

MAKING LIMITS MATTER: EXAMINING DECISION-
MAKING ON SHALE GAS DEVELOPMENT IN
RELATION TO ENVIRONMENTAL IMPACT

by

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Abstract

Society faces an unprecedented existential threat in the form of climate change impacts. Driving those impacts is a continued societal reliance on the extraction and exploitation of fossil fuels for energy use which are fuelling a level of greenhouse gas emissions that is hugely significant in global environmental change. These global impacts prompt reflection on whether environmental law has failed – failed to curb damaging emissions, failed to recognise emission limits, failed to ensure environmental protection. Taking the regulation of unconventional fossil fuel extraction as a basis for examining the extent to which environmental law has failed or succeeded, throws the question of environmental limits into the sharpest relief. Unconventional fossil fuels are subject to a highly political and publicly contested debate, one that is germane to the urgent need to reduce climate change emissions. Examining the decision-making processes for consenting and permitting the extraction of unconventional fossil fuels - in action and in practice - is an opportunity to discover the extent to which sustainable development, incorporating the concept of environmental limits, matters in the outcome. Every decision to permit extraction of fossil fuels contributes to the overall global impact of climate change. Analysing how these decisions are made is informed by considering the extent of authorities' competence, the aims within the framework, and how substantive environmental rights and procedural rights shape the process and the integrity of the law. Findings from the documentary evidence and fieldwork research show that there is an asymmetry in the *content* of the decision making process, relative to decision-makers and participants; and that there is an imbalance in the *context* of the decision making process, relative to decision-makers and participants. Those in power do not ascribe to the same sense of responsibility, while participants in the decision making process lack the power but assume that responsibility. While limits are present in the *content* and *context* of decision-making, there is a failure to make them matter in the final outcome, as cumulative impacts are only partially addressed through the legal framework.

Dedication

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List of abbreviations

BIF	Best Interest Findings
CAJE	Coalition on the Access to Justice for the Environment
CBM	Coal bed methane
CCA	Climate Change Act 2008
CCC	Committee on Climate Change
CCS	Carbon capture and storage
CIEL	Centre for International Environmental Law
DBEIS	Department for Business Energy and Industrial Strategy
DCLG	Department for Communities and Local Government
DECC	Department for Energy and Climate Change
DLUHC	Department for Levelling Up, Housing and Communities
EA	Environment Agency
EC	European Commission
EIA	Environmental Impact Assessment
EPA	United States Environmental Protection Agency
ES	Environmental Statement
EU	European Union
FoE	Friends of the Earth England Wales and Northern Ireland
HSE	Health and Safety Executive
ICLEI	International Council for Local Environmental Initiatives
IEA	International Energy Agency
IPCC	International Panel on Climate Change
LNG	Liquefied Natural Gas
LP	Local Planning
LPA	Local Planning Authority
LPG	Liquid petroleum gas
MHCLG	Ministry Housing Communities and Local Government
NASA	National Aeronautical Space Agency
NDC	Nationally determined contributions
NGO	Non-governmental organisation
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRW	Natural Resources Wales
NSTA	North Sea Transition Authority
Ofgem	Office of Gas and Electricity Markets

OGA	Oil and Gas Authority
ONS	Office for National Statistics
PCPA	Planning and Compulsory Purchase Act 2004
PEDL	Petroleum Exploration Development Licence
PINS	Planning Inspectorate
PPG	Planning Practice Guidance
PPW	Planning Policy Wales
RCEP	Royal Commission for Environment and Pollution
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RIDDOR	Reporting of Injuries Diseases and Dangerous Occurrences Regulations
RSPB	Royal Society for the Protection of Birds
SEA	Strategic Environmental Assessment
TCPA	Town and Country Planning Act 1990
TCPA	Town and Country Planning Association
UCG	Underground coal gasification
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
US	United States of America
WMS	Written Ministerial Statement

Chapter 1: Introduction

1.1 Death by a thousand cuts: has environmental law failed?

1.1.1 Introduction

In the face of increasing evidence of unparalleled environmental degradation, at a rate which could fundamentally affect the organisation and well-being of human societies globally, the achievement of sustainable development that recognises and respects environmental limits, is more urgent than ever before.¹ Rising climate changing emissions are a crucial part of this narrative on environmental limits,² one that is inextricably linked to fossil fuel extraction and use across the world. Fossil fuels have been and remain fundamental to the way 'modern' capitalist and neoliberal³ societies have developed all over the world.⁴ In the era of fossil fuels, where global society, and Western society especially, rely on the products and energy created from fossil fuels, economic structures and vested interests have proven to be self-perpetuating, unless challenged by society itself, or increasingly, tangible environmental disasters.⁵ Environmental law must rise to the occasion, and whether it is failing, and can be reformed, has inspired this thesis.

As Giddens points out in *The Politics of Climate Change*, waiting for the impacts to threaten communities across the globe directly will mean that human societies are too late in taking action,⁶ a view that is backed by the latest IPCC scientific report published in advance of COP26.⁷ In asking whether environmental law has 'failed', this research examines the decision-making process on fossil fuel extraction, and asks whether 'limits' are recognised, an issue that goes to the heart of the climate crisis. It is a fundamental test for the fossil fuel extraction regulatory system in England, but it is also relevant for comparable systems.

¹ United Nations, *Global Environmental Outlook – GEO-6 : Healthy Planet, Healthy People*, (UN Environment, 2019)

² IPCC, *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (CUP, 2018) pp. 3-24

³ Rachel S. Turner, 'The "rebirth of liberalism": The origins of neo-liberal ideology' [2007] 12:1 *Journal of Political Ideologies* 67

⁴ Thomas B. Johansson, Anand Patwardhan, Nebojsa Nakicenovic and Luis Gomez-Echeverri (eds) *Global Energy Assessment* (CUP 2012)

⁵ Nicholas Stern, *The Economics of Climate Change: The Stern Review* (CUP 2007)

⁶ Anthony Giddens, *The Politics of Climate Change*, (Polity Press 2009)

⁷ As at Fn 2.

The key research question posed is:

To what extent are environmental limits recognised in decision-making on hydrocarbon resource extraction?

Drawing inspiration from the theory of planetary boundaries and limits proposed by Röckstrom et al, and their updated article that specifically identifies that climate change ‘has the potential on its own to drive the Earth System into a new state should [limits] be substantially and persistently transgressed’,⁸ the question is how does the law recognise limits? Emissions that drive global warming are inextricably linked to the extraction of fossil fuels, as once extracted, inevitable exploitation occurs of this important and fundamental resource powering societies across the globe, even if different time frames and locations are involved.

1.1.2 Research Background

Politically, banking fears around stranded assets,⁹ the mobilisation of communities situated in proximity to extraction sites,¹⁰ and the recent increase in the urgency of the climate debate¹¹, have changed the context for this research over the period in which it has taken place. This is the dialogue of the time, where the research began at a moment when the prospects for shale gas were very different to where they are now in England and Wales. In the beginning, there was Governmental support in the UK for shale gas extraction, however through intensive community activism campaigning, and the changing political debate, this eventually waned to an effective moratorium. New wars have created extreme energy insecurities and now the debate is turning back to unconventional sources of fossil fuels.

With this in mind, the research is cognisant of the impact of political changes in radically rewriting the context around fossil fuels within a matter of months. In 2010, shale gas

⁸ W Steffen, K Richardson, J Rockström, S E Cornell, I Fetzer, E Bennett, R Biggs, W de Vries, ‘Planetary boundaries: Guiding human development on a changing planet’ (2015) 347 Science AAS 6223 736

⁹ Sam Meredith, ‘UN’s Mark Carney says ‘enormous’ stranded assets show the need for a rapid energy transition’ (CNBC, 21 October 2021) <<https://www.cnbc.com/2021/10/21/climate-stranded-assets-show-the-need-for-rapid-energy-transition-carney-says.html>> accessed November 2021

¹⁰ Ruth Hayhurst, ‘What’s happening where’ (Drillordrop, 18 May 2022) <<https://drillordrop.com/sites/>> last accessed May 2022

¹¹ Department for Business, Energy and Industrial Strategy (DBEIS), *BEIS Public Attitudes Tracker: Wave 37 Findings from the 37th quarterly wave of the BEIS Public Attitudes Tracker (PAT)*, (13 May 2021)

development was largely supported, with a Written Ministerial Statement following in 2015 to specifically set out policy support in England. In 2019, prior to the General Election, the UK Prime Minister at the time announced an effective moratorium on high volume hydraulic fracturing for shale gas development.¹² Environmental law is especially subject to political vagaries because it is more often than not subject to more powerful economic and social concerns,¹³ such as energy security which is affected by global events such as the war in Ukraine.

As a Senior Planner at Friends of the Earth England, Wales and Northern Ireland, and prior to that an Officer at ICLEI – Local Governments for Sustainability, I have been a participant in numerous decision-making and policy-making processes, mainly in the UK, but also the European Union. This has included participating actively in inquiries, giving evidence to committees, and advocacy on legislative amendments. I acknowledge my own bias and inevitable perspective that these positions have created in my outlook, and also that my thinking has been shaped by my personal experiences. Having supported a number of communities and over a thousand individuals to participate in land use planning decisions, my daily experience was one of where community activists were engaged in a crucial process that had far reaching impacts for the environment and for society. In the hundreds of decisions on what should happen where, these community activists were grappling with big questions of the future, of sustainability, of societal values, of fairness, responsibility and power. While defending the local democratic settlement, it was also clear that there was a rising sense of fear, desperation and helplessness in communities faced by a grave existential threat, one that only became *real* with the planning application for fossil fuel extraction. Climate change, it seemed to me, was a ‘death by a thousand cuts’, in that every decision was contributing a bit more to the impact and inevitability of global warming, and

¹² DBEIS, ‘Government ends support for fracking’ (DBEIS, 2 November 2019)

<<https://www.gov.uk/government/news/government-ends-support-for-fracking>> last accessed November 2021

¹³ Peter Haas, *Epistemic Communities, Constructivism, and International Environmental Politics*, (Routledge 2015)

that somehow, measured by the rising graph of emissions, environmental law as it was constructed was failing, in a way that was both complex and confusing.

In the first stage of my research inquiry, my interest was sparked by the gap between adopted UK legislation, the Climate Change Act 2008, with a target of 100% reduction in greenhouse gas emissions by 2050,¹⁴ and the decisions to approve unconventional fossil fuels. I was inspired by what is happening in this gap, and how such decisions will add up overall. In the concept of planetary boundaries, it is imperative that environmental limits be recognised – and a reduction target is essentially a limit. This is the question that I asked at the outset of this research journey – is cumulative impact ‘an issue’? what role does the law play?

At European level, environmental protection and energy security has ‘legal leverage’,¹⁵ while internationally it is the Paris climate agreement that has, on the face of it, the most legal leverage.¹⁶ Notwithstanding this legal presence at international level, countries are failing to fully implement this agreement,¹⁷ both by failing to translate the agreement into enforceable legal measures within countries, but also by continuing to finance and subsidise the fossil fuel industry.¹⁸ Nationally determined contributions do not yet add up to the achievement of the Paris Agreement.¹⁹ Within the UK, there are legal objectives for climate change mitigation²⁰ and for maximising fossil fuel production²¹ at the UK national level. It is self-evident that these objectives are in opposition to each other where there is no widespread and easily accessible technology for the removal of emissions from the atmosphere.²² In a nation without a written constitution, and a focus on processes rather than substantive duties

¹⁴ s.1

¹⁵ Treaty of the European Union (TFEU)

¹⁶ Walter R Tribett and Ross J Salawitch and Austin P Hope and Timothy P Canty and Brian F Bennett, ‘Paris INDCs’ in *Paris Climate Agreement: Beacon of Hope* (Springer 2017)

¹⁷ UNFCCC Secretariat, *Nationally determined contributions under the Paris Agreement Synthesis Report* (2021)

¹⁸ Oil Change International & Friends of the Earth U.S., *Past Last Call: G20 public finance institutions are still bankrolling fossil fuels* (2021)

¹⁹ UNFCCC Secretariat, *Nationally determined contributions under the Paris Agreement Synthesis Report* (2021), Bonn

²⁰ Climate Change Act 2008, s.1

²¹ Infra structure Act 2015, s.41

²² R T Watson and L G Meira Filho and E Sanhueza and A Janetos, *Greenhouse Gases: Sources and Sinks* (IPCC 1992); DBEIS *Guidance: UK carbon capture, usage and storage* (2019)

and rights on environmental limits,²³ there is no apparent conflict in the UK Government being able to legislate for the achievement of these opposing objectives. It therefore comes down to the procedure (the process of decision-making to come to a legally binding decision document), including the means of enforcing and challenging decisions, on *individual* decisions as to which objective is achieved to a greater extent than the other. Reconciling these legal objectives in practice requires prioritisation in decision-making, in the absence of a realistic, current, technological solution to mitigate or eliminate any damaging environmental consequences.²⁴

My research sets out to consider to what extent environmental law recognises planetary environmental limits with regard to fossil fuel extraction and climate change emissions. I take inspiration from Steffen and Rockström's theory of planetary boundaries, and I consider this as a next logical step for legal research: to situate environmental decision-making on development that entails the most severe environmental consequences into the broader context of the breaching of planetary environmental limits, and to understand the barriers in resource extraction decision-making under the auspices of environmental law in relation to respecting these limits. This research will look at decision making on fossil fuel extraction within a specific jurisdiction, but the implications are certainly broader and transferable across other systems of environmental decision making. Many sectors follow similar decision making structures, such as housing and transport, and these developments also have damaging environmental consequences. Many countries apply a land use and development control system that bears procedural comparisons with England, and the practice in this field of environmental law can support broader insights into how environmental law can be coherent and effective. Setting the research in England, which has the first global climate change budgeting system at UK level,²⁵ provides the opportunity to highlight the extent to

²³ R Hazell, *Constitutional futures : a history of the next ten years* (OUP 1999)

²⁴ Kevin Anderson and Alice Bows, 'Beyond 'dangerous' climate change: emission scenarios for a new world', (2011) A.36920 Phil. Trans. R. Soc.44

²⁵ Climate Change Act 2008

which new forms of environmental legislation can achieve an effective change in outcomes according to their construction and implementation. By engaging with the powerful idea that project after project has ecological footprints that add to an overall cumulative impact, there is the opportunity to examine the way in which degrees of impact add up to degrees of global change. Given the acknowledged issue of cumulative impact in relation to environmental damage,²⁶ how then does local decision-making address the climate and ecological crisis? To what extent does the absence of limits have consequences for outcomes? How can we better ‘determine’ a future that recognises environmental planetary boundaries? How can we make environmental limits ‘matter’?

1.1.3 Fossil fuel extraction commentary

Existing academic research has explored the environmental and social impacts of hydraulic fracturing as a newly developing fossil fuel extraction technique and its attendant regulatory structures across different jurisdictions.²⁷ Industry and technological perspectives have also been widely shared in industry journals.²⁸ Framing and discourse analysis of ‘fracking’ has also been conducted by researchers, drawing out the complex, and sometimes surprising issues that were drawn in to the debate, such as the role of democracy.²⁹

Regulation and governance studies have considered whether the new technologies of unconventional fossil fuels are adequately described in regulation, and what approaches have been taken to utilise existing regulation and repurpose it.³⁰ Reins’ research on shale gas extraction in Europe has described shale gas law and policy, the regulatory frameworks

²⁶ L M Cooper and W R Sheate, ‘Cumulative effects assessment: A review of UK environmental impact statements’ (2002) 22 (4), *Environmental Impact Assessment Review* 415

²⁷ R Q Grafton (Ed.), *Risks, rewards and regulation of unconventional natural gas : a global perspective* (CUP 2017), Joanne Hawkins, ‘Fracking: Minding the gaps’ (2015) 17 (1) *ELR* 8; J Cooper and L Stamford and A Azapagic, ‘Shale Gas: A Review of the Economic, Environmental, and Social Sustainability’ (2016) 4 *Energy Technol.* 2016 772; E Albrecht and D Schneemann, ‘Fracking in the United Kingdom: Regulatory Challenges between Resource Mobilisation and Environmental Protection’ (2014) 8 (4) *Carbon & Climate Law Review* 238

²⁸ D Spence, ‘The Shale Gas Revolution Continues’ (2013) 157 (2) *Power* 60

²⁹ Lawrence Williams and Benjamin Sovacool, ‘The discursive politics of ‘fracking’: Frames, storylines, and the anticipatory contestation of shale gas development in the United Kingdom’ (2019) 58 *Global Environmental Change* 101935; Matthew Cotton, ‘Stakeholder perspectives on shale gas fracking: a Q-method study of environmental discourses’, (2015) 47 (9) *Environment & Planning* 1944

³⁰ Tina Hunter (ed) *Handbook of shale gas law and policy : economics, access, law and regulation in key jurisdictions* (Intersentia 2016); F McGowan, ‘Regulating innovation: European responses to shale gas development’, (2014) 23 (1) *Environmental Politics* 41

in different countries, and examined the extent of the coherence between energy and environmental regulation.³¹ The importance of understanding competences in this research as a basis for analysing the regulation of shale gas draws on Reins' approach,³² and the finding that regulation is fragmented when it comes to 'underground' rings true in this research. A similar charge can be levelled at regulation of other 'unseen' impacts, such as emissions. Fleming has analysed the controls over shale gas regulation in the EU, through bans, moratoria, and political statements.³³ This analysis has provided much food for thought, inasmuch as it is argued that the concepts of environmental protection and energy security should be 'distinguished' from each other, and that therefore bans or moratoria weigh one concept at the expense of the other. Fleming finds the 'cautious but permissive approach to shale gas is legally sounder than prohibitive regulation,'³⁴ however this seems to leave some questions unanswered if the climate change mitigation concept is melded with energy security concept, as occurred in the actual decision-making process on shale gas in England. In response to Fleming's conclusions it has been useful to consider the discretionary versus the ban formulation of regulation as it pertains to the extent to which decision-making can recognise environmental limits, and take this analysis further by looking at individual decisions in practice.³⁵ While Fleming proposes a new 'trias' methodology for energy law of an integrated whole consisting of 'constitutional objectives, law principles and rules leading to a concrete regulatory framework,'³⁶ an unaddressed concern is whether this approach can deal effectively with cumulative impacts. As the Climate Change Act 2008 showed, the need to measure and account for emissions over all sectors is necessary to recognise and respect limits. Rather like the difference between a command and control

³¹ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

³² Ibid.

³³ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

³⁴ Ibid, Chapter 7

³⁵ Ibid

³⁶ Ibid

regime setting limits and a discretionary system, based on best available techniques, it still seems unanswered whether having a more integrated trias can enforce environmental limits.

Holder has shown how even those legal processes that are aimed at securing environmental protection outcomes in practice reveal an ‘imbalance in favour of the developer,’³⁷ whilst recognising that mediation is also taken as a core function of the process. The ‘space’ opened up in the decision making process that Holder refers to,³⁸ is a space that this research attempts to investigate further using the case study of a highly contentious development.

Critics of shale gas development point to the failure of the regulatory system(s) for fossil fuel extraction in setting the framework for an orderly transition to the reduction of climate changing emissions;³⁹ the failure to protect water resources and manage waste;⁴⁰ and to allay public health concerns.⁴¹ Phasing out coal fired power stations and therefore extraction has been analysed within Europe, considering the instruments and the drivers for change.⁴² Academic research so far has articulated many of the broad matters in relation to the development of a new technology such as the precautionary principle, constitutional environmental protections, energy law and policy, and societal response.

There have been significant statements on meeting climate change mitigation commitments in the UK, following public debate on the matter.⁴³ The UK Government’s advisor, the Committee on Climate Change (CCC), set out three tests in their 2016 report *Onshore Petroleum: the compatibility of UK onshore petroleum with meeting the UK’s carbon*

³⁷ J Holder, *Environmental Assessment: The Regulation of Decision Making* (OUP 2006)

³⁸ Ibid, p289

³⁹ P C Frumhoff and R Heede and N Oreskes, ‘The climate responsibilities of industrial carbon producers’ (2015) 132 *Climatic Change* 157

⁴⁰ A Kotsakis, ‘The Regulation of the Technical, Environmental and Health Aspects of Current Exploratory Shale Gas Extraction in the United Kingdom: Initial Lessons for the Future of European Union Energy Policy’ (2012) 21 (3) *RECIEL* 282; US Environmental Protection Authority (EPA), *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report)*, (EPA 2016)

⁴¹ A K Werner and S Vink and K Watt and P Jagals, ‘Environmental health impacts of unconventional natural gas development: A review of the current strength of evidence’ (2015) 505 *Science of the Total Environment* 1127

⁴² P-Y Oei and H Brauers and P Herpich, ‘Lessons from Germany’s hard coal mining phase-out: policies and transition from 1950 to 2018’ (2020) 20 (8) *Climate Policy* 963

⁴³ HL Deb 26 January 2015, vol 591, col 599

budgets.⁴⁴ The tests recommended are partly regulatory in a local project sense – managing the development operations, but also relate to the national level in terms of bringing in overall energy strategy and climate mitigation:

These tests relate to the need to regulate tightly production emissions; the need for such shale gas production as does happen to substitute for imported gas and not add to overall gas consumption; and the need to find additional abatement measures to compensate for the emissions attached to production, even under tight regulation.⁴⁵

There is an implication here of the concept of limits in the recommendation not to add to the UK's overall gas consumption. The question addressed by my research is to what extent environmental law in England and Wales implements an idea of limits, if at all?

Meeting climate change mitigation commitments in decision-making on unconventional fossil fuel extraction is further complicated by the unknown impact of fugitive emissions. These are emissions that are released through the extraction activity but are not all captured as part of the technology that is deployed. Fugitive methane emissions are a growing concern following research in the US by Howarth et al⁴⁶ and the problem of cumulative emissions in terms of the overall 'global carbon budget' as set out by Pfeiffer et al.⁴⁷ Their estimate of the cumulative carbon budget has led them to the conclusion that 'our remaining carbon budget could almost already be exhausted today'.⁴⁸ The issue of climate changing emissions goes to the heart of the concept of planetary boundaries, and of limits. There are recognisable limits as to what current societies can cope with in terms of environmental change, and climate change in some researchers' views is at a tipping point in terms of limits.⁴⁹

⁴⁴ Committee on Climate Change (CCC) *Onshore Petroleum: the compatibility of UK onshore petroleum with meeting the UK's carbon budgets* (CCC 2016)

⁴⁵ As at Fn 44

⁴⁶ R W Howarth and R Santoro and A Ingraffea, 'Methane and the greenhouse-gas footprint of natural gas from shale formations' (2011) 196 (4) *Climatic Change* 679

⁴⁷ A Pfeiffer and R Millar and C Hepburn and E Beinbocker, 'The '2°C capital stock' for electricity generation: Committed cumulative carbon emissions from the electricity generation sector and the transition to a green economy' (2016) 179 *Applied Energy* 1395

⁴⁸ *Ibid*

⁴⁹ Carbon Brief, 'Carbon Countdown: Analysis: just four years left of the 1.5C carbon budget' (*Carbon Brief*, 5 April 2017) <www.carbonbrief.org/analysis-four-years-left-one-point-five-carbon-budget> accessed November 2021

1.1.4 Unconventional fossil fuels and their impacts

Fossil fuel production, or hydrocarbon minerals extraction as it is termed in policy guidance in the UK, consists of a wide range of techniques for extracting fossil fuels from different geological layers. The UK is very familiar with deep coal mining and surface mining and the North Sea gas fields, as these have been in operation for a considerable amount of time.

‘Unconventional’ sources of fossil fuels have become more prominent recently, where the ‘unconventional’ nature of these fossil fuels is that these resources were previously not exploited (unlike ‘conventional’ sources) due to the complexities involved in extraction, the technology required, the geological target formations, and the environmental impacts.

In addition, some types of fossil fuel extraction have by-products, such as hydraulic fracturing for shale gas (fracking), where the by-product ethane is used as a basis for plastics production. Fossil fuels therefore do not just have a greenhouse gas emissions impact when they are used for energy generation, although that is their primary economic use.⁵⁰ They are also used for transport and the production of goods.

Fracking, coal bed methane and underground coal gasification are all types of ‘unconventional’ extraction that were set out in policy guidance in the UK, first appearing in 2012 as part of planning guidance,⁵¹ subsequent to some early consents for exploratory test drilling dating from 2007.⁵² High volume hydraulic fracturing is a process where a mixture of chemicals is mixed with sand and water and injected at high pressure at depths below 2,000m into shale formations. This causes fractures in the rock to open, allowing the gas to flow. Acidisation is a process where greater quantities of acid are used in order to dissolve the target formations. Coal bed methane extraction is a process where the coal layers are targeted by drilling down and pumping out the water and allowing the gas to flow to the

⁵⁰ International Energy Agency, *World Energy Outlook 2011* (OECD/IEA 2011)

⁵¹ Department for Communities and Local Government (DCLG), *National Planning Policy Framework* (Planning guidance, edn 2, 2012)

⁵² B Gu and H Nazmy, ‘Britain’s Shale Gas Zeal and Riches’, (2014) 1 (2) *Journal of European Management & Public Affairs Studies*

surface. Underground coal gasification is a process involving the firing of the coal underground and using drilled wells to extract the gas.⁵³

Fracking (shale gas extraction) has boomed in the US over the last fifteen years, with considerable research conducted on the documented environmental impacts of extraction in relation to water and air pollution,⁵⁴ and more recently on the issue of methane leakage near extraction sites.⁵⁵ Epidemiological studies have also picked up on a link between premature births and proximity to fracking sites in the US as set out by Casey et al (2017).⁵⁶ Coal seam gas (coal bed methane) extraction has taken place in Australia, as well as a trials of underground coal gasification, but this activity resulted in a ban in Queensland due to its significant environmental impacts.⁵⁷ The Royal Society's report *Shale Gas in the UK* published in 2012⁵⁸ noted that around 200 conventional oil and gas wells had used some sort of hydraulic fracturing technique.

The exploitation of unconventional fossil fuels has resulted in public protests and moratoriums across the world. New York in the US, and the Northern Territory in Australia both have long-running 'bans' on fracking.⁵⁹ The Republic of Ireland proposed a ban on onshore hydraulic fracturing in 2017, following 'bans' in Germany and Bulgaria.⁶⁰ In the UK, the moratorium in Wales on unconventional fossil fuels has been strengthened by changes to land use planning guidance and changes to the licensing regime. However, in Scotland

⁵³ DBEIS *Guidance on fracking: developing shale gas in the UK* (Policy guidance, 2019)

⁵⁴ US Environmental Protection Authority (EPA), *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report)*, (EPA 2016)

⁵⁵ R W Howarth and R Santoro and A Ingraffea, 'Methane and the greenhouse-gas footprint of natural gas from shale formations' (2011) 106 (4) *Climatic Change* 679

⁵⁶ Joan A Casey and David A Savitz and Sara G Rasmussen and Elizabeth L Ogburn and Jonathan Pollak and Dione G Mercer and Brian S Schwartz, 'Unconventional natural gas development and birth outcomes in Pennsylvania, USA' (2016) 27 (2) *Epidemiology* 163

⁵⁷ Minister for State Development and Minister for Natural Resources and Mines *Underground Coal Gasification now prohibited in Queensland* (24 August 2017) Queensland Government

⁵⁸ The Royal Society and Royal Academy of Engineering, *Shale gas extraction in the UK: A review of hydraulic fracturing* (Royal Society 2012)

⁵⁹ H Herrera, 'The legal status of fracking worldwide: An environmental law and human rights perspective', (*Global Network for Human Rights and the Environment*, 6 January 2020) </gnhre.org/human-rights/the-legal-status-of-fracking-worldwide-an-environmental-law-and-human-rights-perspective/> last accessed November 2021

⁶⁰ As at Fn 53

moratorium was challenged by the chemicals company INEOS.⁶¹ In 2019, the UK Government announced a moratorium based on the advice on earth tremors until further evidence was available.⁶² Most bans and moratoriums have resulted because of public pressure and civil society mobilisation, alongside intense public debates.⁶³

The environmental impacts of unconventional oil and gas extraction and production are clearly recognised and documented,⁶⁴ although their extent and impact is contested within Europe. Significant environmental impacts can be broadly categorised as emissions to water, air and soil. These emissions are either produced by the extraction process through the introduction of chemicals in the process of hydraulic fracturing; or as a consequence of the extraction process where radioactive substances are mobilised from the geological target layer and return in the waste fluid and gases to the surface; or because the gas extracted is itself a pollutant – both in its extracted state and after use. Coal mining is similarly polluting – contaminating large areas of land; creating spoil heaps; altering and mobilising materials into groundwater and surface water systems; causing emissions during the mining process to air of gases; and creating emissions through burning.⁶⁵

By choosing to focus on a resource that powers modern society, and yet is at the root cause of the many of the unsustainable impacts that have long been recognised globally, this research is a deliberate attempt to consider the extent to which environmental law manages an inherently polluting activity. It is also at the extreme end of environmental protection, where the choices are very stark, and the stakes are very high.

⁶¹ Outer House, Court of Session, Opinion of Lord Pentland In the petition INEOS Upstream Ltd and Friends of the Earth Scotland against the Lord Advocate [2018] CSOH 66 P1318/17

⁶² DBEIS, 'Government ends support for fracking' (DBEIS, 2 November 2019)

<<https://www.gov.uk/government/news/government-ends-support-for-fracking>> last accessed November 2021

⁶³ J C Hall and C Shultz and E F Stephenson, 'The political economy of local fracking bans', (2017) 42 (2) *Journal of Economics and Finance* 397

⁶⁴ US Environmental Protection Agency (EPA), *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report)* (EPA 2016)

⁶⁵ R B Finkelman and A Wolfe and M S Hendryx, 'The future environmental and health impacts of coal' (2021) 2 (2) *Energy Geoscience* 99; European Environment Agency (EEA), *Releases of pollutants to the environment from Europe's industrial sector – 2015* (EEA 2017)

1.1.5 Constructing a basis for the research

1.1.5.1 Introduction

In order to have a basis on which to approach the field work, a number of legal challenges were identified, and used to inform the questions being asked. These gave a construction, a conceptual framework to some extent, to the areas of interrogation. The basis of research was not to test a hypothesis, but rather to use these legal challenges as an analytical tool, and to allow the data to speak. In asking the question on whether or not, or the extent to which, the values of sustainable development are in reality being delivered if environmental limits are not being taken into account in decision-making, it is necessary to use legal constructs that support thinking and understanding around the law, so that these constructs form an organisation of approach.

Five legal challenges are highlighted for the purposes of this research to inform the data analysis:

- 1 the scope of competences;
- 2 the conflict between aims;
- 3 the presence of substantive environmental rights;
- 4 the presence of procedural environmental rights;
- 5 the integrity of the law.

Competence, meaning the legal authority to perform a designated function an authority may have,⁶⁶ is the first of the five legal challenges. Identifying the ‘competency’ of the relevant authorities in relation to ‘sustainable development’ where their functions also include the regulation of fossil fuel extraction, and when sustainable development is not defined in law in England, forms the basis for analysis of the evidence. Taking the meaning of competence to be that of ‘authority’ as a prerequisite for ‘legal validity’ as summarised by Spaak,⁶⁷ and as set out by Hart on what law has imposed upon those in authority,⁶⁸ this research considers

⁶⁶ Oxford English Dictionary defines ‘competence’ as “sufficiency of qualification; capacity” and for the Law “the quality or position of being legally competent”

⁶⁷ T Spaak, ‘The Concept of Legal Competence’ in *The IVR Encyclopaedia of Jurisprudence, Legal Theory, and Philosophy of Law* (2005) ‘...suffices to note that to exercise regulative competence is to change legal positions, not by creating norms, but by regulating the application of already existing norms.’; T Spaak, ‘Norms that Confer Competence’, (2002) 16 (1) *Ratio Juris* 89

⁶⁸ H L A Hart, *The Concept of Law* (OUP 2012)

how the competences of the various authorities involved influence outcomes. In the vertical interplay of competences, a national level perspective needs to be illuminated from above and below. It is important to understand as part of the governance within which the legal framework is situated, what is taking place locally, in local government; and what is taking place internationally, how international treaties play out in nation states. There is also the horizontal interplay of competences between the different regulatory frameworks and authorities within England (and Wales) that pertain to each fossil fuel extraction decision.

The second legal challenge considers the aims of the legal framework. An 'aim' is defined as the purpose, or intention to achieve a desired outcome.⁶⁹ The Paris Agreement and the UN's international sustainable development goals influence through 'soft law' and are percolating into policy references.⁷⁰ Conflicts can also be identified between the aims of economic growth, reduction of greenhouse gas emissions and sustainable development contained within the legal frameworks that apply to decision-making on fossil fuel extraction in England. Mapping these out and then examining how these conflicts materialise, and their consequences through the field research enables a critical examination of this legal framework in practice. The UK's departure from the European Union at the end of 2020 changes the European influence on legislation and therefore the scope of the relevant competences,⁷¹ and the shape of some of the aims, but historical alignment remains for now, for the purposes of this research.

In order to move into the practical assessment of 'law in action,' the way that process shapes outcomes must be examined. The examination of the legal framework would be incomplete if the way in which decisions were made and influenced did not take account of the presence of procedural rights. This is the third legal challenge – the rights of participants to be involved

⁶⁹ Oxford English Dictionary defines an aim as "the action of making one's way towards a point, course, direction".

⁷⁰ HM Government, *Review of the Balance of Competences between the United Kingdom and the European Union: Environment and climate change* (HM Government 2014)

⁷¹ European Union (Withdrawal) Act 2018

in decision-making, whether that be through access to information, to participate in the decision forum itself, and to have access to the right to challenge a decision.

The absence of substantive environmental rights was also explored, as their very absence is pertinent to the question of how environmental limits can be recognised in decision-making on fossil fuel extraction. This is the fourth legal challenge and the one that is most problematic in terms of the field work and informing questions as it has a weak and uncertain legal basis.

The fifth challenge is the integrity of the law, and by this is meant the extent to which the law is logical, rational and comprehensive when it comes to integration into outcomes.

Essentially this was a test around whether or not there were gaps in the regulatory framework, whether or not the law is 'integrated'. Individual development decisions within the planning development consent regime are characterised by discretion and value judgements. The extent to which these individual legal decisions add up to an integral whole, and in so doing contribute to the recognition of environmental limits in decision-making, in this case on fossil fuel extraction, is borne out of the research findings and the literature on cumulative impact. The overall effectiveness and integrity of the legal framework is therefore tested by the extent to which environmental limits are recognised in the outcomes.

As the data findings were examined, these challenges were used to interrogate the data, for example in considering whether or not the competence covered every question or issue that was raised during the decision-making process, or whether or not the aims were of equal or unequal weight during the self-same process as perceived by the participants or apparent in the documentary evidence. By way of background, these challenges are explored here in more depth.

1.1.5.2 The scope of competences

Commencing with the vertical division of competences for sustainable development and climate change and in recognition of the UK's departure from the EU, the following framework is sketched out. At the international level there is the Rio Declaration, a non-binding set of principles without enforcement mechanisms,⁷² and the Paris Agreement, with the more binding Nationally Determined Contributions (NDCs), and weak enforcement mechanisms⁷³. The competency for the Paris Agreement is held by the UN as the convenor, through the Framework Convention on Climate change, and by the responsible Minister for the UK Government for the NDCs. For the purposes of this research the sphere of competency of the Minister is taken as meaningful for decision-making on fossil fuel extraction.

National legislation that refers to both sustainable development and climate change has been adopted by the UK Parliament (and by the Welsh government). This legislation is under the guardianship of the relevant Secretaries of State as relevant to England, and the Welsh Ministers in Wales. The Ministers hold the competency for being able to bring forward legislation and related national policy. Officials and advisory bodies such as the Committee on Climate Change have the competency to provide Governmental advice.

Local plans at the local level then function as the primary legal document for consideration in land use planning decisions on fossil fuel extraction, the only locally created legal framework that applies in both England and Wales. These are within the competency of local planning authorities. In England there are either unitary authorities which hold the competency, or two-tier planning authorities, and the competence on hydrocarbon minerals is held by the upper (county) tier in these areas. Wales consists of only unitary authorities.

