by aspects of tradition and background, such as race and religion, family; and by contemporary forces, such as, industrialisation and urbanisation, population growth and mobility, and technological advances in communication and transportation (Bartos and Wehr 2002, pp. 41-44). Values may be simplified into two categories: communal values that are adopted by small communities, and industrial systems values adopted by large industrial societies (see Table 1).

Table 1: Communal Values and Industrial Systems Values; adapted from Bartos and Wehr (2002, p. 46)

| Communal Values | Values of Industrial Systems |
|---|---|
| Be affective | Be affectively neutral |
| Be collectivistic | Be self-oriented |
| Be particularistic | Be universalistic |
| Be ascriptive | Be achievement-oriented |
| Be diffuse | Be specific |

These distinctions are explained as follows. Being affective relates to the care and love felt for a community as opposed to the emotional detachment of industry. Being collectivistic relates to the concern for the community as opposed to being self-orientated. Being particularistic refers to the belief of the quality specific to the place or community as opposed to a belief in the universal provision of quality. Being ascriptive refers to the uniqueness and exceptionality of what is valued as opposed to the value of status that is achieved. Being diffuse is to mean all manner of things to others as opposed to being a specialist.

Whilst small communities may adopt the values on the left of the table, and industrial systems often promote the values in the right column, other systemic cultures, such as religions, may adopt a combination of both communal and of industrial systems values

(Bartos and Wehr 2002, p. 46). Therefore, when considering natural resource conflicts, it is possible to focus conflicts relating to values. For instance, the collectivistic and particularistic values that place value on the local natural environment, the local economy, and the local cultural identity of a community contrast with the universalistic and achievement-oriented values that are seen to infuse energy production policy, neoliberalism, and a fossil fuel-based economy (Barrow 2010).

## 2.2.2 Defining Natural Resources Conflicts

There are several ways in which natural resource development conflicts are defined. Karjalainen and Järvikoski (2010), for example, divide natural resource development conflicts into two kinds: value conflicts (e.g., where different factions believe they are right and are unwilling to negotiate) and conflicts of interest (e.g., where stakeholders need to negotiate the distribution of losses and gains). Barrow (2010) alternatively identifies a range of effects that lead to these conflicts: structural causes; proximate causes; and triggers (Table 2).

Table 2: Causes of conflict taken from Barrow (2010, p. 296).

| Structural or root causes | Factors resulting from the structure and fabric of society and policies. These create the preconditions for conflict. |
|---|---|
| Proximate causes | Factors that are symptomatic of structural causes or precede/lead to escalation. |
| Triggers | Single events or series of events, or the anticipation of something, which sets-off conflict. |

In contrast, Peltonen and Sairinen (2010) describe natural resource development conflicts as political, arising from competing demands, unevenly distributed costs and benefits and the environmental degradation from land-use activity for finite resources. Bebbington (2009, p. 9) suggests that mining protests relate to dispossession, described as "dispossession of land, water quantity and quality, landscape, security and everyday certainties about environment and livelihood". A concise representation of the dimensions characterising conflicts relating to natural resources is presented by Bruckmeier (2005, p. 66):

- abstract (with regard to problems and values from which they derive), but simultaneously concrete (with regard to the interests and the resource use claims of the parties in conflict)

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- rooted in diverging values, needs and interests of individuals or social groups
- dependent on varying subjective perceptions, valuations and interpretations of facts
- varying in size from conflicts between two persons to conflicts between rich and poor countries
- conflicts with cultural, social, economic, and ecological dynamics that cannot be reformulated only in political terms

Given this range of views, conflict related to mining is complex. As a development of natural resources, mining is increasingly understood to be fraught because of the interrelation between natural resources and society, culture, politics, and the economy. Increasingly, the severity of environmental and social impacts of mining challenge its social and economic advantages, such as the provision of economic development opportunities (Bebbington et al. 2008a). Fundamentally, human-centric mining conflicts involve human-environment relationships with varying values, interests, knowledge systems, and power relations at play (Bruckmeier 2005). These fundamentals relate to a range of issues that inevitably occur through the overuse of and unconstrained access to mineral resources. Issues identified by Barrow (2010) include: pollution and environmental damage; effects on group identity associated with space and livelihoods; conflicting ideological rationalisations of mining developments; ethical divergences or impacts on religious beliefs, customs, or practices; and augmentations of imbalances of power between decision-makers and impacted communities.

Conflicts are further complicated by the relational dimensions between these considerations (Barrow 2010; Peltonen and Sairinen 2010; Sairinen et al. 2010). For example, government arguments that promote the benefits of mining are consistently contested by local communities and indigenous groups (Bebbington et al. 2008a). Unease about the risks and implications versus the potential benefits exists because of the intersection between extraction and existing regional dynamics, including people's livelihoods, and the sociologies of risk and uncertainty (Bebbington 2012). Moreover, as Wayland and Kuniholm (2016) highlight in their discussion of mining protests in Guatemala, the historical legacies of political domination and structural injustices, which are key drivers for mining developments, are crucial protest issues.

Mining developments also raise issues of property rights. From this perspective, contention is over land ownership versus the state's right to access resources deep underground (Galloway 2012). For countries such as Australia and the UK, where the state has vested interests in minerals, where minerals, metals, and petroleum are reserved from land grants in favour of the Crown, this is a key issue (Galloway 2012). In contrast, in the US, mining companies directly negotiate profitable leases with private mineral owners in regions of high potential for energy development (Goldstein et al. 2016; Jacquet et al. 2018).

Another source of conflict is the disregard mining companies may be perceived to have of the impacts of their operations on local communities and livelihoods. For example, local communities in Jordan disproportionately bear the detrimental social, health, and environmental impacts from mining operations because mining companies are not obliged to or contribute to these costs, and policies requiring companies to direct some of their profits towards subsidising local communities' development do not exist (Al Rawashdeh et al. 2016). Similarly, in Kenya, people protest mining operations because forceful land acquisition practices by governments mean that homes and farms are bulldozed, with minimal compensation for the occupants (Abuya 2013). These examples demonstrate that community vulnerability is influenced by government action, or inaction, which manifest in a lack of policy frameworks to regulate mining and protect the interests of local inhabitants (Abuya 2013). Moreover, the acquisition of land in this way strengthens power-relation imbalances, transforms distributions of wealth in favour of those in power, and disrupts intercommunity relations (Rasch and Köhne 2016).

Natural resource conflicts occur not only with mining activities; large-scale renewable energy developments, particularly wind farms, also generate community resistance. For example, in Germany, one of the first large, industrialised countries to pledge to transition its energy system to renewable energy, conflicts have emerged about the government's (largely praised) renewable energy technologies (RET) policy. Resistance by local communities relates to concerns about the health issues thought to be associated with electromagnetic waves emitted by the new power lines, the negative impacts of windmills on nature (e.g., vulnerable bird populations), and the reductions in the value of properties that are close to the wind parks (Neukirch 2016).

Mining is also scrutinised because of its often unsympathetic relationship with Indigenous communities. Issues identified include impacts to livelihoods, lack of opportunity to participate in decision-making, and the trespass of industry operations on traditional cultural practices and landscapes (McDonell 2015). For example, social impact assessment (SIA) processes in Norway have been criticised for not provide adequate opportunities for Indigenous people to participate and do not accommodate social elements that are relevant to their communities (Nygaard 2016). The Indigenous Sami people are only able to have adequate participation in the mining planning process if their population is in the majority in regions where mines are planned (according to Norwegian policy), where, in reality, this is often not the case (Nygaard 2016). In Northern Canada, mining activities, although accounting for significant government revenue and employment, are viewed to create devastating impacts on traditional Indigenous economies, such as those based on land-based hunting and trapping (Keeling and Sandlos 2016). In Peru, Indigenous communities have used representational elements of their Indigenous identity to mobilise their struggle over the use and management of natural resources (Wright and Martí I Puig 2012). In Bolivia, the harmful environmental costs of natural resource extraction endanger the traditional livelihood of Indigenous populations because they are more likely to be engaged in agricultural activities and they also hold stronger cultural and emotional ties to their ancestral homeland (Mähler and Pierskalla 2015).

By contrast, it is increasingly evident that positive relationships between mining companies and Indigenous communities reduce conflict. Prominent First Nation Australian scholar Marcia Langton (2015), in a report for the Minerals Council of Australia, argues that changes in the dealings between mining and Australian Indigenous communities have shifted conflictual relationships to ones that are more cooperative. She argues that these benefits result from the concerted effort of mining companies to engage productively with the local Indigenous communities, resulting in "the adoption of good practices in negotiation and agreement-making between parties" (Langton 2015, p. 7). Langton (2015, p. 7) states that positive outcomes relate to respect for Aboriginal culture:

> The positive approach by minerals companies toward their relationships with Indigenous communities has fostered respect for Aboriginal culture and history

and delivered tangible socio-economic impacts. This has driven increased economic participation for Indigenous people, and growing procurement of goods and services from Indigenous businesses and joint ventures. For example, up to 150 Aboriginal businesses have been established in the mining supply chain in the Pilbara with combined turnover in excess of hundreds of millions of dollars.

## 2.3 Social Responsibility in Mining

In the context of the issues described above, the development of responsible relationships with the community is integral to the success of contemporary mining operations and the reduction of conflict. The integration of social and environmental considerations is increasingly asserted as a way to improve industry operating costs and reduced productivity caused by the impacts of social conflict (Corder et al. 2015). These considerations are often framed around the concepts of corporate social responsibility (CSR), social licence to operate (SLO), and community engagement.

CSR combines a range of principles that are neither legally binding nor required and are constructed at the institutional level to demonstrate that the company's practices are socially responsible (Bice 2013). Kemp (2010) argues that community development and participation are used by companies as part of their CSR frameworks. Table 3 provides an overview of a range of principles presented by Visser (2014), who argues that CSR is founded on value creation, good governance, societal contribution, and environmental integrity. These foundations are enabled by five guiding principles that include innovative approaches to include social and environmentally responsible standards, are inclusive of broader approaches to responsibility, embrace and consider stakeholder positions, consider the global and local contexts of operations, and ensure operations are managed in a way that considers the 'whole of life' of operations.

Table 3: CSR principles taken from Visser (2014, p. 52)

| Principle | Description |
|---|---|
| Creativity | Moving beyond 'tick-box' CSR approaches like codes and standards to embrace social and environmental innovation and entrepreneurship, creating products and services to solve sustainability challenges |
| Scalability | Moving beyond 'ethical consumerism' CSR approaches like fairtrade and eco-labelling to embrace 'choice editing' where only sustainable |

| | and responsible options are offered for entire product or service lines |
|---|---|
| **Responsiveness** | Moving beyond 'shareholder-driven' CSR approaches like charity donations and promotional campaigns to embrace stakeholder responsiveness, including impact investing and stakeholder feedback mechanisms |
| **Glocality** | Moving beyond imperial and parochial CSR approaches to embrace 'think global, act local' practices, which follow international guidelines, but tailor context-specific solutions |
| **Circularity** | Moving beyond 'end of pipe' CSR approaches to embrace 'cradle to cradle' practices, which close the loop on production and service processes, with the goal of zero waste, zero toxics and 100 % renewable resources |

Kemp et al. (2012) also include accountability as an integral principle for CSR. They argue that accountability develops organisational knowledge that improves operational-level social performance shaped through participatory processes with affected communities. The use of accountability in this way:

> provides an important conceptual linkage between the current risk paradigm, and the notion of 'self-regulation'; the former reflecting a concern for corporate reputation through the well-known 'audit' process, with the latter denoting a decidedly more ideal approach in which companies self-direct along agreed values and expectations (Kemp, Deanna et al. 2012, p. 8).

Social licence to operate (SLO or social licence) is a gauge of acceptability to the community of industry activities and is based on the perceived community acceptance of company performance (Dare et al. 2014). Social license pivots on legitimacy in that the benefits of industry activity ameliorate its negative impacts (Luke et al. 2018a). The concept was developed by mining executive, James Cooney, in 1997, when mining companies lost money because communities resisted project proposals or expansions – hence, community opposition was likened to government refusal to issue permits (Boutilier 2014). From this perspective, acceptability to the community is deemed to be as important as acquiring government planning approvals (Parsons and Moffat 2014a). SLO implies a requirement of companies to obtain comprehensive, and ongoing, societal support and acceptance of their operations, in order to conduct their activities unhindered (Eaton and Enoch 2018). The seriousness and pursuit of social licence illustrate the inextricable link between industries' survival and community acceptance of their operations (Owen and Kemp 2013). Companies invest heavily in shaping their image

from "one that harms society and the environment to one that can facilitate social development and environmental sustainability" by "constructing impressions of harmony around mining, society, and environment discourses" (Parsons and Moffat 2014a, p. 341).

A key driver of social licence is public trust in industry activities (Luke et al. 2018a; Williams and Walton 2013). An erosion of trust in environmental governance in relation to resources industry activities has seen an increased use of the term social licence to operate by industry opponents (Ingrid et al. 2018). However, social licence as a concept is intangible in that it is a social construct, is not defined by regulation, and means different things for different people in different places (Dare et al. 2014; Harvey and Bice 2014).

Social licence is usually enabled through funding and implementation of CSR actions. For example, a company might contribute to community infrastructure, such as funding health clinics, sporting facilities, or schools, and support local education and training in the communities where it operates (Eaton and Enoch 2018). However, as with CSR, SLO has varying degrees of uptake and interpretation. Some companies actively use the term to focus their engagement with stakeholders and to demonstrate their investment in the local community. Other companies are less persuaded by the use of the term, using it loosely to refer generally to external expectations of their operations (Owen and Kemp 2013).

By contrast, the obstruction of social licence is used by those who oppose industry development with the effect of delaying, and even stopping, the progress of project development (Lacey and Lamont 2014). The Lock the Gate movement in Australia is a key example of this resistance strategy (Hutton 2012) and will be explored in more depth later in this thesis (Chapter 7). Achieving social licence is more likely in communities that have fewer employment opportunities and where economic prospects are perceived to outweigh any risks associated with the industry (Harvey and Bice 2014). However, strategies and activities pursued to attain social licence are not always welcomed by communities (Curran 2017). With the increased use of legal processes for and against resource industries, social licence has become a contentious and increasingly difficult paradigm to establish (Curran 2017; Lacey and Lamont 2014; Luke and Evensen 2018). Moreover, although industry is established within a legal context there is little clarity as to

whether this exemplifies social licence (Lacey and Lamont 2014). Lacey and Lamont (2014, p. 838) highlight the risks of social contracts between communities and industry in the guise of social licence:

> First, such an approach may become less stable over the longer term, particularly if circumstances change. Second, if the arrangements are pursued too hastily, and without a process that is viewed by all competing interests as reasonably fair, there is a risk social opposition may increase. Where the industry is not yet well established and agreement is still in flux, it seems that evidence of procedural justice in social arrangements may prove critical to establishing a social licence over the longer term.

Nevertheless, processes engaged by industry to gain social licence should be collaborative, relate to the individual communities and their environments, and be established with the consideration of organisational social performance (Harvey and Bice 2014). From this perspective, participatory processes such as community engagement become central to social licence (Dare et al. 2014; Harvey and Bice 2014; Michell and McManus 2013; Parsons and Moffat 2014b).

Community engagement signifies contemporary efforts to include public participation in decision-making (Fischer 2006) and is a departure from top-down and technocratic structures (Ashworth 2016; Bingham et al. 2005; Eversole 2011; Head 2008; Kim et al. 2005; Mathur and Skelcher 2007). The principal objective of community engagement is to include the community in "decisions or policy making that are likely to affect them now or in the future" (Ashworth 2016, p. 391). Effective engagement enables the public to take part in and influence decision-making processes with the perception that individual views and concerns are considered even if they are not acted upon (Edwards et al. 2012).

Although there is a unanimous understanding that community, or stakeholder, engagement aims to connect the community with industry operations, views about how this occurs and what it involves vary. For example, Ashworth (2016) argues that community engagement is the involvement of members of the community in decision-making processes, particularly about policy directly affecting them. Kemp and Owen (2019) view community engagement as a means to introduce the project objectives in a way that supports the community's values and demonstrate the benefits to the locality. Dare et al. (2014) see engagement as comprising operational or strategic approaches to

engagement – engagement with stakeholders that is either directly or indirectly impacted by operational activities. Overall, the engagement of stakeholders, including local communities, acts as a means to reduce or avoid conflict for mining operations, and is used to demonstrate CSR and obtain SLO (Dare et al. 2014).

Community engagement is also regularly used by government and industry to demonstrate good and transparent governance (Edwards 2008; Kim et al. 2005; Speer 2012). The engagement of communities in relation to government policy governments distinguishes governments' collaborative capacity (Eversole 2011) and enables citizen autonomy and agency within decision-making processes (Bingham et al. 2005; Michell and McManus 2013). These central democratic tenets facilitate community understanding of and unanimous approval of governance processes (Ashworth 2016; Fung and Wright 2001; Kim et al. 2005). For industry, community engagement is a way to distinguish their sustainable development efforts through the principles of communication, transparency, collaboration, inclusiveness, and integrity (MCMPR 2005).

However, use of the term community engagement and its application are often at cross purposes. For example, engaging with the public online is a different process from face-to-face public consultation; it "unduly emphasises involving citizens in design and delivery through the use of ICT [information and communication technology] over other forms of engagement" (Edwards et al. 2012, p. 156). Even the use of the terms 'community' and 'stakeholder' are problematic. Divergent understandings of community engagement also relate to differing and varied understandings of 'community' (Eversole 2011). Defining what the 'community' is and who the stakeholders are is difficult because these concepts have different meanings (such as, communities of interest and/or of place) (Eversole 2011). Conflict resulting from efforts at community engagement underscores a disconnect between government-led processes and agendas and the understanding and agendas of the communities they are attempting to interact with (Eversole 2011).


## 2.4 Neoliberal Narratives on Mining

Since the 1980s the political, economic, and social landscape of the global economy have been strongly influenced by neoliberalist ideology (Young 2011). The concept of

neoliberalism builds on the classical liberal belief that market forces and individual autonomy triumph over state power (Young 2011). The core belief behind neoliberalism is that economic efficiency equates to human decency and as such will achieve just and stable social order (Young 2011). Economic efficiency is believed to be achieved through unregulated markets and will result in global prosperity, liberty, democracy, and peace (Young 2011). Critics of neoliberalism argue that it is an "ideological construct and is associated with "global inequality, economic disparity, growth of unemployment, social exclusion, environmental destruction, and cultural homogeneity" (Young 2011, p. 1677). Since the 1980s and 1990s, the mining industry has seen significant shifts in the way it is governed (Bayari 2016; Veltmeyer and Petras 2014). In the reorganisation of capitalism, neoliberalism facilitates free global markets, the strengthening of private property rights, the privatisation of state assets, and the creation of new markets (McDonell 2015). Although capitalism has always sought profitability from the resource sector, neoliberalist policies and decision-making ensure support for accelerated resource extraction (McDonell 2015). Neoliberalist reforms permit governments to exploit natural resources, increase their exports, and generate monetary revenues (Veltmeyer and Petras 2014).

One significant impact of these measures has been the deregulation of extractive industries. This has involved the institution of government policies that facilitate enterprise acquisition, reduce tax burdens for large companies, enable land acquisition, and relaxed environmental regulation (McDonell 2015). In addition, labour markets are now deregulated (Bebbington et al. 2018a), and the acquisition of Indigenous community territories by industry for mining purposes is unhindered by national laws or government policy (Lust 2014).

The Australian and UK governments as with many western democracies, have a deregulation agenda. The UK's history long history with deregulation dates back to Margaret Thatcher's government and its advocacy of neoliberalism. Deregulation incorporated the privatisation of government owned services, such as the public transport services and British Telecom. As a result, the energy and gas industries are heavily deregulated through the *Oil and Gas (Enterprise) Acts* and the privatisation and the opening of the market to competition (Asche et al 2006).

In Australia, deregulation has been a government agenda in Australia since the 1980s and in 1995 the National Competition Policy (NCP)[1] was established and developed a deregulation framework to a range of industries, including electricity, gas, road transport and water, by removing regulatory barriers to competition, with the intention to allow market competition to provide the incentives for business efficiency, competitive pricing, and innovation (Douglas 2014). Prime Minister Scott Morrison has put in place a 'deregulation taskforce'. The leader of the Deregulation Taskforce, Ben Morton (2020), outlined what he identified as good and bad regulation:

- Good regulation is critical to making Australia one of the best countries in the world to live, and ensuring Australia has a well-functioning economy, society, environment, and democracy.
- Bad regulation is a 'Job-Killer' with no redeeming features.
    - It inhibits consumer choice, business innovation and investment, and jobs growth. 'Bad regulation' - that is regulation which is unnecessary, poorly designed or implemented:
    - imposes costs in excess of any benefits
    - inhibits business investment and the creation of jobs
    - is a brake on productivity, undermining our prosperity

The current 10 year review of the *Environmental Protection and Biodiversity Conservation Act (EPBC Act) 1999,* which is the key federal regulatory mechanism that effects mining in Australia, will likely be influenced by the Morrison Government's deregulatory agenda, such as the removal of restrictions in the act that prevent the commonwealth from handing over its decision-making powers under the water trigger to the states (Cox 2020b).

This range of deregulations has varying consequences. For example, the deregulation of labour markets encourages business stability, but equally, has repercussions for worker safety (Bebbington et al. 2018a). Legal and regulatory changes put in place by governments also enable the exploitation of labour, including the outsourcing of the workforce to contractors together with casualisation, and the weakening of the union movement have resulted in an erosion of working conditions, including work health and

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[1] The National Competition Policy, Spanning 1995-2005, was Australia's landmark microeconomic reform program. A key principle of the program was that competitive markets will generally best serve the interests of consumers and the wider community. The Council of Australian Governments — the peak intergovernmental forum in Australia — established and implemented the National Competition Policy following a report by the Independent (Hilmer) Committee on a National Competition Policy.

safety (Lust 2014) and job security and other employment conditions (Bebbington et al. 2018a). Equally, the deregulation of environmental regulation also has significant implications which will be discussed further below.

The effect of the neoliberal agenda is manifest globally in state and global systems and governance. Described as development by dispossession, neoliberalism on a global scale epitomises a reorganisation of colonialism, generally known as post colonialism (Huggins 2016). Syntheses are observable between the globalisation of aggressive commodity markets, particularly extractivism[2] in the oil and gas markets, and a global polyarchy[3] that services Western interests, ideological hegemony, post colonialism, and imperialism (Acheraïou 2011; Bayari 2016; Boyd 2013; Gudynas 2018; Nixon 2011; Veltmeyer 2013). The extractive industry within these modes of neoliberalism, known as the 'new extractivism", now performs a central role in national development (Veltmeyer and Petras 2014). The extent of the impact of this paradigm is indicated in Table 4.

Table 4: Extraction typology and destination (from Gudynas, 2018, p. 62)

| Destination | Volume/intensity of extraction | | |
|---|---|---|---|
| | Low | Medium | High |
| **Local** | Peasant cultivation for subsistence | Felling of trees for firewood | Capture of water for irrigation or domestic use |
| **National** | Vegetable fibre for basket making, roofing materials, etc. | Conventional fruit and vegetables for national markets | Quarried stone for construction |
| **Export** | Organic food | Flowers for greenhouses | EXTRACTIVISMS Minerals Hydrocarbons Export crops |

Table 5 outlines the neoliberal free-market assumptions that Schneider et al. (2016) argue are used to advocate these highly intensive industries. Functioning as an embedded set of policies and practices, "neoliberalism shapes and constrains opportunities for policy advocacy, limits what can be accomplished with policy initiatives, and shapes rhetorical

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[2] Extractivism refers to economic development based on the extraction of natural resources such as fossil and biofuels, minerals and agro-food products extracted in a process of 'large-scale investment in land acquisition' – or, in the discourse of critical agrarian studies, 'land-grabbing' (Veltmeyer and Petras 2014)
[3] Polyarchy refers to– popular democratic political systems of government. The term emerged when the idea of 'representation' reformed the theory and practice of popular government. Polyarchy describes the process of democratisation, in contrast to democracy itself (Stinebrickner 2015).

situations for advocates on both the left and the right" (Schneider et al. 2016, p. 11). As such, neoliberalism shapes energy and climate policy, and result in a protracted transition away from fossil fuels, and social justice (Schneider et al. 2016). Neoliberalism, in normalising and controlling views of regulation, increases public support for deregulation, while simultaneously also increasing the publicly perceived risks of industrial activity (Malin et al. 2017). Malin et al. (2017, p. 526) argue that neoliberal framings that normalise "potentially risky industrial or extractive facilities are often tempered by strong free market ideologies, which use economic outcomes like jobs and economic growth as carrots incentivizing growth". This normalisation also exemplifies the significant and persuasive dimension of power exerted by the extractive industry paradigm through its embedding of processes of legitimising truth and knowledge-making into systems of government in relation to extractive developments (Van Teijlingen 2016).

Table 5: Rhetorical neoliberal constructs used by the coal industry to rationalise their interests. From Schneider et al. (2016, p. 168).

| Industrial apocalyptic | A set of rhetorical appeals that constitute the imminent demise of a particular industry, economic, or political system and the catastrophic ramifications associated with that loss |
|---|---|
| Corporate ventriloquism | A rhetorical process by which corporations transmit messages through other front groups or movements to animate an alternative persona and position their own voice as the voice of citizenship |
| Technological shell game | A rhetorical process of misdirection that relies on strategic ambiguity about the feasibility, costs, and successful implementation of technologies to deflect attention from environmental pollution and health concerns |
| Hypocrite's trap | A set of interrelated arguments through which industry supporters defuse the demands of social and environmental movements or activists by pointing to "hypocritical" individual consumption habits that may be in tension with the movement's goals |
| Energy utopia | A set of rhetorical appeals that depict the opening of global energy markets as a solution to problems of poverty and justice |

The mining industry's management of neoliberal tensions and contradictions via the suspension of regulator action and relegation of environmental concerns, is challenged by pressures from the public, concerned about industry impacts and climate change, shifts in

domestic and global markets, and the unpredictability of political landscapes (Schneider et al. 2016).

## 2.5 Convergences in Mining and Environmental Governance

The literature demonstrates that governments shape environmental regulation to suit economic development goals, particularly to cater for extractive industries (Bax et al. 2019; Bebbington et al. 2018a; Carter et al. 2017; Davidson et al. 2018; Heynen et al. 2007; Hobday and McDonald 2014; Lust 2014). This has vast implications for environmental governance. Neoliberalism is typically anti-regulation and as such, governance frameworks are often developed with diminished environmental regulation (Schneider et al. 2016). As such, the 'neoliberalisation' of economies means that extractive industry regulations unambiguously favour the interests of private companies over the environment (Bax et al. 2019). For example, perceived environmental constraints for industry are removed (Carter et al. 2017). Reduced funding and staffing of environmental programs limit government oversight and scrutiny of industry activities (Huque and Watton 2010). Transferring environmental regulation from governmental oversight to market-based mechanisms and voluntary or company-led regulation, for example, through corporate self-reporting or self-monitoring, reduces the role and influence of government and public engagement (Huque and Watton 2010).

These actions, particularly deregulation and the relaxation of environmental protection laws, have a range of social and environmental implications. For example, reductions in environmental governance requirements are seen to create added risks to the environment, such as increased pollution and land degradation (Bax et al. 2019). Asif and Chen (2016, p. 168) provide a comprehensive list of the environmental effects of mining operations in North America:

    i.    the degradation of water quality
    ii.    erosion/sedimentation
    iii.    effect on air quality - emissions of nitrogen oxide ($NO_x$), sulphur oxide ($SO_x$), and particulate matter ($PM_{10}$ and $PM_{2.5}$)
    iv.    the use of significant quantities of energy, water, and toxic reagents (e.g. cyanide)
    v.    greenhouse gas generation

<ol type="i" start="6">
<li>vast quantities of atmospheric pollution, dust, and especially solid rock wastes</li>
<li>acid mine drainage (AMD) and metal leaching of tailing which deteriorate water quality, kill aquatic life like fish, and make water practically unusable</li>
</ol>

Additionally, these environmental implications have flow-on effects to public health. These include "direct health effects, such as toxic work and environmental exposures and assassination of activists, and indirect effects, including sustained impoverishment, water insecurity, and stress-related ailments" (Schrecker et al. 2018, p. 136). Those companies undertaking exploration where no particular resources are exploited, also produce environmental damage such as land and water system degradation. Companies are not held accountable for those impacts because they operate outside royalty contracts and environmental regulations (Schrecker et al. 2018).

The reduction of regulatory oversight mechanisms described above therefore directly affects all environmental systems: environmental degradation, and air water and land pollution, and contributions to greenhouse gas emissions and climate change (Bax et al. 2019). For example, actions by the Federal Government in Australia designed to reduce the 'green tape' of the Federal *Environmental Protection and Biodiversity Conservation Act (EPBC Act)*, risks compromising the protection of threatened species from large developments such as minerals extraction (Hobday and McDonald 2014). Reducing the capacity of this Act to protect the habitats and environments of endangered species from land degradation and pollution through mining development is considered likely by many to be catastrophic for critically endangered species (Reside et al. 2019). In Peru, deforestation as a result of land leases to timber, mineral and hydrocarbon extraction companies, directly threatens the biodiversity of high endemic species-rich areas reserved for conservation (Bax et al. 2019). The Niger Delta is now one of the world's most polluted regions as a result of repeated oil spills over decades. This environmental degradation has destroyed people's livelihoods and caused significant public health issues via common exposure to carcinogens in the water (Schrecker et al. 2018).

Deregulations has implications for governance. Carter et al. (2017) argue that the impacts of regulatory streamlining of environmental policy in Canada's fossil fuel provinces have been threefold: (i) there is limited authority for environmental policy making, (ii) public

participation in decision making is impeded, and (iii) impact assessments are increasingly disregarded. Moreover, the tendency of governments and industry to focus on short-term economic gains erodes the opportunities for long-term environmentally sustainable development (Carter et al. 2017). Huque and Watton (2010) contend that, given that the primary motivator is profit, private companies are not likely to have the provision of public goods and the protection of the environment as a main priority. This raises concerns for environmental management. In Peru, the survival prospects of Indigenous communities are affected by significant shifts in environmental governance and the prioritisation of mining development (Lust 2014). In the 1990s, among a range of government strategies to facilitate mining developments, regulatory systems designed to safeguard the natural environment were placed under the jurisdiction of the Ministry of Energy and Mining. This led to the enforced reallocation and displacement of Indigenous communities to make way for mining operations (Lust 2014).

These confluences are further nuanced by global governance mechanisms, such as the Extractive Industries Transparency Initiative (EITI). This initiative aims to curb corruption by making industry information about revenue flows, especially those between governments and extractive industry companies, available to the public (Lujala 2018). The EITI is a symbolic representation of countries' endeavours to promote improved extractive-industry management and societal development, and most predominantly to address the 'resource curse' (Lujala 2018; Sovacool et al. 2016). However, the issues of poverty, inequality, institutional corruption, social conflict, and environmental degradation relate to the existence of the resource curse (Sovacool et al. 2016). According to Sovacool et al. (2016, p. 180) the 'resource curse' refers to

> Countries with an abundance of minerals or hydrocarbons can exhibit comparatively high levels of poverty and inequality, deteriorating environmental quality, institutionalized corruption, and an increased frequency of conflict and war.

Many authors in the extractive industry space highlight the critical importance of robust environmental management (Carter et al. 2017; Lujala 2018; Sovacool et al. 2016). The EITI is showing some signs of improving regulatory outcomes; however, the focus on transparency in the EITI misses many of the core issues of extractive industry regulatory

oversight that affect environmental management more broadly (Lujala 2018; Sovacool et al. 2016), such as, exemptions secured by industry from environmental regulations (Sovacool et al. 2016).

## 2.6 The Unconventional Gas Development Debate

Exploration of the conflict over the development of unconventional gas and the anti-fracking movement has gained momentum in recent years. The rapid global expansion of the unconventional gas industry and the concurrent rise of social resistance against it is juxtaposed with the longstanding presence of the comparatively uncontentious development of conventional gas. The unconventional gas development paradigm has gained increased attention in the literature. The focus is interdisciplinary and explores the social, political, and economic dimensions of the industry, including community concerns and perceptions about the risks and implications of the developments.

### 2.6.1 Unconventional Gas Development

The status of unconventional gas development as a contentious energy resource has gained momentum globally. With strong neoliberally aligned economic credentials, the extraction of unconventional gas and oil resources is made possible with recent advances in extraction technologies, such as horizontal drilling and hydraulic fracturing (fracking). However, the range of risks and impacts of this development is of concern for local communities who have mobilised into a global movement. The technical processes used in extraction, including fracking, are explained with a focus on the governmental regimes, with particular attention to those in Australia and the UK.

### 2.6.2 Unconventional Gas and Fracking

Despite the extraction of conventional gas reserves across the world since the late 1800s, it was not until recently that the exploitation of unconventional gas was considered viable (Blake 2016). The method of 'well stimulation' was pioneered in the 1940s in the US and has been used globally since, to access the remaining oil and gas in conventional wells (Wylie 2018). In the 1970s, the US Government permitted large-scale fracking in tight sandstone formations (Jaspal and Nerlich 2014). Significant advancements in this

technology in the late 1990s, namely hydraulic fracturing, led to the advancement of the unconventional gas industry as it is known today (Blake 2016; Geoscience Australia 2019b). The term 'unconventional' is used for different contexts in the extractive industry, for example, the type of formation developed, the scale of operation, and the cost of the operation. This study uses Blake's (2016, p. 4) definition. Hence, "unconventional refers to reservoirs that are unfavourable for production using conventional (traditional) recovery methods", and includes coal seam gas (CSG), tight sands, and shale formations.

Demonstrated in Figure 2, CSG is the unconventional gas reserve closest to the surface and is extracted at depths of 300-1000 metres (CSIRO 2020). Shale gas is the deepest unconventional resource found at depths greater than 1500 metres (CSIRO 2020) with drilling occurring up to 4000 metres (APPEA 2016).

Figure 2: Unconventional gas production. Image: Grafton (2012, p. 15)
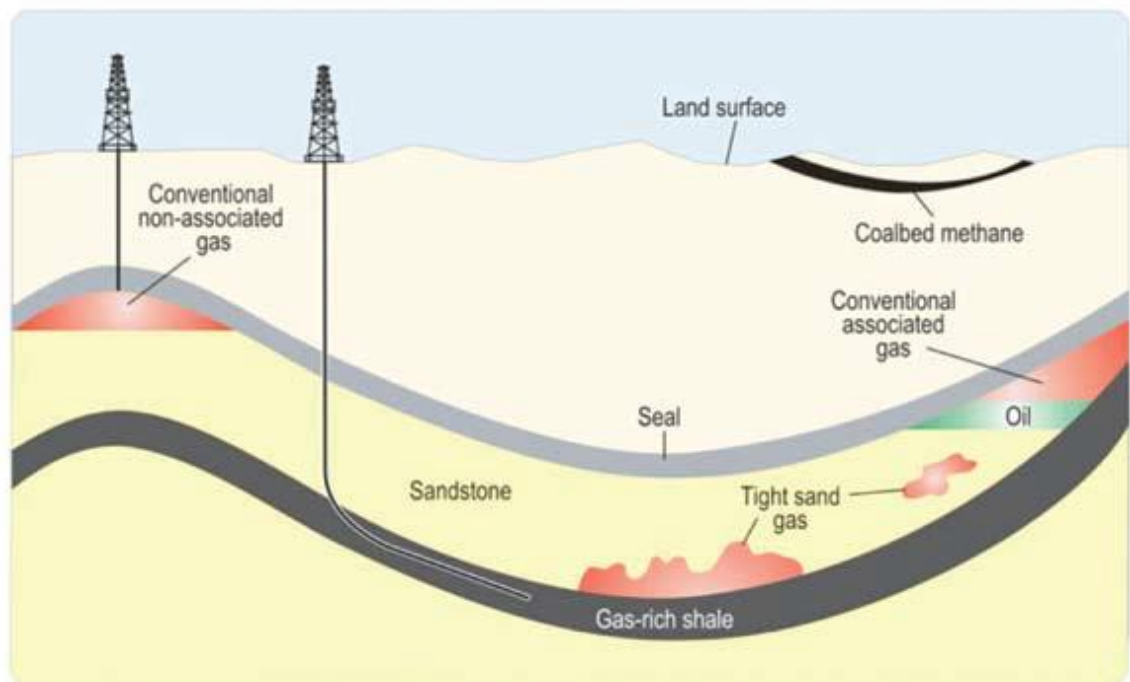


Table 6 describes the different types of geology from which unconventional gas is extracted. Hydraulic fracturing is not required for all extraction purposes, which is a common misconception. For example, CSG production usually uses dewatering rather than hydraulic fracturing. Shale and tight sand gas, however, always require the hydraulic fracturing process (Grafton et al. 2016).

Table 6: The production for gas according to geology. (Adapted from Grafton 2012, p. 15)

| | Conventional Gas | Unconventional Gas | | |
|---|---|---|---|---|
| | | *Coal Seam Gas* | *Shale Gas* | *Tight Gas* |
| **Geology** | Within permeable sandstones | Coal seams | Within pores of shale/mud/clay formations | Within pores of low permeable limestone and sandstone |
| **Production Process** | Natural pressure | Dewatering and in some cases hydraulic fracturing | Hydraulic fracturing | Hydraulic fracturing |

Accessing unconventional gas resources from shale and tight sands requires a range of processes; exploration, drilling, and well construction, horizontal drilling, and hydraulic fracturing, illustrated in Figure 3. Each well is fitted with steel and concrete casings, and the horizontal drilling allows several wells to be drilled from one site. Hydraulic fracturing occurs after the horizontal wells are drilled, and involves the fracturing of geological layers to access the unconventional reserves of gas and oil (Blake 2016).

Figure 3: Horizontal drilling and hydraulic fracturing for shale gas. Image: Department for Business, Energy and Industrial Strategy, UK Government (DBEIS 2016)
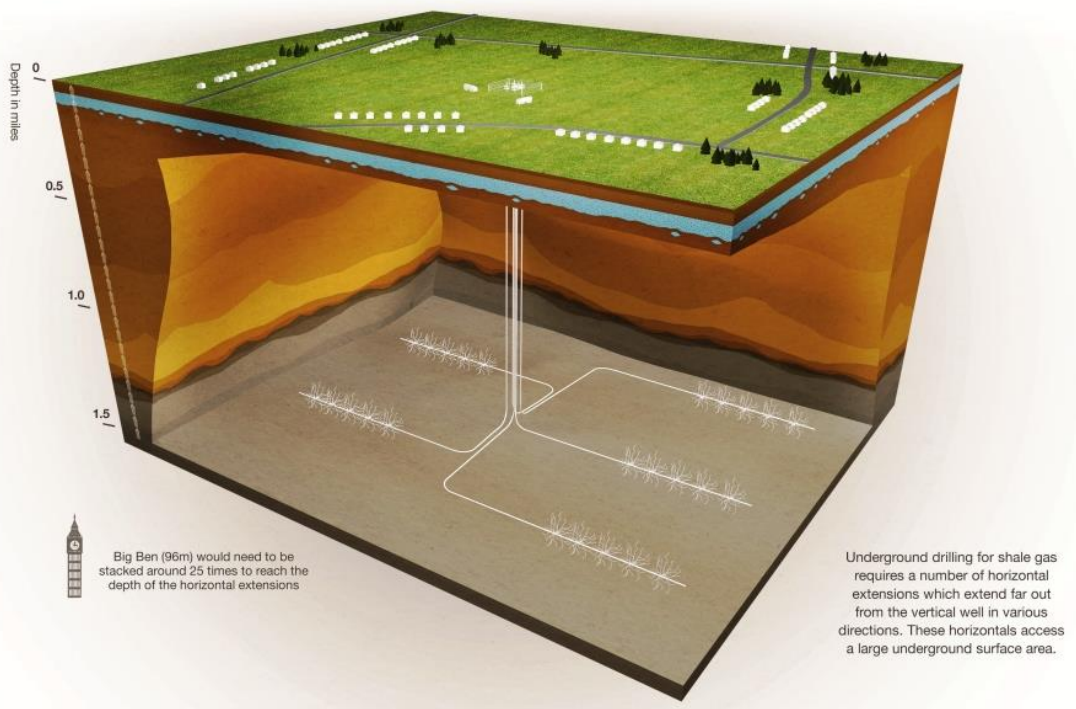
The process specifically involves drilling below the ground's surface and horizontally fracturing the shale, coal, or tight sands to allow the trapped gas to escape (DBEIS 2016). Fracking uses a mixture of water and proppants[4] (96-99%), and chemicals at high pressure to stimulate fractures in the rock layer (APPEA 2019; TRS and TRAE 2012). The proppants (sand, or beads) are used to hold the fissures open to allow the gas to move out into the well (APPEA 2019). The chemicals have a range of uses, namely, to 'reduce friction, remove bacteria from the formation, dissolve some minerals, prevent build-up of scale, and enhance the fluid's ability to transport sand' (APPEA 2019). Hydraulic fracturing is the shortest phase of the operation but is crucial to the economic viability of unconventional gas (Blake 2016, p. 6).

### 2.6.3 Framing Unconventional Gas Development and the Use of the Term Fracking

Before providing a critical evaluation of the literature relevant to the tensions pertaining to the development of unconventional gas, it is important to note that discussions are obfuscated by diverse framings and the terminology used. Terminology stemming from industry-related governmental and legal origins is often used, but some of these terms have become colloquial and used liberally in the broader social debate. The most obvious is the word 'fracking', a slang word for the technological process used in unconventional gas extraction, hydraulic fracturing. The term 'fracking', however, has also become synonymous with all aspects of unconventional operations, including their implications for unconventional gas development (Bomberg 2015; Choma et al. 2016; Espig and de Rijke 2016; McNally et al. 2018; Short et al. 2015; Stoutenborough et al. 2016). Due to this generalisation, the use of fracking is controversial (Evensen et al. 2014; Stoutenborough et al. 2016). Its scope has become broad, even to the extent that it is used by scholars, civil society, and politicians alike to describe the whole unconventional gas industry—often called the 'fracking industry'—even though hydraulic fracturing is not always used to access unconventional deposits. As a result, and confusingly, different fracking narratives exist according to who is using the term (Short et al. 2015). For example, some use the term inclusively to include all other aspects of the many industry process,

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[4] Proppants are a material used in hydraulic rock fracturing in order to keep the fissures open and thereby aid extraction (https://www.collinsdictionary.com/dictionary/english/proppant).

including road and well pad construction, drilling the well, casing, perforating, hydraulic fracturing, completion, production, abandonment, and reclamation (Clark et al. 2012). Others use the term only in relation to the hydraulic fracturing process, and employ other terms specific to the targeted resource, for example, unconventional gas, shale gas, or coal seam gas (CSG) (Short et al. 2015).

The colloquial use of the term fracking has been employed to frame a movement against unconventional gas, now commonly known as the 'anti-fracking movement'. This framing is equally controversial because it is thought to have negative connotations (McNally et al. 2018). The term 'fracking' particularly, although a sticking point because of its inexplicit meaning, is a useful term for mobilising a broader range of actors in that it can be articulated:

> not only as a cause of environmental and social degradation but also as an effect, a symptom as it were, of more durable and structural societal problems that have to do with a crisis of democracy and its manifestations: corruption, violations of human rights and unequal distribution of goods and ills across different parts of society. Such framing of the "fracking issue" has not only enabled wider engagement of national and international citizens but has also resulted in wider institutional support for local anti-fracking protests (Steger and Milicevic 2014, p. 20).

As a result, the sense of solidarity generated by the movement over the concerns associated with fracking has meant that people come together from a range of standpoints in unity against fracking, regionally and internationally. Also, the term is easily conceptualised without becoming lost in a range of technological terminology that is difficult to understand. Moreover, the term is deployed within the conflict discourse, as it provides a concise and adaptable frame for the wide-ranging concerns presented by the anti-fracking movement. One such concern is the impact on water sources, as demonstrated by Steger and Milicevic (2014, p. 14):

> "No Water. No Future." "What part of turning water into toxic sludge makes sense?," "You can't drink money," "Love your lake … Don't frack it!," "Water and Fracking Don't Mix," "Let Them Drink Gas," "Fracking Creates A River of Doubt," and "Keep The Frack Out Of My Water."

In the same tone, the remainder of this thesis employs the term 'fracking' to characterise the social movement against unconventional gas development – the anti-fracking movement.

### 2.6.4 Governance and Implications of the Impacts and Risks

The exploration into the implications and risks of unconventional gas developments has gained traction in recent years. While initial literature about unconventional gas demonstrated its geological and technological advancements, thus enabling the economic viability of its development and its value as a transitional fuel to generate energy, there was initially a paucity of research into and discussion of the social and environmental implications. Yet, as social unrest relating to the development increased, so too did the need for greater empirical analysis of the environmental implications and the human side of the phenomena.

The risks associated with unconventional gas development are extensive. For example, the risks include air quality and emissions, surface and groundwater contamination, fugitive greenhouse gas emissions, seismic activity, and the density of drilling (Wheeler et al. 2015; Zirogiannis et al. 2016). They also relate to broader impacts such as landscape change and degradation, biodiversity fragmentation, changes in traffic flows, and the industry boom-bust cycle (Szolucha 2016; Wheeler et al. 2015; Zirogiannis et al. 2016).

The risks are often complex and interrelated. Water, for example, is exposed to a range of risks associated with unconventional gas developments. Apart from the fact that the hydraulic fracturing process uses large amounts of water, other risks include the migration of toxic fracking fluids into natural waters with unknown consequences through well casing leakages, and spills from wastewater ponds, (Orem et al. 2017; Zhang et al. 2016). There are also risks associated with the constitution of wastewater, for example, it is frequently hypersaline, and comprises of numerous organic and inorganic properties that are added for production purposes, and others that derive from the source rock layer (Orem et al. 2017).

The increase in traffic levels associated with industry operations also exemplifies the diversity of impacts, for instance, visual disruption and traffic congestion, greenhouse gas

emissions and local air-quality, increased noise, and increased road damage (Goodman et al. 2016). It is also important to note that industry activities may also pose risks to public health (Finkel and Hays 2013; McCarron 2018; Zirogiannis et al. 2016), adversely affect existing local economies (Pothukuchi et al. 2018; Steger and Milicevic 2014) and disrupt community identity and connection to place (Espig and de Rijke 2018; Sangaramoorthy et al. 2016).

The industry is propelled by the promise of substantial economic benefits, including benefits to local economies. However, Chen and Randall (2013) contend that the putative benefits to agricultural and farming economies are not necessarily realised. In their study of the coal seam gas fields in the Darling Downs region of Queensland, they find that co-existence does not necessarily have long-term economic benefits compared to agriculture-only and coal seam gas-only cases (Chen and Randall 2013). Moreover, they contend that the extent of unknowns relating to long-term environmental degradation, depletion, and contamination of local water resources makes industry cost-benefit analyses based on guestimates of costs that may be exceeded in the worst-case scenario (Chen and Randall 2013).

The tendency towards boom and bust[5] relating to the unconventional gas industries also raises concerns over the long-term implications of the industry. Measham et al. (2019) argue that the effects of bust scenarios on local communities may have been underestimated and that they may result in falls in employment levels to levels similar to those that existed before the boom. Risk management for local business owners is therefore difficult because of excessive and conflicting information, and the severity of the effects of the boom-and-bust phases are complicated by unforeseen industry-related

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[5] Boom and bust in relation to unconventional gas development involves a construction phase that is "spread over a wider spatial area, the drilling of wells occurs over a longer period than in large scale individual projects which the original boomtown impacts model was based on. … The operational phase and the construction phase tend to blur, with completed wells becoming operational as drilling spreads out across the landscape. The dispersed nature of the industry enables energy companies to respond to market conditions by slowing down the drilling of new wells, shifting from one location to the next, exploiting the most productive or tactical locations first, then conducting in fill" drilling depending upon contractual obligations, investor requirements and market conditions. Consequently, the boom and bust phases are a series of shorter cycles involving mini-booms and mini-busts due to the combination of ongoing well construction and price fluctuation" (Measham, et al. 2019, p. 2).

variables (Measham et al. 2019). Hirsch et al. (2018) add that collective trauma can also be experienced because of these boom/bust cycle effects.

Other impacts of unconventional gas development relate to the impacts of industry operations on local communities. Whilst having the potential to reactivate local economies in rural areas, there are a range of trade-offs for consideration, such as strain on local services and infrastructure, increased heavy-vehicle traffic and increases in cost of living (Ellis et al. 2016; Marcos-Martinez et al. 2019). Among the effects of shale gas development on the Eagle Ford community in the US were "not taking grandchildren to lunch, having trouble affording [the increased] rent, and school employees wearing H2S detectors (hydrogen sulphide gas detectors)" (Ellis et al. 2016, p. 97). Such examples illustrate that unconventional gas developments are associated with a range of consequences, some of which may be more complex and difficult to measure than traditional economic impacts.

The nexus between unconventional gas developments and other environmental and social systems is another consideration, particularly as unconventional gas increasingly crosses over into food production systems. Gray (2019) promotes a move away from considering the nexus between water-food and unconventional gas in purely economic terms, preferring instead to conceptualise the dynamic as a matter of ecological integrity because of the interrelationship between healthy environmental systems and economic growth. From the perspective of policy and governance, these often conflicting interrelations raise important questions of priority, particularly when the interests of industry drive government oversight. For example, when unconventional gas industry water interests overrule food production systems allocation and regulation. (Holley and Kennedy 2019; Pothukuchi et al. 2018). The implications of unconventional gas for food producers include environmental impacts (availability and quality of water; land and local biodiversity degradation) and business operational and economic impacts (conflicts of land use, degrading land values, cost of labour, impacts to local services and infrastructure, and the consequences of 'boom and bust') (Pothukuchi et al. 2018). There

are also considerations for host farmers[6]. Dougall (2019), for example, highlights the health and safety implications for host farmers of industry operations introducing hazards or exacerbating existing ones.

The risks of the unconventional gas development have attracted substantial academic scrutiny. Risk goes to the heart of the management of the industry, including project planning approvals, and regulation and policy development. How well industry operations are regulated is central to how safe the operations are and how well risks are minimised or mitigated (Sovacool 2014). However, whilst the known risks are downplayed by industry with assertions that they will be mitigated or minimised through tough regulatory regimes, they continue to be 'wicked' problems in that they are central to social division and are difficult to overcome (Wheeler et al. 2015). From a scientific perspective, the levels of risk from unconventional gas development continue to be debated (Espig and de Rijke 2016; Goldstein et al. 2016; Shanafield et al. 2019). For example, in relation to the impacts to water, assessments are consistently stymied by inadequate or missing data, including crucial pre-drilling, baseline data, which limits the ability of government and industry to identify and produce adequate risk and impact assessments (Shanafield et al. 2019). There is a growing momentum to improve the inadequacies in data evidenced by growing empirical research and analysis into the impacts of the industry. Box 1 presents an example of research that focuses on public health and related environmental impacts.

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**Box 1: A snapshot of the literature on health-related implications of unconventional gas developments**

**Balise et al. (2016)** review 45 published articles relating to oil and gas extraction activities and human reproduction (birth outcomes, semen quality, fertility, reproductive cancers, and human sex steroid hormone receptors). Results indicate impact of unconventional extraction activities are greater than conventional operations because of the multiple known endocrine-disrupting chemicals in hydraulic fracturing.

**CHPNY and PSR (2019)** provide a compendium of scientific, medical, and journalistic investigations demonstrating the significant threats to air, water, human health, public safety, community cohesion, long-term economic vitality, biodiversity, seismic stability, and climate stability posed by fracking. They find a growing body of scientific evidence

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[6] Host farmers are those farmers who allow the industry to access the subsurface resources on their land. Gas companies are given access to explore and develop those resources on behalf of the government when the resource is on privately owned land (Dougall 2019).

revealing a surfeit of recurring problems not adequately prevented through regulation and no indication that fracking can operate without a direct threat to public health or without endangering climate stability upon which public health depends. They argue that mitigation can only be achieved through a complete and comprehensive ban on fracking.

**Elliott et al. (2017)** identify 55 known, probable, or possible carcinogens that are possible water contaminants and/or air pollutants related to unconventional gas and oil operations, posing an increased risk of leukaemia.

**Goldstein et al. (2016)** argue that there is insufficient investigation into the potential adverse health outcomes of unconventional gas development.

**Hirsch et al. (2018)** explore the mental health and psychological effects of people and communities living close to fracking operations. They find that people experience a range of psychological conditions such as worry, anxiety, and depression regarding daily life, health and safety, and financial security, and distress over changes to the physical landscape. They also acknowledge the experience collective trauma by whole communities.

**Kassotis et al. (2015)** provide a range of recommendations for assessments to account for the potential endocrine-related risks from chemical exposure related to oil and gas operations in the light of evidence of environmental impacts and adverse health outcomes.

**Kassotis et al. (2016)** indicate the possible harmful effects of oil and gas operation chemicals on developmental and reproductive health.

**Kassotis et al. (2016)** report on the high levels of endocrine disrupting chemicals (EDCs) active in surface water extracts associated with unconventional gas operations wastewater facilities indicating further research is required into the risks to downstream drinking water resources to better assess potential human and animal health threats from exposure.

**Kassotis et al. (2018)** assess the adipogenic activity (both triglyceride accumulation and pre-adipocyte proliferation) of 23 commonly used chemicals used in hydraulic fracturing on wastewater. Results indicate that the wastewater has the potential to impact metabolic health at environmentally relevant concentrations.

**Komarek and Cseh (2017)** explore the potential for gonorrhoea in communities as a result of fracking activity. Using the Marcellus shale region as a case study, they find that fracking activity is associated with a 20 per cent increase in gonorrhoea.

**McCarron (2018)** describe an increased rate of hospitalisation for circulatory and respiratory conditions in the Darling Downs, Australia, from coal seam gas operations. Increased cardiopulmonary hospitalisations correspond with the rise in pollutants relating to coal seam gas operations and known to cause such symptoms, showing efforts to limit exposure are inadequate, thus posing a significant public health concern.

**McCoy and Saunders (2018)** argue that there is little evidence that the shale gas industry is clean and will assist the transition to sustainable energy systems. Instead, the continued affects to climate change and the associated risks to livelihoods and

human health clearly and considerably outweigh any possible benefits of shale gas production.

**McKenzie et al. (2012)** argue that risk assessments need to include potential health impacts to inform risk prevention. The study reveals a correlation between health effects from air emissions during unconventional gas operations and proximity of the well pads warranting further study. Risk prevention efforts should focus on reducing human air emission exposure living and working close to wells during operations.

**Quail (2017)** identify that unacceptable air samples at fracking operations indicate future clusters of silicosis cases to emerge from fracking. This requires industry's assurance of proper precautions, safety measures, and oversight are implemented and enforced. If not addressed, the associated and direct health effects to the workforce from fracking operations will result in silicosis clusters. Measures required include mitigation of worker's exposure to silica and silica dust by providing workers with appropriate respiratory equipment, education, medical monitoring, and screening.

**Sapouckey et al. (2018)** assess chemicals used in hydraulic fracturing that have endocrine-disrupting properties. Results suggest mammary gland sensitivity to these chemical mixtures with potential long-term health implications, including lactational capacity and cancer which require further investigation.

**Watterson and Dinan (2017)** argue that the available regulatory systems in the UK are sparse and therefore not necessarily robust enough to regulate and mitigate the public health effects of the unconventional gas and oil industry, and that a precautionary approach is required to protect public health from unconventional gas extraction development.

**Watterson and Dinan (2018)** argue that the wide-ranging review conducted by the Scottish Government considered a significant range of evidence from the USA, Australia, Canada and England providing comprehensive information relating to public health and underpinned the decision-making resulting from the review process.

**Wilke and Freeman (2017)** examine the issues around the large volume of water used for hydraulic fracturing. Issues of flowback generated by fracking, degradation of water quality due to cross-contamination between fracking flowback and drinking water, the use of drinking water for fracking in areas of low water availability, spillage, and wastewater treatment. They argue that close attention to safeguards could help to reduce health risks among individuals.

**Willems et al. (2016)** present results of a US study revealing that people's perceptions of health risks related to their trust in industry operations and the level of involvement industry has in the distribution of information, indicating the role of trust in shaping community perceptions around health impacts of unconventional gas development.

The governance of unconventional gas in relation to impacts and risk management also receives scholarly attention (Fleming and Reins 2016; Marlin-Tackie and Smith 2020; Patterson and McLean 2018). For example, the political influence behind decision-making around risk has varying policy and regulatory outcomes, such as found by Lis (2018) who

compares Germany's cautious moratorium on fracking and Poland's 'going all for shale' approach. Risk assessments for the unconventional gas industry often lack consideration of social factors and exhibit a lack of industry transparency. Availability of information, particularly concerning chemicals, is often restricted, obscuring assessment outcomes (Torres et al. 2016).

The precautionary principle is where the burden of proof is shifted to those proposing a policy or advancing a technology to establish that it will not be harmful (Rubin and Dahlberg 2017). This principle is a preferred approach to risk management (Fleming and Reins 2016; Murray et al. 2016; Patterson and McLean 2018; Phillips and Goldberg 2013; Tan et al. 2015; Watterson and Dinan 2017; Wheeler et al. 2015). The precautionary principle is suggested as the 'go to' management approach where harmful effects are believed to impact humans or the natural environment (Patterson and McLean 2018). Tan et al. (2015) argue that precaution is a way to comprehensively address the cumulative impacts of industry operations, making them more sustainable. Scholars are, however, critical of the varying precautionary approaches. For example, Patterson and McLean (2018), in an examination of the differences between the precautionary approaches used by the UK and the Netherlands governments, argue that although both claim to use precaution, the policies and regulations implemented are, in fact, motivated by politics rather than the principles of precaution (Patterson and McLean 2018). A key benefit of precaution is that apart from ensuring that operations are safe, the incorporation of precaution into regulatory regimes prior to the commencement of industry operations safeguards the protections offered to communities that are likely to be affected. It does so by providing the information and data required for understanding what causes the impacts (Murray et al. 2016).

### 2.6.5 Community Perceptions and the Narratives about Fracking

The literature also explores community perception of unconventional gas. Unquestionably, community perceptions are varied and driven by a range of interests. The significance and prevalence of mobilised community resistance to unconventional gas developments world-wide have made the phenomenon an important subject for empirical investigation. However, community acceptance of the industry is not always

obvious as individuals or communities may not want to actively protest even though they may oppose unconventional gas developments (Eaton and Kinchy 2016). In this way, the absence of active protest and resistance is not necessarily a representation of acceptance of the industry.

There is consensus in the literature that people's concerns relate to the aforementioned risks of harmful effects that are posed by the industry. Whilst there is a global anti-fracking agenda that relates to the continued use of fossil fuels and climate change, it is the threat to everyday necessities, such as livelihoods, land use, and the environment, that motivate local communities to act against the gas and oil industry (Köhne and Rasch 2019; Mazur 2018; Stasik 2018; Steger and Milicevic 2014; Witt et al. 2018). For example, a study in the Eagle Ford Shale region of South Texas found that people's lives were adversely affected by increases in heavy vehicle traffic, food and housing insecurity, fugitive emissions, and water contamination concerns (Ellis et al. 2016).

Concerns about unconventional gas interrelate with people's perception of place, responsibility, and identity, as well as with distributions of social power (de Rijke 2013). Stress, anxiety, and collective trauma make affected communities feel disempowered to address the risks of the industry (Hirsch et al. 2018). Szolucha (2018a, p. 349) argues that a 'politics of time' also reinforces power disparities:

> Various actors in the same locations imagine and live toward the future in different ways. In such contexts, power relationships and resistance take shape not only in the homogeneous time of the site's daily time regime but also in the complex realm of the politics of time where political forms and effects are generated in anticipation of extraction.

There are a range of human rights considerations that frame people's perceptions about unconventional gas developments. These include the rights to water, air, land, and health, as well as the "rights to peaceful assembly, freedom of expression, liberty, and security of the person, fair trial and a private and family life" (Short et al. 2015, pp. 721-722). Property rights is another issue. Conflicts arise because property owners have little scope (or few, if any, options) to prevent industry access to exploit resources on their land (Galloway 2012). Mincyte and Bartkiene (2019, p. 184) argue that the issue of rights extends to people's right to rural livelihoods – "to their farms, animals, and agricultural

labour" – and that these rights are overtaken by the pursuit of domestic energy production.

While often presented in dualistic terms of pro- and anti-fracking, there is a range of nuances regarding community perception. People's level of support for hydraulic fracturing pivots on their values and dispositions, including their political beliefs, and perceptions of, as well as their experiences of industry, government, and environmental resources (Howell et al. 2017). These factors are also influenced by an individual's basic understanding about unconventional gas (Choma et al. 2016). Therefore, community perception is also influenced by people's level of understanding of the industry and its practices (Howell 2018; Stedman et al. 2016). For example, Howell et al. (2017) evaluates people's opinions about fracking by assessing their level of 'factual' technical knowledge about the industry's processes. In comparison, the analysis by Howell (2018) explores people's beliefs based on their 'basic' understanding of the industry. Trust in government and industry also influences perception of risk (Willems et al. 2016). Needless to say, correlations exist between people's knowledge of industry processes and their perception of risk and acceptance of the development; greater knowledge of industry processes lead to perception of more risk, and less acceptance (Howell 2018; Stedman et al. 2016). From this perspective, therefore, the act of producing and disseminating knowledge are in themselves acts of resistance (Köhne and Rasch 2019).

In this vein, risk perception is another consideration. Public perception of risk is derived independently from the actual risks (Szolucha 2016). For example, Graham et al. (2015) argue that risk perception is a subjective amplification to demean unconventional gas development, and not based on actual evidence, of otherwise minimal and controllable hazards with best risk management practices. In contrast, Marlin-Tackie and Smith (2020) explore three factors influencing people and communities' risk perception of unconventional gas: trust in government institutions, socioeconomic profile, and historical experiences with industry. They conclude that negative experiences with industry increased the perception of risk, particularly regarding "human health and safety, operational issues, negative economic consequences, environmental degradation, and mineral rights" (Marlin-Tackie and Smith 2020, p. 8).

Espig and de Rijke (2016) challenge reductionist scientific conceptions of risk with which public perception is often evaluated, particularly in relation to the processes of what is, and is not, known, and instead question the cultural politics of risk and knowledge. This shift in focus would instead consider the central issues facing industrial societies; the future of energy, climate change management, and socio-political dimensions of knowledge concerning addressing these challenges.

## 2.7  The Anti-Fracking Movement – A Social Movement

### 2.7.1  Social Movement Theory

Social movement theories emerged to examine the underlying basis of social mobilisation and the process of social change (Eidlin and Kerrissey 2019). The founding sociologists, such as, Marx, Weber, and Du Bois built a class-based narrative about the labour movement approach to social revolution (Buechler 1995; Eidlin and Kerrissey 2019; Saunders 2013) and the view underscoring collective action as an irrational form of protest (Saunders 2013). However, a 'new' era of social movements emerged around seemingly non-class issues, such as peace, the environment, and race, gender, and sexual identity-based oppression (Eidlin and Kerrissey 2018; Melucci 1980). Social movement theories started to consider the broader motivations, influences and processes behind the formation of movements, their characteristics, and social and political significance (Buechler 1995; Jasper 2010b; Saunders 2013).

Contemporary social movement theories inform the structural, foundational, and action-potential aspects of social movements (Buechler 1995; Jasper 2010a; Smith and Fetner 2010; Thörn and Svenberg 2016), and the broader political, ideological, social, cultural, identity and environmental contexts to which the movements are responding (Roggeband and Klandermans 2010). Because of these broad ranging considerations, the literature on social movements requires careful interrogation. The discussion about social movements is often conflated and scholars are now challenging this division between 'old' and 'new'. For example, the traditional, or 'old' social movements that are class-based, or responding to distribution of power and resources issues, are arguably pertinent when

considering contemporary, or 'new' social movements (Eidlin and Kerrissey 2019). Eidlin and Kerrissey (2018 p. 515) argue that the:

> recent surge in mobilization around economic issues in the twenty-first century, including Occupy movements, austerity protests, strikes, and the growth of worker centers and labor NGOs, appears to be bringing class conflict and economic grievances back into the analytical spotlight.

Moreover, scholars are calling for cross-theoretical approaches to examining social movements. della Porta (2020 p. 946), for example, argues for greater interaction between social movement research with that of civil society, voluntarism and the third sector (NGOs) research.

> While social movement studies might be better equipped to address the politicization of civil society, the involvement of social movement organization in direct social action responds to a need to address not only economic processes, but also cultural ones, such as the rebuilding of the societal value of solidarity stressed in studies on civil society.

Saunders (2013) argues that it is not so much the historical sense of the social movement that is new, but rather, the examination of these social movements through contemporary, more comprehensive, analytical lenses that is new. Because of these theoretical convergences, and because e anti-fracking movement relates to issues that pertain to both 'old' and 'new' social movement theories (the distribution of power is an 'old' issue, and fracking is a 'new' issue), this thesis will use the broader term social movement to describe the anti-fracking movement.

There are common discussion themes existing among the different social movement scholars relate to the movement structures. For example, how movements are organised and mobilised.  Roggeband and Klandermans (2010, p. 2) state that understanding cross-national collaborations and networking is a key objective for social movement scholars. Moyer et al. (2001, p. 104) summarise social movement theory as a focus on "how culture influences and is influenced by social movements", and the "dimensions of interest in the political process approach to compare the emergence of differing social movements". Buechler (1995, p. 442) on the other hand states that diverse social movement theories agree on a range of issues. First, social movements feature a symbolic action against perceived threats to a culture of civil society (Buechler 1995). Second, processes that

promote autonomy and self-determination are important, while collective action is values-based and functions through networks, rather than centralised or hierarchically organised (Buechler 1995). Finally, social movement theories problematise the processes of constructing collective identities and interests and consider grievances and ideology as a social construction (Buechler 1995).

In describing the different types of social movements, Saunders (2013, p. 123) points out a range of commonalities (overviewed in Table 7). She argues that anti-progress, or anti-development motivations drives social movement ideology. She also states that the structures of social movements are decentralised, not class-based, unstructured, and reliant on direct participation of actors. Finally, she asserts that the purpose of resistance is either symbolic, an expression of freedom, cultural or identity validation, or solidarity and autonomy in the face of powerful forces of manipulation.

Table 7: What is a social movement? From Saunders (2013, p. 26).

| What is a social movement? | |
|---|---|
| **Characteristics** | **Pressure groups > Modern concept of social movements < Non-institutionalised social movements** |
| **Organisation** | Formal bureaucratic **> Both types of organisation <** Informal, non-hierarchical and participatory. OR Atomised individuals |
| **Demands** | Small scale change – usually related to specific interests of members **> Both types of demand <** Radical social change |
| **Issues** | Not system challenging **> Both types of issues <** System challenging |
| **Strategy** | Conventional/insider **> Both types of strategy <** Unconventional/outsider |
| **Network links** | None **> Must have network links <** Sometimes |

The epistemological lens through which these various aspects of social movements are analysed is where the divergences in social movement theories arise, because they reflect the range of cross-disciplinary foundations deliberated on by social sciences (Roggeband and Klandermans 2010; Saunders 2013). For example, theories range in their perspectives about the rationales behind mobilisation and collective action of social movements, such as the political, ideological, and cultural values motivating action, the processes used, the social structures incorporated in the movement, and the various sources of identity defining its collective identity (Buechler 1995; Roggeband and Klandermans 2010; Saunders 2013). Smith and Fetner (2010) argue a structuralist position in which the

material and systematic resources used to mobilise a movement within the context of broader political and economic structures explain how a movement perceives itself as distinctive and subject to unjust circumstances. From this perspective, a 'social movement' and 'the state' are conceptually interconnected through the state's role in distributing power and resources (Smith and Fetner 2010, p. 42).

There are also conflicting views regarding the social value of social movements. On one hand, they are seen to be constructed around an ideology that opposes progress and views modernism and development as an imposition of the state (Della Porta and Diani 2009). On the other hand, Melucci (1984, p. 830) argues that "the mere existence of a movement is a reversal of dominant symbolic systems", therefore giving impetus to reform by producing modernisation and stimulating innovation. Another view is that the state and the market intrude on the social fabric, giving impetus and resources for social movements to defend autonomy and define identity (Della Porta and Diani 2009). The divestment movement, where networks put pressure on investors to transfer their shares from fossil fuel stocks to more climate friendly reserves, exemplifies a movement that responds within the confines of the neoliberal governance processes. It uses tactics to disgrace and pressure investors to divest to alternative investments, in particular, to move investments away from fossil fuel-intensive industry to climate-friendly, or climate-neutral, alternatives (Ayling and Gunningham 2017).