⁷² United Nations Rio Declaration (1992)

⁷³ Sylvia I. Karlsson-Vinkhuyzen and Maja Groff and Peter A Tamás and Arthur L Dahl and Marie Harder and Graham Hassall 'Entry into force and then? The Paris agreement and state accountability' (2018) 18:5 Climate Policy 593

Diagram 1 Vertical competences on sustainable development

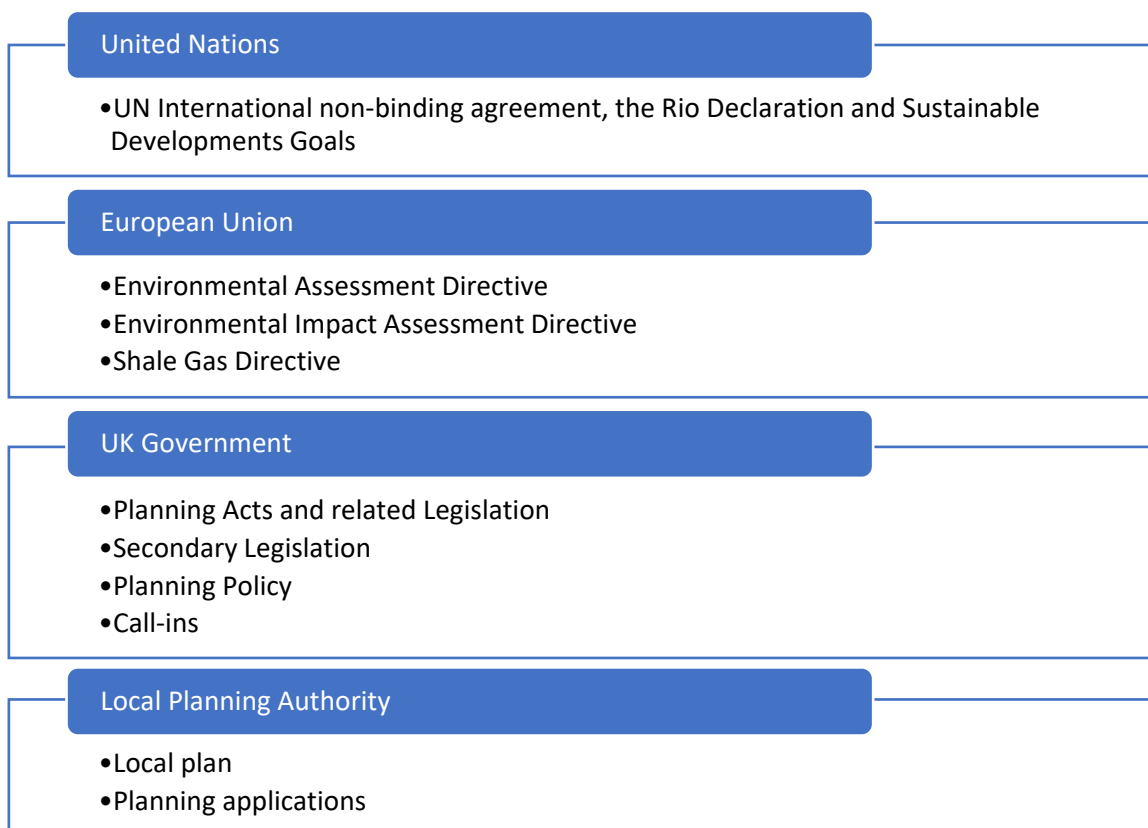


Diagram 2 Vertical competences on climate change mitigation



There is clearly a potential for substantive matters to become lost or to accrue in the vertical interplay, depending on how these competences are circumscribed or translated in terms of hierarchy. For example, there is an absence of a specific competency on climate change at the local planning authority level. The national level of competence is generally the most

powerful,⁷⁴ although the development of European Union law has impressed much environmental law upon the UK.⁷⁵

Moving on to the horizontal division of competences, the picture becomes more complex in England than in Wales. One agency, the Health and Safety Executive, acts across both nations. Different UK Government departments are also engaged in England,⁷⁶ whereas the Welsh Government combines the different departments. In the horizontal division of competences, the allocation of responsibilities and duties to various different authorities creates an effect that is meant to separate these competences rather than allow overlap.⁷⁷

Diagram 3 Horizontal competences England

DLUHC	DBEIS	Local Planning Authority	Environment Agency	Health & Safety Executive	Natural England	Planning Inspectorate	Oil and Gas Authority	Coal Authority
<ul style="list-style-type: none"> • Planning policy • Decision-making 	<ul style="list-style-type: none"> • Licensing • National Policy Statements 	<ul style="list-style-type: none"> • Local Plan • Decision-making 	<ul style="list-style-type: none"> • Policy • Decision-making 	<ul style="list-style-type: none"> • Well inspections • Borehole design 	<ul style="list-style-type: none"> • Standing advice • Site advice 	<ul style="list-style-type: none"> • Appeals • Local plan examinations 	<ul style="list-style-type: none"> • Hydraulic Fracturing consent 	<ul style="list-style-type: none"> • Coal workings

Diagram 4 Horizontal competences Wales

Welsh Government	Local Planning Authority	Natural Resources Wales	Health & Safety Executive	Planning Inspectorate
<ul style="list-style-type: none"> • Planning policy • Decision-making 	<ul style="list-style-type: none"> • Local plan • Decision-making 	<ul style="list-style-type: none"> • Standing advice • Site advice 	<ul style="list-style-type: none"> • Well inspection • Borehole design 	<ul style="list-style-type: none"> • Appeals • Plan examination

Horizontally the division of responsibilities across a number of different competences may indicate that gaps could arise. Legal competences also take a while to become operationalised and normalised, or alternatively, to adapt to changing remits. New authorities have been set up for the purposes of regulating the extraction of unconventional fossil fuels

⁷⁴ Given that there are specific duties assigned through the Climate Change Act 2008 on the Secretary of State for example.

⁷⁵ S Kingston and V Heyvaert and A Čavoški, *European Environmental Law* (CUP 2017)

⁷⁶ Department for Levelling Up, Housing and Communities (DLUHC) and Department for Business Energy and Industrial Strategy (DBEIS)

⁷⁷ *Gateshead Metropolitan Borough Council v Secretary of State for the Environment* [1995] L2 May 1994 [1995] Env. 1.R.37

with newly configured spheres of competency, such as the Oil and Gas Authority (OGA), now called the North Sea Transition Authority (NSTA).

Through the fieldwork, the perspective of the relevant authorities has been elicited. These perspectives bring to bear a deeper understanding of the difference between the competence on paper and the competence in action.

1.1.5.3 The conflict between aims

Taking as read that the law does not describe or encompass what is meant by 'justice' as an abstract, rather unknowable ideal,⁷⁸ this research takes the position that the law encapsulates some of the values and purposes that the society in the broadest and most general sense that has created those laws has from that formed in law, albeit filtered through contextual politics and democracy.⁷⁹ One of the pre-eminent values of land use planning is that of 'public interest,' one that is a norm expressed in policy rather than defined in law.⁸⁰ Given the legal framework surrounding land use planning is the focus of this research, 'public interest' is a key value that is relevant to the understanding of how conflict may arise between aims, given the way 'the public interest' is shaped and re-shaped according to the issues in front of politicians or decision-makers and the values or politics they eschew.

Extraction of fossil fuels has long been weighed a 'public benefit' in political judgements and valuation, in that it enables modern capitalist societies to function and for the economy to grow.⁸¹ As the threat of climate change becomes ever more apparent the weighting of fossil fuel extraction as a 'benefit' becomes more contested. Acting on climate change to reduce emissions is also a 'public benefit' as it benefits society as a whole to stop emissions rising to

⁷⁸ D McIlroy, *The End of Law: How Law's Claims Relate to Law's Aims* (Edward Elgar 2019)

⁷⁹ R M Dworkin, *Law's empire* (Hart 1998)

⁸⁰ Malcolm Tait, 'Planning and the Public Interest' (2016) 15-4 Planning Theory 335

⁸¹ Ministry for Housing Communities and Local Government (MHCLG) *National Planning Policy Framework* (Planning guidance, 2021)

such an extent that irreversible damage is caused to human societies and the environment.

Two actions, both counted as public benefits, but incompatible in terms of outcome.

Legal and policy frameworks at international, European, UK, and at the local level, hold within themselves the conflicting aims of climate change emissions reduction, environmental protection, and the 'need' for fossil fuels. Law is purposeful, and its purposes are described in the legal aims present in primary legislation. Secondary legislation and policy associated with the legislation and provide further detail, guidance and interpretation of the primary legal aims. In examining the extent to which environmental law recognises environmental limits, this research will map and then trace the influence of these aims as they are operationalised in practice through the field research. It will draw upon the work of Reins,⁸² Fleming,⁸³ Van Asselt,⁸⁴ and Hunter⁸⁵ in considering how current frameworks operate and how they are structured.

1.1.5.4 Substantive environmental rights

In 1992, members of the United Nations adopted the 'Rio declaration' on the principles of sustainable development, which aims to meet the needs of human society while recognising and living within environmental limits.⁸⁶ It contained an articulation of a substantive right to a healthy environment.⁸⁷ Substantive rights to the environment or 'environmental rights' exist in treaties, constitutions and frameworks across the world as described by Boyd.⁸⁸ Shelton notes the more commonplace reliance on procedural environmental rights rather than substantive environmental rights,⁸⁹ possibly because of the justiciable difficulties presented

⁸² Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

⁸³ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

⁸⁴ Harro van Asselt, 'Governing fossil fuel production in the age of climate disruption: Towards an international law of 'leaving it in the ground'', (2021) 9 *Earth System Governance* 100118

⁸⁵ Tina Hunter (ed) *Handbook of shale gas law and policy : economics, access, law and regulation in key jurisdictions* (Intersentia 2016)

⁸⁶ United Nations Rio Declaration (1992)

⁸⁷ The Stockholm formulation refers to a human's "fundamental right to ... adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being"; The Rio Declaration stipulates that human beings "are entitled to a healthy and productive life in harmony with nature".

⁸⁸ D R Boyd, 'The Constitutional Right to a Healthy Environment' (2012) 54 (4) *Environment* 3

⁸⁹ D Shelton, 'Developing substantive environmental rights' (2010) 1(1) *Journal of Human Rights and the Environment* 89

by substantive rights in terms of definition, evidence and causality.⁹⁰ The lack of political agreement has also prevented its introduction in Western Europe, where it is left largely to constitutional environmental protections where they exist,⁹¹ or to stretching interpretations of human rights law.⁹² Fossil fuel extraction, given its heavy pollution and climate change impact, does highlight the absence of a substantive environmental right.⁹³

In this research, the question is to what extent substantive rights exist, and what are the implications of its absence, to point to whether substantive rights could afford greater recognition of environmental limits in outcomes, thereby strengthening the corpus of environmental law in relation to fossil fuel extraction decision-making. Little awareness of substantive environmental rights, and little articulation of such a right has been found in the data findings, with only oblique or tangential references. Yet this absence in itself is indicative of a possible gap in the *context* boundaries of decision-making.⁹⁴

1.1.5.5 Procedural environmental rights

In 1997, the UK became a signatory to the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention). This is also known as a multi-lateral environmental agreement (MEA) and it legally commits the UK to providing mechanisms within domestic law that implement the agreement. The Convention has a compliance mechanism that consists of a Compliance Committee, where any member of the public may make a complaint to the Committee about the implementation of the Convention in their own countries, where that country is a signatory.⁹⁵ There are three key rights that are promoted by the Convention – the right to

⁹⁰ Vanhala, L., 'Shaping the Structure of Legal Opportunities: Environmental NGOs Bringing International Environmental Procedural Rights Back Home.' (2018), *Law & Policy*, Vol.40 (1), p.110-128

⁹¹ D R Boyd, 'The Global Emergence of Constitutional Environmental Rights' (2018) 18 (4) *Global Environmental Politics* 132

⁹² S Fiorletta-Leroy, 'Can the Human Rights Bodies be Used to Produce Interim Measures to Protect Environment-Related Human Rights?' (2006) 15 (1) *RECIEL* 66

⁹³ M Powers, 'Juliana v United States: The next frontier in US climate mitigation?' (2018) 27 (2) *RECIEL* 199

⁹⁴ S Owens and R Cowell, *Land and limits : interpreting sustainability in the planning process* (2nd edn, Routledge 2011)

⁹⁵ UNECE, *Guide to the Aarhus Convention Compliance Committee* (2019)

know, the right to participate, and the right to challenge.⁹⁶ These rights form the basis of procedural environmental rights in the UK.⁹⁷

In decision-making on fossil fuel extraction, the right to request information about developments is key to environmental accountability and is found in the Freedom of Information Act and the Environmental Information Regulations, both derived in part from EU law and the Aarhus Convention.⁹⁸ The importance of access to information as a basis for ensuring that environmental matters are considered in decision-making has been researched extensively and the principle of that analysis is assumed in this research. What is explored in this research is the nature of the environmental information that is in this decision-making process (as part of the 'content boundaries' of decision-making), and how this information is affected by the procedural structure (the 'context boundaries' of decision-making), and how these matters determine the outcomes.

Participating in decision-making on extraction is enabled through the land use planning system and the Planning Acts and has been researched extensively by Rydin, Healey, and Morphet.⁹⁹ In this research, the structure and nature of public participation is reflected up in terms of the balance of power and responsibility in decision-making on fossil fuel extraction, but the structure and nature of public participation in and of itself is not a focus for this research. The focus is instead on what the legal framework affords in terms of public participation, and how the content is shaped in the case study by the process.

Access to justice is through judicial review of decisions by public authorities in the regulatory frameworks that regulate extraction. Judicial review is limited to a review of the process rather than of substantive matters. This is reflected upon as part of the discussion on

⁹⁶ UNECE, *UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)*, (1998)

⁹⁷ Articulated in SEA and EIA and Planning Acts (or operationalised by this legislation, partly derived from European legislation and partly from UK legislation).

⁹⁸ UNECE, *Implementation Guide Aarhus Convention* (2019)

⁹⁹ Janice Morphet, *Effective practice in spatial planning* (Routledge 2011); Patsy Healey *Collaborative planning : shaping places in fragmented societies* (2nd edn, Palgrave Macmillan 2006); Yvonne Rydin, *The future of planning : beyond growth dependence* (Policy Press 2013)

governance, and how that affects the balance of power and responsibility in the context boundaries of decision making.

In this research, the involvement of the public, or laypeople, and community activists, in the process of decision-making on the extraction of fossil fuels, is found to be a considerable influence on the outcome of decisions in terms of environmental protection. The field research was conducted with those who have participated actively in the process, through using their procedural rights as well as democratic engagement and protest. The research aims to consider how these rights contribute to a better understanding of the *context* boundaries of decision-making.

1.1.5.6 The integrity of environmental decision-making

Researchers on new sources of fossil fuels such as shale gas are rightly concerned with the issue of integrity of legal systems. Reins shows how shale gas regulation exposes the incoherence of the EU's energy and environmental frameworks.¹⁰⁰ Fleming promotes the 'Energy Trias',¹⁰¹ the unfolding of a hierarchical legal framework that holds checks and balances that enable development of shale gas to come forward while at the same time regulating environmental impact. Together, these key works illustrate the importance of understanding the integrity of the law, in being able to analyse whether or not the corpus of law is achieving its stated purpose.

In testing whether or not environmental law has failed to incorporate environmental limits in decision-making, it is necessary to look at the outcomes as a whole rather than the individual decisions in isolation. The nature of decision-making as exemplified in town and country planning, means there is room for manoeuvre on each decision,¹⁰² as it is a discretionary system, with room for judgement. In a way this is pertinent to all decision-making processes

¹⁰⁰ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

¹⁰¹ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

¹⁰² W E Steele and K Ruming, 'Flexibility versus Certainty: Unsettling the Land-use Planning Shibboleth in Australia', (2012) 27 (2) Planning Practice and Research 155

where there is no foregone conclusion, where judgement is involved, however the extent of 'bias' towards a particular outcome can differ. Each decision may be subject to a number of factors and could inadvertently, given the lack of oversight, lead to unintended consequences. The land use planning system itself was in part borne from the unintended consequences of uncontrolled market-led development that had severe impacts on public health because of pollution.¹⁰³ The whole problem of unsustainable development and the failure to recognise environmental limits is one that exemplifies a lack of integrity. Ascertaining the integrity of the law therefore helps inform the analysis of the data findings.

1.2 The Research Approach

1.2.1 Introduction

The research's theoretical approach is a socio-legal one. It is concerned with 'law in action',¹⁰⁴ how the black letter of the law is made real in different situations and places by different people, authorities, and contexts, drawing on thinking from Pound,¹⁰⁵ through to Sarat,¹⁰⁶ Cotterell¹⁰⁷ and Lacy.¹⁰⁸ Environmental law should properly be judged by its outcomes in terms of effectiveness: detecting to what extent environmental limits have been recognised, to what extent the environment has been protected. The legal framework – the words, meanings, and provisions that it contains are an important area of study, which is further enhanced if it is comprehended in its social context. By social context, the individuals and the relationships between these individuals, the state, industry and people involved in the process are investigated to gain a richer understanding of the framework.

If it is taken that the effectiveness of law is judged by its outcomes, then causality, the link between cause and impact comes into play. This is because if certain impacts are to be avoided, then the causes of those impacts must be identified and mitigated. Causality can be

¹⁰³ B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

¹⁰⁴ E Mertz and S Macaulay and W T Mitchell (eds), *The new legal realism. Volume I, Translating law-and-society for today's legal practice* (CUP 2016)

¹⁰⁵ R Pound, 'Law in the books and law in action' (1910) 44 (1) *American Law Review* 12

¹⁰⁶ A Sarat (ed), *The Blackwell Companion to Law and Society* (John Wiley & Sons 2008)

¹⁰⁷ R Cotterell, 'Why must legal ideas be interpreted sociologically?' (1998) 25 (2) *Journal of Law and Society* 171

¹⁰⁸ N Lacey, 'Normative reconstruction in socio-legal theory' (1996) 5 (2) *Social & Legal Studies* 131

traced between certain activities and their environmental impacts, and is useful and important in gaining a better understanding of what is happening within a decision making process.¹⁰⁹ Some legal frameworks operate to consent, manage and mitigate environmental impacts, and in implementing those frameworks, decision makers gain some understanding of the link between causes and impacts.

Hence the operation of these legal frameworks are intrinsically linked with how they are enacted by the participants during implementation. This is social context which is best explored through the interviews conducted as part of this research; the transcripts and minutes of meetings held by councils and in public inquiries; the media commentary and debate in relation to the decisions under scrutiny. In this, the research is influenced by the epistemological stance of critical realism. As a practitioner, and having been involved in such decision-making processes, there is a clear sense that what has been observed has a certain reality. Nurse's description of the 'narrative' research method as a socio legal approach examining air quality litigation, has been inspiration for this research in thinking about 'listening' to participants in the planning decision-making process.¹¹⁰

1.2.2 Research Methodology

1.2.2.1 Introduction

The research design has its roots in critical realism,¹¹¹ and more specifically in examining relationship between cause, understood as imperatives, and outcomes, understood as environmental impacts as set out earlier. This is because the research is concerned with how environmental limits can be recognised in decision-making on fossil fuel extraction as measured by outcomes. To go beyond an analysis of the documentary evidence in relation to the framework, it is important to consider what has actually happened within and without a

¹⁰⁹ P M Illari and F Russo and J Williamson (eds), *Causality in the Sciences* (OUP 2011)

¹¹⁰ A Nurse, 'Law, the environment and narrative storytelling' in Naomi Creutzfeldt, Marc Mason, and Kirsten McConnachie (eds) *Handbook of Socio-Legal Theory and Methods* (Routledge 2019)

¹¹¹ B. Danermark and M. Ekström and L. Jakobsen and J.C. Karlsson, *Explaining society: Critical realism in the social sciences* (Routledge 2002)

regulatory framework, and in order to do that, the practice, the implementation reality, must be observed.

This is not solely an empirical study as it draws upon some key theories postulated in relation to decision-making that are of special interest in this research. The theories that this research attempts to engage with are:

the co-production of knowledge as described by Jasanoff,¹¹² and

the concept of planetary boundaries described by Steffen and Röckstrom et al¹¹³

These two theories lend themselves to greater insights in environmental law because it is argued that on the one hand, Jasanoff's research into co-production shows a way in which environmental law in practice can be better understood (is knowledge being co-produced or not in decision-making on fossil fuels? Why is this important?); and the concept of planetary boundaries, termed throughout this research as 'environmental limits' is one that is brought into sharp relief by current climate change law, which in itself is trying to impose a limit on emissions (to what extent does this limit matter in decision-making on fossil fuels?). **This research builds upon and contributes to existing scholarship on co-production, and on the architecture of environmental law.**

Having used the legal challenges as a conceptual framework for interrogating the evidence, the data that was elicited in the research gave rise to a series of findings, generating an inductive response. Examining the data through the challenges helped to organise the findings into *content*, considering how competences and aims shape the *content* boundaries of decision-making. By this is meant the *grist* in the mill of the decision-making process. Discovering asymmetries in the data between stakeholders is a finding that speaks to the extent to which co-production was or was not realised in terms of the substance of the matter

¹¹² Sheila Jasanoff, *Science and public reason* (Routledge 2012)

¹¹³ J Rockström and W Steffen and others, 'Planetary boundaries: Exploring the safe operating space for humanity' (2009) 14 *Ecol. Soc.* 32

both within and without the decision-making process, but also to the concept of planetary boundaries, as discussed in Chapter 5. The *context* discussed in Chapter 6 grapples with how the process affects decision-making, considered how the *context* boundaries were manifested, how process affects the ‘facts’ on which decisions are made, how it weaves power and responsibility and what impact rights have on the process. The extent to which co-production was promoted or not by process, and also whether or not limits were promoted or not by process, is a *context* question.

In Chapter 7, final reflections and conclusions on the *content* and *context* boundaries of decision making are considered in terms of their effectiveness and the findings in relation to *coherence*, where integrity was the legal challenge informing the analysis of the data. Research into the effectiveness of environmental law, such as Faure’s discussion of effective instruments,¹¹⁴ and Louka’s connecting effectiveness to ‘success’¹¹⁵, has provided inspiration for the focus on this as an assessment of environmental law, one that links to the practical, and appeals to the demand for solutions posed by the jeopardy of climate change.

The contribution that this research has made to legal scholarship on co-production and the architecture of environmental law is reflected upon.

1.2.2.2 Empirical approach

This research considers ‘what is happening’ in this practice. To understand how effective environmental law can be, it is necessary to trace what is happening in the framework. For that reason, the examination of solely documentary evidence would not have provided sufficient insight into the ‘whys’ and ‘wherefores’ as germane to the outcome. Extensive data was available through the documentation of planning and permitting decisions, with a wealth of information provided by applicants, planning authorities and respondents available through

¹¹⁴ M Faure, ‘Effectiveness of environmental law: what does the evidence tell us’ (2011) 36 William and Mary Environmental Law Policy Review 293

¹¹⁵ E Louka ‘International Environment Law: Fairness, Effectiveness and World Order’ (2007) 31 (4) Natural Resources Forum 324

online planning portals. Taking a broader empirical approach and asking questions of participants and stakeholders in the process provides an opportunity to uncover the perspectives that influence the process, as well as on what choice of information and reasoning the decision is made, what stories and views participants had.

The field research was designed to elicit insights into the operation of the decision-making, monitoring and enforcement system for unconventional fossil fuel decision-making in England in relation to sustainable development that recognises environmental limits, to add a richer insight to the documentary evidence available. In concentrating on the question of the extent to which environmental law is meeting the challenge of environmental limits it is useful to take a specific jurisdiction in order to examine the legal challenges in detail. This research concentrates on England within the UK, with some reference to Wales where a different approach is taken but within a broadly similar framework. Between England and Wales there is a close relationship in legal terms, although Wales has devolved powers on sustainable development, energy planning consent regimes and environmental protection that allows the country to diverge. This presents a comparative opportunity in terms of regulatory and policy construction as the basic legal roots are the same, and this is referred to where pertinent in exemplifying different approaches.

The location for the fieldwork was determined by both the availability and willingness of participants to take part in the research interviews, and by the locus of shale gas exploration activities. Interview participants were therefore largely drawn from the environs of Preston New Road, Roseacre Wood, and Ryedale - those who were active members of the community in the groups organising objections to the development and local councillors. In the main these are a mix of white ethnic, some retired, working to middle class segmentation, but with cultural place identities associated with Lancashire and Yorkshire respectively. A small number of participants were drawn from the South East, but no correlation or causation can be drawn from the backgrounds or locations of the research participants as these were

not structured as either a focus group or a survey. No census data was captured as part of the interview as the fieldwork was not a quantitative survey aimed at understanding segmentation and correlation.

1.2.2.3 Qualitative data collection

As previously set out, the research takes a socio-legal approach,¹¹⁶ and as such the legal challenges identified were particularly chosen to be meaningful in terms of practice.¹¹⁷

Drawing on Silverman,¹¹⁸ Kvale and Brinkman,¹¹⁹ semi-structured interviews were chosen as a methodological approach to gathering qualitative data. Silverman challenges the interview to not 'simply catalogue' what is said but to consider the context sensitively.¹²⁰

The interviews conducted as part of this research were a mixture of telephone interview for both those holding positions of authority and community activists, and interviews taking place in workplaces and neutral venues. To be cognisant of this situational and lived context (what were the participants reading, experiencing and viewing at the time of the interview) a question was asked at the beginning of the interview to understand the personal involvement of the participant in the decision-making process. This is described and reflected upon in Chapter 5 in terms of 'context' to preface the discussion on the perspectives explored on how process is shaping the outcomes of decision making procedures. Kvale and Brinkman's guide to *Learning the craft of qualitative research interviewing* is invaluable in preparing for interviews and thinking more deeply about what is 'going on'.¹²¹ What forms of knowledge are produced in the interview? What issues around consent, ethics and principles may feed into and affect the use of this knowledge?

¹¹⁶ David N Schiff, 'Socio-Legal Theory: Social Structure and Law', (1976) 39 MLR 3 287

¹¹⁷ R Banakar and M Travers (eds) *Theory and method in socio-legal research* (Hart 2005); A Bryman, *Social Research Methods* (5th edn OUP 2016); S Halliday and P Schmidt, *Conducting law and society research: reflections on methods and practices* (CUP 2009)

¹¹⁸ David Silverman, 'The Active Interview' in D Silverman (ed) *Qualitative Research: Theory, Method, and Practice* (Sage 2016)

¹¹⁹ Svend Brinkmann and Steinar Kvale, 'Epistemological Issues of Interviewing' in Svend Brinkmann and Steinar Kvale *InterViews: Learning the Craft of Qualitative Research Interviewing* (3rd edn Sage 2014)

¹²⁰ David Silverman, 'The Active Interview' in D Silverman (ed) *Qualitative Research: Theory, Method, and Practice* (Sage 2016) p82

¹²¹ Svend Brinkmann and Steinar Kvale *InterViews: Learning the Craft of Qualitative Research Interviewing* (3rd edn Sage 2014)

In 'moving beyond the official story' Roer-Strier and Sands¹²² highlight the need to be aware of the dynamics and roles that may play out in an interview, pertinent to the interviews with those in authority, who have certain competences and a legal framework to uphold, and where the topic, 'fracking' is publicly contentious. In these interviews, indicators that showed that the interview participant was cognisant and aware of the role that they held is important context in contrast to a few brief 'off the record' comments that hinted at a hidden story. Reflecting upon the levels at which the story may occur and therefore the forms of knowledge that are produced in the interview have informed the analysis of the 'content' of the decision-making process in Chapter 5. Understanding forms of knowledge and the presence of myself, or the self as the researcher, has something of heuristic research design and method attached to it. Moustakas describes beginning his research with his own 'self-awareness',¹²³ and this research too has both been informed by my own experience and is conducted as far as possible with that sense of awareness, to gain an insight into the human experiences being explored. Drawing on the theory of co-production of knowledge,¹²⁴ the interviews are intended to garner a snapshot of what the participants were thinking - with the proviso that the time, place and experience of the participant up to that point would all have influenced responses to the questions put and how the discussion flowed. However there is a partial and relevant insight that can be garnered into how the issue of fracking (as an environmental issue) was understood, and how that understanding was a result of the individual participants involvement in the decision-making process.

Informed consent was obtained by the researcher from the participants,¹²⁵ following the distribution of a participant information sheet, and an introduction to the research at the commencement of the interview. These procedures ensure that there is some

¹²² D Roer-Strier and R G Sands, 'Moving beyond the "official story": when "others" meet in a qualitative interview' (2015) 15 (2) *Qualitative Research* 251

¹²³ C Moustakas, *Heuristic Research: Design, Methodology, and Applications* (Sage 1990)

¹²⁴ A V Norström and C Cvitanovic and M F Löf, 'Principles for knowledge co-production in sustainability research' (2020) 3 *Nat Sustain* 182; Maria Lee and Lucy Natarajan and Simon Lock and Yvonne Rydin, 'Techniques of Knowing in Administration: Co-production, Models, and Conservation Law' (2018) 45 (3) *Journal of Law and Society* 427

¹²⁵ Retained by the author in a locked cabinet in line with research ethics guidance, signed consent forms in hard copy only.

communication and some response (for example there maybe questions on the research and there is affirmation through the consent form) elicited by the participant. There is also some exchange (which may differ between individuals) as to the ethics of how the research is conducted and to what end. Confidentiality in terms of participants themselves is maintained as far as possible, although anonymity is reduced by the number of participants, and the number of participants in roles of responsibility. In documentary evidence there is little anonymity as officer reports and the submission of evidence must be authored, and are publicly available on council websites. Interestingly, some evidence submitted during the public inquiry into the developments at Preston New Road and Roseacre Wood was in fact without author,¹²⁶ which caused some issues in the cross-examination of the evidence.

An ethical review process was undertaken through the University of Birmingham and formalities such as ethical approval secured,¹²⁷ participant information and consent forms designed and issued to the interviewees. The data is held on the University of Birmingham's secure data storage centre.¹²⁸

Taking an inductive approach was important in terms of allowing the data to 'speak', to draw out findings in relation to the research objective; and to derive a structure from the experiences that are present in the raw data. Therefore the research identified a series of broad topic areas with associated questions. Data findings are presented across two chapters looking at the 'content' of the decision-making process, and the 'context' of the decision-making process based on the responses gathered.

The 'meaning' of sustainable development was an important area for the qualitative data. While the documentary evidence in terms of law, policy, reports and decision notices sets out in 'black letter' meanings of sustainable development, the qualitative data explores their

¹²⁶ Researcher's personal observation as present during these inquiries.

¹²⁷ Available from the records of the College of Law, University of Birmingham.

¹²⁸ Ethics Consent available. The digital transcript information will be held in confidence at the University of Birmingham's secure data storage centre for a maximum of 10 years and 1 month from the date of the written transcript, after which date it will be deleted.

setting and interpretation.¹²⁹ It is discernible from observation that there may be different motivations and understanding behind the black letter, but the interviews provide a rich source of perspectives that brings the research closer to an understanding of the real world situation.¹³⁰ Grasping the extent of the implementation of sustainable development that recognises environmental limits means it is necessary to look beyond the documentary evidence, as much of the implementation is not documented but rather experienced.

To gather qualitative data to augment the documentary evidence, topic areas were used to 'group' and delineate areas for questions, as set out in Table 1.

Table 1 Interview Question Areas

Question	Challenge
Who, experience, background	<i>Setting – methodology</i>
Description involvement in the decision-making process	Competence, procedural rights, substantive rights
Meaning of sustainable development	Aims
Relevance of sustainable development	Integrity
Importance of sustainability	Competence, aims, substantive rights
Evidence of sustainable development Information base Sources of information	Aims, integrity
Actors	Competence, procedural rights
Gaps in information	Competence, procedural rights
Post-approval outcomes	Competence, aims, substantive rights, integrity
Advantages/disadvantages of the current process	Aims, integrity
Challenge, review of decisions	Substantive rights, procedural rights
Outcomes / Authority / sustainable development	Competence, aims, integrity
Quota or a target?	Competence, aims, integrity
Involvement Views / Influence	Procedural rights Substantive rights
Effective	Integrity
Alternatives	Competence, procedural rights, substantive rights
Comments	

¹²⁹ R Cotterrell, 'Theory and Values in Socio-legal Studies' (2017) 44 JL & Soc'y 19; R A Kagan, 'What socio-legal scholars should do when there is too much law to study' (1999) 22 JL & Soc'y 140

¹³⁰ Fiona Haines, *The paradox of regulation: what regulation can achieve and what it cannot* (Edward Elgar 2011) Chapter 2; B Golder and P Fitzpatrick *Foucault's Law* (Routledge 2009), Chapter 1

A range of perspectives were gathered during the research in the semi-structured interviews using these topic areas. Half the interview participants identified themselves as a 'member of the community' and were not professional planners or lawyers. Industry, official (regulatory bodies) and elected representatives formed the other half of the participants. Interview questions were structured around the themes of the 'meaning of sustainable development', its relevance and importance, the evidence pertaining to it and whether outcomes could be considered 'sustainable'; and the procedural aspects covering the actors involved, advantages and disadvantages of the regulatory framework, and its perceived effectiveness. Questions around implementation also therefore formed part of the interviews.¹³¹

Interviews with key stakeholders were secured with community representatives from different backgrounds, officers, councillors, civil servants, developer/private sector representatives, private sector consultants and lawyers. All interviewees were adults who consented to the interviews in confidence and agreed to the use of the data collected by way of written notes or transcript. These participants will be referred to by category in the data findings presentation e.g. community activist; regulator, industry. The planning cases in the areas where the interview participants were drawn from (Lancashire, Yorkshire and the South East) consist of publicly available data on local authority planning registers and will therefore be referred to by their official reference number.

For the fieldwork, semi-structured interviews were conducted and recorded to collect data for this analysis. Twenty-two interviews, drawn from industry, each of the relevant regulatory bodies, and laypeople who had some sort of contact with the shale gas development (this varied widely) were interviewed on the basis of a topic list. In an attempt to avoid the charge levelled by Silverman on merely wanting to understand perceptions or to derive more

¹³¹ Robert Dingwall, 'Accounts, interviews and observations' in Gale Miller and Robert Dingwall's *Context and method in qualitative research* (1997) pp. 51–65

understanding than is supported by quantitative data from the interview,¹³² the transcripts have included where possible the hesitations, the unfinished sentences, and the interviewers' own unscripted contributions. In addition, the analysis of the interview includes a long tabulation of the actual words given (quotes) that are grouped into the data coding themes. While not wanting to read too much into quotes, and mindful of too much reliance upon interview data that is not corroborated by additional focus groups, or a larger pool of participants, Silverman's suggestion to 'tie analytic elements to specific interview elements' is followed here.¹³³ In analysing the transcripts there was an iterative process. The first is the response during the interview – first impressions such as the sense that the interviewee was defending a position, or justifying a view, or expressing concern, disappointment, which questions were not answered, which questions were answered. Secondly there was the focus on the findings from the interviews,¹³⁴ that Chapter 5 and Chapter 6 set out and discuss.

Each interview was transcribed and initially broadly coded for the themes of 'sustainability', 'outcomes' and 'governance'. These themes were derived from the research questions themselves. 'Sustainability' was taken as the concept of how sustainable development in terms of addressing environmental limits was understood. 'Outcomes' focussed on 'what happened?' while acknowledging the legal and policy framework. 'Governance' was the process element. Each theme was then broken down into sub-themes that were prompted by the data findings themselves as set out in the following table (Table 2):

¹³² David Silverman 'How was it for you? The Interview Society and the irresistible rise of the (poorly analysed) interview', (2017) 17 (2) Qualitative research 144

¹³³ Ibid Table 1, adapted from Potter and Hepburn, 2012: 556

¹³⁴ Ibid Recommendations

Table 2 Data coding themes

Sustainability	Governance	Outcomes
Definition and interpretation of sustainability in relation to competences and aims	Perspectives on responsibility, power	Cumulative impact
Characteristics of sustainability	Procedural and substantive rights	Gaps – recognised and unrecognised
	Sources of information	Limits – met and unmet
Presented findings as		
'Content'	'Context'	'Coherence'

These data coding themes to draw out findings are presented across three chapters. Using colour highlights, sections of the interview transcripts or notes were colour coded and then a letter-coded within that highlight to denote the sub-theme. Some of the sections lent themselves to more than one sub-theme. Quotes have also been drawn out from the transcripts where the words effectively encapsulate a powerful, useful and succinct thrust found in the data. Whilst there is no presupposition that there is an individual participant's cognitive understanding of for example the balance between power and responsibility, it is the 'unpicking of the story' that is being told in the interview responses.

1.2.2.4 Documentary data collection

Documentary data consisting of the documentation produced within and for the decision-making process by Government, agencies, developers and lay people was also examined.

The publicly available data considered in this research is tabulated in the table below:

Table 3 Data and Sources

Type of Data	Source
Planning Applications	Developer
Environmental Statements	Developer
Officer's Report	Local authority
Council Meeting Minutes	Local authority
Media coverage	Local and national media outlets
Consultation responses	Various – agencies, public, industry
Public statements	Industry
Ministerial statements	National Government

Government legislation and policy	National Government, Welsh Government, relevant departments
Parliamentary debates	Hansard
Parliamentary reports	UK Parliament Research Service
Third sector publications	NGOs (Friends of the Earth, Greenpeace, Frack off)
Agency guidance	Environment Agency, Health and Safety Executive

Using this empirical documentary data and the interviews on the shale gas decision-making process in England, it is possible to gain an insight into how the legal framework is perceived, utilised and implemented. Outcomes have been explored through Decision Notices,¹³⁵ monitoring and enforcement activity,¹³⁶ and extrapolated from the impacts of the activity as described by the Environmental Statements.¹³⁷ Research published into the impacts of emissions from the proposed scale of fracking activity in the UK is also included as an indication of the outcome of the current system of law and policy.

1.2.2.5 Approach to the documentary and interview data

In examining the basis of decisions, the research considered the way information and evidence is produced and used in the decision-making process. Analysing the production and use of knowledge, described as evidence in the decision-making process for shale gas, requires an empirical approach, as it is the operation of the law in the real world that is under examination.¹³⁸ The premise is that to assess the effectiveness of laws in transitioning to sustainable solutions, it is essential to examine how existing laws that influence the achievement of sustainability are currently operating. Questions were posed to research participants on the information available, the sources of information, and what 'counted' or

¹³⁵ The legal document issued by the planning authority to give consent to a prescribed form of development, with conditions attached.

¹³⁶ Information garnered from correspondence, media reporting, reports produced by the local authority and interview data.

¹³⁷ Environmental Statements commonly describe the environmental impacts in some detail, covering quantitative data on amount of emissions. Kevin Anderson in his evidence to the public inquiry for Preston New Road and Roseacre Wood gave an estimate of the emissions impact of the consent of the development.

¹³⁸ Peter Cane and Herbert M Kritzer, 'Empirical Legal Research and Policy-making', in Peter Cane and Herbert M Kritzer (eds) *The Oxford Handbook of Empirical Legal Research*, (OUP 2010)

was 'of influence' in the decision-making process. Perspectives were elicited on the type, value and treatment of evidence within the process.

The processes of decisions including the relevant rights and responsibilities are crucial to understanding the social setting of legal frameworks. How people are involved, what duties authorities have and how they are carried out, who these decision-makers are, changes the outcomes of processes. Public participation has been extensively and exhaustively researched, but the purpose of the qualitative research here is not to further explore public participation theory, but to understand specifically what influence these processes and the context of these processes is having on the outcome, **and to add to the legal scholarship on co-production and the architecture of environmental law.** How, in effect, both what is within and without the process, and how the form or circumstances of the process is changing, improving, or reducing the effectiveness of environmental law in an area crucial to the recognition of environmental limits.

Any flaws or gaps that were identified and are presented here aim to help inform thinking around similar laws to become more effective and more robust at achieving sustainable outcomes. The research used shale gas extraction decisions as a case study since it is contested in terms of its environmental sustainability. Shale gas extraction in the US has proven environmental impacts, but industry points to its lower climate change impact in comparison to coal.¹³⁹ Whether or not these environmental impacts are acceptable, or can be minimised to acceptable levels, can be seen as either an objective matter in relation to environmental limits, or a political matter in relation to commitments such as the Paris Agreement.

¹³⁹ International Energy Agency (IEA) *Golden Rules for a Golden Age of Gas: World Energy Outlook Special Report* (IEA 2013)

1.2.3 Theoretical basis

As this research approached the examination of law within a social structure in which it is applied or applies, very much as described by Schiff,¹⁴⁰ the premise is that the law in this area of study, is most fruitfully understood in its social context. Described as 'law in action' by Weber,¹⁴¹ given the intimate links between fossil fuels, the economy, and society, the critical examination of decision-making in this area cannot ignore this highly political setting. How 'social solidarity' is formed, making a greater sum than its part, and how law 'catalogues' the organisation of society as theorised by Durkheim,¹⁴² where a new 'reality' is created when individuals interact, speaks very powerfully to the experience of decision-making around unconventional fossil fuels, and also lends itself to the theory of co-production of knowledge. The importance of understanding the societal and behavioural shaping of environmental policy, is advocated by Coglianese and Starobin,¹⁴³ and encouraged the use in this research of interview data, given the focus on attempting to understand the circumstances, the in-practice actualities of the decision-making process being analysed.

In this decision-making process, new realities have been created for communities before and after the advent of a shale gas development. Very different perspectives have collided and interacted in the legal decision-making framework. Much of the law as it is applied in the area of fossil fuel extraction decision-making relies upon judgement and the interpretation of policy by individuals. Decision-making on fossil fuels, placed as it is within planning law, is generally understood as a value-based system.¹⁴⁴ Planning law is also characterised by its discretionary nature. That means that there is a high importance placed on judgement as made by individuals, shaped by their own experience, and interpreting their competences and responsibilities, bringing their own knowledge and the extent to which they are informed

¹⁴⁰ David N Schiff, 'Socio-Legal Theory: Social Structure and Law' (1976) 39 MLR 287

¹⁴¹ M Weber, *Law and Economy in Society* (Harvard University Press 1954)

¹⁴² R Cotterell, 'Law, Morality and Solidarity: The Durkheimian Tradition' in R Cotterell *Law's Community* (Clarendon Press 1997)

¹⁴³ Cary Coglianese and Shana M Starobin, 'Social Science and the Analysis of Environmental Policy' (2020) 37 (5) *Review of Policy Research* 578

¹⁴⁴ H Thomas (ed), *Values and Planning* (Routledge 2017)

by others. To ignore this facet of the decision-making process would be to fail to acknowledge the intensely sociological context.

The following theoretical questions are prompted by the socio-legal approach to the research:

To what extent does 'law in action' frame a focus on the function of law?

How can the contrasts between the law and outcomes be explored?

What is the relationship between critical realism and 'law in action'?

To examine fossil fuel extraction as 'law in action', the data is drawn both from documentary analysis consisting of the primary and secondary legislation, policy and plans at national, regional and local level, and legal decisions both planning consents, permits together with empirical data. The empirical data is drawn from research data collected in a series of qualitative interviews with participants involved in the regulatory framework at different levels and in different areas. In taking an inductive approach, my focus has been on the open questions around the big picture issues that arise out of the local development decision-making system. These big picture issues of competence, aims, procedural and substantive rights need to be explored through the way they are enacted on the ground, in particular places and concepts. Drawing on that, the research can identify universalities and commonalities in terms of themes, and also identify what is individual experience. Hermeneutics suggest that the 'interpretation of meaning' that the participants engage in through decision making process, as described by Bleicher,¹⁴⁵ is that it is important to understand 'how we understand'. Bleicher discusses how 'meaning' is discovered and how it is formed, drawing on philosophical and historical roots. The search for 'meaning' is continually evolving and when searching for meaning through socio-legal research, it is important to be mindful of the limitations to understanding the 'meaning' as experienced by

¹⁴⁵ J Bleicher, *Contemporary Hermeneutics: Hermeneutics as Method, Philosophy and Critique* (Routledge 2019)

others. Assuming a heuristic approach, given the need to understand the ‘meaning’ of the lived experience, and as Moustakas explains,¹⁴⁶ the need to recognise the ‘self’ in the investigation process that I have undertaken, is background to the examination of the data findings and conclusions drawn in Chapter 5 and 6.

Law in abstract does not predict or guarantee outcomes necessarily. Both stochastic and deterministic structures can be identified in relation to the fossil fuel extraction framework in England and Wales. A stochastic model possesses some inherent randomness,¹⁴⁷ whilst a deterministic model is bound by its perimeter values,¹⁴⁸ such as can be seen in the regulation of single use plastics.¹⁴⁹ The stochastic versus deterministic model is an attempt to characterise the properties of the regulatory framework that is the subject of this research, and to which the insights from the data findings have relevance.

Therefore, there is a need to look at the governance (the manner in which the laws are applied) and the social context. Governance in this sense is not meant as only politics, or administration, but the relationships between the ‘governors’ and the ‘governed’.¹⁵⁰

Critical realism as posited by Bhaskar¹⁵¹ supports an analysis of fossil fuel decision-making and whether it recognises environmental limits, in that the observed scientific reality of climate change emissions and impacts, are independent of the law that governs the process and the perspectives of those involved. Bringing together Bleicher’s ‘meaning’, Moustakas ‘discovery’ and the objectivity found in Bhaskar, the approach is to use semi-structured interviews as a discovery method, to find a set of meanings, and to do this in the understanding that there is the objective reality, and the reality created by the process.

¹⁴⁶ C Moustakas, *Heuristic Research: Design, Methodology, and Applications* (Sage 1990)

¹⁴⁷ Oxford English Dictionary

¹⁴⁸ Oxford English Dictionary

¹⁴⁹ T Herberz and C Y Barlow and M Finkbeiner, ‘Sustainability assessment of a single-use plastics ban’ (2020) 12 (9) Sustainability 3746

¹⁵⁰ Bob Evans and Marko Joas and Susan Sundback and Kate Theobald, *Governing Sustainable Cities* (Earthscan 2005)

¹⁵¹ M Archer and R Bhaskar and A Collier and T Lawson and A Norrie, *Critical Realism Essential Readings* (Routledge 1998)

My own experiences in land use planning¹⁵² has led me to the view that the discretionary nature of the system as described by Cullingworth and Nadin,¹⁵³ and the fact that judgement is involved, means that each decision is shaped by its own unique set of circumstances. It is therefore necessary to consider the ‘why’ behind the decision, to understand how the regulatory framework is implemented. Factors influencing the manner in which the framework is implemented are explored in the empirical data. These factors include the ‘why’ such as political views, political pressure, public interest, and individual perspectives. It is the intersection between these legal objectives in the UK, the role of procedural rights in securing outcomes, and the broader justice framing of substantive environmental rights as a basis for sustainable development that is the focal point of this research.

1.2.4 Research Questions and Structure

The thesis is divided into seven chapters. Each chapter will answer one or more research questions and related supplementary questions.

Examining the substantive matter, the *content* of fossil fuel extraction decision-making process is assisted by considering both the documentary evidence and the views of the participants in the process. The same is true of examining the *context* of the decision-making process – how the way it is structured as a procedure is described in the documentary evidence and how it is perceived by the participants in the process.

Chapter 2 is an exposition of the regulatory controls for fossil fuel extraction in England and for some comparison, Wales, and briefly addresses the concepts that this research is concerned with – the nature of authority and government; the concept of sustainable development; governance, power and responsibility; and how regulation is constructed. The research question being answered is ‘what is the regulatory framework for fossil fuel extraction?’

¹⁵² Previously Senior Planner at Friends of the Earth England, Wales and Northern Ireland.

¹⁵³ B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

Chapter 3 examines the competences and aims found in the legal framework, with a particular focus on the climate change mitigation aim. The research question being answered is 'what competences and aims exist within this regulatory framework?'

Chapter 4 addresses the challenges of substantive rights and procedural rights in relation to fossil fuel extraction in England. It will examine the extent to which these rights exist and the manner in which they are applied. The research question being answered is 'what are the substantive and procedural rights that exist within this regulatory framework?'

These chapters ask questions that are more descriptive and explanatory of the regulatory framework, albeit in a 'law in action' context in which the workings of the law are viewed rather than its claims. These help shape the ideas of content and context that follow.

Chapter 5 will then turn to the first part of the data findings, and consider how the *content* of decision-making is drawn as informed by the legal challenges presented by competences and aims. The findings are presented as responses to the following questions:

How do the 'content' boundaries shape the decision-making process?

What are the asymmetries that exist in relation to content?

Chapter 6 will consider how the *context* of decision-making influences the outcomes of decision-making in the second part of the data findings, as informed by the legal challenges presented by substantive and procedural rights. The findings are presented as responses to the following questions:

How does process affect 'reality and truth' in decision making on the extraction of fossil fuels?

How does process weave power and responsibility?

How do procedural and substantive rights shape process?

Having evaluated and asked more directed questions, Chapter 7, the final chapter consolidates the answers to these questions by way of conclusion:

How does the *content* of decision-making augment or diminish the effectiveness of regulation?

How does the *context* of decision-making augment or diminish the effectiveness of regulation?

How coherent is environmental decision-making?

This final chapter engages with the legal challenge of integrity across the regulatory framework as examined and draws conclusions as to the extent to which limits matter in decision-making, adding a number of insights to legal scholarship. These questions shape the response to the key research question of:

To what extent are environmental limits recognised in decision-making on hydrocarbon resource extraction?

1.3 Summary

The aim of the research was to identify any gaps or weaknesses of the regulatory framework and its application in practice that was affecting the basis on which decisions were being made and changing outcomes. Given the climate and ecological crisis it is an urgent question for society to answer on whether our law is fit for purpose. Is this regulatory framework capable of recognising degrees of change and therefore successfully respecting environmental limits?

Based on the scientific understanding of climate change impacts, and examining the reality within decision-making directs the research to the exploration of meaning, and through that discovery to understand how competences, the implementation of aims, and the exercise of rights all contribute to outcomes. Power and responsibility play out in decision-making, shining a light on the governance relationship. The extent to which both power and

responsibility assumed or otherwise is important in whether or not environmental limits are recognised in outcomes. To understand how decision-making works in order to answer the question of whether the current system is capable, the system must be examined as it is operated and realised. Decisions are made in social contexts and an attempt is made here to understand that social context through the sources available including the documentary evidence and the interview transcripts.

The reason for examining how the system is operated and realised, is that the extent to which there is recognition of environmental limits is brought to the fore by the powerful idea that arose from both my own experience and the research findings presented here. This is that project after project, each with an ecological footprint, adds to an overall cumulative impact, for which there is no accounting mechanism within the current legal framework, and that those engaged with and affected by the legal framework are contending with this existential problem. Given the recognised issue of cumulative impact in terms of environmental damage,¹⁵⁴ the question of the present and embedded environmental consequences of decisions now, and how they may determine the future, is a key premise to understanding the integrity and effectiveness of environmental law.

¹⁵⁴ J A E Blakley, *Handbook of Cumulative Impact Assessment* (Edward Elgar 2021)

Chapter 2: Regulatory controls for fossil fuel extraction

2.1 Introduction

In this chapter, the legal framework for fossil fuel extraction in England is set out as context for the research. As explained in the research methodology, the research is concerned with the key question of how planetary boundaries (environmental limits) are recognised by the regulatory framework, and how the co-production of knowledge (as theorised by Jasanoff)¹⁵⁵ contributes or not to the recognition of environmental limits. To make that analysis, an understanding of how the framework is constructed is required. That means both the rules and the policies and how that shapes the 'content' and the 'context' of decisions. Where useful to provide comparison for the regulatory framework, for instance to exemplify how different approaches may be taken, elements of the framework in Wales are also referred to.

While there has been one main political party in power at UK Government level from 2010 to 2022, notwithstanding this, ideologies have shifted,¹⁵⁶ new environmental research and findings have come forward, and social movements have been born.¹⁵⁷

The nature of authority and government in relation to competence are surveyed, to provide context from the literature for the qualitative data elicited through the interviews with those in positions of authority in the legal framework. The nature of the concept of sustainable development is also surveyed to understand the setting for the aims as found in the legal framework. As power and responsibility are assigned through the framework to decision-makers, and participants in the process, the lay publics, these notions are also reconnoitred.

There are a number of regimes for sustainable development and environment, energy and planning regulation in England and Wales that apply to fossil fuel extraction. In this research they are referred to as 'the legal framework', but in effect are a series of different regimes.

¹⁵⁵ S Jasanoff, *Science and Public Reason* (Routledge 2012)

¹⁵⁶ B Williams, 'The 'New Right' and its legacy for British conservatism' (2021) *Journal of Political Ideologies*

¹⁵⁷ *Fridays for the Future* </fridaysforfuture.org/> last accessed November 2021; Extinction Rebellion </rebellion.global/> last accessed November 2021

These regimes are governed by primary and secondary legislation, some of which is required by European law.¹⁵⁸ Planning law predates the UK's membership of the European Union, with the basic principles of the system still in existence today brought in as part of the socialist post-war settlement.¹⁵⁹ This Chapter sets the scene for the field work research and case study exploration, focussing on the exposition of the regulatory controls.

2.1.1 Background to fossil fuel extraction regulation

Historically, the UK as a nation has been a leader in fossil fuel extraction, dating from the explosion in energy use attached to the Industrial Revolution in manufacturing and production.¹⁶⁰ Industrialisation led to urbanisation, and land-use planning was brought in to mitigate and prevent the externalised impacts from uncontrolled market-led development.¹⁶¹ Public health issues, as a result of poor sanitation arising from rapid urbanisation, were a driving force behind the need to control unplanned development driven by the market.¹⁶² Legislation developed around public health, and subsequently around new towns that needed to accommodate burgeoning populations. Land use planning was a conscious political attempt to secure public goods for these new and extensive communities and to deal with environmental issues that impacted upon society, driven by the capitalist market economy.¹⁶³ Climate change impacts as a result of fossil fuel extraction and use are driven by the same capitalist market economy, which has spread across the globe.¹⁶⁴ Planning legislation is considered a powerful legal instrument that can be used to manage the market.¹⁶⁵ By the end of the Second World War, the socialist Labour Government was able to

¹⁵⁸ European Union (Withdrawal) Act 2018

¹⁵⁹ Town and Country Planning Act 1947

¹⁶⁰ W J Ashworth, *The industrial revolution : the state, knowledge and global trade* (Bloomsbury 2017)

¹⁶¹ B Cullingworth and V Nadin, *Town and Country Planning in the UK* (14th ed. Routledge 2006)

¹⁶² B Cullingworth and V Nadin, *Town and Country Planning in the UK* (14th ed. Routledge 2006)

¹⁶³ *Ibid*

¹⁶⁴ H A Baer, *Global capitalism and climate change : the need for an alternative world system* (AltaMira Press 2012); Rebecca M Henderson, 'We Don't Have to Ditch Capitalism to Fight Climate Change' (*Harvard Business Review* 24 September 2014) < <https://hbr.org/2014/09/we-dont-have-to-ditch-capitalism-to-fight-climate-change> > Last accessed November 2021

¹⁶⁵ H W Richardson and P Gordon, 'Market Planning Oxymoron or Common Sense?' (1993) 59 (3) *Journal of the American Planning Association* 347

enact a radical new settlement regarding the use and development of land in England and Wales.

In 1947 the Town and Country Planning Act came into being, nationalising the right to develop land, making arrangements for compensation to private landowners who 'lost' this right,¹⁶⁶ and for betterment to be secured.¹⁶⁷ The Town and Country Planning Act 1947 forms the broad foundation for the regulatory approach across the UK in terms of general principle of rights over development;¹⁶⁸ and the Town and Country Planning Act 1990 sets out the common meaning of development,¹⁶⁹ the form and operation of planning applications and decision-taking.¹⁷⁰ This legal concept of the nationalisation of the right to develop to remains in force,¹⁷¹ although it is now under pressure from neo-liberal policy-makers at the heart of the UK Government,¹⁷² and significant expansion of permitted development rights in England.¹⁷³ In this broad frame for land use planning legislation, hydrocarbon minerals regulation is also found. Planning regulates development 'under land',¹⁷⁴ and this includes hydrocarbon minerals or fossil fuels.

The regulatory system in England for fossil fuel exploration and extraction onshore is not uniform in terms of either policy approach or regulatory requirements. Historical factors and devolution have resulted in a patchwork of systems across the UK, that continues to diverge as political aspirations and political contexts change. Wales and Scotland have had devolved planning powers since 1999,¹⁷⁵ and have established different approaches to fossil fuel extraction. Consent for minerals lies with the Town and Country Planning Act 1990 in England, with a devolved and amended version for Wales. Consent for power stations under

¹⁶⁶ Town and Country Planning Act 1947

¹⁶⁷ A Andrew and M Pitt and M Tucker, 'The evolution of betterment in the United Kingdom' (2007) 6 (4) Journal of Retail & Leisure Property 273

¹⁶⁸ Town and Country Planning Act 1947 s.12

¹⁶⁹ Town and Country Planning Act 1990 s.55

¹⁷⁰ Town and Country Planning Act 1990 s.70-75

¹⁷¹ As of 2021

¹⁷² J Airey and C Doughty, *Rethinking the Planning System for the 21st Century* (Policy Exchange 2020)

¹⁷³ *Rights: Community: Action v Secretary of State for Housing, Communities and Local Government* [2021] EWCA Civ 1954

¹⁷⁴ Town and Country Planning Act 1990 s.55

¹⁷⁵ National Assembly for Wales (Transfer of Functions) Order 1999; The Scotland Act 1998 (Commencement) Order 1998

50MW¹⁷⁶ is also controlled by the Town and Country Planning Act 1990. Consent over for energy projects larger than 50MW in England, and over 100MW in Wales, is decided under the Planning Act 2008 by the relevant Secretary of State, in a process conducted by a part of the Planning Inspectorate England and Wales.

Public policy in England has been openly supportive of unconventional fossil fuels since 2012,¹⁷⁷ while the industry gained its first permissions in 2009 in England.¹⁷⁸ Regulatory requirements have diverged as a call-in procedure has been introduced in Wales to allow Welsh Ministers rather than local councils to determine hydraulic fracturing applications,¹⁷⁹ and then latterly to refuse to issue licences¹⁸⁰ under a restrictive climate based planning policy.¹⁸¹ More recently the Welsh Government issued a new ministerial statement to spell out the climate change mitigation context for any coal extraction decision.¹⁸² The Scottish Government made its lack of support for hydraulic fracturing (fracking) clear in a position statement in October 2017.¹⁸³

Coal has not received support in terms of coal-fired power stations since the announcement of the phase out in England in 2017.¹⁸⁴ Most recently the rejection of the *Highthorn* coal mine¹⁸⁵ confirms that the future of extraction for energy generation in England is dim. The recent controversy around the Cumbrian coal mine at Whitehaven has brought the UK Government's international standing for COP26 and the issue of exporting coking coal to the fore. Friends of the Earth argued in the *Highthorn* case that coal extracted is always an

¹⁷⁶ MW = Mega watt of energy

¹⁷⁷ HC Deb 13 December 2012, vol 555, cols 44-52 WS

¹⁷⁸ Cuadrilla Resources Ltd, *Temporary change of use from agriculture to construction of a drilling platform upgrade of farm track and removal of hedges to create one of three passing places drilling of exploratory borehole and testing for hydrocarbons* (Lancashire County Council: Application Ref No 05/09/0572, 2009)

¹⁷⁹ Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

¹⁸⁰ The Town and Country Planning (Notification) (Unconventional Oil and Gas) (Wales) Direction 2015 (nawm 1)

¹⁸¹ Welsh Government, *Planning Policy Wales Edition 10* at para 5.10.11

¹⁸² Lesley Griffiths, Minister for Environment, Energy and Rural Affairs, *Written Statement: Coal Policy statement* (WMS 22 March 2021)

¹⁸³ DBEIS, *Unconventional Oil and Gas* (Guidance 2017)

¹⁸⁴ DBEIS, *Implementing the End of Unabated Coal by 2025 Government Response to unabated coal closure consultation* (Government Response 2018)

¹⁸⁵ Ministry for Housing Communities and Local Government (MHCLG) Town And Country Planning Act 1990 – Section 77 Application made by HJ Banks & Company Ltd Land At Highthorn, Widdrington, Northumberland NE61 5EE Application Ref: 15/03410/CCMEIA Decision Notice, 8 September 2020

additional source, as there is no axiomatic reduction in extraction e.g. in Colombia if coal is also extracted in the UK. There is no legal link between the extraction consents. The economic arguments about supply range across the question of price (and whether greater supply decreases price and therefore increases use) to whether the extraction itself will be dependent on operators being able to achieve a sale price that makes economic sense for their business. However these arguments are made, it can be observed that coal continues to cling on as a fossil fuel present in the UK economy. In Wales, the Nant Llesg¹⁸⁶ mine was refused by the local council, and in the committee debate climate change was raised as an issue. The Welsh Government changed their policy on coal,¹⁸⁷ due to extensive public pressure from communities living with unrestored coal mines,¹⁸⁸ and Friends of the Earth's campaigning.¹⁸⁹ Conventional oil and gas remains supported by the UK Government, through subsidies,¹⁹⁰ and a regulatory framework designed to 'maximise the economic recovery', and the devolved nations remaining broadly in favour of continuing to support the existing oil and gas fields where they are already operational.¹⁹¹

Within the UK, the systems of regulatory consent retain commonalities, stemming from a shared starting point in terms of concepts of ownership and development consent in the early twentieth century planning legislation as aforementioned. The concept of the ownership of hydrocarbon minerals in the 'Crown Estate' is a long-held principle.¹⁹² This has led to the legal framework of issuing licences to operators (i.e. developers who wish to extract the hydrocarbon minerals).

¹⁸⁶ Caerphilly County Borough Council, Refusal of Planning Permission Application No. 13/0732/MIN, 7 August 2015

¹⁸⁷ Welsh Government, *Planning Policy Wales Edition 11* at para 5.10.14

¹⁸⁸ Wardell Armstrong, *Welsh Government Coal Extraction in Wales: The Existing Impact Evidence* (2019)

¹⁸⁹ Personal observation.

¹⁹⁰ Oil Change International & Friends of the Earth U.S., *Past Last Call: G20 public finance institutions are still bankrolling fossil fuels* (2021)

¹⁹¹ National Statistics, *Digest of UK Energy Statistics (DUKES)* (2019)

¹⁹² DBEIS, *Mining and quarrying in the UK* (Policy Paper 2019)

The history of energy extraction in the UK began with private enterprise,¹⁹³ became nationally-owned in the post-war period¹⁹⁴ and then was re-privatised in the 1980s. British Gas was privatised by the then Prime Minister Margaret Thatcher in 1986,¹⁹⁵ followed by the privatisation of the 12 regional electricity companies in England and Wales in the late 1990s.¹⁹⁶ The other national energy suppliers and the National Grid (the transmission system) soon followed. Privatisation meant that new regulation came in around the energy market, with a new regulatory body – Ofgem.¹⁹⁷ This research is not concerned with the regulation of the energy market, but with the regulation of fossil fuel extraction, but the fact that the operators and extractors of fossil fuels are private enterprises is relevant, as they are governed by company law, and therefore the framework controlling extraction is where the relevant environment law is found. If the extraction of fossil fuels was a public activity, then other laws would then govern the behaviour and influence the aims of those operators in a different way. With this context in mind, namely the evolution of the regulation of fossil fuel extraction, the elements of the regulatory framework that make up the provisions aimed at delivering sustainable development that recognises environmental limits are now scattered across different legislation and authorities, with different historical antecedents. Before the framework explored in detail, it is important to turn to the nature of authority and government as this is relevant to the discussion of competences and aims.

2.1.2 The nature of authority and government

Locke in his *Treatises of Government*, propounds that it is 'by consent that government is formed, and that it is by majority that it governs'.¹⁹⁸ The idea that it is by consent that government rules over society is still current in political and public discourse.¹⁹⁹ Primary law-making in the UK is led by the Government and follows specific parliamentary procedures.

¹⁹³ S Pain, 'Power through the ages' (2017) 551 (7682) *Nature* S134

¹⁹⁴ The Coal Authority; The Coal Industry Nationalisation Act 1946

¹⁹⁵ The Gas Act 1986

¹⁹⁶ L Thomson, 'The financial and accounting implications of the privatization of the regional electricity companies in the UK' (1993) 3 (1) *Utilities Policy* 9

¹⁹⁷ Ofgem < [//www.ofgem.gov.uk](http://www.ofgem.gov.uk) > Last accessed November 2021

¹⁹⁸ J Locke, *Two Treatises of Government*, 1689

¹⁹⁹ J Kleidosty and I Jackson, *An Analysis of John Locke's Two Treatises of Government* (Routledge 2017)

Parliament interacts with Government to produce the rules by which society is then governed. By creating law through Parliament, and having the basis of an elected majority in the House of Commons for the Government, this authority, and the social consent for this authority, is then broadly recognised by society.²⁰⁰ From this basic premise comes the authority that is assigned to decision-makers, who then make decisions based on the laws that are adopted through this process.²⁰¹ The connection between societal consent and rules arguably becomes weaker when it comes to secondary legislation rather than primary legislation, and when it comes to policy rather than secondary legislation. This is because the accountability and democracy processes attached to the production of these rules become weak, or even non-existent, and therefore the sense of consent that attaches to these rules likewise becomes weaker in societal perception. The public and political swirl around the development of fracking comprising of sites, places, people, values, and issues is one that has challenged the idea that social consent continues to rest with the government.²⁰²

Many activists refer to the social licence 'being broken',²⁰³ in relation to the extraction of unconventional fossil fuels. Instances of this breaking of social licence may be seen in the Governments' attempt to impose some changes and rules without accountable consultation procedures, and without robust parliamentary processes attached. These actions attracted both a legal challenge and negative media coverage.²⁰⁴ The extent to which authority is diminished without a social licence may be evidenced by the refusal of fracking developments by local council members against officer advice. This fracturing of authority is

²⁰⁰ P Dunleavy and A Park and R Taylor (eds), *The UK's changing democracy: the 2018 Democratic Audit* (LSE Press 2018)

²⁰¹ Rawlings, R., Leyland, P., Young, A. L., *Sovereignty and the law : domestic, European, and international perspectives* (2014) Oxford : Oxford University Press

²⁰² Janet Newman, 'Governing the present: activism, neoliberalism, and the problem of power and consent' (2014) 8 (2) *Critical Policy Studies* 133; M Bradshaw and C Waite, 'Learning from Lancashire: Exploring the contours of the shale gas conflict in England' (2017) 47 *Global Environmental Change* 28

²⁰³ J Andersson-Hudson and W Knight and M Humphrey and S O'Hara, 'Exploring support for shale gas extraction in the United Kingdom' (2016) 98 *Energy Policy* 582

²⁰⁴ *Stephenson v Secretary of State for Housing, Communities and Local Government* [2019] EWHC 519 (Admin)

an observed result of public protest and dissent, collectivised and organised by non-governmental organisations.²⁰⁵

Research in the US by Robinson et al²⁰⁶ highlights the importance of 'legitimacy' stating that once this is 'undermined' then the ability to tackle environmental issues is 'degraded'. While their research examined the role of the Environmental Protection Agency (EPA), their point that trust is based on 'doing something' is relevant to this research. The Government are supposed to be 'doing something' on climate change mitigation, but that does not seem to be 'done' when it comes to the further extraction of fossil fuels. Notwithstanding the situational and political contexts for the nature of authority in relation to government as apparent in the regulatory framework for fossil fuel extraction, this research proceeds on the basis that government retains a recognisable sense of authority, but that this authority is challenged on occasion if it is perceived to have acted unfairly (not done something).

The idea of competence is one that is crucial to understand in relation to the research question of the extent to which environmental limits are recognised in decision-making. This is because it describes how decision makers act, having accepted they have the authority to do so, and that they inhabit the role of government, be that at national government level, local government level, or as agencies that carry out public services governed by specific acts of legislation. This research does not examine the different roles and levels of trust afforded to the different entities, but instead takes a rather simpler view of authority that looks at a selection of what each authority has done in the decision making process through documentary evidence.

The sphere of competence that is accorded to different authorities is determined by the law allowing that an authority is competent to act. Competency can also be fluid, and this is

²⁰⁵ B Warner and J Shapiro, 'Fractured, Fragmented Federalism: A Study in Fracking Regulatory Policy' (2017) 43 (3) *Publius: The Journal of Federalism* 474

²⁰⁶ S E Robinson and J W Stoutenborough and A Vedlitz, *Understanding Trust in Government: Environmental Sustainability, Fracking, and Public Opinion in American Politics* (Routledge 2017)

further explored by the interviews with the holders of authority in the fossil fuel decision-making process in this research. The competence of authority and government is questioned through this research in two ways – one through the acquisition and assignment of competence; and the second through the basis of competence, particularly in relation to technical expertise and the evidence upon which decisions are made.

2.1.3 The concept of sustainable development

Sustainable development is understood for the purposes of this research as the international definition adopted in the Rio Declaration in 1992.²⁰⁷ Sustainable development is also the preferred legal and policy term that is present in this regulatory framework. In 2021, the main policy document for England, the National Planning Policy Framework (NPPF) adopted references to the Sustainable Development Goals.²⁰⁸ Sustainable development has such a fluid definition in practice; that any one development decision often results in claims of unsustainable development by one set of stakeholders in opposition to the claims of sustainable development from another set of stakeholders. This is observable in the media commentary on unconventional gas decisions in the UK.²⁰⁹ There are legal provisions and policy provisions in the relevant legal framework, but even these allow for broad interpretation. From the field research a snapshot of various views and opinions that interpret the framework or bring in personal understandings were uncovered. Despite this confusion, in some cases seen as deliberate confusion,²¹⁰ this research acknowledges the fluidity of the concept, and the complexity this causes when attempting to assess whether sustainable development is capable of being achieved. The key test upon which this research has alighted is therefore what extent sustainable development *that recognises environmental*

²⁰⁷ United Nations Rio Declaration (1992)

²⁰⁸ MHCLG *National Planning Policy Framework* (Planning Guidance, 2021) as amended in 2021, Footnote 4 and 5

²⁰⁹ J Matthews and A Hansen, 'Fracturing Debate? A Review of Research on Media Coverage of "Fracking"', (2018) 3 *Frontiers in communication*

²¹⁰ D A McEntire, 'The history, meaning and policy recommendations of sustainable development: a review essay' (2005) 4 (2) *International Journal of Environment & Sustainable Development* 1

limits is part of the legal framework, and contributing overall to the effectiveness of environmental law pertaining to fossil fuel extraction.

Sustainable development as a global concept was developed and refined by opinion-formers, researchers and policymakers in recognition of how human societies were irreparably damaging and changing the natural environment on the planet following growing international concern that was shared through emerging international bodies following the two world wars. Arguably, the roots of the concept can be traced back to von Humboldt's visionary work of the early 1800s describing the impact of colonisation on ecosystems and the balance within systems.²¹¹ Sustainable development culminated in a recognisable international form in the work of the Brundtland Commission.²¹² Tangible 'sustainability', or protecting the 'integrity of the Earth's ecosystem' as the UN Declaration describes it,²¹³ still eludes countries, despite the proliferation of duties and rights globally.²¹⁴ The widespread failure at international²¹⁵ and country level²¹⁶ to react to the environmental impacts felt by many communities and individuals, for example from fossil fuel extraction, shows that while the case for recognising environmental limits as part of sustainable development may be aspired to in international agreements,²¹⁷ the reality can be very different.²¹⁸

The gap between the concept of sustainable development that recognises environmental limits, and the actual environmental impact of a development consented 'on the ground' gives some indication of the effectiveness of regulatory frameworks that purport to enforce this concept such as the NPPF. In the UK, the evolution of policy on sustainable development has also waxed and waned, in retrospect perhaps peaking with the UK Sustainable Development Strategy of 2005,²¹⁹ but since then struggling to find purchase in

²¹¹ L D Walls, 'Rediscovering Humboldt's environmental revolution' (2005) 10 (4) Environmental History 758

²¹² Gro Harlem Brundtland (Chair), *Our Common Future* (OUP 1987)

²¹³ United Nations Rio Declaration 1992, Principle 7

²¹⁴ D R Boyd, 'The Global Emergence of Constitutional Environmental Rights' (2018) 18 (4) Global Environmental Politics 132

²¹⁵ The Fossil Fuel Non-Proliferation Treaty, Last accessed: [<https://fossilfuel treaty.org/>]

²¹⁶ F Green, 'The logic of fossil fuel bans' (2018) 8 Nature Climate Change 449

²¹⁷ United Nations Rio Declaration 1992

²¹⁸ D Welsby and J Price and S Pye et al, 'Unextractable fossil fuels in a 1.5 °C world' (2021) 597 Nature 230

²¹⁹ HM Government, *Securing the Future* (Policy paper, Cm6467, 2005)

development decisions as policy and legislation was reformed.²²⁰ Fossil fuel extraction development decisions exemplify this issue, encapsulating the struggle between avowed sustainability that recognises environmental limits, and the inherent environmental impact of extraction, especially with regard to climate change.

In practice, as Ross points out: the 'Brundtland definition can be used to legitimise often conflicting solutions'.²²¹ This is the definition upon which planning decisions are based in England in a broad sense. It is also in Ross's view a definition that is 'sufficiently ambiguous to enable each of the main interest groups to interpret sustainable development in ways that reflected their own agenda', a point on which Fischer and Hajer agree.²²² Fischer and Hajer argue that it is not the 'metaphor of 'sustainable development' in itself that leads environmental politics astray. Rather, it is with the interpretation of its meaning, in particular the fact that it does not compel existing institutions to reconsider the normative and cultural assumptions and premises underlying their operational practices'.²²³ This is certainly evident in the treatment of the concept of sustainable development in planning law in England for example, where the strongly worded policies centre on the need for development (growth), and environmental policy in comparison is weak and unenforceable (limits).²²⁴ Fischer and Hajer propose that we look closer at our 'cultural practices' in order to create 'new options for political action' in the 'search for efficient solutions'.²²⁵ This speaks clearly to the nature of sustainable development governance, where decisions are informed by the values and milieu in which the decision-makers find themselves, and in terms of such contentious developments as unconventional fossil fuels, that are highly political and public, could lead to re-interpretations of the meaning of sustainable development on a case by case basis.

²²⁰ B Clifford and J Morphet, 'A policy on the move? Spatial planning and State Actors in the post-devolutionary UK and Ireland' (2015) 181 (1) *The Geographical Journal* 16

²²¹ Andrea Ross, *Sustainable development law in the UK: from rhetoric to reality* (Earthscan 2012)

²²² F Fischer and M Hajer, *Living with Nature: Environmental Politics as Cultural Discourse* (OUP 1999)

²²³ *Ibid*

²²⁴ R A Howell, 'UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy.' (2018) 113 *Energy Policy* 721

²²⁵ F Fischer and M Hajer, *Living with Nature: Environmental Politics as Cultural Discourse* (OUP 1999)

Sustainable development is thus a troubled concept. But it is the concept that is present in the legal framework that applies to fossil fuel extraction decisions. The recognition of environmental limits as an effective measurable part of the concept is at the foundation of this research inquiry. It is a concept that this research will revisit – in relation to the ‘black letter’ aims that are set out in law and policy in this Chapter, and in the following Chapter 3, how substantive environmental rights may play a role in augmenting and strengthening the concept. Through the field research, participant views on sustainable development have been elicited and will be considered in Chapter 4 on the ‘content’ boundary of the decision making process.

2.1.4 Governance, power and responsibility

Having considered the nature of authority and government, and the concept of sustainable development, the third set of issues that is relevant to this research on decision-making and related to both of these issues, is governance, power and responsibility. If the nature of authority is such that it is assigned and held through democratic processes, and the concept of sustainability is one that requires interpretation and application by those in authority, the idea of governance is to explore the relationship between the governors (those in authority) and the governed (those subject to the authority or affected by the authority). In that relationship, ideas of power and responsibility become important. Power comes with authority, but power also lies elsewhere, borne from expertise or activism. In this Chapter the exploration of power in governance is connected to where the different responsibilities lie in connection with spheres of competency. The legal framework assigns competences to authorities, wherein lies power. It also assigns substantive purpose through the aims to the authorities, which gives certain ideas greater or lesser weight in the balance of decision-making – a different sort of power.

While governance, as in the interaction between the governed and governing, is shaped by the legal framework, it is not the whole story. Content, process and interactions are shaped

by this legal form, but as this research investigates, there is the messy reality to contend with of how in practice decisions are made and outcomes reached. Therefore in this Chapter the focus is on exploring the competences and aims, while Chapter 5 explores further the ideas of governance, power and responsibility drawing on the empirical findings.

2.1.5 The construction of regulation and its effectiveness

Having chosen the concept of sustainable development that recognises environmental limits for the purposes of this research, the construction of regulation is an important factor in examining the extent to which a regulatory framework is effective in achieving either a desired or a necessary outcome. In this research, as the key research question is asking in broad terms whether environmental law has failed, it is necessary to ask whether the construction of the regulation is at fault in terms of effectiveness. For example it may be that there are gaps where a substantive matter is not being regulated at all, as often happens with the development of new technologies.²²⁶ Unconventional fossil fuels are distinguished from conventional fossil fuels by being sourced from different geological strata, in a way that incurs different impacts and utilises different technology. Much regulation may be extrapolated from the regulation of conventional extraction to unconventional extraction, as happened in the UK and in many other countries. However it is an obvious response to consider whether new, bespoke regulation is required, either specifically or in terms of framework change, such as Fleming suggests.²²⁷

Competences and aims concerning sustainable development and environmental protection are assembled by the regulatory framework. Identifying the competences of the relevant authorities in environmental decision-making requires an examination of what powers, duties and responsibilities are afforded to these authorities. Sustainable development and environmental protection aims are similarly spelt out in the relevant law and soft law. Setting

²²⁶ E Stokes and S Smismans, 'Innovation types and regulation: the regulatory framing of nanotechnology as "incremental" or "radical" innovation' (2017) 8 (2) *European Journal of Risk Regulation* 364

²²⁷ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

out this regulatory framework is an important basis for a critical examination of its structure and outcomes.