The dimension of political opportunity, where the political context is open to dissent, provides the resources and conditions for protest (Pilati 2011). Pilati (2011, p. 364), however, in a study of the structural characteristics of social movement mobilisation in Africa, found that the political context only partly explained patterns of mobilisation. Instead, the repressive political contexts were counterbalanced by local organisational structures that provided the necessary resources for individuals to participate in protest activities, despite the type of regime (Pilati 2011).

There is further debate over the role of the structural context of individual and collective agency within a movement. Researchers in the 1990s explored the role of emotions in the construction and proliferation of social movements. The role of emotions and feelings, relating to morals and values, was aligned with the mobilisation of the individual into a

social movement (Della Porta and Diani 2009). Jasper (2010a), particularly outspoken in this area of social movement research, argues that the lived experience of individual protesters brings insight to the reasons behind people's actions. From this perspective, power relations and political opportunity are located in the interactions between actors rather than the structural elements of the state (Jasper 2010b). Melucci (2000, p. 96), another seminal social movement scholar, adds that collective action is never wholly represented by political decisions or policy. Rather, they are both pre-political because people's issues are rooted in everyday life and in personal experience, and meta-political because people are never fully represented by politics.

Scholars also consider the political dimensions of social movements. For example, Thörn and Svenberg (2016) argue that social movements respond to modes of government that have emerged from neoliberal narratives, by participating in policy processes to establish alternative legislation standards. In this way, collective agency is constructed, and collective action made possible (Thörn and Svenberg 2016, p. 595). Escobar (1998, 2004, 2008), a seminal author in the 'social movement' arena, provides a similar argument: social movements (through complex relations among place, nature, and culture) produce alternative forms of modernity and development through practices of appropriation and resistance, and the articulation of alternative political frameworks. From this perspective, 'place' encapsulates the natural and social circumstances that people struggle over (Escobar et al. 2002).

*Networks and Social Movements*

Social movements need resources to survive (Saunders 2013) and derive these from networks. The resources gained from networking include instinctive qualities, such as trust, loyalty, duty, and solidarity, all of which facilitate the mobilisation of resources – information, legal and legislative knowledge, and campaign strategies (Nicholls 2009; Walker 2010). Place plays a series of roles in social movements: it shapes and are seen as opportunities for varied actors to establish contact, the interactions of which help disrupt and/or strengthen power relations (Nicholls, W 2009). Conversely, actors in social movements drive more than just information sharing: the ensuing flow of ideas and emotions between individuals and groups enables the sharing of moral ideals (Jasper

2010a), and the making of connections over the lived experience of activism (Ransan-Cooper et al. 2018). As campaigns in social movements are both place- and actor-driven, the internet is key to maintaining individual and localised activism in conjunction with the generalised and global activism (Walker 2010).

As described above, networks are an integral aspect of social movements (Buechler 1995; Diani and Bison 2004; Nicholls 2009; Saunders 2009, 2013). Networks are central to social movements' capacity to coordinate activities, and they shape movements' composition, activities, processes, and relational dynamics (Nicholls, W 2009, p. 78).

Collective action is a much deliberated term that is used to explain the formation of networks of different groups (Melucci 2000). Melucci (2000, p. 94) argues that networks emerge periodically in response to specific issues, and work to create new cultural representations, relationships, and perspectives. In fact, Melucci argues that movements should be addressed in terms of movement networks to describe the ephemeral nature of contemporary mobilisation (Melucci 1984). Saunders (2013, p. 3) agrees, arguing that using 'network' to describe social movement explains the interesting interactions and spatial and ideological dimensions between organisations.

The interactions and relations between actors and organisations are the common thread found in the various definitions. For example, Escobar et al. (2002, p. 30) argue that social movements evolve from long-term relationships and shared identities. Diani and Bison (2004, p. 303) similarly argue that network processes define the movement in that movement action derives from the constant re-characterisation of identity and solidarity between actors, which is underpinned by long-term relationships and attachments. Baldassarri and Diani (2007, p. 736) correspondingly define civic networks as the "web of collaborative ties and overlapping memberships between participatory organisations, formally independent of the state, acting on behalf of collective and public interests". Saunders (2013, p. 28) defines environmental networks as the collaboration and sharing of information, strategies, and resources that occurs between formal and informal organisations that share common concerns. Networks can also extend beyond the concern of single movements and collaborate with other groups. This inter-issue

networking is especially prevalent in environmental direct-action networks (Saunders 2013).

Networks play an important role in social movements. Saunders (2013, p. 7) argues that, like glue holding movements together, networking brings together allies, which increases recruitment bases and provides a sense of solidarity (Saunders 2013). In this way, networks facilitate innovation for campaign success and help to sustain movements during periods of latency (Saunders 2013). Moreover, the diversity in the support of different sectors of the community makes these networks potent in that they are a force that is difficult for decision-makers to ignore (Saunders 2013, p. 230).

## 2.7.2  The Global Anti-Fracking Movement

The anti-fracking movement first grew out of the unconventional gas development in the US in the early 2010s. However, the industry was well established before acceptance of it waned. Support for the unconventional gas industry in the US continues to be mixed. The oil and gas industries are largely supported in the US, and many landholders who benefit from lucrative returns from the industry support the development (Sovacool 2014). The strong political ideology that values assertive resource extraction and prevails in the US is a strong influence on community perceptions (Choma et al. 2016). Despite the economic benefits of unconventional gas development, however, public concern is growing. Concern over the adverse social, public health and environmental impacts has increased in the US (Sangaramoorthy et al. 2016), particularly as people's experiences of the industry have become increasingly negative (Sovacool 2014), and because of an increasing awareness of the risk potential of the process (Graham et al. 2015). Eaton and Kinchy (2016) argue that many US communities where the industry is well established are not necessarily supportive of the unconventional gas industry but feel powerless to mobilise and confront the prevailing authority of the oil and gas industry.

As the industry increases in scale globally, so too has the growing voice against it. The counterargument found strong support in communities, and even politically, across Europe from the very beginning of industry interest and exploration activities. Moratoriums were imposed in several European countries, including France, Bulgaria, Germany, the Netherlands, and Spain in response to strong community resistance to

development proposals (Lewiński 2016). However, the anti-fracking sentiment was not unanimous in Europe. For example, the governments of Poland and the UK embraced the concept (Pigg 2013). Despite these governments' pursuit of unconventional gas, anti-fracking movements actively protest the strong political advocacy of the development (LaBelle 2017; Lis and Stasik 2018; Pigg 2013).

The divergent views in Europe embody the complexities that surround unconventional gas development found in other global regions. France's mobilisation against shale gas development was largely unchallenged, highlighting a political/citizen confluence regarding shale gas development and fracking (Chailleux and Moyson 2016). Critics of this alliance argue that blurred lines of communication between the public, scientists, and decision-makers mutually constructed the outcome (Molinatti and Simonneau 2015). Pro-fracking claims in Europe, on the other hand, argue that the development of shale gas is about sovereignty and state-security, for example, that shale gas development has the potential to free European countries from Russia's control of the gas market (Lis 2018). Pigg (2013, pp. 736-771) criticises the anti-fracking narrative as "skittish and irrational", suggesting that the concerns of the public are a hindrance to the development of Poland's shale gas stores.

Adding complexity to the response to the global fracking debate is the level of community understanding of the processes and impacts of fracking. For example, individuals' knowledge of the unconventional gas development process influences their perceptions of the development (Choma et al. 2016; Graham et al. 2015; Stedman et al. 2016). There is greater public acceptance of the development in the US than in the UK, However, research has shown that people in the US have an overall lower understanding of the process and its implications compared with greater understanding and lower support in the UK (Stedman et al. 2016). Additionally, in comparing resistance to fracking in the US to that in the UK, resistance to the development was more prevalent in the UK where the industry was not yet established (Kreuze et al. 2016).

### 2.7.3 Defining the Anti-Fracking Movement as a Social Movement

The anti-fracking movement is located within social movement theory. Steger and Milicevic (2014, p. 3) concur when they state: "local anti-fracking initiatives have

appeared all over the world" and are "increasingly creating links between one another, …
generating a truly global movement against fracking". The global scale of the movement
is distinguished by these strong global/local connections. However, the local, grassroots
aspects of the anti-fracking movement are equally important in how the movement
mobilises, functions and protests.

A range of factors distinguishes the anti-fracking movement as a social movement. Firstly,
the actors adopt both formal and informal processes of organisation to resist and protest
(Buechler 1995; Diani and Bison 2004; Saunders 2013). The anti-fracking movement is in
one sense defined by its local grassroots, self-organised mobilisation, as epitomised in
images of rural landscapes with local farming communities (Figure 4), but the formal,
institutional, and strategic influences are equally integral. The involvement in campaigns
of organisations such as Friends of the Earth, the Wilderness Society, and, in Australia, the
Lock the Gate Alliance, provides the institutionally organised structures that help support
the networking and resource allocation for mobilisation at the grassroots level (Hutton
2014; Saunders 2013). For example, although Lock the Gate has developed into a national
organisation with paid members and a national website, the strategy of the organisation
is to encourage and support decentralised networks by assisting local communities to
develop their own informal strategies that represent their own community and local
situation. Thus, it acts in a facilitative role rather than a directive one (Hutton 2014).

Figure 4: Image of a local Australian Lock the Gate group. Image (Lock the Gate Alliance)

The second aspect that identifies the anti-fracking movement as a social movement is the fact its actors seek to secure resources. Resource allocation in this regard applies to mobilising the movement membership on local and global scales and expanding their protest by disseminating views about unconventional gas production and fracking (Steger and Milicevic 2014). Also, social movement networks are place-based and, accordingly, have relational attributes, such as trust, loyalty, and duty, which facilitate the mobilisation of resources and tighten solidarities (Nicholls, W 2009). Place, in this way, plays a series of roles in social movements by shaping and creating opportunities for varied actors to establish contact, the interactions of which help disrupt and/or strengthen power relations (Nicholls, W 2009). A connection is made over the lived experience of activism (Ransan-Cooper et al. 2018). That campaigns are both place- and actor-driven, therefore, provides for individualistic and localised activism. However, it is the formal, organised side of the movement that disseminates resources (such as knowledge and perceptions), providing structure, and ideas that stimulate a core and unified anti-fracking message (Steger and Milicevic 2014).

Thirdly, and related to resource allocation, social movements use the internet to connect people to information and technocratic legislative knowledge. The internet enables the movement to connect the protest narratives to the broader community (Walker 2010). The internet has been integral to the rise and mobilisation of the anti-fracking movement on a global scale. For example, from the inception and rise of the anti-fracking movement in the US, the internet has been a conduit for disseminating the anti-fracking narrative. Powerful images, stories of people living in gas fields and then the professionally made, influential movie *Gasland* raised awareness of the issue across the country and later internationally (Mazur 2018). Disseminating the lived experience across the globe provides powerful unifying connections, such as collective anger and solidarity in protest (Ransan-Cooper et al. 2018). Social media vitally fosters and sustains networks and coordinating action, which is pertinent for rural regions where communities are dispersed over large areas (Ransan-Cooper et al. 2018). Moreover, the online arena helps to bridge the divide in the 'translocal' dimension by creating a platform to unify the movement across borders and waters. It also assists in the dissemination of technocratic information, including industry-related, scientific, and legal (Hopke 2016; Hopke and Simis 2017).

Fourthly, the movement seeks to make change on both small and large scales by using both informal onsite protest and action, as well as formal lobbying to influence policy (Saunders 2013). The careful deliberation by people in the movement of protest tactics that are consciously non-violent acts of civil disobedience, and the strategic approach to ensure grassroots level organisation alongside a national strategy that incorporates lobbying and information sharing, are core to the Lock the Gate movement in Australia (Hutton 2012, 2014). The varying forms of the movement globally share these formal and informal structures to varying degrees (Chailleux and Moyson 2016; Hopke 2016).

Finally, the anti-fracking movement has created alliances between usually disparate groups, namely farming and rural communities, and environmentalists, who traditionally occupy different ends of the political/economic spectrums and are at odds over environmental issues (Hutton 2014; Ransan-Cooper et al. 2018). This relationship has come about because the development often encroaches on agricultural landscapes with impacts on the rural industries (Poulsen et al. 2018). The alliances with environmental movement provided protest strategies, such as non-violent, non-cooperation and civil disobedience (Hutton 2012). The most notable campaign that derived from this alliance was the lock the gate campaign, where farmers put a sign on their gate stating that industry was not permitted onto their property. Principally a symbolic act, the signs indicated the industry did not have social licence to operate. The alliance structure, which pivots around local grassroots participation, also extends to collaboration and support in the form of information sharing, strategising between city-based campaigners, and rural groups (Hutton 2012 p.16). As Hutton (2012 p.17) succinctly puts it:

> The Lock the Gate campaign has brought both groups together within the policy framework of protecting important parts of our natural and cultural heritage but the movement is also prepared to use the language and actions of non-violent, non-cooperation and civil disobedience. The result is an unusual combination of traditions, sub-cultures, and lifestyles, as young, hippy-ish urbanites mix with grizzled farmers in rallies, pickets, concerts, and meetings. It takes some sensitive management at times, but it works.

Interestingly, too, people who take part in social movements do not necessarily see themselves as activists, and in some cases, seek to avoid being labelled as such, because of the negative connotations associated with activism (Luke et al. 2018b). The Lock the

Gate movement in Australia exemplifies this stance with their policy not to focus on climate change at all in their campaigns because they want to distance themselves from 'greenie' rhetoric (Tranter et al. 2017). Instead the movement positions concern in terms of the impacts to the environment or water (Luke 2017). So too in Noordoostpolder, the Netherlands, people distance themselves from the term 'activist', instead describing their action as a 'partnership against shale gas' because they want to be included in decision-making processes made by politicians and policy makers (Rasch and Köhne 2017).

## 2.8  Agency

The act of protest is the embodiment of actor agency. At the heart of the anti-fracking narratives is a sense of disempowerment, a lack of agency, inherent in the tension between decision-maker's desire to preserve their power, public participation requirements, and the public's agency (Kuhlke 2006; O'Faircheallaigh 2010; Thörn and Svenberg 2016). People's experience of loss of agency to oppose when they are forced to participate in unwanted developments is a fundamental driver of mobilisation and stems from the imbalanced power ratios between community, the industry, and government (Szolucha 2016).

In participating actively through protest, and through their social structures, practices, and narratives, actors in the anti-fracking movement expansively perform their agency (Fairclough 2013a). For example, time is used as a resistance tool, to regain agency (Szolucha 2018b). Tactics used in anti-fracking protests that aim to slow down construction activities range from, "slow-walking in front of the trucks, climbing on top of tankers, organising 'pop-up' protests at the premises of the construction companies, to forming 'lock-ons[7]'" (Szolucha 2018b, p. 353). Likewise, people's active participation in participatory governance processes, such as making submissions to public inquiries and

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[7] "Lock-on devices range from readily available bicycle locking devices through to home manufactured steel pipes, or concrete filled barrels in which protesters secure their arms to create a human obstruction. They are favoured by activists – and clearly feared by some politicians – because they take significant time and expertise for police to remove protesters from the devices and to clear roads and blocked gateways. And they have a long history as a tool of non-violent civil disobedience that goes back at least to the days of the suffragettes. More recently, they have been an important tool in blockades against old growth forest logging, coal seam gas and coal mine developments" (https://theconversation.com/lock-on-devices-are-a-symbol-of-non-violent-protest-but-they-might-soon-be-banned-in-queensland-122472).

making planning application submissions, gain political influence through their civic inclusion, forming a "distinct rationale of resistance" (Leifsen et al. 2017, p. 1093). So too, knowledge production renders actor agency real by constructing people's capability to build and mobilise counter narratives and activate participation (Ali-Khan and Mulvihill 2008; Meyer 2010). Moreover, that sense of agency is further strengthened when working as a networked collective (Kuhlke 2006).

## 2.9 A Mechanism of Protest

Social movements are, essentially, groups of actors engaging in action to secure resources and foster mobilisation (Buechler 1995, p. 441). These actions of protest (Bebbington et al. 2008b; Diani 2009; Lee 2011; Meyer and Lupo 2010; van Stekelenburg, Jacquelien and Klandermans 2010) are achieved through a variety of strategies and are driven by a range of ideologies and issues (Saunders 2013). The specifics of the mechanisms used and the motives behind the actions vary. For example, social movements are often responding to a political system and, as such, have their own political paradigms (Meyer and Lupo 2010). From this position, mobilising broader support is tipping the "balance of power in a conflict in their favour" (Meyer and Lupo 2010, p. 114). However, the aspects of communities involved (the individual person, home, community, and habitat) that are brought together in normative community practices, are also practiced in the political strategy of the social movement; as Escobar et al. (2002, p. 30) call it, the politics of place.

As mentioned before, it is common for social movements to be mobilised to protest in relation to issues pertaining to natural resources. Natural resources are inherently interconnected with everyday life, local economies, and broader political paradigms (Escobar et al. 2002; Nicholls, W 2009; Saunders 2013). Munda (2009) argues that the distribution of natural resources is an inevitable source of conflicts. For example, with its connection with colonisation, over-extraction in Latin America during the twentieth century has generated 'visceral anger' because of the suffering, inequality, and lack of beneficial development to show for it (Bebbington 2009, p. 7). There is little wonder, therefore, that conflicts and social uprising against the development of natural resources,

such as through mining and other extractive industries, and energy production, have attracted an extensive scholarship.

The increasing pressure to produce and provide for an industrialised world and burgeoning populations has intensified the demand for the development of natural resources (Duus 2013). Increasingly, there is a shift against the largescale development of natural resources for economic prosperity, towards the protection of biodiversity and habitat (Escobar 1998). For example, in their exploration into social movements against mining Bebbington et al. (2008b, p. 2890) argue that anti-mining social movements are a response to:

> [T]he threats that particular forms of economic development present, or are perceived as presenting, to the security and integrity of livelihoods and to the ability of a population in a given territory to control what it views as its own resources.

Natural resources in this instance are connected to citizens' livelihoods, and the development of these resources through mining obstructs citizens' ability to function on a day-to-day basis. People have an assortment of concerns that relate to food and water, health, local economies, property rights and climate change (Duus 2013, p. 120). Furthermore, power imbalances affect people's autonomy in decision-making over the resources they rely on, and local cultural and ecological knowledge is not considered (Escobar 1998). As Agyeman et al. (2016, pp. 328-329) argue, the extraction of natural resources is an environmental justice issue because of the consequential displacement and/or exploitation of communities, particularly Indigenous communities in developing countries.

Social movements, therefore, are used by these communities to exercise resistance to such developments. In describing movements of black communities rallying against mining development activities in the central and southern region of the Pacific, Escobar (1998, pp. 68-69) suggests that protest groups have used their conflict to build interethnic alliances with regional Indigenous movements. For these Indigenous communities, their resistance is about defending territory because the developments are altering community's embedded cultural knowledge and practices constructed around their natural resources:

> Confronted with national and international pressures on the natural and genetic resources of the region, the organized black communities prepare themselves for an unequal and strategic struggle to maintain control over the only remaining territorial space in mainland (Escobar 1998, p. 69).

Similarly, communities in South America respond to concerns of dispossession and use various strategies that range from rejecting resource extraction completely to demanding either participation in decision-making or an equitable distribution of the economic benefits (Bebbington et al. 2008b). Another strategy is for communities to form collective networks that work within governments and civil society, challenging the modes of resource governance from within and formulating new options (Bebbington 2012, p. 1156).

A comprehensive typology of strategies in relation to the aims of various environmental movements is provide by Saunders (2013). This framework of movement strategies, Table 8, demonstrates the range of tactics used by individuals and groups to pursue an agenda.

Table 8: Typology of Strategies. From Saunders (2013, p. 38)

| Directed at institutions | | Self-directed change | |
|---|---|---|---|
| **Institutional** | **Indirect-institutional** | **Direct action** | **DIY/practical projects** |
| Consultants | Marches | Sabotage | Practical conservation |
| Lobbying | Rallies | Occupations | Local exchange trading schemes |
| Negotiation | Vigils | Ethical shop lifting | Permaculture groups |

For social movements (as against peripheral forms of self-directed action such as undertaking practical DIY projects) the tactical approach to protest is through indirect or direct action (Saunders 2013, p. 35).

A range of campaigns exist that target governments and industry in response to a perceived failure of national and international governance and policy frameworks to address climate change (Saunders 2013). For example, campaigns may be directed at individual politicians (such as, the 'Bush is a Dirty Rat' day of action when George W Bush announced the United States' withdrawal from the Kyoto Protocol), or directly at corporations (the 'Stop Esso' campaign linked the organisation's anti-renewable energy

and anti-climate change stance behind their lobbying Bush to retract from Kyoto)
(Saunders 2013, pp. 58-59).

Social movements, more recently, use campaigns that target the economic markets to
pursue change. The 'divestment movement' works through the same neoliberal model
that the natural resource extraction industry uses (Ayling and Gunningham 2017). By
packaging and disseminating scientific facts grounded in moral arguments the divestment
movement engages direct action and lobbying strategies to shame, convince, and
empower stockholders' investment decisions (Ayling and Gunningham 2017). This
contemporary and dynamic strategy in corporate campaigning, 'divestment', focuses on
financial risks, rather than on ethical grounds, and significantly and deliberately reframes
social movement campaigns using language to home in on investors (Ricketts 2013).

Climate action groups are also on the rise. In Australia, campaigns are directed at energy
market transformation (Pearse 2016). Social movements respond to disrupt the market in
their strategic focus on a transition from fossil fuels to renewable energy (Pearse 2016, p.
1080). They are underpinned by the broader political economic dynamics, shaped by
marketisation. As Pearse (2016, p. 1097) puts:

> A nascent 'energy justice' politics is in the making. New alliances are being built.
> More and more focus is going to the state and Federal agencies directly involved
> in governing mining and electricity, as well as engaging citizen consumers, and
> corporate actors. There are new combinations of symbolic and policy politics. The
> debate over regulation is different when energy markets are campaign targets.
> Renewable energy campaigners are focused on the RET and various barriers to
> grid access for renewable energy. The contest over coal and gas expansion has
> instigated contention over state mineral allocation, planning regulations, and
> Federal environmental approvals processes.

In Sweden too, contemporary shifts in the climate action movement are responding to a
national environmental policy which is influenced by a neoliberal discourse and the
emergence of international governance around climate change and sustainability (Thörn
and Svenberg 2016). In using Foucault's concept of 'governmentality' Thörn and Svenberg
(2016, p. 597) demonstrate that social movements engage in "a politics of responsibility
analytics", in which the movements attempt to delineate "who bears responsibility" for
the environmental policy:

> We argue that in the context of neoliberal government, in which an important government strategy is to encourage civil society actors to take on certain political responsibilities, resistance often takes the shape of a politics of responsibility, referring to conflict and struggle concerning responsibility (Thörn and Svenberg 2016, p. 597).

In this way, social movements introduce a "discourse of moral (rather than political) agency" to address the issue of climate change with an emphasis on market solutions (Thörn and Svenberg 2016, p. 605).

As described above, the anti-fracking movement is characteristically a social movement. As a global movement it is equally active at local scales (Steger and Milicevic 2014). International networks and solidarity related to fracking provide local communities and grassroots groups with powerful information, mechanisms for resistance, and social and political advantage at both local and international scales (Hutton 2012; Ricketts 2013; Saunders 2008; Steger and Milicevic 2014).

There are varying views as to where the anti-fracking movement works as a mechanism of protest. For example, the local/global aspects of the movement mean that issues are both local – water, local economy, livelihoods, health, natural environment, and global – greenhouse gas emissions and carbon-induced climate change (Ricketts 2013). Therefore, campaigns not only work strategically against local policy implications for water, air, and food and land development, but also against global neoliberal structures that form energy production and economic development (Steger and Milicevic 2014). As such, anti-fracking campaigns also correspond with environmental and global social justice movements (Steger and Milicevic 2014). The anti-fracking narratives, such as the 'lock the gate' campaign, that politicise energy production, particularly when it is on agricultural land, and by obstructing social licence to operate in 'locking the gate', exemplify the argument posed by Smith and Fetner (2010, p. 15), that social movements form to influence states and institutions.

The anti-fracking movement's central focus, both locally and globally, is on fracking and unconventional gas development. With this focus, the strategies used by the anti-fracking movement are taken from traditional social movement campaigns, particularly, the use of grassroots mobilisation and direct action (Hutton 2012; Ricketts 2013; Saunders 2013).

For example, Lock the Gate undertook a strategy that set about educating and mobilising local communities. They used direct action tactics to put pressure on government because it was thought that community lobbying would not be able to break through the close and interdependent relationship between industry and government (Hutton 2012). Instead, Lock the Gate wanted to differentiate itself through grassroots campaigning, unlike other environmental non-government organisations, who, they perceive, have tended:

> To become professionalised, bureaucratised and often far more caught up with gaining access to governments than achieving outcomes through hard fought campaigning (Hutton 2012, p. 16).

This decentralised, dispersed and locally autonomous model has been effective in that industry finds it difficult to characterise and assess, and also has difficult evading the actions of the movement (Ricketts 2013).

In the UK, despite the shale gas industry not yet getting into full-scale operations, protests over the development have recently become more frequent and intense, particularly in the form of public demonstrations (Szolucha 2018a). As with the protests in Australia, the UK protests have attracted a range of people including local residents and farmers, environmentalists, church groups, and even Members of Parliament (MPs) (Bomberg 2015). Interestingly, the images and stories shared from the experience of fracking and the impact it has had in the US where fracking is prevalent has engendered much of the solidarity felt in the UK (Bomberg 2015). These images and stories are used to demonstrate the negative impacts of fracking that are to be avoided (Bomberg 2015; Mazur 2018; Steger and Milicevic 2014; Williams et al. 2015).

Images and videos, including satellite images of gas fields and water on fire, and water contamination represent the substantial impact gas fields have on landscapes (Mazur 2018; Williams et al. 2015). Water contamination in particular is a major concern (Bomberg 2015; Chen and Randall 2013; Cotton et al. 2014; de Rijke et al. 2016; Hamawand et al. 2013; Price and Adams 2016; Rester and Warner 2016; Zhang et al. 2016), and these images are used to motivate people either to participate, or at least to sympathise with their cause (Bomberg 2013, 2015; Mazur 2018).

## 2.10 Knowledge Production

The extent of the power relations in the struggles and conflicts surrounding unconventional gas can be highlighted by a range of dynamics, including power and ideology, which are in turn affected by the production of knowledge (Weiss and Wodak 2003): knowledge about the technology, the industry, the benefits, and the associated risks and problems. As Kadoda (2010, p. 518) explains, the concept of knowledge production is twofold:

> In mode 1, the research inquiry follows the set of ideas, values, methods, and norms defined by a discipline, where the mechanism of peer review acts as a quality control to add new knowledge to the existing scholarly base. This mode is an exemplum of present-day university research assessment and promotion criteria. Mode 2 differs in terms of its focus on problems in formulating the research inquiry and on context in identifying the solution space, which reflects the rise of transnationalism in research and transcendence of conventional academic divisions when undertaking social inquiry, also known as multidisciplinarity. This mode accommodates the commoditization of research, crossing of disciplines and sector lines, multiple stakeholder interests, and the involvement of social movements, activists, and nongovernmental organizations (NGOs).

From this perspective, Mode 1 represents the technological understanding of unconventional gas developed within the scientific disciplines, and the development of the technologies pertaining to the industry (Kadoda 2010). When considering the conflicts and the resulting resistance to unconventional gas, Mode 2 refers to the broadening of those understandings to consider and reflect the wider human and environmental dimensions (Kadoda 2010). Taking into consideration the various ways in which knowledge is produced and disseminated, reveals how different social structures affect different narratives and vice versa (Packer 2011).

Deeper understandings of knowledge production also reveal varying power dynamics. Power is at the heart of what, how, and by whom knowledge is produced (Fairclough 2013b). The way in which knowledge is constructed and represented has different implications for different people (Jocson 2015). Also, the way in which the knowledge is produced and how the knowledge produced is transformed into technologies "affects the kinds of lives we lead, the relationships we form, and, increasingly, how we perceive

ourselves and what entitlements we therefore claim" (Jasanoff 2012, p. 11). For example, Jasanoff (2012, p. 11) explains:

> Race, class, gender, nationality, ethnicity, economic and professional status, occupation, and family – have been profoundly reshaped in modernity's long march through the scientific, industrial and high-tech revolutions. Whether we see ourselves as enlightened, globalized, networked or knowledge societies, those era-defining terms themselves reflect epistemic and social configurations that would not have been possible without fundamental changes in science and technology. Hence, science and technology are fitting though strangely neglected subjects for political analysis.

With this in mind, understanding the factors of knowledge production gives us insight into the ontological constructions of policy development and the political economy in relation to natural resource development (Valencia and Carrillo Martinet 2017). Traditional modes of knowledge production are being challenged by new technologies and tools. For example, web-based tools that enable people to share lived experiences of unconventional gas developments through cross-national networks allow social movements to challenge industry-related data and information (Valencia and Carrillo Martinet 2017). As a result, the divide between expert and non-expert knowledge is contested and traditionally expert and technological understandings are no longer accepted as fact, but instead are interrogated, contested, and politicised (Kama 2019).

Critical assessments of knowledge production, therefore, question conventional ideas of what truth is, and what assumptions are made about what is known in our societies (Kadoda 2010). Because of this, what is known no longer rests exclusively in the hands of the powerful and influential, and, as such, there is the belief that challenging the traditional, and creating new systems of knowledge production, can potentially "engage learners in the dialectical relationship between knowledge and injustice" (Kadoda 2010, p. 517) That is, people engaging in the anti-fracking movement can meaningfully participate in knowledge production to reduce the power divide that is increased by controlling what is known.

## 2.11 The Influence of the Anti-Fracking Movement on Policy Development: A Gap in the Literature

As much as the anti-fracking movement is a wave of action against the *development* of unconventional gas, it is equally a mechanism to influence people's *perceptions* about unconventional gas, or *policies* regarding unconventional gas. As demonstrated, an extensive body of literature exists on the conflict that surrounds fracking and the impacts of the unconventional gas industry. There is growing understanding of community perceptions, and of the mobilisation and protest mechanisms of the movements. However, there is an underrepresentation in the literature of research into understanding the impact or influence of social movements and their conflict narratives on natural resource policy development in relation to mining policy in general and unconventional gas in particular. Whilst there is a plethora of literature exploring social resistance to mining within the development paradigm, and in terms of risk, community perception and the framing of unconventional gas, there is insufficient critical analysis of the influences of fracking and the anti-fracking narratives. Steger and Milicevic (2014) apply a critical discourse analysis to the global narratives of the anti-fracking movement. Focusing on the local versus global aspects of the narratives, however, their focus is on the US – the democratic qualities of the protest, the positions of power within the paradigm, and the environmental justice aspects of the movement. Whilst similarly exploring the democratic and power dimensions of the anti-fracking movement in the case studies described herein, this study fills a gap in analysis of the influence of the anti-fracking movement narratives on mining policy development with a focus on the anti-fracking movements in Australia and the UK.

Developing a deeper understanding of the influence of anti-fracking narratives will therefore contribute to the broader literature on conflict, social movements and natural resource policy development and management. As described above, analysis of the response to unconventional mining is a growing area of scholarship, but because it is relatively new, the flow-on effects are creating social, political, economic, and environmental paradigms. Any further contributions to this area, therefore, will deepen the understanding of mining development and energy production conflicts, including why conflicts exist, and what is needed for future planning. Filling this gap will also contribute

to the scholarship regarding participation and social movements, and the social, health, and environmental impacts of mining development, in particular, unconventional gas development. Understanding the broader and conflicting social dynamics and the debates occurring because of operational projects inform decision-makers about the complex social experiences of unconventional gas developments (Espig and de Rijke 2016).

## 2.12 Conclusion

This review demonstrates that natural resources development is a contentious space. The anti-fracking debate pivots on a growing global concern over the practices involved in extracting unconventional fossil fuels. This review explores the factors underpinning the conflict about unconventional gas development and the social movement resisting the development. Despite presenting an extensive literature about the broader dynamics relating to unconventional gas development tensions, a gap in analysis of the influences of the anti-fracking movement on mining policy development has been identified. Deepening the understanding of the anti-fracking movement, with a focus on how it influences policy development, reveals the social, political, and environmental implications of these narratives for mining policy development.

# Chapter 3   Research Methods

## 3.1  Introduction

As described in Chapters 1 and 2, the purpose of this project is to examine the influence of the anti-fracking narratives on mining policy developments in Australia and the UK. Chapter 3 outlines the research methods used to conduct the research. As indicated in Chapter 1, the research consists of two case studies of the anti-fracking movement based on qualitative analysis of semi-structured interviews with people involved in the movement or the industry from Australia and the UK. The content of a range of secondary data, including policy documents, websites, news articles, and film is also analysed. A qualitative approach was used to establish an in-depth and critical understanding of the anti-fracking narratives and the social structures in which these narratives are embedded.

The chapter begins by describing the research rationale behind the qualitative analysis and case studies. It then explains the process of data collection and analysis. It concludes with a discussion of the challenges and limitations of the study.

## 3.2  Methodology

This research project used a qualitative approach in conjunction with case studies to do this project.

### 3.2.1  Qualitative research

Qualitative research is a term that describes an approach to the study of social life (Saldana 2011). The research data collected and analysed is generally unquantifiable, and seeks to investigate, understand, and explain what, how or why of a social phenomenon and how people make sense of the world (Watts 2008, p. 441). Qualitative data consists of textual material, for example, "interview transcripts, field notes, and documents, and/or visual materials such as artefacts, photographs, video recordings, and Internet sites that document human experiences about others and/or one's self in social action

and reflexive states" (Saldana 2011, p. 4). Qualitative data collection is widely used to undertake exploratory empirical research into complex social, economic, cultural, and environmental issues (Firmin 2008).

The primary means of data collection in this case was via semi-structured interviews, which enabled participants to reveal a full range of views and experiences regarding unconventional gas development and their involvement in the anti-fracking movement (Valentine 2005). Semi-structured interviews were used because they provide help to guide the responses in a flexible way for extensive and thorough discussion of the issues (Valentine 2005). For example, attention to the human features of the subject and subtle details of people's actions and conversations may reveal unexplored characteristics and nuances in people's relationships to the world they live in (Packer 2011). The secondary means of data consisted of documents, websites, and news articles that related to the anti-fracking movement and the development of unconventional gas. These texts provided insights into government policy and regulation in relation to unconventional gas development, and additional views of the anti-fracking movement. The qualitative approach to the data analysis consisted of thematic and narrative analysis to establish the subject and narrative themes and predominant views and understandings of the data. The application of a qualitative approach to the exploration of the anti-fracking movement and its influence essentially enabled new and nuanced understandings of the narratives within, and about the movement. Moreover, the qualitative analysis approaches facilitated an in-depth understanding of the relationships between the anti-fracking narratives and the broader political and ideological narrative that frame unconventional gas development.

## 3.2.2  Case studies

A case study approach was used to provide an in-depth examination of two examples of anti-fracking movements in two different countries. The term 'case study' is defined by Yin (2015, p. 194) as an "empirical inquiry that closely examines a contemporary phenomenon (the case) within its real-world context". Bryman (2016, p. 61) more specifically associates the use of the term 'case' with associations of "a location, such as a community or organisation", and an emphasis on an "intensive examination of the

setting" to "reveal the unique features of the case". By undertaking an up-close and in-depth examination of two examples of a contemporary phenomenon—namely, the social movements—within their real-world contexts, the case studies reveal the actual and perceived issues (Yin 2015). Additionally, the social, cultural, political, economic, geographical, and environmental contexts of the social movement provide further contextual information (Blatter 2008; Goodrick 2014; Putney 2010; Yin 2015). Moreover, case studies add value:

> Case studies can prove invaluable in adding to understanding, extending experiences, and increasing conviction about a subject… [and exploring] subjects and issues where relationships may be ambiguous or uncertain. Case studies are also trying to attribute causal relationships and are not just describing a situation. The approach is particularly useful when the researcher is trying to uncover a relationship between a phenomenon and the context in which it is occurring (Gray 2013, p. 247).

Using two or more case studies enables the exploration of multiple perspectives embedded in specific contexts (Lewis and Nicholls 2013, p. 66). The case study approach also enriches the level of understanding of the social phenomenon when it occurs in more than one situation (Baxter 2016, p. 131; Bryman 2016, pp. 64-65). Moreover, the use of two case studies provides an opportunity to explore the global/local spectrum of the anti-fracking movement by making possible the generation and modification of concepts to "explain commonalities across cases despite [the cases] being embedded in different contexts" (Baxter 2016, p. 141). Direct observations and semi-structured interviews provide important data that reveal the fracking and anti-fracking narratives from the case study contexts (Yin 2015, p. 194). As mentioned above, by using two case studies, the similarities and differences are revealed, highlighting the localised aspects of the anti-fracking narratives and the idiosyncrasies and distinctions which underlie the movement (Putney 2010). Moreover, the responses of the anti-fracking movement participants in Australia and the UK to the technocratic and governmental frameworks in which they exist are revealed (Goodrick 2014). Using the accounts of two real-world contexts also ensures that the analysis is embedded within genuine settings and circumstances, bringing to the analysis a richer and more precise understanding of the global and local aspects of the anti-fracking movement (Yin 2015).

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*Case Study Selection*

The case studies were chosen because of their representativeness of the anti-fracking movement, whilst also offering variables within each of the populations (Gerring 2012). For example, both Australia and the UK have active anti-fracking movements that were deemed to be similar in how they function as facilitators of protest and resistance to mining policies and practices within their given context (Witt et al. 2018). However, the case studies also represent two countries whose respective property, environmental and mining laws sit within, and are shaped by, their own social, political, economic, and environmental landscapes (Witt et al. 2018).

Additionally, each case study was chosen because they reveal insights about the anti-fracking movement in the context of the unconventional gas industry in different stages of development. The anti-fracking movement in Australia evolved in response to the already developed and operating industry (Queensland and New South Wales), whereas the movement in the UK rose from the prospect of the industry's development. These differences importantly provided insights into the genealogy of the movement; the factors that influence individual's mobilisation (what 'is happening' versus what 'could happen'), the cultural and structural aspects of the movement, and the political opportunity structure shaping the movement's organisation. For example, the industry's seemingly strong political agency because of the Australian and UK Government's neoliberal agendas; Australia's economic reliance on natural resource extraction; and the long history of social protest in the UK that has shaped the horizontal decision-making structures of social movements in that country. The variable governmental responses at all levels of government in both countries (moratoria, legislated bans, public and parliamentary inquiries, industry approvals/refusals), as political processes that are affected by public opinion were also thought to provide important insights into the influence of the anti-fracking movement.

By choosing the anti-fracking movements in Australia and the UK, this study is able to contribute valuable insights into the study of the anti-fracking movement and social movement studies more broadly (Flyvbjerg 2006). Each case study thus represents its own jurisdiction, possessing characteristics that enable insights about how global-local

narratives are shaped by social movements, and as such, influence unconventional gas development policy.

## 3.3 Data Collection

Several methods of data collection were used. Primary data were collected via semi-structured interviews, and participant observation. Secondary data were obtained by reviewing prior theoretical and empirical studies (see Chapters 2 and 4) and conducting a desktop study of websites and documents pertaining to the unconventional mining industry, government, and the anti-fracking movement. Each of these methods is described in more detail below.

### 3.3.1 Desk-top study of Secondary Data

Secondary data refers to data that have been collected or produced by someone other than the user (Gray 2013). Types of secondary data include texts contained in documents and other resources collected by others (Gray 2013). They also include information that may not have been produced specifically for social research purposes but that is relevant to the study being undertaken (Bryman 2016; Lewis and Nicholls 2013).

In the present case, secondary data were collected via desktop (online) study. Resources consulted included government documents and legislation, industry documents, and websites and news media. Secondary data were also obtained from social media, movies, and documentaries. Content was sought that pertained either to the general topic of fracking and unconventional gas in Australia and the UK, or to the more particular concerns related to the local regions of the case studies. Predominantly, the documents used were relevant government and industry documents or related to the Australian and UK anti-fracking movements. The government documents consisted of related legislation, regulation, media releases, websites, YouTube videos, and transcripts of parliamentary speeches. Industry documents were industry related websites, inquiry submissions, and reports. Anti-fracking movement documents consisted of information found on websites, videos, documentary films, inquiry submissions, and newspaper reports. A range of reports from Inquiries held in Australia and the UK looking into unconventional gas

industry operations and impacts also provided important contextual information about the industry and representations of the anti-and pro-fracking discourses. These sources were found and analysed in order to establish a comprehensive picture of the case studies.

The unconventional gas industry and the ant-fracking movement is well documented within the news media. Whilst I did consult these sources to provide contextual information about certain events, I did not use all the available news reports for analysis purposes. Analysis of media representations of the pro- and anti-fracking discourses already exist in the literature. My priority for this project was to focus on the analysis on the primary data and documents that directly related to the pro- and anti-fracking discourses.

Documents present the biases of those who have written the document (Robson 2011). For example, the power relations epitomised through the production and consumption of social ideas and institutions are represented in journalistic narratives presented in news articles (Richardson 2007). So too, political texts embody political narratives through policy documents and government websites. As Fairclough (2013b, p. 244) points out, "political texts are not some superficial embroider upon political events but are a fundamental, constitutive part of them". The relationship between the content and the context, such as the purpose, and the institutional, social, and cultural facets, emphasise the perspectives, biases, and opinions of those who produced it (Robson 2011). Moreover, because these data have not been produced for social research purposes, they have the advantage of being unaltered and 'non-reactive' (Bryman 2016; Robson 2011).

The provision of a broad range of data ensures that an extensive representation of the range of narratives concerning fracking and unconventional gas; fracking and anti-fracking narratives can be examined. The addition of these heterogeneous documents to the data set benefits the analysis in that the full range of texts defined by Fairclough (2013a, p. 180) are represented: "written texts but also e.g., conversations and interviews, as well as the 'multimodal' texts (mixing language, visual images and sound) of television and the internet".

### 3.3.2 Semi-Structured Interviews

To include a comprehensive representation of narratives concerning fracking, audio-recorded semi-structured interviews were conducted (Packer 2011; Valentine 2005). Semi-structured interviews provide vital textual data for analysis by providing access to subjective understandings people attach to their circumstances (Packer 2011). The 'interview', a data-gathering method in which there is a spoken exchange of information (Dunn 2000, p. 149), is used for research for four core purposes:

1. To fill a gap in knowledge that other methods are unable to bridge efficaciously.
2. To investigate complex behaviours and motivations.
3. To collect a diversity of meaning, opinions, and experiences. Interviews provide insights into the differing opinions or debates within a group, but they can also reveal consensus on some issues.
4. When a method is required that shows respect for and empowers people to provide data. In an interview, the informant's view of the world should be valued and treated with respect. The interview may also give informants cause to reflect on their experiences and the opportunity to find out more about the research project than if they were simply being observed or if they were completing a questionnaire (Dunn 2000, p. 150).

Interviews as a research method bring a range of depth to responses according to the structure used: structured, semi-structured, and unstructured. Data obtained via structured interviews from fixed responses elicited by questions or tasks whose formats and wording have been pre-determined by the researcher (Dunn 2000; Robson 2011). The less structured approaches are more informant-focused (Dunn 2000) and allow flexibility, resulting in increased levels of depth, with rich and comprehensive responses (Bryman 2016; Robson 2011). As this research adopts a qualitative approach, semi-structured interviews were chosen as the interview structure. The semi-structured approach ensures that the range of topics relevant to the research questions are covered in the interview, yet allows for the modification of wording and order, and the introduction of new questions in response to what the interviewee has said previously (Robson 2011). In the interviews, participants were invited to discuss their views and experiences of the fracking and unconventional gas development. The research focus was open to the interviewee's perspectives to provide insights that might not have been accessible using a more structured approach (Bryman 2016).

### 3.3.3 Participant recruitment

Interview participants were recruited via contact details gained from their respective websites and an introductory email was sent to the provided email addresses. The introductory letter adapted for each participant group and case study (see Appendix 1, 2, 3 and 4) provided instructions on how to communicate their interest in participating. The participant numbers expanded with the assistance of people recruiting others from their networks. Also known as 'snowballing', the 'gatekeepers' from the social movements and government and industry bodies were asked to distribute the information about the research to attract the attention of possible participants (Bryman 2016, p. 415; Dunn 2000, p. 160; Valentine 2005, p. 117). Interested participants who responded to the introductory email were sent the participant information sheet, adapted for each case study (Appendix 5 and 6) and invited to participate.

Participants were invited to represent the broad views of the fracking narratives and experiences of unconventional gas development. They consisted of members of the case-study social movements in Australia and the UK, and relevant industry and government officials. The participants invited included landowners who were, or could have been, affected by the unconventional gas industry and other members of the public from these communities. People were also invited to participate who were actively involved in the resistance to unconventional gas development and/or fracking.

In Australia, participants were originally sought from the origins of the phrase, 'Lock the Gate', in the Darling Downs region in Southern Queensland, and from Gippsland in Victoria, where recent state legislation bans unconventional gas development. The response in Queensland was small and the Lock the Gate Alliance declined to endorse the study because of 'research fatigue' (an over-abundance of research and participation requests for research in relation to CSG mining in that area). As a result, the case-study parameters needed to be adjusted to fulfil the desired participant numbers. Participants were then sought across the country. At the time, government Inquiries about fracking were being conducted in Western Australia and the Northern Territory and the anti-fracking movement was active in both states. Participants were also sought from New

South Wales and South Australia. Finally, participants were recruited from every state in Australia except Tasmania and the Australian Capital Territory.

In the UK, participants were sought in the North of England, where the anti-fracking movement is most active, and where there are active protest camps. The counties represented were Lancashire, Yorkshire, Cheshire, and Manchester. At the time of data collection, the local planning authorities of Lancashire and Yorkshire had given planning permission for several unconventional gas projects, opening the way to the next phase of their development.

To ensure that all aspects of the fracking narrative were represented, politicians and government and mining sector officials were also invited to participate. Industry officials were invited from companies that operate in both Australia and the UK. Only one industry representative was recruited from Australia. In Australia, five state government politicians were initially recruited; however, because of a 'snap' state election in Queensland, only one state MP, from Victoria, was interviewed. Only one politician responded from the UK and no industry representatives were successfully recruited. No government officials were recruited from either country. The sample composition is summarised in Table 9.

### 3.3.4  Fieldwork

In total, 44 people participated in 40 semi-structured, audio-recorded interviews. The original goal was for 30 participants, 15 in each country; however, a larger number were willing to participate, 29 in Australia and 15 in the UK, yielding a final sample of 44. Table 9 shows the sample composition, according to location and participant category. With regard to participant types, anti-fracking protesters included people actively involved as citizens in anti-fracking activities, members of a local/national anti-fracking group, or individuals associated through some other local community organisation. Professionals also fall under the anti-fracking banner, but in a professional capacity (lawyers, doctors, researchers, members of NGOs), rather than as members of the general public. The participant titled 'politician' was pro-industry. The 'industry official' is self-explanatory.

Table 9: Breakdown of participants

| Country | State/County | Participant Intext Reference | Participant Types | Participant Number |
|---------|--------------|------------------------------|-------------------|--------------------|

| Australia | Queensland | Qld | 5 anti-fracking<br>1 professional<br>1 industry official | 7 |
|---|---|---|---|---|
| | New South Wales | NSW | 2 anti-fracking<br>1 professional | 3 |
| | Victoria | Vic | 7 anti-fracking<br>2 professionals<br>1 politician | 10 |
| | South Australia | SA | 3 anti-fracking<br>2 professionals | 5 |
| | Western Australia | WA | 3 anti-fracking | 3 |
| | Northern Territory | NT | 1 anti-fracking | 1 |
| United Kingdom | Lancashire | Lanc | 1 anti-fracking | 1 |
| | Yorkshire | Yksh | 9 anti-fracking | 9 |
| | Cheshire | Chsh | 3 anti-fracking | 3 |
| | Manchester | Mnch | 1 anti-fracking<br>1 professional | 2 |
| | Total participant types: 35 anti-fracking protesters; 7 professionals (also anti-fracking); 1 politician (pro-industry); 1 industry official | | | |
| | | | | **Total participants: 44** |

The interview questions had three general foci. Firstly, they were themed around the narratives of fracking and unconventional gas, but also asked about energy and the experiences of the unconventional gas industry and decision-making pertaining to unconventional gas development. Secondly, questions focused on the participant's experiences being part of the anti-fracking community and their perception of any potential influence of those narratives. Finally, the questions explored the potential for resolutions of the perceived problems. Tables 10 and 11 present the questions used to frame the conversations: the semi-structured interviews. Table 10 presents the questions for anti-fracking protesters; Table 11 presents the questions for people working for government or industry.

Table 10: Interview Questions for Anti-fracking protesters

| Can you tell me what does 'unconventional gas' mean to you? |
|---|
| What does 'fracking' mean to you?<br>   &bull;   If these questions are seen to be one and the same….<br>         ○  What do you think the difference is between fracking and unconventional gas? |
| How then, does the development of unconventional gas in your region affect you?  And your community? |

| |
|---|
| • If different… |
|     ○ And how does fracking affect you? And your community? |

| |
|---|
| Does the development of unconventional gas have broader implications? And fracking? |
| Do you have concerns about the development of unconventional gas in general? |
| What do you think about energy production? How and why it is produced? |
| Who do you think is driving the move towards unconventional gas for energy production, locally and globally? Why? |
| Do you think that developing unconventional gas is necessary? |
| What would happen if the development did not happen? |
| What are the differences between what the movement says about fracking and unconventional gas and what the gas industry says, and what the government say? |
| I am going to ask some questions regarding the gas industry, government separately because I am interested in what you see their messages about unconventional gas, fracking is, and how that affects you personally.<br>    • What do you think the gas industry says about fracking and unconventional gas?<br>    • Why do you think they talk about unconventional gas that way? How does that make you feel?<br>    • What do you think government says about fracking and unconventional gas?<br>    • Why do you think they talk about fracking that way? How does that make you feel? |
| Can you tell me how you found out about the Lock the Gate/Frack Off movement? |
| What do you think is the role of Lock the Gate/Frack Off? |
| Who participates in Lock the Gate/Frack Off? What type of people involve themselves? Why do you think attracts this range of people to the group? |
| Do you think the movement is different to other types of action groups? Why? |
| Why did you get involved? Farming/environmental/both/other |
| How do you participate in Lock the Gate/Frack Off? |
| What do you think are the impacts of Lock the Gate/Frack Off? |
| How much influence do you think Lock the Gate/Frack Off has on public perceptions? On government/industry policy development around unconventional gas development and energy production in general? On social licence to operate? |
| How do you think these conflicts of interests between Lock the Gate/Frack Off can be resolved? |
| Do you see a solution in government or industry policy development? |

Table 11: Interview Questions for Participants working for Government or Industry

| |
|---|
| Can you describe to me the term, 'unconventional gas'? |
| Why is it being developed? In general? In that region specifically? |
| Can you describe to me 'fracking'? |
| Why is this process used? |
| What are the implications of the development of unconventional gas- and the use of the fracking process? - The risks? Locally? Broadly? |
| What would happen if the development did not happen? |
| Can you describe to me what you think the general public think of these terms? |

| |
|---|
| Do you think the social movement, Lock the Gate/Frack Off, represents the general public's perceptions of these terms? Why? If not, what do you think that group says about those terms? |
| Why do you think Lock the Gate/Frack Off came about? |
| Who do you think is associated with the group? Why? |
| What is the difference between how the government/industry views unconventional gas compared to Lock the Gate/Frack Off |
| If there are differences, why? |
| Do you think that Lock the Gate/Frack Off is effective? Why? |
| Do you think that Lock the Gate/Frack Off has any influence? How? On public perception? On unconventional gas development generally? On government policy? On social licence to operate? |
| How do you think these conflicts of interests can be resolved? |
| Do you see a solution in policy development? |

A total of 40 interviews was conducted. Of these, 36 were conducted individually. The remaining 6 participants were interviewed in pairs. The interviews were mostly face-to-face and took place in a public place or workplace, 4 were conducted over the telephone or on Skype. Each face-to-face interview was conducted at a location near the home or workplace. All interviews were audio-recorded and lasted between 30 minutes and two and a half hours. Each participant signed a participant consent form before the commencement of his or her interview. Consent forms were sent and returned via email if they did not participate in a face-to-face interview. All communications with participants took place either over the phone, or via email to establish the time and place of the interview and any other clarifications. To ensure the collection of data was ethically grounded, this study gained ethics approval from the Human Research Ethics Committee at the University of Adelaide (HREC approval number: H-2017-037).

The fieldwork took place between October 2017 and June 2018. Face to face interviews took place in Victoria in October 2017, in New South Wales and Queensland in December 2017, and in the UK in March and April 2018. The phone interviews and face to face interviews in South Australia took place intermittently over the fieldwork's allocated time.

In addition to the interviews, I visited various sites to add to the depth of understanding of the case studies and the problems under discussion, for example, the localities and the sites of contestation that may be raised in an interview. I drove around the contested regions to appreciate the impact the industry would have on the landscape of these communities. This included visiting sites in NSW where the impact of the anti-fracking

campaign is still visible, particularly in the Northern Rivers, and in the UK, going to small villages and driving down the country lanes.

When possible, I also attended local events to broaden my understanding of the issues under research. For example, a film, *The Bentley Effect*, was shown at my local cinema. This film documents the anti-fracking movement experience about three significant anti-fracking campaigns in the NSW Northern Rivers region between 2012 and 2014. In the UK, I visited two blockades that have been major operations for the British anti-fracking campaign, Preston New Road, Lancashire, and Kirby Misperton, Yorkshire. I also had the opportunity to attend the Minerals and Waste Joint Plan Examination Public Inquiry which was directed by the Northern Yorkshire County Council. The Council, industry representatives, non-government organisations (NGOs), local individuals, and community organisations participated in this Inquiry. On the day that I attended, the focus of discussion was on developing guidelines on the distance between well sites and other sites within the landscape, with particular attention to residential housing, schools, and other public facilities, but also including national park boundaries. This Inquiry provided insights into local decision-making processes in practice. Additionally, it presented details of the important risks of the industry's practices and the concerns of the local anti-fracking groups.

## 3.4  Data Analysis

### 3.4.1  Thematic Analysis

A thematic analysis was used to analyse the interview data. A thematic analysis systematically explores the data to identify themes and patterns of social and cultural meaning (Lapadat 2010). Used on its own, thematic analysis is an anomalous qualitative analytic approach because it presents a method, unrestrained by theoretical obligations – as opposed to a methodology that is theoretically informed and confined (Clarke and Braun 2017). Thematic analysis is useful to interpret qualitative data for a range of research methods across many disciplines and fields (Clarke and Braun 2017; Lapadat 2010; Nowell et al. 2017).

Thematic analysis is a sense-making approach, and is useful approaching, interpreting, and finding the deeper meanings and understandings in the data (Lapadat 2010), such as the varying perspectives between participants, differences and similarities in their narratives and unanticipated insights (Nowell et al. 2017). It is a useful method for analysing interview data to ascertain themes from the lived experiences, beliefs and perceptions, and behaviour and practices of participants (Clarke and Braun 2017). Thematic analysis is also useful for managing and summarising key features of a large data set, without losing the context (Lapadat 2010; Nowell et al. 2017). Thematic analysis is not only used to summarise the data, the principle aim is to identify and interpret the important (not all) themes of the data (Clarke and Braun 2017). In addition, thematic analysis offers flexibility in that it can be modified according to the needs of the study and provides deep, comprehensive, and complex explanations of the data (Nowell et al. 2017). Thematic analysis is flexible in terms of "research question, sample size and constitution, data collection method, and approaches to meaning generation" (Clarke and Braun 2017, p. 297).

Ranges of actions were used for the thematic analysis. Firstly, the data were coded and classified according to dominant themes (Lapadat 2010). Secondly, the resulting thematic structures were interpreted by looking for "commonalties, relationships, overarching patterns, theoretical constructs, or explanatory principles" (Lapadat 2010, p. 926). For each of these phases the programs NVivo 11 Plus and NVivo 12 Plus (QSR 2020) editions were used. Coding encapsulates the interesting features of the data and provides the building blocks for themes, which are the larger patterns of meaning (Clarke and Braun 2017).

### 3.4.2  Narrative Analysis

Understanding humans construct, explain, and make coherent the human condition, experience, and the world around them is a central area of analysis within social sciences (Thornborrow 2012; Scott 2015). Narrative analysis enables an understanding of the cultural resonance and meaning of these perceptions (Thornborrow 2012). Kohler Riessman (2008, p. 540) states that use of the term 'narrative' is often used in the social sciences to analyse interview data to refer to:

Stories told by research participants (stories, which are themselves interpretive), the interpretive account an investigator develops based on interviews and fieldwork observation (i.e., a story about stories), and even the interpretive narrative a reader constructs after engaging with the participant's and investigator's narratives.

Narrative analysis is useful because it is a retrospective way of understanding because narratives necessitate looking backward and grasping the movement of events within a greater context (Freeman 2015). This is important because we are able to gain an understanding of the large and small stories that make up the moments in "the lives of real human beings" (Freeman 2015, p. 28). In gaining an understanding of the human world "there is no getting around the equally significant fact that we have to await the movement of time in order to make sense of what exactly has gone on" (Freeman 2015, p. 28).

Narrative analysis interrogates the understanding of the themes found from the thematic analysis (Kohler Riessman 2008). To do so, there is a variety of approaches to narrative analysis. De Fina and Georgakopoulou (2015, p. 3) propose using a "social interactional" method for analysing narratives that involves concentrating on the local interactions within their discursive and sociocultural contexts. Kohler Riessman (2008) presents a typology of four types of narrative analysis outlined in Table 12.

Table 12: Typology of Narrative analysis by Kohler Riessman (2008, p. 540)

| Thematic | Interrogates what a story or group of stories is about | The building blocks for all narrative analysis |
|---|---|---|
| Structural | Concentrates on how a story is composed to communicate particular communicative aims | |
| Dialogic/performative | Questions how talk among speakers is interactively (i.e., dialogically) produced and performed as narrative | May be used to draw on to add other dimensions to the analysis |
| Visual | Makes connections between words and images by interpreting images to craft a narrative | |

I have used all of the types of narrative analysis illustrated in Table 12. Adding to the thematic and structural components of the narratives within my analysis, I refer to my own experiences in the field and explore the processes of protest and political

participation performed by the anti-fracking movement. I also use images to help my interpretations of certain narratives.

## 3.5 Limitations

The case studies were used in this study to explore the anti-fracking movement in Australia and the UK to reveal the global aspects of the movement whilst also revealing the unique and common aspects related to each country and the individual movements (Mills 2008). Problems arose from the case study selection (Mills 2008). The broad scale of the study risked overgeneralising characteristics of the anti-fracking movement in each country. Conversely, the focus on specific regions within those countries reduces the possibilities to examine the broader range of experiences and narratives in each country (Mills 2008). Moreover, all of the cultural norms, values, and meanings between countries and individual communities was not always self-evident and required clarification and contextualisation (Mills 2008). Additionally, there is a risk that some of these details were missed or misunderstood in writing this thesis.

The use of interviews as data, too, has its limitations. Interviews are contextualised by the values, politics, and the cultural, social, political, and structural power relations of the interviewer and interviewee (Watts 2008). To ensure the integrity of the research, the researcher will need to be clear and transparent about the role and expectations of the participant (Watts 2008). Additionally, as participants provide, at times, private information for the purpose of placing their thoughts into the public arena, the central ethical considerations are confidentiality and consent (Brinkmann 2008, p. 472).

## 3.6 Conclusion

This chapter provides the methodological principles underpinning this qualitative research and the details of the methods used to collect the data for the thematic analysis. Centred on a thematic analysis of the data within the context of the case studies, the study aims to understand influence of the anti-fracking movement on mining policy development. The analysis uses texts (written texts from documents, transcriptions of

interviews, notes from participant observations, movies, documentaries, and texts from social media, news media, and websites) to focus on the anti-fracking narratives produced by communities, social organisations, and institutions. The use of Australia and the UK as case studies enabled the empirical examination of the real-world contexts of the anti-fracking movement, to highlight their unique narratives. This allowed for an in-depth and critical analysis of the social movement that is catalysed by anti- and pro-fracking narratives. The following chapter will present the context of the unconventional gas industry and present the two case studies, the anti-fracking movements in Australia and the UK.

# Chapter 4 Background to the Case Studies: The Anti-Fracking Context and the Unconventional Gas Industry

## 4.1 Introduction

Chapter 2 established that the development of unconventional gas has gained momentum globally as a contentious energy resource. This chapter (Chapter 4) sets the context for the description of the anti-fracking movement by presenting a history of the unconventional gas industry from which the anti-fracking movement emerged. There is a focus on the governmental structures and narratives that frame the anti-fracking movement, with particular attention to those in Australia and the UK. The chapter then introduces the case studies: the anti-fracking movements in Australia and the UK.

## 4.2 The Unconventional Gas Industry

In the United States of America (US), the development of unconventional gas and oil progressed rapidly because the process of hydraulic fracturing increased the accessibility, scale, and speed of the operations and provided immense economic opportunities (Blake 2016). To take advantage of these opportunities, over 20 states actively promoted the development and use of hydraulic fracturing (Cook 2014) and taking the country to lead producer of unconventional gas globally (Graham et al. 2015). The production of unconventional gas increased from less than 5% in 2000 to 67% in 2015 (Nace et al. 2019). Under the Presidency of Donald Trump, the winding back of regulations for the energy sector and the removal of an emphasis on climate change within policy development has set the scene for the unconventional gas industry to continue expanding unhindered (Ladd and York 2017).

The development of unconventional gas has created a new geopolitical and economic paradigm regarding the production of fossil fuels and energy across the world because in contrast to conventional gas reserves which are limited, unconventional gas can be found

all over the world (Bocora 2012). It is estimated that gas will overtake coal to become the second largest primary energy source and that unconventional gas will make up most of this demand (Bocora 2012, p. 441). The summary of unconventional oil and gas resources in Table 12 demonstrates the capacity for growth in the industry globally.

Table 12: Summary of global oil and gas resource assessments in trillion cubic feet (Tcf), adapted from Dong et al. (2011); and Dong et al. (2016)

| Region | Coal seam gas | Tight sands | Shale | Total |
|---|---|---|---|---|
| Commonwealth of Independent States (CIS) | 859 | 28,604 | 15,880 | **45,343** |
| North America (NAM) | 1629 | 10,784 | 5905 | **18,318** |
| Australasia (AAO) | 1,348 | 6253 | 2690 | **10,291** |
| Europe (EUP) | 176 | 3525 | 2194 | **5,895** |
| Latin America (LAM) | 13 | 3366 | 3742 | **7,122** |
| Middle East (MET) | 9 | 15,447 | 15,416 | **30,872** |
| Africa (AFR) | 18 | 4000 | 3882 | **7,901** |
| **World** | **4,052** | **71,981** | **49,709** | **125,742** |

Australia particularly has significant capacity in terms of its coal seam gas reserves, but also in terms of its tight sands and shale (Figure 5). The UK, within this European context, has more prospects with shale.

Figure 5: World shale gas resources. Image taken from (Torok and Holper 2017)
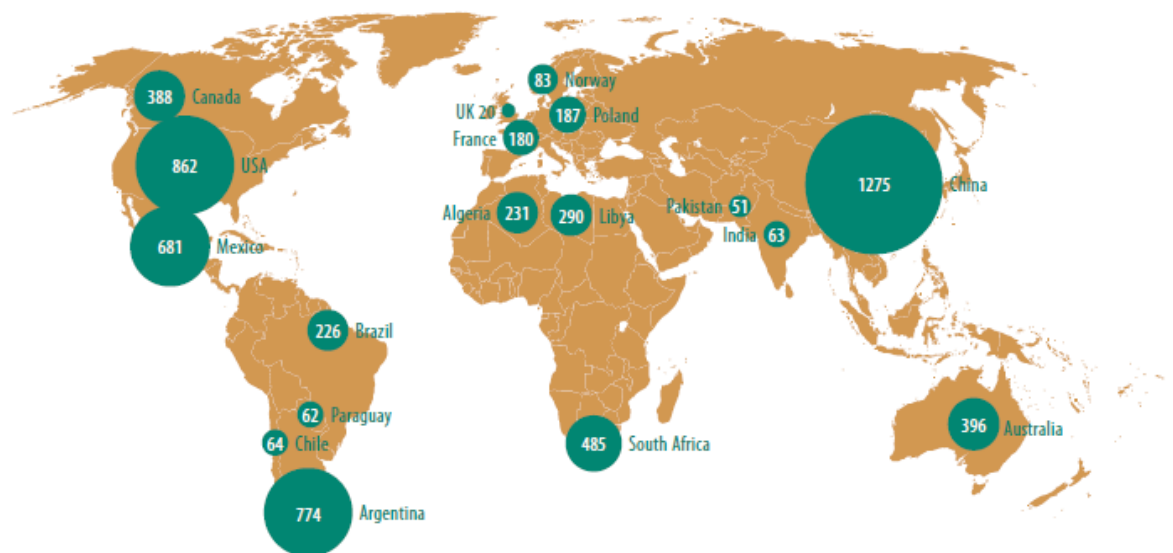


The geopolitical contexts that surround unconventional gas not only epitomise a progression of capitalism into as yet underexploited natural resources, but also shadow the fossil fuel industry's vision of future resources (Kama 2019). The dominant narrative of unconventional gas is therefore built on a platform that it is a bridging fuel that will

facilitate decarbonisation. It is from this 'potential', which putatively strengthens its economic viability and provides nations with the potential for energy security, that national energy policies are built (Kama 2019).

## 4.2.1 Unconventional Gas in Australia

Coal seam gas (CSG) was the first unconventional gas resource to be extracted in Australia, with gas fields first established in Queensland in 1997 and soon after that in New South Wales (Leather et al. 2013; Luke et al. 2018a). Australia contributes significantly to the world's production of unconventional gas with a well-established industry in Queensland, New South Wales, and South Australia (Bubna-Litic 2015). It is now developing industries in Western Australia and the Northern Territory. Australia holds just 2 percent of the world's gas reserves, on and offshore (Figure 6).