In this critical examination, the concept of the 'effectiveness' of the framework in achieving outcomes, what is meant in this research by effectiveness in outcomes is surveyed.²²⁸

Hardin's seminal essay on 'The Tragedy of the Commons'²²⁹ opened the thinking in this research into the concept of the effectiveness of environmental law, in that some environmental impacts remain disassociated from structures of decision-making on fossil fuel extraction and exploitation. Environmental protection can be 'correctly understood as a public policy problem' as Hasnas has pointed out.²³⁰ If we consider climate change mitigation as an environmental protection concern, it is both the 'ultimate tragedy of the commons'²³¹ and the ultimate market failure according to Stern.²³² The effectiveness of environmental law may then be judged by the extent to which it can address the problems that are compounded by the nature of the matters which it seeks to address, and the construction of the regulatory tools that have commonly been purposed to address them. Planning law seeks to address the 'commons', publicly held matters of concern in terms of the environment.²³³ The regulation was specifically constructed to deal with matters of public interest, and to deal with the externalities not addressed by market economics.²³⁴

A ban, or a probative regulation, could be characterised as a deterministic form of law,²³⁵ aimed at securing a predictable outcome.²³⁶ Environmental provisions relevant to land use planning for example could be viewed as being deliberately structured to be weaker and

²²⁸ S Maljean-Dubois (ed), *The effectiveness of environmental law* (Intersentia 2017)

²²⁹ G Hardin, 'The Tragedy of the Commons Revisited' (1999) 41 (2) *Environment: science and policy for sustainable development* 5

²³⁰ J Hasnas, 'Two Theories Of Environmental Regulation' (2009) 26 (2) *Social Philosophy & Policy* 95

²³¹ J Paavola, 'Climate Change: The Ultimate Tragedy of the Commons?' in D Cole and E Ostrom (eds) *Property in Land and Other Resources*, (LILP 2012)

²³² Nicholas Stern *The Economics of Climate Change: The Stern Review* (CUP 2007)

²³³ E Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (CUP 1990)

²³⁴ D B Lee, 'Land Use Planning as a Response to Market Failure' in J I de Neufville (ed) *The Land Use Policy Debate in the United States* (Springer 1981)

²³⁵ A J Cockfield, 'Individual Autonomy, Law, and Technology: Should Soft Determinism Guide Legal Analysis?' (2010) 30 (1) *Bulletin of Science, Technology & Society* 4

²³⁶ R N Boyd, 'Determinism, laws, and predictability in principle' (1972) 39 (4) *Philosophy of Science* 431

subservient to economic benefits in the main, so more deterministic.²³⁷ Hydrocarbon minerals such as shale gas were given policy 'weight',²³⁸ but political support was then withdrawn, leaving the policy isolated but still in force.²³⁹ Procedural rights in channelling public opposition had a fundamental impact on the politics of shale gas extraction.²⁴⁰ This context, and the legal framework of the land use planning system in England, which is democratically accountable and incorporates a value judgement at the end of most decisions, could be described as a stochastic process, where the outcome may not be precisely predicted but dependent on a number of factors and incorporating a level of probability.²⁴¹ Both deterministic and stochastic modes can be identified in the legal framework on fossil fuel extraction. The relevance of these modes is in whether one or the other or both combine to create a framework that is capable of 'determining the future' by recognising environmental limits.

Ashby's view on the relative quality of legislation in relation to effectiveness is that it is dependent on the analysis and understanding of the issue.²⁴² In reviewing legislative effectiveness such as that of the UK's Clean Air Act 1956, researchers have noted that the powers for Governmental action over private sector actors were crucial in removing the causes of the problem.²⁴³ Other researchers have commented that in order for environmental law to be effective, it should not just be 'well-designed' but should contain effective monitoring and enforcement measures.²⁴⁴

²³⁷ G Houghton and P Allmendinger, 'Think tanks and the pressures for planning reform in England' (2016) 34 (8) *Government and Policy* 676

²³⁸ A Sheppard and D Peel and H Ritchie and S Berry, *The essential guide to planning law : decision-making and practice in the UK* (Policy Press 2017)

²³⁹ Policy remains extant in MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

²⁴⁰ J Whitton and M Cotton and I Charnley-Parry and K Brasier, *Governing Shale Gas Development, Citizen Participation and Decision Making in the US, Canada, Australia and Europe*, (Routledge 2020)

²⁴¹ D J Bartholomew, *Stochastic models for social processes* (Wiley 1967)

²⁴² E Ashby and M L Anderson, *Politics of Clean Air* (OUP 1981)

²⁴³ J W S Longhurst, J 'Progress with air quality management in the 60 years since the UK Clean Air Act 1956: Lessons, failures, challenges and opportunities' (2016) 11 (4) *International Journal of Sustainable Development and Planning* 491

²⁴⁴ N Gunningham, 'Enforcing Environmental Regulation' (2011) 23 (2) *Journal of Environmental Law* 169

2.1.6 Summary

Fossil fuel extraction regulation is framed by a historical context and a patchwork of regulation as discussed in the background. It also engages ideas around the nature of authority and government, as the contentious quality of unconventional fossil fuel development challenges authority. The fluidity in the definition of sustainable development is open to opposing interpretations in the regulation. Into this mix can be added the importance of governance, and how power and responsibility are assigned and appropriated through the regulation, the basis of which can begin to be uncovered in describing and understanding the regulatory framework. By bearing in mind that the 'effectiveness' of any given regulation, or its ability to achieve success (recognition of environmental limits), can be impacted by the construction of that regulation, a starting point is to look at the detail of its construction through an exposition.

2.2 Legal framework for fossil fuel extraction in England

2.2.1 Introduction

The regulatory framework for fossil fuel extraction in England is similar to that in Wales, Northern Ireland and Scotland, but as some matters are devolved (licensing, planning) the frameworks can diverge in significant ways. In Wales for example all public authorities are subject to the Wellbeing of Future Generations Wales Act²⁴⁵ containing provisions that sets, on a statutory footing, detailed goals for sustainable development. There is no similar legal definition of sustainable development in England for example.²⁴⁶ Bearing in mind these differences, the regulatory framework as described below covers the main consents that need to be obtained to extract onshore fossil fuels. This is licensing, a procedural approach to verify to an extent the veracity of the applicant; the planning consent governed by Town and Country Planning regulation; the pollution control permits, health and safety; and a coal licence or a consent to use the technique of hydraulic fracturing, whichever is relevant.

²⁴⁵ Wellbeing of Future Generations (Wales) Act 2015

²⁴⁶ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

These elements that make up the regulatory framework are chosen as the core elements of the regulatory framework. Taking this framework as delineating the setting for the research, the evolution of the framework, and gaps or absences in the 'black letter' are identified, and these are then further explored through the documentary and empirical evidence.

2.2.2 Licensing

In order to gain access to hydrocarbon minerals, the operator needs to procure a licence.

The regulatory regime is broadly structured in two ways – as a regime governing the operators of the licences (the licence holders) and as a regime governing the issuers of the licences (the government on behalf of the state).

The UK Government holds most of the main licensing regime, and issues Petroleum Exploration and Development Licences (PEDLs) for which 'operators' must bid in order to have the 'rights' to an area (a block of land). In 1934 legislation was passed vesting in the Crown the ownership of petroleum and natural gas in the land area of Great Britain.²⁴⁷ This was further detailed in the 1998 Petroleum Act, which was amended in 2016 to transfer the authority granting the licences from the Secretary of State to the Oil and Gas Authority (OGA). Licensing powers were devolved to Wales in 2019. The Wales Act 2017 specifically refers to the licensing regime in Section 23 amending Section 8A of the Petroleum Act 1998 to give onshore licensing power to the Welsh Ministers. In England and Wales licences for exploring for and extracting oil or gas (whether through conventional or unconventional techniques) are bid for by operators in competitive rounds under the Petroleum Act 1998.²⁴⁸

The licences set out certain obligations and conditions which have to be met in the operation of the licence while conferring the 'right to minerals'. These are set out in the Petroleum Licensing (Exploration and Production) (Landward Areas) Regulations 2014.²⁴⁹ These regulations require notice to be given to the UK Government (and publicly) for any seismic

²⁴⁷ Petroleum (Production) Act 1934

²⁴⁸ Petroleum Act 1998, Section 3

²⁴⁹ The Petroleum Licensing (Exploration and Production) (Landward Areas) Regulations 2014, SI 2014/1686

surveying that may be required to analyse the geology of the licence area to further ascertain the presence and accessibility of petroleum within that geology.²⁵⁰ The Minister can at any time, with appropriate notice periods, require a 'programme' of work and if not satisfied with this programme can request that the programme is amended, and arbitration may be commenced²⁵¹. The Minister can revoke the licence in case of any breach of the provisions around submitting the work programme²⁵². The programme requires the submission of information about the quantities of petroleum that are expected to be extracted²⁵³. Good industry practice is required in relation to storing of petroleum²⁵⁴, and 'apparatus' must be kept in 'good repair'²⁵⁵. There is a specific requirement on 'avoidance of harmful methods of working' which is about the control of the movements of the petroleum (to minimise escape) into other strata or water²⁵⁶. The model clause for the licence itself contains this requirement²⁵⁷. Consent is required for flaring of gas²⁵⁸ except in circumstances where this removes risk of injury or to maintain the flow of petroleum although this still needs to be reported after the event to the Minister.

2.2.3 Planning permission

Once companies have gained a licence to explore for petroleum, planning permission is required for most land use development activities across the UK. The Town and Country Planning Act 1947 set the principles of land use planning consent in the UK – nationalising the 'right to develop land', creating a framework of local planning authorities and making all land subject to land use planning control (apart from agricultural uses). This changed the governance framework of land radically in the UK, and still shapes the basic legal elements of the system today notwithstanding devolution. The Town and Country Planning Act 1990

²⁵⁰ Ibid s15(3)

²⁵¹ Ibid s15(6) and s15(7) and s15(8)

²⁵² Ibid s9

²⁵³ Ibid s17(2)(c)

²⁵⁴ Ibid s23

²⁵⁵ Ibid s24(2)

²⁵⁶ Ibid s24(2)

²⁵⁷ Ibid s8

²⁵⁸ Ibid s24(3)

consolidated legislation up until then and is still the main Act of consequence in land use planning decision-taking although it is heavily amended by subsequent Acts. The Planning and Compulsory Purchase Act 2004 is the next most significant Act, in that it set out new provisions for land use plan-making that currently remain in force, although it is also amended by subsequent Acts. In relation to hydrocarbon minerals however, the relevant provisions are section 70 of the Town and Country Planning Act 1990 for decision taking and section 19 of the Planning and Compulsory Purchase Act 2004 for (minerals) plan-making.

The Town and Country Planning Act 1990 (the 1990 Act) set out the meaning of development at section 55 as:

55 Meaning of 'development' and 'new development'.

- (1) Subject to the following provisions of this section, in this Act, except where the context otherwise requires, 'development,' means the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land.

The key definition here in relation to hydrocarbon minerals is the encompassing of 'under land' development. While mineral rights might be licensed, working of these rights requires a consent in principle to 'develop' under land, as well as for the surface site itself and associated activities.

The planning process follows a set of regulations in England laid out in the Town and Country Development Management Procedure Order 2015²⁵⁹. This sets out the pre-application process, validation of the application, site notification, relevant consultation periods, and making the decision. Decisions can either be made by planning committees – either by unitary council committees or county level committees in England, or by delegated powers i.e. the relevant planning officer.

In Wales, the recent Welsh Planning Act 2014 has consolidated and built upon the 1990 Act, requiring some consequential amendments on the Town and Country Development

²⁵⁹ The Town and Country Planning (Development Management Procedure) (England) Order 2015, SI 2015/595

Management Procedure Order 2012²⁶⁰, but it follows the same general procedure as in England – pre-application process, validation of the application, site notification, relevant consultation periods, and making the decision. Decisions will either be made by the planning committee or through delegated powers by the relevant planning officer.

The Planning and Compensation Act 1991²⁶¹ amended the law to give the development plan primacy in decision-making; and then by the Planning and Compulsory Purchase Act 2004 for England and Wales (covering planning in Scotland only in relation to the Crown) provided in section 38 that:

38 (6) If regard is to be had to the development plan for the purpose of any determination to be made under the Planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise.

The courts have held²⁶² that this does not mean that the development plan has to be adhered to in all cases, but that it must be considered, and other material considerations can also be a basis for decision making. For a development plan to be caught by this provision, it must be adopted – up until that point it is a material consideration to which weight can be afforded in the planning decision-making judgement.

A number of planning authorities have now dealt with planning applications for shale gas exploration and appraisal and coal bed methane exploration and production in England and Wales. While licences have been issued for underground coal gasification by the Coal Authority,²⁶³ there have been no planning applications for underground coal gasification as of this time.

²⁶⁰ The Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2017, SI 2017/542 (W 120)

²⁶¹ The Planning and Compensation Act 1991, s26

²⁶² *Suffolk Coastal District Council (Appellant) v Hopkins Homes Ltd and another (Respondents) Richborough Estates Partnership LLP and another (Respondents) v Cheshire East Borough Council (Appellant)* [2017] UKSC 37 On appeals from: [2016] EWCA Civ 168, [2015] EWHC 132 (Admin) and [2015] EWHC 410 (Admin)

²⁶³ Cluff Natural Resources, 'Cluff Natural Resources plc ('CNR' or 'the Company') Awarded Two UK Underground Coal Gasification Licences' (14 January 2013) < www.cluffnaturalresources.com/wp-content/uploads/2016/01/5-14-January-2013-Awarded-Two-UK-Underground-Coal-Gasification-Licences.pdf > Last accessed 15 April 2018

Evidence submitted with a planning application can either come through voluntary submission by the applicant for development, and through public consultation, statutory agencies, the officer dealing with the case (i.e. the planning authority), and through Environmental Impact Assessment (EIA)²⁶⁴ if this applies. EIA is regulated domestically but comes from the European Directive.²⁶⁵ In relation to unconventional oil and gas activities in England and Wales, EIA is discretionary as it falls within Schedule 2 of the 2017 regulations under 'Extractive Industry'.²⁶⁶ This discretion allows the decision-maker, either the planning authority or the Secretary of State, to decide in accordance with the regulations as to whether a development of this type requires an EIA. There are two stages to the process – one is 'Screening', whereby projects that fall within Schedule 2 are brought into the 'screening' process to assess whether an EIA is required set out at Section 5 of the regulations²⁶⁷ (Schedule 1 projects are automatically screened in). The relevant Schedule 2 projects are described as 'Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale' where the 'area of the development exceeds 0.5 hectare.' Development can be screened in for EIA in by considering the matters set out in Schedule 3 of the EIA 2017 Regulations – the characteristics and location of the development, and in addition the type and characteristics of the impact of the development.²⁶⁸

The production of waste, the cumulative nature of the development, and the use of natural resources are all matters which should inform the decision-making on whether a development should be 'screened in' and therefore follow the impact assessment process. If the development is screened in by the decision-maker, the second stage is the 'scoping' of the Environmental Statement to be produced as an outcome of the environmental impact

²⁶⁴ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, SI 2017/571

²⁶⁵ Council Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment [2012] OJ L 26/1

²⁶⁶ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, SI 2017/571, Schedule 2

²⁶⁷ Ibid, s5

²⁶⁸ Ibid, Schedule 3

assessment which is now required. Scoping can be requested by the applicant for planning permission or set out in a 'scoping report' by the decision maker. Scoping requires a description of the range and type of impacts. These are comprehensively set out in Schedule 4 of the EIA Regulations, and in particular in reference to type:

The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(1) and Directive 2009/147/EC(2).

Model conditions for shale gas developments are set out in government guidance in England.²⁶⁹ Some of these conditions are general, for example 'protection of groundwater', and in that sense it is a protection 'in principle' but not necessarily an enforceable condition such as one where the quantity, timing and spatial distribution of the impact can be understood.

If planning authorities refuse their consent, developers are able to appeal the decision under the Town and Country Planning Act 1990 as amended in England and Wales.²⁷⁰ The appeal is then dealt with by the Planning Inspectorate for England and Wales (PINS). The Secretary of State can recover these decisions (or relevant Minister in Wales). In the case of shale gas, the then Secretary of State in England, Greg Clark, issued a statement recovering appeals in August 2015.²⁷¹ The then Welsh Minister, Carl Sergeant, issued a notification direction²⁷² on unconventional oil and gas in February 2015, requiring local planning authorities that were 'minded to approve' applications to refer the application to the Minister.

²⁶⁹ MHCLG *National Planning Guidance Minerals Annex C: Model planning conditions for surface area* (Planning guidance, 2014) paragraph 139; DBEIS, *Hydraulic Fracturing Consent: Guidance on application for hydraulic fracturing consent (HFC) under section 4A of the Petroleum Act 1998 (inserted by section 50 of the Infrastructure Act 2015)* (Guidance, 2017)

²⁷⁰ Town and Country Planning Act 1990 s78

²⁷¹ Ministry for Housing, Communities and Local Government (MHCLG) and Department for Energy and Climate Change (DECC), 'Faster decision making on shale gas for economic growth and energy security' (News story, 13 August 2015) <www.gov.uk/government/news/faster-decision-making-on-shale-gas-for-economic-growth-and-energy-security> Last accessed November 2021

²⁷² The Town and Country Planning (Notification) (Unconventional Oil and Gas) (Wales) Direction 2015

2.2.5 Permitted development

In England, seismic surveying has been brought into the permitted development regime,²⁷³ but any exploration, appraisal or production (as the three phases are characterised by national planning guidance) requires planning consent. The permitted development regime under the Town and Country Planning (General Permitted Development) (England) Order 2015 has been amended in 2016²⁷⁴ to bring in boreholes and seismic surveying under Part 17 of Schedule 2, particularly Class J, temporary use of land for mineral exploitation, and Class K, use of land for mineral exploitation. The original theoretical concept behind permitted development is that these developments could be carried out by private landowners on the basis that the nature of the development mean that they had little or no discernable impact on neighbours or wider society. This has been expressed by successive Governments in England, either in explanation as to why consent must be granted by a public authority with procedures attached,²⁷⁵ or as to why these developments are such that they do not need such public protection procedures. The emerging political paradigm that gained power in 2010 consolidated the neoliberal approach to town and country planning, and increased the scale and pace of change. Within a few years, the theory of permitted development rights as a means to confer ‘freedom’ and flexibility’ on planning decisions had permeated into the move to create a less onerous system of consent for shale gas extraction and exploitation.²⁷⁶ Policy commentators close to the UK Government became instrumental in the new planning paradigm that sought a broad move away from ‘control’ to ‘freedom’.²⁷⁷

2.2.6 Environmental Permits

Environmental permits are a body of permits that are issued by the Environment Agency in England and Natural Resources Wales in Wales, to control emissions to soil, water and air,

²⁷³ The Town and Country Planning (General Permitted Development) (England) (Amendment) Order 2016, SI 2016/332 Article 12

²⁷⁴ *Ibid*

²⁷⁵ Hansard Volume 432 *Town And Country Planning Bill* 30 January 1947

²⁷⁶ DBEIS, *Inclusion of Shale Gas production in the nationally significant infrastructure project regime: Government Response* (Government response, 2019)

²⁷⁷ J Airey and C Doughty, *Rethinking the Planning System for the 21st Century* (Policy Exchange 2020)

with the aim of protecting the environment in line with the duty that the relevant bodies hold. Water and chemical control regimes are a key part of the regulatory framework for unconventional fossil fuels, in general overseen by agencies rather than directly by local or national government. This is a regulatory system built on expertise and industry best practice standards, rather than democratic oversight.

There are a range of regulatory controls, most derived from European Directives, that are managed by the Environment Agency in England and Natural Resources Wales in Wales; and the Health and Safety Executive.²⁷⁸ These can be broadly categorised as waste management, water pollution prevention, and chemical use management, and guidance is issued by the relevant agency.

In the UK, the use of chemicals is governed by the REACH Directive²⁷⁹ which is described by the European Commission as follows:

REACH (EC 1907/2006) aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals. REACH also aims to enhance innovation and competitiveness of the EU chemicals industry.²⁸⁰

This is operationalised in the UK through the permits system. For example an operator will apply to the Environment Agency in England for a permit, and on that permit will be listed the number, type and amount of chemicals that will be employed in high volume hydraulic fracturing at a particular site. This information may not be supplied to the local planning authority as part of a planning application. Some chemicals are listed by trade name without

²⁷⁸ S Vaughan, *EU Chemicals regulation : new governance, hybridity and REACH* (Edward Elgar 2015)

²⁷⁹ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC [2006] OJ L 396/1

²⁸⁰ Commission, 'REACH'

a specification of chemical content, as for example happened on a permit application submitted by the developer Third Energy for a permit at a site in Ryedale.²⁸¹

There is a complex and flexible number of permits that are required of developers of unconventional fossil fuels in England and Wales. These permits have undergone some changes in 2015 to 2017, due to the risk of challenge for failing to adhere to European Directives in particular the Mining Waste Directive²⁸² which led to the introduction of further permits; and in other cases permits have been 'standardised' to shorten and simplify the acquisition of permits for developers.²⁸³ In setting out this regulatory process of permitting, what is clear is that polluting activities are permitted on a case by case basis, with each developer acquiring permits for activities. Unlike planning permission that runs with the land, permits are held by the operator. The system is based on best available techniques (BAT) and best industry practice, rather than environmental limits (e.g. set targets or external carrying capacities), and implicitly accept pollution. In a manner comparable to the step change in health and safety regulation in the UK from 'command and control' where detailed technological approaches are mandated and therefore limited by the speed at which legislation can evolve to match technological change, permitting also relies upon a new approach which is to adopt an outcome-based framework.²⁸⁴ This could be characterised as a way of behaving being specified in order to achieve an outcome, rather than specifying technologies to be utilised or using financial incentives.

²⁸¹ Third Energy UK Gas Limited, *Environment Agency Application to vary Permit EPR/BB3699EY at the Pickering Well site* (2013)

²⁸² Friends of the Earth Manchester, 'Salford resident threatens Judicial Review against fracking regulator' (*Friends of the Earth Manchester*, 31 January 2014) <www.manchesterfoe.org.uk/salford-resident-threatens-judicial-review-against-fracking-regulator/> Last accessed 15 April 2018

²⁸³ Environment Agency (EA) *Standard rules : environmental permitting* (Guidance, 2014)

²⁸⁴ W Harrington (ed) *Choosing Environmental Policy : Comparing Instruments and Outcomes in the United States and Europe*, (Taylor & Francis 2004)

The Environment Agency in England in its onshore oil and gas guidance (2016)²⁸⁵ sets out the need for the environmental permits in relation to the following activities that an operator of an onshore oil and gas licence may undertake:

Constructing your well pad; drilling exploratory wells; flow testing and well stimulation, including hydraulic fracturing; storing and handling crude oil; treatment of waste gases (including flaring); handling, storage and disposal of produced waters and flowback fluid; managing extractive wastes; [and] extraction of coal mine methane²⁸⁶.

The following regulations are applicable in England and require permitting by the Environment Agency as stated in their guidance:

Activities carried out at onshore oil and gas sites in England fall under different pieces of legislation. This means you are likely to need several permits and permissions from the Environment Agency, including: Under the Environmental Permitting Regulations (England and Wales) 2010: Installations activities; Mining waste activities; Radioactive substances activities; Water discharge activities; Groundwater activities; Flood risk activity permit. Under the Water Resources Act 1991: Notices to construct a boring for the purposes of searching for or extracting minerals; Water abstraction licences. Under the Control of Major Accident Hazards Regulations 2015: Notification to the Competent Authority.²⁸⁷

These detail the range of permits that may be required depending on the location of the actual site for exploration and extraction of fossil fuels. As a rule, these permits are controlling the activities, and need to be of significant impact for the relevant authority to refuse to issue a permit. The extent to which procedural or substantive rights are engaged in the issuing process for permits is dealt with in Chapter 4; what is pertinent to consider here is that the effluents identified on a scientific basis have a mechanism whereby the authority is able to gather information about these effluents and their impacts. Deemed to be fairly comprehensive,²⁸⁸ the regulation covers the main issues. However the whole package is based on the premise that discharges of effluents to the environment are inevitable. Future environmental quality will be dependent on whether the decisions made now, on the unquantified number of fossil fuel extraction sites, succeed in limiting overall the effect of

²⁸⁵ EA *Onshore Oil & Gas Sector Guidance version 1* (Guidance, 2016)

²⁸⁶ *Ibid*, page 5

²⁸⁷ *Ibid*, page 5

²⁸⁸ Joanne Hawkins, 'Fracking: Minding the gaps' (2015) 17 (1) *Environmental Law Review* 8; Tina Hunter (ed) *Handbook of shale gas law and policy : economics, access, law and regulation in key jurisdictions* (Intersentia 2016)

effluents on the local environment. Incremental environmental impact, relying on the absorption capacity of the environment, could be considered an accepted part of the framework in order to enable development.²⁸⁹

2.2.6.1 Waste management

The Waste Framework Directive ‘sets the basic concepts and definitions related to waste management and lays down waste management principles such as the ‘polluter pays principle’ and the ‘waste hierarchy’.²⁹⁰ It is relevant to shale gas and coal bed methane extraction as well as underground coal gasification because it governs the definitions of waste which are used in the permitting regime²⁹¹ controlled by the Environment Agency in England, and Natural Resources Wales in Wales.

The Extractive Waste Directive²⁹² is part of a specific framework for the management of mining wastes at European level. The purpose of the Extractive Waste Directive is to ensure the proper management of wastes in order ‘to ensure in particular the long-term stability of disposal facilities and to prevent or minimise any water and soil pollution arising from acid or alkaline drainage and leaching of heavy metals.’²⁹³ A best available techniques guidance document²⁹⁴ accompanies the Directive and the Seveso Directive²⁹⁵ on ‘major accident hazards’ also applies. The Seveso III Directive ‘applies to more than 12 000 industrial establishments in the European Union where dangerous substances are used or stored in large quantities, mainly in the chemical and petrochemical industry, as well as in fuel wholesale and storage (incl. LPG and LNG) sectors.’²⁹⁶ This is relevant both to the ‘flowback

²⁸⁹ S Bice, ‘The future of impact assessment: problems, solutions and recommendations’ (2020) 38 (2) *Impact Assessment & Project Appraisal*, 104

²⁹⁰ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives [2008] OJ L 312/3

²⁹¹ Pollution Prevention and Control Act 1991

²⁹² Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC [2006] OJ L 102/15

²⁹³ *Ibid*

²⁹⁴ Commission, *Reference Document on Best Available Techniques for Management of Tailings and Waste-Rock in Mining Activities* (2009)

²⁹⁵ Council Directive 2012/18/EU of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC [2012] OJ L 197/1

²⁹⁶ *Ibid*

fluid' or 'produced water' that is waste produced in shale gas and coal bed methane extraction processes and needs to be managed. The agencies in England and Wales will provide a permit setting out the limits or range of waste that is permitted to be produced by the activity, but neither the planning authorities nor the agencies will consider the capacity of waste management treatment facilities. This is pertinent, as the waste from shale gas extraction is considered radioactive waste and needs specific treatment. There are three licensed treatment centres in England for this type of radioactive waste.

The Industrial Emissions Directive²⁹⁷ is described as follows by the European Commission:

The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT). Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate in accordance with a permit (granted by the authorities in the Member States).²⁹⁸

In relation to unconventional oil and gas onshore activities, this Directive is relevant to controlling onsite flaring from the gas well. The Environment Agency's role is to issue the permits to cover flaring if this is considered best available technique.

These effluents, or 'wastes' as they are termed in this set of regulations, form part of the pollution control system of 'environmental permits' and exhibit the same theoretical approach identified for this part of the overall framework of regulation.

2.2.6.2 *Water and groundwater pollution permits*

The Water Framework Directive²⁹⁹ provides a structure for protection of water within the Member States. The introduction to the Directive is as follows:

There are a number of objectives in respect of which the quality of water is protected. The key ones at European level are general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water

²⁹⁷ Council Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) [2010] OJ L 334/ 17

²⁹⁸ Commission, *The Industrial Emissions Directive* (2016)

²⁹⁹ Council Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy [2000]OJ L 327/1

resources, and protection of bathing water. All these objectives must be integrated for each river basin.³⁰⁰

The principles of this Directive are relevant both in land use planning considerations around water abstraction for use in high volume hydraulic fracturing, possible pollution impacts through leakage from site surface activities; and in permitting arrangements with regard to controlling substances on the site and their disposal.

The Groundwater Directive³⁰¹ is described the Commission as follows:

This Directive establishes a regime which sets groundwater quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. The directive establishes quality criteria that takes account local characteristics and allows for further improvements to be made based on monitoring data and new scientific knowledge. The directive thus represents a proportionate and scientifically sound response to the requirements of the Water Framework Directive (WFD) as it relates to assessments on chemical status of groundwater and the identification and reversal of significant and sustained upward trends in pollutant concentrations.³⁰²

This is particularly relevant to hydrocarbon mining activities which could affect groundwater quality. For example the British Geological Society has pointed out the risk to groundwater in its report *Potential groundwater impact from exploitation of shale gas (2012)*,³⁰³ and concluded that:

Groundwater may be potentially contaminated by extraction of shale gas both from the constituents of shale gas itself, from the formulation and deep injection of water containing a cocktail of additives used for hydraulic fracturing and from flowback water which may have a high content of saline formation water.³⁰⁴

There is also evidence on the risk of well failure, particularly when high volume hydraulic fracturing is employed as an extraction technique.³⁰⁵ While the principles of the Groundwater Directive as envisaged by the EU are a precautionary approach, in their transposition,³⁰⁶ and

³⁰⁰ Commission, *Introduction to the new EU Water Framework Directive* (2016)

³⁰¹ Council Directive 2006/118/EC of 12 December 2006 on the protection of groundwater against pollution and deterioration [2006] OJ L 372/19

³⁰² Commission, *Groundwater in the Water Framework Directive* (2016)

³⁰³ British Geological Survey *Potential groundwater impact from exploitation of shale gas in the UK* (Open report OR/12/001, 2012)

³⁰⁴ British Geological Society (BGS), *Potential groundwater impact from exploitation of shale gas in the UK* (Open Report OR/12/001, 2012)

³⁰⁵ Friends of the Earth, *Drilling without fail? A review of empirical data on well failure in oil and gas Wells by Bright Analysis* (2014)

³⁰⁶ S Bell and L Etherington, 'Out of Sight, Out of Mind: A Study of the Transposition and Implementation of the Groundwater Directive in the United Kingdom' (2007) 9 (1) ELR 6

now in terms of the 'legacy' status that imply that while future regulation is to date taking similar principles as their foundation,³⁰⁷ the 'invisibility' of groundwater may well undermine its protection in law.³⁰⁸ The amendments to the Petroleum Act 1998 by the Infrastructure Act 2015 prohibits well consents in proximity to groundwater,³⁰⁹ most likely in response to public concern and political debate at the time.³¹⁰

2.2.7 Health and Safety Permits

The Health and Safety Executive (HSE)'s role is to regulate to prevent major accidents, and to oversee well design and operation³¹¹. In practice, the HSE does not inspect the wells in person, but assesses the documentary evidence provided by the operator. In addition, enforcement only takes place if there is a risk to human health,³¹² from for example a blow-out or mechanical failure, detection of explosive gases or insufficient distance between wells. Commonly referred to as 'RIDBOR', this is the 'failsafe' so that swift and decisive action can be taken immediately if human health is at risk. But it is not a broader environmental protection – there may be other discharges or issues, but the bar that triggers regulation is set at the level whereby human health begins to be affected – below that bar, these issues are treated by the regulation as acceptable. Since it is focussed on health and safety (of workers, the public), and while the risks to those people do result from environmental pollutants, the subject of the protective regulation is not the wider environment as that is covered by the environmental permits issued by the Environment Agency in England or Natural Resources Wales in Wales.

³⁰⁷ Environment Act 2021

³⁰⁸ R Gifford, 'Environmental Psychology and Sustainable Development: Expansion, Maturation, and Challenges.' (2007) 63 (1) Journal of Social Issues 199

³⁰⁹ Petroleum Act 1998 amended at Section 4 by the Infrastructure Act 2015, Section 50 to create Section 4A Onshore Hydraulic Fracturing Safeguards, Column 1: Conditions

³¹⁰ T Macalister, 'Labour attempts to strengthen regulation of UK fracking industry', (*The Guardian*, 25 August 2014) < <https://www.theguardian.com/politics/2014/aug/25/labour-regulation-uk-fracking-industry> > Last accessed November 2019

³¹¹ The Borehole Sites and Operations Regulations 1995; Offshore Installations and Wells (Design and Construction etc) Regulations 1996, SI 1996/913

³¹² The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013, SI 2013/1471

2.2.8 Coal licensing

The Coal Authority, given the rights held over coal in England and Wales,³¹³ is involved in consenting exploitation of coal seams through unconventional extraction techniques for gas termed coal bed methane (CBM).³¹⁴ It is required to give its consent through licensing for underground coal gasification and exploitation of coal methane³¹⁵. It has for example issued several underground coal gasification (UCG) licences, two of which are in Wales, issued to Cluff Natural Resources in 2013.³¹⁶ The Department for Business, Industry and Enterprise (DBEIS) changed its guidance in 2016, from being encouraging of underground coal gasification (UCG), to being discouraging.³¹⁷ The Welsh Government initially consulted on policy for UCG, but has now changed all of its energy minerals policy to discourage such applications.³¹⁸

The coal licence does not provide much in the way of environmental protection. For example, the licence is not issued on the basis of whether that exploitation of coal is compatible with legal commitments to reduce greenhouse gas emissions. It is in fact a completely separate system, which licences resources for exploitation that will inevitably result in emissions, given the current status of technology to abate such emissions

2.2.9 Hydraulic fracturing consent

A 'Hydraulic Fracturing Consent' is required from the relevant Minister under the Petroleum Act for hydraulic fracturing which is defined within the Infrastructure Act 2015 as follows:

4B Section 4A: supplementary provision

- (1) 'Associated hydraulic fracturing' means hydraulic fracturing of shale or strata encased in shale which—(a) is carried out in connection with the use of the relevant well to search or bore for or get petroleum, and (b) involves, or is expected to involve, the injection of—(i) more than 1,000 cubic metres of fluid at each stage, or expected

³¹³ Coal Industry Act 2994

³¹⁴ MHCLG *Planning Practice Guidance Minerals* Paragraph: 091 Reference ID: 27-091-20140306 (Planning guidance, 2014)

³¹⁵ Coal Authority, *Coal mining licence applications* (Guidance, 2017)

³¹⁶ Cluff Natural Resources, 'Cluff Natural Resources plc ('CNR' or 'the Company') Awarded Two UK Underground Coal Gasification Licences' (*Cluff Natural Resources*, 14 January 2013) < www.cluffnaturalresources.com/wp-content/uploads/2016/01/5-14-January-2013-Awarded-Two-UK-Underground-Coal-Gasification-Licences.pdf > Last accessed November 2019

³¹⁷ HC WQ56962 15 December 2016

³¹⁸ Welsh Government *Planning Policy Wales Edition 11* (Planning guidance, 2021) para 5.10.14; Lesley Griffiths Minister for Environment, Energy and Rural Affairs, *Written Statement: Coal Policy statement 22 March 2021*

stage, of the hydraulic fracturing, or (ii) more than 10,000 cubic metres of fluid in total.³¹⁹

The distinction for hydraulic fracturing is aimed at ensuring that there is Ministerial (and therefore democratic) oversight of the most contentious part of the extraction process. The influence of media and public pressure following the earth tremor incident³²⁰ is clear in the introduction of a new consent for high volume hydraulic fracturing. Where a less visible, and less accountable body – the Coal Authority for example – is involved, and there is no visible or felt impact (as there has been no underground coal gasification activities), consents have been issued without public pressure or influence being engaged. This is despite the much more unconventional nature of underground coal gasification, and where it has been tested, its rather disastrous results.³²¹

Following the public debate concerning the earth tremors in Blackpool after the activities by the developer Cuadrilla at Preese Hall in Lancashire³²², and the public pressure³²³ during the passage of the Infrastructure Bill in 2014-2015, a specific consent was introduced for high volume hydraulic fracturing to recognise the particular impacts associated with this unconventional technique.

2.3 Conclusions

In response to the advent of unconventional fossil fuels in the UK, regulatory systems have been amended, removed and introduced.³²⁴ Hydraulic fracturing consents are one such new introduction, and the amendment of licensing rules (to prevent licensing for shale gas), and the removal of trespass rules (to allow deep geological exploration without landowner's

³¹⁹ Infrastructure Act 2015 s50

³²⁰ J Paige 'Blackpool earthquake tremors may have been caused by gas drilling' (*The Guardian*, 1 June 2011) <<https://www.theguardian.com/uk/2011/jun/01/blackpool-earthquake-tremors-gas-drilling>> last accessed November 2019

³²¹ Australian Association Press, 'Queensland bans underground coal gasification over environmental risk' (*The Guardian*, 18 April 2016) <www.theguardian.com/australia-news/2016/apr/18/queensland-bans-underground-coal-gasification-over-environmental-risk> last accessed November 2019

³²² BBC News, 'Shale gas fracking: MPs call for safety inquiry after tremors' (*BBC News*, 8 June 2011) <www.bbc.co.uk/news/uk-england-lancashire-13700575> last accessed November 2019

³²³ Damian Carrington, 'Tories forced into U-turn on fast-track fracking after accepting Labour plans' (*BBC News*, 26 January 2015) <www.theguardian.com/environment/2015/jan/26/conservatives-u-turn-fracking-labour-cuadrilla-drilling-ban> last accessed November 2019

³²⁴ A Kotsakis, 'The Regulation of the Technical, Environmental and Health Aspects of Current Exploratory Shale Gas Extraction in the United Kingdom: Initial Lessons for the Future of European Union Energy Policy' (2012) 21 RECIEL 3

consent) are also changes reacting to the controversy of the increase in unconventional fossil fuel exploration activity. Political influence on the changing framework of regulation can be identified through the nature of parliamentary debates on the passing of legislation, with the opposing stakeholders of industry and environmentally-concerned public having a discernible influence on the tone of debates and UK Government concessions.³²⁵ There has been an evolution in the nature of the regulatory framework setting of this research over the time period.

Both absences and gaps are also starting to appear. There is an absence of a legal link between the Climate Change Act 2008 and the rest of the regulatory framework of licensing, planning consent, pollution control, health and safety and coal licensing and hydraulic fracturing consent. There are gaps in each of the framework areas in terms of leakage, given that each framework area allows some level of environmental impact, such as emissions or effluents, that are taken as 'inevitable' or 'acceptable'. There is also no upper quantum limit that is managed through the regulatory framework. Decisions are made on an application per application basis.

Turning to the issue of competences and aims provides the opportunity to examine whether an assessment of the quantum of future environmental impact is absent or present in the regulatory framework.

³²⁵ For example: Hansard, 'Fracking' Volume 588: debated on Tuesday 25 November 2014

Chapter 3: Climate change law and policy

3.1 Introduction

At international level, the United Nations secretariat implementing the Framework Convention on Climate Change (FCC) competency covers the administration of the Convention, and the overseeing of the scientific working parties. This competency and the recognition of it is an important part of the force of the Convention, strengthening the weight the agreements carry. The latest iteration, namely the Paris Agreement,³²⁶ requires countries to produce Nationally Determined Contributions (NDCs), in effect, assigning a competency through the act of signing. This falls to the national governments to produce in most cases. In order to achieve the emissions reductions (the ‘contribution’), it is axiomatic that the plans for the NDCs will require the national governments in question to use their competences to issue law, or policy, or funding or other actions, essentially to make decisions in order to achieve that reduction. A department, currently Department for Business, Enterprise and Industrial Strategy (DBEIS) in England,³²⁷ and the Secretary of State for the UK Government holds that competency. The Scottish, Welsh and Northern Irish governments have a certain devolved responsibility to assist in the production of the plan for the NDC.

On a horizontal level with the UK’s Department for Business, Energy and Industrial Strategy (DBEIS), the Environment Agency (in England), the Department for Levelling Up, Housing and Communities (DLUHC),³²⁸ the Oil and Gas Authority (OGA, now NTSA), the Coal Authority and the Planning Inspectorate all hold varying degrees of competency that have an impact on climate change. Whilst DLUHC holds a direct competency (in national planning guidance on development decisions) and indirect competency (to follow its own guidance on called in decisions for development) and the Environment Agency is deeply concerned with climate change adaptation, the other national level authorities do not have direct

³²⁶ Paris Agreement (2015)

³²⁷ Formerly DECC, the Department for Energy and Climate Change

³²⁸ Formerly MHCLG and referred to in the remainder of this research most often as MHCLG.

competences. The Health and Safety Executive does not have competency to act on climate change, but regulates the well design, an element that is crucial in preventing methane leakage. This is an example of a lack of direct competency despite the connection between the activity regulated and the impact. The Planning Inspectorate follows the guidance issued by DHLUC, or the Welsh Government's planning department in Wales, but has no specific duty to act to secure climate change emissions reduction.

The Coal Authority and Oil and Gas Authority do not have competences on climate change but conduct activities that have an intrinsic impact on climate change emissions. In Wales the Health and Safety Executive, the Coal Authority, and the Planning Inspectorate are shared entities, but the Environment Agency's counterpart is Natural Resources Wales, and the Welsh Government replaces the UK Government departments for England. The Welsh Assembly and Welsh Government are governed by an almost constitutional duty through the Government of Wales act, to prepare a national sustainable development scheme, and latterly the Future Generations of Wales Act, creates a level of competency on climate change through the duty for all public authorities to carry out their functions in line with the goals of the Act, goals that include climate change emissions reduction, and global responsibility.³²⁹ The increased harmonisation of competency at Welsh government level contributes to the greater harmony in climate change competency through increasingly harmonised aims. However the more limited extent of Welsh competency restricts the effectiveness of environmental law such as when it comes to reducing extraction of fossil fuels.

The local planning authority, situated at local level, and therefore in the vertical line of competence, has no direct competent power under the Paris Agreement. However it does

³²⁹ Well-being of Future Generations (Wales) Act 2015, Section 4, Goals – A prosperous Wales: *An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.*

have a diluted competency to act on climate change, through national guidance that directs it to make decisions in certain ways. The UK's Committee on Climate Change support a more explicit duty for local government on climate change, that would empower them to do more.³³⁰ Local planning authorities hold competence over plan-making and decision-taking functions.

The Environment Act 2021³³¹ creates a 'new' definition of environmental protection and lists the key principles drawn from the corpus of European environmental law to fill the gap left by the withdrawal from the European Union. 'Sustainable development' remains undefined in this legislation in contrast to 'environmental protection' which is defined as:

In this Part 'environmental protection' means—

- (a) protection of the natural environment from the effects of human activity;
- (b) protection of people from the effects of human activity on the natural environment;
- (c) maintenance, restoration or enhancement of the natural environment;
- (d) monitoring, assessing, considering, advising or reporting on anything in paragraphs (a) to (c).³³²

The principles do not however explicitly apply to planning decision-making, nor do they explicitly include the notion of limits:

In this Part 'environmental principles' means the following principles—

- (a) the principle that environmental protection should be integrated into the making of policies,
- (b) the principle of preventative action to avert environmental damage,
- (c) the precautionary principle, so far as relating to the environment,
- (d) the principle that environmental damage should as a priority be rectified at source, and
- (e) the polluter pays principle.³³³

Instead there is the notion of 'averting environmental damage' and the precautionary principle, both of which can be interpreted to mean 'limits'. The issue of causality comes into play – environmental damage has to be evidenced – and the duty is for the Secretary of State, similar to the Climate Change Act 2008 duties, rather than on local planning authorities or other public bodies. Given that the National Planning Policy Framework has so

³³⁰ L Marix-Evans, *Local Authorities and the Sixth Carbon Budget* (CCC, 2020)

³³¹ Environment Act 2021

³³² Environment Act 2021 Chapter 3, Interpretation of Part 1, s45

³³³ Environment Act 2021 s17 Policy Statement on Environmental Principles

far not been revised to explicitly include these principles nor has legislative change connected the targets of the Climate Change Act 2008 to actual decision-making on development, or plan-making functions, it seems that there is still a gap between the notion of limits and the process and matter of decision-making on fossil fuels.

Competence as the ability to perform functions is an example of a 'purposive power' as described by Davies, can be 'sector-specific' or an ability to 'take measures'.³³⁴ These are distinguished by Davies in that 'a defining characteristic of pure purposive power is that while it is constrained to follow specific goals, it is not constrained in its subject matter or the breadth of its impact.'³³⁵ A planning authority carrying out planning functions is 'sector specific', whereas the local government 'power of competence' conferred on local authorities in England by the Localism Act 2011,³³⁶ is an ability to take measures that are not specifically prohibited.³³⁷ In the regulatory framework for fossil fuel extraction in England (and Wales) the competences are sector specific. In essence the relevant authorities are carrying out functions as part of their assigned competences to regulate different aspects of fossil fuel extraction.

3.1.1 Conflicting competences?

Taking the scope and operation of competency in relation to fossil fuel regulation and understanding the overlap between that and climate change competency is where the question of the extent to which environmental limits are recognised becomes significant. While the role of law and legal competence in relation to climate change as described by Macrory and Hession, discussing the implementation of the United Nations Framework Convention on Climate Change (UNFCCC), suggest that it is not always clear as to 'specific questions of responsibility and implementation',³³⁸ this clarity is even more lacking at the

³³⁴ G Davies, 'Democracy and Legitimacy in the Shadow of Purposive Competence' (2015) 21 (1) European law journal: review of European law in context 2

³³⁵ Ibid

³³⁶ Localism Act 2011 s1 Local authority's general power of competence

³³⁷ J Stanton and A Bowes, 'The Localism Act 2011 and the general power of competence' (2014) Public Law 392

³³⁸ R Macrory and M Hession, 'The European Community and Climate Change: the role of law and legal competence' in J Jäger and T O'Riordan (eds), *The Politics of Climate Change: A European Perspective* (1st edn, Routledge 1996)

point at which decisions on extraction of fossil fuels are made. The Climate Change Act 2008 (CCA) covers most UK emissions, but the Paris Agreement requires governments to think about the emissions that are counted globally and where through trade, production or consumption, may not align to each country's contribution in a transparent and legible way. If a local authority has no competency to carry out under the Paris Agreement, then if for example a local authority is making a decision on the extraction of fossil fuels for export, how can it be seen to possess the competency to take that into account in decision making?

Under the CCA, local authorities, the Environment Agency, Health and Safety Executive, Coal Authority and Oil and Gas Authority do not have specific competences assigned. Only the Secretary of State has a competency in producing policies and proposing budgets under the CCA. The Climate Change Commission (CCC) has a competency in terms of advice, but it does not advise other decision-makers specifically (such as local authorities). Nonetheless, the functions of the different authorities listed do have an impact on climate change budgets, given the regulatory powers they hold in governing fossil fuel extraction. Local government as a whole in particular has had long recognition of a role on climate change, as Bulkeley has described.³³⁹ The Environment Agency in England has a competent scope over environmental protection but for example it does not advise local authorities on climate change mitigation in the way it advises on adaptation such as flood risk or coastal change.³⁴⁰ A gap arises between legally clear competences and the strengthening normative responsibility for climate action by authorities.³⁴¹ The question is whether this is a weakness of a regulatory system that does not on the face of it assign both competency and duty to act on emissions reductions to those authorities that decide on developments that have emissions implications.

³³⁹ H Bulkeley, *Cities and Climate Change* (Routledge, 2013); H Bulkeley and K Kern, 'Local Government and the Governing of Climate Change in Germany and the UK' (2006) 43(12) *Urban Studies* 2237

³⁴⁰ EA *Environment Agency and climate change adaptation* (Policy paper, 2018)

³⁴¹ P Gudde and J Oakes and P Cochrane and N Caldwell and N Bury, 'The role of UK local government in delivering on net zero carbon commitments: You've declared a Climate Emergency, so what's the plan?' (2021) 154 *Energy Policy*

Competency on climate change emissions reduction is germane to the concept of 'meta-legislation', the idea of there being competence norms, for example at European level.³⁴² The growing sense of a climate change 'norm' at a local level is evident in the proliferation of commitments,³⁴³ strategies and the adoption of targets³⁴⁴ by local authorities and local government, despite no specific duty in law for local authorities to do so. Given the UK's withdrawal from the European Union, the concept of meta-legislation takes a different shape as the UK does not now sit within the European framework. However, it is useful to consider meta-legislation as a substantive account of competency in relation to climate change given the difference between competences concretely described by legislation, and the idea of meta-legislation as more of a broader approach by authorities holding these competences. By meta-legislation therefore, what is meant is not the procedures set out in legislation, but rather the overall purpose that is to reduce climate change emissions and adapt to climate impacts. Both actual described competences and meta-legislation are relevant in terms of how competences manifest in the context of fossil fuel regulation. The expansion into a competency 'norm' is exemplified by these local authorities who have adopted climate change strategies and who have declared climate emergencies. Some local authorities, such as Denbighshire County Council in Wales, have changed their standing orders that govern decision-making, so as to create a climate and ecological consideration for all Council decisions.³⁴⁵ This is an example of how a competency is being developed rather than assigned, and also how law is being used to underpin that competency.

Competences, as set out earlier in the introductory sketch of the four legal challenges that this research is investigating, are both vertical in that there is a hierarchy of competency conferred by different parts of the regulatory framework, and horizontally in that the different

³⁴² M Hahn-Lorber, 'Are There Methods of Reasoning on 'Meta-Legislation'? The Interpretation of Legislative Competence Norms within the Methodology of European Constitutional Law' (2010) 16 (6) *European Law Journal*, 760

³⁴³ Climate Emergency UK, *Map of Local Council Declarations* (Undated)

³⁴⁴ L Marix-Evans, *Local Authorities and the Sixth Carbon Budget*, (CCC, 2020)

³⁴⁵ LGA, *Denbighshire County Council: Tackling climate and ecological change in decision making* (LGA 2021)

authorities involved each hold separate areas of competency. This interplay can dissipate competences given the multiple authorities who take on those competences, whether described in law, or as meta-legislation. For example authorities may behave as if the competency is not theirs, but is present at a higher level – so the competency on formulating policy that would restrict fossil fuel extraction is not a competency that a local authority may perceive as theirs. Rather it is a competency that is perceived to be held by DLUHC,³⁴⁶ the department responsible for issuing national planning guidance for England's local planning authorities on both climate change policy and fossil fuel extraction policy (hydrocarbon minerals including coal) for development decisions. Authorities can therefore use the different levels at which competency is assigned by law to absolve themselves of responsibility for a course of action. In a complex horizontal and vertical interplay of competences there are opportunities in the legal framework on fossil fuel extraction in England to reduce 'competency' overall.

European Union (EU) 'competence' over climate change is connected to the question of who has competence on climate change emissions reduction but also fossil fuel extraction regulation, as both harmonisation and differentiation is possible.³⁴⁷ Haraldsdottir notes the limits of EU competence to regulate extraction,³⁴⁸ as it is in the province of member states, however the tensions between an overarching climate policy and inability to control the reduction of fossil fuel extraction in order to reduce emissions is clear. This is mirrored in the UK, where both competences are held at national level (on climate change and on fossil fuel extraction), but these competences hold within themselves a fundamental conflict if their aims are not aligned.

³⁴⁶ Previously MHCLG

³⁴⁷ A Dahl, 'Competence and Subsidiarity Perspectives in EU Climate Change Policy: From Harmonisation to Differentiation?' (1995) 10 (3) Energy & environment 333

³⁴⁸ K Haraldsdottir, 'Limits of EU Competence to Regulate Conditions for Exploitation of Energy Resources: Analysis of Articles 194(2) TFEU' (2014) 23 Eur. Energy & Env'tl. L. Rev. 208

Shapovalova questions the extent to which the Scottish Government held competency over fracking,³⁴⁹ and its ability to 'ban fracking'. The Welsh Government waited to receive delegated powers, and therefore the competency to take action on unconventional fossil fuels licensing.³⁵⁰ The acquisition of competency changes whether or not an authority takes a certain action or not. From these two instances it can be inferred that the acquisition of competency to a different authority such as in Wales led to a strengthening of environmental law. In Scotland, the competency was to a certain extent assumed in Shapovalova's analysis (as above), nonetheless it could be said that this example speaks to the relationship between competence and power and responsibility. An authority could take a different decision, take on more 'power' in the form of competence, and in that way strengthen environmental law. Of course the opposite is also possible.

Divergence can occur despite competences essentially being similar. There is no manifest link between a climate change competency and a particular course of action. England and Wales diverge for example in the way that the competency is carried out – in England there is a separation between the Secretary of State responsible for planning and the Secretary of State responsible for action on climate change. In Wales these competences are merged in one role, and the aims (described below) are therefore more harmonious – the emissions from fossil fuel extraction are directly connected to climate change mitigation duties.³⁵¹

3.1.2 Summary

The extent to which the legal challenge of competency contributes or detracts from the effectiveness of environmental law in terms of recognising limits has been examined through considering the different authorities and different levels of competency. The question is

³⁴⁹ D Shapovalova, 'Fracking, Nuclear, and Renewables: Is the Scottish Government Competent To Pursue These Policies?' (*UKELA*, June 1, 2018)

³⁵⁰ Welsh Government, *Licensing powers on fracking transferred to Wales* (Press release, 1 October 2018)

³⁵¹ Well-being of Future Generations (Wales) Act 2015, s4 Goals

whether a lack of competency is a restrictive factor in the effectiveness of environmental law in relation to fossil fuel extraction.

In contemplating the different authorities and their competences, it can be seen that at some levels – for example at national level, that the competency is broadly understood, but implemented in a rather vulnerable manner. One government department (DBEIS) holds the climate responsibility in terms of national plans and major infrastructure, and another department (DLUHC) holds the planning and climate responsibility. However when it comes to making decisions under the guidance these departments themselves issue, the authority to act on climate change, the competency is not utilised. An example of this is the *Drax case*, where the Secretary of State overruled the Examiner's recommendation.³⁵²

The second example is where the competency (legal authority to act) on the Paris Agreement is not devolved through the vertical interplay of competences. The UK Government has also legislated for adhering to climate change budgets and targets through the Climate Change Act 2008. But there is no clearly stated legal provision that connects the Paris Agreement, or even the Climate Change Act 2008, to an authority carrying out a competency in relation to land use planning. It is similarly the case for licensing, pollution control permits, health and safety, coal licences and hydraulic fracturing consents. This contributes to the competency gap, where the competency does not exist.

The third example is where a competency is adopted by an authority, to extend the power to act. Illustrated in the Denbighshire case, the adoption of a change to standing orders, allows the authority to deem itself as having the legal authority to act. Whether or not this results in more effective environmental law remains to be seen as this change is recent and not widespread. It has the potential to change cultural ways of thinking about the importance of climate change emissions reduction and adaptation in many different decisions.

³⁵² Secretary of State for Business, Energy & Industrial Strategy, *Drax Repowering Decision Letter of 4 October 2019* (DBEIS)

In summary, competency, the legal authority to act, is an important challenge for environmental law. Without competency, many authorities may not act, especially if the decision is a contentious one or involves a competing set of aims. Political and public debate may encourage authorities to expand competences – it may also encourage authorities to refrain or interpret narrowly the sphere of competency. In this research, the nature of authority, power and responsibility also engages with competency, as competency is a type of power.

Fossil fuel extraction requires authorities to engage with a set of opposing aims and a scientifically powerful, but poorly acknowledged imperative to recognise environmental limits. Internationally, the adoption of a framework for recognising planetary boundaries has been suggested by researchers,³⁵³ following on from the perceived failure to address limits internationally, particularly seen through an ecological lens.³⁵⁴ In the absence of more concrete developments at international level, national ‘aims’ are now considered in turn.

3.2 What are the aims found in the legal framework

3.2.1 Introduction

Conflicting aims are a challenge of a legal nature that influence the extent to which environmental law may or may not be effective in terms of recognising limits, and therefore successfully achieving environmental protection. Fossil fuel extraction is subject to several opposing aims that are found in the legal framework under examination, both in legislative and in policy provisions.

Fleming suggests energy regulation may provide a new method of regulation for fracking,³⁵⁵ however this research sets out to consider the broader regulatory structure for consenting the extraction of fossil fuels (including fracking) that should be surveyed. This provides a

³⁵³ E F Fernández and C Malwé, ‘The emergence of the ‘planetary boundaries’ concept in international environmental law: A proposal for a framework convention.’ (2019) 28 (1) *RECIEL* 48

³⁵⁴ N Pelletier, ‘Of laws and limits: An ecological economic perspective on redressing the failure of contemporary global environmental governance’ (2010) 20 (2) *Global Environmental Change* 220

³⁵⁵ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

different assessment of the effectiveness of the legal framework for the regulation of fossil fuel extraction, one that enables the consideration of environmental limits, and one where the insights gained through the research can be applicable more broadly to decision making on development that entails climate change emissions impacts. By concentrating not on energy regulation in and of itself, but on the broader corpus of environmental law, a different lens is being adopted to study the structure and effectiveness of the fossil fuel extraction regulation. Reins accepts that the challenge is of a 'coherent' regulation of energy and environment,³⁵⁶ inspiring this research to study further the issue of integrity in regulation, and to build on this by paying particular attention to the extent to which the legal framework is specifically able to successfully respect environmental limits.

Examining the extent to which environmental limits are respected in relation to fossil fuel extraction requires an understanding of the different aims of the legal framework. The aims of sustainable development, economic benefit, climate change mitigation and pollution prevention have been selected for more detailed examination in this research. These are the aims that colour how decisions are made on fossil fuel extraction. Sustainable development as an aim incorporates in the international definition the idea of environmental limits.³⁵⁷

Economic benefit is an aim that carries great weight in decision making, for example in land use planning, and where the idea of growth is in direct opposition to the idea of limits.

Climate change mitigation and pollution prevention aims both implicitly incorporate the idea of limits, as they contain the idea of reducing or stopping emissions that have a negative impact on the environment. The precautionary principle in relation to unconventional fossil fuel extraction has been researched by Hawkins,³⁵⁸ and while the idea of avoiding impacts is central to respecting environmental limits, this research has chosen to consider the following

³⁵⁶ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

³⁵⁷ United Nations Rio Declaration (1992)

³⁵⁸ Joanne Hawkins, 'Fracking: Minding the gaps' (2015) 17 (1) *Environmental Law Review* 8

selection of aims, based on an observation that these aims are current within the law in practice.³⁵⁹

Understanding where in the legal framework for fossil fuel extraction these aims are found, and what form they take, helps to understand the connection between the construction of the regulation, and the practice when these aims are applied. From officer's reports on decisions and council committee decisions, the extent to which these aims influence outcomes can then be studied. In this way, the research can probe the degree to which the form and substance of aims could be contributing to the effectiveness or not of environmental law in relation to recognising and respecting environmental limits.

The extent to which the presence of this legal basis for sustainable development, economic benefit, climate change mitigation and pollution prevention aims influences decision-making around fossil fuel extraction is then examined through the further qualitative evidence presented in Chapter 5 and 6.

3.2.2 Sustainable development aim

To what extent does sustainable development have a legal basis in relation to fossil fuel extraction regulation in England and Wales? There are a number of different regulatory frameworks as has been described. Sustainable development as an aim is found in land use planning policy, the National Planning Policy Framework (NPPF) in England, and Planning Policy Wales (PPW) in Wales,³⁶⁰ but is not defined in the regulation itself, although there are a number of references to 'sustainable development'. Licensing is briefly covered here, as licensing programmes, like land use plans, are subject to Strategic Environmental Assessment (SEA). SEA regulations contain provisions that describe aspects of sustainable development including types of environmental impact, and can therefore be considered a

³⁵⁹ Drawing on personal experience and observation, supported by the documentary evidence in the selected case studies.

³⁶⁰ Welsh Government, *Planning Policy Wales Edition 11*, (Planning guidance, 2021)

relevant embodiment of a sustainable development in law, and in some ways, an effective tool in environmental law in respecting environmental limits in decision making outcomes.³⁶¹

The Rio Declaration³⁶² requires signatories³⁶³ to follow certain principles in their development systems. Of these principles, the fourth principle is that ‘in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it’.³⁶⁴ This is taken as the key principle inasmuch as it demanded a radical change from prevailing development consent systems that focussed on enabling development and less upon environmental protection.³⁶⁵ However, because there is no quantitative element to the aim of ‘sustainable development’, this leads to a fluid interpretation of sustainable development as characterised by Ross, where environmental protection is considered but not always actualised in the outcome.³⁶⁶ This could be either because of a balancing process that occurs in decision making in a discretionary system such as land use planning, or because of human judgement and interpretation of the aim in relation to more technical permissions such as those issued by the Environment Agency or the Health and Safety Executive. However the form of the aim is a crucial element in the extent to which the aim is realised in any given decision. To understand the sustainable development ‘aim’ in the regulatory system concerning fossil fuel extraction in England it is important to map out precisely where the legal basis can be found, and how it is formulated.

Sustainable development is placed within the land use planning regime in England through the Planning and Compulsory Purchase Act 2004 at section 39(2).

³⁶¹ R Therivel, *Strategic Environmental Assessment in action* (Taylor & Francis 2010)

³⁶² United Nations Rio Declaration (1992)

³⁶³ i.e. Nation States

³⁶⁴ *Ibid* fn 361

³⁶⁵ A Gouldson, ‘Cooperation and the capacity for control: regulatory styles and the evolving influence of environmental regulations in the UK’ (2004) 22 (4) *Environment & Planning C: Government & Policy* 583

³⁶⁶ Andrea Ross, *Sustainable development law in the UK : from rhetoric to reality* (Earthscan 2012)

The person or body must exercise the function with the objective of contributing to the achievement of sustainable development.³⁶⁷

There is no definition of sustainable development on the face of the legislation as aforementioned. While arguably this formulation applies to any function, there is no legal definition to assist with understanding whether or not 'sustainable development' has been achieved or realised. The National Planning Policy Framework 2012 (NPPF) in England included in a box the definition arrived at in 'Securing the Future', the UK Strategy for Sustainable Development which was agreed by the devolved nations:

International and national bodies have set out broad principles of sustainable development. Resolution 42/187 of the United Nations General Assembly defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The UK Sustainable Development Strategy *Securing the Future* set out five 'guiding principles' of sustainable development: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.³⁶⁸

The reference to the UK's *Securing the Future* has been removed from the 2021 version of the NPPF but it has not specifically been revoked as a command paper. The NPPF in 2021 is now formulated as follows:

The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. At a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being and environmental protection³⁶⁹

The policy footnotes Resolution 42/187 of the United Nations General Assembly³⁷⁰ and the *Transforming our World: the 2030 Agenda for Sustainable Development* UN agreement.³⁷¹

The purpose of the change seems to have been to remove reference to the UK's sustainable development strategy for political reasons, the impact is that the leaver mentions of 'living

³⁶⁷ Planning and Compulsory Purchase Act 2004, s39(2) *The person or body must exercise the function with the objective of contributing to the achievement of sustainable development.*

³⁶⁸ HM Government, *Securing the future: delivering UK sustainable development strategy* (2005) Cm 6467

³⁶⁹ MHCLG *The National Planning Policy Framework* (Planning guidance, 2021)

³⁷⁰ United Nations, *Resolution adopted by the General Assembly 42/187. Report of the World Commission on Environment and Development 11 December 1987*

³⁷¹ United Nations, *Resolution adopted by the General Assembly on 25 September 2015 70/1. Transforming our world: the 2030 Agenda for Sustainable Development*

within the planet's environmental limits' is lost from being within the ambit of the description of sustainable development. The 'high level' characterisation of the sustainable development aim detracts from its effectiveness as it is not reflected in the key policy test of the 'presumption in favour of sustainable development'. It does not have the specificity that would be required if it could have force on an actual development decision. There is no measure that could objectively test the extent to which this sustainable development aim is met or not – or alternatively, it is possible for any type of development to pass the test, as all development arguably contributes to meeting the needs of the present, and in general, a single development (as decisions are made on a case by case basis) is unlikely to compromise the ability of future generations to meet their own needs.

The presumption in favour of sustainable development at paragraph 11 of the NPPF (2021), expresses sustainable development as approving development unless the impacts 'significantly and demonstrably outweigh the benefits'. This formulation is a 'tilted balance',³⁷² where sustainable development 'aim' incorporates an economic growth aim that is of more weight in the planning balance than environmental limits, which is not specifically mentioned in this policy.

Unlike for instance the legislative framing in the Future Generations Act (Wales) 2015 as set out at 5 (1):

In this Act, any reference to a public body doing something 'in accordance with the sustainable development principle' means that the body must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.³⁷³

The new duty in Wales has had its first few tests, and the signs are not that positive given that in *R (B) v Neath Port Talbot CBC* on 12th March 2019, Mrs Justice Lambert largely accepted arguments from Neath CBC that the Act imposes general duties not giving a right

³⁷² *Oxton Farm v Harrogate BC* [2020] EWCA Civ 805

³⁷³ Well-being of Future Generations Act 2015, Section 5(1)

to an individual to claim judicial review in the event of their breach.³⁷⁴ The sustainable development principle is described as a way of taking account of the well being goals in the way in which the well being objectives that the public body formulates to ensure that there is an integrated approach and long term thinking so that some goals are not prioritised over other goals.³⁷⁵ Taking a closer look at the goals shows that the sustainable development aim is to all intents and purposes made up of a series of aims, as shown in the following table.³⁷⁶

Table 4 Well Being Goals

Goal	Description of the goal
A prosperous Wales.	An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.
A resilient Wales.	A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).
A healthier Wales.	A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.
A more equal Wales.	A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances).
A Wales of cohesive communities.	Attractive, viable, safe and well-connected communities.
A Wales of vibrant culture and thriving Welsh language.	A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.
A globally responsible Wales.	A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

Sustainable development is shown to be a complex and multi-faceted series of goals in the Welsh legislation, while it is without clear definition in the English legislation and only

³⁷⁴ *R (Blackmore)-v-Neath and Port Talbot CBC* [2019] EWHC (Admin)

³⁷⁵ Well-being of Future Generations Act 2015, s5(2)(a)-(e)

³⁷⁶ Well-being of Future Generations Act 2015, s4

appears in policy. Comparing the Welsh goals with the English planning policy shows that there are different interpretations of the internationally agreed resolution available; referring to the resolution, and indeed having signed up to the resolution as the UK has, does not bind the government to setting out a sustainable development aim that incorporates environmental limits in law. It also shows that it is possible to create a legislative provision that describes sustainable development which has a longer lasting effect than policy that can be amended at any time; and that 'growth' is not necessarily a logical interpretation of the resolution given the express inclusion of limits and commitment to change the economic development model. Observation of the concept of global environmental limits in the definition of sustainable development aim allows for comparison of different approaches in environmental law and the extent to which the different approaches are more or less effective.

Political influence over the construction of the sustainable development aim is one possible answer to the divergence that is found here.³⁷⁷ England has had a Conservative government since 2010 (initially a coalition with the Liberal Democrats), while Wales's government has been predominantly Labour with occasional support from Plaid Cymru. Turning from the high level descriptions of the sustainable development aim in policy in England and legislation in Wales, it is pertinent to understand whether the sustainable development aim in relation to the plan-making and decision-taking functions of planning authorities offer further clarification or not.

Specific guidance is issued on the plan-making function in both England and Wales. National planning guidance in England sets out what the Government expects in terms of land-use plans as follows in the NPPF:

Local Plans set out a vision and a framework for the future development of the area, addressing needs and opportunities in relation to housing, the economy, community

³⁷⁷ I Scoones, 'The Politics of Sustainability and Development' (2016) 41(1) Annual Review of Environment and Resources 293

facilities and infrastructure – as well as a basis for safeguarding the environment, adapting to climate change and securing good design.³⁷⁸

The Welsh Government sets out a similar description in Planning Policy Wales (PPW) for local plans:

- it should incorporate a concise, long-term vision and strategy;
- it should indicate clearly the plan's main objectives, along with the broad direction of change;
- it should indicate key spatial locations for development and the infrastructure required to achieve them;³⁷⁹

Common themes emerge from national planning guidance across England and Wales – particularly that the plan looks to the future, describing types of development and adding in the spatial element. Clearly the increased level of detail, and the reduction of tension between growth and limits in the sustainable development 'aim' in Wales would suggest that there is a stronger basis for local authorities in Wales to act within their competency on creating local plans to achieve a different sort of sustainable development than in England. Different definitions of sustainable development are also applied in planning decisions for hydrocarbon minerals in England and Wales.

Originally the NPPF referred to virtually the entire document (not including the box text) as the definition of sustainable development: 'The policies in paragraphs 18 to 219, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system' at paragraph 6. The policy definition in these 200 paragraphs is broad, and pluralistic, so that the majority is structured as affirmative policy, including minerals hydrocarbons, apart from development types such as peat, where there are clear negative framings. England has adopted a series of other aims, but none that concern a sustainable development aim, although the recent Environment Act 2021 has created a set of environmental principles and a definition of environmental protection.³⁸⁰

³⁷⁸ DCLG, *National Planning Policy Guidance* (Planning guidance, 19 May 2016, Last updated 1 February 2018), Reference ID: 12-001-20170728

³⁷⁹ Welsh Government, *Planning Policy Wales Edition 11* (Planning guidance, 2021)

³⁸⁰ Environment Act 2021

Under the environmental permit regulations,³⁸¹ there is no sustainable development aim as it is concerned with the regulation of different environmental pollutants, and the pollution prevention aim is therefore discussed in more detail later.

The licensing regime confers rights and responsibilities that are relevant to the consideration of to what extent sustainable development may or may not be achieved in relation to the extraction and exploitation of unconventional fossil fuels. The most recent landward licensing round (the 14th round) was officially published in the European Journal and included the following stipulation:

All applications will be determined in accordance with the terms of the Hydrocarbons Licensing Directive Regulations 1995 (S.I. 1995 No 1434) and against a background of the continuing need for expeditious, thorough, efficient and safe exploration to identify oil and gas resources within the mainland of Great Britain with due regard to environmental considerations.³⁸²

The specific mention of environmental considerations is relevant to the consideration of the presence or otherwise of a sustainable development aim in the regulation. Given that this research is concerned with the extent to which aims are effective in achieving outcomes that recognise environmental limits, and the aims that are being considered include sustainable development, it is relevant to include the need for the licensing round to consider the environment as a sustainable development aim. The licensing round (the 14th licensing round)³⁸³ was subject to a Strategic Environmental Assessment (SEA) under the Environmental Assessment Directive.³⁸⁴ SEA requires a consideration of 'the likely significant effects on the environment' and that 'the reasonable alternatives of the proposed plan or programme are identified'.³⁸⁵ The document also tabulated a comprehensive set of environmental factors – biodiversity and nature; land-use, soils and geology; water and flood

³⁸¹ Environmental Permitting (England and Wales) Regulations 2016

³⁸² United Kingdom Government notice concerning European Parliament and Council Directive 94/22/EC on the conditions for granting and using authorisations for the prospection, exploration and production of hydrocarbons [2014] OJ C 188/ 14

³⁸³ United Kingdom Government notice concerning European Parliament and Council Directive 94/22/EC on the conditions for granting and using authorisations for the prospection, exploration and production of hydrocarbons [2014] OJ C 188/ 14

³⁸⁴ Council Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment [2001] OJ L 197/30

³⁸⁵ Commission, 'Strategic Environmental Assessment – SEA' (2018)

risk; waste use and resources; landscape; climate change and air. It also considered health, population and cultural heritage, documenting considerable environmental pressures and negative environmental contexts. The process did not result in the abandonment of the shale gas exploitation programme or the withholding of licences on sustainable development or environmental limits grounds.³⁸⁶ Whether or not this is a failure in environmental law in recognising limits is a question that must be asked. The SEA process allowed for an assessment of a programme of possible activity. It did not allow for a comprehensive testing of the impact of that programme of possible activity through the contribution to greenhouse gas emissions overall, such as the CCC report suggests is necessary so that emissions from fossil fuels, including new sources, allow the UK to remain within legislated budgets, and achieve the end target of 100% reduction of greenhouse gas emissions by 2050.³⁸⁷

The European Habitats Directive³⁸⁸ also applies to the issuing of licences themselves, to ensure consideration of the possibility of any adverse effect on the integrity of any protected European site. A Habitats Regulation Assessment (HRA) was carried out following responses to the earlier SEA consultation³⁸⁹ on the 14th licensing round. The Oil and Gas Authority concluded that having taken into account the responses received during the course of the process of the HRA, and having considered the evidence provided, that it was now 'satisfied that the approval of the 14th licensing round and the offer and eventual award of each of the licences under the round will not have an adverse effect on the integrity of any protected European site.'³⁹⁰ This is a useful case to further illuminate the extent to which what is considered to be a stringent process of assessment, can handle cumulative impacts in a range of different future scenarios.

³⁸⁶ N T Yap, 'Unconventional shale gas development: challenges for environmental policy and EA practice' (2016) 34(2) *Impact Assessment & Project Appraisal* 97

³⁸⁷ Climate Change Act 2008

³⁸⁸ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora [1992] OJ L 206/7

³⁸⁹ Oil and Gas Authority (OGA), *OGA response to the consultation on the Habitats Regulations Assessment of the 14th Onshore Oil and Gas Licensing Round* (2015)

³⁹⁰ OGA, 'Consultation outcome Habitats Regulations Assessments of 14th onshore oil and gas licensing round' (2015)

The aim of sustainable development is most obviously found in land use planning regulation, and procedural assessment regulation is a tool designed to support the achievement of sustainable development and environmental protection through the recognition of environmental limits. In its construction some flaws have emerged, as it seems that environmental limits are not recognised explicitly and effectively in England's framework, an issue that may have an impact on the outcome of decisions. In the assessment process, and the example considered of the licensing round, environmental limits were not applied.

3.2.3 Climate change mitigation aim

Climate change action is one of the Sustainable Development Goals and is linked to the Paris Agreement to keep global warming to 1.5 degrees. The burning of fossil fuels is a major cause of emissions that are changing the climate. In July 2016, NASA reported a record-breaking year on global warming: 'Each of the first six months of 2016 set a record as the warmest respective month globally in the modern temperature record, which dates to 1880.'³⁹¹ In the same report, NASA pointed out that 'the extent of Arctic sea ice at the peak of the summer melt season now typically covers 40 percent less area than it did in the late 1970s and early 1980s.'³⁹² In December 2016, the UK Government answered a parliamentary question on the need to limit the extraction of fossil fuels as follows:

'Based on these figures, between 70-75 percent of known fossil fuels would have to be left unused in order to have a 50% chance of limiting global temperature rise to below 2°C.'³⁹³

This is the concept of 'unburnable carbon'³⁹⁴ that is starting to enter political and policy discourse as understanding of planetary boundaries and environmental limits becomes more pressing given the present and predicted climate change impacts.

³⁹¹ NASA, *2016 Climate Trends Continue to Break Records* (NASA, 19 July 2016)

< <https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records> > last accessed November 2019

³⁹² *Ibid*

³⁹³ Question for Department for Business, Energy and Industrial Strategy UIN 56871, tabled on 9 December 2016

³⁹⁴ M Jakob and J Hilaire, 'Unburnable fossil-fuel reserves', (2015) 517 (7533) *Nature* 150

Climate change mitigation aims are found in the land use planning regulation, and through assessment regulation in the licensing regime. The other regimes such as health and safety, coal, pollution control and hydraulic fracturing consent do not contain clearly stated climate change mitigation aims. There is a question as to the effectiveness of repeating an aim across different regimes to implement what may be termed harmonisation or integration, or an approach could be taken that suggests that one regime in the overall regulatory framework for fossil fuel extraction applies and enforces that aim as part of the decision making outcome.

In the licensing regime, the SEA requirement at the overarching stage (of offering licences); and at the operative stage (of operating as a licence holder) to consider 'environmental impacts' both afford opportunities to address climate change mitigation. A post adoption statement set out that the '*Licensing Plan is set within the context of these energy supply and greenhouse gas reduction efforts; however, even as decarbonisation proceeds, oil and gas will continue to provide an important contribution to UK energy supplies for years to come.*'³⁹⁵

Under the Planning and Compulsory Purchase Act, section 19(1A) as amended by the Planning Act 2008 on climate change applies a duty on local plan-makers '*to include policies as a whole that contribute to the mitigation and adaptation of climate change.*'³⁹⁶ This is a relevant provision for minerals and waste plans that have to recognise and commit to this aim. The aim is however, only as effective to the extent that it is a test which if met, allows a plan to be adopted and to enter legal force. The Planning Inspectorate in England, after a series of correspondence with Friends of the Earth, acknowledged the need to specifically consider whether this aim had been met in the examination of local plans. Without a metric attached to the aim (in terms of how to measure whether the aim had been met) the

³⁹⁵ Department for Energy and Climate Change (DECC), *Strategic Environmental Assessment for Further Onshore Oil and Gas Licensing Post Adoption Statement* (Statement, 2014)

³⁹⁶ Climate Change Act 2008 s19

enforceability of such an aim to amend permissive fossil fuel extraction policies has been limited.

In the Planning Act 2008 in Section 10 a differently worded provision sets an aim for the National Policy Statements on major infrastructure to consider climate change as part of sustainable development:

10 (2) The Secretary of State must, in exercising those functions, do so with the objective of contributing to the achievement of sustainable development.

(3) For the purposes of subsection (2) the Secretary of State must (in particular) have regard to the desirability of—(a) mitigating, and adapting to, climate change;³⁹⁷

This aim has resulted in successful legal challenge on the Airports National Policy Statement,³⁹⁸ where insufficient regard had been had to the mitigation of climate change. This demonstrates that where a policy guiding development (in this case airports) has an acknowledged impact on greenhouse gas emissions the courts will support the interpretation the aim must be applied, and the construction of this provision could therefore be considered to be effective to that extent.

For decisions on development neither the Town and Country Planning Act 1990 at Section 70, which describes the way in which decisions must be taken; nor the Planning Act 2008 at Section 104-6, includes a specific aim to consider climate change mitigation. The aim is only found in policy-making (although note that local planning guidance, such as the national planning policy framework is subject to no such provision).