Figure 6: Prospective conventional and unconventional gas resources in Australia. Image: Geoscience Australia (2019b)
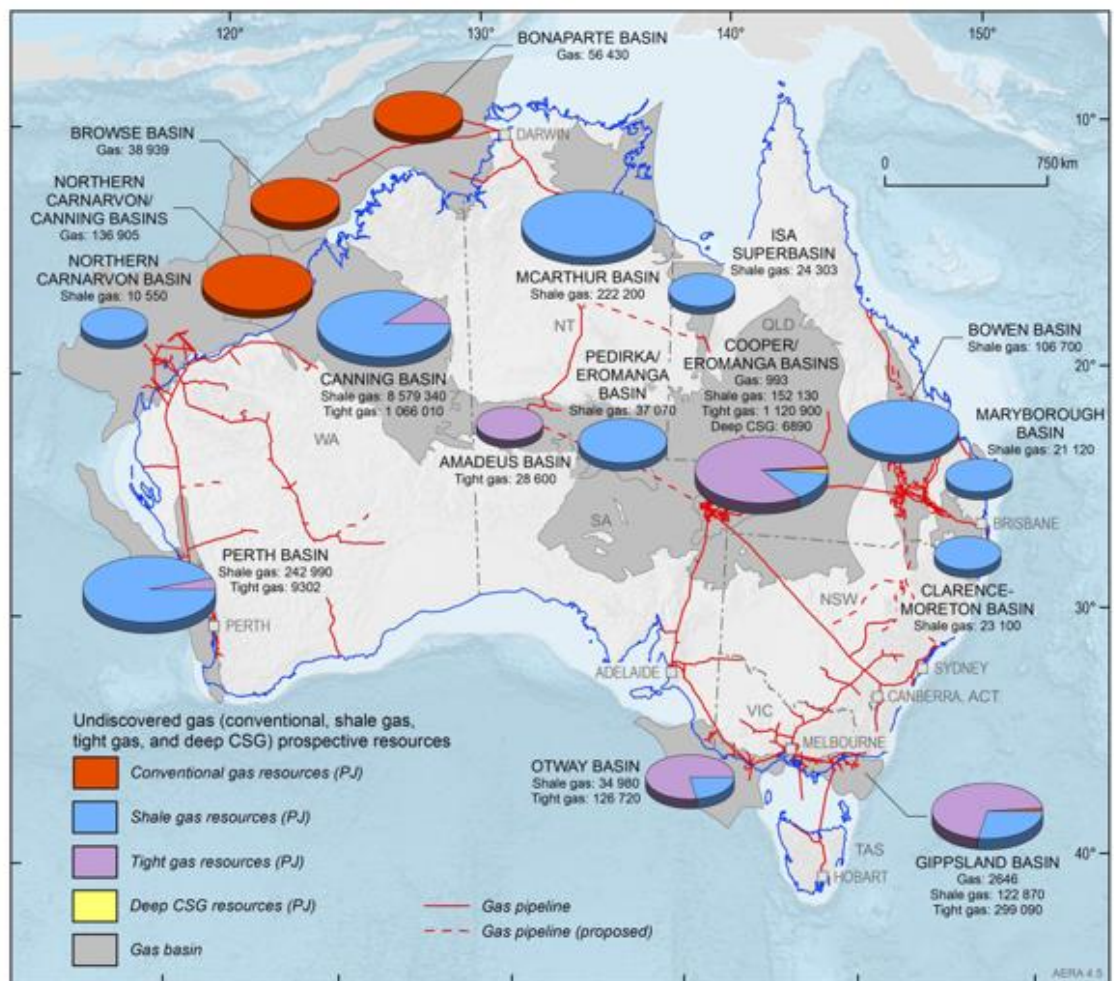
A substantial increase in natural gas production using hydraulic fracturing of coal seams between 2004 and 2010 placed liquefied gas as Australia's quickest growing national export commodity (Ingelson and Hunter 2014). By 2019, it was the largest exporter in the world (Philalay 2020). Unsurprisingly, the Australian Government views unconventional gas development as an important factor in regional growth (Department of Industry 2014). The scale and rate of Australia's Liquefied Natural Gas (LNG) development means it is anticipated to become the world leader in LNG production (Crossley 2018; Geoscience Australia 2019b).

CSG is presently the largest unconventional gas development, predominantly in Queensland and New South Wales (Luke et al. 2018a) and is expected to remain as the most important unconventional gas sector for the near future (Geoscience Australia 2019b). CSG from the Surat and Bowen Basins take up 90% of the East Coast of Australia's unconventional gas, but the potential for CSG is also identified in the Clarence-Moreton, Gloucester Gunnedah, and Sydney basins (Luke et al. 2018a). The industry has expanded to include shale and tight gas, viable because of the hydraulic fracturing process (Bista et al. 2019; Coram et al. 2014). Unconventional gas operations are underway in various capacities in remote locations in South Australia, Western Australia, and the Northern Territory from the substantial recoverable shale gas reserves. This is despite community resistance, moratoria, and Government Inquiries (APPEA ; Core Energy Group 2016; Luke et al. 2018a).

The success of Queensland's unconventional gas industry is built on the fact that its early CSG operations were located in relatively isolated areas where they could not easily be seen and, hence, attracted minimal opposition (Curran 2017). Tolerance of the industry faded as it encroached further onto farming land in New South Wales and Queensland (Hutton 2012; Luke et al. 2018a). Strong local community backlash from the development in the Northern Rivers region of New South Wales progressed into a movement against fracking. This had repercussions across the country and at all levels of government and altered the course of the unconventional gas industry in Australia.

Underground resources belong to the Crown in Australia and royalties go to the individual state governments that have the rights for exploration and the development of those

resources, including access rights to private land for extraction operations (Jacquet et al. 2018). However, Australia differs from the UK by providing for company autonomy and allowing the market to determine the pace and scale of the development (Witt et al. 2018). To maintain this autonomy, the companies pay fees to the states and are subject to requirements such as land access agreements with landowners, and a requirement to address environmental and social impacts (Jacquet et al. 2018).

The unconventional gas industry sits within the Federal and State regulatory systems in Australia. Federally, trade, commerce and authority regarding Aboriginal issues affect mineral development (Ingelson and Hunter 2014); however, it is the *Environmental Protection, Biodiversity and Conservation Act (EPBC Act)* that governs environmental matters associated with such developments (Hunter 2016; Maloney 2015). The States and Territories are the primary regulators of natural resource development and have their own approval and regulatory processes. This results in a complex and constantly evolving landscape for the unconventional gas industry in Australia (Ingelson and Hunter 2014). Since 2010, moratoria on fracking have been put into effect at various times in all States and Territories except for Queensland and the Australian Capital Territory (which does not have gas reserves) (Cox 2018; Hunter 2016). State Government Inquiries have also occurred in recent years in Victoria, South Australia, Western Australia, and the Northern Territory.

In New South Wales, a moratorium and a review by the New South Wales Legislative Council shaped the current legislative framework for unconventional gas (Hunter 2016). The NSW State Government responded to the review by putting into place a multilateral regulatory regime requiring all CSG activities to hold additional licencing and approvals. The effect was to place the burden of protecting the environment, including air, water, noise, and waste, along with a "community right to know", on the licensee. Compliance is then overseen by the Environment Protection Authority (Hunter 2016, pp. 402-403). The Narrabri Gas Project is the latest development in New South Wales and the largest proposal under the new regime (NSW Department of Planning Industry and Environment 2018).

The *Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia* found that current standards and design of unconventional gas wells, including the hydraulic fracturing process, would "if properly executed and located, generally limit risks to the environment and people to a low level", but that there are opportunities to "further reduce risks with a set of recommendations for additional prescriptive regulation" (Hatton et al. 2018, p. 48). The State Government response to this Inquiry was to lift the fracking moratorium on existing onshore petroleum titles and pass into legislation "new world-class strict controls" that include restricting approvals for fracking to land with existing exploration and production licences and continuing a ban on fracking in Perth, Peel and the South-West of the state, and in existing and proposed national parks (Government of Western Australia 2018).

The Northern Territory Government lifted their moratorium on fracking after the release of the report from the *Scientific Inquiry into Hydraulic Fracturing of Onshore Unconventional Reservoirs and Associated Activities in the Northern Territory* and put in place a strategy to address all 135 recommendations (Northern Territory Government 2019a). Their recommendations were divided into six reform areas to be implemented in three stages: strengthening regulation; ensuring accountable industry practice; safeguarding water and the environment, respecting community, and culture; maximising regional benefits and local opportunities; and planning for industry (Northern Territory Government 2019b).

In South Australia, the extractive industry has actively developed gas in the Cooper Basin for over fifty years and saw little resistance over the prospect of shale development in the region (Hunter 2016). The Otway Basin's substantial and economically viable onshore shale resources in the State's Limestone Coast region is also of industry interest (Geoscience Australia 2020). A Parliamentary Inquiry into unconventional gas development in the State's South-East was established in 2014 with the support of the (then) opposition Liberal Party and the Greens and found that the resources were economically viable for development. However, a strong local community-led campaign against shale gas development in the state's South-East was taken up by the opposition Liberal Party as an election campaign for the 2017 State Election. This was a winning agenda for them, attracting significant community support and one that resulted in the

imposition of a ten-year moratorium on fracking in South Australia's South-East (Fedorowytsch 2017).

In Victoria, strong community backlash against the development of unconventional gas development resulted in a moratorium on fracking and a Parliamentary Inquiry. This Inquiry found that the risk of the development outweighed the benefits and the Victorian Labor Government put a bill to ban all onshore gas development in the state to the parliament in 2017. The *Resources Amendment Legislation (Fracking Ban) Act 2017* went into operation on 16 March 2017.

While Tasmania's unconventional gas resources are actually unviable, a moratorium on hydraulic fracturing was nonetheless put in place until 2020 because of concerns over its impacts on their important agricultural industry (Department of State Growth 2018).

The dominance of the States over the unconventional gas resources are manifest by the Federal Government agenda to cut green and red tape and deregulate the industry (Productivity Commission 2020). The Deregulation Taskforce, put into motion in June 2019, underpins this agenda. The report, *Busting Congestion and Supporting Investment and Jobs: The Government's Deregulation Agenda*, directly advocates the Government position on regulation:

> The Government's default option will always be not to regulate. Agencies must put forward the case for new regulation imposed on business and the community. Therefore, the Government's regulatory impact analysis settings are also being strengthened to:
> - ensure the focus on regulatory cost doesn't come at the expense of understanding the economic and competition impacts of new proposals
> - task the Office of Best Practice Regulation to assess Independent Reviews for relevance to the recommended option
> - establish greater proportionality in Regulation Impact Statements, to ensure advice to Government is proportionate with the magnitude of the problem and potential impacts of proposed responses (Deregulation Taskforce 2019, p. 1).

These efforts to deregulate will be key in facilitating the industry progression in Australia and reflect the determination of the Federal Government to pursue unconventional gas as an integral part of their future energy market.

### 4.2.2 Unconventional Gas Development in the UK

The unconventional gas industry in the UK is still in the exploration phase and is yet to get into full operation (Whitton et al. 2017). Despite this, exploration drilling has occurred across the country and many proposals are in the pipeline with some accepted in Yorkshire (Gosden 2016) and Lancashire (Vaughan 2018). The National Government promotes the fracking technology as a way to secure the national energy market, promote economic growth and transition to renewable energy resources (Whitton et al. 2017). Developing shale gas is government policy (Department for Business Energy and Industrial Strategy 2019b). Nonetheless, gaining public support for the industry's development in the UK has been problematic (Williams et al. 2015, p. 2). Competing against the Government's advocacy of the development and the prioritisation its advancement is a strong community response regarding the local disruption and attachment to place, detrimental health risks, and impacts to air and water quality among other issues (Cotton et al. 2014).

Shale gas is the predominant unconventional gas resource sought by industry for development in the UK and found in three basins across the country: Midland Valley, Bowland-Hodder, and the Weald Basins (Figure 7). The main area of commercial interest is in the Bowland-Hodder Basin in the North of England. A fracking pad constructed in 2017 at the Preston New Road site, near Blackpool in Lancashire, has become an exemplar of the gas industry in the UK, with the potential to influence the future of the shale gas industry there (Szolucha 2018). Strong community protest against the development resulted in fracking bans by the Scottish and Welsh Governments, and exclusions from exploration operations in some areas of the Bowland-Hodder Basin, and all of the Midland Valley Basin. A focus on explorations in the South East (in the Weald Basin) was also reduced because of significant public protest (Andrews 2014).

Figure 7: UK shale basins and study areas. Image: Monaghan (2014)

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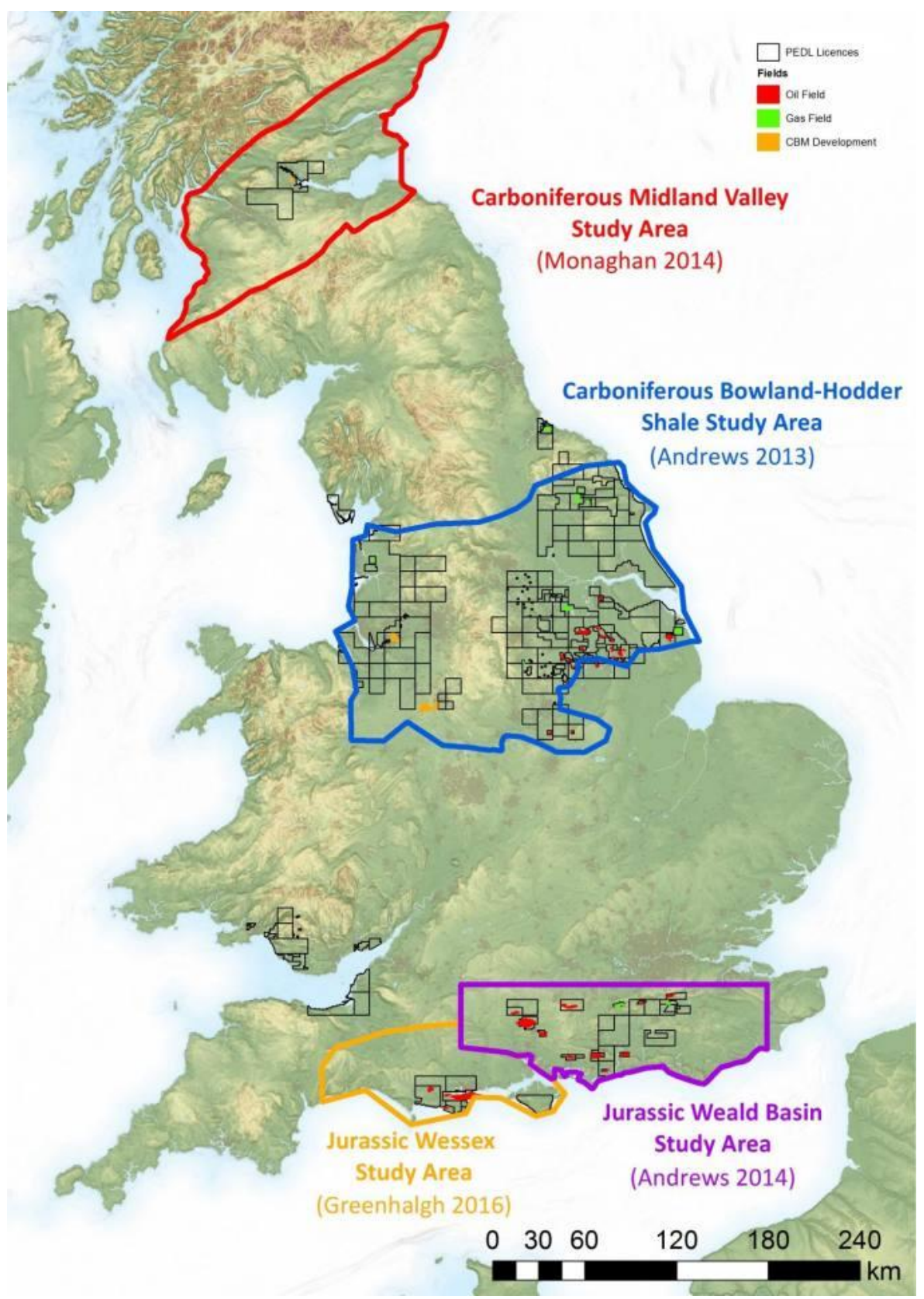
The UK Government positions the development of shale as a national need, but also that it is 'right' to discover the economic potential for onshore shale gas production in the UK and mitigate environmental impacts with robust regulation (Department for Business Energy and Industrial Strategy 2019b). The key to the Governments argument for unconventional gas is about ensuring energy security via the guarantee of domestic supplies of fuel (Department of Energy and Climate Change 2013; Priestly 2018). The UK's dependency on importing oil and gas increased after 2000 (along with reduced domestic production). The majority of its gas imports are from Norway, but it also imports LNG from Qatar and has pipelines with Belgium and the Netherlands, plus other small amounts of LNG from other different countries (Priestly 2018). The nation's infrastructure for gas is significant, with over 85% of households using gas for heating and 65% for cooking, as well as gas used in electricity generation, industry, and transport (Department for Business Energy and Industrial Strategy 2019b).

Early exploration of unconventional gas resources in Lancashire by the drilling company Cuadrilla resulted in seismic tremors of magnitudes 2.3 and 1.5 (Whitton et al. 2017). These seismic events were well-publicised, brought the industry and its drilling techniques under intense scrutiny, and resulted in a moratorium imposed by the UK Government in May 2011, thus suspending shale-related drilling operations throughout the UK (Whitton et al. 2017). In 2012, an independent investigation found that with adequate regulation the process of hydraulic fracturing was safe, and the suspensions were removed; exploration drilling was again permitted to continue with the full support of the Government (Rattle et al. 2018). A range of incentives were subsequently put in place by the Government to encourage the growth of the industry, including "industry tax breaks, the introduction of a new regulatory framework, reduced business rates for local councils and proposed community benefits packages" resulting in an increase in Petroleum Exploration and Development Licenses (PEDLs) applications (Whitton et al. 2017, p. 13).  Despite the economic prospects however, the industry and governments are still working to find ways to manage the risks (Blake 2016, p. 11). The suite of implications relating to the development is extensive and ranges from the risks associated with well construction, the vast number of wells, and the management of the related infrastructure such as roads and traffic, emissions, and pollution (Chen and Randall 2013;

Cotton et al. 2014; Luke 2017). A further challenge and impediment to the industry's progress is the planning approval processes which involve local county councils and National Government agencies, coupled with strong community opposition (Rattle et al. 2018).

Like Australia, subterranean resources are owned by the Crown Estate in the UK and the exploration and extraction processes are governed by a range of national laws (Witt et al. 2018). However, in contrast to Australia, the UK maintains a high level of National government control over the scale and pace of development in granting petroleum licences (Witt et al. 2018). The shale gas application process (Figure 8) includes a range of National Government agencies; the Environment Agency (EA), the Health and Safety Executive (HSE) and the Oil and Gas Authority (OGA), and local planning authorities usually operating through county councils, the Mineral Planning Authorities (MPAs).

Figure 8: Application process for shale gas in the UK. Image: Department for Business Energy and Industrial Strategy (2019b)
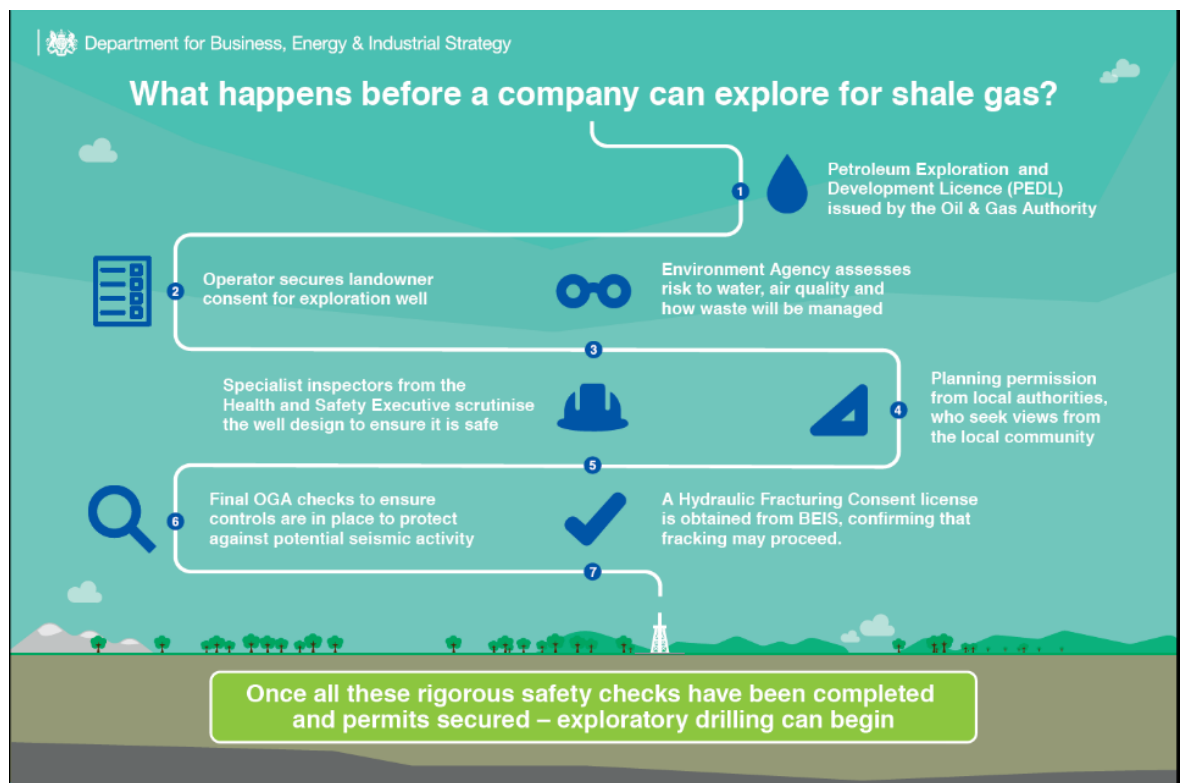


A recent addition to the framework, the Shale Environmental Regulator Group (SERG) works 'virtually' by liaising and sharing best practice with local authorities considering shale gas applications, and works as an intermediary between local authorities,

community, and industry (OGA 2019). The SERG commenced in October 2018 and brought together the onshore oil and gas regulators to administer the environmental aspects of shale gas exploration and production (OGA 2019). The MPAs operate outside of SERG and use guidance issued by the Department for Communities and Local Government (DCLG) on localised issues relating to the development such as, transport, dust, and noise (Rattle et al. 2018). SERG has two work streams that bridges it with all regulatory authorities:

1. A Planning Authority Liaison will share knowledge and information with mineral planning authorities, who are considering shale gas applications, on environmental regulation processes. Each mineral planning authority has been given the name of a key contact from each of the three regulators to engage directly.
2. Coordinators who work across EA, HSE and the OGA and act as a single point of contact for operators. They will co-ordinate regulation of shale gas sites, liaise with the operator to help them understand and plan for the regulatory process and facilitate progress and resolution of issues. The coordinator role will be staffed by EA staff (Department for Business Energy and Industrial Strategy 2019b).

At the most recent review of the application process, it was unclear how SERG fitted into the process, highlighting the current and evolving nature of the development of the UK Government's policy and regulatory framework for shale gas development in the country. Figure 8 also highlights the challenges for community participation in the process and their ability to influence government policy. It is yet to be understood whether the challenges of the previous regulatory framework (that it was too complex, distanced policy makers from affected communities and lacked participatory and democratic processes) (Rattle et al. 2018, p. 229) are resolved by the new virtual nature body and continuation of the existing agencies or processes (Department for Business Energy and Industrial Strategy 2019b). Although SERG in some ways deals with connecting policymakers with local communities, it is limited to the environmental impacts and not the full range of impacts of shale development. Moreover, the system continues to be complex and citizen avenues for influence remain minimal.

A moratorium on fracking put in place by the National Government in November 2019, demonstrates an uncertainty in the Government's shale gas agenda.

Ministers took the decision on the basis of a report by the Oil and Gas Authority (OGA), which found that it is not currently possible to accurately predict the probability or magnitude of earthquakes linked to fracking operations. Fracking already takes place across the world including in the US, Canada and Argentina. However, exploratory work to determine whether shale could be a new domestic energy source, delivering benefits for our economy and energy security, has now been paused - unless and until further evidence is provided that it can be carried out safely here (Department for Business Energy and Industrial Strategy 2019a)

The press release above describes the basis for the decision; however, this policy position has many loopholes. Firstly, this ban relates to the operation at Preston New Road in the North of England where the high-pressure hydraulic fracturing was in action. The use of the term 'fracking' is also ambiguous. Operations in the Sussex and Surrey that access unconventional gas, also use fracking techniques (acidisation and acid fracking): while these techniques use lower pressure, they still inject acid into boreholes to widen subterranean fractures (Baker and Styles 2019).

Another point is that this decision occurred at the height of the general election campaign at the end of 2019. The issue of fracking, politicised by the anti-fracking movement, meant that every political party other than the Conservative Party had an anti-fracking policy. The significance of this decision during the election campaign therefore was influenced by the need to secure the traditional Labour seats in the North of England, known as the Red Wall (Clarke 2020), also the heartlands of the anti-fracking movement. These recent events underscore the uncertainty around shale gas development in the UK. Despite this, at present, the pursual of unconventional gas remains government policy.

## 4.3  Introducing the Case Studies

The anti-fracking movements in Australia and the UK are representative of the universal anti-fracking narratives practiced through their social movement activities and include their uniquely local narratives. In Australia, the act of locking the gate, the direct-action strategy used by the Lock the Gate movement, enables farmers to obstruct mining companies' social licence to operate and therefore obstruct their ability to operate in their region. This 'Lock the Gate' campaign is central to the anti-fracking narratives in Australia. In the UK, the anti-fracking movement has successfully used civil disobedience

(blockades and rallies), has slowed down and disrupted the activity and progress of the industry.

*The anti-fracking movement in Australia – Case study 1*

The anti-fracking movement in Australia has its roots in the development of coal-seam gas in Queensland. As the development encroached on local communities, they began to directly experience the range of problems occurring as a result of the development, particularly a range of environmental issues (Colvin et al. 2015; de Rijke 2013; Towler et al. 2016). Shale gas exploration in the North, South, and West of the country also prompted local community responses with the range of concerns congruent to those expressed internationally. The movement in Australia, therefore, is also just as multifarious.

The purported opportunities of unconventional gas in Australia, such as providing an alternative energy source, reducing greenhouse emissions and fitting in with government energy and climate policy, were challenged by the increasing evidence of air and water pollution and increasing infrastructure surface footprint of the industry in Queensland and New South Wales (Freij-Ayoub 2012). However, there were other issues relating to unconventional gas developments crossing into highly productive, agricultural regions that were pivotal in the advent of anti-fracking narratives in Australia. The intrusion onto farming land, and the uncertainty of rehabilitation garnered narratives around property rights, stewardship, and the protection of agricultural landscapes (de Rijke 2013). The reluctance of the governments to consider the growing concerns relating to pollution and public health (de Rijke 2013). The focus to advance the industry despite uncertainties concerning public health effects, coupled with the increasing realisation of the lack of research in this area, resulted in communities fearing that potential burdens emanating from the industry would fall disproportionately on them (Coram et al. 2014). Moreover, other legal and policy issues also emerged, such as, compensation, impacts to land valuation and litigation processes (Turton 2015).

Important in the Australian anti-fracking paradigm is the voice of the many Aboriginal communities affected by the unconventional gas industry. Aboriginal people have a long history and often productive working relationship with mining companies (Langton 2015),

however the relationship with the unconventional gas industry has not been so straightforward. The perspective of Aboriginal communities has gained impetus and brought to the anti-fracking narratives a further range of complex issues (Norman 2016). The unique viewpoints of Aboriginal communities, particularly in relation to land rights and the history of land dispossession for the development of agriculture is further nuanced by contemporary cultural responsibilities of caring for country and the possibilities for autonomy in development (Howlett and Hartwig 2017). The impacts of the industry on custodial responsibilities to the land, together with their cultural and economic interests underscore the Aboriginal response to the development (Norman 2016). Trigger et al (2014 p. 185-186) outline a range of areas that impact the relationship between industry and Indigenous groups:

- The complexity of the competing interests between industry and numerous Indigenous groups
- Competency with engaging with Indigenous groups that considers the cultural and kinship of Aboriginal groups in relation to native title rights, and agreements
- Economic development factors including employment, training and the cost-benefits of industry involvement
- Recognition of the implications of industry operations on native title rights, cultural and historical importance of connection to land and waters
- Recognition of the significance of establishing mutually respectful interpersonal relationships across the parties as an effective governance capacity building process for Indigenous groups, particularly by engaging younger Aboriginal people in the process

Political and democratic characteristics also exist in Australian anti-fracking narratives and relate particularly to levels of community participation in decision-making. For example, the resounding 'no' result of a CSG poll question integrated into the Lismore City Council election in 2012, produced a strong political front through deliberative democratic processes that represented the regional sentiment impeding the industry's ability to progress in that area (Luke et al. 2013). Equally, Aboriginal people seeking inclusion in decision-making processes regarding unconventional gas development is to ensure

Aboriginal participation in democratic processes and decision-making that affect their communities (Norman 2016).

In Australia, an alliance was made with landholders, organisations, and communities in 2010 from a growing concern of the growing expansion of the coal and gas mining industries (Lock the Gate Alliance 2016). In relation to unconventional gas, the original protests were focused on the CSG industry, well-established in Queensland's South East, Western Downs region (Hardie et al. 2016), traditionally a broad-acre beef and cotton farming region with relatively low population (Luke and Evensen 2018). It is from this alliance that the so-called Lock the Gate movement emerged. The Lock the Gate Alliance is important in explaining the Australian context of the anti-fracking movement and the way the Australian anti-fracking narratives are framed. Although Lock the Gate is not the only aspect of the anti-fracking movement, they were instrumental in conveying the anti-fracking position into the broader Australian vernacular and they continue to work as a conduit for protesting unconventional gas development across the country (Lock the Gate Alliance 2016). While the true strength of Lock the Gate emanated later from anti-CSG protests in the Northern Rivers region in New South Wales, the development of the strategy, the name, and the alliance between environmentalists and conservative farmers began within the well-established gas fields of Queensland.

A meeting in 2010 with landholder and community organisations and a long-term environmentalist discussed a response to state and federal governments' environmental approvals for three large coal seam gas projects in the state. Hutton (2014, p. 27) describes the impetuses behind the movement and the convergence of environmentalist strategies within a traditionally conservative rural setting:

> It was obvious to me in early 2010 that the devastation of whole regions was not going to be stopped as the result of campaigns by farmers and environmentalists working separately. Our opponents were too large, too powerful, and too influential with all levels of government and all major political parties. Farmers and environmentalists needed to come together. Rural communities would need to build a defensive barrier against the encroaching mining industry and would require as much consensus as they could get.

It was at this meeting that a non-cooperation campaign (an environmentalist construct) was produced – landholders would deny land-sale negotiations with mining companies

and the term 'lock the gate' was coined as a statement of that non-cooperation (Hutton 2012). This non-cooperative action was a powerful act, although in many ways symbolic, as landholders actively disallowed social licence to operate (Luke and Evensen 2018). Signs were produced (see Figure 9) which farmers could put on their gates but also positioned their protest within a rights perspective. Figure 9 became the universal symbol of the Lock the Gate movement

Figure 9: The most used Lock the Gate sign emphasising the legal right of the landowner. Image: https://www.facebook.com/frackfreewa/



Although the anti-fracking movement did not gain traction in Queensland because of a level of social licence for industry in the region, it gained a strong foothold in North-East of NSW when the State Government started accepting development proposals in the Northern Rivers region (Luke and Evensen 2018). A highly productive rural region, the Northern Rivers is known for its 'extraordinary natural beauty', tourism and a local community thriving in "creative industries, festivals and community activism" (Luke and Evensen 2018, p. 134). As much as the advent of the Lock the Gate Alliance defined the start of the Australian anti-fracking movement, the events that took place in the Northern Rivers in many ways defined the components used for campaigning that are used nationally, and in some cases internationally today.

It is impossible to examine the anti-fracking movement in Australia without acknowledging Lock the Gate. Indeed, Lock the Gate is synonymous of the anti-fracking

movement in Australia because it was the one of the original grassroots groups to respond to the CSG industry in Queensland. Grassroots groups are central to the movement's structure.

Articulated as *communitarian*, by Hutton (2014), the decentralised model used by Lock the Gate is a conscious attempt to keep the organisation at an arm's length from the on-the-ground mobilisation and action and maintain a deliberative and consensus-built process of protest:

> Lock the Gate's approach to campaigning, however, is communitarian in that local communities are encouraged to take the leadership of activities that occurs in their region. This usually involves an active process of community mobilisation that draws on social movement theory and complexity principles, both emphasising the positive role to be played by decentralised networks with LTG leadership playing a facilitating rather than directive role. Local cultures, political beliefs, and lifestyles are all treated with respect; and consensus is built around a clear set of sustainability and social justice policies. Increasingly, the goal of participatory democracy is becoming part of the culture of resistance (Hutton 2014, p. 28).

Lock the Gate has grown to have a more facilitative role and, in many ways, shaped Australia's anti-fracking movement. Although Lock the Gate promote a 'communitarian' approach, the alliance is broadly persuasive in influencing each grassroots campaign. One way they do this is by employing approximately 20 staff to coordinate in local regions (Lock the Gate Alliance 2020a).

Several campaigns took place in the Northern Rivers including several blockades, most significantly, a blockade in Bentley which attracted up to 7,000 protesters (Luke and Evensen 2018) (Kia and Ricketts 2018). Many local grassroots groups emerged across the region at the time, such as the Knitting Nanna's Against Gas (KNAG), Girls Against Gas, CSG Free Lismore, and Gasfield Free Northern Rivers, to name but a few (Lock the Gate Alliance 2019).

Despite the local success of the Bentley campaign, CSG development is still pursued in NSW and protest campaigns continue to be active. The most prominent is about CSG developments occurring in the North West of the state (Figure 10), and the most prominent of those is the Narrabri Gas Project in the Pilliga National Park.

Figure 10: Campaign against the Narrabri Gas Project located in the Pilliga State Forest, south of Narrabri and the potential development of CSG in North-West NSW. Image, Image: https://www.csgfreenorthwest.org.au/about_us
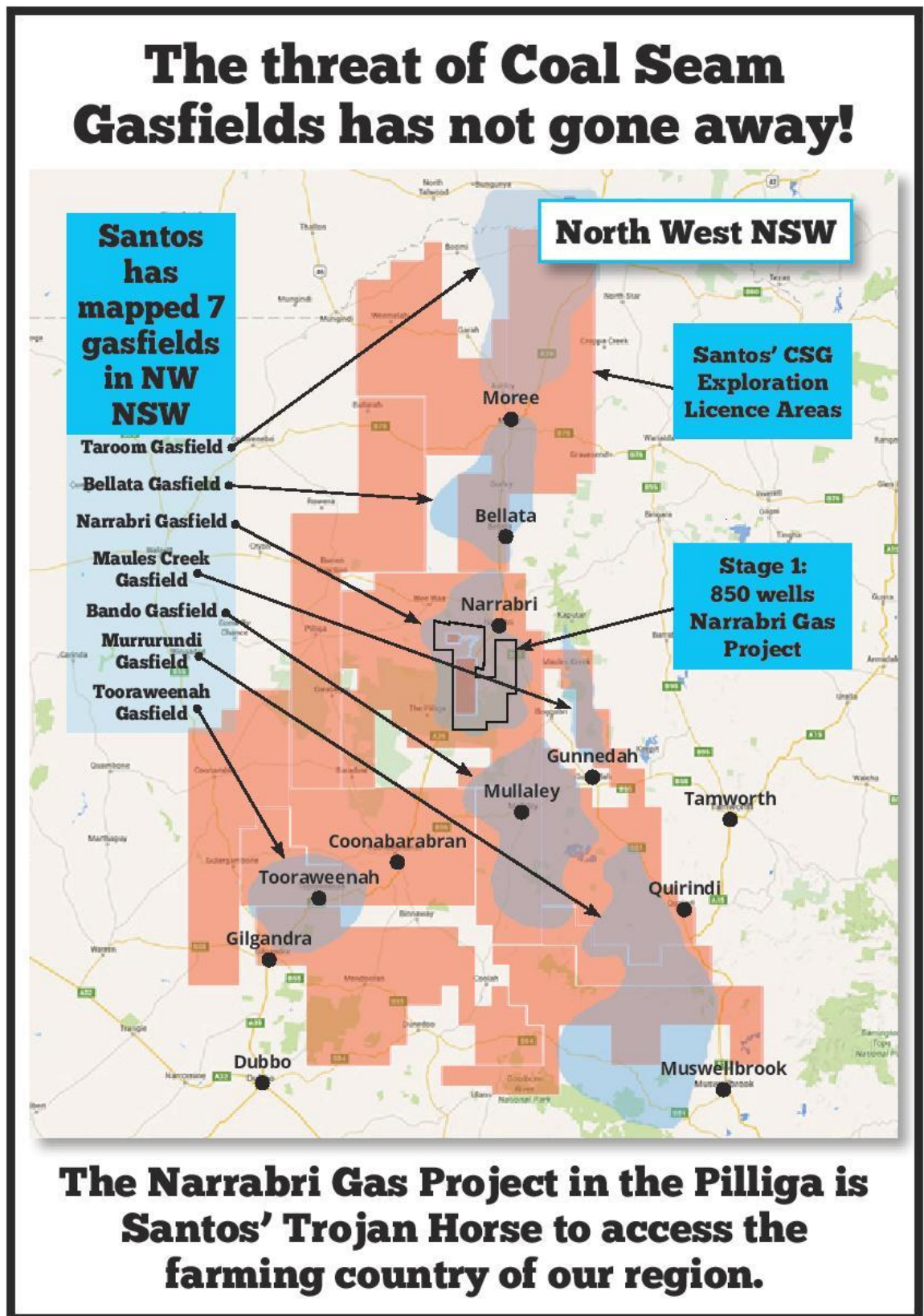
This project is particularly concerning for the anti-fracking movement because it interferes with both national and state parks and forests, and because the farmers in the area are concerned with the impacts of the industry on their local economies. The Lock the Gate argues that the use of flaring[8] is a fire risk for the highly forested region (Lock the Gate Alliance 2020b). Lock the Gate also argues that farmers are concerned that industry's excessive use of water will impose further strain on the stretched subterranean water resources, particularly when severe drought has hit farmers (Lock the Gate Alliance 2020b).

The Lock the Gate alliance supports many of the numerous local groups with 'awareness meetings', organised locally by volunteers. The Alliance also provides resources to local groups, including their high-quality website, their notable symbol and signs, and contacts. The website provides information, campaign resources, and links to social and legal support about how to protest and resist mining projects in their local communities. The group, now a nation-wide alliance with over "120,000 supporters and more than 450 local groups", also has paid staff and works, not only to support local anti-fracking campaigns, but also to lobby government and has branched out to other matters of protest, most notably the anti-Adani campaign (Lock the Gate Alliance 2016).

Although an integral part of the anti-fracking movement in Australia, Lock the Gate does not operate and is not affiliated with all the local grassroots anti-fracking groups in the country. Many anti-fracking groups operate completely independently from Lock the Gate. The anti-fracking movement has grown with groups of various forms across the country as the industry has sought to increase in scale. Along with the usual forms of protest such as, participating in demonstrations and lobbying the various state governments, these groups were also used to place submissions into the above-

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[8]Flaring: "Natural gas flaring, also called gas flaring or simply flaring, is the technical term used for the intentional and controlled burning (flaring) of excess natural gas. It is a common practice used in the oil and gas industry during the exploration, production, and processing phases. Flaring is responsible for millions of dollars of natural gas being wasted daily in the United States, equating to billions of dollars each year. This waste occurs primarily when companies are not able to sell natural gas fast enough because of the lack of necessary infrastructure (pipelines, refineries, and other technologies) to transport and process the natural gas. Therefore, the utility companies burn off excess natural gas through the process of flaring" (Atkins 2016 p. 320).

mentioned Government Inquiries. Victoria's campaign was a considered success, with the resulting ban on all onshore gas development made law in 2016 (Luke and Evensen 2018). Most of the participants for this project from Victoria felt that the campaign was over because of the ban. The South Australian campaign in the State's South-East was also considered a success with the 10-year moratorium put in place (PLCA 2015). Strong anti-fracking campaigns occurred in Western Australia and the Northern Territory leading up to their Scientific Inquiries. Despite the strong community opposition both Inquiries resulted in the lifting of their respective moratoria. In the Northern Territory, the whole moratorium lifted, and in Western Australia, the moratorium was partially lifted. The anti-fracking movement remains active in those states because of the continued development of unconventional gas.

*The anti-fracking movement in the UK - Case study 2*

The pivotal moment and impetus for the anti-fracking movement in the UK were a number of seismic tremors that occurred after the first ever fracking operation at Preese Hall, Lancashire, in 2011, of which the largest had a magnitude of 2.3 ML (Green et al. 2012; Jaspal and Nerlich 2014). The concern about unconventional gas, which had been growing since explorations first began in 2011 and subsequently when the first planning permission for shale gas extraction was granted in Lancashire in 2009 (Szolucha 2018b), was consolidated by the occurrence of these tremors. Instigating broader public protest, a call to arms by an anti-fracking group, Frack Off (Figure 11), was issued on a banner which was dropped from the Blackpool Tower (BBC News 2011).

Figure 11: Frack Off banner drop from Blackpool Tower – "Fracking is coming to the UK. We can stop it. Frack-Off.org". Image: Taken from https://www.indymedia.org.uk/images/2011/08/483061.jpg



The anti-fracking movement in the UK differs from the Australian case in that it has grown as a resistance to the establishment of the fracking industry. Until recently, the UK industry has been limited in its progression, and as mentioned above, is yet to be fully operational. From this perspective, the UK anti-fracking movement has been largely successful in maintaining campaign momentum and using technocratic processes to obstruct the shale gas industry's progress (Rattle et al. 2018). Fracking has also become a political issue, which is a measure of the success of the anti-fracking campaign in the UK. It has been banned in Wales, Scotland, and Northern Ireland (FOE 2019). Also, all political parties, apart from the Tory Party have policies against fracking.

Anti-fracking protests in the UK have been particularly potent in their blockade campaigns. There are currently six ongoing blockades across the country, two of which are located in the Northern England regions of this study's focus, Preston New Road, Lancashire and Kirby Misperton, Yorkshire (see Figure 12).

Figure 12: Map locating the anti-fracking blockades in the UK, including the Preston New Road and Kirby Misperton blockades in Northern England. Image: https://frack-off.org.uk/extreme-energy-fullscreen/



The blockades are concentrated where shale gas companies file planning requests. The Preston New Road and Kirby Misperton sites have passed planning permission, with the former in active exploratory operations. The site at Kirby Misperton is metres from a small village surrounded by farmland, and the only means of access is via the iconic 'country lanes'. The Preston New Road site too is a rural district not far from the cities of Blackpool and Preston. Although not as discrete as Kirby Misperton, the Preston New Road site sits within farmland and is close to small villages.

Another blockade, the Upton Camp, was located near Chester, in Cheshire County, south west of Manchester. This camp ran for nearly two years from when it commenced in 2014 until the protesters were evicted in 2016 (Frack-Off UK 2016). This site provided a significant impetus for the anti-fracking movement in the UK, which at the time of its eviction was "the UK's longest-running anti-fracking camp". The protesters resisted the eviction until the last moments by fortifying the site with "tunnels, treehouses and a moat" (Gayle 2016). This protest camp was established in a field where a shale gas well was proposed, but which was also close to the village of Upton, and in particular to its local school (within 500 metres) and houses within 200 metres of the site (Gayle 2016).

The UK anti-fracking movement also responds regularly (or maintains a constant flow of responses) to the various technocratic government processes of planning applications, public inquiries, and industry appeals. An example is an ongoing protest site near the Upton Camp at Ellesmere Port on the Mersey River, north of Chester. The site is in an industrial zone, close to the Mersey River, major roadways, and a residential zone. An application for a well test in 2017 was refused by the Cheshire West and Chester Councils in January (Hayhurst 2019b). A Public Inquiry was conducted over three months in early 2019 after the gas company appealed against the planning refusal (Hayhurst 2019b). The result of this is ongoing because an appeal by IGas was delayed in April 2020 (Hayhurst 2020). The local anti-fracking groups in Cheshire actively participate in all aspects of the Public Inquiry by writing submissions, protesting regularly at the site, demonstrating, writing 'freedom of information' applications to obtain greater transparency about the process, and holding public meetings to inform the wider community of the issues. The local anti-fracking campaign argues that the project involves significant risks to the high-density residential, industrial, and wetland landscapes within a 2-kilometre radius of the site (see Figure 13)

Figure 13: Map of Ellesmere Port demonstrating the 1- and 2-kilometre zones surrounding the unconventional gas proposal site used to promote a community awareness meeting, September 2019, organised by local group, Ellesmere Port Frack Free. Image: https://frack-off.org.uk/event/would-they-frack-ellesmere-port-information-meeting/
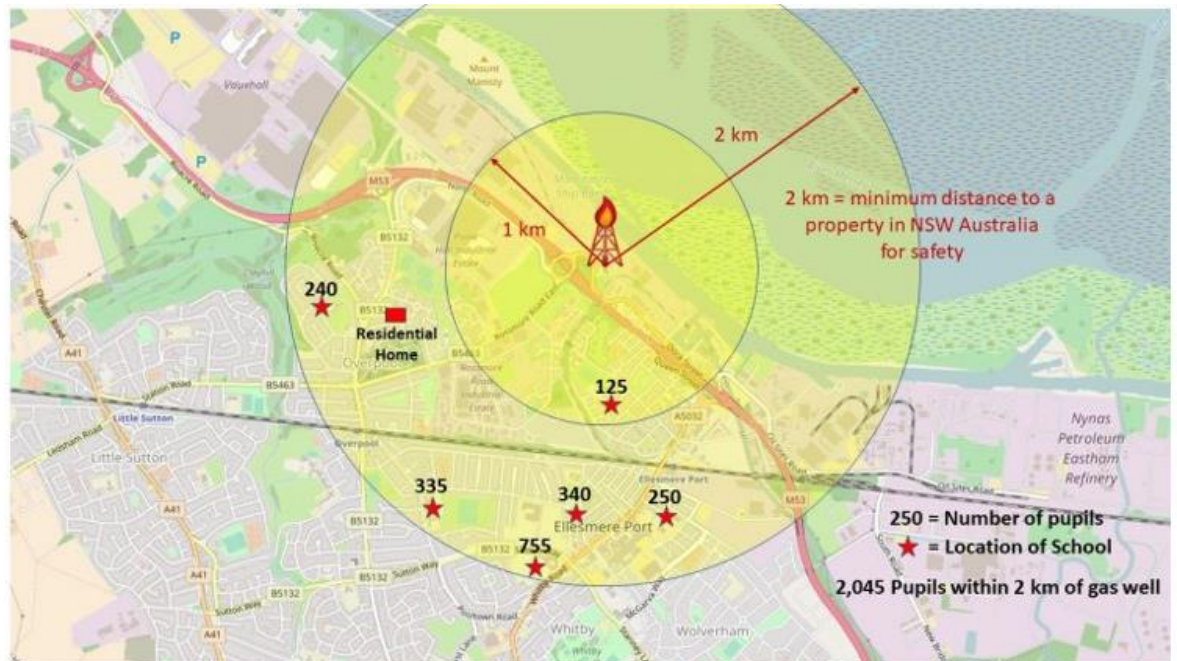


## 4.4 Conclusion

The unconventional gas industry is maintaining a global narrative about energy resources that asserts a fossil fuel paradigm. The ability to extract previously unviable gas and oil resources through technical advancements has revitalised the fossil fuel industry and strengthened its economic case within a strongly neoliberal global zeitgeist. The unconventional gas industries in Australia and the UK are in very different stages of development: Australia's coal seam gas industry is fully operational, and the UK is still in the exploration phase. Despite this, there are parallels between both national governments in that they seek to pursue and grow these industries. Parallels also exist because regionally and locally, there are disparities from national government rhetoric with moratoriums and bans in place. Both also have social movements that oppose the dominant narratives supporting unconventional gas development with concerns over the risks and impacts of development operations.

I have so far contextualised my study into the anti-fracking movement with a thorough examination of the literature, description of the research process and the background and context of the case studies. In the next three chapters I will present my key analysis findings.

# Chapter 5   The Anti-Fracking Narratives and Community

## 5.1  Introduction

This chapter presents the first of three research findings from the data analysis that characterise the anti-fracking movement as a social movement. The three findings relate to: (i) the anti- and pro-fracking narratives; (ii) the governance mechanisms; and (iii) protest.

This chapter is an analysis of the data to expose the ways in which the anti- and pro-fracking narratives are constructed. I found that the anti-fracking narratives are community centric. That is, the fundamental construction of the anti-fracking narrative is constructed around the perception that unconventional gas development is a social problem and thus anti-community. These narratives are founded on concepts of identity to place and community-based values that are incompatible with the neoliberal achievement-orientated and economically driven modes of operation of government and industry (Bartos and Wehr 2002). The movement's evolution from and for local communities, and its focus on community wellbeing make the anti-fracking narrative persuasive and a motivator for the community to actively participate in the unconventional gas political sphere.

## 5.2  Community-Centric Anti-Fracking Narratives Positioning Unconventional Gas as a Social Community-Based Problem

Anti-fracking narratives are constructed around an emphasis on local communities. Chapter 2 established that the anti-fracking movement is complex, with multi-party "argumentative polyogue[s]" at play, consisting of many protagonists, of conflicting positions (Lewiński 2016, p. 555). My analysis reveals ways that these complexities pivot on a narrative about community – a perception that unconventional gas development is a

social problem because of the range of risks and impacts to community. The concept of the impact to community is broad and all-encompassing:

> But that's what I feel that this is. It's inflicting something on the community. It's not a single community that's been affected by this suggestion – Do it! Give us your money! Do it! – No community at all (Participant UK – Lanc 1).

> It doesn't just affect the environment; it actually affects the whole sort of community (Participant Aust – NSW 2).

The community-based narratives not only refer to directly affected communities, but also extend to the broader community. The concerns are about the physical imposition of the industry operations on farming landscapes, and the detrimental effects to public health, the occurrence earthquakes and the high water needs of the process and contamination into the local environment relate directly to local communities (Annevelink et al. 2016; Choma et al. 2016; Finkel and Hays 2013; McKenzie et al. 2012; Meng and Ashby 2014). Even concern about the global issue of climate change is localised. The expansion of the industry is seen as a continued reliance on fossil fuels, detracting from, rather than bridging towards, renewable energy resources. Climate change, too, is seen to have impacts at all geographical scales (Lis and Stankiewicz 2017; Scanlan 2017). Overwhelmingly, the community-based implications of unconventional gas are broad and variable, as described by Ladd and York (2017, p. 71):

> …the fracking of a shale region's biophysical landscape for oil and gas development inherently creates a system of …socio-environmental impacts for local stakeholder groups and residents. Depending on how these impacts are experienced over time, place, and audience, mediated by conflicting discursive frames of assorted institutional and residential voices, these synergistic forces can produce the fracturing of a community's ecosystem, sense of place, and social fabric, as well as its patterns of political mobilization and democratic governance.

In order to problematise further the centrality of community within the framing of, and concerns about, unconventional gas, there is a need to explore and understand community within the context of unconventional gas development as a social problem.

### 5.2.1 Defining Unconventional Gas Development as a Social Problem

My analysis found that the anti-fracking movement frames unconventional gas development as a social problem. For example, the predominant framing of the

development in the interview data includes the risks to community wellbeing (to the environment, local communities, climate change, public health, safety), and people's rights (human and property), and other social implications (local community's economies, community division, morality).

In Australia, the Lock the Gate Alliance frames unconventional gas development as a social problem for a range of interconnected reasons. In explaining the movement on their website, they portray the risks of the development to local communities:

> Right across Australia, the well-being of communities is being put at risk by invasive coal mining, coal seam gas, and fracking. New and expanding coal mines and unconventional gas operations are encroaching on towns, villages and agricultural lands, harming quality of life, devaluing properties, destroying livelihoods, and dividing communities. Pollution of air and water is leading to serious illnesses and poor health outcomes. Other industries such as agriculture and tourism face labour shortages and rising costs whilst losing land and assets to mining. The natural and rural landscapes that are known and loved by local communities are being changed forever by the mining expansion (Lock the Gate Alliance).

In the UK, the anti-fracking movement similarly focuses their argument on the risks of unconventional extraction operations on local communities. In the opening statement on the Frack-Off Extreme Energy Action Network, an online campaign website, community and the social impacts of unconventional gas developments are the central focus:

> Fracking is a nightmare! Toxic and radioactive water contamination, severe air pollution and tens of thousands of wells, pipelines, and compressor stations devastating our countryside and blighting communities. All this to produce expensive gas that will soon run out using a process that directly accelerates climate change (Frack-Off Extreme Energy Action Network 2019).

My analysis also found that imagery is used to strongly convey the idea that unconventional gas is a social problem. Images such as those used in Figure 14 are important aspects of the anti-fracking narratives as they illustrate what is meant by the possibilities of unconventional gas and how the industry would impact local communities.

Figure 14: Poster - What does Fracking mean? Image: Authors own



The community-based themes in the images in this brochure include the destructive impacts to landscapes, the toxic chemicals used in the fracking process, and the consequential traffic of the fracking industry – all of which emphasise the industrial nature of the development. Aimed at a UK audience, the images of altered landscapes

and the industrial nature of the operations taken from Australia and the US are intended to portray the truth that will result from this type of development and the industrial nature of the development. The image of a large chemical truck in Figure 15 emphasises the industrial scale traffic and chemicals used in the extraction process – that these threats are 'coming', stresses the imminence and the proximity of the danger.

Figure 15: Frack Free Leeds poster – The Frackers are Coming. Photo: Authors own

The poster published by Frack Free United, Figure 16, similarly illustrates this community-based focus by emphasising a threat to local economies, local environments and landscapes, climate change and energy, and public health.

Figure 16: Declaration for a Frack Free UK background information poster. Photo: Author's own

These posters and brochures introduce community-related issues of industry operations that may not be known to the broader community, such as the poisons and lorries (known as trucks in Australia), both of which accompany unconventional gas development. Figures 15 and 16 also suggest contamination and lorries on country lanes and to the already congested cityscapes, which confronts people's value of their local landscapes.

The imagery and stories from people who have wells in their backyards, together with the vision of gas fields and burning water are testament to the US experience (Steger and Milicevic 2014). These narratives define the possibilities of the industry – a community perspective of the potential impact of the industry on their way of life. The anti-fracking movement engenders narratives framed in terms of their cultural difference that is an alternative to industrialisation (Escobar 1998). These narratives are constructed in defence of their localities and livelihoods and they subscribe actively in protest as a measure of their social and political autonomy (Escobar 1998). As Soyer (2015) describes, fracking is framed as a social problem in a range of ways: as a rights issue – human and property, contributing little to the local community's economy; a problem of risk – public health and the environment; a safety problem; a problem of community division; and as a morality problem.

Defining a social problem is problematic. In the first instance, social problems are often characterised as specific problems that are detrimental to society, damaging lives in unambiguous ways, and that are objectively determined (Goode and Ben-Yehuda 2009). Problematic too, the social problem is assessed according to the number of people affected, resulting in a potential for important social issues to be missed (Goode and Ben-Yehuda 2009). The idea of a social wrong is also often framed within the human rights paradigm, accompanied by the potential for ambiguous undertones. Bakan (1997) argues this point in a critique of the Canadian Constitution: although it is a symbolic document regarding social rights, the reality is that social wrongs continue despite the Constitution, and therefore, it legitimises social wrongs that occur and obfuscates the need for social change. As such, defining a situation, such as the development of unconventional gas resources as a social wrong is difficult, especially because it is grounded within legitimate narratives around energy and economy.

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Norman Fairclough's definition of social wrongs incorporates the failings of predominant discourses occurring from governance systems, as well as specific issues: social wrongs are features of social systems that are "detrimental to human well-being, and which could in principle be ameliorated if not eliminated, though perhaps only through major changes in these systems" (Fairclough 2013b, p. 13). Social wrongs from this perspective are not isolated in and of themselves but relate to the broader social systems in which they sit. Furthermore, by framing the issue(s) as wrongs rather than problems, Fairclough shifts the focus from something that is a difficulty or drawback to something that is more erroneous or even immoral. Fairclough's perspective highlights issues such as poverty, racism, inequality, and lack of freedom as social wrongs and the predominant neoliberal economic order (Fairclough 2013b). To illustrate neoliberalism as a social wrong, Fairclough argues that the effect of the collective greed of bankers, and the government policies that support them during the global financial crisis in 2008, contributed to people's inequality of wealth and income, and places the burden on ordinary people to bear the cost of repairing public finances (Fairclough 2011, p. 14).

The anti-fracking movement's arguments against unconventional gas development constructed around concepts of community (how unconventional gas will affect and is a problem for community) is persuasive. Principally, as I found in the interview data, it is persuasive because it cuts to the heart of what people identify with and value. People have an emotional connection to their communities. As such, themes embedded in the concept of community, such as threats to their community's natural, social, and economic resources, are emotive (Aryee et al. 2020). As a result, people are motivated into action, to protest or to participate in the unconventional gas political sphere more broadly. Moreover, there is an increase in the public's awareness and understanding of unconventional gas, including the industry processes, and the implications of how those processes could affect people and their communities.

## 5.3 Community-Based Identity within the Anti-Fracking Narratives

My analysis reveals ways in which a strong emphasis of the community within the anti-fracking narrative is constructed around the concept of identity, both individual and community. In both case studies, the community identity of participants living in rural areas was predominantly framed in terms of an attachment to the landscape. For example, the concept of identity was often expressed in terms of an emotional sense of connection to the landscape and the rural industries pertaining to that landscape:

> Well, we live on a farm. We've got 170 acres of quite hilly country, but it's very good productive grazing land for sheep and cattle, and we also grow trees and so, we nurture it. And you know, my partner and I have lived there for thirty years, and we've grown trees and we've looked after the land – we're custodians of it. Like, we feel a great affinity with the land like everyone who lives on the land does. … And to us, with that emotive thing of me going, the land's being wounded by fracturing, and who knows what's happening to the water table, and everything, all our springs and everything. You know, that's just an anathema to us, we're just like, for heaven's sake, this is just crazy! We've got olives and grapes, and …boutique beef, like Otway Prime is a fantastic, really good, you know, they're sold to restaurants in Melbourne, … and it's a tourist route and, we've got so much going for it, and they want to build gas wells! We're just going, sorry! (Participant Aust – Vic 2).

People are also attached to the sense of the beauty and function of a landscape – that it is something to be protected:

> Well, for our community, yes, so this is an area just to the north of York where it starts to become gently hilly, it's a very beautiful area, it has lots of areas of outstanding natural beauty involved in it and borders onto a national park, called the North York Moors. And so, it's an area that's not, perhaps number one in the tourist industry, but those who know, really love it (Participant UK – Yksh 1).

> Cheshire in the county is exquisitely beautiful, so then to contaminate that with four thousand wells, with all the heavy goods vehicles, that means the pipes, the treatment plants the compression stations, the, all the rest of it is just something I don't really want to happen (Participant UK – Chsh 3).

Even if not themselves farmers in rural areas, study participants demonstrated that they identified with the farming/agricultural economies and landscape. For example, participants construct the landscape and rural industries in possessive terms, such as 'our' and 'we':

But the reality, in reality, our geology is complex and fractured and so on.
Anyway, it would be, it's going to be very easy to damage the aquifers.  Ground
water… I mean the pollution of ground water, I know this has happened in
Australia, it's happened everywhere as well but it's a real threat here because um,
the quality of the water will affect the agriculture.  And we, its mixed agriculture,
but it's a lot of pasture and if animals are allowed to feed on contaminated
pasture or contaminated water, serious damage (Participant UK – Yksh 5).

Imagery of the landscape, and changes to it, provide a lens to associate that identity with the threat of industrialisation. Images of altered landscapes and the industrial infrastructure illustrate the perception that the industry will encroach onto the landscape. The image in Figure 17, shows the imposition on the industry in Queensland: the network of roads, the vast amounts of wells, the increase of traffic woven into the otherwise rural landscape.

Figure 17: A gas field in Queensland, Australia. Image taken from
https://www.lockthegate.org.au/queensland_coal_seam_gas



Images of the fractured Queensland landscape such as this (and similar from the US) are powerful. Participants across both case studies in both Australia and the UK referred to them to relay their fears about the industry:

> We have such a lovely, pristine environment down there, with forests and the sea, and the farmland. And people could see that ruined. All you have to do is look at an overlay of Queensland, and [say], far out, I don't want this beautiful place to look like that! That's scary! (Participant Aust – Vic 1)

In the UK fears about the industrialisation of the countryside focus on the impacts on rural life:

> Industrialisation. I used to live 50 miles south of here in industrial West Yorkshire, a perfectly lovely place to live but it was not rural farming North Yorkshire. We had significant problems with pollution, with health-related problems with pollution, it was just simple things like dirt on the car in the morning, not putting your washing out at certain times, little things, but we lived in an industrial region. I do not think that North Yorkshire should become industrialised, which is the inevitable consequence of having 10 fracking pads, factories whatever you call them (Participant UK – Yksh 3).

In presenting the intrusion of the unconventional gas industry into the landscape, these images challenge the assumption that the industry will coexist with other land uses. Coexisting with unconventional gas is not as smooth as industry and government imply:

> Well, it's the involuntary intrusion onto our properties; you don't have a say. And the Government's been pushing coexistence, well it's a con-word because it virtually comes down to, if the conversations good enough we've got to live with it – that's about the only choice we've got … it's involuntary, we have no choice; you can't say no (Participant Aust – Qld 4).

Coexistence is problematic because of the spatial impacts of the industry on various land uses. An example of this problem was evident in the events that took place on the day when I attended the Minerals and Waste Joint Plan Examination Public Inquiry in the UK mentioned in Chapter 3. The day's proceedings focused on the distance between wells and other land uses, including residential housing and national parks. The community groups argued for a minimum of a 500-metre buffer zone between fracking and community buildings such as residential housing and schools. Their arguments were based on US evidence which suggests that the spatial impacts of fracking include increased risk of water contamination, pollution and emissions, and seismic events, as well as landscape changes (Meng and Ashby 2014). Contrastingly, the fracking company legal counsel argued that there should be no fixed spatial guidelines for wells and other land uses. They argued that comparable UK data did not exist and evidence from other countries was inadmissible because it did not relate to the specific geological and

demographic conditions in the UK. They also argued that buffer zones would reduce the area available for fracking and prevent operations on eighty percent of available land in North Yorkshire (Hayhurst 2019a).

This example demonstrates the contrasts between the industry's expectations concerning the extent of their operations within a region and the community's expectations that they are, or could be, affected by the close proximity of those operations. The result of the Inquiry in regards to the issues presented on that day advised that a fixed distance of a 500m buffer zone around homes would be adequate to protect residents from "noise, light spill, visual intrusion and emissions of oil and gas sites" (Hayhurst 2019a, p. 1) suggests that the contributions by the community perceptions were taken into account.

One Australian participant, a farmer from Queensland, reported on his experience living with industry operations on his land. His description of the impact of pollution to human health parallels the US reports that were used by community members in the Inquiry:

> Most of the things with the coal seam gas industry are hidden. It's the fugitive emissions, the gas going out into the air that's the big worry and our house is on the top of a hill, and there's a big valley back to the compressor station and in winter time we get south-westerly winds, we get sore eyes and headaches and it's the gas, the free gas, and it hugs the ground see ….and if it comes over the hill and it's concentrated and we can feel the effects of that. But to measure them, there hasn't been a serious attempt to measure free gas in the atmosphere (Participant Aust – Qld 4).

For this participant and his family, coexisting with the industry has come at a personal cost. The factors of the landscape (the wind direction and the contours of the land) are inherent in their experience because they are part of the conditions that create the impacts. Moreover, the lack of effort on behalf of government or industry to actively measure fugitive emissions consolidates the perception that industry is not interested in working in the interests of the farming industry or coexisting it. The findings of Taylor and Taylor (2016) also challenge the positive assumptions about coexistence. They find that Queensland's unconventional gas development regime lacked emphasis on preserving agricultural land and their industry activities resulted in adverse impacts (Taylor and Taylor 2016).

These examples demonstrate that the perception that unconventional gas will transform the rural landscape is a powerful conduit to mobilise people against the development. The imposition of the industry onto the landscape challenges those whose identities are connected to the landscape (Luke et al. 2018b). For example, Luke et al. (2018b, p. 3) argue that people from rural communities:

> Often construct place identity through their relationship with the land(scape) itself, and the way that a landscape is perceived and related to is extremely important for whether they will view unconventional gas development as a threat, or a welcome addition.

In the face of the intrusion of industry, primary production industries and traditional rural communities struggle with a perceived loss of identity (Luke et al. 2018a). Farmland in Australia and the UK is perceived as a landscape that coalesces with the natural and pristine. Small townships, villages, and farming communities are perceived as a rural idyll. Unconventional gas development is a perceived threat to the allure of the place and thus altering their relationship with that place (Luke et al. 2018b).

Public anxiety about unconventional gas hinges on the perception that industry impinges on traditional regional land uses such as productive agricultural industries and town centres (Lacey and Lamont 2014). For example, primary agricultural producers in Australia hold fears that CSG development will damage their livelihoods (Lacey and Lamont 2014).

The above examples present an anti-fracking narrative that the community-identity in relation to rural landscapes and industries is incompatible with unconventional gas developments (Luke et al. 2018b). The importance of landscape and its resources derives from deeply held attitudes and beliefs, engrained in social and cultural history, in which people "traditionally perceive natural resources as 'their own'" (Matilainen et al. 2017, p. 32). Framing their perceptions of the industry and their activity in relation to farmers and farming therefore attaches the anti-fracking movement to the broader construct of ownership of the landscape and plays an important role in framing rural community identity (Luke et al. 2018b).

The unconventional gas industry converges with local communities because it accesses resources close to or on private property. This convergence is tangible because of the

increasingly visual industrialisation of rural landscapes where mining activity exists, and the encroachment of the industry's footprint on residential and more highly populated areas (Meng 2018). However, because of this convergence, the industry's needs are in competition with the needs of other industries and communities. As such, a conflict of roles and identity evolves among the various players (Bartos and Wehr 2002).

## 5.3.1 The Collective Identities within the Anti-Fracking Narratives

My analysis also found that the anti-fracking conflict is produced through a range of collective identities. Collective identity is viewed in different ways by different scholars. Polletta and Jasper (2001, p. 285) define collective identity as:

> an individual's cognitive, moral, and emotional connection with a broader community, category, practice, or institution. It is a perception of a shared status or relation, which may be imagined rather than experienced directly, and it is distinct from personal identities, although it may form part of a personal identity.

Flesher Fominaya (2010) argues that there are two understandings of collective identity:

i.   Product – something recognisable to people outside the movement which people (antagonists, sympathisers, or potential members) respond to and which mobilises people to join; or

ii.  Process - an intra-movement phenomenon which occurs through the "shared meanings, experiences and reciprocal emotional ties as experienced by movement actors themselves through their interaction with each other" (Flesher Fominaya 2010 p. 397).

Melucci and Avritzer (2000 p. 509) equate the connection and perception of shared status as the "principle of belonging". From this perspective, collective identity transforms the sense of belonging into political issue, offering "a different solution to the way cultural pluralism and democracy can be bridged" (Melucci and Avritzer 2000 p. 509). In this way collective identity is at its core, a process rather than a property of social actors that evokes "a sense of 'we,'" (Snow and Corrigall-Brown 2015 p. 175). However, Snow and Corrigall-Brown (2015) also contend that the consideration of collective identity as a product is fundamental to understanding its character and functionality. From the 'product' point of view, collective identity has an orientational function, and is the

"constructed social object to which the movement's protagonists, adversaries, and audience(s) respond" (Snow and Corrigall-Brown 2015 p. 175).

The collective identity of certain communities with the perception that industry will result in the diminishment of that identity because of changes to the landscape (use and visual) presented above is a mobilisation factor of people into the anti-fracking cause (Polletta and Jasper 2001). Historical factors, too, are connected to the natural attraction and economic ties that shape people's place identity (Luke et al. 2018b).. I found that broadly, people connect to the shared perceptions about the problems associated with unconventional gas development, which unites people with the anti-fracking narratives within and beyond borders. In this sense the anti-fracking movement is itself the community (the product) with which people collectively identify. However, I also found that the anti-fracking movement is also formed through processes of storytelling and building relationships across borders which is also indicative of the collective identity as a process. There are also narratives that demonstrate that people within the broader movement share collective identities that are regionally specific. Due to the regionally specific nature of these collective identities, the case studies take different forms that people identify with.

*Collective Identities within Australia*

Lock the Gate Alliance is an example of a community that individuals and anti-fracking groups identify with across the nation. The Alliance has an international reputation, being known for its link to the anti-fracking movement and every participant across both case studies knew of Lock the Gate. In the Australian context, environmental and climate-change organisations identify with Lock the Gate's anti-fracking narrative because it aligns with their own group's objectives:

> When Lock the Gate Alliance was formed, we threw in our lot with them. We've had several meetings in the Toowoomba area about coal seam gas mining, we've attended some protest meetings as well. We put out a position statement on coal seam gas mining just to show our support locally and nationally because, I mean look, mining's always been and might always be, but when you're talking about the really large environmental problems, global problems, we all need to take responsibility for that (Participant Aust – Qld 3).

Individuals felt connected with the Lock the Gate narrative because they felt that it was valid and important:

> I first heard about unconventional gas or fracking about two years ago. It was suggested that we go and see a video. And so, I went along and was quite amazed at what I saw, having had a research background, and being very much involved with lobbying in research areas, I quite understood that there is [sic] always two sides to a story. While it can have one side, 'cause then it would be all emotional, you know you can have quite a valid other side. So, I decided I'd look into it and I did a bit of research, and at that stage, and more and more found out and was quite appalled at what I was seeing. So, I've been involved, and my wife has been involved in Lock the Gate organisation since then (Participant Aust – WA 3).