One is the inherent contradictions of the policies set out in the paragraphs referenced in the NPPF in England.³⁹⁹ This means for example, paragraph 144 requiring decision makers to ‘*give great weight to the benefits of the mineral extraction, including to the economy;*’ is alongside paragraph 94 requiring decision-makers to ‘*adopt proactive strategies to mitigate*

³⁹⁷ Planning Act 2008 s10

³⁹⁸ Department for Transport (DFT) *Airports National Policy Statement: new runway capacity and infrastructure at airports in the south-east of England* (Planning guidance, 2018); *R (Plan B Earth and others) v Secretary of State for Transport and others* [2020] EWCA Civ 214

³⁹⁹ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

and adapt to climate change'. There is both a 'benefit' and a 'disbenefit' to hydrocarbon mineral extraction in terms of sustainable development – it contributes energy which drives economic and social goods,⁴⁰⁰ but it produces greenhouse gas emissions and other wastes that are environmental problems, and can have noise, landscape and transport impacts that affect local communities. The use of the resource is generally characterised as 'Scope 3' emissions and therefore distanced from Scope 1 and 2 that are characterised as more directly linked to the extraction activities.⁴⁰¹

Further, the meaning of 'energy security' as secured by shale gas exploitation is set out as a contribution to the low carbon economy in the written ministerial statement published in 2015:

'Exploring and developing our shale gas and oil resources could potentially bring substantial benefits and help meet our objectives for secure energy supplies, economic growth and lower carbon emissions'⁴⁰²

This clearly points to the context being the UK's aspirations for a low carbon economy,⁴⁰³ and in the context of the target set by the Climate Change Act 2008 to 'ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline'.⁴⁰⁴ In April 2021 the Carbon Budget Order was presented to Parliament and adopted by Government:

2. The carbon budget for the 2033-2037 budgetary period is 965,000,000 tonnes of carbon dioxide equivalent.⁴⁰⁵

This equates to an effective reduction of 78% by 2035 in terms of greenhouse gas emissions as confirmed by the UK Government at the time.⁴⁰⁶ That means a limited timeframe and target, that takes effect as an 'environmental limit', servicing a public benefit of addressing

⁴⁰⁰ Tina Hunter (ed) *Handbook of shale gas law and policy: economics, access, law and regulation in key jurisdictions* (Intersentia 2016)

⁴⁰¹ Ministry of Housing Communities and Local Government (MHCLG), APP/P2935/V/16/3158266 Town And Country Planning Act 1990 – Section 77 Application Made By HJ Banks & Company Ltd Land At Highthorn, Widdrington, Northumberland NE61 5EE Application Ref: 15/03410/CCMEIA 8 September 2020

⁴⁰² Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

⁴⁰³ CCC, *Fifth Carbon Budget* (CCC, 2016) CCC; DBEIS *The Clean Growth Strategy* (Policy paper, 2017)

⁴⁰⁴ Climate Change Act 2008, s1, as amended in 2020

⁴⁰⁵ The Carbon Budget Order 2021 No. 750

⁴⁰⁶ Department for Business, Energy & Industrial Strategy, Prime Minister's Office, 10 Downing Street, The Rt Hon Kwasi Kwarteng MP, The Rt Hon Alok Sharma MP, and The Rt Hon Boris Johnson MP, *UK enshrines new target in law to slash emissions by 78% by 2035* (Press release, 20 April 2021)

the cause of climate change. On the other hand, there is the 'public benefit' of energy production.

It is broadly acknowledged that energy security delivers multiple economic and social benefits, as Fleming has set out comprehensively in *Shale gas, the environment and energy security*.⁴⁰⁷ 'Energy security' is defined by the International Energy Agency (IEA) as 'uninterrupted availability of energy sources at an affordable price'.⁴⁰⁸ It is also a concept that in the IEA's definition incorporates the broader notions of long-term and short-term energy security.⁴⁰⁹ Long term energy security is particularly relevant to the achievement of sustainable development as it has an environmental dimension in its description as set out by the IEA: 'long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs'.⁴¹⁰ If energy security is considered within the frame of a low carbon economy, and therefore the overarching frame of sustainable development, it is therefore necessary for decisions contributing to 'energy security' to make a contribution to the low carbon economy and to contribute more broadly to sustainable development.

Taking the example of climate change emissions that inevitably result from the exploitation of unconventional fossil fuels,⁴¹¹ illustrates the fraught nature of equating this type of development with 'sustainability'.⁴¹² Recent reports are warning that it is possible that global warming from greenhouse gas emissions from fossil fuels already in the atmosphere are past a 1.5 degree level of warming.⁴¹³ The UK's Committee on Climate Change in 2016 published a report into the impact of the exploitation of shale gas on the UK's carbon budgets set by

⁴⁰⁷ Ruven Fleming, *Shale gas, the environment and energy security: a new framework for energy regulation* (Edward Elgar 2017)

⁴⁰⁸ International Energy Agency (IEA), *Energy Security* (undated)

⁴⁰⁹ *Ibid*

⁴¹⁰ *Ibid*

⁴¹¹ To a greater or lesser extent depending on some geological environmental factors, in addition to the accepted conversion rate from burning.

⁴¹² R Wood and P Gilbert and M Sharmina and K Anderson and A Footitt and S Glynn and F Nicholls, 'Shale gas: a provisional assessment of climate change and environmental impacts' (Tyndall Centre Technical Reports, Cooperative Group, 2011)

⁴¹³ IPCC, *Climate Change 2021: The Physical Science Basis*, the Working Group I contribution to the Sixth Assessment Report on 6 August 2021

the Climate Change Act 2008 (CCA) and recommended that this exploitation (at the scale proposed by industry) would not be compatible with the achievement of the budgets unless specific tests to limit emissions were met.⁴¹⁴ Yet in all the decisions taken so far in England, Wales and Northern Ireland on unconventional fossil fuels, the impact on climate change has not been considered as 'significant', bar the latest exception.⁴¹⁵ In some cases, climate change has not even been considered relevant. In the same decisions the benefits of economic growth and the contribution made by unconventional fossil fuels to 'energy security' are consistently and strongly made, such as in the following example of a consent granted by Trafford Council in relation to coal bed methane:

116. The Office of Unconventional Gas and Oil promotes the safe, responsible and environmentally sound recovery of the UK's unconventional reserves of gas and oil and has the aim of ensuring that the UK makes the best use of our natural resources by encouraging the development of these reserves in a way that maximizes the benefits to the economy in terms of improving security of supply, creating jobs, growth and investment, and supporting the transition to a low carbon economy at the least cost. NPPF supports this and paragraph 144 states that great weight should be given to the economic benefits of minerals extraction.⁴¹⁶

Given the stringent carbon budget that needs to be met over a 15 year timeframe, the question is the extent to which the current legal framework recognises this environment limit. Local plans and minerals and waste plans often have 10-15 year timeframes. Decisions made now on extraction of fossil fuels will fall within that timeframe. Unfortunately the CCA confers no duties on public authorities, but only on the legal entity of the Secretary of State as described earlier as part of the exploration of competency. Here, the climate change mitigation aim within the legal framework for the extraction of fossil fuels is in the form of consideration of mitigation, radical reductions in emissions, and similar wording, but there is

⁴¹⁴ CCC, *The compatibility of UK onshore petroleum with meeting the UK's carbon budgets* (CCC, 2016)

⁴¹⁵ DHLUC APP/A0665/W/18/3207952 Town And Country Planning Act 1990 – Section 78 Appeal Made By Island Gas Limited Land At Ellesmere Port Wellsite, Portside North, Ellesmere Port, Cheshire Application Ref: 17/03213/Min 7 June 2022

⁴¹⁶ Application To Extend The Time Limit Of Planning Permission 74681/Full/2010 (Construction Of Site For Exploration, Production Testing And Extraction Of Coal Bed Methane, Transmission Of Gas And Generation Of Electricity, Erection Of Temporary 34m High Drilling Rig, Formation Of Two Exploratory Boreholes, Installation Of Wells, Erection Of Portacabins, Storage Containers And Ancillary Plant And Equipment, Creation Of A New Vehicular Access Road, Erection Of 2.4m High Perimeter Fencing And Restoration Of Site Following Cessation Of Use) 81446/RENEWAL/2013

no explicit target. The CCA is referred to as part of the NPPF, but local planning authorities have no explicit competency to act to achieve the carbon budgets and employ a limit to greenhouse gas emissions to their plan-making and decision-taking functions.

Wales has adopted a change to national energy planning policy that introduces a hierarchy with fossil fuel energy at the bottom.⁴¹⁷ In the latest edition of Planning Policy Wales at 5.10.11, policy controlling unconventional fossil fuel extraction is as follows:

The Welsh Government has set challenging targets for decarbonisation and increased renewable energy generation. The continued extraction of all fossil fuels, including shale gas, coal bed methane and underground coal gasification, are not compatible with those targets. The Welsh Government's policy objective is therefore to avoid the continued extraction and consumption of fossil fuels. When proposing the extraction of on-shore oil and gas, robust and credible evidence will need to be provided to the effect that proposals conform to the energy hierarchy, including how they make a necessary contribution towards decarbonising the energy system. In all other respects, minerals policies aimed at preventing and limiting the environmental impacts of extraction and ensuring restoration will apply.⁴¹⁸

Connecting the extraction of fossil fuels to climate change emissions impacts is a ground breaking precedent. There had previously been no policy that linked the largest cause of emissions impacts to making decisions at the point of extraction that recognised these inevitable impacts.

The question is whether the effectiveness of environmental law is undermined by the lack of a clearer climate change aim in the legal framework in England. One could argue that the CCA embodies a clear aim with a clear target and a clear budget, and that rather than the aim being unclear, it is the way it is referenced across the legal framework, to which fossil fuel extraction is subject, that is unclear and undermines its effectiveness. In contrast to the climate change aim, for which public authorities in England do not hold a duty to consider, economic growth is a duty for authorities relevant in this framework.

⁴¹⁷ Welsh Government, *Consultation Document Draft Planning Policy Wales: Edition 10* (Planning guidance, 2018)

⁴¹⁸ Welsh Government, *Planning Policy Wales Edition 11* (Planning guidance, 2021)

3.2.4 Economic benefit or growth aim

Within the legal framework for fossil fuel extraction, there are a number of instances where economic benefits or growth is spelt out. Under licensing regulation, there is a duty to 'maximise' economic returns from fossil fuel extraction (oft-cited in relation to North Sea oil and gas extraction). It forms a substantive driving aim in the issuing of licences and the operation of those licences.⁴¹⁹ While the Deregulation Act 2015 is not directly related to the legal framework for fossil fuel extraction it applies to many of the authorities who are operating under the remit of that framework. This is a duty similar to Wales' Future Generations Act 2015, but almost completely opposite in ideological force:

108 Exercise of regulatory functions: economic growth

(1) A person exercising a regulatory function to which this section applies must, in the exercise of the function, have regard to the desirability of promoting economic growth.

(2) In performing the duty under subsection (1), the person must, in particular, consider the importance for the promotion of economic growth of exercising the regulatory function in a way which ensures that - (a) regulatory action is taken only when it is needed, and (b) any action taken is proportionate.⁴²⁰

One could consider this aim to be as 'vague' as the duty on sustainable development. In practice, the application of sustainable development is never as clearly understood⁴²¹ as economic growth. Sustainable development can be interpreted as economic growth, by those in authority. Economic growth as an aim in comparison needs little explanation or accompanying guidance. What is interesting is that while it would seem that in order to ensure that environmental limits such as the need to reduce climate change emissions are respected in decisions on fossil fuel extraction these limits need to be spelt out with some force, and with some metrics attached, there is no similar need for economic growth or benefits to be treated in the same way. Numbers of jobs, and the financial inputs and outputs are

⁴¹⁹ Tina Hunter (ed) *Handbook of shale gas law and policy: economics, access, law and regulation in key jurisdictions* (Intersentia 2016)

⁴²⁰ Deregulation Act 2015, s108

⁴²¹ Andrea Ross, *Sustainable development law in the UK : from rhetoric to reality* (Earthscan 2012)

described in relation to economic benefits, but this process does not bear comparison with for example housing metrics, which may be a more useful comparison for carbon accounting.

The aim for the economy is described in the planning policy guidance for England as compared with Wales’s legislative definition of the well-being goals, and as can be seen, they are formulated quite differently.

Table 5 Comparison between England and Wales

England (NPPF)	Wales (WFGA)
<p>An economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;</p>	<p>An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.</p>

In Table 5, a comparison is made between the economic objective in England’s planning policy, and the well-being goal that describes the economy in Wales’ Well-being of Future Generations Act 2015. They are formulated quite differently – consider the difference between the use of the word ‘growth’ and an economy that generates ‘wealth for people’; between sufficient land being identified and resources that are used ‘efficiently and proportionately’. Examining the specific wording assists with a deeper understanding of the aim that inhabits the legal framework. These aims could respectively generate different outcomes in decisions.

Fossil fuel extraction is supported by NPPF paragraph 144: 'When determining planning applications, local planning authorities should: [first bullet] give great weight to the benefits of the mineral extraction, including to the economy;'. Coal not similarly supported, but nor is there a clear presumption against such as there is for peat. While hydrocarbon minerals development is characterised by policy support in England, where it is considered of 'great benefit to economic growth',⁴²² whereas it is not connected any longer to economic benefit in Wales. Revised planning policy for England states at paragraph 209:

Minerals planning authorities should: a) recognise the benefits of on-shore oil and gas development, including unconventional hydrocarbons, for the security of energy supplies and supporting the transition to a low-carbon economy; and put in place policies to facilitate their exploration and extraction;⁴²³

There is a clear connection between unconventional fossil fuel extraction and economic benefit. An implicit acknowledgement of the possible lesser impact of unconventional fossil fuels on overall emissions⁴²⁴ is present in the designation of 'low carbon economy'. Over a period of time, and partly due to effective campaigning by communities, by Friends of the Earth,⁴²⁵ and the devastating impacts of coal mining on Welsh communities, including the huge cost of restoration,⁴²⁶ and through political conviction, the Welsh government changed its position on all fossil fuels and connected fossil fuels to climate change impacts rather than to economic growth.

3.2.5 Pollution prevention aim

Aims on pollution prevention can be found in the legal framework for fossil fuel extraction in England's land use planning regulation and in planning and pollution control. In England, economic benefits can outweigh environmental impact except where there are 'significant' impacts. This is a high test, and in practice could entail impacts with every development that gains consent. Coal mining and fracking have both gained consent under this policy despite

⁴²² DCLG *National Planning Policy Framework* (Planning guidance, 1st edn, 2011) Chapter 13

⁴²³ MHCLG '*National Planning Policy Framework*' (Planning guidance, 2nd edn, 2018)

⁴²⁴ R W Howarth and R Santoro and A Ingraffea, 'Methane and the greenhouse-gas footprint of natural gas from shale formations' (2011) 106 (4) *Climatic Change* 679

⁴²⁵ Personal observation.

⁴²⁶ ERM, *Research into the failure to restore opencast coal sites in South Wales* (WG, 2014)

the presence of environmental impacts. Two matters arise out of the consideration of the aim of pollution prevention in the planning policy and in the process of assessment (EIA and SEA), namely that the aims are not sufficiently strongly worded to pose a brake on development. There is no presumption against environmentally damaging development, and on a case by case basis, there is rarely a development that is refused on environmental grounds. Most planning development is approved in England under the current policy construction.⁴²⁷

Planning guidance also includes model conditions in England. These model conditions propose formulations to cover the various aspects of planning considerations such as visual impact, noise, transport, dust, air quality, lighting and soils, water. For example a model condition on the protection of groundwater is part of the guidance:

The boreholes must be constructed so as to prevent uncontrolled discharge of artesian groundwater to surface, and to prevent uncontrolled discharge of water or contamination into or between individual aquifers or different geological formations.⁴²⁸

However while conditions are meant to be constructed so as to be enforceable, it is likely that this condition could not be tested. Monitoring whether or not the condition is achieved may be very complex and require technology that neither the authority nor the Environment Agency nor the operator of the development has access to.

Under the planning and pollution control regime it is apparent that the Environment Agency's role is to set 'objectives' for example setting a limit on effluent to watercourses, or emissions to air, and the permit leaves the method for achieving that objective to the operator. Certain aims are therefore met in pollution control by the use of limits. Greenhouse gas emissions are not limited in this way however from the use of the resource, but only from for example the reduction of methane leakage, or the use of different types of technology, such as flaring, to change methane leakage to carbon dioxide emissions. There is a limit the activity of

⁴²⁷ DLUHC *Statistical Data set: Live tables on planning application statistics* (2012) updates

⁴²⁸ MHCLG *National Planning Guidance Minerals Annex C: Model planning conditions for surface area* (Planning guidance, 2014) paragraph 139

flaring, and it is possible that this may to a certain extent impose an ‘environmental limit aim’ on fossil fuel extraction, it does not impose that limit on the resource extracted but only on the act of extracting.

3.2.6 Summary

Mapping out the references to aims on sustainable development, climate change mitigation, economic growth and pollution prevention in the regulatory framework (both legislative and policy) reveals where the legal basis can be found. This legal basis is however weak, consisting of duties to have regard to sustainable development with malleable definitions in politically charged guidance in England. Divergences are developing across the UK. This stems from a mix of the political and ideological approaches to governance, regulation, energy security and sustainable development. Wales’ Future Generations Act 2015 does define sustainable development not directly in relation to land use planning but instead for public authority functions (which includes planning functions). In comparison, environmental assessment (EIA), stemming from EU law, is described in detail as elements; air, soil, water etc; and effects; indirect, secondary, cumulative.⁴²⁹ EIA also contains a clear provision that the environmental information has to be considered in the decision itself – there is no such parallel provision with regard to sustainable development (that it has to be considered in each decision), nor for example in the climate change duties brought in by the Planning Act 2008 is there a provision on decision-taking.

Sustainable development aims informing development decision-makers in England assess environmental matters but rarely apply environmental limits. If this continues, there is the potential for environmental damage to be slowed, but current development systems will not halt or reverse the damage.⁴³⁰ Overall, the extraction of fossil fuels globally is compromising the ability of future generations to meet their own needs because the damage is now

⁴²⁹ Town and Country Planning Environmental Impact Assessment Regulations 2017 SI No. 571

⁴³⁰ European Environment Agency, *The European environment — state and outlook 2020* (2019)

perceived to be so severe that entire countries may be lost to drought or flooding or sea level rise.⁴³¹ But this cumulative impact is not apparent on a case by case basis. 'Sustainability' is therefore so far, an unenforceable provision, both because of its ill-defined nature, and because it cannot be usefully used as a measure for assessing individual developments.

Stokes has set out the UK Government's tactical approaches to governing unconventional fossil fuels in order to promote the 'new' technology in the face of public opposition.⁴³² This regulatory overview is important context for assessing the outcomes on the ground i.e. the decisions taken, and developers' actions, both in understanding how effectively the aims in the regulation are constructed, and to be cognisant of the political influence and context for the aims in the framework.

Legal frameworks around unconventional fossil fuels have taken different directions, ranging from the Republic of Ireland's proposed ban through the *Prohibition of Fossil Fuels Bill 2017*;⁴³³ to the general duty to 'maximise economic recovery' of petroleum in the UK Parliament's Infrastructure Act 2015.⁴³⁴ England's legal framework could be characterised as 'managing' unconventional fossil fuel activities.⁴³⁵ Recognised triggers such as the London smog of 1952 for proscribing legislation such as the Clean Air Act 1956⁴³⁶ can be contrasted with the legislative change around the ban on smoking. This took a different, longer, route characterised by the coalescence of evidence of health impacts with public concern.

The earthquake in Blackpool was a trigger in England and Wales for a year-long moratorium on high volume hydraulic fracturing. It also led eventually to regulation to prohibit hydraulic fracturing in protected areas.⁴³⁷ The quality of the evidence and analysis was questioned at

⁴³¹ IPCC, *Climate Change 2021: The Physical Science Basis*, the Working Group I contribution to the Sixth Assessment Report on 6 August 2021

⁴³² E Stokes, 'Regulatory Domain and Regulatory Dexterity: Critiquing the UK Governance of 'Fracking'' (2016) 79 *Modern Law Review* 961

⁴³³ Oireachtas Prohibition of Fossil Fuels (Keep it in the Ground) Bill 2017 [No 136 of 2017]

⁴³⁴ Infrastructure Act 2015 s41

⁴³⁵ See Chapter 2

⁴³⁶ R. Macrory, 'Regulation, Enforcement and Governance in Environmental Law' (2nd edn Hart 2010) p7 commenting on Lord Ashby's point about the 'ignition event' for legislative change

⁴³⁷ The Petroleum Licensing (Exploration and Production) (Landward Areas) (Amendment) (England and Wales) Regulations 2016 No 2019

the time by protest groups and NGOs.⁴³⁸ Scotland initiated a public consultation on unconventional oil and gas⁴³⁹ as well as setting up an expert group to report on unconventional oil and gas,⁴⁴⁰ leading to an ‘unfinished’ planning policy,⁴⁴¹ clarified by the Court after a challenge by petrochemical giant INEOS,⁴⁴² to take a position not to support development.⁴⁴³ Wales has introduced an effective ban on further licensing for petroleum exploration through a Written Statement, but have not banned through regulation although there is as a presumption against fossil fuels in its planning policy, having commissioned a number of reports to support its position.⁴⁴⁴ There are advocates for a proscribed approach to unconventional oil and gas consisting of concerned politicians, NGOs and protest groups, as well as broad public petitions⁴⁴⁵ across the UK, but so far only the Scottish and Welsh legislatures have responded with proscriptive measures in either legislation or policy.

Reflecting upon these approaches – whether prohibitive or managed – is a necessary precursor to understanding the decision-making spaces created by the regulatory frameworks across England and Wales. Degrees of prohibition exist in regulatory frameworks for fossil fuel extraction. In the Republic of Ireland’s proposed bill at Section 5A which has not been enacted, there is an effective ban:

The Minister for Communications, Climate Action and Environment shall not issue, renew, reinstate, or extend any licence or other exploitation rights for the exploration, extraction, production or prospecting of petroleum onshore or offshore.⁴⁴⁶

⁴³⁸ Medact, *Health & Fracking – the impacts and opportunity costs* (2015)

⁴³⁹ Scottish Government, *Talking “Fracking”: A Consultation on Unconventional Oil and Gas* (Consultation, 2017)

⁴⁴⁰ Scottish Government *Expert Scientific Panel on Unconventional Oil and Gas report* (2014)

⁴⁴¹ Chief Planner, *Control of Unconventional Oil and Gas Developments 3 October 2017* (Local Government and Communities Directorate, 2017)

⁴⁴² Opinion of Lord Pentland in the Petition *Ineos Upstream Ltd and another and Friends of the Earth Scotland against The Lord Advocate* [2018] CSOH 66 P1318/17

⁴⁴³ Scottish Government Energy and Climate Change Directorate *Unconventional oil and gas development: our position* (Position paper 2019)

⁴⁴⁴ BGS, *A Study of Potential Unconventional Gas Resource in Wales Commissioned Report CR/13/42* (2013); Ricardo Energy & Environment, *Unconventional Oil and Gas: Community Impacts from Transportation Activities in Wales Report for Natural Resources Wales* (2017); Senedd Research, *Drilling down: the Welsh Government proposes policy to ban petroleum extraction research article* (Research paper, 2018, updated 2021)

⁴⁴⁵ Bob Dennett, *Ban Fracking Before It’s Too Late!* (Change) 234,961 signatories < [//www.change.org/p/ban-fracking-before-it-s-too-late](http://www.change.org/p/ban-fracking-before-it-s-too-late) > Last accessed November 2019

⁴⁴⁶ Oireachtas Prohibition of Fossil Fuels (Keep it in the Ground) Bill 2017 [No 136 of 2017]]

Policy in Wales states at paragraph 7.1 of the consultation document is also an effective political ban:

We will not undertake any new petroleum licensing in Wales, or support applications for hydraulic fracturing petroleum licence consents.⁴⁴⁷

The most recent policy update introduces a hierarchy for decision-making on fossil fuels that addresses climate change mitigation:

The Welsh Government has set challenging targets for decarbonisation and increased renewable energy generation. The continued extraction of all fossil fuels, including shale gas, coal bed methane and underground coal gasification, are not compatible with those targets. The Welsh Government's policy objective is therefore to avoid the continued extraction and consumption of fossil fuels. When proposing the extraction of on-shore oil and gas, robust and credible evidence will need to be provided to the effect that proposals conform to the energy hierarchy, including how they make a necessary contribution towards decarbonising the energy system. In all other respects, minerals policies aimed at preventing and limiting the environmental impacts of extraction and ensuring restoration will apply.⁴⁴⁸

Similar in thinking to the waste hierarchy,⁴⁴⁹ it essentially puts less weight and value through the ranking of different types of energy on fossil fuel extraction. But the policy is still discretionary rather than an outright ban or limit, because the developer could put in place an argument with evidence for an application that the proposal does contribute to decarbonisation. As the technology for decarbonisation such as carbon capture and storage (CCS) is both novel and expensive, it is economically not really a viable option at the moment.⁴⁵⁰

A prohibitive aim leaves less space for the decision-maker to manoeuvre, although discretion is retained as part of the structure of the land use planning framework in Wales where the prohibitive aim will operate. Land use planning decisions are by their nature discretionary,

⁴⁴⁷ Welsh Government, *Consultation Document: Petroleum Extraction Policy in Wales WG34712* (Consultation document, 2018)

⁴⁴⁸ Welsh Government, *Planning Policy Wales Edition 11* (Planning guidance, 2021), para 5.10.11

⁴⁴⁹ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

⁴⁵⁰ E V McLean and T Plaksina, 'The Political Economy of Carbon Capture and Storage Technology Adoption' (2019) 19n(2) *Global Environmental Politics*, 127; W J Schmelz and G Hochman and K G Miller, 'Total cost of carbon capture and storage implemented at a regional scale: northeastern and midwestern United States' (2020) 10 (5) *Interface Focus*, The Royal Society

subject to the values and judgement held by the decision-maker, the context and immediate influences and background to each individual decision.

Divergence and conflict in the aims set out in law and policy undermine both the meaning of sustainable development, and the notion of recognising environmental limits as an outcome through the legal system. Thus, the aims found in the legal framework for fossil fuel extraction bear further examination in practice given the weaknesses identified in the wording in this survey of the law and policy as it is currently formed.

3.3 Competences and aims in practice

Competences held by authorities in the regulatory framework may be carried out in practice in different ways, depending on the individual or teams involved, the context, the moment in which they are operating – in fact a whole slew of factors may be influencing this practice. As can be seen from the review of the judicial reviews (challenges) taken on decisions concerning climate change aims, these seem to be heralding a change to how the implementation of these aims in practice is being accepted or contested.

Land use planning emerges as a key part of the legal framework on fossil fuel extraction and therefore bears further exploration. Planning control is concerned with the public interest, and much of what is understood by the Government to be ‘public interest’ is set out in national planning guidance in both countries, although not exclusively. Lewis Silkin first articulated it clearly in his introduction to the 1947 Act, and much of the debate that followed served to clarify at least the shared roots of what ‘public interest’ meant in general. Each planning case may bring forth material considerations that may not have been anticipated or described in either the local development plan or national guidance. Material considerations are therefore broadly interpreted. In the *Stringer* case, Cooke J said ‘It seems to me that any consideration which relates to the use and development of land is capable of being a planning

consideration.⁴⁵¹ Glydewell LJ set out the ‘tests’ of whether or not a consideration was ‘material’ in *Bolton MBC v SSE*⁴⁵², and that have subsequently been referred to in numerous other cases. These tests can be summarised as follows: that if the consideration might have changed the decision, then it should be material, but if the consideration was of small importance and therefore would not have changed the decision then it need not be taken into account. Furthermore, there is a distinction in between what is required to be considered e.g. by guidance, and what may be material given the nature of the decision and the matters attached to it.

Initially the first decisions made on unconventional fossil fuels were all approvals based on the ‘value’ of economic growth and benefits. From 2011 to 2018, unconventional fossil fuels have encountered such public opposition, that the relevant locally elected representatives (the politicians) have begun to refuse applications, in general against the advice of their professional officers at local government level. Landscape and transport (i.e. impacts of place) are the most common reasons. The question is whether this points to a ‘local’ valuation of sustainable development on a scale and of a type that is meaningful to the communities affected by such developments.

The exploitation of unconventional fossil fuels is currently supported by the UK Government. In 2015, the relevant Ministers said in a written statement to Parliament on behalf of the UK Government that:

there is a national need to explore and develop our shale gas and oil resources in a safe, and sustainable and timely way... Exploring and developing our shale gas and oil resources could potentially bring substantial benefits and help meet our objectives for secure energy supplies, economic growth and lower carbon emissions. Having access to clean, safe and secure supplies of natural gas for years to come is a key requirement if the UK is to successfully transition in the longer term to a low-carbon economy.⁴⁵³

⁴⁵¹ *Stringer v Ministry of Housing and Local Government* [1970] 1 WLR 1281 (J Cooke)

⁴⁵² *Bolton Metropolitan District Council and Others v Secretary of State for the Environment and Others* [1995] HL 17 Jul 1995 (LJ Glydewell)

⁴⁵³ Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

The UK Government's media announcements presents the view that the environmental concerns over 'fracking' should not overrule the economic benefits.⁴⁵⁴ This view is further evolved in policy, as the UK set out that 'there is a national need to explore and develop our shale gas and oil resources in a safe, and sustainable and timely way' in the joint written ministerial statement by Department for Communities and Local Government and Department for Energy and Climate Change in September 2015.⁴⁵⁵ This position was further explained in relation to sustainable development in this statement, and particularly in climate change terms in that:

...the need for shale gas exploration set out in the WMS reflects, among other things, the Government's objectives in the WMS, in that it [the approval of applications for exploratory works for shale gas appraisal and testing] could help to achieve lower carbon emissions and help meet its climate change target.⁴⁵⁶

Energy use is fundamental to our daily activities – producing food, heating homes, travelling and working. The 'benefits' of energy use to society are clearly recognised, not least by our almost constant use of energy. This benefit is the subject of a 'tug of war' in the energy debate between energy providers and those advocating sustainable development, where energy providers claim the social benefit as the justification for the development⁴⁵⁷, and sustainable development advocates argue against this justification⁴⁵⁸ by presenting the case for social impacts. Examination of the 'discourse dynamics'⁴⁵⁹ in the UK surrounding the exploitation of shale gas shows that the proponents emphasise economic and security benefits, while opponents stress the health and environmental impacts.

Debates on sustainability have complicated the simplistic notion of social benefits from energy use to question how much energy use and what sort of energy sources are still

⁴⁵⁴ Department of Energy & Climate Change, Ministry of Housing, Communities & Local Government, The Rt Hon Greg Clark MP, and The Rt Hon Amber Rudd, *Faster decision making on shale gas for economic growth and energy security: Shale gas planning applications will be fast-tracked through a new, dedicated planning process, under measures announced today* (Press release, 23 August 2015)

⁴⁵⁵ Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

⁴⁵⁶ *Ibid*

⁴⁵⁷ Cuadrilla Resources, *Putting Lancashire First* (Undated)

⁴⁵⁸ Friends of the Earth Europe, *Shale gas: a dangerous experiment on environment and human health* (Undated)

⁴⁵⁹ E Bomberg 'Shale we drill? Discourse dynamics in UK fracking debate' (2017) 19 (1) *Journal of Environmental Policy & Planning* 72

delivering social benefits without being outweighed by social harms.⁴⁶⁰ Economic benefits are strongly advocated by the developers of unconventional fossil fuels, with energy security, jobs, and value to the economy most commonly cited.⁴⁶¹ As the UK is within the European energy market, indeed the global market including Russia and the Middle East, as well as the USA,⁴⁶² the role of shale gas as the most prominent of the unconventional fossil fuels has been examined by the European Commission's committees and research bodies.⁴⁶³

The environmental impacts of fracking have been analysed in most detail in the USA⁴⁶⁴ and Australia.⁴⁶⁵ These studies have set out the data behind the environmental impacts on fracking as recognised by the UNEP report.⁴⁶⁶ These environmental impacts are recognised in planning policy in the UK. Gaps in the environmental matters to which planning decision-makers are directed in England have been identified, in particular with regard to lifecycle impacts.⁴⁶⁷ A study has also found major sustainability impacts of shale gas exploitation in particular in comparison with other electricity generating options.⁴⁶⁸

Regulatory challenges have been examined in terms of the UK in particular in terms of conflicting priorities between resources and environmental protection,⁴⁶⁹ and on public health,⁴⁷⁰ as part of societal impacts. On responding to a parliamentary question by Mark Menzies, MP for the Fylde in 2012 on whether a 'gold standard' of regulation would be put in

⁴⁶⁰ As discussed in F P Sioshansi (Ed) *Energy, Sustainability and the Environment: Technology, Incentives, Behaviour* (Elsevier 2011)

⁴⁶¹ P Williams, 'Shale-Gas Jobs Light Up Economy' (2012) 32 (1) *Oil & Gas Investor*; L Hermwille and L Sanderink, 'Make Fossil Fuels Great Again? The Paris Agreement, Trump, and the US Fossil Fuel Industry' (2019) 19 (4) *Global Environmental Politics* 45

⁴⁶² International Energy Agency (IEA), *Are We Entering a Golden Age of Gas?* (World Energy Outlook, 2011)

⁴⁶³ Gregor Erbach, *Shale Gas and EU energy security* (European Parliamentary Research Service, 2014)

⁴⁶⁴ US Environmental Protection Agency, *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States* (EPA, 2016)

⁴⁶⁵ CSIRO, *Air, water and soil impacts of hydraulic fracturing, Phase 2 (GISERA)* (2020)

⁴⁶⁶ UNEP Global Environmental Alert Service *Gas fracking : can we safely squeeze the rocks?* (2012)

⁴⁶⁷ L Stamford and A Azapagic 'Life cycle environmental impacts of UK shale gas' (2014) 134 *Applied Energy* 506, 518

⁴⁶⁸ Jasmin Cooper et al, 'Sustainability of UK shale gas in comparison with other electricity options: Current situation and future scenarios' (2017) *Science of The Total Environment*

⁴⁶⁹ E Albrecht and D Schneemann 'Fracking in the United Kingdom: Regulatory Challenges between Resource Mobilisation and Environmental Protection' (2014) 4 *CCLR* 238;

⁴⁷⁰ Medact, *Health & Fracking – the impacts and opportunity costs* (2015); E Reap 'The risk of hydraulic fracturing on public health in the UK and the UK's fracking legislation' (2015) 27 *Environmental Sciences Europe* 1,7; S Kovats and M Depledge and A Haines and L Fleming and P Wilkinson and S Shonkoff and N Scovronick 'The health implications of fracking' (2014) 383 *The Lancet* 757; P J Saunders and D McCoy and R Goldstein and A T Saunders and A Munroe, 'A review of the public health impacts of unconventional natural gas development' (2016)

place before the extraction of shale gas⁴⁷¹, the then Prime Minister David Cameron answered 'I can assure my hon. Friend that any future shale gas production would have to meet stringent safety and environmental standards, follow deep consultation with local communities and fit within our overall energy commitments'. NGOs active in the fracking debate question this 'gold standard' of regulation aspired to by the UK Government, with these concerns set out in a joint publication on hydraulic fracturing in 2014 and published by the RSPB.⁴⁷² Examination of 'fracking' in the UK has questioned the adequacy of regulation in relation to environmental (climate change) and social concerns including impacts on public health. Adequacy in this sense is whether the regulation effectively achieves the aim of protecting the environment and protecting public health, with costs and unknown risks or miscalculated risks cited as particular questions that remain unanswered by Albrecht.⁴⁷³

A claim to 'gold standard' in regulation is made by national level political representatives and industry, deliberately evoking solidity, reliability and trustworthiness. In opposition to this promulgated 'view' of regulation, public and society evoke images of risk, and powerlessness e.g. referring to themselves as 'guinea pigs' in some sort of 'experiment'. As Stokes has pointed out, 'Government policy is clear, but it 'leaves a great many issues unresolved'.⁴⁷⁴ Her work also illustrates the way in which the UK Government has used two regulatory approaches, characterised as 'domain' and 'dexterity' to promote the development of unconventional fossil fuels. However, the failure to tackle substantive issues of outcomes such as scientifically proven environmental and public health impacts that are not currently addressed through the regulatory process will only intensify conflict and divergence around

⁴⁷¹ Hansard, 12 Sep 2012 : Column 282 Q14. [120398] Mark Menzies (Fylde) (Con)

⁴⁷² V Moore and A Beresford and B Gove, *Hydraulic fracturing for shale gas in the UK: Examining the evidence for potential environmental impacts* (RSPB 2014)

⁴⁷³ E Albrecht and D Schneemann, 'Fracking in the United Kingdom: Regulatory Challenges between Resource Mobilisation and Environmental Protection' (2014) CCLR 238

⁴⁷⁴ E Stokes, 'Regulatory Domain and Regulatory Dexterity: Critiquing the UK Governance of "Fracking"' (2016) 79 *Modern Law Review* 961

unconventional fossil fuels, which has so far led to contested decisions, challenged through the courts, and publicly criticised in the media.

The influence and implementation of European Directives including Environmental Impact Assessment⁴⁷⁵ on the assessment of the environmental effects of projects and Strategic Environmental Assessment⁴⁷⁶ of the likely significant environmental impacts on plans or programmes have been key to the development of town and country planning environmental regulatory frameworks. There is a provision for ‘non-regression’ as part of the Withdrawal Act 2020, however planning reform has been suggested⁴⁷⁷ that would amend or substantially change the provisions as they currently stand.

3.4 Conclusions

The examination of the relevant authorities, their competences and the aims in the framework in relation to climate change demonstrates the following. Firstly that there are gaps in the competences – there is no competence specifically with regard to respecting environmental limits in the fossil fuel extraction framework. Secondly that some competences are being widened, such as local authorities on climate change, while the same authorities are also narrowing their competency (climate change is not their issue but national governments’). Thirdly, the aims in England with regard to sustainable development and climate change mitigation are weakly worded. They are generally outweighed by economic benefit aims. Weak aims lead to less weight in decisions, which leads to decisions that entail environmental impacts being consented. There is little connection between climate change aims and the regulation of fossil fuel extraction in England, in contrast to that in Wales.

In considering the legal implications of technological developments such as those around unconventional fossil fuel exploration and extraction, questions around the role of law in

⁴⁷⁵ Council Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment [2012] OJ L 26/1

⁴⁷⁶ Council Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment [2001] OJ L 197/30

⁴⁷⁷ Planning for the Future White Paper, Department for Levelling Up Housing and Communities (DLUHC 2020)

securing 'environmental sustainability' arise. Should the law proscribe activities that have proven or risk of damaging environmental effects i.e. set out legal acceptability in substantive form? Or should the law 'manage' activities in a more procedural form?⁴⁷⁸ The effects of the Cuadrilla activities in Preese Hall led to a brief moratorium as the UK Government commissioned research and investigation into the possible effects of hydraulic fracturing on seismicity, and to verify the link between hydraulic fracturing and seismicity.⁴⁷⁹ This is an example of regulation being introduced following an unforeseen impact and the attendant media and public pressure.

National policy across the UK on sustainable development in relation to development decision-making is both confusing and contradictory. The extraction of fossil fuels is considered to contribute to the achievement of sustainable development as it is of 'great benefit to the economy', delivering 'energy security', while at the same time the 'radical reduction in greenhouse gas emissions' is a key part of that same definition of sustainable development. This inherent contradiction points to the problem of sustainable development governance. Neoliberal economic approaches challenge and override the weak definitions of sustainable development set out in law and policy.

Rights lend status and recognition to public input into decision making processes.

Substantive rights can be defined as rights that pertain to 'substance', in this research, the right to a healthy environment (i.e. one that is free from pollution) and procedural rights can be defined as rights that pertain to processes. This research now seeks to uncover the extent to which these rights exist in the regulatory controls on fossil fuel extraction as described.

⁴⁷⁸ J Holder, *Environmental Assessment: The Regulation of Decision Making* (OUP 2006)

⁴⁷⁹ C A Green and P Styles and B J Baptie, *Preese Hall Shale Gas Fracturing: Review & Recommendations for Induced Seismic Mitigation* (DECC 2012)

Chapter 4: Substantive and procedural environmental rights

4.1 Introduction

To understand the nature of substantive and procedural environmental rights as an integral part of the decision process on fossil fuel extraction, this research now turns to the consideration of the shape and form, and a selection of the literature on the utilisation and impact of these rights as relevant to the focus of this research. The construction of these regulatory controls and associated climate law and policy in England (and for comparison, Wales) has already been sketched out. By substantive environmental rights, the definition of this right accepted for the purposes of this research lends from Shelton as one, however worded, that guarantees a certain environmental quality free from pollution to a person.⁴⁸⁰ By procedural environmental rights, the definition is that of Aarhus convention rights, namely, a person's right to information, to participate, and to challenge environmental decisions.

Knowledge is 'co-produced' when stakeholders and the public come together in a decision making process. Co-production, as discussed in Chapter 1, is particularly important when it comes to issues where science and public opinion combine and matter in the outcome of decisions. Fossil fuel extraction and climate change are issues of high public interest and the involvement of the public can change the outcome of decisions. This research seeks to examine the extent to which environmental limits feature in decision-making, and the extent to which they matter is recognisably strengthened by public participation. Pedersen explains resilience thinking in environmental law is based on public participation figuring within the process, and yet that 'existing structures of inequality' are exacerbated unless this public participation process is specifically focussed on certain social groups.⁴⁸¹ The Aarhus Convention was borne out of the earlier Rio Declaration Principle 10,⁴⁸² and based upon a

⁴⁸⁰ D Shelton, 'Developing substantive environmental rights' (2010) 1 (1) *Journal of Human Rights and the Environment* 89

⁴⁸¹ Ole W. Pedersen, 'Resilience in environmental law: epistemic limitations and the role of participation' in Bridget M Hutter (ed) *Risk, Resilience, Inequality and Environmental Law*, (Edward Elgar 2017) p.49-64

⁴⁸² United Nations Rio Declaration (1992), Principle 10

generally held theory borne out of evidence that public participation strengthens environmental decision-making,⁴⁸³ however there is much nuance with regard to who is involved. While this research does not seek to explore public participation theories and research in relation to environmental law, it is of importance to consider how the substance of what is considered or not considered is influenced or changed by the extent to which it is governed by the legal framework and the views of participants.⁴⁸⁴ Given accepted public participation theory, the presence of procedural and substantive rights influences the balance of how much environmental issues may matter in the decision and outcome. Consequently these rights influence the extent to which planetary boundaries (environmental limits) are recognised in outcomes.

As a reminder and to inform this review of the literature and the provisions in the legal framework, the question concerns the extent to which climate change mitigation, in terms of limits to emissions, is recognised in decision-making on fossil fuel extraction, is shaped by the substantive matter in the process (content), and the rules that govern the process (context). The rules that control the process influence the substantive matter as well as the outcome. Given that some of the rules allow for different inputs and different levels of absolute protection, these rules must be examined when researching the extent to which fossil fuel extraction decision making takes into account planetary boundaries. Therefore we come to a consideration of substantive and procedural environmental rights as they are 'rules' that can affect the content and context of the process.

4.2 To what extent are there substantive environmental rights in the UK that can be applied to the extraction of fossil fuels?

Constitutional environmental rights have been strongly advocated by Hayward,⁴⁸⁵ who argued that a constitutional environmental right is 'valid, necessary, practicable [and]

⁴⁸³ J Jendroška and M Bar (eds), *Procedural environmental rights : Principle X in theory and practice* (Intersentia 2017)

⁴⁸⁴ S Brownill and J Carpenter, 'Increasing participation in planning: Emergent experiences of the reformed planning system in England' (2007) 22 (4) *Planning Practice & Research* 619

⁴⁸⁵ T Hayward, *Constitutional Environmental Rights* (Oxford, OUP, 2005)

desirable',⁴⁸⁶ in the main because it affords a way in which to organise further, stronger environmental protection with the environment as a 'trumping force'.⁴⁸⁷ As a 'genuine' human right, the right to a healthy environment has been argued by Boyd, Hilson, and Knox, and advocated by a number of NGOs, including Friends of the Earth International,⁴⁸⁸ and CIEL.⁴⁸⁹ An acknowledged need for greater environmental protection is inarguable if the science and evidence of environmental damage is taken seriously and continues unchecked.

Hilson suggests that environmental rights may be derived from existing human rights:

'Alternatively, as in the case of the European Convention on Human Rights (ECHR), the rights to a healthy environment may be 'derived' rights, whereby newer environmental rights are derived from the older, pre-existing rights already found within the Convention architecture, such as the right to life (Article 2) or the right to home and family life (Article 8).⁴⁹⁰

This may be legally arguable, but in terms of application and the derivation of greater environmental protection it cannot be said to be descriptive of the normative situation in the UK. Ella Kissi-Debra's death was directly linked to air pollution as a contributory cause of the asthma she suffered.⁴⁹¹ There had been a failure to set adequate limits on pollution to protect people's health according to the Coroner's report on the 'Matters of Concern':

(1) The national limits for Particulate Matter are set at a level far higher than the WHO guidelines. The evidence at the inquest was that there is no safe level for Particulate Matter and that the WHO guidelines should be seen as minimum requirements. Legally binding targets based on WHO guidelines would reduce the number of deaths from air pollution in the UK.⁴⁹²

In a situation such as this, where the causes of air pollution – private vehicle (diesel or petrol) movements – are regulated in various different ways, there is a gap in terms of law and responsibility (competence). The law fails by setting the targets too low, and by not being

⁴⁸⁶ T Hayward, 'Constitutional Environmental Rights: A Case for Political Analysis.' (2000) 48 (3) *Political Studies* 558

⁴⁸⁷ *Ibid*

⁴⁸⁸ Friends of the Earth International, *Our environment, Our rights* (2003)

⁴⁸⁹ Sébastien Duyck, 'Time is Now: Recognize the Right to a Healthy Environment Press Release' (*Centre for International Environmental Law*, 14 September 2021) < [//www.ciel.org/news/time-is-now-recognize-the-right-to-a-healthy-environment/](https://www.ciel.org/news/time-is-now-recognize-the-right-to-a-healthy-environment/) > Last accessed November 2021

⁴⁹⁰ C Hilson, 'Substantive Environmental Rights in the EU: Doomed to Disappoint?' in S Bogojevic and R Rayfuse (eds.) *Environmental Rights in Europe and Beyond Swedish Studies in European Law* (Hart 2018) pp. 87-103

⁴⁹¹ Philip Barlow Assistant Coroner, *Regulation 28 Report to Prevent Future Deaths*, 20 April 2021, London, England

⁴⁹² *Ibid*

directed at the causes. Options for regulation are the use of vehicles, the make of vehicles, and pedestrianisation (i.e. the banning of vehicles). There is however no authority to make the connection between the limits and the imposition of such measures that would ensure that this environmental limit is met. While a local planning authority may be able to pedestrianise, it is a separate Government department that could regulate the make of vehicles. There is no obvious way to regulate the use of vehicles except through the control of the use of a private vehicle, which could at a stretch be likened to the ban on smoking in public places. It is clear that no justiciable right could have been acted upon in this case at the time.⁴⁹³ Morrow suggests that existing human rights provisions in law have not 'greatly extended' protection for environmental interests in England and Wales.⁴⁹⁴

Extensive research has demonstrated the importance of people having 'rights' with regard to environmental quality in order to increase environmental protection aims.⁴⁹⁵ A right to a healthy environment is enshrined in over 100 constitutions across the world.⁴⁹⁶ In the UK there is no such high level constitutional right, and therefore there is arguably a gap – neither the courts nor individuals can rely upon an indication that substantive environmental protections can form the basis of a claim where procedural issues are not in question.

This does not mean that environmental protections do not exist nationally in England and Wales, as these have been described. While the broad principle of sustainable development has been translated into law and policy in England and Wales,⁴⁹⁷ there are also specific environmental protection measures. As examined earlier, the broad provisions have not proven to be justiciable, but the number of cases taken on the climate change provisions

⁴⁹³ N Guillerm and G Cesari, 'Fighting ambient air pollution and its impact on health: from human rights to the right to a clean environment' (2015) 19 (8) *The international journal of tuberculosis and lung disease*, 887; B Taylor and R Nunes, 'Entitlement, Indeterminacy and Professional Discretion in Urban Planning: Problematising a Child's Right to Clean Air for Play in London' (2022) 14 (10) *Sustainability (Basel)* 6189

⁴⁹⁴ K Morrow, 'Worth the paper that they are written on? Human rights and the environment in the law of England and Wales', (2010) 1 (1) *Journal of Human Rights and the Environment* 66

⁴⁹⁵ David Boyd, UN Special Rapporteur on Human Rights and the Environment

⁴⁹⁶ UNEP, *Key Messages: Human Rights and the Environment* (Policy and Strategy, 24 March 2021)

⁴⁹⁷ N A Robinson, 'Comparative environmental law: Evaluating how legal systems address 'sustainable development' (1997) 27 (4) *Environmental Policy & Law* 338; R E Kim, 'The Nexus between International Law and the Sustainable Development Goals.' (2016) 25 (1) *RECIEL* 15

more latterly, and environmental impact assessment provisions since their introduction are numerous.⁴⁹⁸

The Aarhus Convention, of which the UK is a signatory, recognises that:

‘...every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations’⁴⁹⁹

While this is acknowledged, theoretically, in policy terms by national signatories, it has not been translated into primary legislative provisions in the UK. Nor does the Convention specifically require substantive rights, as the articles of the Convention focus on procedural rights. Banner, in his edited handbook for lawyers on the Aarhus Convention describes the incorporation and development of the Convention in UK legislation and the devolved nations, notes the influence it has had upon the development of environmental law.⁵⁰⁰ The handbook however makes no push to conclude that substantive environmental rights form part of the implementation of the Convention.

There is no specific, substantive environmental right in the UK, despite this having been an issue that has cropped up over the years with NGOs raising the matter when for example a new Bill of Rights white paper is published.⁵⁰¹ If the *Ella Kissi-Debra* case is taken for example, the point at issue is whether a substantive environmental right would have assisted in that instance in forcing the relevant authorities to take measures to control the levels of pollution. The 2015 ClientEarth case⁵⁰² that resulted in the UK Government being ordered to prepare an air pollution plan has been ineffective so far in changing pollution levels on the

⁴⁹⁸ R Evans, ‘Environmental Reviews And Case Studies: Decision Making in the Environmental Impact Assessment Process.’ (2014) 16 (4) Environmental Practice 290

⁴⁹⁹ UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (1998)

⁵⁰⁰ C Banner (ed), *The Aarhus Convention: A Guide for UK Lawyers* (Bloomsbury 2015)

⁵⁰¹ House of Lords, House of Commons, Joint Committee on Human Rights, *A Bill of Rights for the UK? Twenty-ninth Report of Session 2007-08*; Ministry of Justice, *Human Rights Act Reform: A Modern Bill of Rights – A consultation to reform the Human Rights Act 1998* (2021) CP 588

⁵⁰² ClientEarth, ‘Press Release Top court confirms UK has broken air pollution law’ (*ClientEarth*, 4 March 2021) < [//www.clientearth.org/latest/press-office/press/top-court-confirms-uk-has-broken-air-pollution-law/](https://www.clientearth.org/latest/press-office/press/top-court-confirms-uk-has-broken-air-pollution-law/) > Last accessed November 2021

ground to date.⁵⁰³ The absence of the right to access the courts, in the absence of a judicial review on any procedural grounds, hindered the individuals subject to severe environmental pollution to either evidence causality or force action. As it is likely that no single decision was made that created the problem, but rather an accumulation of historic decisions and economic and social decisions that led to the increase in the use of the private car, the increase in the number of journeys and the failure to provide alternatives, how in these situations can the environment be protected?

Applying such thinking to the situation of fossil fuel extraction bears some fruit. Extraction is similarly a situation where cumulative impacts have proven to arise, and Anderson has warned of a cumulative issue when it comes to greenhouse gas emissions.⁵⁰⁴ While a substantive environmental right remains absent in the UK, there is arguably a gap in the legal framework for environmental protection, specifically where damage is being caused by increasing greenhouse gas emissions. Further reflections on this gap will emerge through the considerations of the field work data findings.

4.3 Do substantive environmental rights exist elsewhere where they have been applied to the extraction of fossil fuels?

Following the contention that a similar situation may arise in relation to fossil fuel extraction, a brief contemplation of whether substantive environmental rights in other nations has resulted in different outcomes for climate change mitigation in the sphere of fossil fuel extraction is useful. Each individual decision on fossil fuel extraction may not in and of themselves cause a specific climate impact, however the accumulation of these decisions adds up to a cumulative impact.

⁵⁰³ Mayor of London, *Air Quality in London 2016-2020 London Environment Strategy: Air Quality Impact Evaluation* (GLA 2020)

⁵⁰⁴ K Anderson, and J F Broderick and I Stoddard, 'A factor of two: how the mitigation plans of 'climate progressive' nations fall far short of Paris-compliant pathways', (2020) 20 (10) *Climate Policy* 1290

Climate change litigation, as the *Urgenda* case illustrates, is starting to turn to the duties of authorities in protecting people by addressing climate change.⁵⁰⁵ As a known ‘cumulative impact’ arising from an accumulation of decisions, the legal basis for environmental protection continues to develop. Different instruments rely on the ‘duties’ of public authorities (such as *Urgenda*) that are derived in the main from constitutional responsibilities. The South African Constitution notable for both the way in which it was written,⁵⁰⁶ and for a simple and yet powerful provision at Section 24 on the right to a healthy environment:

Everyone has the right –

- (a) To an environment that is not harmful to their health or well-being; and
- (b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.⁵⁰⁷

Krüger has commented on where the right has not been utilised and yet could have been in relation to the South African Constitution.⁵⁰⁸ She identifies an environmental ‘blindspot’ in both the courts and those bringing the cases - while environmental issues were pertinent in these cases, they were not raised.⁵⁰⁹ A greater role is argued for the courts themselves to raise the issue, and the constitutional right in South Africa does in theory provide this opportunity. These constitutional provisions confer rights to individuals and responsibilities to governments.

Linking climate change to the right to a healthy environment, the Greenpeace Nordic Association initiated proceedings in October 2016⁵¹⁰ against the Norwegian Ministry of

⁵⁰⁵ M Wewerinke-Singh and A McCoach, ‘The State of the Netherlands v Urgenda Foundation: Distilling best practice and lessons learnt for future rights-based climate litigation’ (2021) 30 (2) RECIEL 275; C McGrath, ‘Urgenda Appeal Is Groundbreaking For Ambitious Climate Litigation Globally’ (2019) 36 (1) Environmental & Planning Law Journal 90; B Mayer, ‘Temperature Targets and State Obligations on the Mitigation of Climate Change’ (2021) 33 (3) Journal of Environmental Law 585

⁵⁰⁶ Truth and Reconciliation Commission, South Africa

⁵⁰⁷ Constitution of the Republic of South Africa, 1996

⁵⁰⁸ R Kruger, ‘The Silent Right: Environmental Rights in the Constitutional Court of South Africa’ (2019) 9 Const. Ct. Rev. 473

⁵⁰⁹ Ibid

⁵¹⁰ Petition submitted by Greenpeace Nordic Association and Natur og Ungdom (Nature & Youth) with regard to the validity of the award of production licences in the 23rd licensing round on the 18 October 2016, with the District Court Judgement handed down on the 1 April 2018, reference Oslo Tingrett 16-166674TVI-OTIR/06

Petroleum and Energy to argue that in applying Norway's constitution, Article 112,⁵¹¹ meant that further drilling and extraction of fossil fuels violated this right. While the Oslo District Court found that the right to a healthy environment included the right to a healthy climate,⁵¹² it also found the emissions from the combustion of the oil and gas were overseas, and therefore not a matter of responsibility for the Norwegian state. In the appeal the Bogarting Court of Appeal affirmed the prior decision, citing uncertainty as to eventual emissions impact.⁵¹³ The final findings by the Supreme Court relied on the uncertainty of future emissions to bar the granting of the licenses.⁵¹⁴ The first of these findings is important in responding to the question of whether substantive rights exist elsewhere that have found applicability to climate change and therefore to fossil fuel extraction impacts. This case demonstrates that a link can be legally constructed in practice in a specific jurisdiction.⁵¹⁵ If the UK had such a substantive environmental right, given this precedence, and the recent proliferation of climate cases in the UK, it is clear that NGOs and individuals would make the connection between the two.⁵¹⁶

The second Oslo court finding demonstrates the disjunct between location and causation. By location, it is meant what activities are taking place where? By causation, the root cause of the greenhouse gas emissions impact may ascribed to a certain set of activities but not others, and therefore the locus of the cause can move between nation states and therefore legal jurisdictions. Where the fuel is extracted is not necessarily when the attendant, inevitable, emissions are counted. Predictably this causes a disconnect in responsibility: if the company is not responsible for emissions (for example under a concept such as extended producer responsibility),⁵¹⁷ and indeed different companies could be involved along

⁵¹¹ The Constitution of the Kingdom of Norway, Article 112

⁵¹² District Court Judgement 1 April 2018 Oslo Tingrett 16-166674TVI-OTIR/06

⁵¹³ Bogarting Court of Appeal 23 January 2020 Case no: 18-060499ASD-BORG/03

⁵¹⁴ Supreme Court of Norway Judgement given on the 22 December 2020 HR-2020-2472-P Case no. 20-051052SIV-HRET

⁵¹⁵ C Voigt, 'The First Climate Judgment before the Norwegian Supreme Court: Aligning Law with Politics' (2021) 33 (3) Journal of Environmental Law 697

⁵¹⁶ Ibid

⁵¹⁷ T Lindhqvist, 'Extended Producer Responsibility in Cleaner Production: Policy Principle to Promote Environmental Improvements of Product Systems' (2000) IIIIEE, Lund University.

the extraction and supply chain to eventual combustion in power generation or use in industry, then there are a number of points along the way where public or governmental authorities could create legal authority to intervene. These instruments are by their construction circumscribed to particular activities.

While bearing in mind this situation, this research is concerned with the point of extraction, as the study is concerned with the decision-making process around fossil fuel extraction, and as a case in point, shale gas extraction site fieldwork. But it is also concerned with the rights and responsibilities around that extraction. Hence the right of people living close to proposed or operational fossil fuel extraction to exert a right to a healthy environment include a right to a healthy climate.

In Pennsylvania, a community case against shale gas extraction was taken on the basis of the Pennsylvania constitution, *Robinson Township v Commonwealth of Pennsylvania*.⁵¹⁸

Section 27 of the Declaration of Rights in the Pennsylvania Constitution states:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.⁵¹⁹

The Pennsylvania Supreme Court discussed two 'primary goals' that the amendment accomplished, namely 'preventing the state from acting in certain ways', and secondly 'providing a framework to participate the development of these rights'.⁵²⁰ The court noted that for the historic exploitation of fossil fuel coal resources that this substantive environmental right was not available but that because it is now 'available' a different response is possible. The result was that parts of 'Act 13' of the oil and gas law of 2012 enacted in Pennsylvania was held unconstitutional. Dernbach discusses the implications of

⁵¹⁸ *Robinson Township v. Commonwealth of Pennsylvania* (PA Supreme Court), 83 A.3d 901 (2013)

⁵¹⁹ Constitution of the Commonwealth of Pennsylvania, Article 27

⁵²⁰ S Kessler, 'Interpreting the Post-Robinson Township Environmental Protection Amendment' (2016) 77 (4) University of Pittsburgh Law Review

this case in Rutgers University Law Review,⁵²¹ noting that it was issued in a context of ‘significant social, economic and environmental controversy’ over shale gas development, bearing out research that finds that environmental law evolves in response to high public interest environmental issues.⁵²² The way in which environmental rights are taken seriously, even though a majority view was not taken, ‘achieves the dual goals of advancing human rights and environmental protection at national and subsidiary levels’ according to Dernbach.⁵²³

In addition, the Alaskan case on the consideration of the ‘cumulative impacts throughout the course of oil and gas projects’,⁵²⁴ lends weight to the theory that substantive environmental rights could provide a means to remedy the gap in environmental law on addressing the cumulative impacts of fossil fuel extraction projects. This case was brought by the community on the basis that the State of Alaska’s Department of Natural Resources, Oil and Gas Division failure to consider impacts (termed best interest findings – BIF) ‘at each phase of an oil and gas project violated Article VIII of the Alaska Constitution’.⁵²⁵ The court said that ‘we reverse the superior court’s ruling reversing and remanding the Commissioner’s final decision denying reconsideration of DNR’s best interest finding. However, we hold that the State is constitutionally required to consider the cumulative impacts at later phases of an oil and gas project.’ It was acknowledged that when issuing leases, given the particulars of how a development might be carried out, some of the environmental impact may be unknown or difficult to quantify. However that means that it is important in order to make ‘reasoned decisions’⁵²⁶ that consideration of issues can happen when new or more data becomes

⁵²¹ J C Dernbach and J R May and T Kristl, ‘Robinson Township v Commonwealth of Pennsylvania: Examination and Implications’ (2015) 67 Rutgers University Law Review 1169

⁵²² F Fischer and M Hajer, *Living with Nature: Environmental Politics as Cultural Discourse* (OUP 1999)

⁵²³ J C Dernbach and J R May and T Kristl, ‘Robinson Township v Commonwealth of Pennsylvania: Examination and Implications’ (2015) 67 Rutgers University Law Review 1169

⁵²⁴ *Sullivan v. Resisting Environmental Destruction on Indigenous Lands* (REDOIL), Supreme Court of Alaska March 29, 2013, 311 P.3d 625

⁵²⁵ *Ibid*

⁵²⁶ *Ibid*

available. The State in this case was 'constitutionally required to consider the cumulative impacts at later phases of an oil and gas project'.⁵²⁷

In summary, these two examples of the application of constitutional substantive environmental rights in other nations has resulted in an increased level of environmental protection in theory in the regulatory control of fossil fuel extraction. They allow a brief reflection on how substantive environmental rights might go some way towards strengthening environmental protection in terms of climate change mitigation in the UK when decisions are made on fossil fuel extraction where cumulative impacts can arise.

4.4 To what extent are there procedural environmental rights in the UK that apply to the extraction of fossil fuels?

4.4.1 Introduction

As set out at the beginning of this Chapter, procedural environmental rights for the purposes of this research are defined as the Aarhus Convention rights - the right to environmental information, the right to participate in environmental decisions and the right to challenge environmental decisions. Public participation is an extension of democracy – in that it fundamentally builds upon the notion that people should be represented when decisions are made that affect them - and an extension of the notion that public trust and public opinion must be considered in decision making. Lewis Silkin in his speech to the House of Commons put it simply in relation to his proposed planning reform in 1947:

The people whose surroundings are being planned must be given every chance to take an active part in the planning process, particularly when the stage of detail is reached. It is not merely landowners in the area who are affected, or even business interests. Too often in the past the objections of a noisy minority have been allowed to drown the voices of other people vitally affected. The housewife, who will use the new shops, and whose children will go to the new school, the trade union branch whose members will work on the new factory estate, the farmer, the motorist, the amenity society —these too must have their say, and when they have had it, the provisional plan may need a good deal of alteration, but it will be all the better for that since it will reflect actual needs, democratically expressed. In the past, plans have

⁵²⁷ Ibid

been too much the plans of officials and not the plans of individuals, but I hope we are going to stop that.⁵²⁸

Here, strongly and practically expressed is the central idea of public participation – that it helps ensure that the needs of the public are met because they have been understood and incorporated into decisions or plans. The so-called Skeffington Report was an attempt to set out a more systemic approach to the way communities were involved in planning, and to move away from the post-war period of planning.⁵²⁹ At the heart of the existing planning system in England and Wales is this idea, that public participation is essential to meet the needs of the community and it is generally accepted as a ‘good’, despite some researchers pointing to the lack of extensive empirical scrutiny in the past.⁵³⁰ More recent public participation research such as that conducted by Rydin, Natarajan considers and reflects upon the way in which lay knowledge is valued in decision-making and the ways in which communities are involved in strategic decisions.⁵³¹ This research attempts to consider a complementary, the idea of knowledge being ‘co-produced’, so not the value placed upon lay knowledge, but the way the legal framework shapes the content and context of decisions, and to what extent that impacts upon the outcome in terms of respecting environmental limits. The research does not consider how people are involved, but rather looks at the content that results from that involvement. On that basis the procedural rights that pertain to fossil fuel extraction are surveyed here.

4.4.2 Procedural rights in the planning regime

In the planning regime in England (and Wales) there are a series of rights that exist that during the field work were reportedly accessed by the research participants. The rights to information under Environmental Information Regulations and the Freedom of Information

⁵²⁸ Hansard, Town and Country Planning Bill HC Deb 29 January 1947 vol 432 cc947-1075, Col 963-964

⁵²⁹ Committee on Public Participation in Planning, *People and Planning: Report of the Committee on Public Participation in Planning* (HM Stationery Office 1969)

⁵³⁰ J Forester *Planning in the face of power* (University of California Press 1989); P Burton, ‘Conceptual, Theoretical and Practical Issues in Measuring the Benefits of Public Participation’ (2009) 15 (3) *Evaluation* 263

⁵³¹ Y Rydin and L Natarajan, ‘The materiality of public participation: the case of community consultation on spatial planning for north Northamptonshire, England’ (2016) 21 (10) *Local Environment* 1243; L. Natarajan, ‘Socio-spatial learning: A case study of community knowledge in participatory spatial planning’ (2017) 111 *Progress in Planning* 1

Act were not a focus for the research but are acknowledged here for sake of completeness. EIR and FOI provide for access to information rights that individuals can make use of, and have a means of redress through the Information Commissioner's Office (ICO). They fulfil the introduction into the UK the 'right to information' element of the Aarhus Convention. The reason for taking the approach of focussing on procedural rights within the planning regime is that this is the focus of the case study areas where the research participants were drawn from. A conscious decision was made to therefore focus on the information that was made available or brought into the decision through the mechanism of the planning regime. Community activists participants in the case studies examined were questioned about the information provided through the planning application and environmental impact assessment process. Selecting a focus for the research enables a better understanding of the conditions and rules that direct which content becomes part of the decision.

Procedural opportunities to be involved in the planning decisions are summarised in the following table:

Table 6 Procedural rights in legislation (England)

<i>Opportunity</i>	<i>Legislative reference (not including later amendments)</i>
Consultation on planning application	The Town and Country Planning (Development Management Procedure) (England) Order 2015
Consultation on Environmental Statement	The Town and Country Planning (Environmental Impact Assessment) Regulations 2017
Consultation on local plan	The Town and Country Planning (Local Planning) (England) Regulations 2012
Consultation on Environmental Assessment	The Environmental Assessment of Plans and Programmes Regulations 2004
Planning Committee	Standing Orders adopted by each Council
Planning Appeal – Written	The Town and Country Planning (Appeals) (Written Representations Procedure) (England) Regulations 2009
Planning Appeal – Hearing	The Town and Country Planning Appeals (Determination by Inspectors) (Inquiries Procedure) (England) Rules 2000

Planning Appeal – Bespoke	The Town and Country Planning (Determination of Appeals by Appointed Persons) (Prescribed Classes) Regulations 1997 Town and Country Planning (Inquiries Procedure) (England) Rules 2000
Review of decisions	Judicial review Town and Country Planning Act 1990, Section 288

In each of these opportunities environmental information on climate change can be brought into the process of making a decision by the public and other stakeholders. The detailed secondary legislation that on the type of environmental information required as part of applications covered by Environmental Impact Assessment regulations are particularly important in relation to climate change mitigation and limits. Most matters are capable of being ‘relevant’ to a planning decision, and for the purpose of this research the materiality of climate change mitigation to land use planning decisions is unquestioned. The local plan and national planning policy framework (England) combine to ‘weight’ this information in the planning balance.⁵³² Given the importance of these rights in influencing environmental decisions in the UK, there has been extensive research into their operation.

Research in the UK on the positive impact that public participation has on environmental outcomes such as that by Owens,⁵³³ and the Royal Commission on Environmental Pollution report,⁵³⁴ and is supported by similar research in Germany such as Drazkiewicz et al.⁵³⁵ Davies importantly for this research provided inspiration for considering the ‘products’ of public participation, and identifies the failure to incorporate the values and emotional responses into the plan-making process.⁵³⁶ The plan making process incorporates the requirements of the Environmental Assessment Directive (SEA), and include a very strong

⁵³² B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

⁵³³ S Owens, ‘Engaging the public’: information and deliberation in environmental policy’ (2000) 32 (7) *Environment and Planning* 1141

⁵³⁴ Royal Commission on Environmental Pollution, *The Urban Environment* (2007) Twenty Sixth Report Cm 7009

⁵³⁵ A Drazkiewicz and E Challies and J Newig ‘Public participation and local environmental planning: Testing factors influencing decision quality and implementation in four case studies from Germany’ (2015) 46 *Land Use Policy* 211

⁵³⁶ A Davies, ‘What Silence Knows – Planning, Public Participation and Environmental Values’ (2001) 10 (1) *Environmental Values* 77; D W Hine and K Clarke and A D Marks, G Morgan and I Methuen, ‘Feelings About Fracking: Using the Affect Heuristic to Understand Opposition to Coal Seam Gas Production’ (2019) 39 (3) *Risk Analysis: An International Journal* 586

set of requirements that demand that alternatives to policies are assessed. Planning needs 'future thinking', and the use of models,⁵³⁷ scenarios,⁵³⁸ or backcasting,⁵³⁹ powerful ways of looking in to the future. While models are incremental in their approach, extrapolating from past and present to identify short term futures, scenarios such as those used by the Committee on Climate Change⁵⁴⁰ look further into the future, as is necessary with the carbon budget orders being adopted by Parliament more than 15 years in the future. Backcasting is a type of thinking that allows a planner to start from a point in the future e.g. the 2050 date as that is the net zero emissions date, and then work backwards. These methods provide real opportunities for bringing different information and thinking into the plan-making process, but so far research of local plans in England has shown that neither nationally adopted carbon budgets, nor legislative targets have translated into plans that have robust climate change mitigation and limitation policies.⁵⁴¹

In plan-making examinations in England and Wales, those who have objected to the plan can appear before the Inspector and be heard.⁵⁴² Suggestions for alternative policies can be proposed and arguments made in a setting where the Inspector acts as a 'Chair' and the planning authority officers sit around the table with the objectors. The examination process is carefully tabled, with agendas set over a series of weeks and items for discussion. While these fora are often dominated by developers (professionals) there is a real opportunity for NGO or community representatives to speak. Often barristers are also employed to make representations. Davies highlights the barriers to participation including 'public disenchantment with formal politics and expertise', and that the process of public participation in planning needs to be 'tempered with caution', and suggests there needs to be

⁵³⁷ H Couclelis 'Where has the future gone?' Rethinking the role of integrated land-use models in spatial planning' (2005) 37 (8) Environment and Planning 1353; E Koomen and J Borsboom-van Beurden (eds), *Land-Use Modelling in Planning Practice* (Springer 2011)

⁵³⁸ W-N Xiang and K C Clarke, 'The Use of Scenarios in Land-Use Planning' (2003) 30 (6) Environment and Planning 885

⁵³⁹ J Robinson and S Burch and S Talwar and M O'Shea and M Walsh, 'Envisioning sustainability: Recent progress in the use of participatory backcasting approaches for sustainability research' (2011) 78 (5) Technological forecasting & social change 756

⁵⁴⁰ For example in preparing the Sixth Carbon Budget. Committee on Climate Change *Sixth Carbon Budget Methodology Report* 9 December 2020.

⁵⁴¹ TCPA, *Planning for the climate challenge? Understanding the performance of English local plans* (2016)

⁵⁴² Planning and Compulsory Purchase Act 2004 s20 Independent Examination

consideration of what the ‘implications of a new, successful system might mean’ in relation to participation in local plan making.⁵⁴³ This has relevance to the data findings in this research, where some of the community individuals who are the subject of the research gave an emotional response to the shale gas developments, and from the data findings, there is an exploration of how this brings in a different aspect to the content in the decision-making process.

The bespoke planning appeal (inquiry) is frequently considered the most powerful right to be heard after the right to be heard in local plan making inquiries. This is because it allows communities to bring evidence and to question the applicant’s evidence, and in cases where the appeal is called in by the Secretary of State, to also question the evidence and reasoning of the local authority. Communities can register as ‘Rule 6 parties’ allowing them full access to the inquiry and full participation in processes such as cross-examination and testing of evidence. Power is differently distributed in a bespoke planning inquiry – unlike a planning committee hearing, there are three factors that contribute to this redistribution. The first factor is that of time. While a planning committee decision on a development may take up to three hours, or in the exceptional circumstances of the Lancashire County Council’s committee hearing covering two days for the Cuadrilla applications at Preston New Road and Roseacre Wood, in normal circumstances the applicant is given the time to present the development, while public speaking is limited to 3 or 5 minutes, depending on the Standing Orders the council in question has adopted. The second factor that rebalances power, is the consideration and testing of evidence. If an applicant reasons that the climate change impact is ‘acceptable’ based on the evidence, a community (or third party in technical terms) can bring their own evidence on impact. For example during the *Highthorn* appeal inquiry, Friends of the Earth brought a number of scientists to give evidence on the climate change

⁵⁴³ A Davies, ‘What Silence Knows – Planning, Public Participation and Environmental Values’ (2001) 10 (1) Environmental Values 77

impact of the proposed development.⁵⁴⁴ As an officer writing the report on the application, there is much more ‘power’ in the officer’s hands as to how the evidence submitted by the applicant and any objections is treated. Contrast this to a planning appeal inquiry where a community’s representative or NGO representative, an advocate, asks searching questions of the evidence, to which the Inspector is duty bound to listen and consider. There is no such scrutiny of the evidence to inform the local planning authority officer. The third factor which is important is that the appeal inquiry is held in public. This changes an internal deliberation behind closed doors, to one where every word can be scrutinised, made even more public via the media, and for which the speakers are accountable. Taken together, the time, the testing of evidence, and the private/public nature of a process can result in very different outcomes.

The refusals of applications for shale gas applications were heavily influenced by the level of public opposition – committee members are elected politicians and highly contentious developments become highly political. Similar situations arise for coal, such as the committee meeting in Caerphilly County Borough Council on *Nant y Llesg*,⁵⁴⁵ where the Chair referred to the history of coal mining in the area, stating that the ‘community has suffered enough’. Another member spoke about the values that needed to apply in the decision ‘money isn’t god’. A third member spoke strongly about the impact of climate change on the future generations, the children of the area. These highly emotional moments find expression in these moments of political decision making. However the factors of time, evidence and public/private that are differently constructed in different processes as explained, and this has an impact on the outcome, especially for ‘environmental’ decisions.

The way in which power and responsibility are assigned by the regulatory framework and yet are assumed differently by those involved in a decision-making process with cumulative

⁵⁴⁴ Personal observation.

⁵⁴⁵ Personal observation.

environmental impact forms part of the response to the key research question on the extent to which the framework recognises environmental limits. Watterson et al found that ‘science was frequently ignored and industry was able to influence decision-making within a political, legal and planning framework in England, to the detriment of public health.’⁵⁴⁶ The study looked at air quality and the contributions to climate change in the political and public health context. Dinan advocates a new set of ‘ethical approaches’ to shale gas exploration through the planning regime in response to the concerns that important issues are not being addressed.⁵⁴⁷ The marginalization of views and refusal to acknowledge the consequences of decisions in the process by Governmental authorities in England is an important finding of this study by Watterson, supporting the findings of this research as explained later, that the issues around failure to consider environmental limits despite the community activists bringing in a set of what could be characterised as a set of more ‘responsible’ aspects to the content of decisions, leads to an environmental protection failure.

The right to participate opportunities as summarised in Table 6 provide range of ways in which individuals can have an impact on the outcome. Issues such as environmental limits and climate mitigation have formed the basis of objections to planning applications across the shale gas development sites. A total of 11,127 objections were received with regard to the Preston New Road site application by Cuadrilla Ltd, of which 827 were individual letters, and the others ‘template’ letters, i.e. signed letters with comparable text where the main issues listed were objections based on ‘no need for development’ and ‘climate change’. The field research questions sought to explore the views of key participants in the process, in the context of all the objections submitted to the case study application⁵⁴⁸ and the community

⁵⁴⁶ A Watterson et al., ‘Lagging and Flagging: Air Pollution, Shale Gas Exploration and the Interaction of Policy, Science, Ethics and Environmental Justice in England’ (2020) *International Journal of Environmental Research and Public Health*

⁵⁴⁷ Ibid

⁵⁴⁸ 11,127 objections in addition to subsequent submissions at the appeal inquiry at Preston New Road.

activists who were interviewed, there was a general indication by most that some part of the planning process' opportunities for involvement had been utilised.⁵⁴⁹

Judicial review is a legal challenge option that must be taken within six weeks of the development consent (in town and country planning), and several judicial reviews have been brought on decisions to approve shale gas operations.⁵⁵⁰ The importance of access to a review process by the Courts in providing a means to strengthen environmental protection has been publicly endorsed by the Coalition on Access to Justice in the Environment (CAJE) for many years.⁵⁵¹ Day and others have discussed its importance in providing an 'enforcement' mechanism,⁵⁵² and it is also acknowledged in Banner's edited handbook on the Aarhus Convention.⁵⁵³ Again, this research has reviewed climate cases that have been brought through judicial review, and enabled by Aarhus derived costs protection,⁵⁵⁴ but given that the effect of these reviews on planning decisions is that the decision is remade, the legal focus returns to the planning regime.