Others identify and feel connected to the affected communities despite not being actively involved in the Lock the Gate. For one participant, who is a member of another environmental-based action community group and living in a community not directly affected by unconventional gas, saw themselves as a supporter of the broader cause of the anti-fracking movement. The Lock the Gate signs were a way that they affiliated themselves with the cause:

> I do support Lock the Gate and what they do. I think they've had a big influence in Northern NSW or in NSW. … I have seen Lock the Gate signs around South Australia as we drive around. We also drive to Victoria so there are probably some over there. I get townspeople who are going to be affected. If your community is going to have a mountain built alongside, with mine spill – that's not very nice, with dust and noise. So why not get the whole community involved? I don't know specifically, but I know it's pretty widely supported (Participant Aust – SA 3).

Conversely, there are people who identify with the anti-fracking movement who choose to disidentify with Lock the Gate. Four participants in this study were against the alliance, and for varying reasons. One reason was because of the activist actions identified with the group:

> Oh, no. I've always stayed within the law. I made a decision a long time ago that our whole purpose is to change the law rather than break the law (Participant Aust – Qld 4).

Another reason is that they disagree with Lock the Gate's narrative and group structure:

> I have come to the conclusion that I am very, very concerned with what is really driving some of the non-government organisations in different places, particularly

Lock the Gate. Now one of the things that I can say is that I'm paid by no one, therefore, my motivation is not for the wrong reasons. (Participant Aust – SA 1).

*Collective Identities within the UK*

In the UK, the anti-fracking movement has a clear focus on individual communities and regions. Campaigning is consciously driven and focused on local communities and individual sites of contention:

> There's a very strong identity in each community, that it's about their area, ...it's very grass-roots and sort of very grounded and I guess there's a pride in that, that it's about their campaigning, they're just making decisions about it (Participant UK – Professional).

Community identity is also constructed around a perceived connection to the visual aesthetic of the region and its place as a tourist destination and a rural agricultural region:

> The industrialisation of rural communities, which, a lot of them are old pit villages, but we have regenerated and moved on, and a lot of them are tourist places and really, aside from all the pollution, who wants to go on holiday to places full of fracking rigs. No. So we don't want them in our communities we don't want them in anyone else's community. We don't want the pollution. We don't want the level of traffic going through these little villages (Participant UK Yksh 9).

The UK participants resoundingly identified with their counties, but also as 'Northerners', a term that identifies them as being from the North of England. They also referred to being from the 'Desolate North', a term used by Conservative Lord Howell of Guildford, the energy secretary between 1979 and 1981. In parliament in 2013, Lord Howell suggested that pursuit of fracking could be a mistake for the whole country and there should be a distinction between areas because:

> I mean there obviously are, in beautiful natural areas [implied – in the South], worries about not just the drilling and the fracking, which I think are exaggerated, but about the trucks, and the delivery, and the roads, and the disturbance, and those [are] about justified worries. But there are large and uninhabited and desolate areas. Certainly, in part of the North East where there's plenty of room for fracking, well away from anybody's residence, where we could conduct without any kind of threat to the rural environment (Lord Howell, taken from the BBC News 2013).

The anti-fracking movement from the 'North' responded to this statement by embracing the term as part of the anti-fracking narrative as well as using it as a proud declaration of

identification. Most of the participants referenced the 'Desolate North' or their northern origins in relation to this term. The term has class overtones referencing the poorer regions in the North of England that are traditionally industrialised. Because of this historical context, the term has been taken to mean that the region is to be sacrificed for the development of the nation's greater good:

> And our region is being, they're trying to put the negative consequences of national energy policy on this small region. AKA, 'sacrifice zone', and it's not acceptable. … 'Sacrifice Zone' is the name that we have in the national fracking campaign, have come up for certain areas of the North of England. So, we are being sacrificed. 'Sacrifice zone' comes from a gentleman, Lord something [Lord Howell] that said way back in the beginning of the fracking project. That we could frack in the 'Desolate North', and that was his phrase (Participant UK – Yksh 3).

The term has also been embraced to proudly show their alliance with the movement. The cape in Figure 18 demonstrates the participant's pride in identifying with the region.

Figure 18: The Desolate North Campaign Cape. Picture: Author's own



However, interview participants were also keen to impress that the North of England is far from desolate:

> I mean just have a wander around here and look for the Desolate North, then he [Lord Howell] said, well I didn't mean Yorkshire, but that's where it's happening, that's where the shale bed is. The shale bed itself is beneath our feet as we sit here (Participant UK – Yksh 5).

> Now …it caused a lot of outrage because in the 'Desolate North' there's a lot of villages. It was merely a facilitative phrase and actually, the Desolate North is rural, beautiful, tourism, North of England with villages and communities that must be protected (Participant UK – Yksh 3).

The examples above describe how collective identity was represented through particular narratives. In doing so, anti-fracking protesters differentiate their uniqueness, both as individuals and as a collective, and their affinity to the anti-fracking cause (McLaren 2011). By mobilising their struggle as a collective in this way, the anti-fracking movement enables the fundamental engagement of social and political action at the local community level (Steger and Milicevic 2014).

The process of collective action is a natural attribute of human interaction (Snow and Corrigall-Brown 2015). My analysis shows that the perceived threat to the relationship between communities and their regions and landscapes is a driver for the community to stand up and protect (Polletta and Jasper 2001). In this way, the collective identity is built on place and the landscape (van Stekelenburg et al. 2013). The collective identity, through the anti-fracking movement's participation in the political space, is politicised as part of the struggle around unconventional gas resources (Bush and Opp 1999). The integration of natural resources into community identity and the conception of community means that natural resources can no longer be separated from "identity resources" and challenges traditional approaches to natural resource development (Hallward 2006, p. 52).

## 5.4 Community-Based Values versus the Values of Fracking

This study also highlighted that the anti-fracking narratives highlight fundamental differences between the values that shape the roles and identities of the unconventional gas industry and those of the communities they impact. Bartos and Wehr's (2002) explanation of divergent values as a reason for conflict puts industry and community

values in binary terms: collectivistic communal values in contrast to achievement-orientated values of industrial systems.

## 5.4.1 The Values of the Fracking Industry

My review of the literature in Chapter 2 found that neoliberalism is embedded in the narratives at the heart of the production and consumption of unconventional gas. Value is placed on the gas as a commodity. The value of unconventional gas in Australian and the UK is constructed around its economic credentials, demonstrated here in an overview of Australian energy resources by Geoscience Australia:

> Australia has abundant, high-quality energy resources that are widely distributed across the country. These resources are expected to last for many more decades, even as production increases. Australia has a significant proportion of the world's uranium and coal resources, and large resources of conventional and unconventional gas. Australia has access to a range of high-quality renewable energy sources, many of which are yet to be developed. Australia also has significant potential to improve its energy productivity, using its abundant resources more efficiently to power its boost [to] economic growth (Geoscience Australia 2019a).

This interview participant, an industry representative in Australia, similarly conveys these economic-based values of unconventional gas:

> …conventional gas, oils and gases in the world are diminishing. [So] to be the cheapest sources so to keep up with, you know, global demand we are having to look at these unconventional resources as the next generation of opportunity, so I guess, that's why we're developing unconventional gas resources – to meet the demand and it's the next most available. … From an economic perspective, the implications of fracking are that a resource that was previously uneconomic that you couldn't extract from the ground can now be extracted and so you can produce, and you can invest and actually extract the gas or the oil. Here in Australia, and certainly the company I work for we're not fracking for oil that actually happens in other countries, we're just after gas. So economically, it turns an uneconomic resource into something that's economic (Participant Aust – Industry).

Similarly, the UK's National Government conveys the value of shale gas:

> Shale gas development is of national importance. The Government expects Mineral Planning Authorities to give great weight to the benefits of mineral extraction, including to the economy. This includes shale gas exploration and extraction (Clark 2018).

The economic value in this statement lies with the technology that allows access to previously inaccessible resources. The framing of both statements above also sits within the ideological tenets of extractivism – a paradigm of uncompromising exploitation of natural resources attributed to capitalism and neoliberalism (Gudynas 2018; Junka-Aikio and Cortes-Severino 2017).

Equally, unconventional gas is viewed through a geopolitical lens that invokes national sovereignty and identity (Kama 2019). Framed in terms of 'energy security' or 'energy transition', unconventional gas promises considerable advantages, such as an abundant cheap supply of natural gas, industry security, a boost to the local economy, and job creation (Bomberg 2013). As such, unconventional gas is a fundamental component in a nation's energy policies and can be as much about market dominance as it is about energy security (Pierce et al. 2018).

## 5.4.2 The Anti-Fracking Movement's Perception of Government and Industry Values

My analysis shows that what government and industry see as benefits from fracking are not valued to the same extent by the local communities and industries likely to be affected. Overwhelmingly, the participants demonstrated that they clearly understand the conflict in terms of these divergent ideologies and values and the threat that these have on democracy:

> I'm not altogether taken in with Keynesian economics, and I certainly realise that the neoliberal types of economics might have been great at his time. But it's the competition and the free market and the, what would you say, the silent hand, or the invisible hand of the market etc. does not work in the human consideration of human nature and it just sort of doesn't work. And this is where we've got a lot of problems now with greed and corruption and so forth. This is simply a, would you say, the evolution of that progression of that ideology, well I call it a dogma, at this stage. So, you could say that yes, I would like to see more of a steady state, but I'm not opposed to growth all told, I want growth in conjunction with nature, not to suppress or against nature (Participant Aust – Vic 7).

> I am only anti-fracking for very good reasons. And if someone could genuinely convince me, give me the evidence that there'll be no health effects, there will be no water contamination, no air contamination, the traffic won't cause massive disruption, it won't disrupt tourism that we make our living out of, it won't damage the agriculture which is the other major industry in this area. Yeah, you can convince me that you can minimise the leakage of methane so that it's below

the circa of 3 percent which actually is probably near a 1 % for this, for this particular thing, that makes it worse than burning coal. Then I say right, if you can do it safely and it genuinely is a transition fuel, you know, 'cause it's better than coal, and this is just to tie us over until we get renewables up and running, and you're going to have the political will and the funding and the subsidies for renewables while they get on their feet, then I'll wind my neck in and go away. I've got better things to do with my life (Participant UK – Yksh 7).

My analysis highlights a discrepancy between what governments think the benefits from unconventional gas development are for communities, what communities' value, and the anticipated loss of what they value about their surroundings from the development. In response to the motivations of the industry's and government's pursuit of unconventional gas resources, interview participants did not concur that these benefits would be of value to their communities. For example, there was a strong perception that the economic value of the industry was not being translated into value at a community level:

> And they were not doing it for the good of Australia, they were doing it to make money for themselves by selling overseas. And that's what struck me, most of the gas, well at one stage they were talking about all of the gas, was to go straight out, and that money was not coming in and becoming part of our culture, helping us as a community, no it was going into the pockets of a few people. And that's what I think upset a lot of people (Participant Aust – NSW 2).

> People living in this health hazard, they've got nowhere to go, they're stuck with it for 15 years, they've got their payout but, and if they are farming, they can't really effectively continue to farm 'cause they're not allowed to use the roads that are built on their property by the gas people, you know, they are exclusion areas, they've got pipes and things like that everywhere (Participant Aust – NSW 1).

This value discrepancy was also articulated in relation to the impacts of the industry to communities and the environment:

> When you realise that it's power-structures in society, it's big industry, it doesn't care about the environment, it doesn't really care about people, it only engineers profit and using the power-structures in society which dovetail into that profit-motive then that sort of changes people's view (Participant UK – Chsh 3)

There was doubt that the industry will advantage local economies and job creation:

> All I see is destruction to communities, destroying communities, destroying the environment, and people walking away with mega-bucks, and it going offshore. So, I, you know, it doesn't even support communities because it all supports, it

funds FIFO[9] workers, and really there's not a lot of employment in the gas works – it's not a big industry, so it's not like you're going to employ hundreds and hundreds of people like gold mining and other types of mining. And it's not very labour intensive so no I can't see any benefit at all (Participant Aust – WA 2).

Existing economies are also perceived to be at risk and most of the participants were doubtful that any jobs created would benefit locals. Instead, new jobs would be filled by workers with the necessary skills, who would be brought to the region for the short-term construction phase, for example, 'fly-in-fly-out' in Australia.

> From an economic perspective, you get a displacement of other industries from those areas, because when the gas industry goes to an area, it doesn't employ people who have been…, most gas workers are fly-in-fly-out, to the extent that they do employ people in those areas, they don't employ people who are unemployed, they need highly skilled workers, so they basically poach those workers from other industries. So, if you're a farmer, or a manufacturing industry, suddenly you lose all your skilled workers, who you've spent years training up, and then you have to train more people up, which is really disruptive and expensive, and then you have to pay more to keep people. So, it's highly disruptive to local businesses, which adds a lot of costs, and there's a whole range of other, sort of, disruptive economic to local businesses (Participant Aust – Professional 1).

Queensland participants described an experience where workers were brought in, accommodated, and catered for in a location outside of the town. Local businesses were not offered tenders and all catering and transport services were sourced from outside the region. The local benefit of the industry therefore was limited to the local pubs and the financial compensation given to landowners by industry.

> Well, the people who were living in town probably got their breakfast at 5 o'clock or got their lunch, but the majority lived in camps where everything's provided. And they like to keep people in camps because they keep an eye on the alcohol and, see their working on 12-hour days and they have zero tolerance on alcohol or drugs. It wasn't so much of people getting caught, but if they were living off site, they just didn't turn up. They thought they were over there they didn't go to work so it was better in the camp (Participant Aust – Qld 4).

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[9] Fly-in-fly-out (FIFO) "is one of a several terms used to refer to a set of work arrangements for resource operations that are typically located at a distance from other existing communities. The work involves a roster system in which employees spend a certain number of days working on site, after which they return to their home communities for a specified rest period. Typically, the employer organizes and pays for transportation to and from the worksite and for worker accommodations and other services at or near the worksite. While most remote operations fly their workforces to and from their worksites, other modes of transport may be used. Fly-in/fly-out is used [in Australia] as a generic term for these types of commute work arrangements" (Keith 2010, p. 1161).

I know you could have the other argument that while they're employing people you get payroll tax coming in and people have got money to spend in communities and so on. You only have to go out to Chinchilla and ask how much money they spent out there because of the thousand men needed. They didn't go into town, and interesting things happened – the pub stopped employing local girls because they were concerned that the miners might do something wrong to local girls so they favoured backpackers and things like that (Participant Aust – Qld 2).

The experiences from Queensland were referred to by participants across Australia, and eight participants from other states expressed concerns about fly-in-fly-out workers. On one hand there is concern that the jobs will not go to people from the local communities:

It makes me feel angry because it gives false hope to communities, that it will give jobs, but in fact, usually, the jobs aren't even coming from the communities, they're coming from fly-in-fly-out people that do the work and leave again (Participant Aust – Vic 4).

Other concerns relate to the broader community-related impacts that result from fly-in-fly-out-based economies, such as the impacts to property and rent prices:

I'm just basing it on what I know about Queensland because it's relevant to us, there's communities … as like any kind of mining it is no different to any other kind of mining that comes into a community, a lot of the workers were FIFO; they fly in they fly out. So, the community as it was, you know, people could get a house to rent and it would cost them $150 a week, rural communities are generally quite cheap, and then mining comes into town. Those people who are working at the local IGA or working, you know as a farm hand or working in the local Wesfarmers, suddenly their rent starts going up because it can go up because these miners are quite prepared to pay exorbitant rates because suddenly you've got an influx of an industry. So, people can't afford to rent and to live in that community (Participant Aust – WA 2).

And there was a perception that the financial benefits would not flow to the local community, but rather would move offshore, into the coffers of international investors:

I don't believe the benefits they're claiming. I mean that, while the companies make profits, it's of no benefit to Australia, we've all seen our gas prices go up and that's because of the manipulation of the gas companies and I don't trust them – their profits all go offshore. But in the end, certainly not for jobs, you know in the long-term they don't employ very many people anyhow, so I don't see any benefits … I just cannot believe that we're ruining our best agricultural land for a short-term, no economic gain, but that's what they claim, I cannot see any reason (Participant Aust – WA 3).

> It will make a very small select group of people that being shareholders and company directors and those [type of] positions. It'll make them rich; it will not make Australians rich in general – it's not going to bring in a great deal of wealth to the Northern Territory. It doesn't even create jobs for us (Participant Aust – NT 1).

In the UK, participants also doubted that the jobs and economic benefits would relate to local community needs:

> But in our area, North Yorkshire, we'll stick with that; it has two main strands to its economy. One of which is agriculture and the other of which is tourism, and fracking appears to threaten both. It's very difficult to see how the level of tourism will be maintained in the areas that are turned into gas fields. Because you can't disguise the infrastructure and the well heads and all the rest of it. And in the process, I mean this is going to go on and on and on for two or three decades is the idea. So, it's not as if they're coming in and disappearing, this is going to go on indefinitely (Participant UK – Yksh 5).

> I don't think that the communities can benefit. There won't be the jobs that we were originally told there would be and all there will be is industrialisation of the countryside. When that could be what benefits the locals, that could be the future if we went down a line where we were more self-sufficient and use the land, to be connected to the land (Participant UK – Mnch 1).

The interview participants also did not share the belief that there was a need for unconventional gas development. Australian participants were particularly unconvinced there was a need because of the considerable export market:

> …we've got huge amounts of gas already. I mean, Bass Strait has enough gas for us for fifty years or something; but it all goes overseas. You know, they want to dig it up for profit, to sell overseas, it's not for the benefit of Australians. It's not going to bring gas prices down. Since we've been drilling for unconventional gas successfully in New South Wales and Queensland, the prices, I don't know whether they've doubled or tripled, but it's gone up by an enormous amount. So, there's no evidence whatsoever to say that mining new gas will bring the price down (Participant Aust. – Vic 2).

Half of the UK participants were also unsure that the 'energy security' argument touted by the National Government was convincing, particularly in relation to importing gas from Russia:

> So, going back to 2015 it was – we can have our own gas, this is a good thing because we have to import gas, we have troublesome people who we import gas from like the Russians. Well, it's less than 5% from the Russians. So that

argument, and just at the moment the Russian issue has become very hot[10] but if we cut off the supply from Russia it, probably we could manage. We have a good supply coming in from the North Sea, from Norway and that is secure and we're friends with Norway, we've always been friends with Norway there's no problem. So, they were peddling this thing (Participant UK – Yksh 1).

These examples clearly demonstrate that anti-fracking protesters are sceptical about the value to local communities (and the nation more broadly) of the macro-political benefits acclaimed by industry and government. There is mistrust over the purported benefits, such as building local economies and job creation (Chen and Randall 2013; Evensen and Stedman 2018), and there is doubt cast on the benefits in relation to local needs (Meng 2018).

### 5.4.3  The Shared Community-Based Values of the Anti-Fracking Movement

My analysis also shows that participants demonstrated a strong sense of value in local community well-being and local environments. For example, value was placed on natural environmental systems (such as water and local landscapes), the health of the community, and primary production and other local industries. These values exemplify the collective and communal values presented by Bartos and Wehr (2002) presented in Chapter 2. For example, community values are linked to existing local economies, such as farming and tourism:

> Our local plan, our local values even, our local environment, our local economy are all at risk from this national agenda. And should it [the development] go through, all those values that we hold will be sacrificed; they will go. There is no way they're compatible with the plans on the table. I'll be specific on that. Tourism is our backbone, tourism and industry are not good bed fellows (Participant UK – Yksh 3).

Along with concern about landscape degradation and local economies, the impact to water systems was a predominant concern that demonstrated a shared value of their local natural resources other than gas. Half of all participants expressed concern over

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[10] On 4 March 2018, a former Russian spy and his daughter were found seriously ill on a bench in Salisbury, England. A nerve agent had poisoned them, in an attack "almost certainly" approved by the Russian state. An extraordinary series of accusations and denials from the highest levels of governments came in the months that followed, culminating in diplomatic expulsions and international sanctions. Police linked the attack to another poisoning in June 2018, in which Dawn Sturgess and her partner Charlie Rowley were exposed to Novichok in nearby Amesbury, after handling a contaminated perfume dispenser. Ms Sturgess died in hospital in July 2018 (https://www.bbc.com/news/uk-43315636)

subterranean water systems, and all participants shared concerns about water contamination:

> If we use too much water and you have no ground water for your stock or for domestic uses, we'll truck some water in for you. I think, oh, hang on, why don't you truck the water in for your mine? Why not leave the water as it is for the farmers? (Participant Aust – Qld 3)

> We depend upon a good water supply and the risks to the aquifer are too much for me (Participant UK – Lanc 1).

The value of water was expressed in terms that were broad and far-reaching. For example, fears of contamination were associated with impacts across industry sectors, particularly in relation to cross-contamination into food production systems, and the inter-regional impacts of contamination of water systems:

> Our community very strongly believes that it threatens our drinking water supplies because of the hydraulic fracturing and the chemicals required and possible spills and leaks and things that can contaminate aquifers and water, as well as truck accidents and things contaminating rivers and streams. So, in the Territory, we are almost totally reliant on our ground water for our water supply. So, anything that impacts our ground water impacts us all. … If the Great Artesian Basin is impacted that will affect the whole of Australia. … It will impact our water security, it will impact our food security, you know, clean green food may become a thing of the past if it's getting watered with contaminated water or using recycled fracking wastewater to water crops. You know, there's the risk of that then contaminating our meat and fruit and vegetables (Participant Aust – NT 1).

> From what I understand, York does rely on the River Derwent for some of its drinking water, it's municipal water supply and I think the River Derwent is potentially at risk from this industry. So, if there was spills on the surface there that managed to escape the site, potentially, water quality could be affected in the River Derwent. I think that would become much more of a problem if there was, again, more widespread unconventional gas development in North Yorkshire because the river's being polluted and also groundwater being polluted. And the groundwater in North Yorkshire is used to water crops and livestock. And it then becomes a problem of this contaminated water getting into the food chain (Participant UK – Yksh 4).

The interviews also revealed a value for biodiversity and the natural environment. For example, natural coastal water systems:

> But when you've got these trucks coming in and also we've got, what is very, very important is, we've got an area that's called a HEVAE area which is a High Ecological Value Aquatic Ecosystem, which is a long swamp and like Mombeong

and the Estuary which has already been nominated, so far, successfully, it's waiting for ratification from the Victorian Government as we speak, and then it'll go to the Federal Government and then of course to the World Authority (Participant Aust – Vic 7).

And the intricate biodiversity within a landscape:

And the amount of trees that come down, the felling that comes down, the fracture of our landscapes, we know fine well that a lot of more aggressive species are filling the gaps and they have the edges of disturbed areas, they like invasive weeds take over disturbed weed …… so when our landscapes are fragmented, small birds will not go from plot a to plot because they're going to be eaten by something else as they cross the great divide which is 6-900 metres wide for our pipeline, then you add a power easement and the management easement, and salt and …cleared areas for the different infrastructure, it's an eyesore, it's huge! (Participant Aust – Qld 2).

The interviews also revealed a strong level of concern about the impact of the industry on climate change and energy resources. 25 out of the 28 of the Australian participants, and all the participants from the UK, argued that more effort was needed to move away from fossil fuels and pursue renewable energies because of climate change. In this way, the anti-fracking narratives portray unconventional gas as continued reliance on fossil fuels and as such continuing to contribute to climate change:

I just find it totally disgraceful that our government would be funding-which is what they're doing, and pushing, another fossil fuel industry. I just find it ridiculous when we've got the implications for climate change or I'd prefer to say global warming because so many climate change deniers, you cannot deny global warming and the links with fossil fuels. What this industry tries to say is that fracked gas will be better than coal. But it isn't- that's not the point. The point is why start up a new fossil fuel industry, a variation on a theme but basically a new fossil fuel industry- when we shouldn't be burning what we've got (Participant UK – Lanc 1).

Moreover, in arguing that unconventional gas is a global issue because of its contribution to climate change, the participants demonstrated there was a need to act as global citizens:

So, unconventional gas is something that has local, region-wide, and global impacts. Obviously, climate change is something that affects us all so even if you don't live anywhere near the actual site where fracking is taking place you should be concerned about the impact on climate change and how it will affect your life and everyone's in the world (Participant UK – Yksh 4).

My analysis also shows that images are used to tap into those community-related values. For example, the images used on the Lock the Gate home page (Figure 19) illustrate community values – agricultural and pristine landscapes and local industries, and children.

Figure 19: Lock the Gate campaigns. Image taken from the web home page: https://www.lockthegate.org.au/, 5/12/2019 11:11 AM



The images of children and farmers on their land encapsulate what is perceived to represent community well-being. The images of rural and pristine landscapes and primary production industries are contrasted against gas fields mining operations. Water is presented in a beautiful scene from the Northern Territory. Images frame the social understandings about the risks of fracking and reflect what is understood as the truth

(Steger and Milicevic 2014). These images challenge the viewer's values with the contrasting visions of industrial activity as a way of imagining the possibilities of what unconventional gas will do to the valued agricultural or natural landscapes.

## 5.5 Conclusion

In this chapter I demonstrate that the key component to the anti-fracking movement is its community-centric narratives and the ways in which these narratives reinforce my argument that unconventional gas development is a social problem. These narratives are used to drive conflict and are galvanised by attachment to identity and values which are incompatible with the ideological and economic-based rationalisations driving the industry's development. My analysis shows that these narratives, constructed around a perceived threat to the community, are emotive and therefore persuasive in motivating people into action against the development.

In the following chapter I explore another characteristic of the anti-fracking movement: that the anti-fracking movement is shaped by and responds to the government regimes overseeing the unconventional gas industry that shape the anti-fracking conflict.

# Chapter 6   The Role of Governance Dynamics in Shaping Conflicts and Obstructing their Resolution

## 6.1  Introduction

This chapter presents the second key social movement characteristic of the anti-fracking movement: the conflict over unconventional gas is shaped by government regimes that oversee the development. My analysis found that aspects of the government regimes in Australia and the UK are seen as barriers to the resolution of the tensions about unconventional gas developments and driver of the conflict. The previous chapter explored the community-centric narratives within the anti-fracking narratives. This chapter highlights the anti-fracking movement's focus on government policy and regulatory frameworks because they diverge from those community dimensions, and act as instruments to determining and augmenting the issues of conflict stressed by the anti-fracking movement.

My analysis identifies a range of obstacles that were articulated by participants that associate the government's use of discretionary power[11] to expedite the unconventional gas development, and the close relationship between industry and government. The chapter begins by introducing four issues that were perceived by the interview participants in relation to discretionary power: (i) inadequate policy and regulation structures and processes, (ii) discretions with policy and regulation, (iii) discretions with policing, and (iv) the influence of industry on government decision-making. The exploration of these issues reveals a broader issue of government discretion and establishes the argument of the 'discretionary principle', a term coined and

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[11] Discretionary power: "Discretionary authority is generally thought of as peripheral to the core of settled rules in terms of which legal order is characterized. The vagaries of language, the diversity of circumstances, and the indeterminacy of official purposes are ...considerations which guarantee discretion some continuing place in the legal order and make its elimination an impossible dream. But these characteristics of rules do not exhaust the notion of discretion for they do not accommodate its stronger and more central sense as an express grant of power conferred on officials where determination of the standards according to which power is to be exercised is left largely to them" (Galligan 1986, p. 1).

conceptualised in this chapter. The term delineates the use of governmental discretionary powers to advance the unconventional gas industry by bypassing mechanisms that are intended to protect public health, the environment, and local economies, and to uphold national and international climate change agreements. I finish the chapter with the argument that the discretionary principle is an obstacle that prevents the resolution of community-related concerns about unconventional gas development.

## 6.2 The Issues of Government Discretion

My analysis of the interviews found that there four dominant issues arising from the perceived use of discretionary power in relation to the unconventional gas industry: (i) inadequate policy and regulation structures and processes, (ii) discretions with policy and regulation, (iii) police discretion, and (iv) influence of industry on government decision-making (Table 13).

Table 13 – Four Perceived Issues with Government Discretion Identified in Participant Interviews

| Inadequate oversight and monitoring | <ul><li>A lack of capacity in existing agencies to oversee the industry</li><li>Not enough stringency and an absence of the precautionary principle</li><li>Inadequate knowledge</li></ul> |
|---|---|
| Discretions with policy and regulation | <ul><li>Adjustments of laws and regulations to benefit industry</li><li>Exemptions from assessments and other regulatory processes</li><li>Companies self-monitoring</li></ul> |
| Policing discretions | <ul><li>Over policing and heavy-handedness in police responses</li><li>The criminalisation of protesting unconventional gas developments</li></ul> |
| Influence of industry on government decision-making and regulatory capture | <ul><li>Lobbying and monetary influence</li><li>Impartiality</li><li>Revolving doors</li></ul> |

The issues that relate to government discretion first came to my attention in a statement from a UK participant who described concerns over what he observed to be a range of discretions used by government, national and local, to support the unconventional gas

and oil industry and against the anti-fracking protesters. These discretions included heavy policing of their local campaign site at Kirby Misperton, and anti-fracking campaigns in the UK more broadly, that were supported by changes in laws that criminalise protesting against fracking. They also questioned adjustments made to local planning laws and discretionary powers used by the local planning authorities to ensure success of shale gas projects in the local planning process.

> There's a lot of discretion being afforded which is a real problem. … It means that, if you were to be dramatic, we have a state of temporary martial law here, where normal rules do not apply. All the police need to do is say that they need to use discretion and they can change the rules. This is something that I am investigating with quite a lot of interest because it's a great concern. It shows the Council are failing a fundamental duty to work for the community, to liaise with the community, and so the reasons they use for discretion are very, very spurious…. But underlying it all is, we have no liability, you know, we are actually undermining all our laws, all our legality. Basically, anything goes in this system. … And this is the mechanism which they hope to use for fracking across the whole country. Having dug of this [had enough of this], the only way they can get it through the council is to use discretion to override legislation, which at the moment, as you can tell, I'm not getting a lot of straight answers from the council, they don't seem to know what they're doing. A lot of what happens is the buck gets passed to the council, say the police have asked us to do it, the police then say the Council have asked us to do it, but ultimately there's no health and safety report, there's no liability, there's no insurance, it's just been made up. And that's no way to bring a new industry in. Now I can say it's very subtle but it's really, really coming to the fore when you see legitimate decisions which have cost the Council taxpayer hundreds of thousands of pounds to make these plans and then they're not honoured. It's not on (Participant UK – Yksh 3).

This statement provided the impetus for me to examine whether narratives about the use of government discretionary powers in this way existed more broadly within the research data. Analysis of interview and other data, such as news reports, and anti-fracking documents, videos, and websites, revealed a variety of concerns about the perceived use of discretions used by the Australian and UK Governments. Members of the anti-fracking movement deem these concerns to be roadblocks to easing tensions regarding unconventional gas and oil development. The literature similarly critiques governments' use of such discretionary practices in relation to the unconventional gas and oil industry. For example, the implications of these practices for democratic frameworks when policy changes are made to facilitate industry's progress (Davidson et al. 2018; Fairclough 2019),

and when regulation frameworks are not robust enough to mitigate the full range of risks (Watterson and Dinan 2017).

## 6.3 Inadequate Policy and Regulation Structures and Processes

My analysis reveals that there are themes in the anti-fracking narrative that are constructed around the view that policy and regulation structures and processes are inadequate to oversee, manage, or mitigate the risks associated with unconventional gas development. For example, I found that the majority of participants did not trust industry to comply with regulations and 'do the right thing'. From this perspective, participants perceived government agencies as central to policing industry compliance with regulations and as an important mechanism to oversee industry operations, and to ensure that they operate safely and adhere to planning approvals:

> You might have great regulations but if companies go on and take short cuts …in the pursuit of profit and trying to cut corners when they can, it comes down to then how do you monitor and how do you ensure those regulations are followed. That's down to a number of bodies, so there's the Health and Safety Executive in the UK which a part of it is the Environment Agency which a part of it there's the local authorities is a part of it and all of these organisations are part of the public (Participant UK – Professional).

The perceived inadequacies are constructed around three perceptions: (i) that government agencies lack the capacity to apply the regulations; (ii) that there is not enough regulatory stringency or precaution; (iii) that there is a deficit in knowledge about the unconventional gas extraction mechanisms and processes. The representation of these inadequacies within the case study anti-fracking movements is explored below.

### 6.3.1 A Lack of Capacity in Existing Agencies

I found that interview participants, predominantly among those from the UK, argued that existing government agencies do not have the capacity to adequately manage and monitor the development the unconventional gas industry. This lack of capacity is seen to stem from insufficient government agency funding, staff numbers and knowledge, and inadequate regulatory scope to properly monitor unconventional gas and oil operations.

One of the reasons for the strong representation of this belief in the UK is related to the period of austerity since the financial crisis in 2008-2009.

> And one of the worst things that's happened because of this huge recession that we've had, these agencies like the Environment Agency and the Health and Safety Executive have all had staff reductions and presumably a financial reduction (Participant UK – Yksh 1).

Participants also base their concerns about current regulation on their criticisms of government agencies' past record in overseeing the industry during its infancy:

> We've already seen the Environment Agency struggle to enforce regulations on the existing number of wells; what happens when there are thousands of wells? (Participant UK – Yksh 4).

In relation to austerity, participants perceived that the resulting funding cuts have affected government departments' capacity to satisfactorily regulate the industry. An argument posed by some of the participants was that funding cuts have reduced regulatory staff numbers and reduced the resources to the available staff to properly oversee industry operations:

> Obviously, there are financial pressures through austerity of this government, so you've seen the Environment Agency's staff I think, something like half in the last few years, local authority budgets have been slashed. So, to be honest they haven't got time to do the basics, never mind try and monitor and regulate an industry which they don't know anything about; they're not experts on (Participant UK – Professional).

Moreover, they argue that these financial strains and reduced capacities will inhibit any attempts at providing gold standard practice and regulation:

> But fracking regulation, despite saying we're going to have 'gold standards' and some of the Tory ministers say, "Oh we're going to develop this industry and we're going to show the rest of the world how to do it safely", the reality is that they've nibbled away at legislation here and there and it's not regulated well at all (Participant UK – Chsh 3).

> Gold standard regulation… [is] wonderful but without the policing and without the enforcement it's nothing, … if these companies know that there isn't the force, or its self-regulation, they can get away with whatever (Participant UK – Yksh 7).

The reduced capacity is believed to make enforcement of regulations impossible:

> It's unenforceable. That's what we're finding here, is regulation without
> enforcement is not regulation, it's just words (Participant UK – Yksh 3).

These views are also reflected in research in the UK by Drake (2018) who argued that concerns about government agency capacity are behind people's distrust in government declarations that industry operations would be appropriately supervised. Funding and staff cuts to regulatory agencies, such as the Environment Agency, is a known problem for oversight of environmental concerns in the UK since austerity measures were instigated in 2010 (Bigg 2017).

I found that there was less criticism of government agency capacity in Australia. Only one participant perceived that there were not enough people to actively monitor the on-the-ground activities of the industry:

> So, if you don't have the on-ground staff to monitor everything that's going on
> there's no reporting back to Government saying there are breaches, 'cause
> there's no one there to monitor it, no one to evaluate it. So, it's a real nonsense
> as far as we're concerned (Participant Aust – Qld 3).

## 6.3.2 Not Enough Stringency

Like their UK counterparts, Australian participants were also critical of how the industry was regulated. However, rather than focusing on government's role in constraining regulatory agency capacity I found that Australians tended to level their criticisms at the role of government (both state and federal) as overseer. From this perspective, participants from both case studies shared concerns over a perceived lack of stringency within the regulatory frameworks that oversee the industry.

In narratives of risk, participants argued that the scope of the regulations, and the assessment processes for development applications, do not consider the full extent of impacts. There is a view that the regulatory frameworks that have been designed do not fully consider the different range of risks associated with unconventional extraction. For example, in the UK, I found that there is concern that there is not adequate consideration of the risks that arise when unconventional gas is developed close to populated areas, such as farming and residential districts, and forested and national park areas. The risks include the effects of increased traffic and pollution on more densely populated regions:

And all these agencies, like the Health and Safety Executive, they have experience of drilling in the North Sea. They've transferred those regulations, but it's not the same thing. Absolutely not the same thing. Especially not on this issue of the traffic movement which are all day every day. Light pollution, noise pollution, air pollution, water pollution etc. etc. (Participant UK – Yksh 1).

There were also concerns expressed regarding the risk of fire from industry activity, such as flaring. One perspective was that the risk of fire would put pressure on existing local services such as the volunteer fire brigades:

I would like someone to be able to say to me that the mining company has 20 men there and 5 tenders, and that they don't rely on the butcher, the baker, and the candlestick maker from town to sort their mess out if they make a mess (Participant Aust – Qld 2).

There was also concern that emergency services were not able to adequately conduct risk management and mitigation, such as preparation for emergency procedures. One example was an archaic emergency evacuation procedure, consisting of a telephone call system dating from 1995 that relied on industry to undertake any action. It was also suggested that local fire and rescue services were not adequately prepared for an emergency on fracking well sites and did not have the adequate equipment to respond to possible emergencies:

They had not seen the plans, had not visited the site … we know that firemen there were really worried because they only had one h2s [hydrogen sulphide] monitor in their force and yet they were if they were called in an emergency you might have 6 vehicles turning up and they could drive into a pocket of h2s and you will know it's very highly combustible. So, that was their biggest concern. … releases of h2s and that's an undulating countryside there and the pockets on particularly in the winter, the pockets of gas could just sit on the ground (Participant UK – Chsh 1).

Another concern related to site conditions, that there is inadequate access and exits for emergency services:

And you would have been trapped. If a fire engine had gone in there, there was nowhere for it to turn around, there wasn't a second exit, which there should be. You know, they'd have been trapped (Participant UK – Chsh 2).

I also found that the risk of earthquakes was another area where participants believe there is not enough regulatory oversight. For example, there was the perception that

there is not enough rigorous consideration of the fracking process within government legislation. This oversight is thought to miss vital risk factors, such as the process's interference with fault lines, particularly within prime agricultural areas:

> The legislation is not adequate at all. I mean for example in our State legislation there's nothing about the hydraulic fracture stimulation in the bill, the legislation or ... the regulations. There's no definition. ...And there are other ...really important laws like the [EPBC] act where it talks about if the taking of water is going to impact other users. It shouldn't happen. Those sorts of things are totally ignored, if there's any contamination or any problems during exploration, the [industry] self-governs; it doesn't go to the EPA. So, there's so many loopholes that are lost in our laws (Participant Aust – SA 1).

*An Absence of the Precautionary Principle*

My analysis also found that participants connect an absence of the precautionary principle, defined in Chapter 2, within planning processes and regulatory frameworks with not enough stringency:

> There's just not enough stringency around the regulation, like the actual assessment process, to determine the impacts up front as much as possible; use the precautionary principle. If we don't know which isn't being facilitated enough in assessment, and then not just rely on adaptive management, [and it] is obviously still important once you know the impacts, definitely, like adapt your management style as you go along and monitor and be reactive to it. But it shouldn't be what's relied on and that's what we're seeing through most resource industry projects (Participant Aust – Professional 4).

In this way, participants problematise the regulatory approaches used to govern unconventional gas. For example, the adaptive management approach adopted by the Queensland Government is argued to be a reactive approach to management. That is, it relies on fixing problems after they have emerged, which does not properly manage or mitigate the risks:

> The biggest problem with the coal seam gas industry would be sold to the public as a lie – there are no EISs or anything like that and it was based on adaptive management rather than fix the problems when they come along and we've been pushing that it should operate on precautionary principle and do the investigations, do the risk management – that never happened (Participant Aust – Qld 4).

The perception of participants, therefore, is that using the precautionary principle would ensure that industry would have proper scrutiny and abate community concerns. The

precautionary principle is viewed by participants as a way to avoid environmental impacts, such as the contamination of water systems:

> There's also with the use of those chemicals it's a matter of polluting the water – now we're part of the Great Artesian Basin and there's a whole range of aquifers around that that people talk about …. if that gets heavily polluted, all downstream users are going to have a problem with that water. For some reason, the Federal and State Governments threw out the precautionary principle some time ago and that was a giant mistake. We need to err on the side of precaution in this regard. (Participant Aust – Qld 3).

The precautionary principle is also used to problematise the risks of unconventional gas in relation to public health:

> One of the fundamental concepts in public health is the precautionary principle. Why would you do something that might have a reasonably significant risk without knowing what that risk might be and having to deal with consequences later, some of which could be irreversible. And then, so going back to what I said about evidence based, because fracking is relatively new, studies directly giving evidence of impact on human health are still emerging. So we're well aware, … in areas surrounding unconventional gas development in the United States impact on, I think it's mainly on post-natal outcomes, or maybe even anti-natal outcomes, some premature labour, some issues there, you can't say causation but you can say there's an association, which just a precautionary principle flag is just raised again, it needs further investigation. But why would you continue if you've got those precautionary flags being raised already? (Participant Aust – Professional 6).

Correspondingly, there was a view by participants from Victoria that the deliberative processes used by their State Government were precautionary, because this approach thoroughly explored the risks of the industry. Victorian participants were positive that the resulting ban on onshore gas production and the continuation of the moratorium on fracking was an example of the precautionary principle in action:

> So, I think this government was very, very good; this government being the Andrews [Victorian] Government, in that they gave the commitment to the process, and the people on the committee were pretty much, you know, convinced during that process, that it wasn't a tenable industry to open up, and they made a very good decision based on community sentiment, but also based on a pretty good assessment of the precautionary principle (Participant Aust – Professional 2).

In considering the precautionary principle, my analysis found that the word 'precaution' is used in unconventional gas related policies in Australian and UK to give the impression

that precautions are being taken in their decision-making. In contrast to the definition that the precautionary principle is to take no action unless there is proof of safety, government rhetoric avoids such phrasing as 'no action' to opt for less specific terms. For example, the UK Government identified the application of "judicious and responsible management practices" as a precautionary approach (Patterson and McLean 2018, p. 47).

Despite the precautionary principle being listed as one of five principles for government environmental policymaking, dating back to 1990 in the UK Government White Paper, *This Common Inheritance* (Patterson and McLean 2018), in relation to unconventional gas and oil development, the application of precaution has been selective. On one hand, a precautionary approach was used by placing a moratorium on fracking after an earthquake occurred in Blackpool in 2011 and initial risk assessments were deemed insufficient (Fleming and Reins 2016). However, the moratorium was removed after an investigation concluded that the tremor related to pre-existing geological stresses in the region, despite evidence from the US of the connection between hydraulic fracturing and earthquakes (Fleming and Reins 2016, pp. 135-136). Additionally, the precautionary principle has been referenced infrequently in policy and regulation documents, and any references to it have been vague and poorly defined (Patterson and McLean 2018; Watterson and Dinan 2018).

My analysis found that in Australia the use of the precautionary approach has been mixed. In Victoria, the Northern Territory, Western Australia, and South Australia, moratoriums on fracking, and government inquiries are arguably precautionary governance approaches. For example, the precautionary principle was a consideration in the Northern Territory Scientific Inquiry into Hydraulic Fracturing in the Northern Territory; although not viewed to inhibit the development of onshore shale gas, the principle meant rather:

> ...that, assuming the worst, the maximum level of mitigation must be implemented until contrary evidence is obtained. Where the Panel has concluded that the residual risk is still 'medium' or 'high', notwithstanding the implementation of all potential mitigation measures, then the action has been assessed as 'unacceptable' (Pepper et al. 2018, p. 9).

This inquiry concluded that "risk is inherent" in the development of onshore shale gas industry, but that if all of the 135 recommendations made in the Final Report "those risks may be mitigated or reduced – and in some cases eliminated altogether – to acceptable levels having regard to the totality of the evidence before the Panel" (Northern Territory Government 2019a). Subsequently, the Northern Territory Government lifted the moratorium on fracking and allowed the shale gas industry to progress in the Territory, but with an outlined plan to proceed with the recommendations, the implementation of which is presented on the Government website (see Figure 20).

Figure 20: The progress of the implementation of the NT Inquiry into Hydraulic Fracturing recommendations. Image: https://hydraulicfracturing.nt.gov.au/



**Total Implementation Progress**

Progress on Implementing the Recommendations of the Scientific Inquiry into Hydraulic Fracturing. Implementation as at July 2019.

- 52 Complete
- 75 Commenced
- 11 Not yet commenced

*Three of the 135 recommendations have been split across timeframes, resulting in a total of 138 implementation actions.
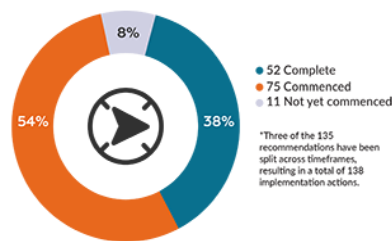
In Western Australia, the Inquiry Report recommended that:

> The precautionary approach should be adopted for all hydraulic fracture stimulation and associated activities where there is scientific uncertainty on impacts to environment and human health (Hatton et al. 2018)

However, despite establishing "new world-class strict controls as part of the McGowan Government's balanced response to the scientific inquiry" (Government of Western Australia 2018) reference to precaution in its Implementation Plan is only in relation to public health, omitting precaution on environmental or other social/economic grounds:

- separation of 2,000 metres between any hydraulic fracture stimulation activity and gazetted Public Drinking Water Source Areas
- in the absence of a local health risk assessment indicating otherwise, separation of 2,000 metres between any hydraulic fracture stimulation activity and sensitive receptors, such as residences, schools and settlements (Government of Western Australia 2019).

Finally, the Queensland Government argues that the adaptive management approach, using "new information and/or research as it becomes available" to alter the environmental conditions placed on a project, is a precautionary approach to managing the CSG industry (Business Queensland 2020). Although this approach is valid in that minor problems would be addressed as they occur, it is not an approach that applies the precautionary principle because those risks have not necessarily been considered within the decision-making process.

### 6.3.3 Inadequate Knowledge

My analysis revealed that the participants, particularly from Australia, link the inadequacy of policy and regulation with regulatory agencies' lack of knowledge about the individual processes and the materials used to extract the gas, and about the risks and impacts of these processes. One example that was strongly represented in the interviews relates to a concern about the level of understanding about the chemicals used in the extraction process. Every Australian participant and two thirds of the UK participants referred to their concerns about the fracking chemicals. Primarily the participants believe that there is an unsatisfactory level of knowledge about the chemicals. This understanding is constructed around the belief that there is little to no baseline measurement and/or insufficient research into the impacts of the chemicals used in unconventional gas development. For example, participants believed that there was an insufficient understanding about the way in which the different chemicals interact with each other in the fracking process, and how those chemicals interact with the natural chemicals found in the subterranean environments into which they are introduced. This lack of knowledge is argued to be a problem for managing and regulating the industry:

> You just can't manage what you don't know and when it comes to chemicals in relation to unconventional gas, we don't know all that we [don't] know. Again, if you look at, again if you just looked at the individual chemicals and you know that the vast majority of them are, a large number of them are endocrine disrupters. So, again, we know very, very little still about how endocrine disrupters function, how they function again in mixtures, and again it is very, very hard to manage them once the exposure happens (Participant Aust – Professional 3).

I also found that there is no trust that the industry will provide adequate information for risk and impact assessments in the planning phases of developments. In one case

described, the industry was not honest about what was known about the chemicals used. In fact, an investigation revealed that many of the chemicals that had been listed have never been assessed properly, particularly in relation to unconventional gas production, some are known to have a toxicity problem, and one is a known concern in relation to groundwater contamination:

> So, you know, 2-Butoxyethanol. So, we already had a situation here where industry was using chemicals that they knew had never been assessed; that they knew went down in tonnage, yet would get up and say, oh, it's such a tiny amount, it's what you find under your sink. And to me that was worse than even being stupid and not knowing, which is hard enough to tolerate, but when you do know and then you lie, that's unacceptable (Participant Aust – Professional 3).

One of the common complaints among participants is that the chemicals are described by the industry as being harmless: that they are just common household grade chemicals that are likely to be found under the sink. However, my research found that there is no trust that industry fully understands what happens to those chemicals when they are used together.

> I think the gas companies will be saying, oh no we're fine it's tried and tested you know, it's ok, we're using household chemicals. I spoke to a geologist recently and I showed him the list of chemicals that were being used. And he said, look alone many of these chemicals are fine, you know, but hang on, if you put that one with that one, and that one with that one, hang on you've got some explosive stuff going on there; there's some pretty toxic combinations. So, I think they gloss over the whole chemical thing ... And they're not ever talking about the combination of the chemicals… There hasn't been enough …. studies done on what's actually the repercussions of this industry, emotionally, financially and health wise (Participant Aust – WA 2).

Concerns about methane were also raised in the interviews. One of the examples used to describe the issue of methane is the fact that methane gas is known to issue from water sources, such as springs, rivers, and bores. In Australia, an example of this occurrence was most famously recorded in the Condamine River, Queensland, with many images and videos depicting the bubbling and flammable water. This example is used by anti-fracking protesters to demonstrate the lack of established baseline data before establishing the industry, which has been detrimental to monitoring the impacts of the industry on natural water systems:

It has pretty much been proven now that there's an enormous amount of fugitive emissions that actually escape, straight through the ground. The Condamine River is a classic example of that. Although people try to say that it's always done that, that's a load of rubbish. And the other thing that Southern Cross University people, Professor Santos, …… he did some work on the gas fields in Queensland and in the gas field the levels of methane are enormous, you know, compared with outside the gas field. Methane is lighter than air so it's not going to sit there on the ground and just accumulate, so that high level of methane is moving through all the time getting up there and impacting climate change, it's really bad. … So, yeah, it's obvious from that fact alone, the fact that methane's there (Participant Aust – NSW 1).

Participants also perceived that a lack of knowledge is a factor that affects the capacity of regulators and local services to respond appropriately to adverse events. One example described related to an air contamination event in Yorkshire in 2015. People in the nearby village were affected by contaminated smoke emanating from industry-related flaring. The view was that the government agency was ill equipped with the knowledge to respond effectively:

And there was an incident about a proposed fracking well in this area over here … in the East Riding area, and that occurred in 2015 and they were drilling, and something went wrong and there was a flare with filthy, oily smoke coming off and all sorts of issues with local villages. And because it was so, at the very beginning of things, nobody knew what was happening. Villagers were stopped going out of their homes, all sorts of weird things were going on. The Environment Agency went, 'cause they were called, and they didn't know what to do. (Participant UK – Yksh 1).

Another concern for participants related to the way in which knowledge is produced, particularly in relation to the impacts of industry activity on public health. An example that was used to construct this concern was in relation to the difficulties a Queensland GP experienced when she noted a cluster of skin and respiratory conditions developing close to CSG gas fields. The perception was that the government processes in place to respond to an industry-related public health issue were doomed to fail. Industry was not trusted to provide an honest account of their emissions and the affected public were disadvantaged by inadequate government data-collecting processes:

You know, to register your symptoms you had to go and speak to a consultant who was a hundred kilometres away and worked for the coal industry and then you wonder why people won't go and talk to him, oh gosh what a surprise. Anyway, when it was released, not only did the industry come out and say, it shows a clean bill of health, which it did nothing of the sort, but they also stated

that, – who  are these people, what are these people, they're just like, 'blockies'. … Blockies in Queensland means somebody who's left the city … a 'tree-changer' but with no money. So, it's an insult. It means that you're poor, uneducated, you're living in you know, pretty crappy conditions, so anything you suffer, doesn't mean anything (Participant Aust – Professional 3).

## 6.4 Discretionary Powers used in Developing Policy and Regulation

The second perceived problem identified in the interview data was that participants felt that governments were using discretions with regulations and policy to provide an easy path for the unconventional gas industry. My analysis highlights a perception in the anti-fracking movement that there is a trend of government discretion through policy and regulation to benefit the industry. These discretions are seen to be applied in three ways: (i) the adjustment of laws and regulations to benefit unconventional gas industry; (ii) exemptions from assessments and processes to smooth out the passage for the industry; and (iii) shifting oversight to the responsibility of industry.

### 6.4.1 Adjustment of Laws and Regulations to Benefit Unconventional Gas Industry

My analysis found that participants problematised the adjustment of laws and regulations for the benefit of the unconventional gas industry. To do so, the interviewees focused on concerns over the use of discretions to allow the industry ease of access to minerals on farmed land. Issues regarding changes to regulations were raised in both case studies, but the focuses were on different matters. In Australia there were concerns over changes to environmental protection laws, and discretionary powers exerted to apply them. There was particular attention to how the industry is governed in Queensland. In the UK, participants' concerns focused on changes in trespassing laws and local planning laws.

In Australia I found that participants were sceptical about the effectiveness of environmental protection mechanisms, such as the EPBC Act and the Murry Darling Basin Authority, perceiving that industry and political influence impacted decision-making:

> Well, the water trigger's an example of the type of thing that a body like [an independent EPA] could manage because we've seen the EPBC Act watered down and it actually is not protecting the environment at all. So, we're seeing problems

with the Murray Darling Basin Authority, we're seeing ….actually corruption with that, politicians having a very negative influence on outcomes and it's because they have a vested interest if you like, or an interest in pushing their own particular barrow, but it's not in the national interest, so if we had a properly constructed EPA, …a lot of those activities wouldn't go ahead if we had a strong independent EPA – that's what I think our organisation would like (Participant Professional Aust 7).

The scope of the water trigger[12] mentioned in the statement above is criticised because the trigger only relates to coal seam gas and large coal mining projects and excludes other forms of unconventional gas and oil resources such as shale and tight sands or other mining that excavate beneath the water table (Department of the Environment and Energy 2016). The recommendations from an independent review to extend the scope to include shale and tight sands remains unaddressed (Parliament of Australia 2017).

Additionally, participants were concerned about structural barriers within the regulatory frameworks. For example, one participant explained that Queensland's regulatory frameworks have a range of inbuilt barriers that limit the capacity for experts and the local community to participate in or oppose CSG application projects. Firstly, the constraints in the timeframes are perceived to be inadequate for thorough assessment, such as environmental impact assessments or social impact assessments:

> And there are extremely tight timelines on the assessment, like there's a lot of pressure on them it seems, to assess very complex material. From the outside, it looks like there might not be expertise either in a lot of the units that are assessing it to properly assess all of the various aspects of it (Participant Aust – Professional 4).

Secondly, it is perceived that the regulatory framework assumes a certain level of knowledge from the public. For instance, it is expected that people know how to access and navigate the information about project proposals and putting in submissions or going through the complaints process. Additionally, the Australian Department of Environment, Water, Heritage and the Arts (DEWHA) has the discretion not to notify the public of a site-specific application if it is determined that there has been adequate public consultation

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[12] Water Trigger: "Australia's national environment law, the EPBC Act, includes water resources as a matter of national environmental significance, in relation to coal seam gas and large coal mining developments. This is known as the water trigger. This means that coal seam gas and large coal mining developments require federal assessment and approval if they are likely to have a significant impact on a water resource" (https://www.environment.gov.au/epbc/what-is-protected/water-resources).

through an EIS process (EDO QLD 2018). For the public to place a submission to an EIA, they must know about the application in the first place, and how to fill it in, all within a limited timeframe (often only twenty days) (EDO QLD 2018).

In the UK participants expressed concern over shifts in policy that are designed to support the progression of industry projects. One example of these changes is trespassing laws. One participant saw that the changes in the trespass laws were directly related to the close relationship between Government and industry:

> Well, it's a Tory government, and the Tories are always in bed with large industry. So, they're friends in the hydrocarbon world. So, "we want to frack". "Oh, go for it". "You know, we'll change the law". Which they've done. The law used to be if someone drills under your property, they need your permission. They changed the law, so you can drill under anybody's property and extract minerals without their permission. But basically, it's their friends in the hydrocarbon industry, so they're favourable (Participant UK – Yksh 6).

This change to the trespassing law occurred despite most of the public being opposed to the changes (Carrington 2014). The Government viewed the changes to the laws as important to remove the burden of red tape and regulation (Carrington 2014; Cotton 2013). As a result, companies have guaranteed access for oil and gas development below 300 metres and notification and compensation schemes are administered by the industry voluntarily (BBC News 2014).

Participants were critical of the close relationship between the UK Government and industry which has seen the National Government interfere in a range of planning laws and processes which have enabled the industry to bypass local government planning processes:

> I see it that the Government to my mind [is] deliberately changing planning laws. They're deliberately changing laws. And they have been doing this for a few years now, very much on the quiet because virtually, all of this is not involved any debate …The infrastructure act was changed … As far as I'm aware there has been about 30 different changes to laws and planning regulations and all the stuff and it's just a constant. Let's make it easier, let's make it easier let's ease these definitions to make it easier for the industry (Participant UK – Yksh 7).

> The government has done virtually everything that the industry asked. Changed the planning laws, make it simpler, even now, they take the planning issues into central government, they take local government's powers away because they're not [granting the approvals]. And they now have quite an impressive law against

the protesters, which is causing all sorts of ructions, but at the moment this is where they're driving it, and this is everything is what the industry is asking for (Participant UK – Yksh 5).

## 6.4.2 Exemptions from Assessments and Other Regulatory Processes

I found that there is the perception amongst anti-fracking protesters that assessments and other regulatory processes that provide the framework for industry oversights are often overlooked or relaxed for unconventional gas projects. I encountered a strong level of distrust in the assessment processes, particularly those where discretionary powers are used.

In Australia, the *EPBC Act* was again criticised in this regard. A central criticism is that decisions made under the power of the *Act* are subject to political influence because the Federal Environment Minister is the principal decision-maker with overarching discretionary powers written into the *Act*:

> Civil penalty and offence provisions are established by the legislation to prohibit developments that have, will have, or are likely to have a significant impact on a water resource, unless done in accordance with an approval issued under Part 9 [Approval of Actions] of the EPBC Act or otherwise exempted (Department of the Environment and Energy 2016, p. 36)

One participant also described discretions with regard to environmental and social impact assessments: either they are not included in the planning process, or their terms of reference do not consider the full range of potential social and environmental implications:

> The biggest flaw in the EIS framework is that they're just not holding a high standard of assessment for the proponents to live up to. And also, ...we've got the environment department's EIS, and then the coordinator general's EIS if it's a coordinated project, there's not mandatory standard terms of reference on that EIS, or even actually either of them has a mandatory 'terms of reference' for what needs to go in the EIS so it's kind of, you often have very different kind of EIS requirements of projects that would otherwise be similar. Climate change I guess is a good example of that whether they are required to consider scope through, like downstream emissions from their product being burned or released or not, it's not always in the EIS; it's not always required (Participant Aust – Professional 4).

Participants were also concerned that unconventional gas projects were being approved indiscriminately because the assessments were not adequate, or that discretions were being made by decision-makers:

> If you look at the assessments, I mean I was just reading this morning under the water trigger, they hadn't blocked any of those assessments and it makes you wonder. And approvals in Queensland are very rarely rejected … it's hard to be confident that it's a really rigorous [process] (Participant Aust – Professional 5).

Similarly, another participant argued that approvals were given despite flawed environmental assessments:

> The ground water modelling has come back flawed in what the regulator accepted and provided a draft environmental authority to the proponent on the basis of, oh, for gas it's actually a final environmental authority. So, they've definitely accepted the modelling that was put forward by the proponent. But then when we've had the capacity to assist clients to go through the modelling and get experts to verify its accuracy, we found significant flaws (Participant Aust – Professional 4).

The fast tracking of project proposals in the early development of the CSG industry in Queensland gained criticism after a government official exposed a raft of regulatory flaws in an investigation in 2013 by the ABC's Four Corners program, *Gas Leak*. For example, this investigation revealed that CSG projects were permitted despite the fact that industry did not supply adequate information in their environmental impact statements (Carney 2013). As a result, decision-making to grant the permits was not properly informed, and companies were allowed significant delays in submitting key information (Carney 2013). This program also revealed that baseline data was not obtained by industry prior to the commencement of industry operations in Queensland.

Another participant from Victoria argued that state laws contained provisions for mining operations to be exempted from water regulations that apply to all other land uses:

> Under our water, they did a new water draft and I actually said to the guy that completed it, I said, I can tell you through every chapter here where mining can just trump everything. I said, how are you going to go with that? So, in Victoria, mining is a land use, but it was taken out of the State planning provisions of the environmental planning act. And so …… it is exempt from provisions, from anything else, so any other land use has to go through the normal processes (Participant Aust – Vic 5).

In the UK, analysis shows frustration that the industry is often exempt from assessments relating to planning proposals and that incidents in their operations are overlooked. For one participant from Cheshire, problems included a failure of the industry to make all appropriate applications for the operation, then to break their obligations according to the planning application. They were also critical of the government agency's failure to properly hold the industry to account for failing their obligations:

> We saw it in the local planning applications where the Environment Agency would just turn blind eyes to things that the industry was doing. So, the Ellesmere Port, …the planning application was for a thousand metres, which they took to two thousand metres. The waste permit said, here's a non-hazardous waste permit, you've got to apply for a radio-active permit, a hazardous waste permit, and permission to use anything other than water in your fluids. Now the industry only applied for a non-hazardous waste permit, so that was just putting mud in a whole somewhere, they didn't apply for the other three permits. The Environment Agency didn't pick them up on it and then when they applied the second time around, they didn't sanction them for not applying the first time around. So, the Environment Agency is turning quite a blind eye (Participant UK – Chsh 3).

### 6.4.3 Shifting Oversight to the Responsibility of Industry

I also found that the participants were concerned with a trend of government agencies to shift the responsibility of industry oversight to systems that place the responsibility of regulatory compliance oversight onto the industry. Across both case studies, participants believed that the industry cannot be trusted to comply and honestly self-evaluate. The view was that there is little incentive for industry to comply when mining industries have had little consequence when they do not comply with regulations, and when damaging incidents occur. Participants argued that this type of inadequate oversight increases the risks of something going wrong.

> So, the real concern is that it'll end up being the fracking companies marking their own homework and so it's all 'self-report', saying oh; everything's fine. And …then you'll find out later when it's too late and stuff's gone wrong. We've seen examples already with some of the test drilling (Participant UK – Professional).

In the UK, participants were highly sceptical that there was sufficient incentive for industry' to comply with regulations. The lack of independent oversight for example, was considered as problematic:

The energy company, when they say they ought to have an inspection they can say, would you like to come next Thursday? Now that's like when you have a cleaner and you clean the house before the cleaner comes because you're so embarrassed by the mess you've made. They are not independent and random in their inspections in this country. What use is that? …. So again, we don't trust them because these things happen, and they deny it and then they make an explanation and then they sort of timely come out with this story and you just feel, if something were seriously wrong, how long would it be before any of those agencies were invited in. And they've applied those regulations – too late Bob. And that's extremely concerning (Participant UK – Yksh 1).

Another participant argued that the information provided to government by industry is biased and lacking transparency:

So, the Environment Agency's very much, it's a matter, you know, it's a, …. the industry told us it's safe and we believe them it's safe. So …who else have we got? Health and Safety Executive, sort of do stuff but they're not as vigilant as they could be. They rely upon the industry reporting incidents rather than going and investigating, maybe checking the site once every two weeks, so it's all very self-reporting which isn't very healthy at all (Participant UK – Chsh 3).

There was also the observation that placing the responsibility of regulatory reporting onto industry is an example of the lack of capacity of the regulatory agencies to do the job:

You can have good regulation but it's only as good as how well it's applied and how well it's followed and how well it's monitored. And there's real concerns there, about how that would happen in practice with those bodies being so underfunded, and not understanding, and having to rely on the companies who are doing it to tell them what's going on" (Participant UK – Professional).

In Australia, anti-fracking protesters were also concerned that industry is given the task of self-monitoring the impacts of their operations. These concerns are not unfounded. Self-regulation of the coals seam gas industry is included as a principle of best practice regulation by the Standing Council on Energy and Resources, a sub-committee of the Council of Australian Governments (COAG) (SCER 2013). This shifting of oversight is viewed as problematic for the anti-fracking movement because there is little trust in industry to provide transparent and accurate information about their operation activities. Anti-fracking groups and the Lock the Gate Alliance have presented a range of concerns to the varying public and scientific inquiries that have occurred across the country exploring unconventional gas developments. For example, in a submission to the Federal

Senate Inquiry into the impacts of coal seam gas extraction on the Murray Darling Basin in 2011, the Lock the Gate Alliance emphasised the lack of transparency in self-reporting:

> Representatives in the Queensland Government's environmental assessments group have openly acknowledged that they are not given the opportunity to undertake appropriate review of company submissions. Projects have routinely been announced by the Premier *before* the applications even hit the desk of the reviewers, leaving conditions on the license as the only way in which to regulate the industry. The Department is inadequately resourced to deal with the increasing volume of applications, reviews, and amendments; as well as to undertake its compliance and enforcement responsibilities. Of 7 actions put in place by the government, 6 are requirements for self-reporting by the industry itself. The seventh involves making information available to landholders. … This is a deplorable state of affairs. This emphasis on self-assessment and self-monitoring lacks transparency and is not a good foundation for community confidence that water resources, the wider environment or individual property rights are adequately protected (Lock the Gate Alliance 2011).

A submission by the Gippsland-based anti-fracking Coal and CSG Free Mirboo North to the Victorian Legislative Council's Environment and Planning Committee, also expressed concern about an over-reliance of government to assign industry oversight of their operations through self-monitoring. They argued that industry is unreliable to provide adequate information to public regulators:

> There is too much reliance on this industry to self-monitor and the government could not afford to provide adequate staffing levels and powers to regulate this. Public Regulators are usually the last to know after much repressing, modifying, and delaying tactics by Industry in providing them access and in the face of strong community monitoring and awareness raising (Coal and CSG Free Mirboo North 2015).

## 6.5  Policing Discretions

My analysis also found that there was great concern among participants about the level of police force used to manage the anti-fracking protests. There was a consensus by participants in Australia and the UK, that a police presence at anti-fracking protest rallies and blockades was expected. However, they were also unanimous that the level of policing exercised an overemphasis of power, and adjustments to laws that criminalise protesting industry activity focus on deterring public protesting events targeted anti-fracking protesters. These laws used concurrently with an intensified police force

presence represent a potent power dynamic that seemingly puts the police on the side of industry.

The discretionary powers given to police for public order policing exemplifies the considerable imbalance of power between police and protesters (Gilmore et al. 2019). The heavy-handed approach is legitimised by a narrative promoted by governments that defines protesters as "irrational and 'uncooperative' and therefore ripe for coercive policing" (Gilmore et al. 2019, p. 39). Poignantly, an interview participant indicated that this power dynamic was somehow strategic and shifts the focus of the conflict away from the industry, stating:

> I feel that there is an element that is confrontational especially against the police and moves the conversation into a fight with the police instead of a fight with the companies, the industry (Participant UK – Mnch 1).

Gilmore et al. (2019) similarly point out that there are direct assumptions about policing that obscure the political function of policing protesters, concealing attention to the close relationship between government and industry, and the political, social, and economic contexts of the debates about unconventional gas. Moreover, the human rights issues of policing used in this way are ignored, including:

> The right to freedom of peaceful assembly, the right to freedom of expression, the right to liberty and security of the person, the right to a fair trial, and the right to respect for a private and family life (Short et al. 2015, p. 713).

The interview data strongly represented concerns about policing; the heavy-handedness of police actions towards the anti-fracking movement, and with the changes of laws that decrease their powers of, and ability to protest.

## 6.5.1 The Substantial use of Police Force at Anti-Fracking Protests

The extent of force used by police was alarming for interview participants in both countries, especially since it was outside their previous experience. In Australia, one participant, a self-confessed seasoned protester dating back to the 1960s anti-war protests in Australia, suggested the police force they experienced for anti-fracking protest was far greater. They detailed an occasion at an anti-fracking protest in New South Wales to construct this sentiment:

> We went down there, and they brought in riot police from Sydney who were very different from the local police. And the riot police, they came in with these heavy dark glasses and they were quite threatening. Though a friend of mine, she's in her 70s and her partner, he's in his 80s and he's very deaf and … didn't get off the road, they were pushing people off the road you know, and Bob didn't hear 'cause he's deaf. And she, she's a little tiny woman, she touched this huge policeman on his shoulder to say he can't hear you and he grabbed her by the hair and dragged her down the road. And then some of the other police were not happy about this and she was released; nothing happened, but then she wrote a protest letter into the head of police in Lismore and this policeman then charged her [saying that] she had been attacking him and he had been frightened. And so, there was a court case and the Magistrate actually charged her for it (Participant Aust – NSW 2).

The anti-fracking campaigns against the development of CSG in the Northern Rivers region, New South Wales, Australia had a strong police presence. Police were used to support the establishment of CSG operations in the region to lessen the increasingly confrontational protest actions by local community and environmentalists. The campaign at Bentley, New South Wales, in 2014 particularly, brought the relationship between the police and the protesters to a new level. The campaign which consisted of a blockade at the entrance of the land on which the industry had been granted a licence to operate lasted several months. The number of protesters at the Bentley Blockade fluctuated over that time in response to the police presence. With each wave of industry activity, the level of policing increased, and eventually riot-police and an estimated 900 police force were deployed to break up the protest camp (Wilson 2014). In response, the camp organisation rallied their supporters to counteract the police numbers by increasing the number of protesters to 1000. The anti-fracking movement's protest in this instance was a success. The State Energy Minister Anthony Roberts suspended the CSG operation as a result of this impasse, referring the project to the Independent Commission Against Corruption on the grounds that there had been "insufficient community consultation" (Nicholls 2014).

This kind of policing is also increasingly prevalent at protests in the UK and is of increasing concern for members of the anti-fracking movement (Gilmore et al. 2019). One Australian who has taken their campaigning internationally stated:

> I have seen some of the most brutal violence I have ever seen in my life, particularly one grandmother getting a bloody kicking from the UK police in front of cameras which stunned me (Participant Aust – Professional 3).

As Figure 21 depicts, a woman in her 70s was famously arrested by an excessive number of police, clearly demonstrated in the image, for refusing to move. The event of her arrest, recorded and on the national news that day, occurred when there was an attempt by the North Yorkshire County Council to dismantle the Kirby Misperton protest site.

Figure 21: Arrest of anti-fracking protester, Kirby Misperton, Yorkshire, UK. Photograph: Yorkshire Post/SWNS.com (https://www.theguardian.com/uk-news/2017/dec/27/anti-fracking-tea-lady-vows-to-fight-order-to-move-catering-van)



The woman's role in the protest was to provide tea and cake to the protesters. The police had asked her to move her van, which was located near the gates of the fracking site, to another location. She refused to move on the grounds that the alternate location was 'dangerous', and that the owner of the adjacent house had objected (Halliday 2017). She stated:

> We're not blocking anything at all, and the people are safer here because we're not blocking the road. Nobody from the council has actually come and told me that I've got to move and as far as I'm concerned, I'm not going to move (quoted in Halliday 2017).

The high level of police presence has also a significant monetary cost. The extent of the police operations used in relation to the unconventional gas industry has been substantial

in both Australia and the UK, with the cost burden for these policing operations borne by the taxpayer. Hence, a paradox occurs between people rightfully protesting and the policing of those protests paid for in their taxes:

> You've got an industry that wants to promote all that. "Yeah, divert them, they're just a bunch of lunatics". It's terrible! And do you know how much the police... You as taxpayers, you're paying for the police, to police this lot! It's an absolute disgrace! And of course, everyone does the Facebook thing, "Ah yes, you're right! It's an absolute disgrace!" And if you don't, listen to me when I say, yeah but you've got 60 or 70 police there on a daily basis, or you did, you're in a big, massive rural area, you bring in those police from every parts of the District, and outside it from Durham, Teesside, West Yorkshire, South Yorkshire on occasions, you're taking 60 or 70 police every day from frontline policing. And that means fraud, burglary, rape, murder, you know anything, … every aspect of frontline policing; you're pulling those police away to police non-violent peaceful protest. Now who makes that decision? Is that affordable, sustainable? (Participant UK – Yksh 7).

For one participant, this is a cost that should not be paid by the taxpayer, but rather by the industry:

> I mean from my specific angle; I'm trying to get the industry to pay for its own subsidies. Right now, we have a huge police subsidy, security subsidy, call it what you will, but right now, if the industry needs that well, they should pay for it. We've got regulation subsidy, we've got Local Council subsidy, it's costing the Local Council a fortune to facilitate this. So, right now, if the industry paid their costs, we would know how unviable it is (Participant UK – Yksh 3).

In 2019, the Government acknowledged "the significant financial impact" the fracking operation was having on Lancashire and Yorkshire Police (Macdonald 2019) and injected funds to specifically to cover the costs for policing unconventional gas and oil developments (BBC News 2019). This acknowledgment came after there was no government assistance given for the major police operation at the Barton Moss protests. This protest camp resulted in a major policing operation lasting over six months, resulting in 231 arrests, and costing the Greater Manchester Police in excess of £1.7 million (Gilmore et al. 2016). The lack of government support meant that police were taken from their normal duties for a protracted time (Gilmore et al. 2016).

In Australia too, the financial burden of the police effort to support industry operations was noted. If the previously mentioned police operation in Bentley had proceeded, it

would have been expected to cost taxpayers "$8 million and to involve police using helicopters and water cannon" (Chambers 2014).

## 6.5.2 Criminalisation of Anti-fracking Protest

I also found that participants were cognisant of a move to criminalise protesting against unconventional gas through changes to civil disobedience, trespass, and terrorism laws. Changes in laws in this way emphasises the illegitimacy of protests that disrupt industry operations (Ricketts 2017). Participants understood that these law changes were directed at progressing industry operations, but they were also mindful that there were repercussions for democracy. Protesting unconventional gas development has been criminalised in a range of ways in both Australia and the UK, but predominantly, there has been an effort to shift the focus of protest away from the industry into the technocratic workings and authority of the legal system.

In the UK, civil protest has been criminalised via changes to trespass laws, and the industry has used legal pathways to criminalise protest by placing injunctions that prevent trespass on specific sites. As one participant reflects, this has established a situation where those who choose to protest, know they may face a potential prison sentence:

> This is the injunction for the land preventing trespass. Because in this country, trespass is a civil offense and the police were not interested, it's not a criminal matter unless there is a breach of the peace or you cause criminal damage at which point it becomes aggravated trespass which is a criminal offense. So, when you get an injunction to prevent persons unknown going on your land, if they go on the land it is aggravated trespass, not trespass. So, raising the level of the site at that time from trespass to aggravated trespass was done deliberately to help the oil company because aggravated trespass can put potentially up to six months in jail £5000 fine or both (Participant UK – Chsh 1).

Trespass laws are perceived to be used to quash protest actions by the community. This causes the public to lose faith in the legal system that is supposed to protect them from intimidation by industry, and which restrict what they believe to be their democratic right to protest (Szolucha 2016). One woman, who as the defendant in a trespass case in Lancashire in 2016, was ordered to pay more than £55,000 in legal fees, summarised this sentiment in a statement made in court highlighting the imbalance of power and the effects on democracy and justice (Szolucha 2016):

With respect to the District Judge and the courts, I have huge admiration for a system of justice that is fair, but I feel in this case that our law courts are not being used to seek justice but instead being applied like a weapon and a threat against peaceful protest. The fact that Cuadrilla has the finances, power, and vindictiveness to pursue this throughout courts is an abuse of one of the most valued aspects of our democracy. So please accept my apologies if this seems rude, but as this case has nothing to do whatsoever with justice, I will not be complying with any requests for information or payment. I make this statement on behalf of myself, and an entire movement who will not be bullied (Quote taken from Szolucha 2016, p. 74).

The discernible links between these changes in law and the government agenda for unconventional gas development (Szolucha 2016) are not lost on the anti-fracking movement, as one participant observed in relation to the use of anti-terrorism legislation to incorporate anti-fracking protest:

We've seen in in the way that anti-fracking protesters are policed in a very heavy-handed kind of way, and sometimes even in a violent way. We've seen it with … anti-frackers … branded as extremists and briefings are given to schools that you need to be worried about children if their parents are involved in anti-fracking activity because their parents are extremists and really unpleasant. Attacks on the part of the Government against people who are using their democratic rights to express their opposition to a harmful industry. And yes, I think the Government is really hostile and contemptuous to anyone who's opposed to any of their policies in a significant way (Participant UK – Yksh 4).

One participant summarised the impact of the criminalisation of anti-fracking activities on the way they are policed and their democratic right to protest:

I'm now 72, so my first student protest was when I was about 18, against the Vietnam war, around these when the police would say, 'just stay over there, love', just very gentle, a few police just keeping us safe. But we learnt from the police that they were not keeping us safe, they were protecting the fracking site. And we were classified as terrorists under the current law to deal with protesters.
*Interviewer: Why do you think that is?*
Because we were going against Government policy. Now we live in a so-called democracy. What is this? Even Green Common, which is 1980s protesting against the, having cruise missiles on an English Military site; we didn't' have that kind of thing. All right, the police could sometimes clear people who were camping there, but that was all. This was a whole new wake up call to me of how we were being treated. The press, if they did anything about what was going on in Kirby Misperton, we told to be 'the mob', our local MP once, 'hippies', 'brought-in protesters' from all over the place, 'professional protesters'. Well, I consider myself a professional protester because I don't like injustice, but I will do it peacefully and as far as I had thought, within the law. But this was a complete shock last year to learn just what we were up against (Participant UK – Yksh 1).

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In Australia, changes to state laws have been made to criminalise anti-fracking protest across the country. One example is through changes to the *Inclosed Lands, Crimes and Law Enforcement Legislation Amendment (Interference) Act 2016 (NSW)* which was passed in April 2016. The changes in law are fourfold. Firstly, the maximum penalty for statutory trespass is increased tenfold (including on business premises, and any person interfering with the conduct of a business). Secondly, protesting unconventional gas now falls within the offence of interfering with mining (carrying a maximum five-year imprisonment penalty). Thirdly, they extend police powers to stop, search, and detain people or vehicles on suspicion of purposes for the protest act of locking-on. Finally, the move-on powers for police now include where people gatherings obstruct traffic. These changes are constructed as a "sneaky" way of broadening the government's power over anti-fracking activities (White and MacKenzie 2018). Moreover, this action targets people's civil and democratic right to protest (Brull 2018). In speaking to the ABC, lawyer, and NSW Greens candidate for Lismore, Sue Higginson, stated:

> "I see time and time again, the courts — generally speaking — have a real concern about having to penalise people who have found that they are in a position of having to break laws to stand up for an issue or to protect the environment or to protect a civil right" (White and MacKenzie 2018)

However, the right to protest is also being targeted at a federal level in Australia, in response to the growing resistance to natural resource development (Paris 2019). Like changes to the UK's anti-terror laws, additions to Australia's espionage laws are viewed to impact those protesting against mining activities. The *Foreign Influence Transparency Scheme Bill (FITS)*, which passed into legislation with minimal debate, reframed the term espionage to include acting against economic interests, placing corporate interests into law (Paris 2019).

An open letter to the Australian Federal Parliament in 2017, written by a range of community groups including several grassroots anti-fracking groups and the Lock the Gate Alliance, opposed three pieces of legislation: the *Electoral Legislation Amendment (Electoral Funding and Disclosure Reform) Bill 2017*, the *Foreign Influence Transparency Scheme Bill 2017* and the *National Security Legislation Amendment (Espionage and Foreign Interference) Bill 2017*, which have since been legislated into Acts. The submission

argued that these changes have far-reaching implications for charities and community groups. The submission also expresses concern over the apparent diminishment of democracy by stifling civil societies' ability to publicly debate the actions of government, as illustrated in the following excerpt from the open letter:

> If enacted, the proposed legislation will tear at the fabric of our democracy, unpicking the freedoms that have made our national conversation so rich. We are united in opposition to the proposed Bills.
> The proposed Bills conflate advocacy for good policy with political campaigning for elections. They impose severe criminal penalties on expression and access to information that is central to public debate and accountability in a democratic society. The changes will stop charities, community organizations, and not-for-profits from speaking out about issues that are of great importance to the Australian community.
> The people of Australia and our country's civil society need to be free to air their views. This best guarantees that our laws and policies truly support the Australian community. That freedom is under threat from the proposed changes in this Bills package (Volunteering Australia et al. 2018).

## 6.6 Influence of Industry on Government Decision-Making and Regulatory Capture

The final governance issue raised by participants was that the industry exerts significant influence on government decision-making. This influence is mostly viewed through industry's powerful lobbying, and what is viewed as a 'revolving door' between industry and government is also problematic. Participants overwhelmingly believed that government and industry interests are interchangeable, and that "Government is completely captured by the oil and gas industry and in particular fracking industry interests" (Participant UK – Yksh 4). As a result of this influence, anti-fracking protesters doubt the impartiality of government decision-making.

The influence of industry over the regulatory regimes that oversee their activities is known as 'regulatory capture' (Dal Bo 2006). Regulatory capture occurs when "the entity entrusted with overseeing the public interest instead acts in the interests of industry, as though 'captured' by it" (Barkin and DeSombre 2013, p. 63). The theory of regulatory capture, which was developed by the economist, George Stigler, states that regulation is generally acquired by the industry and is devised and managed for industry's benefit (Nash 2010). It was from this position that the moves to deregulate industry occurred in

the 1970s (Nash 2010). This perspective is viewed positively by those who see the power of the market and where regulatory objectives are efficiently and effectively achieved (Carter and Morgan 2018). However, the focus on economic benefits, namely profits, result in regulators surrendering regulatory stringency, a factor considered central to many environmental disasters (Lei et al. 2017).

The problem with regulatory capture lies when the public interests are not met because the burdens versus the benefits of industry or business practice are disproportionately distributed through biased regulatory regimes (Portman 2014). Natural resources, such as unconventional gas resources, are public goods, and are central to the capitalist view of securing the rewards of investing in extraction and production of resources (Portman 2014). Therefore, when regulations serve the regulated entity rather than the greater public interest, especially when those interests involve public goods, issues of public concern are often overlooked "particularly those of the environmental protection, precaution and conservation" (Portman 2014, p. 46). Ultimately, these problems are political, insofar as the regulatory process is a political process. The regulatory process becomes distorted by "economies of influence that exploit it, making it serve private ends" (English 2014, p. 263).

Industry's role in regulatory development is associated with the complex combination of management issues and support being dependent on a level of understanding between the regulated entity and the regulator (Bigg 2017). In this way knowledge, and knowledge production, underlie regulatory development, whilst at the same time they become instruments of regulatory capture. Also known as 'information capture', industry related information is used to gain control over regulatory decision making (Wagner 2010). Used through their influential channels with decision-makers, industry uses such means as a:

> …continuous barrage of letters, telephone calls, meetings, follow-up memoranda, formal comments, post-rule comments, petitions for reconsideration, and notices of appeal from knowledgeable interest groups over the life cycle of a rulemaking can have a "machine-gun" effect on overstretched agency staff (Wagner 2010, p. 1325).

Government agencies are not protected from this inundation of information, nor do they have the resources to develop expert understanding of the project. Instead, these

agencies need to take into consideration the input received from all relevant stakeholders (Wagner 2010). This type of pressure on government agencies, coupled with industry's authority over the production of knowledge through strong relationships with educational institutions and government-run scientific agencies (Fabbri et al. 2018), plays a central role in regulatory capture.

Natural resource industries often escape public outcry because environmental and social implications of industry activity are individually small or diffuse (Nash 2010). Public concerns increase when failures are perceived to occur in environmental regulation, which results in an escalation in calls for authorities to act (Carter and Morgan 2018). Environmental organisations, as well as, in this case, anti-fracking groups and organisations, become advocates for the public interest through lobbying and other social movement activities (Nash 2010).

### 6.6.1 Lobbying, Monetary Influence and Revolving Doors between Government and Industry: The Impact on Impartiality

Regulatory capture is facilitated by industry's relationship and subsequent activities undertaken to advance their interests. These factors are noticed by people opposed to industry activities and are a key component in anti-fracking narratives. Carter and Morgan (2018, p. 1790) argue that regulatory capture is accredited to factors increasing weaknesses of the regulator such as, "a 'revolving door' of personnel between regulators and industry; industry and political pressure; and an imbalance of information and expertise". As a result of this industry pressure the industry benefits from less oversight by regulators and lower penalties (Hadani et al. 2018). However, corresponding benefits are not experienced by activists or environmental organisations because they do not enjoy an equal opportunity of influence. Despite their networks of resources, skills, and knowledge, "they are no match for the experience, magnitude, and financial wherewithal of the corporate form of political activity" (Hadani et al. 2018, p. 2071).

Anti-fracking narratives include narratives about this power of the industry over government decision-making (Davis 2012). These narratives also include recognition of the significant resources and effort that industry uses to devalue the concerns raised by the anti-fracking movement (Davis 2012; Hadani et al. 2018). The following participant

statements reflect a narrative that industry influence is enabled through lobbying and political donations in Australia:

"It's the industry that's driving that and we see it through political donations, you know. I know in the Northern Territory they're always out wining and dining our politicians. It's not in Australia's best interests to do it and it's getting driven by the actual gas industry" (Participant Aust – NT 1).

…it's a huge amount of money available. But not for Australians, for private companies, whose bottom line is their shareholders. And I mean, they've got incredible resources. They've got full time lobbyists that do nothing but go and court government, do nothing but try and devalue what we say, and so huge resources to combat this (Participant Aust – Vic 3).

One participant highlights the political and financial advantage of industry lobbying:

They get in there and talk to ministers in the Government; they've got their lobbyists on the job all the time – they've got really, really, high payed lobbyists who if they want to get some easy cheap 'muller', um they'd be forced to work as $500/hr silks as lawyers in Spring St or Collins St in Melbourne, instead, they choose to get the easy money and develop lies that they can peddle on behalf of their vested interests. So, these people, you know, the gas industry employs people like that to argue their case for them. it's a really, really, unfair fight when you consider what we work within Gippsland communities who basically got to start from base level of knowledge and get up meeting basically, educated pricks like that to – that enjoy squashing little people (Participant Aust – Vic 3).

Additionally, another participant argues that lobbying works against and corrupts the regulatory processes in Queensland:

And you know, when the Land Court brings down decision recommending grant of a lease, well the people of Queensland have spoken, that's how it goes, and that's how the system works. But a deal's done behind closed doors and yeah that's, it's open to corruption. And you know, lobbyists, lobbying by another word is corruption, it's just that it's legalised (Participant Aust – Qld 4).

Lobbying is also perceived as a powerful force in relation to the ban on onshore gas development in Victoria, Australia. One participant perceived that pressure from industry through its lobbying could influence government to remove the ban:

Will it last? Well, it's really hard to know because the industry, you know, lobbies ferociously at all levels of government, so there's a lot of pressure on them to remove it (Participant Aust – Professional 1).

In the UK too, the perception of regulatory capture is also strong, and industry is viewed as powerful. These participants argue that the monetary power of industry is significant in its influence:

> The major contribution is obviously to the Tory Party and [industry] employ lobby companies to keep the pressure on people. We're not in the position whereby we can employ people to lobby, we can only do it through own actions and our own protest and our own letter writing. (Participant UK – Chsh 1)

> And they just obey the gas and the oil companies, and they just run the world. They've just got so big and so powerful – they just have too much power. (Participant UK – Chsh 2)

Another participant observed that the lobbying inhibits a clear debate about energy, fossil fuel versus renewables:

> …it's very difficult to get into a rational debate because of the inference of the petrol chemistry industry and the fossil fuel industry, they clearly have a lobbying case, and they want to maintain as long as possible (Participant UK – Yksh 5).

There was also the perception that industry lobbying has influenced government reducing its support for the renewable energy sector:

> They said that solar industry could now stand on its own because production of the solar panels was cheaper. And they are supporting to an extent offshore wind, but not onshore wind. Because they are allowing communities to say no to onshore wind because of the visual aspect. But they're pushing fracking. Notwithstanding the visual aspect. It just doesn't make any sense. So, from that we can only conclude that the government are being lobbied more strongly by the fossil fuel industry and they are by the renewables industry (Participant UK – Lanc 1).

Another impasse for the anti-fracking movement is the nepotism and 'revolving door' between industry and government. This close relationship is seen to be integral to the industry's influence on government decision-making, and the interchangeability of their agendas, as these participant statements from both the UK and Australia imply:

> There are a lot of links between the Government and the oil and gas industry as well. … There are all these links between politicians who are making these decisions and the oil and gas companies who are trying to exploit the oil and gas that's there. So, you kind of wonder about how impartial those decisions that are being made and especially when you hear some of the kind of intel-communications going on between them. It's a kind of a revolving door as well where you've got government departments where you have secondments from

big, big companies to help support the civil servants to do their jobs and so what you get is, especially inside people from the oil and gas industry working within government departments who are the ones who supposed to be creating regulations and the laws to oversee, making decisions about the future of the industry. So, that's all very dubious in terms of the political process and impartiality and that kind of stuff (Participant UK – Professional).

The Government's advisors wrote it. But you know, it may be the same in Australia, but government advisors come from the fossil fuel industry. So, what are they going to say? (Participant UK – Lanc 1).

For example, Boudicca put together a lot of work on who owned the companies, where they were getting their money from which government agencies had you know staff that ended up as the head of their company (Participant Aust – Professional 3).

As one of the interview quotes suggests; politicians are seen to lack the necessary expertise and they are easily led by industry, but this statement also comments on a perceived lack of impartiality in decision-making:

Ah, lobbying. You know, you're selling an industry to people who haven't got a clue. Politicians are just as naïve and gullible as anyone else. The majority of politicians, you know, in the first term they're like rabbits in the bloody headlights. …… so, they're easy targets, especially when a bill comes up to be voted on. ……They're sold on the benefits and nobody's telling them all the downsides of it (Participant Aust – Qld 4).

In this light, industry influence is seen as insidious and present in all aspects of government relating to the unconventional oil and gas. This level of influence is perceived to results in the diminishment of democracy because industry has authority within decision-making processes:

It's not just fracking; I just think corporations are taking over the world and they're sort of denying the ordinary people like us democracy because money's is turning to talk; they're becoming much toe powerful. And with TTRP [Transatlantic Trade and Investment Partnership] and Ceta [Comprehensive Economic and Trade Agreement] on the horizon, you know, they will be able to start claiming compensation from the governments if the government does something that curtails their profits. That can't be right. The government should be doing what the people want them to do not what the corporations want them to do (Participant UK – Yksh 8).

Additionally, there was a perception that industry interests become identical with government rhetoric because of the appointments of industry representatives to government roles:

> Petrol chemical industry, fossil fuel industry. When Cameron came in and was enthusiastic about it, he involved John Brown, who had been chairman of BP and responsible for the severe pollution in the Gulf. And in 2007, Lord Brown took to a platform and said, the petrol chemical industry is facing its conclusion and we have to change, we have to invest in renewables. It was a very good speech, and he said he was determined to take BP in that direction, and then the price of oil doubled, and it all went away. And by 2010 he came into government as an advisor in the department of energy on fracking, he was government advisor. So, he was making the policy, he was setting out all this stuff. He then moved on to another company, I've forgotten what it was, equally disreputable. And they've had others very, very close within government, so you know, read the policies, read the reactions, the government has done virtually everything that the industry asked (Participant UK – Yksh 5).

## 6.7 Discretion

As a concept of governance, discretion is neither new nor necessarily bad, and it is important to note that it plays an important role in 'good governance' (Gómez-Ibáñez 2003). However, equally important, discretion is about power: it is only made by persons in a position of power, and it involves the power to choose (Bell 1992). As an exercise of authority, discretion correspondingly involves the ability to give reasons for choices made, and when used well, will be justified by defensible reasons (Feldman 1992).

Discretion has many advantages, such as flexibility, enabling adaptability to changing and unforeseen circumstances (Gómez-Ibáñez 2003). On the other hand, discretion can be disadvantageous because of the risk of decisions being influenced by others' interests (Gómez-Ibáñez 2003). The social context of government decision-making nonetheless is indicative of discretionary behaviour (Feldman 1992). The use of discretion as an exercise of power is concerning when used to pursue an ideological agenda, in this case, the neoliberal tenet of extracting resources for economic gain. The concerns are that laws are used to give authority to ideological pursuits and that the decision-maker is unscrupulous in taking advantage of circumstances to reach their objectives (Bell 1992, p. 102). Moreover, those with the highest discretionary power correspondingly have greater opportunity for corruption, making "high-level government officials – represented by

legislators or elected public officials – as the best placed to institute or manipulate policy and legislation in favour of particular interest groups in exchange for benefits" (Mungiu-Pippidi 2015, p. 13).

Discretion, consequently, has equally good and bad connotations to governance and decision-making, as Miller and Whitford (2016, p. 14) concisely put:

> Bureaucracies that are "above politics" and practice discretionary authority to oversee the state are created when politicians choose to make credible commitments to "bind their own hands." When, as in a theory of congressional dominance, those politicians damage those commitments, the tension over responsibility re-emerges, with consequences for the kinds of social losses that society incurs.

Furthermore, with direct bearings on community trust (Bomberg 2014; Kwok et al. 2018), discretionary practices in government decision-making has a convincing influence on the social licence of the unconventional gas and oil industry. Taking the point of the participant Yksh 3, quoted in the introduction, and exploring the various ways in which decision-makers use discretion in relation to the development of unconventional gas and oil resources, it is evident that discretion is used for the benefit of the industry. From the viewpoint of this analysis, discretion has been used to pursue a political agenda and bypass the frameworks in place to protect community and the environment. As such, government discretion with its decision-making, policy, and regulation relates directly to public discontent with the development of unconventional gas, the industry.

## 6.8  The Discretionary Principle

The 'discretionary principle' explains the underlying political instrument of using government discretionary decision-making to support industry interests in relation to the development of unconventional gas resources. My analysis found that discretion used to advance industry's interests to the detriment of society and the environment is inherent in the organisation and structure of unconventional gas development in Australia and the UK and is an obstacle to addressing concerns and easing tensions. It was evident from the interview data, that discretionary decision-making is seen by people in the anti-fracking movement to be used by governments to advance the unconventional gas industry over

and above existing mechanisms to protect public health, the environment, local economies, and national and international climate change agreements. It can therefore be argued, therefore, that overusing discretionary decision-making in this way demonstrates a willingness to exercise power for political and ideological purposes.

I argue that discretion can be used as a tool to exert power in decision-making: the 'discretionary principle'. The discretionary principle is used to shift the burden of proof of risk away from industry and government. This principle contrasts with anti-fracking narratives, and a growing number of academics who present the argument for the 'precautionary principle'. Precaution, from this opposing argument, should shift the burden of proof regarding uncertainty of the unconventional gas extraction processes onto government and industry to establish that such development would not be harmful. The research data highlights the ways in which anti-fracking narratives frame the misuse of discretionary power. This chapter argues that the use of the discretionary principle exemplifies a broader narrative used by government and industry that positions the unconventional gas industry as powerful, and outside legislated, regulated, and democratic processes.

It is important to distinguish the discretionary principle compared to discretions used as normal day-to-day governing associated with 'good governance' and what has just been explained in this chapter. The use of discretion is commonplace and legitimately used by government decision-makers to allow for flexibility and to "employ, develop, and adapt the most effective and efficient means of implementing policies" (Behn 2001, p. 81). However, delegating discretion is a privilege afforded to people in positions of power and therefore requires consideration of the broader implications of the decision-making, and overreach in discretion had direct implications to community trust (Kwok et al. 2018).

I advance the term discretionary principle to describe the use of discretion excessively to pursue an agenda, such as extracting natural resources. In so doing, the users of such discretion abuse the power delegated to their position. Particularly concerning is when the use of discretion impinges on governance frameworks and democracy, such as when the extractive industry's agenda is placed above the protection of local communities, public health, the environment, and global obligations. The discretionary principle,

therefore, is defined as an approach to decision-making that, in principle, is designed to pursue a political or ideological interest or agenda – in the case of this research project, the development of unconventional gas resources. The decision-making is ideologically framed by neoliberal tenets in that it is justified by economic credentials and is used to ensure the development pursuit is successful and absolved of scrutiny. As such, decision-making based on the precautionary principle is denied because laws, policy and regulations are circumvented which would otherwise highlight issues of the pursuit.

## 6.9 Conclusion

In this chapter I explored the anti-fracking movement's focus on the government regimes that are constructed around perceived discretions used to advance the unconventional gas industry. With this focus in mind, I found that a key characteristic of the anti-fracking movement is a conflict delineated by government narratives and processes. I coin the term discretionary principle to describe the misuse of discretionary power to pursue an ideological and political agenda over and above existing mechanisms to protect public health, the environment, local economies, and national and international climate change agreements. I argued that the discretionary principle is anchored to neoliberal tenets and underscores a discourse of power where a political agenda is pursued at any cost. By positioning the unconventional gas industry as powerful, and outside legislated, regulated, and democratic processes, the use of the discretionary principle acts as an obstacle to the resolution of tensions related to the unconventional gas industry.

# Chapter 7  The Organisation of the Anti-Fracking Movement and Protest

## 7.1  Introduction

This chapter presents the third key social movement characteristic of the anti-fracking movement: its forms of organisation to protest. My analysis found that the manner that protest is manifest in the way the anti-fracking movement is organised, and that the forms of protests are distinguishable with the movement and vital to its operationalisation.

It was evident in this research project that multiple versions of anti-fracking protest occurred across different time and geographical scales, generating a complex and integrated composition. The consequence of this is that the structure of the movement within each case study is complex and neither straightforward nor easily compartmentalised. To provide a framework for this chapter, I focus the analysis on the social movement attributes of the anti-fracking movement, principally by demonstrating the ways in which protest is organised and used. I first use the case studies to explore the local and grassroots aspects of the anti-fracking movement. I then explore the protest mechanisms used globally by the movement.

## 7.2  The Organisation of the Anti-Fracking Protests in Australia

Chapter 2 explained that social movements are distinctive because they blend formal bureaucratic structures with informal structures characterised by participatory, non-hierarchical, and non-class-based approaches to organisation (Saunders 2013). My analysis found that the anti-fracking movement embodies this characteristic because it is constructed with a combination of local grassroot, community-led anti-fracking groups, and established coordinated organisations. This multilayered structure was found in both case studies.

Additionally, I found there are attributes that are unique to the anti-fracking movement and characteristic of their origin. For example, the use of the term and the organisation 'Lock the Gate' is inherently Australian, while the protection camps are idiosyncratic of the movement in the UK. Nevertheless, there are also parallels in the ways the movements in Australia and the UK are organised. For example, grassroots groups have been established in both countries in all regions where there are licences for unconventional gas development and exploration, or where industry has shown interest in developing unconventional gas.

## 7.2.1 Grassroots Organisation and Protest

My analysis found that grassroots groups in Australia are multidimensional in how they operate and engage in protest:

> The community groups become pretty much autonomous and work within their communities to sort of, I guess, to sort of, inform the community, and then find ways to, you know, do the kind of things that they can to slow down the industry, or stop it, so that lobbying, sort of, protests, media, that kind of thing (Participant Aust – Professional 1).

I found that raising public awareness is a key protest activity and the central role of local anti-fracking groups. One participant describes how presenting information about unconventional gas is:

> Well, our role, as I see it is that we, and this is I think how Lock the Gate would see it, is that we inform communities; that we give them good information. I mean they've got this constant media stuff happening from all the mining powers that be, so we give them [the local community] the information that they need to have, and it helps bring them on board. We're at markets, we're at events, we have things going on, and so people feel that they can do something, you know, they feel they can get a clear picture of what it's all about (Participant Aust – Vic 6).

One participant describes their involvement with Lock the Gate, as both a volunteer and an employee, in raising public awareness and supporting the development of local anti-fracking groups in their region:

> So, for many years I was a volunteer, so I would do information stalls at our local supermarket in the rural area where I live and talk to people what fracking is, bearing in mind I had postgraduate qualifications in it now, so you know, I'd show them maps of where the fracking the applications are, and where it's proposed to

occur …and going to get-togethers. And now that I'm employed by Lock the Gate. I help to coordinate people and get people in touch with each other and help lead meetings – we've got many groups through the Territory. If there's any reports that are released, I'll send them out to people on our mailing list and help keep people informed and help keep them coordinated – if someone in one town, [I will help them with] what they'd like to do but need some help. You know, I'll put them in touch with other people that might have the skills they're looking for (Participant Aust – NT 1).

Another participant discussed how Lock the Gate aimed to decentralise the anti-fracking movement in Australia by empowering and supporting small local community groups rather than controlling them through a hierarchical system of organisation:

Because what Lock the Gate was not trying to do was become a hierarchical NGO. …The ACFs [Australian Conservation Foundations] and the Greenpeace's and the Wilderness Society are very hierarchical, and hierarchy means control and what Lock the Gate never wanted to do, and never appeared to do, was try to control their organisation. You could set up your little organisation, you know, on the King Island against Gas, and you could affiliate with Lock the Gate and you could use their information and have Lock the Gate as your big brother. But Lock the Gate would never say to you, you must do this, or you can't say that, or even you have to wear the same clothing. So, Lock the Gate wasn't about forming that sort of hierarchical organisation, it was about empowering and growing a social and community movement and that's why it is so different (Participant Aust – Professional 3).

Along with typical forms of direct-action characteristic of social movements, such as marches and blockades, varying forms of media attention were also considered an important part of getting the anti-fracking message across. Connecting personally through these means with other farming communities was deemed to be an effective way to network:

Well, yeah, there was letter writers to the paper as well, I must include myself 'cause I have a slight forte that, there was the occasional bits on WIN TV and the news and you know, there was drummed up interest in the local papers. There's ABC, but what really did it was driving to the farms, and talking to people, and it was the locals (Participant Aust – Vic 3).

In conjunction with the different forms of protest I also found that the grassroots organisation of the anti-fracking movement in Australia operates in a decentralised way, through autonomous local grassroots groups that steer their own individual campaigns. One3 participant views decentralisation in the Australian anti-fracking movement as a

reversal of traditional hierarchical organisations. In this way, the power is through the process of collaboration throughout the network:

> It's also a network, so it's very grassroots. So generally, the way the environment movement has worked is out of a head office somewhere, and it's very hierarchical in that there'll be a board, and there'll be and executive director and so on, driving policy and then down through the staff, and down to the volunteers. This is the other way around. So, we visualise it very much as a non-hierarchical network, a federation of interested people, finding ways to collaborate (Participant Aust – Professional 2).

One participant in Western Australia emphasised that the autonomy that characterised their local group's decision-making differentiated the group's anti-fracking protest activities from those typical of a campaign driven by Lock the Gate:

> We are capable of running our own sort of [campaign], we didn't' sort of, you know, we get the information from [Lock the Gate] and that sort of thing, but we do our own decisions and so does Dandaragan. We're a bit, yeah, we're capable of sorting things out and that sort of thing (Participant Aust – WA 1).

## 7.2.2  Regional Organisation and Protest

I also found that the individual groups are networked regionally. For example, small local groups were quick to establish in the Northern Rivers regions, New South Wales, when the industry started to gain licences to expand the industry in that region. The groups formed networks and created a regional response which facilitated the movement's adaptability and enabled it to shift its focus to wherever industry proposals arise:

> So, we had several small groups and they eventually amalgamated under this banner in Lismore (Participant Aust – NSW 1).

> As a group we were able to keep in touch with the people who were in Clunes and Corndale, Rosebank and Whian Whian. And Dorroughby came together to be a sort of bigger group. And we would inform people in our area what was happening, and it was a way of everybody having some sort of part of what was happening (Participant Aust – NSW 2).

I found that blockades have been used by the movement in Australia as central sites for regional campaigns. Notable examples are the blockades in the Northern Rivers that were depicted in the movie, *The Bentley Effect*. I observed when I watched this movie that these sites provided a focus for the protests and attracted people from a range of

backgrounds and from different parts of Australia. One participant noted that the Northern Rivers blockades provided a turning point for the movement because a broad range of people could travel to these sites and safely take part in the protest:

> Where it changed is when the blockades started. Then what would happen, Lock the Gate would say well there's a blockade down at Glenugie or one out at Bentley, these people need help. And out of the woodwork came people that you would never expect. Like, we have some neighbours across the road, they're just a pair of teachers, you know, they had two little kids, I don't think we'd ever discussed coal seam gas or anything –one morning they said oh look I think you might be interested, we've got the babysitter coming in and we're heading out to Bentley … our neighbours next door, you know like it was just this, because Lock the Gate gave them a safe way to do it. And the other thing that Lock the Gate did was it brought a diversity of people. So instead of just being activists, you had a very strong farming lobby who just did it because of water issues. You had academics. You had the health professionals. And of course, you had the Knitting Nanas [discussed in detail below] (Participant Aust – Professional 3).

These sites also provided places for people to take part in direct action protest, such as lock-ons. As one participant explained:

> Now, also the protestors, at [the Bentley Blockade] built these towers and they had someone sitting on top. And so, the police had to spend quite a lot of time getting, unchaining people and getting them off [the towers, and] from underneath cars and, so there was all that sort of stuff. It was not violent (Participant Aust – NSW 2).

I also observed in *The Bentley Effect* that gatherings provided the community with a sense of solidarity in events that could be described as ceremonial. For example, the movie depicted events where the results of community surveys were presented to public officials, such as the local mayor. These events provided opportunities to demonstrate the extent of the regional opposition to the development.

Regional alliances with a range of interest groups have also been formed across Australia to focus on unconventional gas development. For example, the Basin Sustainability Alliance (BSA), is based in Queensland and has a focus on the industry's impact on the Great Artesian Basin. The BSA's website explains that the Alliance chooses to operate within the available legal and regulatory processes to improve the conditions of the already operational CSG industry in that state:

> We are committed to working with industry and government in the hope we can achieve a CSG industry that preserves our groundwater resources, our lifestyle, and our ability to produce food and fibre for future generations.
> Science must inform development, impacts must be mitigated, and activities should not proceed where the risk it too high.
> We urge our decision makers not to be blinded by the lust for royalties and jobs. The industry cannot proceed 'at any cost' (BSA 2018).

One participant who is a member of BSA explained that presenting the group's position in written submissions to Government is one of the ways in which the group conducts its protest:

> We use our memberships to employ a consultant to write submissions and we've just put one into the Senate inquiry into the resource sector. It's not up on the website yet but you can go on and see all our submissions (Participant Aust – Qld 4).

In this way, protesting unconventional gas development in Australia includes active citizen participation in existing governmental frameworks. By focusing their protest on participatory methods, these groups differentiate their activities from the direct-action forms of protest that are commonly associated with the anti-fracking movement:

> I've chosen that, but my philosophy is that if the laws need changing – see we've got too many people or groups who squeal, and you know the noisy [activists] and that sort of stuff, last five minutes, you know. My thing is you've got to nibble, nibble, nibble, and get lasting change. …… My whole aim is to look into future generations, to our grandkids. What would our grandkids say? You silly old bastard – you should have done something! (Participant Aust – Qld 4).

Participants from Victoria argued that the strong regional community protest response was politically effective. In part, this was due to direct-action campaigns and raising public awareness within the rural regions in Gippsland and the south west of the state, but there was also a concerted effort to raise public awareness in the urban areas:

> You've gotta think of where the mass of votes are. If those farmers, and those rural communities didn't come out and say, it's an industry, but you're not risking our livelihoods, it would have been very difficult to get a ban, until we got city folk on side (Participant Aust – Vic 1).

> Yeah, I think it was not just regional communities and we saw it as important to get the city people on board, because they would agree to anything to do with [expanding the gas industry] because they didn't know [what the problems are]. So, there were a lot of good people in Melbourne who did a lot of campaigning.

And we also went to Melbourne. I think our first city campaign was at [Prahran] and we were at the station with our banners and our things, just a few of us. And people were saying, oh, really, what is this – really? And that was kind of the start of their Melbourne campaign. Yeah, so it's had to bring in that whole area (Participant Aust – Vic 6).

I found that people who were involved in the protests in Victoria felt that their fight is over. Importantly, for the Victorian participants, reflecting on the anti-fracking campaigns in their state, the opportunity to protest was seen as a way for the community to connect with government and the decision-making process:

I think communities have and should stand up for their rights and should continue to stand up for their rights. I do believe that Governments do represent their communities. If 90% of your community says, you don't want it that is what they should be voting for. We didn't get 90% of politicians saying that we should ban fracking, but we still got it and it was passed into law. All politicians should be listening to their communities (Participant Aust – Vic 4).

I also found that people were satisfied with the process of the Inquiry and changes in law to ban onshore gas production and maintain the moratorium on fracking. One participant stated that they believed that democracy prevailed in Victoria because the government had listened to the community. However, they were also angered by the Federal Government's push for the Victorian State to lift its ban:

So, this whole push by the federal government for NSW and Victoria to lift their bans is absolutely abhorrent, because we have had a democratic process, and we've had our state governments do what their populations want. And now the federal government's saying that that's ridiculous, and they want to punish us by this whole GST ridiculous thing (Participant Aust – Vic 2).

### 7.2.3 Activism

Another aspect of the Australian anti-fracking movement that I observed was that there was a certain level of tension over the concept of activism. I noticed that although it was known that environmentalists and activists were instrumental in anti-fracking campaigns by raising public awareness, many grassroots groups are determined to reflect their community roots and distance themselves from the environmental movement, or from radical activism. One participant, an active member of a local environmentalist group, described how the support from his group was distanced from the anti-fracking campaign:

> Down here we had several groups start up, and up in the Casino area there was
> the Northern Rivers Guardians were one, they were up from Woolimbar, there
> was Gas Free Northern Rivers. We had Clarence Valley Anti-Gas Group here,
> because of the sort of right-wing nature of the community we didn't want the
> Environment Centre to be seen to be leading this. We [the Environment Centre]
> were quite happy to support, so they started up another group, which actually
> had farmers and all sorts of mixed people on it. And I think they were probably
> more comfortable doing it that way, in the early part; they didn't want to think
> they were just a mob of rag headed hippies out there, dope smoking and what
> have you (Participant Aust – NSW 1).

In contrast to the resolve expressed by some participants to be distanced from environmentalism and radical activism, there was strong advocacy for the anti-fracking cause by the environmental movement itself, with many environmental and conservation interest groups being actively engaged in anti-fracking campaigning. Several of the Australian study participants represented community organisations that actively supported the anti-fracking movement, even if the protest was not their primary focus. For example, participants represented naturalist groups, along with community groups with a focus on the environment, climate change, and/or sustainability. In this way, Lock the Gate is not the sole representative of the Australian anti-fracking movement, and the broader anti-fracking movement in Australia works in a genuinely decentralised way. Many local action groups operate separately from Lock the Gate. One of the key points of distinction between Lock the Gate and other community action groups that support the anti-fracking cause is their stance on climate change. One participant argues that Lock the Gate's rationale for distancing itself from the climate debate does not ring true for most Australians:

> But you know most people are not climate deniers right. Most people can have
> some sort of level of concern, I believe. And there have been surveys. The CSIRO
> had some figures, putting it as something like 70% of people who are quite
> strongly concerned about climate. Lock the Gate for example, aren't at all
> interested in what we're doing because we talk about climate, and they don't
> want to scare their supporters by talking about climate right (Participant SA 2).

I also discovered that there is contention over the narratives and information disseminated by Lock the Gate. Two participants argued that Lock the Gate's information is not always correct or scientifically based. For one participant, the fact that Lock the Gate now employs people is a problem. They argue that paying people has influenced the

movement to pursue campaigns that are about winning though gaining media attention, rather than basing their information on science:

> With some of these movements, they are paid, and I believe that they want to keep campaigns going as long as possible. So, and to show that they are having wins here and there because they want to keep their jobs, it's all about themselves, in some cases I believe. … The reasons are, they don't go to the people with the most knowledge, and they don't use this very, very critical information that they could be using to put out there in the media (Participant Aust – SA 1).

Another participant argues that the focus on 'fracking' misses many of the problems of the industry and therefore misinforms people:

> So, some of the movements, well we will use Lock the Gate, has helped the industry, with the discourse to only focus on fracking. You know, because I have lobbied and I've said, come on you guys, you've got to understand the big picture. It's not only one step; it's all about the land access; it's about the section 32s; it's about the valuations; it's about just that basic stuff. It's about who's going to manage this forever you know. It's just a mass of generalisations which has frustrated me. It's been problematic for us here in Victoria because it's been black coal [the CSG in the North Eastern states], and whereas we're brown coal, so, people don't understand that. And so that is what they did for the Condamine River. That area is not fracked (Participant Aust – Vic 5).

The examples above demonstrate a struggle with the perception of activism and radicalism. I found that there was a desire by anti-fracking protesters to be seen as ordinary people is a struggle against being defined by neoliberal narratives about protest. The problems about fracking faced by communities across Australia are seen as real problems as opposed to ideological or whimsical. Although the Lock the Gate Alliance has been integral to the reach and shaping of the movement across the country, I found that the activist roots at its heart and its determined avoidance of climate change in its focus have generated this struggle over the direction of the movement in Australia. For one participant, the Lock the Gate sign has become a symbol of this activism and thus detracts from effectively communicating the real problems associated with unconventional gas:

> I said please do not bring Lock the Gate signs, let the whole focus be on the science that'll be presented in the SE, so what did she do, she rang up everybody, told them to bring their Lock the Gate signs and most of the media was pictures of Lock the Gate, which did huge damage, and again it perpetuated the thing that they're just a bunch of greenies (Participant Aust – SA 1).

There were participants who did not see themselves as activists, or were uncomfortable with associating the anti-fracking movement with activism. Comments such as the following were not uncommon: "I don't claim myself an activist, but I'm informed, and I've been involved in certain lobby groups" (Participant Aust – Qld 4). I also found there were variations of what participants perceived activism was. One participant distinguished between environmentalism and activism:

> In the process of doing research to find out about fracking of course you do a search, and it comes up Lock the Gate. I can't say that I'm all completely enamoured about Lock the Gate, I have slight reservations because we mostly here in Mora are environmentalists, we're not activists, you know what I mean, and I have challenges with some of the things [they do] and I keep saying [to our local coordinator], it's much bigger than anti-fracking now. It's the …need to shift over to sustainable energy. And she said but that is our Lock the Gate is only against fracking (Participant Aust – WA 1).

In contrast, another participant perceived Lock the Gate not as activists, but as representative of ordinary, everyday people concerned about their livelihoods and futures:

> I think what makes us different to other action groups is we're not activists. We're everyday people fighting for our future and our livelihoods. We have a very strong policy of adhering to the law and a very strong non-violent policy, so we had a rally here two weeks ago and the rally was attended, you know, by families, they were families from all walks of life, but you know we'll have as many kids as adults at some events (Participant Aust – NT 1).

For another participant, they did not equate the direct-action protest activities that they took part in as radical activism. Instead, they described protests as being peaceful and non-aggressive, aimed at gradually weakening the industry's efforts to pursue the development:

> And it was just quiet, there was nothing major was it. There were street marches and things like that, but there was no real violence or anything like that, it was just a process of people saying we're not going to allow this to happen and just being there. And some road blocking, I think. I was never out there when they were actually blocking roads and things. But we did some barricading of gates and things out at the Megasco sites in Casino and, but they could still get through, it wasn't sort of, there was no major disruption to them but it was just a sort of process of gradual wearing down of what was happening (Participant Aust – NSW 2).

Another participant saw that the Lock the Gate sign has given people the opportunity to participate in the anti-fracking protest even if they do not want to participate more actively:

> And they can put [up] a Lock the Gate sign, if that's all they can do. That is fine because that works; it is really powerful to have that sign on your gate posts (Participant Aust – Vic 6).

Another participant considered that the anti-fracking movement provided a full spectrum of activism, from grassroots and direct action to letter writing:

> So, it was about the levels of activism, from the grassroots to the letter writers to the politicians and I think Lock the Gate and the Knitting Nannas, are down at the grass-roots level. They're the activists on the ground, the ones that are trying to stop [the development]. You've got the ones below the Knitting Nannas which are the activist who tie themselves up and lock themselves to gate. They're the grassrootsy ones. Then you've got the ones like the Nannas who make their presence felt. Their presence is there; they're activist without harm and it's a visual thing. And then the next level up is you know, the activist that you know do the letter writing … And the next level up is the politicians, and so on (Participant Aust – WA 1).

Despite diverging opinions within the anti-fracking movement over what constitutes the most appropriate methods of protest, and whether or not individual members fully support Lock the Gate, I found that every participant knew about them and acknowledged their role in raising awareness of the social problem of unconventional gas development:

> It does, it gets public opinion. It gets it out in the media which is, I'm not against them, and they serve a purpose. Raising public awareness. The Knitting Nannies: gee they're dedicated. They sit outside politicians' offices and have their placards up, and peaceful resistance and that's good. The hardest trouble is to get the public interested (Participant Aust – Qld 4).

> Yes, there's no doubt that they are a presence. And look the Minerals Council, which is the mining industry mouthpiece, they see Lock the Gate as a big target so yeah, I think they do a great job. Different from us but we've gathered a couple of members who were traditionally farmers who would normally haven't been interested (Participant Aust – NSW 1).

Furthermore, it was also evident that the national impact of Lock the Gate was underpinned by the perception that they filled a gap of representation for farmers and

rural communities in relation to the development of the CSG industry, or when problems associated with industry operations started to arise:

> I think a lot of farmers are dissatisfied with the representation they've received from typical farmer rep groups …the people we've spoken to don't see that these groups are actually representing their interests and their rights when they're advocating to government and negotiating with the resource industry and so Lock the Gate provides an alternative – I mean for some, for some farmers they look too radical and they don't want anything to do with them, but for others, who I guess feel like maybe the other farm rep groups just aren't supporting their needs enough, Lock the Gate's a nice alternative that goes into fight for them (Participant Aust – Professional 4).

## 7.3  The Organisation of the Anti-Fracking Protests in the UK

### 7.3.1  Grassroots Groups

The most significant difference between the UK and Australian anti-fracking movements to emerge from this research is that in the UK there is no 'national' alliance or group that is comparable to Lock the Gate. Instead, I found that there is a concerted effort to ensure that the anti-fracking campaign is community-driven and that individual groups operate on their own basis:

> I would say there isn't a big, unified kind of brand on it. I think it tends to be in the communities who are essentially developing their own campaigns in their own local areas. And then networking and learning from others, but there's not [any] real coordinated approach to it (Participant UK – Professional).

The Extreme Energy Action Network (or Frack-Off.org) operates a national website and similarly centralises information about the growing grassroots anti-fracking groups and provides information and resources to support protest campaigns on its website. However, the Extreme Energy Action Network has not taken on the same level of campaign facilitation and lobbying as the Lock the Gate Alliance in Australia. Rather, the anti-fracking movement in the UK operates in a deliberately grassroots and decentralised way:

> So, we started in Ryedale, and then we were all hovering into this sort of 'central village', and then it was decided that we would be much more effective if we were in our own local communities. So, little groups started in all of these little

market towns all over which made it that people didn't travel so far, and you were being able to get out into your community (Participant UK – Yksh 1).

One participant explained that the decentralised organisation is deliberate because it gives the movement a level of unpredictability:

Well, if we don't know what we are doing tomorrow, then who does? And that's [why] the police and the government hate it, and the industry hates it. They just don't know what's going to happen. And that goes back to not having the national organization whereby things are planned that won't happen (Participant UK – Chsh 1).

In this way, decisions about protests and campaigns are made at the local level:

You know it's just a fluid – you just decide; there's no organisation. You know, you just decide what you want to do and do it yourself. If you want to do something, you just do it. You know, there's no leaders. …Which is why I think it works so well (Participant UK – Chsh 2).

The UK participants were also keen to convey that their campaigns reflected the views of their local communities, particularly in relation to how the industry would affect their localities. In this way, the community response was likened to putting into practice what they saw as being their democratic rights, having a say in what happens in their local area:

There's a very strong identity in each community about, that it's about their area, …it's very grass-roots and sort of very grounded and I guess there's a pride in that, that it's about their campaigning, they're just making decisions about it. It is about the local people, that local decision-making which is kind of a key part of it as well as the kind of issues around the environment. And they're saying, we, as a local community, should have a local say in what happens in our local area. And that's a fundamental part of democracy, and that's how it should work. So, I think it is a case of individual groups with a range of different kind of ideas, backgrounds approach, doing things in their own way but trying to kind of networking, [with] loose affiliations, rather than it being a formal structure (Participant UK – Professional).

I had an opportunity to attend a local anti-fracking group in Cheshire. The group met at the local pub on a monthly basis and the meeting I joined had seven attendees. The meeting included decision-making about local campaigns, and discussions about how the group intended to participate in a coming public event organised by the Greens Party. Like the groups in Australia, I found from attending this meeting, and through my analysis of the interview data, that the local anti-fracking groups in the UK are concerned with

raising public awareness. I found that local groups used a range of strategies to achieve their aim, including having stalls at local events, and encouraging people to go out and do their own research about fracking and unconventional gas:

> The role really is to go and inform people and let them make their own decisions. We tell them what we think, but we always say at the end of it, do your own research, don't believe us. And then hopefully people go away and do it. We don't bully people. We just don't want them to fall for what we see as industry lies. So, to that end we go to local events, have a stall, we don't go haranguing people, we let people come and approach us. We did loads last year. We started planning and doing them again this year. There's a local history group and we go to that when they have their annual event and people just are amazed that something like that is going to happen, or potentially going to happen. People are sort of struck with horror when they actually realise what it could entail. So yeah, it's to inform people and network (Participant UK – Yksh 8).

Another participant explained a range of strategies used by their group, including taking part in roadside protests with banners, hand-delivering letters with information about fracking to local businesses, and developing and providing locals with stickers and signs that displayed their group's logo and message:

> We approached businesses in the area, went out and talked to farmers to local businesses, tourism, ordinary shops, whatever, would they be interested, would they sign up, would they put a sticker up? Stickers in the car, etc. all of those things. We protested outside the Environment Agency here in York. We had a do on the beach in Scarborough when we had a dramatic drawing a line in the sand. … There was a massive protest outside the main [Barclay's] bank here in York[13], that was great fun! Delivering letters, somebody very correctly dressed goes, delivers a letter to the manager... We've started doing something called popups on main roads or junctions around our area, just our little group. We go out on a main road with banners and placards. …We made a massive one; it's huge, black fabric with white sheet writing on it – "No Fracking". You can see it from quite a long way. And we just go out on the main road and stand there with all this stuff and "honk if you support us". So, we're doing everything we can (Participant UK – Yksh 1).

The production and distribution of flyers, leaflets, and posters is also used to raise public awareness. Flyers and posters, such as shown in Figure 22, raise awareness by problematising government and industry narratives about fracking and unconventional

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[13] The anti-fracking movement started a divestment campaign against Barclays Bank because the bank was found to own over 90% of Third Energy, a company that had planned to frack up to 19 well sites in Ryedale in North Yorkshire and found to have dubious financial records https://huddersfieldfoe.wordpress.com/campaigns/fracking/barclays-are-fossil-fools-for-fracking/.

gas development. Notable in Figure 22 is that the assertions for and against fracking are framed in a binary way – pro-fracking as 'myths', and anti-fracking as 'facts'. Also notable in this brochure is that the anti-fracking movement references expert sources—peer-reviewed, government, or industry documents—to support their 'facts'.

Figure 22: Poster – Fracking Myths and Facts Photo: Authors own
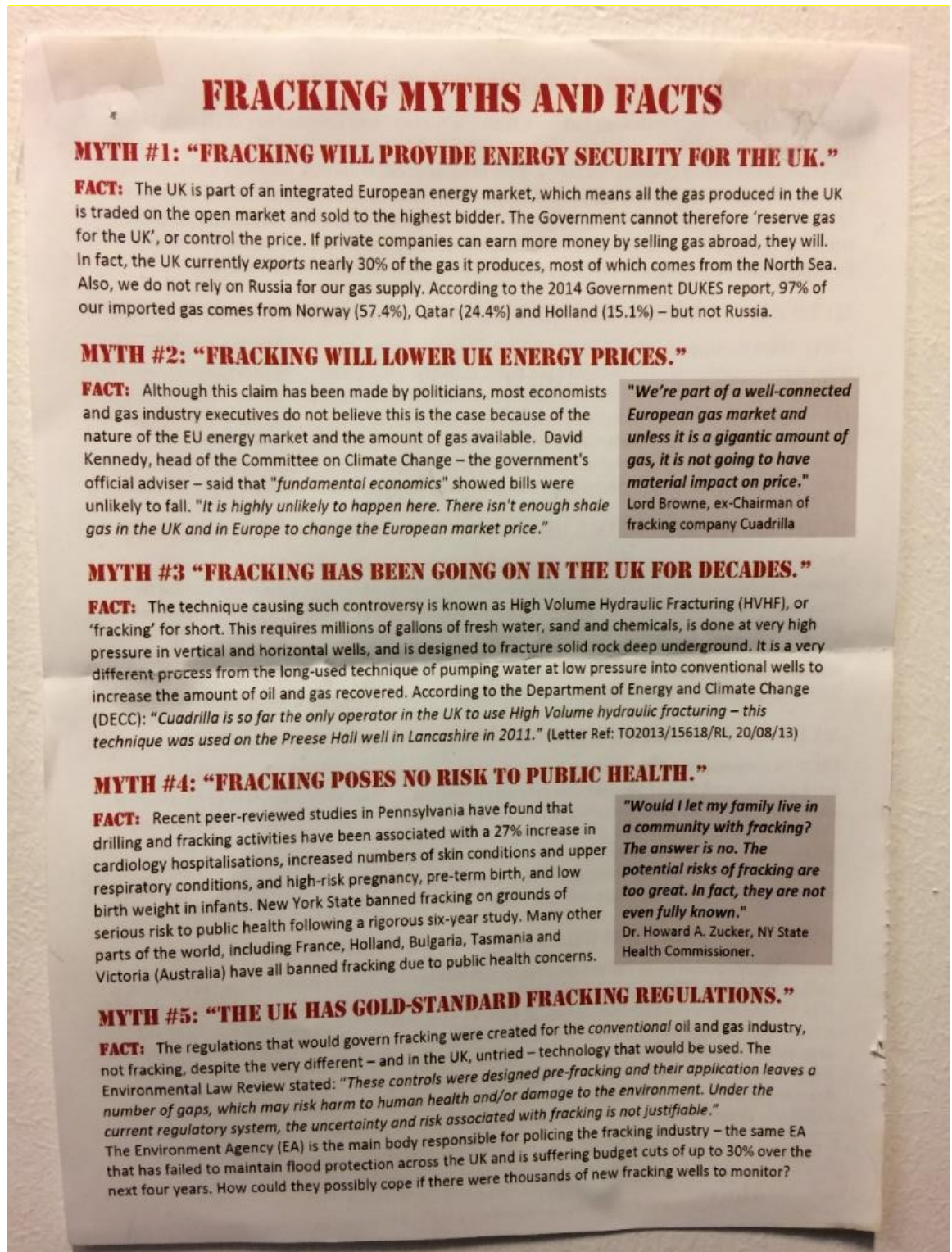
One participant described the extent of developing and using flyers to inform and motivate people to attend public meetings:

> I do leaflet writing, leaflet design, commissioning leaflet production. …Two years ago, [we ran] some public meetings in Inner- South Leeds. And what we did there was leaflet the whole area, so you put out 5 or 10,000 leaflets to get people to the meeting. But also, even if they don't come to the meeting, they've got the leaflet, they've got the argument. So, we're doing that again, so producing leaflets and organising leaflet distribution …So, it's a matter of deciding where …and so on (Participant UK – Yksh 6).

I also found that campaign strategies included targeting businesses associated with the unconventional gas industry in their local region, such as the campaign against Barclays Bank referenced above. In this case, the campaign included rallies outside Barclays Banks, and, as described by one participant, tagging the banks with chalk paint, and approaching customers as they entered the bank:

> Have you heard of the "tag at Barclays" as well? That's where the activists go to Barclays stand outside spray it with chalk paint, you know, things like "toxic bank" and stuff like that and [they] talk to customers as they are going in (Participant UK – Yksh 8).

These targeted campaign methods also include gathering information on the full extent of the industry. For example, some participants spoke about gathering information about seismic surveys:

> We fight it from every angle. We were out chasing the seismic surveys, slowing them up. You know face to face with them. And that's quite brutal sometimes, you know, because they're quite nasty these people (Participant UK – Chsh 2).

Keeping track of seismic surveys is used to monitor and inhibit the industry's progression in the early stages of development. Seismic surveys are also perceived to be intrusive processes that require land access to lay out cables and possible explosives charges (Frack-Off UK 2017).

Another targeted protest approach used by anti-fracking groups in the UK is to carry out reconnoitre exercises. Participants described going to company cites to monitor and document industry operations by taking photos and videos and livestreaming their encounters. For example, two participants described an event where they and one other

protester went to survey Marriott P R Drilling Ltd[14] to find out what was happening on the business site. Marriot was targeted because of its involvement in supplying fracking equipment to unconventional gas companies, as one of the participants explained:

> We went because Cuadrilla owned a drill which they sold to Marriotts ... and we were concerned that equipment was coming from Marriotts going on to Preston New Road and nobody was looking at Marriotts (Participant UK – Chsh 1).

The two participants described in detail their confrontation with the manager about the destination of a lorry that had been loaded with fracking equipment, and how they walked slowly in front of the lorry (known as 'slow walking') to slow down its progress:

> I've never done anything like that in my life before. I got my camera out and started livestreaming and we were just in front of the lorry. And then management came out from Marriots and we said, "this lorry's going nowhere, you know it's taking fracking equipment" and they said "no it's not, it's going to Scotland" [and "it's water equipment not fracking equipment"]. And I said "show me your work order then and we'll go, it's that simple" ...then we started our slow walk [in front of the lorry], and it was really scary (Participant UK – Chsh 2).

The event above progressed to a larger group of protesters and was the start of a protest camp at the Marriot site, is also an example of the fluidity of the grassroots campaigning in the UK:

> And that camp, that camp was a great camp. It basically, Derbyshire and Knotts knew there were planning permissions, but they had no awareness. So that camp, was an awareness camp. As well as slow walking lorries out, couple of lock-ons, a couple of lorry surfs, delayed Marriotts. No doubt they put the price up, Cuadrilla would have had to pay for it. And that lorry of course did [eventually] turn up at PNR (Participant UK – Chsh 1).

Another protest strategy revealed in the interviews was that protesters use freedom of information (FOI) laws to gain information about operations and decision-making by industry and government. Five participants spoke about how FOI has been used by anti-

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[14] Marriott P R Drilling Ltd "is the largest onshore deep drilling company based in the United Kingdom operating over 25 drilling and workover rigs and providing a wide range of drilling and associated services to the oil, gas, shale gas, gas storage, CBM, mining, water and geothermal industries and for specialised geoscientific drilling projects in the UK, Europe and selected international markets" (https://www.marriottdrilling.com/).

fracking groups. Freedom of information is described as 'behind the scenes' campaigning and is used in conjunction with direct action protests:

> [Campaigning] has been in the large part, to get in the way, to cause a scene. But then there's lots of people behind the scenes here challenging, sending freedom of information requests, so it's both on the frontline and behind the scenes campaigning (Participant UK – Mnch 1).

An example of FOI in use is in relation to local groups finding information about the financial details of industry-related companies. In speaking about a fellow anti-fracking protester, one participant described how they effectively used FOI to garner information about the fracking company operating at Kirby Misperton, Third Energy[15]:

> He's really good at the freedom of information stuff and he's a really quiet one that digs and delves and puts some really cracking stuff, and he'd done most of the work on the Third Energy [company] accounts (Participant UK – Yksh 7).

Pursuing such controversies using FOI enables the movement to substantiate a narrative that the industry's operations are dubious and are not economically viable. FOI is also used to substantiate the narrative that governments fail to exercise due caution in making decisions about courses of action that involve known and substantial risks, and that decisions are made even though there is known risk. For example, one participant explained how they used freedom of information to find out that the government Environment Agency had ignored the risk posed by the location of a shale gas exploration well close to an aquifer used for public consumption:

> The well at the middle of Ellesmere Port is four kilometres from an extraction point that extracts four million tonnes of water for public consumption every year. So, [the Environment Agency] completely ignored that altogether, you know. I had to write a few Freedom of Information requests to get them to acknowledge that that was a possible threat [to the local water source] (Participant UK – Chsh 3).

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[15] Third Energy: It was revealed in early 2018 that Third Energy, 95% owned by Barclays Bank, had been granted a licence to operate in Kirby Misperton despite dubious financial arrangements. According to a delayed release of their 2016 accounts, Third Energy had a significant debt of £3.405 million and turnover was £757,000, and a total owed to companies in the group £4.8 million which was repayable on demand, but the directors of Third Energy Holdings had confirmed it was "not their intention to seek repayment of this amount within the 12 months following the signing of these accounts" (https://drillordrop.com/2018/02/02/fracking-firm-third-energy-records-loss-of-3-4m-in-delayed-2016-accounts/).

I also found that, through their groups, most of the UK study participants took part in some form of citizen participation opportunity, such as by writing submissions for planning approval processes and public inquiries, or by lobbying their local government officials. This strategy has effectively helped to politicise the anti-fracking narrative by focusing on local councils who give licences and planning permissions, and by making fracking a partisan election issue. One participant described approaching their local councillors, local MP, and the local City Council:

> We talked to our local councillors and we've talked to our local MP, who are backing us. I've been to see Sheffield City Council with my wife, and they've come out with a policy of, they're not going to allow anybody to frack on council owned land (Participant UK – Yksh 8).

Another participant similarly described their participation by writing to government representatives, as well as trade unions, and by participating in the proceedings of the Minerals and Waste Joint Plan Examination Public Inquiry:

> You have someone like me who's been more involved in things like writing blogposts, writing to MPs, councillors, talking to national trade union, local trade union, congress branch things like that. …Yes, and one of the major roles I've had is consultation on Minerals and Waste Joint Plan (Participant UK – Yksh 4).

The day on which I attended the Minerals and Waste Joint Plan Examination Public Inquiry, I observed a considerable representation of the anti-fracking movement, with approximately seven local anti-fracking groups that took part in the proceedings.

## 7.3.2  Regional Networks and Protection Camps

Like its Australian counterpart, the anti-fracking movement in the UK consists of regional campaigns and networks. I observed an example of regional networks when I attended an anti-fracking meeting in Manchester organised by the Friends of the Earth. The event was attended by approximately fifty people from the Manchester region, and by a range of speakers from the North of England. The speakers were there to talk about their experiences at the various protection camps and longstanding blockade campaigns in Northern England: Preston New Road, Lancashire; Kirby Misperton, Yorkshire; and Barton Moss, Cheshire. A sense of camaraderie at the event was evident; that is, although each

campaign was organised locally, people were there in earnest to hear the experiences of others in the region.

I also found that the protection camps and blockades act as regional hubs, where people can go and show their solidarity and support for the different campaigns. I observed this type of support when I attended the Kirby Misperton, and Preston New Road blockades. I met people who regularly attended these sites, but I also met people who were visiting on those days. The interviews also revealed that this demonstration of support is common in the UK. One participant from Leeds listed the different sites that they had visited:

> I've been to a couple of times, rather more than that to Barton Moss.  But I've been to Kirby Misperton a couple of times, Preston New Road a couple of times. I haven't been down to the Nottinghamshire site (Participant UK – Yksh 6).

I found that participants spoke about attending various camps as one of the ways to identify their level of support, not only for the movement overall, but also for different campaigns in the region:

> So, going to, at the time that Barton Moss was running I would go to the protests there. I have visited other camps, but not long-term because I'm a mum (Participant UK – Mnch 1).

I also found that the networks have brought people together in ways that they had not anticipated. One participant described how the groups in their region keep in contact with each other and provide support for anti-fracking events. Interestingly, they commented on the unifying quality of the network:

> Since I've found out about it, I've been here, there and everywhere, and got involved with, and got in contact with other local groups. All they stressed, and all the rest of it, it brought us together in a way that I would never have imagined. So, there are groups locally who are in touch with nearly every other local group. We tend to mill around, and if there's something going off at one place, we'll all go there. So, we have got quite a strong community (Participant UK – Yksh 9).

For another participant, the connections are about protesters from different regions supporting each other, because even if their own region is not directly affected by mining now, it might be in the future:

> We always get to talk to people and my husband said to me this morning, "who was there yesterday?" and I said, "you'd know them if you saw them". I don't know their name, because we've got one thing in common, we don't go out drinking with them but I know them because I see them all the time. And we don't know their name, but we have one thing in common. I think the companies don't like to see normal people really involved, because they like to blame outsiders. And I guess from Preston New Road you would say I was an outsider because I come from West Lancs. But what spurred me on to support them in 2014 was to help them to fight what will ultimately come to us if we don't stop it there (Participant UK – Lancs 1).

Another participant acknowledged that they felt a sense of camaraderie with people they had met at the Kirby Misperton Protection Camp because they shared the same concerns and the desire to protect the environment and public health:

> I've been down the [Kirby Misperton] protection camp and talked to the people, and I know they're some nutcases down there who're probably not taking their medication when they should do, but there's also the genuine local people, and there are some fabulous people, I've got to know some lovely people because the people you think the same as me, you've got to protect the environment, you've got to protect the air, you've got to protect people's health, it's more important than the Economics, everything's important (Participant UK – Yksh 7).

Protection camps are also sites for raising public awareness. One participant described how driving past a camp brought the issue of fracking to their consciousness, but then also became a point of contact to find out about more after a flyer was delivered to their door:

> It was really funny because two days before we got that leaflet, we had been driving down the country lanes, and we went past Upton camp. I said, "oh, what's that about?". And there was all the [anti-fracking] signs outside, and we just went, "oh, I wonder what all that's about?", and we carried on. And then, a couple of days later we got this leaflet, and I went "well there is only one place to go", I said. "down to the camp to see what this means what this means for us" (Participant UK – Chsh 2).

Likewise, a participant spoke about the Kirby Misperton sites as being sites for informing people, and as such, the importance of being welcoming to newcomers:

> It is to inform people. A lot of people that drop by here, especially seeing it for the first time, if you see a mum and her daughter walking down the hill with her first ever homemade placard and they're nervous, it's really important how you greet them. And we do and [we] reassure them and that's lovely. And then they come back and then they bring their friends (Participant UK – Yksh 3).

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### 7.3.3 Activism

Another point of difference between the Australian and UK case studies is the level of acceptance of activism in the movement. As in Australia, there was a range in the representation of participants who had, and had not, had experience in protesting or activism:

> We went from quiet [living a quiet existence], to following seismic vehicles down the lanes... I mean we had a little action, didn't we, not long after we joined, where we sat in front of vehicles and kept [them] locked ...in a farm field. And we have never done anything like that before. It was frightening really (Participant UK – Chsh 2).

However, I found that there was acceptance of the 'seasoned' protestors, or what were called, 'national protesters'. Although there was criticism in the media and by the broader public of protesters that were not local, all of the participants shared a sense that these activists were welcomed by the movement because they brought to the protest a larger range of strategies and resources:

> As much as the[re] is difficulty with the national/local/regional dynamics, we very much appreciate the support of national protesters here. We don't want that to replace local grass-roots activism, it has to work together; this is a national battle. We've got national regulators involved, we've got the Government, of course the frontline is a national protest and that harmony of groups and the different energy it's brought has been really amazing and I know I would say that for me the dedication of the protection camp and the guys that live here is motivating. I don't agree with all the behaviours, I don't agree with all their MO (modus operandi) but I respect their right to do that. But the energy and the dedication they have brought to the campaign is nothing but inspiring ...well we have to thank them as a community, and we also have to defend them because there's a lot of slurs and accusations of violence and just general prejudice which are entirely unfounded (Participant UK – Yksh 3).

Another participant acknowledged the benefits of the national protesters' capacity and skills to set up protest camps. They acknowledged a broad range of people involved in the protests from different backgrounds that are protesting the same issues:

> We've got tree-huggers, who are the young people, [or the] professional [national] protestors because they move around the country. And thank god for them, to be honest with you. They're the people who can set up camps. They know how to do it. And they are campaigning against the total injustice of what's happening here. We've got supporters of the Green Party. We've got people from mainstream. We've got people like myself, who have never done anything like

this in our life. We've got farmers, we've got a lot of equestrian [people], it brings together all sorts of people that you don't actually know very much about (Participant UK – Lancs 1).

One participant wanted to emphasise that most of the protesters are normal everyday people who would not usually be activists in this way:

> They've got to think that they've looked at exactly who is standing at the gates over there. But it is not your average activist and anarchist. Its people like us. And somebody up there did a thing called Rogue Gallery and she was taking photos of people, a bit of paper saying where they were from, what job they did. And she's got hundreds of them. And it's like, look at that, we're just normal people with jobs. We don't want it. But we don't want it enough to just stand there and face with the police. I can't believe what we're doing. I never thought I'd be head on with the police (Participant UK – Yksh 9).

## 7.4 Global Protesting Mechanisms and Networking

My analysis also found that the anti-fracking movement used a range of typical protest mechanisms in Australia and UK. I found that collaborations between different organisations, groups, and individuals enable information and resource sharing which aid in developing the movement's broader purpose and collective identity (Diani and Bison 2004; Saunders 2013). I also found that relationships are made across regions and continents that are founded on shared identity and solidarity (Diani and Bison 2004). Although many of the protest mechanisms that are used by the anti-fracking movement in both Australia and the UK have local origins, they were attributed to campaign successes and taken up as campaign strategies across regions and international borders.

### 7.4.1 Community Meetings

I found in both Australia and the UK that the central mechanism for mobilising communities to participate in the anti-fracking movement was the holding of community meetings. Community meetings usually take place when a licence application in a region is underway. However, I found that there are two types of community meeting. One type, organised by the anti-fracking movement, is used to raise public awareness, and inform the affected local communities:

> We did probably some of the first meetings up here in Lismore, you know, there were 800 people in the hall, and you couldn't get any more people in the hall. You

know, there was that movement that started to build (Participant Aust – Professional 3).

The anti-fracking movement also makes use of community engagement events held by government and industry. These events provide an opportunity for the anti-fracking movement to present their counterarguments to the local community, and if they are present, to government and industry officials. To do so, the local community bring in their own experts to reinforce and legitimise their counterarguments. Additionally, as one participant explained, these meetings also provide an opportunity to provide government and industry representatives with evidence of community opposition to proposed developments:

> There was a meeting at Lismore town hall. The poor man arrived, and he had been trained in interaction and, "I'm listening to you", he kept saying – well he could hardly hear himself. And it was just interesting to see. He was bewildered, he could not understand what was happening. We had baskets of [documents] people had signed to say they didn't want certain things tied up with ribbon, and I took up [my basket] and I handed it to him. He graciously accepted it – he didn't realise what was going to happen. …We were not giving him roses we were giving him protests. Well some people were very noisy at that meeting weren't they. [The protesters] had specialist after specialist speaking, it was quite extraordinary. One after the other they got up and they were able to out talk his experts…. And they were left, you know, speechless (Participant Aust – NSW 2).

I also found that the anti-fracking movement seeks to impart sound and scientific knowledge to support their counterarguments at community events. As well as having experts speaking at these events, one UK participant demonstrated how they used information gained from peer-reviewed literature, and government and industry documents, to convey the anti-fracking message at community meetings in Cheshire. Along with this information, community meetings are used to promote self-efficacy and encourage people to explore the topic and find out for themselves:

> I tend to show that and say well look, people are starting to find out about it, and this is the result of people finding out about it. I explain, I'll give you a presentation, I do my best to be as factual as possible, but you need to go and have a look yourself. And then I point out, I show several reports, reports by environmental groups, which always have a bias. Now however you tend to look at it they have a bias, and I say, they're interesting to read but bear in mind they've got a bias. Even then look at industry reports, now there aren't many of those and again they're totally biased. They have no negative connotations at all, so I point that out and say, have a read of them they're interesting; no negative

connotations, you need to think twice about it. But then there is some good peer-reviewed scientific stuff around there and I'm always keen, being, you know an engineering background, I'm always keen that it's statistically correct. So, its sample sizes are less than a thousand, I'm not interested. But you get sample sizes like the Pennsylvania child mortality study, end of last year, where they looked at a million births – to me that's statistically significant and statistically usable. So, I always tell people to go and have a look on the internet but, a; you need to make sure it's unbiased and b; you need to make sure it's statistically significant (Participant UK – Chsh 3).

Another way in which community meetings were used was described to me by two participants from Yorkshire. They explained a local strategy that evolved in response to several industry community engagement events that had taken place in their local region. Their local group organised what they called 'alternative exhibitions', which were held on the same day as the industry event and in a nearby location:

> …in the same village about half a mile away and that was very effective because people were going to both of them and finding out the company spin, you know, the industry spin, and then find out what we thought about it, which resulted in a march over to their's and them being run out of town really. They were run out to town more or less, weren't they? … wherever they were holding an exhibition we'd tag along and hold one nearby with the support of the local people. Which proved to be pretty effective because I think that quite a lot of knowledge came out of that (Participants UK – Yksh 8).

These participants believed that such community events were effective in raising public awareness and presenting their alternative narrative because they attracted a positive community response. The participants also stated that they felt they had surprised the industry with the level of community opposition generated by these events:

> Whatever answers [industry] were trying to fob us off with, people had done a bit of research by then, and they were coming back with facts. And they were saying, "no, we don't believe that!" …I don't think INEOS were quite ready for quite the level of opposition that they got (Participants UK – Yksh 9).

Community meetings are also used to show films that further build awareness and bring the lived experiences of people in other regions into a community. The Lock the Gate Alliance has sponsored a range of films that they have taken with a range of speakers to tour internationally, notably *The Bentley Effect* (described in Chapter 4) and *Frackman*. Other notable films from the US have been toured and shown at community meetings in both Australia and the UK, including *Gaslands parts I and II, Promised Land, Mining for*

*Ruby,* and *Oklahoma Shakedown*. One participant described how such a 'movie tour' provided her with other campaign strategies which she put into operation through her own anti-fracking group:

> And I've been with this one [shows a petition form]. It came from your wonderful people, *The Bentley Effect*, and they came over here last spring and they showed us their film. And part of the film was all these people signing it and people rolling up with all these sheets of paper. I thought, that's what we need. So, I set off and I emailed Australia and they sent me a proforma of their one and so I changed it. This is a second version. I had one last summer, because we have these agricultural shows locally and this is a fantastic way to meet people. We just have a stall and table – "would you like to have some information about the fracking", and then, "would your sign it?" I got 500 signed it in about six weeks (Participant UK – Yksh 1).

A few of the participants spoke similarly about the benefits of touring and making international connections on these tours. One participant described the sense of solidarity and opportunity that they felt after talking to people who had brought a movie tour to the UK from Australia:

> I mean when [names three people] came round with the film on tour, they were saying you had a real opportunity. "By the time we started the movement it was already happening all round us". You know, and he said, "you've got a chance because it hasn't started yet". I think we're better off in that respect (Participant UK – Yksh 8).

I also found that national and regional tours have been used to help generate the movement in new regions. One participant described how such a tour was used to start the movement in Victoria. The tour, called *The CSG Roadshow*, featured prominent speakers from Queensland and New South Wales, such as Lock the Gate founding member, Drew Hutton. This tour was described as having had a ripple effect in mobilising people to start their own grassroots groups:

> It was originally in Western Victoria. So, 2011 we get we did a CSG roadshow. So, basically, we brought Drew Hutton to Western Victoria and we just went around and found venues, like, RSLs[16] and town halls, and announced we were going to

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[16] RSLs are bar, dining, and entertainment venues originally formed for the Returned Services League in communities across Australia as a venue for current and ex-serve personnel and their families and are now open to the broader Australia community and work as revenue raisers to benefit and contribute towards the goal of better facilities and services for veterans (https://www.rslservicesclubs.com.au/329).

have a CSG roadshow, and people really came out of the woodwork. I think the reason it was on people's minds was the Gaslands film had come out, and a lot of people had started to see that, and were wondering what was going on, and at that point there was no information anywhere about the level of exploration for CSG. And so, we saw it as a stone in the pond, and then, you know, we did a tour for about 10 days, and then we just stood back to see where the ripples went. And the ripples were quite profound in that all these people started to then look around and then realise, actually, their area was under exploration. And then from that, groups started to get themselves organised (Participant Aust – Professional 2).

## 7.4.2 Community Surveys

Another example of a protest strategy used in both Australia and the UK is the use of community surveys. The community surveys exemplify how the anti-fracking movement has created ways for people to politically participate where there is a deficit in official participatory opportunities.

The use of community surveys as a mobilisation strategy was developed during the Australian Northern Rivers campaigns between 2011 and 2014. The idea came from a member of the developing Northern Rivers grassroots campaign, Annie Kia, who had remembered the strategy used in anti-nuclear protests in her childhood in the UK. One participant described how the process involves surveying the level of community acceptance of a proposed unconventional gas development. The local anti-fracking group members survey whole local communities and then publish the results on roadside signs:

> First of all, you have a meeting and then you get those people to go out and survey their area and find out whether they were for it or against it or they were neutral and just give their opinions. Now ... we did do the whole of this area and partly going into Corndale and as a result of that we were able to put up signs like the one up near our hall which says that, I think it's 79% it might be higher, were against (Participant Aust – NSW 2).

Publishing the results on signs along roads powerfully and publicly demonstrates the lack of social licence for the industry in the region. When I travelled through the Northern Rivers region years later, I found these signs were commonplace along roadways, and example of which is illustrated in Figure 23.

Figure 23: Survey results sign, Northern Rivers, NSW. Image: Authors own



I found that the use of surveys as a protest strategy filtered through to campaigns across Australia. One participant explained that the surveys were a tangible way for the communities to communicate their opposition to the potential developments:

> That was huge because then you've got the community saying no, you've got it in hard copy. Yeah, so our community was 98% said no. And that was pretty similar across the state. I mean some areas that were in coal mining areas because a lot of these surveys had covered coal as well, they would be around 80% which is still huge (Participant Aust – Vic 6).

Another participant described how the surveys enable communities to make it resonate to the broader community and to government decision-makers, that they are not wanting unconventional gas development:

> Now the concept is really good where you've got people stirred up and done surveys, and we've done a survey where we live, now my wife was involved with doing the survey. And so, they could show that 95% of people [in our community] don't want it. And that's all throughout Australia. And so that's really good. That's a big effort though, but it's very good, [and it] can be used really strongly. It still

> bewilders me that the governments see that, and then don't stand back and go, the community really doesn't want that, and there's no social licence, we shouldn't do it (Participant Aust – WA 3).

For one participant the surveys provided a way in which they could be actively involved in their local group; further, they were effective in generating interest in attending a public meeting and conveying publicly the broad opposition of unconventional gas development in their region:

> 'cause, you know, they were looking for setting up little local groups and getting people out to door knock. So, I door knocked all my community. I don't know, fifty something houses, which is rural. And the opposition in the community was incredible! Like, in our tiny little hall, we squeezed in 200 and something people. We had all the local politicians there, ABC media, radio…Lakes Oil had one representative against all of us. The only people for it, that I understand, were the local earth moving company up the road, 'cos they wanted the jobs from them (Participant Aust – Vic 1).

I also found that the community survey strategy was used in the UK. One participant described how the strong community opposition expressed in their survey influenced the local Parish Council to vote to oppose shale gas development in their region:

> We did a survey in [location], and 88% of the people who responded to the survey, and it was quite a good cross-section, actually, were totally against fracking. Not just where we are, but totally against it. That was 2014. So, although I hadn't been aware of it, other people had been aware of it. We asked four questions. Do you know what fracking is? Do you want to see Fracking in [location]? Do you want to see fracking anywhere? And would you join a group opposing? And it was more than 88% were aware. It's more than that, I can't tell you what it is now, but 88% said no to fracking locally, 88% said no to fracking anywhere. And one person said they didn't want to join our opposition group which brought it down to 87.4 %, not very much. And that was how we started the group that is how I, together with Parish Council, started the group. Because the Parish Council took the view that that survey told them what the community wanted, and so, they stood fully behind our little group (Participant UK – Lancs 1).

### 7.4.3  The Knitting Nannas against Gas

The network, Knitting Nannas against Gas (known as Knitting Nannas or KNAG), is another group closely associated with Lock the Gate. The Knitting Nannas became a phenomenon with their signature campaign style of attending rallies and blockades with their knitting. The Knitting Nannas Against Gas, established in 2012 have become an international organisation (a 'disorganisation' according to their website), celebrating the role of

grandmothers (nannas) in society, and using this persona as a strategy for protest (KNAG 2020a). The group uses knitting (an activity popularly associated with 'nannas') as the trademark and conduit of their protest; powerful in its everyday passiveness, but which underscores morals about power and greed and protecting future generations and communities.

> We sit, knit, plot, have a yarn and a cuppa, and bear witness to the war against the greedy, short-sighted corporations that are trying to rape our land and divide our communities. KNAG happily supports other anti-greed groups at their protests and meetings, or online. We are non-party political. We annoy all politicians equally. Any selfies taken by pollies with the Nannas are a show of their enthusiasm to be seen with real celebrities (KNAG 2020b).

By using passive protest mechanisms, quintessentially non-violent direct-action campaigning, the Knitting Nannas also represent a wave of social movement with growing membership, strong networks crossing state and international borders, including a sister organisation in the UK; 'The Nannas'. Playing on the role of nanna, they provide an important role in creating safety at protests and ensuring they are family friendly events. The group challenges the popular belief that protesters consist solely of radicals, activists, and young university students. Through humour and fun, the Knitting Nannas shed light on the social and environmental problems of unconventional gas development.

Knitting Nannas have become synonymous with the anti-fracking movement and has grown to have an international presence, including in the UK. I found that Knitting Nannas were strongly represented across the data sources that I consulted in my research: the interviews, my online analysis, and in the documentaries that I watched. They are represented on the Lock the Gate website, they were highly visible in *The Bentley Effect*, they have a strong social media following, and they were often found in news items. Five participants in Australia mentioned the Knitting Nannas in their discussions about the anti-fracking movement; one of them personally identified as a Knitting Nanna:

> I thought the idea of being a Knitting Nanna, ...and doing the silent protesting type-thing suited me down to the ground. So, I got involved with that and then of course Lock the Gate came into that because they were having some things going on and they needed the Knitting Nannas there (Participant Aust – WA 2).

Less obviously, I found that the Knitting Nannas embody a power imbalance associated with the debate about natural resource development. I observed the Knitting Nannas highlight this power imbalance in a scene from *The Bentley Effect*. At the time depicted in the film, during the Northern Rivers anti-fracking campaigns between 2012 and 2014, the emerging group attended a protest on a dirt country road waiting for trucks that were delivering well infrastructure to a local farmer's property. The Knitting Nannas were knitting long scarves. As the trucks arrived, they laid the scarves on the road and the trucks were forced to drive over their knitting. The Knitting Nannas were not aggressively protesting, and their act was not obstructive, but the image of the large trucks rolling over the knitting graphically conveyed the industry's power relative to that of the anti-fracking movement.

I also found that the Knitting Nanas use their knitting to introduce a creative element to their protest knitting:

> The Knitting Nannas started, and it was brilliant, you know. When they knitted, a member of parliament, [Thomas] George, up here in Lismore, a coffin, it was just like, brilliant; it was just gorgeous. So, when there was a blockade the Knitting Nannas, and I've got this gorgeous photo of two of them, one of them is just pushing her thing with all the knitting and the others on a walking frame and you know the next photo is one of the Knitting Nannas on top of a tripod knitting (Participant Aust – Professional 3).

The Knitting Nannas also took on caring roles at blockades; doing so helped to make the protest sites safe and family-friendly:

> But they made it safe. They made it somewhere you could take children. You knew things weren't going to get out of hand. Basically, if you went to a blockade like the first thing you had to do was report into the Knitting Nannas and they would ensure you had water, a hat, sun cream, had any special dietary problem, dietary issues. So it was that sort of, you know, it was the typical role of a good grandmother looking after the flock. And they did it so well. And also, it's much more difficult for the police to be brutal in front of an older woman (Participant Aust – Professional 3).

Moreover, the Knitting Nannas present a friendly and inclusive way to participate in the anti-fracking movement, but one that has equal measures of activism and a sense of community:

When the Knitting Nannas first started in Perth, we actually had no nannas, and some of us couldn't even knit …. It used to be quite funny when people would say ah well, I'd like to be a Nanna, but I can't knit, and we'd say none of us are nannas and most of us can't knit so you'll be well suited here. … They're also people with a bit of a fiery spark where they've got a bit of activism at heart and they're prepared to, I'd say, probably, at least 50% of them would be prepared to lock themselves to something if they had to and be prepared to go to prison for it. So, there's a bit of a radical element there with the Nannas. You know, they'd be prepared to take the next step (Participant Aust – WA 2).

Tactics pursued by the group include weekly 'knit-ins' on the footpath outside their local MPs office. This type of activism has evolved into a signature, and often controversial strategy used across Australia. Before the Australian Federal Election in 2019, the Knitting Nannas held a protest outside Liberal National Party MP George Christensen (Figure 24).

Figure 24: The Knitting Nannas Against Gas protesting outside Liberal National Federal MP George Christensen's office. Image: https://frontlineaction.org/knitting-nannas-protect-kiddie-george-christenson-3/



In this protest, the role of nannas 'looking after their flock' brings the focus of sea level rise onto the impact of future generations. The use of the colloquial term for children, 'kiddies', on their banners reemphasizes the perception of closeness between the nannas and their children and grandchildren. Also notable in Figure 24, is the yellow clothing and accessories symbolically aligning the group with the Lock the Gate Alliance (KNAG 2020a)

and highlighting a collective identity with the broader Lock the Gate, and anti-fracking narratives. The uniform constructs the identity and creates alliances and a sense of camaraderie, which perpetuates the anti-fracking narrative.

The events at Bentley inspired and instigated the expansion of the group across Australia and internationally resulting in a total of 27 groups, two of which are in the US, and five in the UK. In the UK, the group has adapted to typical British notions of nannas. Taking heed of the powerful and important place of the Knitting Nannas in the Australian anti-fracking campaign, a group was formed in the UK in 2014, The Nanas and one group known as 'Nanashire'. Emanating from the Preston New Road protest site, The Nanas similarly provide an important element of safety to the protest, and ensure people are fed, have water, attend to first aid and are often the 'point of contact' at the protest site as well as participating in the 'front line' in the protest (Figure 25).

Figure 25: UK Nanna at the Preston New Road Blockade, Lancashire. Image: Author's own



Instead of the knitting and yellow clothing, the Nannas are often equipped with tea and cake, ensuring well sated protesters. Presently, the Nanas are a countrywide network,

and have a distinctly British uniform of pinafore, or tabard (Figure 26), or clearly labelled raincoat (Figure 25). The group has also established the Nanashire Facebook group to communicate and operate their group nationally.

Figure 26: The Nanashire Facebook cover photo. Image: https://www.facebook.com/Nanashire1/



Interestingly, the Knitting Nannas manifesto (nannafesto) does not suggest solutions. Concurrent with the general narrative emanating from this study's interviews, there is no compromise with their objective – there should be no fracking or unconventional gas development at all. The 'nannafesto', states:

> We peacefully and productively protest against the destruction of our land, air, and water by corporations and/or individuals who seek profit and personal gain from the short-sighted and greedy plunder of our natural resources. We support energy generation from renewable sources, and sustainable use of our other natural resources. We sit, knit, plot, have a yarn and a cuppa, and bear witness to the war against those who try to rape our land and divide our communities (KNAG 2020b).

The Knitting Nannas' language is strong and non-negotiable. It positions the development of unconventional gas, and mining in general, as destructive and driven by greed. By creating a dichotomy, with themselves as protectors, and the industry and politicians as destructors, they establish a sense of camaraderie, 'us against them', which in turn

reinforces their narrative. The Knitting Nannas are not lobbyist and do not work with government to achieve goals. Instead, the Knitting Nannas work entirely as a protest group, defining themselves through the problems associated with unconventional gas development. To further perpetuate their narrative, they have diversified the scope to include other types of mining, such as Coal. As Lock the Gate have done, the Knitting Nannas have moved on to other, similar causes. Their protest is less about a specific issue, and more about broader debates concerning caring for community and the environment, climate change, and energy use.

### 7.4.4 Non-Government Organisations

My research also found that non-government organisations (NGOs) are instrumental in the anti-fracking movements in Australia and the UK. These NGO's include, Greenpeace, The Wilderness Society, the Conservation Council of Australia, and the Friends of the Earth. NGOs play a strategic role in informing communities of industry activity, organising events, and providing vital resources (knowledge, strategies, and connections). However, I also found that at the heart of these processes of facilitation, particularly for Friends of the Earth, is an emphasis on keeping the anti-fracking movement grounded in the local communities and allowing the communities to respond in their own way. In responding to the comparison between Lock the Gate's national presence in Australia, a participant from Friends of the Earth described that NGOs in the UK provide support and guidance to the local communities, such as advice and assistance with planning applications and legal challenges:

> So, there are national bodies who are working on fracking. So, Greenpeace, Friends of the Earth and others who do provide support to communities and guidance around some technical aspects around planning applications and legal challenges and that kind of stuff and try to empower and support communities to campaign effectively. But I think it has been very much the case, of certainly from our point in Friends of the Earth, it's been a case of saying, well, it's not for us to impose a way of working or a brand or a structure on a community that wants to oppose this, we want to try and stop this, and we want to support communities to do that but it's not really for us to kind of do that. So, we provide those resources if communities want it. There's loads of resources, and different places is their choice about what they do (Participant UK – Professional).

Another example of Friends of the Earth's involvement was that they put into action a petition to show the level of community opposition about the proposed well at Barton Moss, which they used to lobby local council:

> So, one of the things we did was to organise a petition to some of the council who were the ones deciding on that particular application and gather …signatures to be able to show public opposition to council for when it came to the decision-making they had that feeling of the opposition which you get, I guess, the impression that the …site protest it's just a rent-a-mob coming along and protesting for protest sake – it's not really local people. But we could back that up and say it is actually local people because here's all the signatures of people who live in Salford. So, we did that part of it which I guess the people at the camp on the site probably wouldn't do, they were absolutely focused at the rally (Participant UK – Professional).

Another participant explains that Friends of the Earth was pivotal in informing their local community in Yorkshire about the problems with unconventional gas and fracking:

> Yeah, certainly [Friends of the Earth helped] in getting some information out for communities. [Before they provided this information] there was nothing apart from, [fracking] is a new technology, and we're all going to benefit, stuff (Participant UK – Yksh 1).

In Australia I found that Friends of the Earth were instrumental in mobilising the movement in Victoria. One participant described how Friends of the Earth employed someone to drive events and generate the movement from the Gippsland region to the south west of Victoria:

> It started in Gippsland. I think Friends of the Earth hired a person to drive it. I guess, once they saw the opposition in Gippsland, how strong it was, it was then easier to roll it out to other areas. And then we had the people with the Gippsland experience come to our area and talk about what they did. I guess I found out about it just through social media and I was quite happy to help it when it came over here (Participant Aust – Vic 1).

## 7.5 Conclusion

This chapter explores the ways in which protest is used to operationalise the anti-fracking movement. My analysis revealed a range of protest strategies discussed and evaluated by anti-fracking protesters that enact the opposition to unconventional gas development. The various methods and strategies of protest revealed in the interviews are

characteristic of social movements and demonstrate that protest is a powerful component of the anti-fracking movement's ability to gain public awareness, mobilise communities into action, and gain traction in the political sphere.

In the following chapter I will discuss the implications of the findings presented in the previous three chapters in relation to power, democracy, and the possibility for decision-making in relation to unconventional gas development and mining into the future.

# Chapter 8   Ways Forward: Identifying the Implications of a Social Movement for Mining Policy Development

## 8.1  Introduction

Chapters 5-7 reveal the narratives that have shaped the key characteristics of the anti-fracking movements in Australia and the UK: the community-centric narratives that pose the development as a social problem; the influence and response to government regimes; and the use of both decentralised and formal structures for protest. Collectively, these findings define the anti-fracking movement as a social movement. In this chapter I will argue why defining the anti-fracking movement in this way matters for mining policy development. To do so, I will discuss the role of conflict within the mining policy development paradigm, with particular reference to the findings of my analysis from Australia and the UK. The chapter concludes that protest provides opportunities for mining policy development to address the social problems associated with natural resources development and to even out the power relations at the core of these conflicts.

## 8.2  The Value of Understanding Social Movements and Social Conflicts for Policy Development

This thesis has documented the evolution of the anti-fracking movement in conjunction with the expansion of the unconventional gas industry globally and how it has adapted to the various localities impacted by the industry. In Chapter 2 my review of the literature establishes how the anti-fracking movement can be viewed through the social movement lens, through its formal, informal, and networked processes of organisation, securing resources by mobilising membership, by disseminating anti-fracking narratives, and by seeking to make change through protest. My exploration of the anti-fracking movements in Australia and the UK finds key characteristics that identify the anti-fracking movement as a social movement. These findings have a range of implications which are important considerations for mining policy development.

Protest narratives expose contested reasoning and prosecutions, reconciling unconventional energy development discussions (Valencia and Carrillo Martinet 2017). My analysis has highlighted that the anti-fracking narratives, and the anti-fracking movement's organisation and protest responses, are positioned within dimensions of power and governance. Circumscribed in technocratic and legalistic terminologies, the motivations for the progression of the industry are ideological and economic-based neoliberal narratives (Mercer et al. 2014; Nyberg et al. 2017; Willow 2016). However, as I established in Chapter 5, the anti-fracking protest does not exist within the constraints of market-based and economic considerations alone. Instead, the anti-fracking movement galvanises its protest narrative that unconventional gas is a social problem within the human dimensions of community values and identity. Moreover, these value-based dichotomies between conflicting community- and industry-based narratives and central values (Bartos and Wehr 2002) underscore the power dynamics within the unconventional gas paradigm.

In reality, the anti-fracking movement does not exist in a vacuum but within a broader political context that both provides the opportunities as well as the cause for protest (Meyer 2004). The use of the discretionary principle within political processes is an example of the political opportunity structures to which the anti-fracking movement responds (Tarrow 2011). Tarrow (2011 p. 32) describes political opportunity as "consistent – but not necessarily formal, permanent, or national – sets of clues that encourage people to engage in contentious politics". The opportunities in this case contrast with political threats that discourage contention (Tarrow 2011). Whilst not determinates of social movements, political opportunity structures provide an environment where contentious politics can create the circumstances which may lead to prolonged public interaction with authorities and then to social movements (Kitschel 1985; Tarrow 2011). The example of the real and perceived notions of the discretionary principle at play in the governance of unconventional gas have created the institutional opportunities that have facilitated public participation in the political sphere and ultimately the development of the anti-fracking movement (Brand 2012; Vráblíková 2014).

Understanding the anti-fracking movement as a social movement, therefore, enables the reflection of these political/relational dimensions as they provide the basis of representations and interpretations of that power within the anti-fracking narratives (Fairclough 2013b). Fairclough (2011, p. 9) argues that these "social realities have a reflexive character, i.e., the way people see and represent and interpret and conceptualise them is a part of these realities". Thus, considering these dimensions within the context of the interrelated and complex role of government regimes explored in Chapter 6, it is possible to gain a deeper understanding of the foundations of the range of power struggles between decision-makers involved in the development of unconventional gas and those opposed to the development (Fairclough 2013b).

Because the protest is against an industry that is envisioned by many governments in terms of future economic and energy security, the anti-fracking movement is political. Protest is a political resource (Meyer and Lupo 2010) and when channelled in terms of social change, social movements like the anti-fracking movement cannot be divorced from political power struggles (Tarrow 2011). The mobilisation of people into an active protest movement therefore pivots on a range of concerns, possibilities, and contexts that are as political as the protest itself (Tarrow 2011). Through their varying narratives, their movement mechanisms, and their influence to change, the anti-fracking movement persistently interacts with the political system (Meyer and Lupo 2010).

Therefore, in basic terms, the protest pursued by the anti-fracking movement is inherently about participating in the political systems about unconventional gas development. With this in mind, success in their endeavours to deter and change unconventional gas developments resonate politically because they are both articulated by the political elite and endorsed by the general public (Meyer 2004; West 2013), thus creating a sense of political agency (Meyer and Lupo 2010). Also, opportunities and incentives to frame domestic anti-fracking prerogatives in global terms and move beyond borders are created through the international systems driving natural resource development regimes (Tarrow 2011). The neoliberalist economic agenda is integrated into global economic spheres, absorbed into national decision-making, with impacts felt at local to global scales. In this way, the anti-fracking movement emerged, in part, from a struggle over power distribution (Cho 2010), particularly in relation to a lack of

opportunity for public participation and building economies on natural resources development.

Along with highlighting the political and power dimensions, the anti-fracking protest narratives provide a range of other insights. Social movement narratives contribute to the political sphere because they provide a gauge of the legitimacy of government actions (Arce and Rice 2019). Chapters 2 and 6 explore how government prioritises unconventional gas because of its economic credentials and the ideological principle that natural resources are for the taking (McDonell 2015). Chapter 5 explains why this view of extraction is at odds with community values and identity. Additionally, the anti-fracking narratives highlight the inconsistencies, or failures, in political representation (Short and Szolucha 2019). My analysis reveals ways in which communities seek to participate in decision-making processes that relate to natural resource development. Chapter 6 examines the ways in which people perceive government regimes limit the community's opportunity for political representation. Chapter 7 explores a range of ways in which the anti-fracking movement has produced opportunities for community political representation through its protest mechanisms.

Understanding the social movement mechanisms for dispersing certain narratives offers insights into the power and influence of the movement. Mobilisation, through networking and what Tarrow (2011) calls the diffusion of contention (dispersing and perpetuating conflict narratives), provides the resources for the movement to grow across borders and into different localities. Networking enables movements to build power by dispersing emotive and identity-based narratives that focus on transforming political opportunities (Tarrow 2011). As such, the extent of the local anti-fracking grassroots networks across Australia and the UK demonstrates the power of the anti-fracking narratives in terms of both their emotive and identity capacity to mobilise and provide political opportunity.

From the void of participatory opportunity, the decentralised protest mechanisms of grassroot organisation and direct action become the means of political expression and agency (Cho 2010). The anti-fracking movement's protest repertoire is deliberately non-violent and focuses protest activities directed at government and the industry through contained or disruptive protest behaviours. Contained protest behaviour takes advantage

of building on accepted social parameters more likely to be more received, or even facilitated by political elites, such as, "lobbying, publishing, media politics, and elections" (Tarrow 2011, p. 104). Disruptive protest, on the other hand, adds appeal by introducing amusement and excitement and solidarity through performances that "disrupt the routines of life in ways that protesters hope will disarm, dismay, and disrupt opponents" (Tarrow 2011, p. 99).

Solidarity too, plays a role in the power of a movement. Tarrow (2011) identifies that solidarity is the result of three components: (i) framing, (ii) identity construction, and (iii) emotion work (Figure 27). From this perspective, the framing of the unconventional gas industry in conjunction with the emotions related to the sharing and acceptance of those framings and the identity formed by the movement combine to shape the sense of solidarity felt amongst those in the movement. Solidarity too is a useful frame to explain the interregional and international influence of the anti-fracking narratives.

Figure 27: Components of movement solidarity, taken from Tarrow (2011, p. 143)
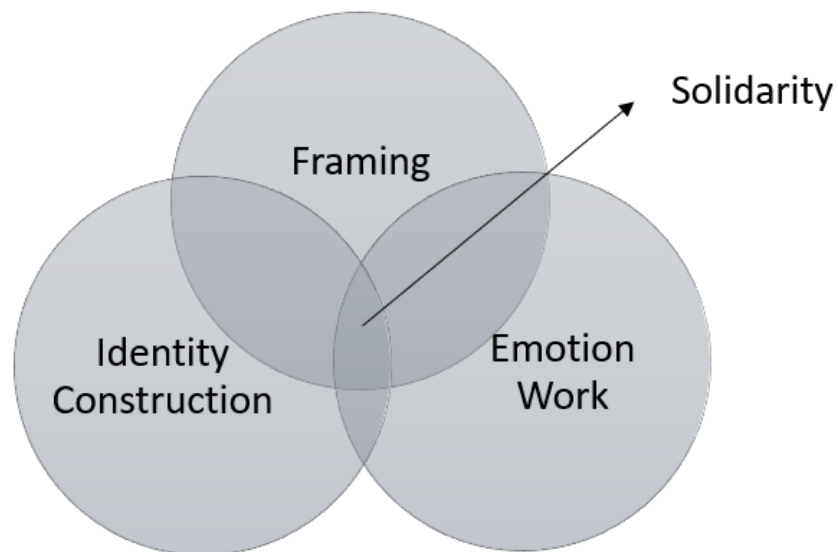


Framing generalises the grievances that define the movement (Tarrow 2011). As noted in Chapter 2, the use of the word fracking, although controversial, simplifies the social problems of unconventional gas, which provides the required generalisation that can be easily identified with. The term 'fracking' also provides a material message about the wrongs of the unconventional gas industry by invoking images that delineate the core narratives of the anti-fracking movement.

## 8.3 Considering the Power Relationships

### 8.3.1 Understanding the Power in Political Participation

By participating in protest, people are practicing political participation (Tarrow 2011). In both Australia and the UK, the representative democracies inherently encompass a central relationship between the people and the governing process (Cohen and Valencia 2008). Political participation affords citizens agency through a method of conveying their interests and needs, engendering pressure for government to respond (Cohen and Valencia 2008). State actors too frame issues to garner support for their policies and contest the counter narratives put forward by social movements (Tarrow 2011). In this way, the anti-fracking movement is constantly engaged in a political struggle over framing unconventional gas development and its meaning for citizens.

The hegemony, in the case of unconventional gas development, is contained within government and industry terminologies. This has implications. Industry activity is legitimised by technical and scientific framings, which makes it difficult for opponents to have the authority to express their concerns (Boyd 2013). The interactions between opponents and government and industry are therefore at cross-purposes (Boyd 2013). Boyd (2013) argues that this pattern sits within a postcolonial view of the world where those wielding the power disempower others by locking them out of structure and processes. Boyd contends, by using the same notions of constraint and exclusion, the Lock the Gate motto, paradoxically empowers landowners to refuse industry land access for operational activities (Boyd 2013).

Protest narratives are therefore formed from government and industry narratives and simultaneously provide the opportunity for political opportunity (Fairclough 1989; Tarrow 2011). These opportunities are shaped by the political system, and as such, determine the interactions movements have with the political system (Tarrow 2011). In this light the protests pursued by the anti-fracking movement can be seen as democratic acts (Cohen and Valencia 2008) or a political resource (Lipsky 1968) because they are participating in political systems (Lister and Pia 2008).

## 8.3.2 Understanding the Power and the Neoliberalism/Society Disjuncture

My analysis has found that the ideological values underpinning unconventional gas are neither inconsequential nor unimportant for people who are against unconventional gas development. The power relationships within this paradigm not only determine, but also affect the relations at play because power is exercised through discourses framing government regimes (Fairclough 1989). Pro-unconventional gas development narratives framed within government and legal structures powerfully sustain the industry's hegemony in relation to natural resource development.

For example, the Australian Government has put gas at the centre of the Post-Covid-19 economic recovery with a plan to reorganise the East Coast gas market into an Australian Gas Hub by "unlocking gas supply, delivering an efficient pipeline and transportation market, and empowering gas customers" (Morrison 2020). The plans to put this policy into action, detailed in Box 2, are underscored by the Liberal Party's neoliberal narratives surrounding natural resource extraction.

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**Box 2: The ways in which the Australian Government will get more gas into the market for it's 'Gas-Fired Recovery' (Morrison 2020).**

The Government will get more gas into the market by:
- Setting new gas supply targets with states and territories and enforce potential "use-it or lose-it" requirements on gas licenses
- Unlocking five key gas basins starting with the Beetaloo Basin in the NT and the North Bowen and Galilee Basin in Queensland, at a cost of $28.3 million for the plans
- Avoiding any supply shortfall in the gas market with new agreements with the three east coast LNG exporters that will also strengthen price commitments
- Supporting CSIRO's Gas Industry Social and Environmental Research Alliance with $13.7 million
- Exploring options for a prospective gas reservation scheme to ensure Australian gas users get the energy they need at a reasonable price

We will boost the gas transport network by:
- Identifying priority pipelines and critical infrastructure as part of an inaugural National Gas Infrastructure Plan (NGIP) worth $10.9 million that will also highlight where the government will step in if the private sector doesn't invest
- Reforming the regulations on pipeline infrastructure to promote competition and transparency
- Improving pipeline access and competition by kick-starting work on a dynamic secondary pipeline capacity market

To better empower gas consumers, the Government will:

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- Establish an Australian Gas Hub at our most strategically located and connected gas trading hub at Wallumbilla in Queensland to deliver an open, transparent and liquid gas trading system
- Level the negotiating playing field for gas producers and consumers through a voluntary industry-led code of conduct, to be delivered by February 2021.
- Ensure Australians are paying the right price for their gas by working with the ACCC to review the calculation of the LNG netback price which provides a guide on the export parity prices
- Use the NGIP to develop customer hubs or a book-build program that will give gas customers a more transparent and competitive process for meeting their needs

These plans will also be facilitated by the Government's plans to change the federal environmental protection framework, the *EPBC Act*. The legislation to amend these laws and to create regulatory pathways for industry was already started before receiving the report from the formal once-in-a-decade statutory review of the *EPBC Act* (Cox 2020a). This discretion and the fact that the Prime Minister admitted that a key adviser behind the Government's decision to make gas the central feature of the recovery plan was "Andrew Liveris, a former Dow Chemical executive and current Saudi Aramco board member" (Murphey 2020) illustrates use of the discretionary principle (coined and explained in Chapter 6) by the Australian Government.

With these power dynamics in mind, the natural resource development paradigm is surmised to be about attaining social and economic resource-dependency continuity as opposed to social change. People opposed to unconventional gas development are forced to work within the dominant constraints of these frameworks, particularly mining policy and regulation, legal frameworks, and other government processes, that are conspicuously set against them. Consequently, the strong government oration praising the benefits of the development, the use of the discretionary principle, and the disproportionately influential industry, not only strengthen industry hegemony, but also diminish the community's capacity to oppose unconventional gas development in their regions. Protest, therefore, becomes one of only a few courses of action available to the community to express any concerns, participate in the unconventional gas dialogue, or engender any counter narratives (Saunders 2013). The example of the emergence of the Lock the Gate Alliance exemplifies how people will be mobilised when they are constrained in dialogue with decision-makers.

The dynamic is further unbalanced with government and industry efforts to suppress people's capacity to protest in both Australia and the UK. Examples include the changing of laws in New South Wales to criminalise protest, the imposition of trespass injunctions on protesters by industry in the UK, and the blatant attempts by the Australian Federal Government to dissuade activists' encouragement of secondary boycotts of businesses and contractors supporting the mining industry (Karp 2019; Tillett 2019). Embedded in the regulatory and legal frameworks of both Australia and the UK, these actions fragment foundational aspects of the democracies, namely, the rights to dissent and protest.

Reducing people's capacity to oppose government or industry actions increases the power gap between decision-makers and the rest of society. These uncompromising actions to prohibit protest and opposition exemplify a situation where those in power are in constant need to reassert their power (Fairclough 1989). Interestingly, when power is viewed as capacity, the exertion of power is aimed to incapacitate, and therefore to weaken and debilitate the movement (Searle 2010). Power here is executed within the institutions of power (government and the law) and it is within the 'rights' of government and industry to exercise that power (Fairclough 2019). Searle (2010, p. 145) calls this "deontic power", that is, power by "obligations, authorisations, permissions, and requirements". Contrastingly, those wishing to voice their opposition have reduced capacity within those institutions to express their views or influence decision-making.

These repressive government-based narratives also demonstrate a willingness by those with power to diminish foundational democratic structures, such as public participation (Black and Kohler 2004), as a means of maintaining their hegemony (Mercer et al. 2014). However, more profoundly, government narratives function to 'naturalise' the ideology within those democratic institutions (Fairclough 2013b) so that the tenets of neoliberalism are taken for granted by society (Nyberg et al. 2017). Norman Fairclough names this phenomenon 'ideological/discoursal power'.

The normalisation of neoliberalism occurs in a range of ways. First is through the indistinguishable narratives of government and industry evident from my analysis, particularly when the discretionary principle is used. The emphasis on the economic benefits normalises the ideological rationalisation of the industry, which is further

consolidated by the formal institutions of power – policy, regulations, the law – and the use of the discretionary principle. Moreover, narratives are presented as "common sense, and thereby [making] them opaque, i.e., no longer visible as ideologies" (Fairclough 2013b, p. 44). To further explain this occurrence, Fairclough (2013b, p. 44) argues:

> In the construction of the subject, the acquisition of normative 'ways of talking' associated with a given subject position must simultaneously be the acquisition of the associated 'ways of seeing' (ideological norms); that is, since any set of discursive norms entails a certain knowledge base, and since any knowledge base includes an ideological component, in acquiring the discursive norms one simultaneously acquires the associated ideological norms.

From this perspective, the influence of industry is implicit in the portrayal of well-being as being dependent on economic growth (Willow 2016). In this way, exercising ideological and discoursal power successfully coerces aspects of society by consent rather than by force to ultimately attain social control. This has been particularly evident in state access to resources on people's land in Australia and the UK, where landowners have little authority and feel forced to consent.

### 8.3.3 Understanding the Relationships of Power in Knowledge Production

My analysis revealed that the production of knowledge about unconventional gas also plays an important role in the exertion of power. Knowledge is used by government, industry, and the anti-fracking movement to exercise power. What is known about unconventional gas development, who makes the decisions about what is known, and who has access to that knowledge are all components of that power. Industry and government maintain a power divide by gate-keeping what knowledge is produced and disseminated (Beck and Wehling 2012; Lis 2018). Conversely, by facilitating knowledge production and by encouraging citizens to go out and do their own research, the anti-fracking movement gains power by qualifying their arguments and broadening the public's understanding of the development.

In Australia, the industry started its development in Queensland with gaps in knowledge about the impacts of tapping into unconventional resources in that region. As research from Espig and de Rijke (2016) reveals, the level of unknowns makes it impossible to know the true range of risks. In Queensland, gatekeeping practices by companies over

what knowledge was produced and what information about the risks was disseminated mean that even government departments were not necessarily fully informed (Espig and de Rijke 2016). Hardie et al. (2016) add that industry-driven knowledge production through public institutions are seen as challenges in ensuring accountability and transparency of the privately funded research that is used to inform public policy.

I found that there many people interviewed perceived lack of knowledge for adequate decision-making. In my own observations at the Minerals and Waste Joint Plan Examination Public Inquiry in the UK, I saw industry prosecute their case for no protection zones around their operations on the basis that there was a lack of knowledge specific to the area. They argued that existing knowledge related to the US and Australia made these studies inadmissible in the UK. Gaps in knowledge are used to deny culpability for pollution, and other detrimental effects as a result of industry operations via questionable modelling (Espig and de Rijke 2016) and a lack of baseline data. For example, the Four Corners exposé on Australia's ABC television, *Gas Leak,* found that environmental impact assessments were fast-tracked, and hindered by a lack of baseline data (Carney 2013).

Not knowing is powerful (Beck and Wehling 2012). Gatekeeping of knowledge in this way is in the interests of those in power because the capacity of the public to develop counter narratives is controlled. As the work by Stedman et al. (2016) identifies, understanding the processes of unconventional gas operations is a determinant of public acceptance. Industry's hegemony over the technocratic knowledge about unconventional gas development, covered in Chapter 6, places them in a powerful position because they are in control over what information is produced as well as what information is delivered to decision-makers and community. Deficits in knowledge are deliberately and strategically used by industry to emphasise uncertainties and thereby to thwart political intervention and regulation (Beck and Wehling 2012). Avoiding specific areas of research by strategically not funding, not completing, or simply disregarding them (also known as 'undone science') is about avoiding the issues that arise from industry activities, and which, if drawn attention to, may be viewed as a threat to industry interests (Kinchy and Perry 2012).

In contrast, the anti-fracking movement uses a strategy to gain knowledge and gain public power by taking control over gaps in knowledge of what is not known (Beck and Wehling 2012). Knowledge provides the anti-fracking movement power in legitimising its narrative. Actively participating in and promoting the production and dissemination of knowledge about unconventional gas development are powerful in their ability to influence public perception. Knowledge in this instance, is the establishment of capacity, and, therefore, power (Searle 2010). By filling gaps in knowledge and understanding about unconventional gas development, particularly regarding the social and environmental impacts, the anti-fracking movement develops and adjusts their narratives to reduce the power gap, enacting transformations in the uneven power-relations (Valencia and Carrillo Martinet 2017). Building science-based and empirical knowledge, together with technocratic information, provides protesters with reasoned responses to government and industry claims (Schugurensky 2016). Science is used in this way to legitimise the anti-fracking narrative and drive social change (Jasanoff 2012). By mobilising these knowledges and resources, the anti-fracking movements is able to generate "tipping points in political values, actions and behaviours" (Chesters 2012, p. 146). Moreover, by highlighting the undone science, the anti-fracking movement challenges what is known and what is knowable, and in doing so identifies what areas of research are possible (Hess 2016). The public meetings explored in Chapter 7, where anti-fracking protesters invited their own 'experts' to counter and challenge industry and government officials, exemplify this. A common theme in the interviews was the importance of staying well-informed, expressed as "look at the science", "do your own research". In this way, knowledge is powerful in influencing public perception, decreasing public acceptance of unconventional gas, and disallowing industry social licence to operate. Certainly, the UK case study exemplifies how greater community knowledge about fracking has been associated with a lack of public acceptance, and the industry has struggled to take hold (Stedman et al. 2016).

Knowledge is therefore inherently enmeshed with power (Cho 2010). Given this premise, the production of knowledge concerning unconventional gas and its development is a central power dynamic between government, industry, and the general public (Cho 2010). The knowledge accumulated by social movements accounts for much of their

power and agency (Schugurensky 2016); this knowledge is used to overcome their relative lack of resources, and to substantiate their narrative (Woodly 2015). In one way, attaining knowledge is about informing people of the processes of mobilisation and increasing the awareness of the public about the social problems of unconventional gas (Schugurensky 2016). Additionally, social movements seek and support new knowledge outside the movement (Schugurensky 2016).

In this case, new knowledge is produced about the social wrong. Increasing the level of trusted knowledge reduces the perceived sense of exclusion from the inadequate level of information about unconventional gas (Kinchy and Perry 2012). The anti-fracking movement is particularly critical of the knowledge disseminated by industry, which claims that industry operations are safe. As such, the movement seeks to support the production of independent and scientifically based knowledge to reinforce and legitimise their case against the development (Espig and de Rijke 2016). In this way, knowledge production is an important act of resistance (Köhne and Rasch 2019). Producing and disseminating knowledge about unconventional gas crucially positions the anti-fracking movement as an actor in the unconventional gas development debate (Rasch and Köhne 2017). The depth and quantity of empirical research about the broader global impacts of unconventional gas development, produced independently of government and industry, have expanded the understanding of the problems highlighted by the movement. Knowledge production from institutions that are independent from industry also enables a more critical analysis of the industry and its risks and impacts to society and the environment (Espig and de Rijke 2016; Hardie et al. 2016).

## 8.4  Considering the Implications for Democracy

### 8.4.1  The Power Divide in Governance Landscapes

The democratic landscapes within the Australian and UK unconventional gas governance regimes deliver the hegemonic narratives which provide the environment for conflict to grow. Therefore, the governance regimes in Australia and the UK provide the context from which to understand the power relations between government and the anti-fracking movement (Arce and Rice 2019). Chapter 6 highlights that the policy, and regulatory

landscapes within and between each case study are not straightforward. The Australian and UK unconventional gas governance systems, particularly in how they have responded to community concerns, are complex, political, and constantly evolving. Since the data were collected for this thesis, there have been significant shifts in government policy and rhetoric, which highlights the challenging and fluid nature of this issue. Correspondingly, the anti-fracking movement's approaches to protest have responded to these constant evolutions, divergences, and complexities.

*Australia*

The Australian context is complex because of the country's federal system of government. This means that the varying state and federal policy agendas may be at odds with each other. There is complexity because of the different government jurisdiction responses to community protest, such as, the state authorised moratoriums and the ban on onshore unconventional gas development in Victoria. Cautionary processes, such as public and scientific inquiries provided citizen participation opportunities. The inquiries with 'scientific' parameters in Western Australia and the Northern Territory narrowed the scope of their inquiries, and as such, missed the real and important social dynamics. These processes have predominantly delivered the foundations to progress the industry, albeit with specific regulatory frameworks and protections for specific regions with moratoria where there are higher populations and intense agricultural productivity.

The broader scope of Victoria's Parliamentary Inquiry in 2015 meant that there was greater consideration of social factors. With its broader scope, it is interesting that the resulting legislated ban is the most far-reaching response from the deliberative processes that have taken place in Australia. Victoria's change in law too demonstrates the capacity of government to incorporate deliberative democratic processes in its decision-making about extractive industry projects. It is also an example of government considering community views, despite their often-noisy delivery in marches and rallies. The extent of community representation in the deliberative processes that have occurred in Australia demonstrate these democratic processes are valued within the Australian political landscape. My analysis also demonstrates that participants in Victoria are more satisfied with their political systems than participants from the other states.

The contrasting, and increasingly resonant, Australian Federal Government agenda to cut green and red tape underpinned by the Deregulation Taskforce and the Productivity Commission mentioned in Chapter 4, emphasises the neoliberal ideological thinking behind regulation reform in Australia. The Federal Government's references to regulation are made in terms of the 'cost' (in processing time and project delays, costs for businesses, and the cost for regulation delivery) and the burden placed on business and industry (Productivity Commission 2020). Moreover, recent Federal Government draft plans that see gas-led manufacturing as central to the post-COVID-19 economic recovery, envisioning the writing off of state bans on coal seam gas development and the subsidisation and public investment in the gas industry (Long 2020), reemphasise this neoliberalist logic. In acting in this way, the Federal Government gives weight to its economic-based values and diminishes the importance of environment concerns and community wellbeing. Significantly, this Federal Government rhetoric challenges the autonomy of the States regarding resource extraction and the mechanisms they have put in place that deter its development.

*The UK*

In the UK, an equally complex governance framework delineates the debate around unconventional gas. The time during which this research has taken place has seen significant shifts in the governance landscape. In November 2019, in an apparent agenda backflip, the National Government put in place a moratorium on fracking because of the unavoidable risk of earthquakes from hydraulic fracturing activity at the Preston New Road site (Department for Business Energy and Industrial Strategy 2019a). Paradoxically, the rationale behind this decision legitimises arguments made by the anti-fracking movement. However, there are loopholes in the new policy because it is specific to Preston New Road; it is also misleading because unconventional gas development remains a National Government agenda (Baker and Styles 2019). The timing of the statement has also been seen as political vote winning exercise, to garner votes in the England's North which has been a hub for the anti-fracking movement and is a Labour strong ground (Baker and Styles 2019).

The anti-fracking movement has seen significant political repercussions. The moratoria on fracking in Wales, Scotland, and Northern Ireland, and the declaration of multiple local councils against the development demonstrate that the movement has had a resonating effect on the different levels of government in the UK. This is not to say that all local jurisdictions in the UK have rejected shale gas project applications; North Yorkshire County Council, for example, granted a planning application for Kirby Misperton despite strong public opposition. Moreover, the fact that the National Government overruled council's rejection of a shale gas application not only establishes that deontic power is used (Fairclough 2019), but also that governmental planning and justifications for investing in unconventional gas development in the UK are in disarray (Szolucha 2018a). The trajectory of the Governments greenhouse gas emission reduction strategy via natural gas and carbon capture and storage is being challenged after the report of the citizen Climate Assembly [17] made strong recommendations to move away from fossil fuels for its energy. The recommendation in the report regarding; *Where our electricity comes from*, indicates that there is strong citizen support for moving away from fossil fuels towards known renewable energy sources:

> All the UK's electricity generation will need to come from low carbon sources if it is to meet its net zero target. The UK is also likely to need more electricity in future due to an increase in electric vehicles and electric heating. Large majorities of assembly members 'strongly agreed' or 'agreed' that three ways of generating electricity should be part of how the UK gets to net zero [offshore and onshore wind, and solar]. Assembly members were much less supportive of bioenergy, nuclear and fossil fuels with carbon capture and storage – although, particularly for bioenergy, significant numbers of assembly members were unsure about its use (The House of Commons 2020, p. 24).

Given the previous examples of the National Government overriding local government decision-making regarding gas developments it is doubtful that these recommendations will be taken into consideration.

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[17] In "June 2019, six Select Committees of the House of Commons (Business Energy and Industrial Strategy; Environmental Audit; Housing, Communities and Local Government, Science and Technology; Transport; and Treasury) called a citizens' assembly to understand public preferences on how the UK should tackle climate change because of the impact these decisions will have on people's lives. … 'Climate Assembly UK: the path to net zero' will consider how the UK can meet the Government's legally binding target to reduce greenhouse gas emissions to net zero by 2050" (https://www.climateassembly.uk/about/).

## 8.4.2  A Diminished Democracy

Despite some examples of citizens being heard, such as moratoriums on fracking and the ban in Victoria, both case studies show examples of reduced capacity for people to participate. Governance regimes that limit public participation lead to diminishing democracy. This is because public participation in decision-making has a range of important contributions to democracy. Public participation ensures the incorporation of public values, takes into consideration competing interests, ensures the public are educated and informed, and builds trust in institutions (Black and Kohler 2004). Steger and Milicevic (2014, p. 348) argue that the problems with unconventional gas development represent a 'crisis of democracy' in the US because:

> ..."truth" and "power" are one in the same; and where their "truths" about fracking confront and repoliticize a dominant global discourse on energy politics that is largely orchestrated and perpetrated by the gas and oil industry and various political entities at local, state, federal, and international levels. In this context, the movement is challenged to originate an "alternative imaginary" in which a different path, an energy path included, can be articulated to guide the movement as a force for change.

My analysis has revealed that the 'truth' about unconventional gas is obscured through biased knowledge production that is principally formed by industry and facilitates the dominant narratives delivered by government. Anti-fracking narratives act as 'change makers' in that they challenge these normative narratives to be seen as 'alternative' narratives around natural resource development and energy (Steger and Milicevic 2014). The growing academic critique of insufficient planning requirements and industry oversight (domination through regulation and policy, Nyberg et al. (2017); legislative slippage, Davidson et al. (2018)) strengthens the case that such measures by government are concerning. Moreover, because industry is overseen through an economic lens, community and environmental issues are overlooked or underappreciated in decision-making (de Rijke et al. 2016). My analysis emphasises there is little trust that public values and interests, and legitimate social benefits, are at the centre of unconventional gas policy and practice (Ralston and Kalmbach 2018; Steger and Drehobl 2018).

Fundamentally, reduced oversight of the industry leaves communities and environments exposed to risk (Davidson et al. 2018), increasing the level of uncertainty over industry

operations (Ralston and Kalmbach 2018). According to the typology presented by Ralston and Kalmbach (2018, pp. 72-73):

> Government action falls along a continuum ranging from allowing full experimentation with a technology to restricting the use of the technology until further information is obtained. If political actors are risk-averse and concerned about effects on the environment or public health, they are likely to restrict the new technology and study its potential use; conversely, if political actors are risk-seeking and concerned about taking advantage of the economic opportunities presented by a new technology, they are likely to allow the new technology and learn from the experience of using it.

According to this typology, moratoria, public and scientific inquiries, and stringent planning and regulatory frameworks demonstrate risk-averse decision-making. Whilst the ban on development legislated by Victorian State Government is the most extreme example, the regulatory frameworks implemented in Western Australia and the Northern Territory, and the recent moratorium in place in the UK, also equate to risk-averse decision-making. As to whether there is adequate precaution to eliminate or reduce risk is questionable. Certainly, maintaining the moratorium in the more populated regions of Western Australia was welcomed; however, the movement continues to be active in the state with campaigns focused on the Kimberly and Pilbara regions (Frack Free WA 2020). The capacity of public inquiries to address or reduce risk is also disputed. Nyberg et al. (2017) argue that because inquiries are processes that reproduce existing power relations, they ultimately support the established reality, and that it is questionable that they adequately critique the political hegemony.

Diminished industry checks and balances also increases the power that industry accumulates within the political and governmental landscapes (Davidson et al. 2018; Mercer et al. 2014). Apart from the Victorian State Government, and the various regional moratoria on fracking, the unconventional gas industry enjoys significant government influence in Australia and the UK. This industry influence on the oversight of its activities not only reifies the political regime (Nyberg et al. 2017), but also increases the power-divide between decision-makers and the community because industry has greater capacity to participate in decision-making. This relationship is beneficial too for the governments supporting the industry, as pointed out by Davidson et al. (2018, p. 308):

Such slippage [changes to legislation] simultaneously shields the provincial state from attacks on its legitimacy while rendering environmental and democratic protections subservient to fossil fuel development.

Diminished democracy, therefore, not only substantiates the industry and the neoliberal justifications of the development but also transforms democracy frameworks to do so. In this way, the democratic institutions normalise neoliberalism and entrench natural resource extraction practices in normative framings. Likewise, transformed democratic institutions are also normalised.

The use of policy, regulation, and legal pathways to deter or hinder activism is another way in which public democracy is diminished. The several examples demonstrating government and industry efforts to exclude or diminish the public's ability to participate in decision-making explored in this thesis diminish people's trust that those processes will achieve the best outcomes for the public and environment. As Davidson et al. (2018) argue, it is when people become disconcerted with the systems in place, and when they realise their democratic rights have been eroded that they are mobilised to resist. People value their democratic rights.

### 8.4.3 Protest and Democracy and the Influence of the Anti-Fracking Movement in Australia and the UK

Fairclough (1989, p. 34) states, "power relations are always relations of struggle". The constraints placed on the public participation and protest fuel the struggles about unconventional gas development. These constraints also highlight that there are power disparities that affect democracy. Certainly, I found that the political struggles at the heart of anti-fracking narratives are about democracy and the role of citizens in decision-making and in the development of natural resources.

Government use of the discretionary principle has resulted in the curtailing of democratic processes, particularly active protest, which has had democratic consequences. Tarrow (2011, p. 110) highlights that although liberal democratic governments tolerate a broader range of contention than their authoritarian counterparts, they "have a range of forms of suppression other than state violence with which to suppress dissent". I have documented the impact to people's democratic rights in Chapter 6.

The anti-fracking movement highlights the tendencies of government, even in liberal democracies, to use repressive measures to control and subdue conflict. However, these political measures assume that the public are ignorant, and the resulting patronising and exclusion of citizens does not necessarily work well in a democracy (Jasanoff 2012). My analysis clearly indicates that the anti-fracking movement is not constructed around ignorance but rather reflects the issues at the heart of society – community, livelihoods, cultural and identity values, the natural environment, and power. Moreover, the desire for greater information, and the facilitation and encouragement of knowledge production outside the scope of industry interests, indicates the public's desire to be informed.

The anti-fracking movement's influence is in its ability to engage the broader public and provide them with the agency to raise awareness of the social and environmental issues implicated in unconventional gas development. This has had an impact on the political landscape by making unconventional gas developments and fracking election issues. There have also been, albeit arguably insufficient, increased public participation opportunities on these matters. Moratoria, citizen assemblies and legislated bans are indicators of this success. This public power was built on the ability of the anti-fracking movement to convey the anti-fracking message to the wide public in a way that mobilised people into action, and by providing a range of ways for people to be active (Woodly 2015).

In this way, the anti-fracking movement is an exemplar of the capacity of social movements to activate people's political engagement. Democracies fundamentally require people to participate. As Lister and Pia (2008, p. 80) state: "rule by the people cannot be said to function if the people do not get involved". Protest, as a form of political participation, is equally integral to democracy (Cohen and Valencia 2008). Therefore, social movements such as the anti-fracking movement are important for democracy because they enable public participation. Moreover, they are important for social change because of their ability to influence the public in a way that requires a political response (Woodly 2015).

My analysis of the forms of protest in Chapter 7 demonstrated some differences between Australia and the UK. Firstly, there was a continuity amongst participants from the UK

about a determination for the movement to be decentralised. I found that there was a perception of unitedness around this concept which permeated into a sense that the movement in the UK was unified and working together. Conversely, I found that the presence of the Lock the Gate Alliance in the Australian movement brought divisions and even conflict within the movement's narratives. I also found that there was a difference between the two cases in the level of acceptance of activism and activists. In the UK, while condemnation of activists existed in the broader community, I found that there was greater consensus among study participants of a need for multiple levels of activism, and even an appreciation for the resources and skills from those known as 'national' or 'professional' protesters. On the other hand, in Australia I found that there was not the same level of consensus across the country over the need for stronger forms of activism.

The capacity for people to protest is central to a democracy. The global expansion of neoliberal governance principles has meant that social and environmental problems are often overlooked or deemed unimportant. The importance of protest, as described above, is a way for societies to have the agency to respond to the inevitable issues occurring because of developments such as unconventional gas, so that social problems can be addressed. With governments increasingly submissive to the resource industries, and where protest is increasingly invalidated, it is important to assert the need for protest for the wellbeing and sustainability of human society, particularly in the light of climate change and decision-making regarding energy futures.

## 8.5 Finding the Opportunities within the Conflict

Within the problems lie the opportunities. As I have discussed, the relational dynamics within the unconventional gas paradigm demonstrate that the relationships between the anti-fracking movement and government and industry are complex. Exploration of the Australian and UK case studies established that power is at the heart of these relationships, and the range of institutional barriers obstructing possible resolutions makes finding opportunities equally complex. From this perspective, the power and hegemony of industry in the decision-making space are the same. Equally, the rise of anti-fracking narratives in these two democratic countries demonstrate a commonality in the

problems of unconventional gas development. Correspondingly, despite some variations between the case studies, the opportunities for addressing the conflicts are the same. The opportunities found through my analysis are discussed below using the themes examined above; broadening policy considerations to include community and the environment, knowledge production, and in governance practices and mechanisms.

## 8.5.1  Extending Considerations beyond the Economy

The social impacts of unconventional gas developments are important considerations. People, their communities, their health, and their livelihoods matter. People's natural environments matter. Greater consideration of issues other than the economic benefits is necessary (Dairon et al. 2018). Current trends prioritise industry interests over local community interests, other industries and land uses, environmental implications, and global climate change obligations. This means that social and environmental issues are increasingly understood outside of, and with little regard in comparison to, economic framing (Dairon et al. 2018). By government limiting its mining policy focus on the realms of economics many social and environmental issues are missed (English 2014; Lei et al. 2017; Nash 2010). de Rijke et al. (2016, p. 706), in their analysis of the CSG mining implications on water resources, consider the social and natural aspects of natural resources viewing them as "simultaneously material and cultural". From this perspective, natural resources are not merely a commodity, but integral to the social and cultural fabric of communities.

My analysis has demonstrated that the social dimensions of extractive industries are not wholly economic, and people are not convinced that financial payments necessarily compensate for losses in other areas. Land rights, public health, and environmental implications – local and global, for example are not easily measured in terms of fiscal cost. Likewise, the benefits to national GDPs are not broadly relatable to people when local impacts are so tangible. Moreover, diminished power in the relationship is not automatically restored by economic benefits. It is these non-economic dimensions that are represented in anti-fracking narratives. The values-based, power-based reasons behind the discord central to the anti-fracking narratives establish the importance of social aspects of natural resources developments.

Insight into opportunities for considering community and cultural values in the unconventional gas paradigm is found at the core of anti-fracking narratives. An expanding literature indicates a deficit of these more-than-economic considerations relating to unconventional gas development (Bronson and Beckley 2018; de Rijke et al. 2016; Grove-White 2006; Szolucha 2016). A plethora of literature supports the value of more humanistic decision-making processes. The tendency for government and industry to view the public in simplistic terms, such as, consumers, perpetuate inappropriate market-type models for decision-making that are complicated by complex human interaction and judgement (Grove-White et al. 2000). This thesis demonstrates that this lack of a humanistic approach is particularly problematic in relation to issues of technological risk and uncertainty, which the public have demanded to be more informed and certain of responsible courses of action (Grove-White et al. 2000).

A more humanistic decision-making approach also involves incorporating public interests in decision-making, particularly when public participation is considered early in the process, with clear objectives and with systematic representation of relevant stakeholders (Reed 2008). Known to build public trust, reduce conflict and increase the perception that decisions are holistic and fair (Reed 2008), the representation of public considerations in decision-making has the potential to empower, rather than marginalise, affected communities (Leifsen et al. 2017). The example of Victoria's Parliamentary Inquiry demonstrates that the inclusion of the public in the decision-making about unconventional gas development in that State leads to an increase of public trust in government decision-making processes. Moreover, the findings of this thesis demonstrate the anti-fracking movement highlights the limitations of policy development that does not consider the broader human dimensions, particularly as there is strong public scepticism about the industry's risk management. The demand for more open public discussion and negotiation is therefore a new reality for natural resource policy development (Grove-White 2005).

## 8.5.2 Knowledge Production

Opportunities also exist in the production of knowledge about unconventional gas development. My analysis highlights people's need for information about issues that matter and affect them and to fill the gaps in industry's biased information that do not alleviate growing concerns. My analysis also shows that persistent community concerns over industry activities has led to an active pursuit of critical knowledge outside of industry and government institutions.

The evident public interest and willingness to engage in knowledge production offers excellent opportunities that would ensure that future natural resource development is approached with the best possible information. For instance, engaging local publics in producing knowledge around locally specific issues draws together generalised and locally specific knowledge (Kinchy and Perry 2012). Engaging the public in this way also creates public participation opportunities which in turn employs trust and legitimacy building mechanisms into government decision-making (Reed 2008). Moreover, engaging with communities' experiences and concerns is a way to address the risks of the development such as the potential for contamination, pollution, and public health.

As I have established in this thesis, exploiting natural resources encompasses considerable unknowns (Espig and de Rijke 2016), making prediction of their success or failure problematic, particularly regarding conflicting ideas about reducing carbon-intensive energy systems (Kama 2019). Moreover, with increasing conflict regarding the industry, its success or failure is increasingly affected by its legitimacy in the public sphere. Shaped by diverse publics and multiple social and political influences, in conjunction with recognised scientific and regulatory agencies, the conflict is complex (Kama 2019). But it is because of this complexity that public conflict and counter narratives should be taken into consideration as factors that inform and construct policy for prospective industries. In this way developing understandings of conflict is essential, both because of the complexity involved, and because the issues are public issues. As Grove-White et al. (2000 p. 34) argue, the public in democracies expect to be informed of risks and included in deliberative decision-making processes regarding technological advances:

> [It] is a reality of human experience that honesty about unknowns and areas of lack of control is intrinsic to all resilient social relations of trust. People need and expect to be able to make social preparations for unknowns, surprises, and the uncontrolled, as a routine feature of everyday life. It follows that publicly influential institutions or individuals who appear not to recognise such realities are experienced as inherently suspect.

Knowledge production about unconventional gas therefore should be wide-ranging, interdisciplinary, and transparent. Moreover, embracing knowledge production in this way simultaneously empowers and promotes citizen engagement whilst alleviating the need for resistance and protest. Valencia and Carrillo Martinet (2017) provide a range of possibilities for knowledge production in relation to unconventional gas development (Box 3).

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**Box 3: Possibilities for knowledge production relating to unconventional gas development adapted from Valencia and Carrillo Martinet (2017, pp. 6-7)**

1. Interdisciplinary approaches that emphasise combined knowledge about the broader risks
2. A central component of designing sustainable projects that acquire public advocacy is the incorporation of academic and non-academic knowledge
3. Collaborative and comparative research that is localised and racially inclusive importantly reveals differences in the construction and meaning of subjectivity, sovereignty, and the allocation of responsibility
4. The creation of new methods and collaborations that include input from local experts and interactions between diverse stake holders to examine the construction and flow of diverse kinds of information about fracking
5. The construction of pedagogies that incorporate new logics of learning, urgency, and activism, as well as social, political, and economic contexts, form the basis of an emerging ontology suitable for examining fracking which takes into consideration the convergence of traditional thinking about carbon energy and thinking about the sustainability of human society within a changing climate future
6. Knowledge about unconventional gas development needs to consider the interconnectedness of water and energy resources that have for too long been analysed in separate siloes, and the nexus between water-energy-agriculture with transdisciplinary inquiries

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Conflict therefore does not need to be avoided or quelled but embraced because of the important insights provided that can pave the way for more equitable and sustainable outcomes (Dairon et al. 2018). Equally, the public's desire to know more should not be

seen as a threat, but an opportunity to reduce the ever-growing power divide. Valencia and Carrillo Martinet (2017, p. 7) state that

> Neoliberalism as a way of knowing is being shown to be the driving force behind the destruction of community cohesion resulting in the decrease in social equity and is a major obstacle for society to reach a sustainable path.

As such, challenging the normative of producing biased knowledge that facilitate hegemonies and maintain the politics of non-knowing (Beck and Wehling 2012) is at the heart of addressing the social wrongs of unconventional gas developments.

### 8.5.3 Governance – Rigorous Oversight and Getting Back to Democratic Principles

The public are at the heart of democracy. My analysis of anti-fracking movements in two democracies with similar governmental and legal systems highlights the importance the public place on deliberative processes and the inclusion of social concerns in natural resources developments. This thesis has demonstrated that when truly deliberative processes have occurred, where people's concerns have been considered, people place more trust in the decisions made and the institutions making those decisions. The evolution of anti-fracking narratives is illustrative of a functioning democracy. For Jasanoff (2012, p. 29), interaction, including with those that challenge, is central to the workings of democracy:

> What makes democracy work, whether in specialist domains of expert policy making or more generally, is continual interaction. Public understanding grows through myriad repeated encounters between people and those to whom they have entrusted responsibility: a doctor, a community policeman, a regulator, an expert adviser, or an elected political representative. That interactivity goes begging when public reason becomes artificially depoliticized, the preserve of insulated expertise. Skepticism and questioning, however uncomfortable or irritating in the short run, make better foundations for democracy than imperial opinions handed down in the expectation of acceptance.

My analysis demonstrates that natural resource developments matter to people because it impacts on people on many levels. Keeping in mind the considerations outlined above (acknowledgment of and being extensively informed about the broader social and environmental factors), the development of governance mechanisms for unconventional

gas development should not only be rigorous, but also tap into basic democratic participatory principles.

Current policy and regulatory frameworks for extractive industries in Australia and the UK predominantly convey a narrative in which the development of unconventional gas is pursued at any cost. Neoliberalist narratives placing economic benefits of the industry as the principal driver behind decision-making puts in jeopardy foundational democratic processes and liberties. However, it is from these democratic foundations that opportunities lie, particularly in public participation and embracing the notion of conflict and protest.

Possibilities for resolving tensions exist in addressing the excessive influence of industry, and the government's indiscriminate and political use of discretionary powers in decision-making (see Chapter 6). Policy and regulations and planning application processes require participatory measures to ensure that the public are involved in decision-making. For example, placing the interests of resources industries on an equal footing with measures for planning and operational oversight, such as water and emissions regulation, will go towards ensuring that the burdens of risk are not placed on directly impacted communities. The use of discretionary powers within these regulatory contexts requires that frameworks be in place to ensure that decision-making is not political and ideologically driven. Unbiased decision-making and sound regulatory frameworks will aide trust-building in government agencies and improve legitimacy of operations.

Policing and the law should not be used against citizens exercising their right to protest. It is clear from this study that people seek to participate in the decision-making about their natural resources. People actively engage where they can: in the public inquiries; EIA and EPBC Act submissions; planning submissions; lobbying local MPs; and, if all else fails, in collective action and protest. In this way, collective action reflects the quality of embedded representation in political and governance institutions (Arce and Rice 2019). The ability of political institutions to absorb and channel discontent into protest demands, along with protesters' willingness to engage is reflective of strong and democratic governance systems (Arce and Rice 2019; Jasanoff 2012). The fundamental nature of democratic governments is the acceptance that disagreements and inconsistencies occur

(Searle 2010). Thus, open, and responsive political systems that provide wide formal access to the state encourage citizens to seek change by way of existing institutional mechanisms (Arce and Rice 2019).

There is also a need to foster new learning capacities about the human dimension of such technologies. Policymaking and decision-making relating to natural resource development necessitates more widely shared understandings of how social learning relates to action in the face of future uncertainty (Grove-White 2005). Including the human dimension of policy development is a difficult cultural change and requires public discussion and negotiation (Grove-White 2005) but provides possibilities for the way government interacts with the public (Jasanoff 2012). Viewing concerns, conflict, and counter-narratives in a more positive light is useful in terms of risk management, ensuring good policy outcomes and good governance. Here, public responses can be useful in highlighting flaws in governance and provide vital understanding of the social problems that occur from natural resource development activities (Arce and Rice 2019). These public narratives are useful in finding improved policy platforms for the future.

Aikin and Talisse (2013) contend that argumentation is central to democracy. For example, democracies rely on a collective of public beliefs to determine what laws, policies, and institutions look like (Aikin and Talisse 2013). Unconventional gas development is political in that it includes matters that directly affect people. Because of this public dimension, argumentation is critical in decision-making (Aikin and Talisse 2013). Moreover, social protest is a basic feature of democratic politics because of its role in presenting opposition and counter narratives (Arce and Rice 2019). Protest movements therefore encourage democratic transparency and responsiveness, compel more democratic decision-making, and hold governments to account (Arce and Rice 2019).

Public concerns and fostering public participation in decision-making also works towards addressing the power imbalances previously discussed (Gilmore et al. 2019; Smith and Haggerty 2018). Powerlessness is universally felt by people across jurisdictions in relation to unconventional gas developments (Smith and Haggerty 2018), a sense underscored by the analysis' primary data. The relationship between power imbalances, protest, and a lack of participatory possibilities in decision-making is evident (Whitton et al. 2017). As

Whitton and Charnley-Parry (2018, p. 222) propose, "dialogue-based stakeholder collaborations and knowledge generation" in which the public is empowered to influence and legitimise decision outcomes, provides an opportunity to gain a sense of procedural justice in affected communities. Addressing the power imbalances therefore alleviates the sense of powerlessness and legitimises government policies and actions.

## 8.6 Conclusion

My analysis reveals that identifying the anti-fracking movement as a social movement provides us with important insights. The conflict about unconventional gas development pivots on relationships of power where the hegemony lies with government and industry. The anti-fracking movement seeks to bring about social change by addressing those imbalances through protest. Understanding the power within those relationships is at the heart of the opportunities to address the issues of conflict. A range of opportunities are achievable through government institutions, policy and regulation and include providing greater opportunity to include public participation and ameliorate consideration of community concerns in decision-making. There are also opportunities to improve the understanding of unconventional gas development to include the broader social implications of the industry. Moreover, there are opportunities to embrace conflict and protest in a way that positively informs decision-making that will make way for improved governance outcomes.

# Chapter 9   Conclusions

## 9.1   Introduction

In this chapter I revisit my analysis of the anti-fracking movements in Australia and the UK. The chapter provides an overview of the examination of the anti-fracking movement's influence on mining policy development. To this end, I summarise the research process, highlight key findings, and draw together the conclusions that emerge. The chapter finishes by addressing the research challenges and limitations and presents recommendations for decision-makers and for future research.

## 9.2   Research Summary

The pursuit of unconventional gas resources by governments across the world in recent decades was triggered by technological advancements, namely the process known as hydraulic fracturing, or 'fracking', that enhance its economic viability (Blake 2016). Centred on neoliberal economic principles of natural resource exploitation and development, unconventional gas is advocated by industry and governments as an environmentally sound transitional energy source (Nyberg et al. 2017). However, the industry's crossover into other land uses (e.g., agricultural, environmental, urban) has resulted in a range of social and environmental impacts which have generated social conflict.

The anti-fracking movement has grown out of the social conflict about unconventional gas development and has set out to change the trajectory of the unconventional gas industry by bringing the social problems resulting from industry operations into the public and political spheres. The rise of the anti-fracking movement across the world is reflective of other social movements that are responding to mining operations globally, particularly when these operations cross over into other land uses. Work by Anthony Bebbington, Ciaran O'Faircheallaigh and Mathew Allen demonstrate the contentious issues that relate to mining in developing countries and with Indigenous populations. However, the anti-

fracking movement has developed within western democracies, and with strong ties to environmental and climate change activism, despite Lock the Gate's distancing from these issues.

As a result, the anti-fracking movement has garnered a substantial literature investigating the social issues associated with the conflict, as well as the social perceptions behind the movement, and the public health and environmental implications of the development. Through my analysis of two case studies of the anti-fracking movement, one in Australia, the other in the UK, this thesis explored the influence of the anti-fracking narratives generated by this social movement on mining policy development to answer the primary research question presented in Chapter 1: whether (and if so how) the conflict between those for and against unconventional gas, (known colloquially as fracking), influence the mining policies and politics surrounding fracking in those countries?

In order to answer the research question, I applied a qualitative approach to the research data collection and analysis. I conducted semi-structured interviews with 44 people across Australia and the UK. I used a thematic analysis and narrative analysis approaches to examine the interview data against the research questions. The Australian and UK case studies provided added nuance to the analysis. Examining the movement in two settings made it possible to identify contextual differences within the movement as a whole. Whilst having cultural and governmental similarities, the industry is at different stages of development in each country. The thematic analysis approach enabled a systematic exploration of the interview data from which a range of critical themes and patterns in the anti-fracking movement's social and cultural understandings emerged (Lapadat 2010). From the various themes I was able to establish the anti- and pro- fracking narratives and interrogate each group's understanding about unconventional gas (Kohler Riessman 2008).

My analysis established key characteristics which make the anti-fracking movement a social movement, the anti-fracking movement. The qualitative methodology, together with the use of conflict theory from Bartos and Wehr (2002), gave me the framework to establish and delve into the central narratives in the conflict: the pro-fracking narratives that are formulated from neoliberal rationales, and the anti-fracking narratives that are

founded on the premise that unconventional gas is a social problem. From the themes and using social movement theory I was able to establish the core issues within the conflict about unconventional gas development (principally, the social problems that are elicited by industry practices and government regimes that pursue the development), and the forms of organisation and protest of the anti-fracking movement. The case studies provided an opportunity to identify core themes that are shaped by the networking of stories of lived experience, skills, and knowledge that unite the anti-fracking narratives in the two countries. Where there are differences, they are in the detail, and are relative to the decentralised nature of the movement.

My research found that the conflict in Australia and the UK is concentrated on distinct pro- and anti-fracking narratives. The narratives promulgated by the anti-fracking movement have expanded the social conflict and organised protest against the development of unconventional gas. Those promulgated by the pro-fracking narratives have enticed governments to exert their discretionary powers to facilitate the industry. They have done this by establishing government and legislative provisions that favour industry, they have inhibited community engagement in debate and decision-making, and they have made provisions to criminalise public protest against the industry. This misapplication of power by both government and industry results in the diminishment of democracy and regulatory capture with detrimental societal and environmental impacts.

The effect of these tensions has been the formation of a social movement that is driven by the concept that unconventional gas is a social wrong, which is galvanised by community identity and values. The anti-fracking movement drives conflict and protest against the unconventional gas development via a common narrative and numerous forms of protest. It uses protest, knowledge production and dissemination to assert agency where such agency is limited. The opportunities for conflict resolution are found within the relationships between government and the community. Affording greater public participation and consideration of community concerns in decision-making and knowledge production regarding unconventional gas development will work towards reconciling the social problems seen to be created by the industry.

## 9.3 Key Findings

### 9.3.1 The Anti-Fracking Movement is a Social Movement

The overarching finding of my analysis is that the key characteristics of the anti-fracking movement documented in Chapters 5-7 define the anti-fracking movement as a social movement. First, the anti-fracking narratives are framed around issues pertaining to community and pose the development as a social problem. These perceptions are galvanised by concepts of community identity and community-based values which are at odds with the market-based values that promote industry development. Secondly, the anti-fracking movement responds to, and is shaped by, government regimes that facilitate the development of unconventional gas, galvanised by the exercise of discretionary power. Thirdly, the anti-fracking movement is organised in contrasting, informal decentralised, and formal, networked structures for protest to effect social change. Through these characteristics, the anti-fracking movement secures resources by mobilising membership, disseminating information and anti-fracking narratives, and seeks to make change through protest.

### 9.3.2 Power is at the Heart of the Struggles about Unconventional Gas Development

The power struggles presented in this thesis are centred on the relationships between government, industry, and the public. I found that the government regimes that progress and oversee international gas developments produce uneven power ratios that underscore these relationships. Power, in this way, is a resource that is unevenly distributed (Bartos and Wehr 2002). Power is framed through technocratic and legalistic terms driven by neoliberal ideology. Foremost, the policy and regulatory regimes in both Australia and the UK place industry interests as powerful and diminish public agency and environmental representation in decision-making. Moreover, the industry holds privilege over what is known and not known about unconventional gas development. By focusing on positive claims, such as economic credentials and strongly scientific and technocratic information, the focus is kept away from the detrimental effects of the industry.

My analysis found that it is from these power disparities that people are driven to seek ways to even them out. I found that to do so, the anti-fracking movement exerts its own power through different modes. Networks are powerful because they inform and educate the broader public about the social wrongs of unconventional gas development. Influencing public perception and pursuing greater public representation in the discussion about unconventional gas development is powerful because the issues are brought into the political sphere. Power is also found in sharing resources and creating solidarity within communities and across borders because they proliferate and perpetuate the anti-fracking narratives.

### 9.3.3  The Discretionary Principle Shapes Mining Policy Development in Australia and the UK, and is an Obstacle to Resolving Tensions and has Implications for Democracy

The pro-fracking narratives that justify the pursuit of the unconventional gas industry in Australia and the UK underscore decision-making concerning the development of unconventional gas resources. I found that discretionary powers are exerted to ease the path of industry operations, and thus I conceived the concept of the discretionary principle. I argue that the discretionary principle results in the prioritisation of industry's interests over social/environmental interests, a deficit in the scrutiny of industry operations, and the formation of barriers that inhibit community to protest. Existing mechanisms that protect public health, the environment, local economies, and national and international climate change agreements are bypassed. All of this emphasises a narrative of power where a political and economic agenda is pursued at any cost. However, in this case, the cost is potentially extensive and includes risks to local communities – to their local economies and livelihoods, public health, and localised environmental impacts. The global costs are in the risks of contributing to climate change are not clearly realised and cannot therefore be properly addressed.

### 9.3.4  Conflict and Protest Highlight Problems Associated with Extractive Industries

My analysis found that the social problems of the unconventional gas development are exposed through the conflict and protest of the anti-fracking movement. The anti-fracking movement highlights the problems that develop in the absence of stringent oversight and

knowledge production about industry operations. I conclude that protest has occurred because people's agency has been curtailed within the decision-making processes about unconventional gas. The effects of this curtailment are particularly unfavourable for those who are directly affected by those decisions. Because of this, the conflict and protest provide the information that can be used to address these social wrongs.

### 9.3.5 Possibilities Exist Within Government Policy and Regulatory Frameworks

I conclude that government regulatory regimes provide the frameworks to address the problems that relate to the oversight of the industry and the public's capacity to participate in decision-making. These possibilities are discussed in Chapter 8 and include: (i) extending decision-making considerations beyond those regarding economic benefits, (ii) broadening the knowledge to include the social dimensions of unconventional gas developments, (iii) ensuring regulatory and democratic institutions are rigorously upheld. My analysis revealed that in many ways it is the governance regimes that shape the anti-fracking narratives and as such I argue that it is through these regimes that the tensions can be addressed and level the power dynamics regarding unconventional gas.

### 9.3.6 The Influence of the Anti-fracking Movement is in Engaging the Public in Decision-Making Concerning Unconventional Gas.

In answering the principal research question, my analysis has found that the predominant influence of the anti-fracking narratives in the development of mining policy in Australia and the United Kingdom is through the establishment of a social movement, the anti-fracking movement. The movement has been influential because it has brought the issues of unconventional gas development into the public and political spheres. In doing so, the anti-fracking movement has raised public awareness about the industry and its practices, and communities have been mobilised to politically participate in mining policy decision-making and to protest.

At the heart of this finding is that the concept of community is the central focus of the anti-fracking narrative. The concept of community is bound to perceptions of identity to place and community-based values that draw a distinction with government and industry's agenda which is neoliberal achievement-orientated and economically driven.

The movement's influence is therefore through its innate connection with community, which is persuasive and motivates people to actively participate in the unconventional gas political sphere.

## 9.4 Research Challenges

The challenges faced in this research were predominantly found in obtaining participants for interviews. With the growing research interest relating to social conflict over unconventional gas developments globally, many groups and people involved in the anti-fracking movement were not keen to participate in 'yet another' research project. In some cases, people were suspicious of my motives as a researcher, including a fear that I could be working on behalf of industry. People were worried about sharing their information, that it could be used against them. There was also concern that there was no incentive for them to participate, particularly that there was no guarantee that the research would be in anyway beneficial for their 'cause'.

In Australia particularly, there was difficulty in finding an adequate number of participants from the original case study sites – South East Queensland and Victoria. These sites were chosen because the former is the origin of the Lock the Gate Alliance and the latter because Victoria is where strong community protests resulted in a legislated ban on onshore gas production. Lock the Gate Alliance was approached to participate. Although I had a good response from Victoria, few responded from South East Queensland. Lock the Gate Alliance would not endorse or participate in the research as an organisation and said that it would be up to individual groups to decide if they would nominate a person/s to participate. For these reasons, I needed to look beyond the initial regions of investigation, with the result that participants were recruited from across Australia.

In the UK, participants were sought in the North of England shires of Lancashire, Yorkshire, and Cheshire. Despite a longstanding and public protest at the Preston New Road site in Lancashire, only one person agreed to participate from Lancashire. Like South East Queensland, the campaign at Preston New Road has drawn considerable research interest and the lack of interest in this project from that area is assumed to be related to 'research fatigue'. The result was that most of the respondents were from Yorkshire, and

a few were from Cheshire. All had equally important points of view and experiences relating to the research matter.

Despite these challenges, the resulting range of participants across both case studies was more diverse than first envisaged. Participants included people from a range of organisations, including those not specifically involved in, but supportive of, the anti-fracking cause, such as medical practitioner groups, and lawyers and other advisory or facilitative organisations. Thus, a diversity of views was obtained, allowing greater insight into the range of anti-fracking narratives held and allowing for greater depth in the analysis.

Another challenge related to obtaining interviews with decision-makers. People from government and industry were approached. As indicated in Chapter 3, there were no responses from any government agencies in either case study area, and only one person from industry in Australia, and one politician interviewed for each case-study. Despite a lack of primary data in relation to decision-making, innumerable secondary data sources were available, such as government and industry documents and websites, as well as newspaper reports. These enabled adequate coverage of this aspect of the unconventional gas paradigm.

I also found it challenging to identify strong differences between the case studies. The differences were in the detail and relative to their contexts rather than in the main narratives or organisational structures. I found instead that there was a commonality of the anti-fracking narratives which provided insights into the effectiveness of the anti-fracking movement ability to promulgate their narrative.

## 9.5 Recommendations for Decision-Makers

My research has established that there is a range of possibilities to resolve these social conflicts about unconventional gas development within government policy and regulatory frameworks. Greater consideration of social and environmental implications of the development will more likely address the wider risks, such as to public health, local economies, and environments. Facilitating citizen participation in decision-making and

ensuring rigorous oversight of industry operations, for example, by placing industry on equal footing with other industry operations with regulatory requirements, will go towards ensuring that these processes are fair and equitable and address the tensions about industry operations. The following are five recommendations for putting these considerations into practice.

## 9.5.1 Include Social Factors in all Planning, Policy, and Regulatory Frameworks.

Social and human well-being should be a government priority. Decision-making should not only be based on economic credentials but should also include social and environmental impacts. In the case of the mining industry (or fracking or hydraulic fracturing), for example, risks to public health, and other social impacts from environmental degradation, pollution and increased emissions resulting from industry operations should be considered. Social and cultural connections to space and other environmental factors should also be included. Recognition of the social elements of development projects will provide a more holistic lens for decision-making. Placing these factors on equal basis with other land uses and industry will also legitimise decision-making regarding unconventional gas.

My analysis has highlighted that the issues at the heart of the anti-fracking narratives relate to community and social wellbeing, whether they be concerns about public health, impacts to landscapes or livelihoods, or concerns about climate change and the use of fossil fuels for future energy. Moreover, the exclusive focus of economic framings to assess social wellbeing misses the vital socio-cultural elements that underpin people's grievances about unconventional gas development. Given the fundamental connections that these concerns have to social cohesion and welfare, consideration of community and social well-being is an essential decision-making factor.

## 9.5.2 Include Citizen Participation at All Levels of Decision-Making

Public participation in decision-making is necessary when considering the social and cultural aspects of a development. Interactions with community should not only focus on issues that directly impact communities. Current tendencies for industry to interact and negotiate only with directly impacted landholders misses a substantial group of

stakeholders – the public. This approach maintains the division of community cohesion because it reinforces disproportionate burdens placed on communities.

My research has highlighted that people are mobilised into action when there is a lack of meaningful interaction between community and decision-makers. Meaningful interactions include consequential participation at all levels of decision-making and consideration in decision-making of community-related concerns. Also emphasised by my analysis is the resounding understanding that public participation is inherent to good decision-making about sustainable natural resource development. Including public considerations in decision-making will go toward reducing current imbalances in power, building public trust, and highlighting problems from development leading to more robust solutions (Reed 2008).

### 9.5.3 Comprehensive and Cross-Disciplinary Knowledge Production to Inform Decision-Making

Knowledge is a fundamental element of the power-ratio within the unconventional gas paradigm. This thesis underscores the ways in which knowing, and not-knowing are used to produce power (Beck and Wehling 2012). Moreover, as revealed by my analysis, unconventional gas development impacts communities and their natural environments in a vast and complex range of ways. Decision-making, therefore, needs to be informed by rigorous and comprehensive cross-disciplinary information. I recommend that knowledge production needs to ensure that adequate baseline data to measure potential industry impacts from are available, include local knowledge systems, consider the expanding international literature, and include social, cultural, and environmental dimensions. Knowledge needs to be developed in areas where there are currently knowledge deficits, such as chemical mixes in subterranean environments, risks to public health, the extent of seismic activity, the extent and impacts of traffic and related land use changes and impacts to and comparisons between existing local economies. It is also important to use knowledge development as a precautionary measure to avoid unnecessary risks and circumvent the need for adaptive management.

### 9.5.4  Rigorous, Transparent, and Fair Governance Systems

I have argued in Chapter 6 that discretionary power is incorporated into policy and regulation to pursue through policy and regulation political and ideological agendas. Regulatory frameworks need to be independent of industry influence for the purposes of developing unconventional gas development. As stated above, including social and environmental considerations into decision-making provides the sociocultural elements important to local communities: their health and wellbeing; their livelihoods; and their social, cultural, and economic connections to their local environments (de Rijke et al. 2016; Espig and de Rijke 2016; Szolucha 2016). Because of these integral elements, regulatory frameworks are key intersections between the public's problems with how the unconventional gas industry is governed and how their concerns are managed. Regulatory frameworks protect and sustain these elements.

Regulation is therefore an important mechanism to ensure that industry projects, such as developing unconventional gas, protect and sustain the communities they are impacting. Ensuring that these systems of governance are transparent, fair, and equitable will build public trust in those systems. To this end, regulations are best placed when they are rigorous, in that they are well informed by sound knowledge, communicated with clarity and in line with other industries and land uses.

### 9.5.5  Embrace Conflict, Criticism, and Protest

Conflict is an opportunity. A crucial finding of this thesis is that conflict and protest not only provide information on community perception about unconventional gas, but also information of unforeseen social and environmental problems and risks. Embracing conflict also enables deliberative processes at the heart of a democracy to work effectively to find the best possible solutions and ways forward (Jasanoff 2012). Conflict is not only founded on gullibility, mistruths, and inexperience. The anti-fracking movements strive for sound and scientific information tells us that this conflict is from a position of knowledge and contrasting values to those driving unconventional gas developments. Embracing conflict therefore is also to embrace alternative views and values. Therefore, rather than obstruct protest, I recommend embracing community conflict and criticism because it is an opportunity to resolve real and present problems.

## 9.6   Contributions and Recommendations for Future Research

My analysis of the anti-fracking narratives has highlighted a range of issues that relate to the governance of unconventional resources development. By undertaking analysis of the anti-fracking narratives within the broader context of government and industry narratives around unconventional gas, this study contributes to the literature concerning the social response to unconventional resources developments. Although the case studies presented differences in government oversite, demographics and geography, and resources available, my analysis contributes to the literature by characterising both the local and global aspects of the anti-fracking movement. United by common narrative threads the movement's influence is not only public perception, but also mining policy development via the activation of citizen participation.

Most of the literature concerning the anti-fracking movement relates to community perceptions and social licence to operate, and there is a growing scholarship exploring industry influence on government mining policy. My analysis demonstrates a vast range of dynamics impact people affected by unconventional gas developments, all of which could be better understood. Furthermore, the connection between the social response to unconventional gas developments and the systems of governance revealed in the analysis indicates a continued focus on the relationship between government decision-making, industry governance, and practice, and the community is needed. An example would be longitudinal studies of the social impacts, effectiveness, and shortcomings of regulatory regimes in place because of public and scientific inquiries such as those rolled out in Western Australia and the Northern Territory.

Another issue raised in this thesis inspiring further research relates to the interaction between industry and government practices on democratic processes. Although these concepts are raised by some authors, such as by Fairclough (2019), there is an opportunity to increase the scrutiny of measures which erode democracies for the benefit of industry or ideological hegemony.

Further to future research opportunities relating to the human side of unconventional gas and natural resources developments and management, this thesis also invites further exploration of discretionary decision-making. The term 'discretionary principle' refers to a

phenomenon that emerged from the data, namely the perception that governments misuse their discretionary power to facilitate industry development for economic and ideological motivations. Although the term emerged from the data of this thesis and relates to unconventional gas developments, further research would be beneficial in this area. The term is also applicable wherever and whenever any discretionary powers exist. As discretion relates to power, innumerable research possibilities exist where the discretionary principle is used to maintain certain political and ideological hegemonies.

# References

Abrahamson, M 2001, 'Functional, conflict and neofunctional theories', Handbook of social theory pp. 141-151.

Abuya, WO 2013, 'What is in a coconut? An ethnoecological analysis of mining, social displacement, vulnerability, and development in rural Kenya', *African Studies Quarterly*, vol. 14, no. 1/2, pp. 1-21.

Acheraïou, A 2011, *Questioning hybridity, postcolonialism and globalization*, Palgrave Macmillan UK, London.

Agyeman, J, Schlosberg, D, Craven, L and Matthews, C 2016, 'Trends and directions in environmental justice: From inequity to everyday life, community, and just sustainabilities', *Annual Review of Environment and Resources*, vol. 41, no. 1, pp. 321-340.

Aikin, SF and Talisse, RB 2013, *Why we argue (and how we should) : A guide to political disagreement*, Routledge, Florence, GB.

Al Rawashdeh, R, Campbell, G and Titi, A 2016, 'The socio-economic impacts of mining on local communities: The case of Jordan', *The Extractive Industries and Society*, vol. 3, no. 2, pp. 494-507.

Ali-Khan, F and Mulvihill, PR 2008, 'Exploring collaborative environmental governance: Perspectives on bridging and actor agency', *Geography Compass*, vol. 2, no. 6, pp. 1974-1994.

Allen, MG 2018, *Resource extraction and contentious states: Mining and the politics of scale in the Pacific Islands*, Springer Singapore, Singapore.

Andrews, I 2014, *The Jurassic shales of the Weald Basin: Geology and shale oil and shale gas resource estimation*, British Geological Survey Department of Energy and Climate Change, https://www.ogauthority.co.uk/media/2773/bgs_decc_jurassicwealdshale_study_2014_main_report.pdf.

Annevelink, MPJA, Meesters, JAJ and Hendriks, AJ 2016, 'Environmental contamination due to shale gas development', *Science of The Total Environment*, vol. 550, pp. 431-438.

APPEA 2019, *The shale gas opportunity*, Australian Petroleum Production and Exploration Association, https://www.appea.com.au/oil-gas-explained/benefits/the-shale-gas-opportunity/, viewed 04/09/2019.

APPEA 2019, *Hydraulic fracturing*, Australian Petroleum Production and Exploration Association, https://www.shale-gas.com.au/industry-operations/hydraulic-fracturing/, viewed 05/09/2019.

Arce, M and Rice, R 2019, 'The political consequences of protest', in R Roberta and A Moisés (eds), *Protest and Democracy*, University of Calgary Press, https://press.ucalgary.ca/books/9781773850450/, pp. 1-21.

Aryee, F, Szolucha, A, Stretesky, PB, Short, D, Long, MA, Ritchie, LA and Gill, DA 2020, 'Shale gas development and community distress: Evidence from England', *International Journal of Environmental Research and Public Health*, vol. 17, no. 5069, pp. 1-19.

Asche, F, Osmundsen, P & Sandsmark, M 2006, 'The UK market for natural gas, oil and electricity: Are the prices decoupled?', The Energy Journal, vol. 27, no. 2, pp. 27-40.

Ashworth, P 2016, 'Best practice for community engagement: Determining who is affected and what is at stake', in Q Grafton, IG Cronshaw and MC Moore (eds), *Risks, rewards and regulation of unconventional gas: A global perspective*, Cambridge University Press, Cambridge, UK, pp. 391-410.

Asif, Z and Chen, Z 2016, 'Environmental management in North American mining sector', *Environmental Science and Pollution Research International*, vol. 23, no. 1, pp. 167-179.

Atkins, WA 2016, 'Flaring', Energy: In Context: Agricultural Energy Use and Production to Kyoto Protocol, pp. 320-323.

Ayling, J and Gunningham, N 2017, 'Non-state governance and climate policy: The fossil fuel divestment movement', *Climate Policy*, vol. 17, no. 2, pp. 131-149.

Bakan, J 1997, *Just words: Constitutional rights and social wrongs*, University of Toronto Press, Toronto.

Baker, K and Styles, P 2019, 'UK government's fracking 'ban' has a convenient loophole', *The Conversation*.

Baldassarri, D and Diani, M 2007, 'The integrative power of civic networks', *American Journal of Sociology*, vol. 113, no. 3, pp. 735-780.

Balise, VD, Meng, C-X, Cornelius-Green, JN, Kassotis, CD, Kennedy, R and Nagel, SC 2016, 'Systematic review of the association between oil and natural gas extraction processes and human reproduction', *Fertility and sterility*, vol. 106, no. 4, p. 795.

Barkin, JS and DeSombre, ER 2013, *Saving global fisheries: Reducing fishing capacity to promote sustainability*, The MIT Press, Cambridge, Massachusetts; London, England.

Barrow, CJ 2010, 'How is environmental conflict addressed by SIA?', *Environmental Impact Assessment Review*, vol. 30, no. 5, pp. 293-301.

Bartos, OJ and Wehr, P 2002, *Using conflict theory*, Cambridge University Press, Cambridge, GB.

Bax, V, Francesconi, W and Delgado, A 2019, 'Land-use conflicts between biodiversity conservation and extractive industries in the Peruvian Andes', *Journal of Environmental Management*, vol. 232, pp. 1028-1036.

Baxter, J 2016, 'Case studies in qualitative research', in I Hay (ed.), *Qualitative Research Methods In Human Geography*, 4 edn, Oxford University Press, Ontario, Canada, pp. 130-146.

Bayari, C 2016, 'Economic geography of the Australian mining industry', *Tijdschrift voor economische en sociale geografie*, vol. 107, no. 5, pp. 552-566.

BBC News 2013, 'Fracking OK for 'desolate' North East, says Tory peer', *BBC News*

BBC News 2014, 'Ministers want to change trespass law to boost fracking', *BBC News - Politics*, https://www.bbc.com/news/uk-politics-27110655.

BBC News 2019, 'Lancashire police gets £4.3m grant for fracking costs', in BBC News (ed.)https://www.bbc.com/news/uk-england-lancashire-47094337.

Bebbington, A 2009, 'Latin America: Contesting extraction, producing geographies', *Singapore Journal of Tropical Geography*, vol. 30, no. 1, pp. 7-12.

Bebbington, A 2012, 'Underground political ecologies: The second annual lecture of the Cultural and Political Ecology Specialty Group of the Association of American Geographers', *Geoforum*, vol. 43, no. 6, pp. 1152-1162.

Bebbington, A, Abdulai, A-G, Humphreys Bebbington, D, Hinfelaar, M and Sanborn, CA 2018a, *Governing extractive industries: Politics, histories, ideas*, Oxford University Press, Oxford, United Kingdom.

Bebbington, A, Hinojosa, L, Bebbington, DH, Burneo, ML and Warnaars, X 2008a, 'Contention and ambiguity: Mining and the possibilities of development', *Development and Change*, vol. 39, no. 6, pp. 887-914.

Bebbington, A, Humphreys Bebbington, D, Bury, J, Lingan, J, Muñoz, JP and Scurrah, M 2008b, 'Mining and social movements: Struggles over livelihood and rural territorial development in the andes', *World Development*, vol. 36, no. 12, pp. 2888-2905.

Bebbington, AJ, Humphreys Bebbington, D, Sauls, LA, Rogan, J, Agrawal, S, Gamboa, C, Imhof, A, Johnson, K, Rosa, H, Royo, A, Toumbourou, T and Verdum, R 2018b, 'Resource extraction and infrastructure threaten forest cover and community rights', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 115, no. 52, p. 13164.

Beck, U and Wehling, P 2012, 'The politics of non-knowing: An emerging area of social and political conflict in reflexive modernity', in P Baert and FD Rubio (eds), *The politics of knowledge*, Routledge, Oxon, UK, pp. 33-57.

Behn, RD 2001, 'Discretion and trust', in *Rethinking Democratic Accountability*, Brookings Institution Press, pp. 81-102.

Bell, J 1992, 'Discretionary decision-making: A jurisprudential view', in K Hawkins (ed.), *The uses of discretion*, Oxford University Press, Oxford, pp. 89-111.

Bice, S 2013, 'No more sun shades, please: Experiences of corporate social responsibility in remote Australian mining communities', *Rural Society*, vol. 22, no. 2, pp. 138-152.

Bigg, M 2017, 'Introduction to environmental regulation and practice in the UK and Europe', in J Foreman (ed.), *Developments in environmental regulation: Risk based regulation in the UK and Europe*, Springer International Publishing, Cham, Switzerland, pp. 1-47.

Bingham, LB, Nabatchi, T and O'Leary, R 2005, 'The new governance: Practices and processes for stakeholder and citizen participation in the work of government', *Public Administration Review*, vol. 65, no. 5, pp. 547-558.

Bista, S, Jennings, P and Anda, M 2019, 'Carbon footprint management of unconventional natural gas development in the export scenario', *Renewable Energy and Environmental Sustainability*, vol. 4, no. 3, pp. 1-8.

Black, ML and Kohler, EJ 2004, 'Diminishing democracy: A review of public participation in Michigan's environmental decisionmaking', *Wayne Law Review*, vol. 50, no. 2, pp. 219-308.

Blake, U 2016, 'The unconventional oil and gas process, and an introduction to exposure pathways', in T Rose (ed.), *Environmental and Health Issues in Unconventional Oil and Gas Development*, Elsevier, pp. 1-12.

Blatter, JK 2008, 'Case study', in LM Given (ed.), *The SAGE Encyclopedia of Qualitative Research Methods*, SAGE Publications, Inc., pp. 69-71.

Bocora, J 2012, 'Global prospects for the development of unconventional gas', *Procedia - Social and Behavioral Sciences*, vol. 65, pp. 436-442.

Bomberg, E 2013, 'The comparative politics of fracking: Networks and framing in the us and europe', paper presented at Annual Meeting Paper; American Political Science Association 2013 Annual Meeting, Chicago, Illinois.

Bomberg, E 2014, 'Shale governance in the European Union: Principles and practice', *Issues in Energy and Environmental Policy*, no. 15, pp. 1-19.

Bomberg, E 2015, 'Shale we drill? Discourse dynamics in UK fracking debates', *Journal of Environmental Policy and Planning*, pp. 1-17.

Boudet, H, Clarke, C, Bugden, D, Maibach, E, Roser-Renouf, C and Leiserowitz, A 2014, '"Fracking" controversy and communication: Using national survey data to understand public perceptions of hydraulic fracturing', *Energy Policy*, vol. 65, pp. 57-67.

Boutilier, RG 2014, 'Frequently asked questions about the social licence to operate', *Impact Assessment and Project Appraisal*, vol. 32, no. 4, pp. 263-272.

Boyd, B 2013, 'Postcolonial times: Lock the Gate or pull down the fences? A special monograph edition', *Coolabah*, vol. 12, no. 12, pp. 1-31.

Bradshaw, M and Waite, C 2017, 'Learning from Lancashire: Exploring the contours of the shale gas conflict in England', *Global Environmental Change*, vol. 47, pp. 28-36.

Brand, U 2012, 'Contradictions and crises of neoliberal-imperial globalization and the political opportunity structures for the Global Justice Movements', Innovation, vol. 25, no. 3, pp. 283-298.

Brinkmann, S 2008, 'Interviewing', *The SAGE Encyclopedia of Qualitative Research Methods*, pp. 471-472.

Bronson, K and Beckley, T 2018, *Scientized and sanitized: Shale gas in the context of New Brunswick's political history*, in J Whitton, M Cotton, IM Charnley-Parry and K Brasier (eds), *Governing shale gas: Development, citizen participation and decision-making in the US, Canada, Australia and Europe*, 1 edn, vol. 1, Routledge, London and New York, pp. 272-287.

Bruckmeier, K 2005, 'Interdisciplinary conflict analysis and conflict mitigation in local resource management', *Ambio*, vol. 34, no. 2, pp. 65-73.

Brull, M 2018, *Council for Civil Liberties condemns regulations allowing for bans on public gatherings*, New South Wales Council for Civil Liverties, http://www.nswccl.org.au/council_for_civil_liberties_condemns_regulations_allowing_for_bans_on_public_gatherings, viewed 16/08/2019.

Bryman, A 2016, *Social research methods*, 5 edn, Oxford University Press, Oxford, United Kingdom.

BSA 2018, Home, Basin Sustainablity Alliance, https://notatanycost.com.au/, viewed 21/08/2020.

Bubna-Litic, K 2015, 'Fracking in Australia: The future in South Australia?', *Environmental and Planning Law Journal*, vol. 32, p. 437.

Buechler, SM 1995, 'New social movement theories', *The Sociological Quarterly*, vol. 36, no. 3, pp. 441-464.

Bush, K & Opp, R 1999, 'Peace and conflict impact assessment', in D Buckles (ed.), Cultivating peace: Conflict and collaboration in natural resource management, International Development Research Centre, Otowa, Canada, pp. 185-202.


Business Queensland 2020, *CSG-LNG legislation*, Queensland Government, https://www.business.qld.gov.au/industries/mining-energy-water/resources/petroleum-energy/legislation-policies/regulatory-framework/legislation5/05/2020.


Carney, M 2013, *Gas leak*, https://www.abc.net.au/4corners/gas-leak/4605726, ABC.


Carrington, D 2014, 'Fracking trespass law changes move forward despite huge public opposition', *The Guardian*, https://www.theguardian.com/environment/2014/sep/26/fracking-trespass-law-changes-move-forward-despite-huge-public-opposition.


Carter, AV and Eaton, EM 2016, 'Subnational responses to fracking in Canada: Explaining Saskatchewan's "Wild West" regulatory approach', *Review of Policy Research*, vol. 33, no. 4, pp. 393-419.


Carter, AV, Fraser, GS and Zalik, A 2017, 'Environmental policy convergence in Canada's fossil fuel provinces? Regulatory streamlining, impediments, and drift', *Canadian Public Policy*, vol. 43, no. 1, pp. 61-76.


Carter, RM and Morgan, RK 2018, 'Regulatory trust and failure: A case study of coal seam gas in New South Wales, Australia', *Journal of Environmental Planning and Management*, vol. 61, no. 10, pp. 1789-1804.


Chailleux, S and Moyson, S 2016, 'The French ban on hydraulic fracturing and the attempts to reverse it: Social mobilization, professional forums, and coalition strategies', in CM Weible, T Heikkila, K Ingold and M Fischer (eds), *Policy Debates on Hydraulic Fracturing: Comparing Coalition Politics in North America and Europe*, Palgrave Macmillan US, New York, pp. 115-145.


Chambers, G 2014, 'Police headed for clash with anti-fracking army at Bentley, near Lismore', *The Daily Telegraph*.


Chen, C and Randall, A 2013, 'The economic contest between coal seam gas mining and agriculture on prime farmland: It may be closer than we thought', *Journal of Economic and Social Policy*, vol. 15, no. 3, pp. 1-30.

Chesters, G 2012, 'Social movements and the ethics of knowledge production', *Social Movement Studies*, vol. 11, no. 2, pp. 145-160.


Cho, S 2010, 'Politics of critical pedagogy and new social movements', *Educational Philosophy and Theory: Focus on Democracy, Power and Governmentality*, vol. 42, no. 3, pp. 310-325.


Choma, BL, Hanoch, Y and Currie, S 2016, 'Attitudes toward hydraulic fracturing: The opposing forces of political conservatism and basic knowledge about fracking', *Global Environmental Change*, vol. 38, pp. 108-117.


CHPNY and PSR 2019, *Compendium of scientific, medical, and media findings demonstrating risks and harms of fracking (unconventional gas and oil extraction)*, Concerned Health Professionals of New York, Physicians for Social Responsibility., http://concernedhealthny.org/compendium/.

Clark, C, Burnham, A, Harto, C and Horner, R 2012, *Hydraulic fracturing and shale gas production: Technology, impacts, and policy*,  Our Energy Policy, Argonne National Laboratory, http://www.ourenergypolicy.org/hydraulic-fracturing-and-shale-gas-production-technology-impacts-and-policy/.


Clark, G 2018, 'Energy Policy:Written statement - HCWS690', UK Parliament, https://questions-statements.parliament.uk/written-statements/detail/2018-05-17/HCWS690.


Clarke, J 2020, 'Building the 'Boris' bloc: Angry politics in turbulent times', *Soundings*, no. 74, pp. 118-135.


Clarke, V and Braun, V 2017, 'Thematic analysis', *The Journal of Positive Psychology: Qualitative Positive Psychology. Edited by Kate Hefferon and Arabella Ashfield*, vol. 12, no. 3, pp. 297-298.


Coal and CSG Free Mirboo North 2015, *Submission to the Victorian Legislative Council's Environment and Planning Committee Inquiry into should there be an onshore unconventional gas industry in Victoria?*, Parliament of Victoria, https://www.parliament.vic.gov.au/images/stories/committees/EPC/Submission_338_-_Coal__CSG_Free_Mirboo_North.pdf.


Cohen, EH and Valencia, J 2008, 'Political protest and power distance: Towards a typology of political participation', *Bulletin of Sociological Methodology*, no. 99, pp. 54-72.

Colagiuri, R and Morrice, E 2015, 'Do coal-related health harms constitute a resource curse? A case study from Australia's Hunter Valley', *The Extractive Industries and Society*, vol. 2, no. 2, pp. 252-263.

Colvin, RM, Witt, GB and Lacey, J 2015, 'Strange bedfellows or an aligning of values? Exploration of stakeholder values in an alliance of concerned citizens against coal seam gas mining', *Land Use Policy*, vol. 42, pp. 392-399.

Cook, JJ 2014, 'Who's regulating who? Analyzing fracking policy in Colorado, Wyoming, and Louisiana', *Environmental Practice*, vol. 16, no. 2, pp. 102-112.

Coram, A, Moss, J and Blashki, G 2014, 'Harms unknown: Health uncertainties cast doubt on the role of unconventional gas in Australia's energy future', *Medical Journal of Australia*, vol. 4, pp. 210-213.

Corder, G, Kemp, D, Brereton, D and Bangerter, P 2015, 'Integrating social and environmental aspects in project design', *AusIMM Bulletin*, no. Dec 2015, pp. 55-57.

Core Energy Group 2016, *Cooper-Eromanga Basin Outlook - 2035*, Core Energy Group, http://petroleum.statedevelopment.sa.gov.au/__data/assets/pdf_file/0005/283919/Core _Energy_-_Cooper-Eromanga_Basin_Outlook_-_Final_-_Oct2016v1.pdf.

Cotton, M 2013, 'NIMBY or not? Integrating social factors into shale gas community engagements', *Natural Gas and Electricity*, vol. 29, no. 9, pp. 8-12.

Cotton, M 2017, 'Fair fracking? Ethics and environmental justice in United Kingdom shale gas policy and planning', *Local Environment*, vol. 22, no. 2, pp. 185-202.

Cotton, M, Rattle, I and Van Alstine, J 2014, 'Shale gas policy in the United Kingdom: An argumentative discourse analysis', *Energy Policy*, vol. 73, pp. 427-438.

Cox, L 2018, ''Not safe, not wanted': Is the end of NT fracking ban a taste of things to come?', *The Guardian Australia*.

Cox, L 2020a, 'Coalition began writing landmark environment bill before receiving review it had ordered', *The Guardian Australia*.

Cox, L 2020b, 'Australia's national environmental laws: What is the Morrison government proposing to change and why?', The Guardian Australia.

Crossley, P 2018, 'The Australian LNG industry: Legal and commercial challenges', in S Raszewski (ed.), *The International Political Economy of Oil and Gas*, International Political Economy Series.

CSIRO 2020 *What is unconventional gas*, Commonwealth Scientific and Industrial Research Organisation, http://www.csiro.au/en/Research/Energy/Hydraulic-fracturing/What-is-unconventional-gas, viewed 1/12/2016.

Curran, G 2017, 'Social licence, corporate social responsibility and coal seam gas: Framing the new political dynamics of contestation', *Energy Policy*, vol. 101, pp. 427-435.

Dahrendorf, R 1958, 'Toward a theory of social conflict', *Journal of conflict Resolution*, vol. 2, no. 2, pp. 170-183.

Dairon, M, Parkins, JR and Sherren, K 2018, *Seeking common ground in contested energy technology landscapes: Insights from a Q-methodology study*, in J Whitton, M Cotton, IM Charnley-Parry and K Brasier (eds), *Governing shale gas: Development, citizen participation and decision-making in the US, Canada, Australia and Europe*, 1 edn, vol. 1, Routledge, London and New York, pp. 256-271.

Dal Bo, E 2006, 'Regulatory capture: A review', *Oxford Review of Economic Policy*, vol. 22, no. 2, pp. 203-225.

Dare, M, Schirmer, J and Vanclay, F 2014, 'Community engagement and social licence to operate', *Impact Assessment and Project Appraisal*, vol. 32, no. 3, pp. 188-197.

Davidson, DJ, Edou, EA and Robinson, B 2018, 'Chipping away at democracy: Legislative slippage in Alberta's energy development zone', *Energy Research and Social Science*, vol. 46, pp. 303-310.

Davis, C 2012, 'The politics of 'fracking': Regulating natural gas drilling practices in Colorado and Texas', *Review of Policy Research*, vol. 29, no. 2, pp. 177-191.

DBEIS 2016, *Guidance on fracking: Developing shale oil and gas in the UK*, Department for Business, Energy and Industrial Strategy, https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk, viewed 1/12/2016.

De Fina, A & Georgakopoulou, A 2015, *The Handbook of Narrative Analysis*, John Wiley & Sons, Incorporated, Somerset, United States.

de Rijke, K 2013, 'The agri-gas fields of Australia: Black soil, food, and unconventional gas', *Culture, Agriculture, Food and Environment*, vol. 35, no. 1, pp. 41-53.

de Rijke, K, Munro, P and Zurita, MdLM 2016, 'The Great Artesian Basin: A contested resource environment of subterranean water and coal seam gas in Australia', *Society and Natural Resources*, vol. 29, no. 6, pp. 696-710.

della Porta, D and Diani, M 2009, *Social movements: An introduction*, John Wiley and Sons.

della Porta, D 2020, 'Building bridges: Social movements and civil society in times of crisis', Voluntas, pp. 938–948.

Department for Business Energy and Industrial Strategy 2019a, 'Government ends support for fracking', UK Government, https://www.gov.uk/government/news/government-ends-support-for-fracking.

Department for Business Energy and Industrial Strategy 2019b, *Guidance on fracking: Developing shale gas in the UK*, Department for Business, Energy and Industrial Strategy - Government of the United Kingdom, https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking09/09/2019.

Department of Energy and Climate Change 2013, *Developing onshore shale gas and oil – facts about 'fracking'* Department of Energy and Climate Change - Government of the United Kingdom, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265972/Developing_Onshore_Shale_Gas_and_Oil__Facts_about_Fracking_131213.pdf.

Department of Industry 2014, *Energy White Paper: Green Paper 2014 - to inform preparation of a White Paper*, Australian Government, https://consult.industry.gov.au/energy-white-paper-taskforce/energy-green-paper-consultation/supporting_documents/Energy%20Green%20Paper.pdf.

Department of State Growth 2018, *Tasmanian Government policy on hydraulic fracturing (fracking)*, Tasmanian Government, http://www.mrt.tas.gov.au/portal/tasmanian-government-policy-statement-on-hydraulic-fracturing-fracking-2018, viewed 02/09/2019.

Department of the Environment and Energy 2016, *Implementation of the Water Trigger under the Environment Protection and Biodiversity Conservation Amendment Act 2013:*

*Post Implementation Review*, Australian Government: Department of the Environment and Energy, http://www.environment.gov.au/system/files/resources/905b3199-4586-4f65-9c03-8182492f0641/files/water-trigger-review-appendix-3-pir.pdf.

Deregulation Taskforce 2019, *Busting congestion and supporting investment and jobs: The government's deregulation agenda*, Australian Government https://treasury.gov.au/sites/default/files/2019-11/pmcreportcardawonlineupdated20191126_0.pdf.

Diani, M 2009, 'The structural bases of protest events', *Acta Sociologica*, vol. 52, no. 1, pp. 63-83.

Diani, M and Bison, I 2004, 'Organizations, coalitions, and movements', *Theory and Society*, vol. 33, no. 3, pp. 281-309.

Dong, Z, Holditch, S, Mcvay, D and Ayers, W 2011, 'CSUG/SPE 148365 global unconventional gas resource assessment', in *The Canadian Unconventional Resources Conference,* vol. 16.

Dong, Z, Holditch, SA and John Lee, W 2016, 'World recoverable unconventional gas resources assessment', in YZ Ma and SA Holditch (eds), *Unconventional Oil and Gas Resources Handbook*, Gulf Professional Publishing, Boston, pp. 53-70.

Dougall, S 2019, 'Workplace health and safety (WHS) implications for farmers hosting unconventional gas (UG) exploration and production', *Policy and Practice in Health and Safety*, vol. 17, no. 2, pp. 156-172.

Douglas, J 2014, 'Deregulation in Australia', Economic Roundup, no. 2, pp. 53-78.

Drake, F 2018, 'Risk society and anti-politics in the fracking debate', *Social Sciences*, vol. 7, no. 11, pp. 1-22.

Dunn, K 2000, 'Interviewing', in I Hay (ed.), *Qualitative Research Methods In Human Geography*, 4 edn, Oxford University Press, Ontario, Canada, pp. 149-188.

Duus, S 2013, 'Coal contestations: Learning from a long, broad view', *Rural Society*, vol. 22, no. 2, pp. 96-110.

Eaton, E and Enoch, S 2018, 'Oil's rural reach: Social licence in Saskatchewan's oil-producing communities', *Canadian Journal of Communication*, vol. 43, no. 1, pp. 53-74.

Eaton, E and Kinchy, A 2016, 'Quiet voices in the fracking debate: Ambivalence, nonmobilization, and individual action in two extractive communities (Saskatchewan and Pennsylvania)', *Energy Research and Social Science*, vol. 20, pp. 22-30.

EDO QLD 2018, *Fact sheet: Coal seam gas: Community submission and appeal rights*, Environmental Defenders Office Queensland, https://www.edoqld.org.au/factsheets.

Edwards, M 2008, 'Participatory governance', *Corporate Governance ARC Project: Issues Paper Series No. 6*, University of Canberra, Australia.

Edwards, M, Halligan, J, Horrigan, B and Nicoll, G 2012, *Public sector governance in Australia*, ANU Press.

Elliott, EG, Trinh, P, Ma, X, Leaderer, BP, Ward, MH and Deziel, NC 2017, 'Unconventional oil and gas development and risk of childhood leukemia: Assessing the evidence', *Science of The Total Environment*, vol. 576, pp. 138-147.

Ellis, C, Theodori, GL, Petrzelka, P, Jackson-Smith, D and Luloff, AE 2016, 'Unconventional risks: The experience of acute energy development in the Eagle Ford Shale', *Energy Research and Social Science*, vol. 20, pp. 91-98.

English, W 2014, 'Economic and ideological corruptions of the regulatory state', *Society*, vol. 51, no. 3, pp. 262-267.

Escobar, A 1998, 'Whose knowledge, whose nature? Biodiversity, conservation, and the political ecology of social movements', *Journal of Political Ecology*, vol. 5, no. 1, pp. 53-82.

Escobar, A 2004, 'Beyond the Third World: Imperial globality, global coloniality and anti-globalisation social movements', *Third World Quarterly*, vol. 25, no. 1, pp. 207-230.

Escobar, A 2008, *Territories of difference: Place, movements, life, redes*, New ecologies for the twenty-first century, Duke University Press, Durham.

Escobar, A, Rocheleau, D and Kothari, S 2002, 'Environmental social movements and the politics of place', *Development*, vol. 45, no. 1, pp. 28-36.

Espig, M and de Rijke, K 2016, 'Unconventional gas developments and the politics of risk and knowledge in Australia', *Energy Research and Social Science*, vol. 20, pp. 82-90.

Espig, M and de Rijke, K 2018, 'Energy, anthropology and ethnography: On the challenges of studying unconventional gas developments in Australia', *Energy Research and Social Science*, vol. 45, pp. 214-223.

Evensen, D, Jacquet, JB, Clarke, CE and Stedman, RC 2014, 'What's the 'fracking' problem? One word can't say it all', *The Extractive Industries and Society*, vol. 1, no. 2, pp. 130-136.

Evensen, D 2018, 'Yet more 'fracking' social science: An overview of unconventional hydrocarbon development globally', The Extractive Industries and Society, vol. 5, no. 4, pp. 417-421.

Evensen, D and Stedman, R 2018, ''Fracking': Promoter and destroyer of 'the good life'', *Journal of Rural Studies*, vol. 59, no. C, pp. 142-152.

Eversole, R 2011, 'Community agency and community engagement: Re-theorising participation in governance', *Journal of Public Policy*, vol. 31, no. 01, pp. 51-71.

Fabbri, A, Lai, A, Grundy, Q and Bero, LA 2018, 'The influence of industry sponsorship on the research agenda: A scoping review', *American journal of public health*, vol. 108, no. 11, pp. 9-16.

Fairclough, I 2019, 'Deontic power and institutional contexts: The impact of institutional design on decisionmaking in the UK fracking debate', *Journal of Argumentation in Context*, vol. 8, no. 1, pp. 136-171.

Fairclough, N 1989, *Language and power*, Longman, London and New York.

Fairclough, N 2011, 'Critical discourse analysis', in *The Routledge Handbook of Discourse Analysis*, Routledge, https://www.routledgehandbooks.com/doi/10.4324/9780203809068.ch1.

Fairclough, N 2013a, 'Critical discourse analysis and critical policy studies', *Critical Policy Studies*, vol. 7, no. 2, pp. 177-197.

Fairclough, N 2013b, *Critical discourse analysis: The critical study of language*, Routledge.

Fedorowytsch, T 2017, 'South-East fracking ban set to be legislated by South Australian Government', *ABC News*.

Feldman, M 1992, 'Social limits to discretion: An organizational perspective', in K Hawkins (ed.), *The uses of discretion*, Oxford University Press, Oxford, pp. 163-183.

Finkel, ML and Hays, J 2013, 'The implications of unconventional drilling for natural gas: A global public health concern', *Public Health*, vol. 127, no. 10, pp. 889-893.

Firmin, MW 2008, 'Data Collection', *The SAGE Encyclopedia of Qualitative Research Methods*, pp. 191-193.

Fischer, F 2006, 'Participatory governance as deliberative empowerment: The cultural politics of discursive space', *The American Review of Public Administration*, vol. 36, no. 1, pp. 19-40.

Fleming, RC and Reins, L 2016, 'Shale gas extraction, precaution and prevention: A conversation on regulatory responses', *Energy Research and Social Science*, vol. 20, pp. 131-141.

Flesher Fominaya, C 2010, 'Collective identity in social movements: Central concepts and debates: Collective identity in social movements', Sociology Compass, vol. 4, no. 6, pp. 393-404.

Flyvbjerg, B 2006, 'Five Misunderstandings About Case-Study Research', Qualitative inquiry, vol. 12, no. 2, pp. 219-245.

FOE 2019, *Fracking and climate breakdown*, Friends of the Earth, https://friendsoftheearth.uk/climate-change/fracking, viewed 17/09/2019.

Frack Free WA 2020, Home, https://www.facebook.com/frackfreewa/, viewed 02/09/2020.

Frack-Off UK 2016, *Upton day 648 (Tues 12th Jan) camp eviction*, Frack-Off Extreme Energy Action Network, https://frack-off.org.uk/category/upton/, viewed 29/04/2020.

Frack-Off UK 2017, *Ineos plan fracking invasion of central England: Military logistics company hired fro seismic survey*, Frack-Off Extreme Energy Action Network, https://frack-off.org.uk/social-media-post/recruiting-begins-for-survey-in-north-nottinghamshirederbyshire/, viewed 25/08/2020.

Freeman, M 2015, 'Narrative as a mode of understanding', in A De Fina & A Georgakopoulou (eds), *The Handbook of Narrative Analysis*, John Wiley & Sons, Incorporated, Somerset, United States, pp. 21-37.

Freij-Ayoub, R 2012, 'Opportunities and challenges to coal bed methane production in Australia', *Journal of Petroleum Science and Engineering*, vol. 88–89, pp. 1-4.

Fung, A and Wright, EO 2001, 'Deepening democracy: Innovations in empowered participatory governance', *Politics and Society*, vol. 29, no. 1, pp. 5-41.

Galligan, DJ 1986, *Discretionary powers a legal study of official discretion*, Clarendon, Oxford.

Galloway, K 2012, 'Landowners' vs miners' property interests: The unsustainability of property as dominion', *Alternative Law Journal*, vol. 37, no. 2, pp. 77-81.

Galtung, J 2008, 'Conflict theory ', in *Encyclopedia of Violence, Peace, and Conflict (Second Edition)*, Academic Press, Oxford, pp. 391-400.

Gayle, D 2016, 'Anti-fracking protesters evicted from Cheshire camp', *The Guardian*.

Gerring, J 2010, 'Case selection for case-study analysis', in JM Box-Steffensmeier, HE Brady & D Collier (eds), The Oxford handbook of political methodology, Oxford University Press, Oxford, pp. 645-684.

Geoscience Australia 2020, *Unconventional petroleum resources* Australian Government, https://www.ga.gov.au/scientific-topics/energy/resources/petroleum-resources/unconventional-resources, viewed 28/04/2020.

Geoscience Australia 2019a, *Australiain energy resources assessment: Executive summary*, Australian Government, https://aera.ga.gov.au/#!/energy-resources-and-market, viewed 21/01/2020.

Geoscience Australia 2019b, *Gas*, Australian Government, https://aera.ga.gov.au/#!/gas, viewed 28/08/2019.

Gilmore, J, Jackson, W and Monk, H 2016, *Keep moving! Report on the policing of the Barton Moss Community Protection Camp, November 2013-April 2014*, Centre for the Study of Crime, Criminalisation and Social Exclusion, Liverpool John Moores University

Centre for URBan Research (CURB), University of York,
http://eprints.whiterose.ac.uk/115146/1/Barton_Moss_Report.pdf.

Gilmore, J, Jackson, W and Monk, H 2019, ''That is not facilitating peaceful protest. That is dismantling the protest': anti-fracking protesters' experiences of dialogue policing and mass arrest', *Policing and Society*, vol. 29, no. 1, pp. 36-51.

Goldstein, BD, Renn, O and Jovanovic, AS 2016, 'Public health, risk perception, and risk communication: Unconventional shale gas in the United States and the european union', in T Rose (ed.), *Environmental and Health Issues in Unconventional Oil and Gas Development*, Elsevier, pp. 107-127.

Gómez-Ibáñez, JA 2003, *Regulating infrastructure: Monopoly, contracts, and discretion*, Harvard University Press, Cambridge, USA, London, UK.

Goode, E and Ben-Yehuda, N 2009, 'Social problems', in E Goode and N Ben-Yehuda (eds), *Moral Panics*, Wiley, https://onlinelibrary-wiley-com.proxy.library.adelaide.edu.au/action/showCitFormats?doi=10.1002%2F9781444307924.ch9, pp. 150-167.

Goodman, PS, Galatioto, F, Thorpe, N, Namdeo, AK, Davies, RJ and Bird, RN 2016, 'Investigating the traffic-related environmental impacts of hydraulic-fracturing (fracking) operations', *Environment International*, vol. 89–90, pp. 248-260.

Goodrick, D 2014, 'Comparative case studies: Methodological briefs - impact evaluation no. 9', *Methodological Briefs*, vol. 9.

Government of Western Australia 2018, *'Government introduces strict new controls for hydraulic fracturing'*, Government of Western Australia, https://www.mediastatements.wa.gov.au/Pages/McGowan/2018/11/Government-introduces-strict-new-controls-for-hydraulic-fracturing.aspx.

Government of Western Australia 2019, *Implementation plan: Implementation of the Government's response to the Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia*, Government of Western Australia, https://www.hydraulicfracturing.wa.gov.au/wp-content/uploads/2019/07/Implementation-Plan.pdf.

Grafton, Q 2012, *Challenges and opportunities for Australian unconventional gas production*, Australia's Unconventional Energy Options, Committee for Economic Development of Australia,

http://adminpanel.ceda.com.au/FOLDERS/Service/Files/Documents/15347~cedaunconve
ntionalenergyfinal.pdf.

Grafton, RQ, Cronshaw, IG and Moore, MC (eds) 2016, *Risks, rewards and regulation of unconventional gas: A global perspective*, Cambridge University Press, Cambridge.

Graham, JD, Rupp, JA and Schenk, O 2015, 'Unconventional gas development in the USA: Exploring the risk perception issues', *Risk Analysis*, vol. 35, no. 10, pp. 1770-1788.

Gray, DE 2013, *Doing research in the real world*, 3 edn, Sage, Los Angeles; London.

Gray, J 2019, 'Ecological integrity as an alternative frame for the water, unconventional gas, and food nexus', *Jurimetrics*, vol. 59, no. 2, pp. 193-232.

Green, CA, Styles, P and Baptie, BJ 2012, *Preese Hall shale gas fracturing review and recommendations for induced seismic mitigation*, British Geological Survey, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachme nt_data/file/48330/5055-preese-hall-shale-gas-fracturing-review-and-recomm.pdf.

Grove-White, R 2005, 'Uncertainty, environmental policy and social learning', Environmental education research, vol. 11, no. 1, pp. 21-24.

Grove-White, R 2006, 'Britain's genetically modified crop controversies: The agriculture and environment biotechnology commission and the negotiation of 'uncertainty'', Community genetics, vol. 9, no. 3, pp. 170-177.

Grove-White, R, Macnaghten, P & Wynne, B 2000, Wising up: The public and new technologies, Centre for the Study of Environmental Change, Lancaster University, Lancaster.

Gudynas, E 2018, 'Extractivisms: Tendencies and consequences', in R Munck and RD Wise (eds), *Reframing Latin American Development*, Taylor and Francis, London, pp. 61-76.

Haarstad, H and Fløysand, A 2007, 'Globalization and the power of rescaled narratives: A case of opposition to mining in Tambogrande, Peru', *Political Geography*, vol. 26, no. 3, pp. 289-308.

Hadani, M, Doh, JP and Schneider, MA 2018, 'Corporate political activity and regulatory capture: How some companies blunt the knife of socially oriented investor activism', *Journal of Management*, vol. 44, no. 5, pp. 2064-2093.

Halliday, J 2017, 'Anti-fracking tea lady vows to fight order to move catering van ', *The Guardian*.

Hallward, MC 2006, 'Natural resource transformation: Incorporating identity', *Journal of Peacebuilding and Development*, vol. 3, no. 1, pp. 48-62.

Hamawand, I, Yusaf, T and Hamawand, SG 2013, 'Coal seam gas and associated water: A review paper', *Renewable and Sustainable Energy Reviews*, vol. 22, pp. 550-560.

Hardie, L, Smith Devetak, N and Rifkin, W 2016, 'Universities in contentious energy debates: Science, democracy and coal seam gas in Australia', *Energy Research and Social Science*, vol. 20, pp. 105-116.

Harvey, B and Bice, S 2014, 'Social impact assessment, social development programmes and social licence to operate: tensions and contradictions in intent and practice in the extractive sector', *Impact Assessment and Project Appraisal*, vol. 32, no. 4, pp. 327-335.

Hatton, T, Commander, P, McKenzie, F, Wright, J and Clennell, B 2018, *Independent Scientific Panel Inquiry into hydraulic fracture stimulation in Western Australia: Final Report to the Western Australian Government*, www.frackinginquiry.wa.gov.au.

Hayhurst, R 2019a, 'Inspector backs plan to block fracking sites within 500m of N Yorks homes', *Drill or Drop?*

Hayhurst, R 2019b, 'Updated: Deadlines set for reports on Ellesmere Port and Woodsetts appeals', *Drill or drop?*

Hayhurst, R 2020, 'Breaking: Government delays Ellesmere Port shale gas decision', *Drill or drop?*

Head, BW 2008, 'Three lenses of evidence-based policy', *Australian Journal of Public Administration*, vol. 67, no. 1, pp. 1-11.

Hess, DJ 2016, *Undone science social movements, mobilized publics, and industrial transitions*, MIT Press, Cambridge, MA.

Heynen, N, McCarthy, J, Prudham, S and Robbins, P 2007, *Neoliberal environments: False promises and unnatural consequences*, Routledge, New York, USA.

Hirsch, J, Bryant Smalley, K, Selby-Nelson, E, Hamel-Lambert, J, Rosmann, M, Barnes, T, Abrahamson, D, Meit, S, GreyWolf, I, Beckmann, S and LaFromboise, T 2018, 'Psychosocial impact of fracking: A review of the literature on the mental health consequences of hydraulic fracturing', *International Journal of Mental Health and Addiction*, vol. 16, no. 1, pp. 1-15.

Hobday, AJ and McDonald, J 2014, 'Environmental issues in Australia', *Annual Review of Environment and Resources*, vol. 39, no. 1, pp. 1-28.

Holley, C and Kennedy, A 2019, 'Governing the energy-water-food nexus: Regulating unconventional gas development in Queensland, Australia', *Jurimetrics*, vol. 59, no. 2, pp. 233-266.

Hopke, JE 2016, 'Translocal anti-fracking activism: An exploration of network structure and tie content', *Environmental Communication*, vol. 10, no. 3, pp. 380-394.

Hopke, JE and Simis, M 2017, 'Discourse over a contested technology on Twitter: A case study of hydraulic fracturing', *Public Understanding of Science*, vol. 26, no. 1, pp. 205-120.

Howell, EL, Li, N, Akin, H, Scheufele, DA, Xenos, MA and Brossard, D 2017, 'How do US state residents form opinions about 'fracking'in social contexts? A multilevel analysis', *Energy Policy*, vol. 106, pp. 345-355.

Howell, RA 2018, 'UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy', *Energy Policy*, vol. 113, pp. 721-730.

Howlett, C and Hartwig, LD 2017, 'The friction of fracking: Discursive constraints on Aboriginal participation in coal seam gas in Northern NSW', *The Extractive Industries and Society*, vol. 4, no. 2, pp. 329-336.

Hudgins, A and Poole, A 2014, 'Framing fracking: Private property, common resources, and regimes of governance', *Journal of Political Ecology*, vol. 21, no. 1, pp. 303-319.

Huggins, C 2016, 'Artisanal and small-scale mining: Critical approaches to property rights and governance', *Third World Thematics: A TWQ Journal: Artisanal and small-scale mining*, vol. 1, no. 2, pp. 151-164.

Hungerford, G 2008, 'Conflict theory', *Culturescope*, vol. 87, pp. 29-31.

Hunter, T 2016, 'The development of shale gas and coal bed methane in Australia: Best practice for international jurisdictions?', *Houston Journal of International Law*, vol. 38, no. 2, pp. 367-424.

Huque, AS and Watton, N 2010, 'Federalism and the implementation of environmental policy: Changing trends in Canada and the United States', *Public Organization Review*, vol. 10, no. 1, pp. 71-88.

Hutton, D 2012, 'Lessons from the Lock the Gate movement', *Social Alternatives*, vol. 31, no. 1, 2012 Second Quarter, pp. 15-19.

Hutton, D 2014, 'Building bridges and rebuilding communities in the campaign against coal and gas', *Australian Options*, no. 77, p. 27.

Idrissou, L, van Paassen, A, Aarts, N, Vodouhè, S and Leeuwis, C 2013, 'Trust and hidden conflict in participatory natural resources management: The case of the Pendjari national park (PNP) in Benin', *Forest Policy and Economics*, vol. 27, pp. 65-74.

Ingelson, A and Hunter, T 2014, 'A regulatory comparison of hydraulic fracturing fluid disclosure regimes in the United States, Canada, and Australia', *Natural Resources Journal*, vol. 54, no. 2, pp. 217-254.

Ingrid, EvP, Christopher, C, Elizabeth, F, Justine, L and Rachel, K 2018, 'The emergence of social licence necessitates reforms in environmental regulation', *Ecology and Society*, vol. 23, no. 3, p. 24.

Jacquet, J, Witt, K, Rifkin, W and Haggerty, JH 2018, 'A complex adaptive system or just a tangled mess?: Property rights and shale gas governance in Australia and the US', in J Whitton, M Cotton, I Charnley-Parry and K Brasier (eds), *Governing Shale Gas: Development, Citizen Participation and Decision Making in the US, Canada, Australia and Europe*, Routledge, London and New York, pp. 37-50.

Jasanoff, S 2012, 'The politics of public reason', in P Baert and FD Rubio (eds), *The politics of knowledge*, Routledge, Oxon, UK, pp. 12-31.

Jaspal, R and Nerlich, B 2014, 'Fracking in the UK press: Threat dynamics in an unfolding debate', *Public Understanding of Science*, vol. 23, no. 3, pp. 348-363.

Jasper, JM 2010a, 'Cultural approaches in the sociology of social movements', in B Klandermans and C Roggeband (eds), *Handbook of Social Movements Across Disciplines*, Springer US, Boston, MA, pp. 59-109.

Jasper, JM 2010b, 'Social movement theory today: Toward a theory of action?', *Sociology Compass*, vol. 4, no. 11, pp. 965-976.

Jocson, KM 2015, 'New media literacies as social action: The centrality of pedagogy in the politics of knowledge production', *Curriculum Inquiry*, vol. 45, no. 1, pp. 30-51.

Junka-Aikio, L and Cortes-Severino, C 2017, 'Cultural studies of extraction', *Cultural Studies*, vol. 31, no. 2-3, pp. 175-184.

Kadoda, G 2010, 'Knowledge production', *Encyclopedia of Case Study Research*, pp. 513-517.

Kama, K 2019, 'Resource-making controversies: Knowledge, anticipatory politics and economization of unconventional fossil fuels', *Progress in Human Geography*, vol. 0, no. 0.

Karjalainen, TP and Järvikoski, T 2010, 'Negotiating river ecosystems: Impact assessment and conflict mediation in the cases of hydro-power construction', *Environmental Impact Assessment Review*, vol. 30, no. 5, pp. 319-327.

Karp, P 2019, 'Scott Morrison threatens crackdown on protesters who would 'deny liberty' ', *The Guardian*.

Kassotis, CD, Iwanowicz, LR, Akob, DM, Cozzarelli, IM, Mumford, AC, Orem, WH and Nagel, SC 2016, 'Endocrine disrupting activities of surface water associated with a West Virginia oil and gas industry wastewater disposal site', *Science of The Total Environment*, vol. 557-558, pp. 901-910.

Kassotis, CD, Klemp, KC, Vu, DC, Lin, C-H, Meng, C-X, Besch-Williford, CL, Pinatti, L, Zoeller, RT, Drobnis, EZ, Balise, VD, Isiguzo, CJ, Williams, MA, Tillitt, DE and Nagel, SC 2015, 'Endocrine-disrupting activity of hydraulic fracturing chemicals and adverse health outcomes after prenatal exposure in male mice', *Endocrinology*, vol. 156, no. 12, pp. 4458-4473.

Kassotis, CD, Nagel, SC and Stapleton, HM 2018, 'Unconventional oil and gas chemicals and wastewater-impacted water samples promote adipogenesis via PPARγ-dependent

and independent mechanisms in 3T3-L1 cells', *Science of The Total Environment*, vol. 640-641, pp. 1601-1610.

Kassotis, CD, Tillitt, DE, Lin, C-H, McElroy, JA and Nagel, SC 2016, 'Endocrine-disrupting chemicals and oil and natural gas operations: Potential environmental contamination and recommendations to assess complex environmental mixtures', *Environmental Health Perspectives*, vol. 124, no. 3, pp. 256-264.

Keeling, A and Sandlos, J 2016, 'Introduction: Critical perspectives on extractive industries in Northern Canada', *The Extractive Industries and Society*, vol. 3, no. 2, pp. 265-268.

Keith, S 2010, 'Fly-in/fly-out: Implications for community sustainability', *Sustainability*, vol. 2, no. 5, pp. 1161-1181.

Kemp, D 2010, 'Mining and community development: Problems and possibilities of local-level practice', *Community Development Journal*, vol. 45, no. 2, pp. 198-218.

Kemp, D and Owen, JR 2019, 'Characterising the interface between large and small-scale mining', *The Extractive Industries and Society*, vol. 6, no. 4, pp. 1091-1100.

Kemp, D, Owen, JR and Van de Graaff, S 2012, 'Corporate social responsibility, mining and "audit culture"', *Journal of Cleaner Production*, vol. 24, pp. 1-10.

Kim, PS, Halligan, J, Cho, N, Oh, CH and Eikenberry, AM 2005, 'Toward participatory and transparent governance: Report on the sixth global forum on reinventing government', *Public Administration Review*, vol. 65, no. 6, pp. 646-654.

Kinchy, AJ and Perry, SL 2012, 'Can volunteers pick up the slack? Efforts to remedy knowledge gaps about the watershed impacts of Marcellus Shale gas development.(Duke Environmental Law and Policy Forum Symposium 2012)', *Duke Environmental Law and Policy Forum*, vol. 22, no. 2, pp. 303-339.

Kitschelt, HP 1986, 'Political opportunity structures and political protest: Anti-nuclear movements in four democracies', British journal of political science, vol. 16, no. 1, pp. 57-85.

KNAG 2020a, *Knitting Nannas against gas (KNAG)*, Knitting Nannas against gas, https://knitting-nannas.com/, viewed 01/02/2020.

KNAG 2020b, *The nannafesto*, Knitting Nannas against gas, https://knitting-nannas.com/philosphy.php, viewed 01/02/2020.

Kohler Riessman, C 2008, 'Narrative Analysis', in LM Given (ed.), *The SAGE Encyclopedia of Qualitative Research Methods*, SAGE Publications, Inc., Thousand Oaks, pp. 540-541.

Köhne, M and Rasch, ED 2019, 'Hydraulic fracturing in rural communities: Local realities and resistance', in M Scott, N Gallent and M Gkartzios (eds), *The Routledge Companion to Rural Plannin*, 1 edn, Routledge, London, UK, pp. 557-565.

Komarek, T and Cseh, A 2017, 'Fracking and public health: Evidence from gonorrhea incidence in the Marcellus Shale region', *Journal of public health policy*, vol. 38, no. 4, p. 464.

Kreuze, A, Schelly, C and Norman, E 2016, 'To frack or not to frack: Perceptions of the risks and opportunities of high-volume hydraulic fracturing in the United States', *Energy Research and Social Science*, vol. 20, pp. 45-54.

Kuhlke, O 2006, 'Human agency', in B Warf (ed.), *Encyclopedia of human geography*, SAGE Publications, Inc., Thousand Oaks, US, pp. 231-232.

Kwok, M, Johnson, L and Pojani, D 2018, 'Discretion and the erosion of community trust in planning: Reflections on the post-political', *Geographical Research*, vol. 56, no. 4, pp. 382-392.

LaBelle, M 2017, 'A state of fracking: Building Poland's national innovation capacity for shale gas', *Energy Research and Social Science*, vol. 23, pp. 26-35.

Lacey, J and Lamont, J 2014, 'Using social contract to inform social licence to operate: an application in the Australian coal seam gas industry', *Journal of Cleaner Production*, vol. 84, pp. 831-839.

Ladd, AE and York, R 2017, 'Hydraulic fracking, shale energy development, and climate inaction: A new landscape of risk in the Trump era', *Human Ecology Review*, vol. 23, no. 1, pp. 65-80.

Langton, M 2015, *From conflict to cooperation: Transformations and challenges in the engagement between the Australian minerals industry and Australian Indigenous peoples*, A public policy analysis, no. 9780992533328, Minerals Council of Australia, Forrest, ACT.

Lapadat, J 2010, 'Thematic analysis', *Encyclopedia of Case Study Research* pp. 926-927.

Leather, DTB, Bahadori, A, Nwaoha, C and Wood, DA 2013, 'A review of Australia's natural gas resources and their exploitation', *Journal of Natural Gas Science and Engineering*, vol. 10, pp. 68-88.

Lee, J-e 2011, 'Insularity or solidarity? The impacts of political opportunity structure and social movement sector on alliance formation', *Mobilization: An International Quarterly*, vol. 16, no. 3, pp. 303-324.

Lei, P, Huang, Q and He, D 2017, 'Determinants and welfare of the environmental regulatory stringency before and after regulatory capture', *Journal of Cleaner Production*, vol. 166, pp. 107-113.

Leifsen, E, Sánchez-Vázquez, L and Reyes, MG 2017, 'Claiming prior consultation, monitoring environmental impact: Counterwork by the use of formal instruments of participatory governance in Ecuador's emerging mining sector', *Third World Quarterly: Special Issue: New Mechanisms of Participation in Extractive Governance Between New Technologies of Governance and Resistance Work*, vol. 38, no. 5, pp. 1092-1109.

Lewiński, M 2016, 'Shale gas debate in Europe: Pro-and-con dialectics and argumentative polylogues', *Discourse and Communication*, vol. 10, no. 6, pp. 553-575.

Lewis, J and Nicholls, CM 2013, 'Design issues', in J Ritchie, J Lewis, CM Nicholls and R Ormston (eds), *Qualitative Research Practice: A Guide For Social Science Students And Researchers*, 2 edn, Sage, pp. 47-76.

Lipsky, M 1968, 'Protest as a political resource', *The American Political Science Review*, vol. 62, no. 4, pp. 1144-1158.

Lis, A 2018, 'Politics and knowledge production: Between securitisation and riskification of the shale gas issue in Poland and Germany', in K Szulecki (ed.), *Energy Security in Europe*, Springer, Cham, Switzerland, pp. 93-115.

Lis, A and Stankiewicz, P 2017, 'Framing shale gas for policy-making in Poland', *Journal of Environmental Policy and Planning*, vol. 19, no. 1, pp. 53-71.

Lis, A and Stasik, A 2018, 'Unlikely allies against fracking: Networks of resistance against shale gas devlopment in Poland', in J Whitton, M Cotton, I Charnley-Parry and K Brasier

(eds), *Governing Shale Gas: Development, citizen participation and decision making in the US, Canad, Australia and Europe*, Routledge, Oxon, UK, pp. 117-129.

Lister, M and Pia, E 2008, *Citizenship in contemporary Europe*, Edinburgh University Press, Edinburgh, United Kingdom.

Lock the Gate Alliance 2016, *About us*, lockthegate.org.au, http://www.lockthegate.org.au/about_us, viewed 17/5/2016.

Lock the Gate Alliance 2011, *Submission to the Senate inquiry into the impacts of coal seam gas extraction on the Murray Darling Basin.*, Parliament of Australia, https://www.aph.gov.au/About_Parliament/Senate.

Lock the Gate Alliance 2019, *Get involved with Lock the Gate*, Lock the Gate Alliance, https://www.lockthegate.org.au/get_involved, viewed 16/09/2019.

Lock the Gate Alliance 2020a, *Our movement: Our work*, Lock the Gate Allianc, https://www.lockthegate.org.au/our_work, viewed 8/5/2020.

Lock the Gate Alliance 2020b, *Stop the Narrabri Gas Project*, Lock the Gate Alliance, https://www.lockthegate.org.au/stop_the_narrabri_gas_project, viewed 04/07/2020.

Long, S 2020, 'Government's COVID Commission manufacturing plan calls for huge public gas subsidies', *ABC News*.

Lujala, P 2018, 'An analysis of the Extractive Industry Transparency Initiative implementation process', *World Development*, vol. 107, p. 358.

Luke, H 2017, 'Social resistance to coal seam gas development in the Northern Rivers region of Eastern Australia: Proposing a diamond model of social license to operate', *Land Use Policy*, vol. 69, pp. 266-280.

Luke, H, Brueckner, M and Emmanouil, N 2018a, 'Unconventional gas development in Australia: A critical review of its social license', *The Extractive Industries and Society*, vol. 5, no. 4, pp. 648-662.

Luke, H, den Exter, KA, Boyd, WE, Lloyd, DJ and Roche, B 2013, 'Developing the Lismore CSG poll: A university/local government collaboration', *Journal of Economic and Social Policy*, vol. 15, no. 3.

Luke, H and Evensen, D 2018, 'Community representations of unconventional gas development in Australia, Canada and the United States, and their effect on social licence', in J Whitton, M Cotton, I Charnley-Parry and K Brasier (eds), *Governing Shale Gas: Development, Citizen Participation and Decision Making in the US, Canada, Australia and Europe*, Routledge, London and New York, pp. 130-148.

Luke, H, Rasch, ED, Evensen, D and Köhne, M 2018b, 'Is 'activist' a dirty word? Place identity, activism and unconventional gas development across three continents', *The Extractive Industries and Society*, vol. 5, no. 4, pp. 524–534.

Lust, J 2014, 'Peru: Mining capital and social resistance', in H Veltmeyer and JF Petras (eds), *The new extractivism : A post-neoliberal development model or imperialism of the twenty-first century?*, Zed Books, London, pp. 193-221.

Macdonald, C 2019, 'Home Office will fund additional costs of policing fracking protests in Yorkshire', *The Yorkshire Post*.

Mähler, A and Pierskalla, JH 2015, 'Indigenous identity, natural resources, and contentious politics in Bolivia: A disaggregated conflict analysis, 2000-2011', *Comparative Political Studies*, vol. 48, no. 3, pp. 301-332.

Malin, SA, Mayer, A, Shreeve, K, Olson-Hazboun, SK and Adgate, J 2017, 'Free market ideology and deregulation in Colorado's oil fields: Evidence for triple movement activism?', *Environmental Politics*, vol. 26, no. 3, pp. 521-545.

Maloney, DAW 2015, 'Unconventional oil and gas in Australia: A case of regulatory lag', *Journal of Energy and Natural Resources Law*, vol. 33, no. 4, pp. 349-404.

Marcos-Martinez, R, Measham, TG and Fleming-Muñoz, DA 2019, 'Economic impacts of early unconventional gas mining: Lessons from the coal seam gas industry in New South Wales, Australia', *Energy Policy*, vol. 125, pp. 338-346.

Marlin-Tackie, FA and Smith, JM 2020, 'Key characteristics influencing risk perceptions of unconventional energy development', *Journal of Cleaner Production*, vol. 251, pp. 1-11.

Mathur, N and Skelcher, C 2007, 'Evaluating democratic performance: Methodologies for assessing the relationship between network governance and citizens', *Public Administration Review*, vol. 67, no. 2, pp. 228-237.

Matilainen, A, Pohja-Mykra, M, Landesmaki, M and Kurki, S 2017, '"I feel it is mine!": Psychological ownership in relation to natural resources', *Journal Of Environmental Psychology*, vol. 51, pp. 31-45.

Mazur, A 2018, 'Birth and Death(?) of the anti-fracking movement: Inferences from quantity of coverage theory', Society, vol. 55, no. 6, pp. 1-9.

McCarron, G 2018, 'Air Pollution and human health hazards: a compilation of air toxins acknowledged by the gas industry in Queensland's Darling Downs', *International Journal of Environmental Studies*, vol. 75, no. 1, pp. 171-185.

McCoy, D and Saunders, P 2018, 'Fracking and health', *British Medical Journal*, vol. 361, p. k2397.

McDonell, E 2015, 'The co-constitution of neoliberalism, extractive industries, and indigeneity: Anti-mining protests in Puno, Peru', *The Extractive Industries and Society*, vol. 2, no. 1, pp. 112-123.

McKenzie, LM, Witter, RZ, Newman, LS and Adgate, JL 2012, 'Human health risk assessment of air emissions from development of unconventional natural gas resources', *Science of The Total Environment*, vol. 424, pp. 79-87.

McLaren, MA 2011, 'Collective identity', *Encyclopedia of Global Justice*, pp. 156-158.

MCMPR 2005, *Principles for engagement with communities and stakeholders*, Ministerial Council on Mineral and Petroleum Resource, http://www.sacome.org.au/images/MCMPR_Principles_for_Community_Engagement.pdf

McNally, H, Howley, P and Cotton, M 2018, 'Public perceptions of shale gas in the UK: framing effects and decision heuristics', *Energy, Ecology and Environment*, vol. 3, no. 6, pp. 305-316.

Measham, TG, Walton, A, Graham, P and Fleming-Muñoz, DA 2019, 'Living with resource booms and busts: Employment scenarios and resilience to unconventional gas cyclical effects in Australia', *Energy Research and Social Science*, vol. 56.

Melucci, A 1980, 'The new social movements: A theoretical approach', Social Science Information, vol. 19, no. 2, pp. 199-226.

Melucci, A 1984, 'An end to social movements? Introductory paper to the sessions on "new movements and change in organizational forms"', *Social Science Information*, vol. 23, no. 4-5, pp. 819-835.

Melucci, A 2000, 'Social movements in complex societies: A European perspective', *Arena Journal*, vol. 15, pp. 81-99.

Meng, Q 2018, 'Fracking equity: A spatial justice analysis prototype', *Land Use Policy*, vol. 70, pp. 10-15.

Meng, Q and Ashby, S 2014, 'Distance: A critical aspect for environmental impact assessment of hydraulic fracking', *The Extractive Industries and Society*, vol. 1, no. 2, pp. 124-126.

Mercer, A, de, R, Kim and Dressler, W 2014, 'Silences in the boom: Coal seam gas, neoliberalizing discourse, and the future of regional Australia', *Journal of Political Ecology*, vol. 21, no. 1, pp. 279-302.

Meyer, DS 2004, 'Protest and political opportunities', *Annual Review of Sociology*, vol. 30, pp. 125-145.

Meyer, DS and Lupo, L 2010, 'Assessing the politics of protest political science and the study of social movements', in B Klandermans and C Roggeband (eds), *Handbook of Social Movements Across Disciplines*, Springer US, Boston, MA, pp. 111-156.

Meyer, JW 2010, 'World society, institutional theories, and the actor', *Annual Review of Sociology*, vol. 36, pp. 1-20.

Michell, G and McManus, P 2013, 'Engaging communities for success: Social impact assessment and social licence to operate at Northparkes Mines, NSW', *Australian Geographer*, vol. 44, no. 4, pp. 435-459.

Miller, GJ and Whitford, AB 2016, *Above politics: Bureaucratic discretion and credible commitment*, Political Economy of Institutions and Decisions, Cambridge University Press, Cambridge.

Mills, MC 2008, 'Comparative research', *The SAGE Encyclopaedia of Qualitative Research Methods*, pp. 101-103.

Mincyte, D and Bartkiene, A 2019, 'The anti-fracking movement and the politics of rural marginalization in Lithuania: Intersectionality in environmental justice', *Environmental Sociology*, vol. 5, no. 2, pp. 177-187.

Molinatti, G and Simonneau, L 2015, 'Shale gas controversy: Scientists' public communications, social responsibility and collective versus individual positions', *Science Communication*, vol. 37, no. 2, pp. 190-216.

Monaghan, A 2014, *The Carboniferous shales of the Midland Valley of Scotland: Geology and resource estimation*, British Geological Survey and the Department of Energy and Climate Change, https://www.ogauthority.co.uk/media/2765/bgs_decc_mvs_2014_main_report.pdf.

Morrison, S 2020, 'Gas-fired recovery', Office of the Prime Minister of Australia, https://www.pm.gov.au/media/gas-fired-recovery.

Morton, B 2020, The Morrison Government's deregulation agenda, Department of the Pime Minister and Cabinet, https://ministers.pmc.gov.au/morton/2020/morrison-governments-deregulation-agenda, viewed 11/02/2021.

Moyer, B, MacAllister, J and Soifer, MLFS 2001, *Doing democracy: The MAP model for organizing social movements*, New Society Publishers, Canada.

Munda, G 2009, 'A conflict analysis approach for illuminating distributional issues in sustainability policy', *European Journal of Operational Research*, vol. 194, no. 1, pp. 307-322.

Mungiu-Pippidi, A 2015, 'Corruption: Political and public aspects', in JD Wright (ed.), *International Encyclopedia of the Social and Behavioral Sciences (Second Edition)*, Elsevier, Oxford, pp. 12-20.

Murphy, K 2020, 'Scott Morrison's power plan is nothing but a gas-fuelled calamity', The Guardian Australia.

Murray, T, Andre, E and Prasad, K 2016, 'Holding fracking operations to account for environmental contamination in risk-based regulatory regimes: Insights from the United States', *Environmental and Planning Law Journal*, vol. 33, no. 3, pp. 222-236.

Musemwa, M 2009, 'Contestation over resources: The farmer-miner dispute in colonial Zimbabwe, 1903-1939', *Environment and History*, vol. 15, no. 1, pp. 79-107.

Nace, T, Plante, L and Browning, J 2019, *The new gas boom: Tracking global LNG infrastructure*, Global Energy Monitor, https://globalenergymonitor.org/new-gas-boom/.

Nash, B 2010, 'Regulatory capture', *Region Focus*, vol. 14, no. 3, p. 12.

Neukirch, M 2016, 'Protests against German electricity grid extension as a new social movement? A journey into the areas of conflict', *Energy, Sustainability and Society*, vol. 6, no. 1, pp. 1-15.

Nicholls, S 2014, 'Metgasco's Bentley gas drilling suspended, referred to ICAC', *The Sydney Morning Herald*.

Nicholls, W 2009, 'Place, networks, space: Theorising the geographies of social movements', *Transactions of the Institute of British Geographers*, vol. 34, no. 1, pp. 78-93.

Nixon, R 2011, *Slow violence and the environmentalism of the poor*, Harvard University Press, Cambridge, Massachusetts, USA.

Norman, H 2016, 'Coal mining and coal seam gas on gomeroi country: Sacred lands, economic futures and shifting alliances', *Energy Policy*, vol. 99, pp. 242-251.

Northern Territory Government 2019a, *Government accepts all recommendations of the inquiry*, Northern Territory Government, https://hydraulicfracturing.nt.gov.au/about/government-accepts-all-recommendations-of-the-inquiry, viewed 04/09/2019.

Northern Territory Government 2019b, *Reform areas*, Northern Territory Government, https://hydraulicfracturing.nt.gov.au/reform-areas, viewed 04/09/2019.

Nowell, LS, Norris, JM, White, DE and Moules, NJ 2017, 'Thematic analysis: Striving to meet the trustworthiness criteria', *International Journal of Qualitative Methods*, vol. 16, no. 1, pp. 1-13.

NSW Department of Planning Industry and Environment 2018, *Coal seam gas in NSW* New South Wales Government,, https://www.resourcesandgeoscience.nsw.gov.au/landholders-and-community/coal-seam-gas, viewed 06/09/2019.

Nyberg, D, Wright, C and Kirk, J 2017, 'Re-producing a neoliberal political regime: Competing justifications and dominance in disputing fracking', *Research in the Sociology of Organizations*, vol. 52, pp. 143-171.

Nygaard, V 2016, 'Do Indigenous interests have a say in planning of new mining projects? Experiences from Finnmark, Norway', *The Extractive Industries and Society*, vol. 3, no. 1, pp. 17-24.

O'Faircheallaigh, C 2010, 'Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making', *Environmental Impact Assessment Review*, vol. 30, no. 1, pp. 19-27.

OGA 2019, *The shale environmental regulator group (SERG)*, Oil and Gas Authority - Government of the United Kingdom, https://www.ogauthority.co.uk/onshore/the-shale-environmental-regulator-group-serg/, viewed 09/09/2019.

Orem, W, Varonka, M, Crosby, L, Haase, K, Loftin, K, Hladik, M, Akob, DM, Tatu, C, Mumford, A, Jaeschke, J, Bates, A, Schell, T and Cozzarelli, I 2017, 'Organic geochemistry and toxicology of a stream impacted by unconventional oil and gas wastewater disposal operations', *Applied Geochemistry*, vol. 80, pp. 155-167.

Owen, JR and Kemp, D 2013, 'Social licence and mining: A critical perspective', *Resources Policy*, vol. 38, no. 1, pp. 29-35.

Packer, M 2011, *The science of qualitative research*, Cambridge University Press, New York.

Paris, N 2019, *Suppression of the right to protest*, Green Agenda, https://greenagenda.org.au/2019/04/right-to-protest/, viewed 16/08/2019.

Parliament of Australia 2017, *Regulatory framework for use of underground water*, Parliament of Australia: Senate Standing Committees on Environment and Communications, https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and _Communications/WaterUseGovernance/Report/c03, viewed 10/8/2019 2019.

Parsons, R and Moffat, K 2014a, 'Constructing the meaning of social licence', *Social Epistemology: Social Licence to Operate*, vol. 28, no. 3-4, pp. 340-363.

Parsons, R and Moffat, K 2014b, 'Integrating impact and relational dimensions of social licence and social impact assessment', *Impact Assessment and Project Appraisal*, vol. 32, no. 4, pp. 273-282.

Patterson, A and McLean, C 2018, 'The regulation of risk: The case of fracking in the UK and the Netherlands', *Science and Public Policy*, vol. 45, no. 1, pp. 45-52.

Pearse, R 2016, 'Moving targets: Carbon pricing, energy markets, and social movements in Australia', *Environmental Politics*, vol. 25, no. 6, pp. 1079-1101.

Peltonen, L and Sairinen, R 2010, 'Integrating impact assessment and conflict management in urban planning: Experiences from Finland', *Environmental Impact Assessment Review*, vol. 30, no. 5, pp. 328-337.

Pepper, R, Anderson, A, Ashworth, P, Beck, V, Hart, B, Jones, D, Priestly, B, Ritchie, D and Smith, R 2018, *Scientific inquiry into hydraulic fracturing of onshore unconventional reservoirs and associated activities in the Northern Territory: Final report*, frackinginquiry.nt.gov.au.

Philalay, M 2020, 'Gas', in D Thurtell (ed.), *Resource and energy quarterly: March 2020*, Department of Industry, Science, Energy and Resources, https://publications.industry.gov.au/publications/resourcesandenergyquarterlymarch2020/documents/Resources-and-Energy-Quarterly-March-2020.pdf, pp. 60-70.

Phillips, SK and Goldberg, MS 2013, 'Natural gas development: Extracting externalities - towards precaution-based decision-making', *Journal of Sustainable Development Law and Policy*, vol. 8, no. 2, pp. 175-203.

Pierce, J, Boudet, H, Zanocco, C and Hillyard, M 2018, 'Analyzing the factors that influence U.S. public support for exporting natural gas', *Energy Policy*, vol. 120, p. 666.

Pigg, RS 2013, 'Poland's quest for shale gas and energy independence: An examination of domestic and international hurdles', *Houston Journal of International Law*, vol. 35, no. 3, pp. 735-773.

Pilati, K 2011, 'Political context, organizational engagement, and protest in African countries', *Mobilization: An International Quarterly*, vol. 16, no. 3, pp. 351-368.

PLCA 2015, *Home*, Protect the Limestone Coast Alliance http://www.protectlimestonecoast.org.au/, viewed 15/8/2015.

Polletta, F and Jasper, JM 2001, 'Collective identity and social movements', *Annual Review of Sociology*, vol. 27, pp. 283-305.

Portman, ME 2014, 'Regulatory capture by default: Offshore exploratory drilling for oil and gas', *Energy Policy*, vol. 65, no. C, pp. 37-47.

Pothukuchi, K, Arrowsmith, M and Lyon, N 2018, 'Hydraulic fracturing: A review of implications for food systems planning', *Journal of Planning Literature*, vol. 33, no. 2, pp. 155-170.

Poulsen, MN, Bailey-Davis, L, DeWalle, J, Mowery, J and Schwartz, BS 2018, 'Agricultural implications of unconventional natural gas development: Divergent perceptions of sustainable and conventional farmers', *Culture, Agriculture, Food and Environment*, vol. 40, no. 1, pp. 24-35.

Price, DJ and Adams, JC 2016, 'Water use and wastewater management: Interrelated issues with unique problems and solutions', in T Rose (ed.), *Environmental and Health Issues in Unconventional Oil and Gas Development*, Elsevier, pp. 61-79.

Priestly, S 2018, *Shale gas and fracking; Briefing paper*, House of Commons Library, https://researchbriefings.files.parliament.uk/documents/SN06073/SN06073.pdf.

Productivity Commission 2020, *Resources sector regulation: Draft report*, Canberra.

Putney, LG 2010, 'Case study', in NJ Salkind (ed.), *Encyclopedia of Research Design*, SAGE Publications, Inc., pp. 116-119.

QSR 2020, *NVivo*, QSR International Pty Ltd., https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home.

Quail, MT 2017, 'Overview of silica-related clusters in the United States: Will fracking operations become the next cluster?', *Journal of Environmental Health*, vol. 79, no. 6, pp. 20-27.

Ralston, JJ and Kalmbach, JA 2018, 'Regulating under conditions of uncertainty and risk: Lessons learned from state regulation of hydraulic fracturing', *Environmental Practice*, vol. 20, no. 2-3, pp. 68-79.

Ransan-Cooper, H, Ercan, SA and Duus, S 2018, 'When anger meets joy: How emotions mobilise and sustain the anti-coal seam gas movement in regional Australia', *Social Movement Studies*, vol. 17, no. 6, pp. 635-657.

Rasch, ED and Köhne, M 2016, 'Micropolitics in resistance: The micropolitics of large-scale natural resource extraction in South East Asia', *Society and Natural Resources*, vol. 29, no. 4, pp. 479-492.

Rasch, ED and Köhne, M 2017, 'Practices and imaginations of energy justice in transition: A case study of the Noordoostpolder, the Netherlands', *Energy Policy*, vol. 107, pp. 607-614.

Rattle, I, Baker, T and Van Alstine, J 2018, 'Shale gas development in England: A tale of two mineral planning authorities', in J Whitton, M Cotton, I Charnley-Parry and K Brasier (eds), *Governing shale gas: Development, Citizen patuicipatniand decision making in the US, Canada, Australia and Europe*, Routledge, London and New York, pp. 227-241.

Reclaim the Power 2018, *Who we are*, Reclaim the Power, https://reclaimthepower.org.uk/who-we-are/, viewed 17/09/19.

Reed, MS 2008, 'Stakeholder participation for environmental management: A literature review', *Biological Conservation*, vol. 141, no. 10, pp. 2417-2431.

Reside, AE, Cosgrove, AJ, Pointon, R, Trezise, J, Watson, JEM and Maron, M 2019, 'How to send a finch extinct', *Environmental Science and Policy*, vol. 94, pp. 163-173.

Rester, E and Warner, SD 2016, 'A review of drinking water contamination associated with hydraulic fracturing ', in T Rose (ed.), *Environmental and Health Issues in Unconventional Oil and Gas Development*, Elsevier, pp. 49-60.

Richardson, JE 2007, *Analysing newspapers : An approach from critical discourse analysis*, Palgrave Macmillan, Basingstoke.

Ricketts, A 2013, ' Investment risk: An amplification tool for social movement campaigns globally and locally ', *Journal of Economic and Social Policy*, vol. 15, no. 3, pp. 59-86.

Ricketts, A 2017, 'Anti-protest laws: Lock up your nannas', *Alternative Law Journal*, vol. 42, no. 2, pp. 107-111.

Robson, C 2011, *Real world research*, 3 edn, John Wiley and Sons, West Sussex, United Kingdom.

Rokeach, M 1973, *The nature of human values*, Free Press, New York.

Roggeband, C and Klandermans, B 2010, 'Introduction', in B Klandermans and C Roggeband (eds), *Handbook of Social Movements Across Disciplines*, Springer US, Boston, MA, pp. 1-12.

Rubin, O and Dahlberg, R 2017, 'Precautionary principle', in O Rubin and R Dahlberg (eds), *A Dictionary Of Disaster Management*, Oxford University Press, https://www.oxfordreference.com/view/10.1093/acref/9780191829895.001.0001/acref-9780191829895-e-156.

Sairinen, R, Barrow, C and Karjalainen, TP 2010, 'Environmental conflict mediation and social impact assessment: Approaches for enhanced environmental governance?', *Environmental Impact Assessment Review*, vol. 30, no. 5, pp. 289-292.

Sangaramoorthy, T, Jamison, AM, Boyle, MD, Payne-Sturges, DC, Sapkota, A, Milton, DK and Wilson, SM 2016, 'Place-based perceptions of the impacts of fracking along the Marcellus Shale', *Social Science and Medicine*, vol. 151, pp. 27-37.

Sapouckey, SA, Kassotis, CD, Nagel, SC and Vandenberg, LN 2018, 'Prenatal exposure to unconventional oil and gas operation chemical mixtures altered mammary gland development in adult female mice', *Endocrinology*, vol. 159, no. 3, pp. 1277-1289.

Saunders, C 2008, 'Double-edged swords? Collective identity and solidarity in the environment movement', *The British Journal of Sociology*, vol. 59, no. 2, pp. 227-253.

Saunders, C 2009, 'It's not just structural: Social movements are not homogenous responses to structural features, but networks shaped by organisational strategies and status', *Sociological Research Online*, vol. 14, no. 1, p. 4.

Saunders, C 2013, 'Environmental networks and new social movement theory', in *Environmental Networks and Social Movement Theory*, 1 edn, Bloomsbury Academic, London, pp. 121-150.

Scanlan, SJ 2017, 'Framing fracking: scale-shifting and greenwashing risk in the oil and gas industry', *Local Environment*, vol. 22, no. 11, pp. 1311-1337.

SCER 2013, *The national harmonised regulatory framework for natural gas from coal seams*, Standing Council on Energy and Resources, Council of Australian Governments, http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/National-Harmonised-Regulatory-Framework-for-Natural-Gas-from-Coal-Seams_1.pdf..

Schneider, J, Schwarze, S, Bsumek, PK and Peeples, J 2016, *Under pressure: Coal industry rhetoric and neoliberalism*, Palgrave Studies in Media and Environmental Communication, 1st ed. 2016. edn, Palgrave Macmillan UK, London.

Schrecker, T, Birn, A-E and Aguilera, M 2018, 'How extractive industries affect health: Political economy underpinnings and pathways', *Health and Place*, vol. 52, pp. 135-147.

Schugurensky, D 2016, 'Social pedagogy in North America: Historical background and current developments', *Pedagogia Social*, no. 27, pp. 225-251.

Scott, J 2015, Narrative, *Oxford University Press*, Oxford University Press.

Searle, JR 2010, *Making the social world the structure of human civilization*, Oxford University Press, New York.

Shanafield, M, Cook, PG and Simmons, CT 2019, 'Towards quantifying the likelihood of water resource impacts from unconventional gas development', *Groundwater*, vol. 57, no. 4, pp. 547-561.

Short, D, Elliot, J, Norder, K, Lloyd-Davies, E and Morley, J 2015, 'Extreme energy, 'fracking' and human rights: a new field for human rights impact assessments?', *The International Journal of Human Rights*, vol. 19, no. 6, pp. 697-736.

Short, D and Szolucha, A 2019, 'Fracking Lancashire: The planning process, social harm and collective trauma', *Geoforum*, vol. 98, pp. 264-276.

Simmel, G 1955, Conflict, Free Press, Glencoe, Ill.

Smith, J and Fetner, T 2010, 'Structural approaches in the sociology of social movements', in B Klandermans and C Roggeband (eds), *Handbook of Social Movements Across Disciplines*, Springer US, Boston, MA, pp. 13-57.

Smith, KK and Haggerty, JH 2018, 'Devolved governance and alternative dispute resolution programs: An example from the Bakken', in J Whitton, M Cotton, IM Charnley-

Parry and K Brasier (eds), *Governing shale gas: Development, citizen participation and decision-making in the US, Canada, Australia and Europe*, 1 edn, vol. 1, Routledge, London and New York, pp. 184-197.

Smith, MF and Ferguson, DP 2013, '"Fracking democracy": Issue management and locus of policy decision-making in the Marcellus Shale gas drilling debate', *Public Relations Review*, vol. 39, no. 4, pp. 377-386.

Snow, DA and Corrigall-Brown, C 2015, 'Collective identity', *International Encyclopedia of the Social and Behavioral Sciences*, pp. 174-180.

Sovacool, BK 2014, 'Cornucopia or curse? Reviewing the costs and benefits of shale gas hydraulic fracturing (fracking)', *Renewable and Sustainable Energy Reviews*, vol. 37, pp. 249-264.

Sovacool, BK, Walter, G, Van de Graaf, T and Andrews, N 2016, 'Energy governance, transnational rules, and the resource curse: Exploring the effectiveness of the extractive industries transparency initiative (eiti)', *World Development*, vol. 83, no. C, pp. 179-192.

Soyer, M 2015, 'Putting the town on the map: Power struggle over fracking in Denton', Department of Sociology and Social Work, *Doctor of Philosophy thesis*, Texas Woman's University, https://search-proquest-com.proxy.library.adelaide.edu.au/docview/1776463403?pq-origsite=primo.

Speer, J 2012, 'Participatory governance reform: A good strategy for increasing government responsiveness and improving public services?', *World Development*, vol. 40, no. 12, pp. 2379-2398.

Stasik, A 2018, 'Global controversies in local settings: Anti-fracking activism in the era of web 2.0', *Journal of Risk Research*, vol. 21, no. 12, pp. 1562-1578.

Stedman, RC, Evensen, D, O'Hara, S and Humphrey, M 2016, 'Comparing the relationship between knowledge and support for hydraulic fracturing between residents of the United States and the United Kingdom', *Energy Research and Social Science*.

Steger, T and Drehobl, A 2018, 'The Anti-Fracking Movement in Ireland: Perspectives from the Media and Activists', *Environmental Communication*, vol. 12, no. 3, pp. 344-356.

Steger, T and Milicevic, M 2014, 'One global movement, many local voices: Discourse(s) of the global Anti-Fracking movement', in L Leonard and SB Kedzior (eds), *Advances in Sustainability and Environmental Justice*, vol. 15, Emerald Publishing Limited, pp. 1-35.

Stinebrickner, B 2015, 'Robert A. Dahl and the essentials of modern political analysis: Politics, influence, power, and polyarchy', Journal of Political Power, vol. 8, no. 2, pp. 189-207.

Stoutenborough, JW, Robinson, SE and Vedlitz, A 2016, 'Is "fracking" a new dirty word? The influence of word choice on public views toward natural gas attitudes', *Energy Research and Social Science*, vol. 17, pp. 52-58.

Szolucha, A 2016, *The human dimension of shale gas developments in Lancashire, UK: towards a social impact assessment*, Anna Szolucha.

Szolucha, A 2018a, 'Anticipating fracking: Shale gas developments and the politics of time in Lancashire, UK', *The Extractive Industries and Society*, vol. 5, no. 3, pp. 348-355.

Szolucha, A 2018b, 'Community understanding of risk from fracking in the UK and Poland: How democracy-based and justice-based concerns amplify risk perceptions', in J Whitton, M Cotton, I Charnley-Parry and K Brasier (eds), *Governing Shale Gas: Development, Citizen Participation and Decision Making in the US, Canada, Australia and Europe*, Routledge, London and New York, pp. 242-255.

Tan, P-L, George, D and Comino, M 2015, 'Cumulative risk management, coal seam gas, sustainable water, and agriculture in Australia', *International Journal of Water Resources Development*, vol. 31, no. 4, pp. 682-700.

Tarrow, SG 2011, *Power in movement: Social movements and contentious politics*, Cambridge studies in comparative politics, 3rd ed. edn, Cambridge University Press, Cambridge.

Taylor, ME and Taylor, S 2016, 'Agriculture in a gas era: A comparative analysis of Queensland and British Columbia's agricultural land protection and unconventional gas regimes.(Report)', *Australasian Journal of Regional Studies*, vol. 22, no. 3, p. 459.

The House of Commons 2020, *The path to net zero Climate Assembly UK: Full report*, The House of Commons, https://www.climateassembly.uk/report/read/final-report.pdf.

Thörn, H and Svenberg, S 2016, ''We feel the responsibility that you shirk': Movement institutionalization, the politics of responsibility and the case of the Swedish environmental movement', *Social Movement Studies*, vol. 15, no. 6, pp. 593-609.

Thornborrow, J 2012, 'Narrative analysis', in JP Gee & M Handford (eds), The Routledge Handbook of Discourse Analysis, Taylor & Francis Group, London, United Kingdom.

Tillett, A 2019, 'Morrison vows to take action against enviromental 'anarchists'', *Financial Review*.

Torok, S and Holper, PN 2017, *Securing Australia's future harnessing interdisciplinary research for innovation and prosperity*, CSIRO Publishing, Clayton South, VIC.

Torres, L, Yadav, OP and Khan, E 2016, 'A review on risk assessment techniques for hydraulic fracturing water and produced water management implemented in onshore unconventional oil and gas production', *Science of The Total Environment*, vol. 539, pp. 478-493.

Towler, B, Firouzi, M, Underschultz, J, Rifkin, W, Garnett, A, Schultz, H, Esterle, J, Tyson, S and Witt, K 2016, 'An overview of the coal seam gas developments in Queensland', *Journal of Natural Gas Science and Engineering*, vol. 31, pp. 249-271.

Tranter, B, Lester, L and McGaurr, L 2017, *Leadership and the Construction of Environmental Concern*, Palgrave Macmillan UK, London, pp. 87-115.

Trigger, D, Keenan, J, de Rijke, K & Rifkin, W 2014, 'Aboriginal engagement and agreement-making with a rapidly developing resource industry: Coal seam gas development in Australia', The Extractive Industries and Society, vol. 1, no. 2, pp. 176-188.

TRS and TRAE 2012, *Shale gas extraction in the UK: A review of hydraulic fracturing*, The Royal Society and The Royal Academy of Engineering, http://www.raeng.org.uk/publications/reports/shale-gas-extraction-in-the-uk.

Turner, JH 2005, 'Conflict theory', in G Ritzer (ed.), *Encyclopedia of Social Theory*, SAGE Publications, Inc., Thousand Oaks, California, pp. 135-139.

Turton, DJ 2015, 'Unconventional gas in Australia: Towards a legal geography', *Geographical Research*, vol. 53, no. 1, pp. 53-67.

UNECE 1998, *Convention on access to information, public participation in decision-making and access to justice in environmental matters*, International Legal Materials, no. 00207829, The United Nations Economic Commission for Europe https://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf.

Valencia, C and Carrillo Martinet, M 2017, 'Local control: Authority, resistance, and knowledge production in fracking', *Wiley Interdisciplinary Reviews: Water*, vol. 4, no. 2, pp. 1-13.

Valentine, G 2005, 'Tell me about...: Using interviews as a research methodology', in R Flowerdew and D Martin (eds), *Methods in human geography : a guide for students doing a research project*, 2nd edn, Pearson Prentice Hall, Harlow, England.

van Stekelenburg, J and Klandermans, B 2010, 'Individuals in movements', in B Klandermans and C Roggeband (eds), *Handbook of Social Movements Across Disciplines*, Springer US, Boston, MA, pp. 157-204.

van Stekelenburg, J, Snow, DA, della Porta, D, Klandermans, PG and McAdam, D 2013, 'Collective identity', *The Wiley-Blackwell Encyclopedia of Social and Political Movements*, pp. 219-225.

Van Teijlingen, K 2016, 'The 'will to improve' at the mining frontier: Neo-extractivism, development and governmentality in the Ecuadorian Amazon', *The Extractive Industries and Society*, vol. 3, no. 4, pp. 902-911.

Vaughan, A 2018, 'Cuadrilla gets go-ahead to start fracking at Lancashire site', *The Guardian*.

Veltmeyer, H 2013, 'The political economy of natural resource extraction: A new model or extractive imperialism?', *Canadian Journal of Development Studies*, vol. 34, no. 1, pp. 79-95.

Veltmeyer, H and Petras, JF 2014, *The new extractivism : A post-neoliberal development model or imperialism of the twenty-first century?*, Zed Books, London.

Visser, W 2014, *CSR 2.0: Transforming corporate sustainability and responsibility*, Springer Berlin Heidelberg, Berlin, Heidelberg.

Volunteering Australia et al. 2018, *Open letter to parliamentarians #HandsOffOurCharities*, Volunteering Australia,

https://www.volunteeringaustralia.org/wp-content/uploads/20180328-Civil-society-open-letter.pdf, viewed 16/08/2019.

Vráblíková, K 2014, 'How context matters? Mobilization, political opportunity structures, and nonelectoral political participation in old and new democracies', Comparative Political Studies, vol. 47, no. 2, pp. 203-229.

Wagner, WE 2010, 'Administrative law, filter failure, and information capture', *Duke Law Journal*, vol. 59, no. 7, p. 1321.

Walker, G 2010, 'Environmental justice, impact assessment and the politics of knowledge: The implications of assessing the social distribution of environmental outcomes', *Environmental Impact Assessment Review*, vol. 30, no. 5, pp. 312-318.

Walton, AM, McCrea, R, Leonard, R & Williams, R 2013, 'Resilience in a changing community landscape of coal seam gas: Chinchilla in Southern Queensland', Journal of Economic and Social Policy, vol. 15, no. 3, pp. 1-23.

Watterson, A and Dinan, W 2017, 'The U.K.'s "Dash for Gas": A Rapid evidence assessment of fracking for shale gas, regulation, and public health', *New Solutions: A Journal of Environmental and Occupational Health Policy*, vol. 27, no. 1, pp. 68-91.

Watterson, A and Dinan, W 2018, 'Public health and unconventional oil and gas extraction including fracking: Global lessons from a Scottish Government Review', *International Journal of Environmental Research and Public Health*, vol. 15, no. 4, p. 675.

Watts, JH 2008, 'Integrity in qualitative research', *The SAGE Encyclopaedia of Qualitative Research Methods*, pp. 441-443.

Wayland, J and Kuniholm, M 2016, 'Legacies of conflict and natural resource resistance in Guatemala', *The Extractive Industries and Society*, vol. 3, no. 2, pp. 395-403.

Weber, M 2019, Economy and society : a new translation, Harvard University Press, Cambridge, MA.

Weiss, G and Wodak, R 2003, 'Introduction: Theory, interdisciplinarity and critical discourse analysis', in G Weiss and R Wodak (eds), *Critical Discourse Analysis: Theory and Interdisciplinarity*, Springer, New York, USA, pp. 1-34.

West, D 2013, *Social movements in global politics*, Polity Press, Cambridge.

Wheeler, D, MacGregor, M, Atherton, F, Christmas, K, Dalton, S, Dusseault, M, Gagnon, G, Hayes, B, MacIntosh, C, Mauro, I and Ritcey, R 2015, 'Hydraulic fracturing: Integrating public participation with an independent review of the risks and benefits', *Energy Policy*, vol. 85, pp. 299-308.

White, L and MacKenzie, B 2018, 'New protest regulations labelled 'a fundamental attack on democracy' will start in NSW from July 1', *ABC News*.

Whitton, J, Brasier, K, Charnley-Parry, I and Cotton, M 2017, 'Shale gas governance in the United Kingdom and the United States: Opportunities for public participation and the implications for social justice', *Energy Research and Social Science*, vol. 26, pp. 11-22.

Whitton, J and Charnley-Parry, I 2018, 'Shale gas governance in the United States, the United Kingdom and Europe', in J Whitton, M Cotton, IM Charnley-Parry and K Brasier (eds), *Governing shale gas : Development, citizen participation and decision making in the US, Canada, Australia and Europe*, 1 edn, vol. 1, Routledge, London and New York, pp. 231-226.

Wieviorka, M 2013, 'Social conflict', *Current Sociology*, vol. 61, no. 5-6, pp. 696-713.

Wilke, RA and Freeman, JW 2017, 'Potential health implications related to fracking', *Journal of the American Medical Association*, vol. 318, no. 17, pp. 1645-1646.

Willems, M, Dalvie, MA, London, L and Rother, H-A 2016, 'Environmental reviews and case studies: Health risk perception related to fracking in the Karoo, South Africa', *Environmental Practice*, vol. 18, no. 1, pp. 53-68.

Williams, L, Macnaghten, P, Davies, RJ and Curtis, S 2015, 'Framing 'fracking': Exploring public perceptions of hydraulic fracturing in the United Kingdom', *Public Understanding of Science*, pp. 1-17.

Williams, R and Walton, A 2013, *The social licence to operate and coal seam gas development*, A literature review report to the Gas Industry Social and Environmental Research Alliance (GISERA), CSIRO, Canberra.

Willow, AJ 2016, 'Wells and well-being: Neoliberalism and holistic sustainability in the shale energy debate', *Local Environment*, vol. 21, no. 6, 2016/06/02, pp. 768-788.

Wilson, M 2014, *Protest 900 riot police breaking the Bentley anti CSG camp*, Lock the Gate Alliance, viewed 15/08/2019.

Witt, K, Whitton, J and Rifkin, W 2018, 'Is the gas industry a good neighbour? A comparison of UK and Australia experiences in terms of procedural fairness and distributive justice', *The Extractive Industries and Society*, vol. 5, no. 4, pp. 547-556.

Woodly, DR 2015, *The politics of common sense: How social movements use public discourse to change politics and win acceptance*, Oxford University Press, New York.

Wright, C and Martí I Puig, S 2012, 'Conflicts over natural resources and activation of Indigenous identity in Cusco, Peru', *Latin American and Caribbean Ethnic Studies*, vol. 7, no. 3, pp. 249-274.

Wylie, SA 2018, *Fractivism: Corporate bodies and chemical bonds*, Duke University Press, Durham and London.

Yin, RK 2015, 'Case studies', in *International Encyclopedia of the Social and Behavioral Sciences (Second Edition)*, Elsevier, Oxford, pp. 194-201.

Young, B 2011, 'Neoliberalism', *International Encyclopedia of Political Science*, pp. 1676-1679.

Zhang, X, Sun, AY and Duncan, IJ 2016, 'Shale gas wastewater management under uncertainty', *Journal of Environmental Management*, vol. 165, pp. 188-198.

Zirogiannis, N, Alcorn, J, Rupp, J, Carley, S and Graham, JD 2016, 'State regulation of unconventional gas development in the U.S.: An empirical evaluation', *Energy Research and Social Science*, vol. 11, pp. 142-154.

# Appendix 1 Introductory Letter Australia

## Introductory Letter

Dear Ms/Mr/Mrs/Dr,

I am writing to let you know about a research project that you have the option to take part in. The research is being conducted by Catriona Meyer-McLean and will form the basis for the post-graduate degree of Doctor of Philosophy at the University of Adelaide, Australia under the supervision of Associate Professor Melissa Nursey-Bray and Dr Thomas Wanner.

The research project is titled: *Grassroots social resistance movements: analysing the influence of conflict narratives in mining policy development in Australia and the UK*. This research is being undertaken to learn more about the influence of conflict narratives, such as the anti-fracking discourse on the development of mining policy.

I am contacting you because have expressed your interest in participating in an interview, or you are involved on some level with the anti-fracking movement in Australia. The interviews will be conducted in October and November 2017.

Taking part in research is always optional. We are looking for people who want to take part in this research and who are involved in the anti-fracking movement, or indirectly through their roles in government or industry.

If you decide to take part in the research, we would invite you to participate in an audio recorded interview with Catriona Meyer-McLean.

If you would like more information or are interested in being part of the research, please contact: Associate Professor Melissa Nursey-Bray on (08) 8313 3497 or Catriona via email: catriona.meyer-mclean@adelaide.edu.au. If we have not heard from you in two weeks, you will be contacted by email to provide further opportunity to answer any questions you may have.

Taking part in research is voluntary. You may choose not to take part.
This research has been reviewed and approved by The University of Adelaide Human Research Ethics Committee. If you have any complaints or concerns about the research project please Contact the Human Research Ethics Committee's Secretariat on phone +61 8 8313 6028 or by email to hrec@adelaide.edu.au.

Yours sincerely,

**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**

# Appendix 2 Introductory Letter UK

## Introductory Letter

Dear Ms/Mr/Mrs/Dr,

I am writing to let you know about a research project that you have the option to take part in. The research is being conducted by Catriona Meyer-McLean and will form the basis for the post-graduate degree of Doctor of Philosophy at the University of Adelaide, Australia under the supervision of Associate Professor Melissa Nursey-Bray and Dr Thomas Wanner.

The research project is titled: *Grassroots social resistance movements: analysing the influence of conflict narratives in mining policy development in Australia and the UK*. This research is being undertaken to learn more about the influence of conflict narratives, such as the anti-fracking discourse, on the development of mining policy.

I am contacting you because have expressed your interest in participating in an interview or you are involved on some level with the 'Frack Off' movement in Lancashire or Yorkshire. The interviews will be conducted in March 2018.

Taking part in research is always optional. We are looking for people who want to take part in this research and who are involved in the 'Frack Off' movement, or indirectly through their roles in government or industry.

If you decide to take part in the research, we would invite you to participate in an audio recorded interview with Catriona Meyer-McLean.

If you would like more information or are interested in being part of the research please contact: Associate Professor Melissa Nursey-Bray by email at: melissa.nursey-bray@adelaide.edu.au or Catriona via email: catriona.meyer-mclean@adelaide.edu.au. If we have not heard from you in two weeks, you will be contacted by email to provide further opportunity to answer any questions you may have.

Taking part in research is voluntary. You may choose not to take part.
This research has been reviewed and approved by The University of Adelaide Human Research Ethics Committee. If you have any complaints or concerns about the research project please Contact the Human Research Ethics Committee's Secretariat on phone +61 8 8313 6028 or by email to hrec@adelaide.edu.au.

Yours sincerely,

**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**

# Appendix 3 Introductory Letter Industry and Government Australia

## Introductory Letter

Dear Ms/Mr/Mrs/Dr,

I am writing to let you know about a research project that you have the option to take part in. The research is being conducted by Catriona Meyer-McLean and will form the basis for the post-graduate degree of Doctor of Philosophy at the University of Adelaide, Australia under the supervision of Associate Professor Melissa Nursey-Bray and Dr Thomas Wanner.

The research project is titled: *Grassroots social resistance movements: analysing the influence of conflict discourses in mining policy development in Australia and the UK.* This research is being undertaken to learn more about the influence of conflict discourses, such as the anti-fracking discourse on the development of mining policy.

I am contacting you because have expressed your interest in participating in an interview or you are involved in the development of unconventional gas in Australia because of your position in the gas industry. The interviews will be conducted in person; in Victoria in October; in Queensland in November, 2017. If these are not convenient, alternatives can be negotiated.

Taking part in research is always optional. We are looking for people who want to take part in this research and who are involved in 'Lock the Gate', or indirectly through their roles in government or industry.

If you decide to take part in the research, we would invite you to participate in an audio recorded interview with Catriona Meyer-McLean.

If you would like more information or are interested in being part of the research, please contact: Associate Professor Melissa Nursey-Bray on (08) 8313 3497 or Catriona via email: catriona.meyer-mclean@adelaide.edu.au. If we have not heard from you in two weeks, you will be contacted by email to provide further opportunity to answer any questions you may have.

Taking part in research is voluntary. You may choose not to take part.
This research has been reviewed and approved by The University of Adelaide Human Research Ethics Committee. If you have any complaints or concerns about the research project please Contact the Human Research Ethics Committee's Secretariat on phone +61 8 8313 6028 or by email to hrec@adelaide.edu.au.

Yours sincerely,

**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**

# Appendix 4 Introductory Letter Industry and Government UK

## Introductory Letter

Dear Ms/Mr/Mrs/Dr,

I am writing to let you know about a research project that you have the option to take part in. The research is being conducted by Catriona Meyer-McLean and will form the basis for the post-graduate degree of Doctor of Philosophy at the University of Adelaide, Australia under the supervision of Associate Professor Melissa Nursey-Bray and Dr Thomas Wanner.

The research project is titled: *Grassroots social resistance movements: analysing the influence of conflict discourses in mining policy development in Australia and the UK*. This research is being undertaken to learn more about the influence of conflict discourses, such as the anti-fracking discourse, on the development of mining policy.

I am contacting you because have expressed your interest in participating in an interview or you are involved in the development of natural resources in the UK because of your position in either industry or government in Lancashire or Yorkshire. The interviews will be conducted in March 2018.

Taking part in research is always optional. We are looking for people who want to take part in this research and who are involved in the 'Frack Off' movement, or indirectly through their roles in government or industry.

If you decide to take part in the research, we would invite you to participate in an audio recorded interview with Catriona Meyer-McLean.

If you would like more information or are interested in being part of the research please contact: Associate Professor Melissa Nursey-Bray by email at: melissa.nursey-bray@adelaide.edu.au or Catriona via email: catriona.meyer-mclean@adelaide.edu.au. If we have not heard from you in two weeks, you will be contacted by email to provide further opportunity to answer any questions you may have.

Taking part in research is voluntary. You may choose not to take part.
This research has been reviewed and approved by The University of Adelaide Human Research Ethics Committee. If you have any complaints or concerns about the research project please Contact the Human Research Ethics Committee's Secretariat on phone +61 8 8313 6028 or by email to hrec@adelaide.edu.au.

Yours sincerely,

**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**

# Appendix 5 Participant Information Australia

## PARTICIPANT INFORMATION SHEET

**PROJECT TITLE: Grassroots social resistance movements: analysing the influence of conflict narratives in mining policy development in Australia and the UK.**
**HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2017-037**
**PRINCIPAL INVESTIGATOR: Associate Professor Melissa Nursey-Bray**
**STUDENT RESEARCHER: Catriona Meyer-McLean**
**STUDENT'S DEGREE: PhD**

Dear Participant,

You are invited to participate in the research project described below.

**What is the project about?**
This project is exploring the influence of narratives used by the anti-fracking social movement on unconventional gas mining policy development. An analysis of the anti-fracking narrative used by the case study examples, Lock the Gate, in Australia, and Frack Off, in the UK, will establish the social, political, and environmental dimensions of the narrative and its influence on mining policy development. By deepening the understanding of the anti-fracking narrative and its influence over policy development, the study will establish implications to policy development and the social, political, and environmental outcomes.

*Who is undertaking the project?*
This project is being conducted by Catriona Meyer-McLean. This research will form the basis for the post-graduate degree of Doctorate of Philosophy at the University of Adelaide under the supervision of Associate Professor Melissa Nursey-Bray (primary supervisor) and Thomas Wanner (co-supervisor).

**Why am I being invited to participate?**
You are being invited to participate because you are either: a member of an anti-fracking movement in Australia; an industry or government representative who is a relevant spokesperson in relation to unconventional gas development in Australia.

**What will I be asked to do?**
You will be asked to participate in an interview in October-November 2017, or at another time negotiated with you. You will be asked a series of questions in relation to your experience as a member of an anti-fracking movement, and/or in relation to your experience of unconventional gas development and/or hydraulic fracturing or 'fracking'. The interview will be digitally recorded. No photographs taken of the participants and no identifiable information will be used in the thesis. Participants may voluntarily choose to provide photos of relevant locations which may be used in the publication of the thesis. The sessions will take place in a quiet room in a neutral location yet to be determined.

**How much time will the project take?**
The interviews will take no longer than one hour. Some extra time will be allocated to ensure all participants are comfortable and informed properly of the proceedings. Only one session will be required for each participant. Some food and refreshments may be provided for the session, where appropriate.

**Are there any risks associated with participating in this project?**

The topic of conversation may bring with it some discomfort. The experiences that any person may have had related to the fracking conflict, may also be related to some other difficult experiences. This study does not wish to provoke any unpleasant feelings and it is acceptable to withdraw from the study at any time of the process.

**What are the benefits of the research project?**
This is an opportunity for participants to voice their opinions and feelings about a matter which concerns their community and their livelihoods. The information gained through the analysis may inform decision makers of their views in relation to mining development, particularly fracking, in their region.

**Can I withdraw from the project?**
Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time. It is possible to also withdraw any data obtained during the study; however, this is only up until the submission of the thesis.

**What will happen to my information?**
The audio recordings will be transcribed to be used for the analysis. The overall research will be published as part of an academic PhD thesis which will be made publicly available, and the information gained may be used to develop further academic publications. All records of the recorded sessions will be kept in a digital format and be stored by the researcher and the research supervisor for a maximum of five years, after which time they will be destroyed. The data will not be used again for any other related research or for any other researcher unless further fully informed consent is given by the participants. Participant's identities and personal results will not be published, however full anonymity cannot be guaranteed due to the small size and the distinct nature of the study.

**Who do I contact if I have questions about the project?**
**Associate Professor Melissa Nursey-Bray** Phone: 08 8313 3497
**Catriona Meyer-McLean** Phone: 0434531747 Email: catriona.meyer-mclean@adelaide.edu.au

**What if I have a complaint or any concerns?**
The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2017-037). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
Phone:  +61 8 8313 6028
Email:   hrec@adelaide.edu.au
Post:    Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000
Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

**If I want to participate, what do I do?**
If you are interested in participating please let Melissa or Catriona know. They will organise with you the details about the interviews and will send you a consent form.

Yours sincerely,
**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**

# Appendix 6 Participant Information UK

## PARTICIPANT INFORMATION SHEET

**PROJECT TITLE: Grassroots social resistance movements: analysing the influence of conflict narratives in mining policy development in Australia and the UK.**
**HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2017-037**
**PRINCIPAL INVESTIGATOR: Associate Professor Melissa Nursey-Bray**
**STUDENT RESEARCHER: Catriona Meyer-McLean**
**STUDENT'S DEGREE: PhD**

Dear Participant,

You are invited to participate in the research project described below.

### What is the project about?
This project is exploring the influence of narratives used by the anti-fracking movement on unconventional gas mining policy development. An analysis of the anti-fracking narrative used by the case study examples, Lock the Gate, in Australia, and Frack Off, in the UK, will establish the various dimensions of the narrative and its influence on mining policy development. By deepening the understanding of the anti-fracking narrative and its influence over policy development, the study will establish implications to policy development and the social, political and environmental outcomes.

### Who is undertaking the project?
This project is being conducted by Catriona Meyer-McLean. This research will form the basis for the post-graduate degree of Doctorate of Philosophy at the University of Adelaide under the supervision of Associate Professor Melissa Nursey-Bray (primary supervisor) and Thomas Wanner (co-supervisor).

### Why am I being invited to participate?
You are being invited to participate because you are either: are involved in the 'Frack Off' movement in Lancashire or Yorkshire in the UK; an industry or government representative who is a relevant spokesperson in relation to unconventional gas development in Lancashire or Yorkshire in the UK.

### What will I be asked to do?
You will be asked to participate in an interview, to be conducted in Lancashire or Yorkshire in March 2018. You will be asked a series of questions in relation to your experience with the 'Frack Off' movement, and/or in relation to your experience of unconventional gas development and/or hydraulic fracturing or 'fracking'. The interview will be digitally recorded, No photographs taken of the participants and no identifiable information used in the thesis. Participants may voluntarily choose to provide photos of relevant locations which may be used in the publication of the thesis. The sessions will take place in a quiet room in a neutral location yet to be determined.

### How much time will the project take?
The interviews will be digitally recorded and will take no longer than one hour. Some extra time will be allocated so as to ensure all participants are comfortable and informed properly of the proceedings. Only one session will be required for each participant. Some food and refreshments may be provided for the session, where appropriate.

### Are there any risks associated with participating in this project?
The topic of conversation may bring with it some discomfort. The experiences that any person may have had related to the fracking conflict, may also be related to some other difficult experiences. This

study does not wish to provoke any unpleasant feelings and it is acceptable to withdraw from the study at any time of the process.

**What are the benefits of the research project?**
This is an opportunity for participants to voice their opinions and feelings about a matter which concerns their community and their livelihoods. The information gained through the analysis may inform decision makers of their views in relation to mining development, particularly fracking, in their region.

**Can I withdraw from the project?**
Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time. It is possible to also withdraw any data obtained during the study; however this is only up until the submission of the thesis.

**What will happen to my information?**
The audio recordings will be transcribed to be used for the analysis. The overall research will be published as part of an academic PhD thesis which will be made publicly available, and the information gained may be used to develop further academic publications. All records of the recorded sessions will be kept in a digital format and be stored by the researcher and the research supervisor for a maximum of five years, after which time they will be destroyed. The data will not be used again for any other related research or for any other researcher unless further fully informed consent is given by the participants. Participant's identities and personal results will not be published, however full anonymity cannot be guaranteed due to the small size and the distinct nature of the study.

**Who do I contact if I have questions about the project?**
Associate Professor Melissa Nursey-Bray          Phone: 08 8313 3497
Catriona Meyer-McLean          Phone: 0434531747 Email: catriona.meyer-mclean@adelaide.edu.au

**What if I have a complaint or any concerns?**
The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2017-037). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
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Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

**If I want to participate, what do I do?**
If you are interested in participating, please let Melissa or Catriona know. They will organise with you the details about the interviews and will send you a consent form.

Yours sincerely,
**Associate Professor Melissa Nursey-Bray (Supervisor)**
**Dr Thomas Wanner (Co-supervisor)**
**Catriona Meyer-McLean (Student researcher)**