4.4.3 Procedural rights in the permitting regime and health and safety regime

Alongside the planning regime is the pollution control regime as described in the Chapter on regulatory controls. The Environment Agency in England issues standard and bespoke permits.⁵⁵⁵ Standard permits were introduced under new rules, removing the public consultation requirement and creating a three week processing timeframe related to drill and core activities, radioactive waste accumulation and crude oil storage and handling.⁵⁵⁶

Bespoke permits are required (including consultation) for anything that is not covered by a standard rule permit. In practice, this means that all unconventional extraction activities are

⁵⁴⁹ Personal observation.

⁵⁵⁰ *Frack Free Balcombe Residents Association, R (on the application of) v West Sussex County Council* [2014] EWHC 4108 (Admin); *R (PNRAG and Frackman) v SSCLG and Cuadrilla* [2017] EWHC 808 (Admin)

⁵⁵¹ CAJE, *Written evidence submitted by Coalition for Access to Justice on the Environment PE 12* (Public Administration Committee, November 2012)

⁵⁵² C Hatton and P Castle and M Day, 'The Environment and the Law — Does Our Legal System Deliver Access to Justice? A Review' (2005) 6 (4) *Environmental law review* 240

⁵⁵³ C Banner (ed) *The Aarhus Convention: A guide for lawyers* (Routledge, 2015)

⁵⁵⁴ D Hart and J Metzger, 'The Aarhus Costs Rules - Past, Present and Future' (2018) 23 (2) *Judicial review* 83

⁵⁵⁵ EA, *Guidance Waste : Environmental Permits* (1st edn, EA 2016)

⁵⁵⁶ EA *Standard Rules for the Environmental Permitting Regulations – Consultation No.11 Summary of consultation responses* (2016)

covered by some form of bespoke permit. It also means that some parts of unconventional extraction activities are considered 'standard' even though radioactive waste accumulation is a particular feature of high volume hydraulic fracturing for shale gas (an unconventional extraction technique). Natural Resources Wales follows the Environment Agency approach closely.⁵⁵⁷ Limitations to the procedural rights in what is distinguished as being a technical regime allow for little room for the expression of broader concerns. In the health and safety regime there is very little room for public participation. While the interaction between public health regimes and the health and safety regime is not a focus for this research, it is noted that the Public Health Director in one of the areas where shale gas developments were proposed was active in responding and highlighting public health concerns in relation to a specific application.⁵⁵⁸ Arguably, the highly technical nature of the permitting and health and safety regimes is a check on the extent to which public participation by lay people is perceived as 'useful' by the authorities responsible for the regimes. By no means does this automatically mean that public and lay concerns are not useful in identifying the public interest and bringing in new content where these regimes operate.

4.4.4 Summary

In brief, there are a number of procedural rights that exist in the regulation of fossil fuel extraction. From field work and from the documentary evidence such as objections received by planning authorities to applications for development, it is apparent that new content is brought into the decision-making process by the procedural rights that have been discussed in this section. This content then has the potential to shape the outcome. The extent to which the content brings in the notion of limits to such decisions is explored through the fieldwork.

⁵⁵⁷ Natural Resources Wales, *FAQ: Onshore Oil and Gas* (2019)

⁵⁵⁸ S Karunanithi, *Potential Health Impacts of the Proposed Shale Gas Exploration Sites in Lancashire* (6 November 2014) Published for Lancashire County Council Cabinet Meeting, Item 9

An example of how this might manifest in changing the content that becomes part of the decision-making process was observed through the research in relation to the issue of climate change.

4.5 Governance and environmental decision-making

Governance, simply put, is taken to mean the 'manner in which a state is governed'.⁵⁵⁹ This can be characterised as the interaction between the 'governors' and 'the governed'. This research has described the regulation as it is currently designed, and how it has been amended. In the fieldwork the motivations, perspectives and judgements that are involved are explored. The 'governors' are those who have authority conferred by regulation in the process of fossil fuel decision-making. 'The governed' for the purpose of this research are taken to comprise of developers, the public, and community activists who are engaging with that process of decision-making. Procedural rights, in the absence of more substantive rights, shapes the context of the decision-making process. These procedural rights form an essential part of 'governance', due to their presence in the legal framework, and being cognisant of how they are structured is a basis for proceeding to think about governance.

In *Governing Sustainable Cities*, the authors distinguish between government (as the institution) and governance:

Governance, on the other hand, is the sphere of public debate, partnership, interaction, dialogue and conflict entered into by local citizens and organisations and by local government.⁵⁶⁰

They go on to describe 'governing' as the 'relationship between the two processes' and offer a meaningful definition of governance in terms of examining to what extent 'governance' in relation to unconventional fossil fuels is achieving sustainable development in England. This is further improved if the description is extended to include national and 'regional' tiers of

⁵⁵⁹ Oxford English Dictionary

⁵⁶⁰ Bob Evans and Marko Joas and Susan Sundback and Kate Theobald, *Governing Sustainable Cities* (Earthscan 2005)

government for the purposes of this research. This interpretation draws upon the UN-Habitat description of governance (in relation to local government):

Governance is the enabling environment that requires adequate legal frameworks, efficient political, managerial and administrative processes to enable the local government response to the needs of citizens. It can be defined as the many ways that institutions and individuals organize the day-to-day management of a city, and the processes used for effectively realizing the short term and long-term agenda of a city's development. Urban governance is the software that enables the urban hardware to function. Effective urban governance is characterized as democratic and inclusive; long-term and integrated; multi-scale and multilevel; territorial; proficient and conscious of the digital age.⁵⁶¹

The UN-Habitat description starts to distinguish 'good' governance through characterising 'effectiveness'. Elements of this 'effectiveness', for example the long-term and integrative aspects, are also crucial to understanding the procedural aspects of sustainable development, for example as set out in the Brundtland definition.⁵⁶² Further recognition of the importance of describing 'good' governance came with the EU's White Paper on European Governance,⁵⁶³ published in 2001. It set out five proposed principles for underpinning 'good governance' 'openness, participation, accountability, effectiveness and coherence.'⁵⁶⁴ These principles were proposed in response to concerns about loss of confidence in the institutions of government. But the 'effectiveness' principle does not reflect the UN-Habitat definition, instead being more narrowly drawn:

Policies must be effective and timely, delivering what is needed on the basis of clear objectives, an evaluation of future impact and, where available, of past experience. Effectiveness also depends on implementing EU policies in a proportionate manner and on taking decisions at the most appropriate level.⁵⁶⁵

This is very much the institution (as the government) perspective on what constitutes 'effectiveness', with the subsidiarity principle being the most obvious link with the UN-Habitat's definition of effective governance. Subsidiarity is a key topic in the unconventional

⁵⁶¹ UN Habitat, *Governance* [Last accessed at <https://unhabitat.org/governance/>]

⁵⁶² Gro Harlem Brundtland (Chair), *Our Common Future* (OUP 1987)

⁵⁶³ Commission, *European Governance - A White Paper* COM (2001) 428 final, 25 July 2001; R Atkinson, 'The White Paper on European Governance: Implications for Urban Policy' (2002) 10 (6) *European Planning Studies* 781

⁵⁶⁴ *Ibid*

⁵⁶⁵ *Ibid*

fossil fuel discourse as noted by Bomberg (2017),⁵⁶⁶ noting that the question of who has the decision-making authority is contested, the more the development becomes politicised. In England measures have been put in place to call-in decisions so that a national level Minister is making the final decision on a project that is refused by a local government.⁵⁶⁷

The principles of openness, participation and accountability can also be found in the Aarhus Convention,⁵⁶⁸ to which the EU and UK are both signatories. The Convention's preamble further reinforces the links between environmental protection in particular and 'good' governance in terms of how decisions are made that affect the environment:

Recognizing also that every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations,

Recognizing that, in the field of the environment, improved access to information and public participation in decision-making enhance the quality and the implementation of decisions, contribute to public awareness of environmental issues, give the public the opportunity to express its concerns and enable public authorities to take due account of such concerns,

Aiming thereby to further the accountability of and transparency in decision-making and to strengthen public support for decisions on the environment⁵⁶⁹

The Convention specifically links environmental protection to procedural rights that codify part of the interaction between civil society and government. The 'rules' set out in the convention are also seen by Richard Macrory in *Regulation, Enforcement and Governance in Environmental Law* as part of defining 'governance':

Legal rights to public information and participation in decision-making, access to justice, and the accountability of regulatory authorities are issues that have a universality and help define the relationship between citizen and state.⁵⁷⁰

⁵⁶⁶ E Bomberg, 'Shale we drill? Discourse dynamics in UK fracking debates' (2017) 19 *Journal of Environmental Policy & Planning* 72, 88

⁵⁶⁷ Department of Energy & Climate Change, Ministry of Housing, Communities & Local Government, The Rt Hon Greg Clark MP, and The Rt Hon Amber Rudd, *Faster decision making on shale gas for economic growth and energy security* (Press release, 13 August 2015)

⁵⁶⁸ UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (1998)

⁵⁶⁹ *Ibid*

⁵⁷⁰ R. Macrory, 'Regulation, Enforcement and Governance in Environmental Law' (2nd edn Hart 2010)

Defining this relationship requires familiarity with the specific provisions. A provision to be heard in a local plan examination is in practice a very different exercise to writing a response via email to a consultation. Being in a room, in person, with the attendant human interaction and dialogue, negotiating and speaking with the main parties in the room, able to respond and test suggestions and assertions as they are made is very different to the 'one way' process that consultation often takes. Thousands of written responses were made to the Preston New Road and Roseacre Wood development applications for shale gas by Cuadrilla Bowland Ltd.⁵⁷¹ These were summarised by the planning officer in the report – the number of responses and the general themes. However there is no 'dialogue' in that process, no to and fro that develops and changes and is influenced by the participants in that dialogue. While it is clear that the participants are not equal in that dialogue as consultation responses are not treated equally, it is still valid to assume that the way knowledge is co-produced in an examination with a right to be heard resulting in an Inspector's recommendations, is different to the way knowledge is co-produced in an Officer's report. The contention is therefore that the detail of the legal provisions, the detail of these procedural rights is important – they do not have the same effect on the outcome. This is well understood in public participation literature, and this research does not seek to revisit that, but instead to look specifically at what happens to the concept of limits in decision making on fossil fuels.

4.6 Conclusions

The importance of procedural and substantive rights in emphasising environmental issues in decision-making is supported by the research, and reflected in international conventions and national legislation. The lack of substantive rights in the UK legal corpus lends itself either to speculation about how such rights might change the outcome if they were present, or to searching out comparative examples such as the Norwegian and Pennsylvanian ones, and contemplating on the different outcomes with regard to similar decision-making on fossil fuel

⁵⁷¹ These are recorded in the Officer's report as above.

extraction. Procedural and substantive rights are the vehicles for the public voice, that are of a time and place. There is no homogenous 'public voice', rather a multitude of voices that are channelled in the decision-making process and in every process is differently constituted. And in each process, procedural rights will be realised slightly differently given the way an authority might enforce or amend the way it carries out a process.

Nevertheless in general, there are some conclusions that can be drawn. One is the assumption that the 'public voice' that is realised in this process will in some way and to some extent highlight environmental issues. Secondly, that the 'public voice' draws upon and is supported by the findings of the scientific community when it comes to stressing the importance of mitigating environmental impacts and strengthening environmental protections. Drawing this inference is possible because of the technical nature of licensing, land use planning, and permitting. Evidence is a key part of decisions, and evidence draws upon the wider scientific community of understanding. How the 'content' is shaped by the rules and by the differing 'voices' in the process is explored in the following chapters that consider the field work data findings. With this background, the extent to which the public who participate in the decision-making process on highly contentious developments that have considerable environmental impacts in terms of climate change emissions is found to be one that is not uniform across the different regimes. From land use planning to environmental permitting there are different opportunities governed by different policies, and these rules inevitably result in different outcomes.

Bearing in mind that the rules that control the process influence the substantive matter as well as the outcome, the setting for the field work draws upon both verified assumptions – that public participation in and of itself is a precondition although not the sole precondition, for a greater emphasis on environmental matters. Given that some of the rules allow for different inputs and different levels of absolute protection, understanding the corpus of law, is the basis on which it is then possible to examine the practice – what happens in a real world

situation? Why is that real world situation important? It is important because it enables a reflection on whether the construction of law would increase the level of consideration and incorporation of environmental limits into the outcomes of decisions. when researching the extent to which fossil fuel extraction decision making takes into account planetary boundaries.

Chapter 5: How are ‘content’ boundaries shaping outcomes?

5.1 Introduction

As set out in Chapter 1, the premise of this research is to critically examine decision-making with future consequences in the broader context of the breaching of planetary environmental limits, and what gaps or failures can be identified in the law in a specific jurisdiction. Using an inductive approach allows the data gathered in the field research and in the documentary evidence of the case studies to inform the research questions.⁵⁷²

The empirical data is now presented in this and the following Chapter and the legal challenges are examined ‘in action’ through the field research, taking a socio-legal approach, attempting to gain a richer understanding of what is happening in and around the legal framework.⁵⁷³ Through scrutinising the operation of the framework in practice, this research is inspired by similar examinations of how effective legal frameworks are constructed and operated.⁵⁷⁴ Socio-legal research approaches, as described in Chapter 1, adopt the assumption that a more detailed understanding of the causes and circumstances that could be related to the observed outcomes can be sought out through examining law in practice.⁵⁷⁵ Tracing the connection between the legal framework, its operation, and the eventual outcomes where these are apparent from the case studies selected here, provides insight into the effectiveness of environmental regulation in specific circumstances, but also allows lessons to be drawn more broadly.⁵⁷⁶ Environmental regulation in England has been tested in these case studies of fracking, and this testing means that gaps can be identified, and the

⁵⁷² Note that this Chapter and the Chapter following have been part published by the author as N Luhde-Thompson, ‘Why Reality and Truth Matter in Environmental Law’ in M Boeve and S Akerboom and C Backes and M van Rijswijk (eds), *Environmental Law for Transitions to Sustainability* (Intersentia 2021)

⁵⁷³ D Nelken, ‘Law in action or living law? Back to the beginning in sociology of law’ (1984) 4 (2) *Legal Studies* 157

⁵⁷⁴ L Squintani, ‘Addressing the (Lack of) Effectiveness of Environmental Law and the Gap between Law in the Books and Law in Action’ (2020) 17 (2) *Journal for European Environmental & Planning Law* 133; P Hubbard and J Prior, ‘Law, pliability and the multicultural city: Documenting planning law in action’ (2018) 184 (1) *The Geographical Journal* 53

⁵⁷⁵ H Genn and M Partington and S Wheeler, *Law in the real world: improving our understanding of how law works. Final Report and Recommendations* (UCL 2006)

⁵⁷⁶ C Armeni, ‘Participation in Environmental Decision-making: Reflecting on Planning and Community Benefits for Major Wind Farms’ (2016) 28 (3) *Journal of Environmental Law* 415; S Vaughan, ‘“The law is my data”: The socio-legal in environmental law’ (*Blog on Oxford University Press*, 4 September 2017) < //blog.oup.com/2017/09/socio-legal-in-environmental-law/ > Last accessed November 2021

extent to which the law is effective and coherent better understood by examining *content* and *context*.

These gaps have been characterised in this research as ‘boundaries’ both in terms of ‘content’ and ‘context’. The ‘content’ is the substance of the matter within decision-making, and the ‘context’ is what happens in and around the process of decision-making. Both *content* and *context* lenses are rooted in the concept of critical realism.⁵⁷⁷ This is because of the difference between theory and practice – what the law says, the text in and of itself, and what people do when using that law or in being subject to it as a process, and how things evolve and develop in a specific real world situation when that law is used. By examining the causes of outcomes, moving from the artifice of the law, to studying how it plays out in reality, this research has attempted to examine the effectiveness of the environmental legal framework in terms of recognising environmental limits. Both specific and broad inferences can be drawn from the case studies leading to reflections on how effective legal frameworks could be constructed.

Gathering together the documentary evidence and empirical data, the first part of the data findings sets out how ‘content’ is shaped by the legal and policy framework in this Chapter. The shaping of the content also illuminates what is outside this content boundary, what the omissions are, and what impact this might have on outcomes. To put it another way, the exploration of ‘content’ is the exploration of the nature of the grist that is fed into the mill of decision-making. Jasanoff’s theory of co-production has inspired this viewpoint, in terms of thinking about what is happening to ‘knowledge’ and ‘reasoning’ inside a legal process which relies heavily on scientific evidence. Land use planning by its nature is treated as an evidence-based decision-making process.⁵⁷⁸ This Chapter as such concerned with the

⁵⁷⁷ B Danermark and M Ekström and L Jakobsen and J C Karlsson, *Explaining society: Critical realism in the social sciences* (Routledge 2002)

⁵⁷⁸ W J Sutherland and H Downey and W F Frick and P Tinsley-Marshall and T McPherson, ‘Planning practical evidence-based decision making in conservation within time constraints: the Strategic Evidence Assessment Framework’ (2021) 60 *Journal for Nature Conservation* 125975

'knowledge' being fed into the process; the *content* as it is shaped by the relevant legal competences and aims, and substantive rights, to the extent the latter are present. The following Chapter will consider how the *context* is shaped by procedural rights, and the governance around the legal framework. The question there is how process shapes the outcomes. Notwithstanding that this division between *content* and *context* is not quite as black and white or as simple as saying that some things are 'content' and some are 'context' as there is a dynamism and fluidity between the concepts, this presentation of the data findings allows the data to be broadly divided into the 'what?' and the 'how?' Wider reflections can be drawn from these two viewpoints of *content* and *context*.

Legislation could proscribe in more detail what considerations should be part of decision-making processes. Chapter 3 provided the example of the Court of Appeal decision in response to the challenge to the National Policy Statements on Airports concerning airport expansion in relation to climate change considerations.⁵⁷⁹ The relevant legislation has a 'content' consideration on the need to consider climate change,⁵⁸⁰ but the judicial review concerned procedural matters, the 'context' as is the case in the common law legal system of England and Wales. The case was successful on procedural grounds concerning the failure to take the Paris Agreement and sufficient consideration of the legislative provision into account in the Appeal Court. The Supreme Court decision overturned the Court of Appeal judgement, demonstrating how weighting on the 'content' interacts with 'context'.⁵⁸¹ Here we can see just one example of the overlap between 'content' and 'context' playing out in an environmental case in the sphere of land use planning law.

Therefore, whilst acknowledging the fluidity of the concepts by which these two Chapters presenting the field work findings have been organised, the distinction between the two is

⁵⁷⁹ *R (Plan B Earth and others) v Secretary of State for Transport and others* [2020] EWCA Civ 214

⁵⁸⁰ Planning Act 2008 s10

⁵⁸¹ *R (on the application of Friends of the Earth Ltd and others) (Respondents) v Heathrow Airport Ltd (Appellant)* UK SC 2020/0042

useful to differentiate where the 'content' is shaping the outcome, and where the 'context' is shaping the outcome. Chapter 7 follows the exploration of 'content' and 'context' boundaries of decision-making and reflects upon the data findings as a whole, focussing on the extent to which these boundaries shape outcomes in a way that is stochastic⁵⁸² or deterministic⁵⁸³ in terms of the future. Stochastic decision-making is taken to mean decision-making that has an unpredictable outcome, and has been of interest to researchers where probabilities are engaged,⁵⁸⁴ whereas deterministic decision-making is where the outcome is predicted. Following on from that, the final legal challenge of the coherence of individual development decisions, and the extent to which the law examined here could be considered effective in terms of recognising environmental limits is investigated in the conclusions.

5.1.1 Shale gas decision-making: the case study

The field research took shale gas decision-making as the case study. While open cast coal mine decisions were also active at the time, there was a unique situation with regards to shale gas in that these were new developments in communities that had largely not experienced fossil fuel extraction. It therefore provides a clarity in that the counter-factual of no fossil fuel extraction was the extant situation, and then fossil fuel extraction as an issue was brought into being by the development proposal. In the shale gas case studies chosen for this research in Lancashire and North Yorkshire, the public concerned was both significant in terms of the quantity of people who became involved in decision-making process,⁵⁸⁵ and because of the variation in societal background.⁵⁸⁶ The communities involved in the fracking debate in these places, were place based, i.e. referred to as a community because of their geographical proximity to the contested development sites. Those

⁵⁸² Oxford English Dictionary

⁵⁸³ Oxford English Dictionary

⁵⁸⁴ A A Batabyal, 'Alternate decision rules, the flexibility premium, and land development over time and under uncertainty' (2004) 18 (2) Stochastic Environmental Research and Risk Assessment 141

⁵⁸⁵ 11,127 the number of objections recorded in the Officer's report for the Preston New Road application; 186,000 plus names on a petition supporting the refusal of shale gas developments at Preston New Road and Roseacre Wood in Lancashire, available at <http://drillordrop.com/2016/06/14/180000-name-petition-supporting-lancashire-fracking-decision-delivered-to-government/>

⁵⁸⁶ Joanne Hawkins, 'Fracking: Minding the gaps' (2015) 17 (1) Environmental Law Review 8; R A Howell, 'UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy' (2018) 113 Energy Policy 721

interviewed were selected for having been long standing members of the community, with a community interest (i.e. active in the community), but not environmental campaigners such as members of NGOs. These are activists who could be characterised as having been ‘activated’ by the advent of the shale gas proposal in proximity to their place of residence.

Shale gas was also chosen for the case study because of the clearly evidenced environmental impacts of greenhouse gas emissions and waste-water pollution.⁵⁸⁷ Both impacts have corresponding ‘limits’ set out in environmental law – a limit on emissions via the Climate Change Act 2008,⁵⁸⁸ and a limit on groundwater pollution (in fact a prohibition) through the Groundwater Directive.⁵⁸⁹ Therefore, shale gas development allows the examination of the extent to which environmental law is helping to secure environmental protection as defined by recognising planetary limits.

5.1.2 The political influence on ‘content’ in shale gas decision-making

As a case study, shale gas development decision-making is an opportunity to explore the impact of politics and societal pressure on environmental law. Fossil fuel extraction is a highly political issue that goes to the heart of sustainable development and whether or not environmental limits are being recognised. In 2015, the UK Government’s written ministerial statement said that ‘(e)xploing and developing our shale gas and oil resources could potentially bring substantial benefits and help meet our objectives for secure energy supplies, economic growth and lower carbon emissions’.⁵⁹⁰ Planning practice guidance issued in England two years earlier, similarly emphasised shale gas’ role as a transition to lower emissions.⁵⁹¹ The issue of ‘lower’ carbon emissions is clearly a contentious one.⁵⁹² Kysar

⁵⁸⁷ The US had a ten year period of active and extensive shale gas development, while different in terms of geological make up, could still provide comparative evidence in terms of emissions.

⁵⁸⁸ Climate Change Act 2008

⁵⁸⁹ Council Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration [2006] OJ L 372/19

⁵⁹⁰ Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

⁵⁹¹ DCLG, *Planning Practice Guidance for Onshore Oil and Gas* (Planning guidance, 2013)

⁵⁹² J Broderick and K Anderson, *Natural gas and climate change: Report commissioned for Friends of the Earth Europe* (Tyndall Center 2017)

notes that evaluating policy revisits the reasons for choosing and acting in particular ways,⁵⁹³ and it is important to evaluate the impact of the construction of national policy on the decision-making that consequently implements this policy.

No Strategic Environmental Assessment (SEA)⁵⁹⁴ was conducted on the policy guidance originally, as this is not a requirement for planning policy in England,⁵⁹⁵ although local plans do undergo SEA.⁵⁹⁶ Arguably, without the use of this instrument to assess the policy, there is an absence of information and public consultation, leading to a shortfall in the relevant evidence to inform the policy. Mulder points out that planning is not that scientifically certain, and there is much conflict and ambiguity involved.⁵⁹⁷ If assessments designed to strengthen policy 'content' such as SEA are not applied, conflict and ambiguity around the policy may increase.⁵⁹⁸ Against that, actively promoting shale gas developments, contrary to what might be scientifically certain in terms of harms, seems to go to the heart of one of the reasons why environmental limits fails to be recognised in such policies and associated processes. The political economy that surrounds the development of such content detracts from the more rational, scientific base that indicates a different approach.⁵⁹⁹

Both developers and authorities in England emphasised the 'need' for shale gas, following the earthquake in Blackpool that drew national media attention, requiring a political response.⁶⁰⁰ This assumption of policy need creates a high bar for environmental impacts that would have to outweigh this need as discussed in the Officer's Report for the Lancashire

⁵⁹³ D A Kysar, *Regulating From Nowhere: Environmental Law and the Search for Objectivity* (Yale University Press 2010) p66–67

⁵⁹⁴ Council Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment [2001] OJL197/30.

⁵⁹⁵ *Friends of the Earth Ltd v Secretary of State for Housing, Communities And Local Government* [2019] EWHC 518 (Admin).

⁵⁹⁶ UK Environmental Assessment of Plans and Programmes Regulations 2004, SI 1633; E Stokes, 'Regulatory Domain and Regulatory Dexterity: Critiquing the UK Governance of "Fracking"' (2016) 79 *Modern Law Review* 961

⁵⁹⁷ J De Mulder, 'The Protocol on Strategic Environmental Assessment: A Matter of Good Governance' (2011) 3 *RECIEL* 20

⁵⁹⁸ *Ibid.*

⁵⁹⁹ D T Evensen, 'Policy Decisions on Shale Gas Development ('Fracking'): The Insufficiency of Science and Necessity of Moral Thought,' (2015) 24 (4) *Environmental Values* 511

⁶⁰⁰ L Whitmarsh and N Nash and P Upham and A Lloyd and J P Verdon and J Kendall, 'UK public perceptions of shale gas hydraulic fracturing: The role of audience, message and contextual factors on risk perceptions and policy support' (2015) 160 *Applied Energy* 419

application.⁶⁰¹ Refusals of shale gas were rare until public campaigning reached a fever pitch in Lancashire in 2015, culminating in the elected members rejecting high profile, large scale exploration sites, one of them against the advice of officers, on visual impact and transport grounds.⁶⁰² Other councils followed suit, but in the knowledge that they were likely to lose at appeal, as indeed happened at the Preston New Road site in Lancashire.⁶⁰³ Councils have attempted to defend decisions to refuse shale gas exploration on climate change grounds.⁶⁰⁴ These English planning authorities, both in terms of elected members and officers, were not assisted by national policy guidance in their decisions to refuse development.⁶⁰⁵ Taking a longer view over time, the shifting and complex political atmosphere that developed around shale gas, and had an impact on the 'content' of decisions is apparent.⁶⁰⁶

Politics are hugely important in environmental decision-making, as much research has evidenced.⁶⁰⁷ In 2019, the UK's Prime Minister announced an end to political support for shale gas extraction,⁶⁰⁸ but some developments continue to progress.⁶⁰⁹ In 2020, the UK Government Minister refused to call in an undersea coal mine of some significance, following requestions from the local action group,⁶¹⁰ despite the revised planning policy on coal in England following the Banks Mining Highthorn case,⁶¹¹ the UK's Committee on Climate

⁶⁰¹ Lancashire County Council, *Officer's Report Preston New Road Cuadrilla Planning Application* (LCC, 2015)

⁶⁰² Ibid, and at Lancashire County Council, Development Control Committee, *Minutes of the Meeting held on 23, 24, 25 and 29 June 2015 at 10.00 am in Council Chamber, County Hall, Preston* (LCC, 2015)

⁶⁰³ Ministry of Housing, Communities & Local Government, 'Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision letter and Inspector's Report on appeals relating to applications for planning permission' (MHCLG, 2016)

⁶⁰⁴ S Mander, *Why are Local Authorities going against UK Government on fracking?* (Manchester University, 2019)

⁶⁰⁵ *Wavendon Properties Ltd* [2019] PTSR 2077, Dove J, paragraph 58.

⁶⁰⁶ A Szolucha, 'Anticipating fracking: Shale gas developments and the politics of time in Lancashire, UK' (2018) 5 (3) *The Extractive Industries and Society* 348; L Williams and B Sovacool, 'The discursive politics of 'fracking': Frames, storylines, and the anticipatory contestation of shale gas development in the United Kingdom' (2019) 58 *Global Environmental Change* 101935; L Williams and B Sovacool, 'Energy democracy, dissent and discourse in the party politics of shale gas in the United Kingdom' (2020) 29 (7) *Environmental Politics* 1239

⁶⁰⁷ N Carter, *The politics of the environment : ideas, activism, policy* (CUP 2018); P North, 'The Politics of Climate Activism in the UK: A Social Movement Analysis' (2011) 43 (7) *Environment and Planning* 1581; N Carter, 'Greening the mainstream: party politics and the environment' (2013) 22 (1) *Environmental Politics* 73

⁶⁰⁸ L Williams and A Martin and B Sovacool, *A Brief History of the UK's Political Debate over Shale Gas 2009-2019* (University of Sussex 2020)

⁶⁰⁹ *Finch, R (On the Application Of) v Surrey County Council* [2021] EWHC 170 (QB) (03 February 2021)

⁶¹⁰ Timeline of the case provided by Cornerstone Chambers, acting on behalf of SLACC at < /cornerstonebarristers.com/news/after-jr-threat-secretary-state-calls-cumbrian-coal-mine/ >

⁶¹¹ *HJ Banks & Company Ltd v Secretary of State for Housing Communities And Local Government* [2018] EWHC 3141 (Admin) (23 November 2018)

Change's concerns and the international condemnation of such a decision.⁶¹² Although locally, the application was not being considered on its climate merits or demerits,⁶¹³ much commentary by opinion formers appeared scandalised by the failure to consider the climate consequences.⁶¹⁴ By 2021 this decision had been reversed. The political influence over the 'content' of decision-making transfers into a 'context' question, how, and at what level, should the determination be made. Political decisions can change what is considered to be 'content' – in the case of Woodhouse Colliery, the relevant Minister was of the view that the development was a local matter until political pressure resulted in a change of approach. Other commentary on the different conclusion – that the development was a national matter, going to the heart of the nation's climate change commitments, eventually won out:

The Secretary of State has decided to call this application in because of the further developments since his original decision. The Climate Change Committee's recommendations for the 6th Carbon Budget have been published since he was advised on this decision. The Secretary of State recognises that proponents and opponents take different positions on that matter, and considers that this should be explored during a public inquiry.⁶¹⁵

Substantial and potential conflict is noted within the National Planning Policy Framework (NPPF),⁶¹⁶ and this is found to be a supporting reason for issuing a call-in. Clearly, the 'controversy' is crucial to the decision being made and underlies the importance again of politics when it comes to decisions with significant environmental impacts that are contested, and where the question of limits is important.

⁶¹² Lord Deben, Chairman of the CCC to Rt Hon Robert Jenrick MP, Secretary of State for Housing, Communities and Local Government *Letter: Deep Coal Mining in the UK* (29 January 2021)

⁶¹³ R Willis and M Berners-Lee and R Watson and M Elm, *The case against new coal mines in the UK* (Green Alliance 2020)

⁶¹⁴ P Ekins and others, *Academics letter to the Prime Minister regarding Woodhouse Colliery Cumbria* (8 February 2021)

⁶¹⁵ Secretary of State, Ministry of Housing Communities & Local Government, *Notice of Call-in for Application No 4/17/9007* (11 March 2021) PCU/RTI/H0900/3255949

⁶¹⁶ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

5.1.3 Summary

Having chosen to present the data findings in terms of ‘content’ and ‘context’ boundaries of decision-making, selected shale gas decision-making as a case study, and noted the political influences on ‘content’, especially in relation to fossil fuel extraction, a series of more detailed questions are prompted by the key research question. The extent to which environmental law surrounding fossil fuel extraction in England has failed or succeeded in recognising planetary limits, splits into a series of subset questions when exploring ‘content’ boundaries. The examination of the failures and successes of environmental law delves into the mechanics of decision-making – what are the rules, how do they operate in practice, on what is practice based, and is the substance of the decision-making process uniform? Given the legal challenges identified at the outset to define the direction of travel for the research, these legal challenges are linked up with the ‘content’, and in the next Chapter, with ‘context’. The data findings prompted these questions in relation to ‘content’:

How do competences shape the ‘content’ boundaries?

How do aims shape the ‘content’ boundaries?

What are the asymmetries that exist in relation to ‘content’?

Firstly, how competences shape ‘content’ boundaries. In decision-making, the competences of the relevant authorities axiomatically define the scope of those authorities. As set out in Chapter 2, different authorities have different competences. Some of these competences overlap, where for example the local planning authority and the Environment Agency in England are both concerned with emissions to air, soil and water as part of their competency in awarding planning consent and pollution permits respectively.

Secondly, how do aims shape the content boundaries? The aims of the legal and policy framework as described in Chapter 3 are numerous and conflicting. Nevertheless, they still describe what is within the content boundary and what is without. The relative weight that

pertains to an aim prioritises that content over other content.⁶¹⁷ It is an aim set out in England's policy that minerals development, is 'of great benefit to the economy',⁶¹⁸ outweighing the 'need to rapidly reduce greenhouse gas emissions'⁶¹⁹ that appears elsewhere in land use planning policy. When a decision is made on an application for extraction of unconventional fossil fuels, the reasoning of the Inspector's report on a decision to recommend the consent of an application for extraction of unconventional fossil fuels via high volume hydraulic fracturing clearly shows the weighting of the different aims in play.⁶²⁰

Thirdly, what are the asymmetries that exist in relation to 'content'? By asymmetries what is meant is where the substantive matter within the boundary of content takes a certain aspect. The regulator, industry and the public seem, as the data findings show, to have taken a different 'aspect' regarding a set of substantive matters. What is meant by aspect is a common view held by a grouping such as regulators and industry compared to the public on a matter.⁶²¹ Six aspects have been identified as part of the data findings, indicating a different view on these matters by the relevant stakeholders. While the regulator as the controller of the content through the competences of the authorities they represent, and the implementation of the aims of the law and policy that they are bound to implement, may take a certain view of an aspect on the 'content', the public may take a different view of the aspect. These data findings align upon views that are supported by research into the differences between regulators, industry and public and contributes additional insight in terms of what view, what aspect, is taken as the 'content' boundary.⁶²² The importance of the aspect that is taken of a substantive matter is demonstrated by the influence that the aspect

⁶¹⁷ M Grant, 'Planning Law and the British Land Use Planning System: An Overview' (1992) 63 (1) *The Town Planning Review* 3

⁶¹⁸ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

⁶¹⁹ *Ibid*

⁶²⁰ Lancashire County Council (LCC), *Officer's Report Preston New Road Cuadrilla Planning Application*, (LCC 2015)

⁶²¹ M Gottlieb and E Bertone Oehninger and G Arnold, "'No Fracking Way" vs. "Drill Baby Drill": A Restructuring of Who Is Pitted Against Whom in the Narrative Policy Framework' (2018) 46 (4) *Policy Studies Journal* 798

⁶²² P Walton, 'The limitations of decision-making' (2020) 11 (12) *Information (Basel)* 1

has on the outcome because of the way it shapes the 'content' that is informing the decision-making process.

These three questions on competences, aims, and asymmetries form the structure for the presentation of the data findings that follow.

5.2 How do competences shape the content boundaries?

5.2.1 Introduction

Competences shape 'content' boundaries because of the way in which they define the scope of an authority's responsibility, and therefore, to an extent, define a boundary of what is within the decision-making of that authority, if they do not exceed their competence. Most visible to the public, in terms of the regulators involved in this case study, is the local planning authority, in its democratic role. If the authority is the upper tier or unitary, it is also the waste authority as well as minerals authority.⁶²³ The local authority also has a Director of Public Health who can venture into public commentary on the impacts from fossil fuel extraction given the public contention reported in the media about possible public health impacts.⁶²⁴ Secondly most visible to the public is the Environment Agency, responsible for pollution control and matters regarding watercourses, flooding, and groundwater, as well as site specific operations that require environmental controls, mainly because of its role in public communication on flooding and water bodies. Next there is the Health and Safety Executive, responsible for boreholes drilling and on-site safety. These dual roles can be rather opaque and technocratic.⁶²⁵ Then there is the Planning Inspectorate, largely unknown except to those actively involved in the land use planning process.⁶²⁶ Finally, comes national Government, the relevant Ministers and departments, including the oft-renamed Department

⁶²³ Local Government Association, *What is local government?* (Undated)

⁶²⁴ S Karunanithi, *Potential Health Impacts of the Proposed Shale Gas Exploration Sites in Lancashire* (6 November 2014) Published for Lancashire County Council Cabinet Meeting, Item 9

⁶²⁵ J Walls and N Pidgeon and A Weyman and T Horlick-Jones, 'Critical trust: understanding lay perceptions of health and safety risk regulation' (2004) 6 (2) *Health, Risk & Society* 133

⁶²⁶ A Sheppard and H Ritchie, 'Planning decision-making: Independence, subsidiarity, impartiality and the state' (2016) 87 (1) *Town Planning Review* 53

for Levelling Up, Housing and Communities,⁶²⁷ the Department for Business, Enterprise and Industrial Strategy, and the arms-length national Oil and Gas Authority.⁶²⁸ All these authorities have competences over fossil fuel extraction that is set out in law either as general duties or responsibilities for the body in question; or as a function as a public body; or as a power to grant consent or to curtail activities. If these are not described the authorities themselves may not ascribe to themselves the competence to act. Bearing these competences in mind is important for the purposes of setting out the data findings.

5.2.2 The limitations of competences

Broadly in the data findings developers and regulators seem satisfied that the sphere of competence did not raise issues regarding gaps in the qualitative data. The regulators held a mostly clear view about what they did, what their role was, what was in and outside of their sphere. This holds with similar research about authorities and competence, that there is generally an understanding within authorities of their relevant competence.⁶²⁹

Two contentious areas of onshore oil and gas extraction impacts are the generation of wastewater and the production of greenhouse gas emissions, both onsite through extraction and resulting from the end use of the extracted gas. For these two areas of waste and greenhouse gas emissions, a regulatory response was that in the former case, the regulators' perception was that there was no competency to provide waste treatment facilities, it is not 'their business.' This means that although the amount of waste water was estimated by the industry applicant in one case to take up around 60% of the capacity on one of the three suitable waste water treatment centres in England,⁶³⁰ the possible cumulative issue that might arise from this is not within the competence of the regulator.⁶³¹ The

⁶²⁷ Also referred to in this research as the Department for Communities and Local Government (DCLG or CLG), Ministry for Housing, Communities and Local Government (MHCLG).

⁶²⁸ Renamed the North Sea Transition Authority in March 2022.

⁶²⁹ J Cooper, 'What is Legal Competence?' (1991) 54 (1) *Modern Law Review* 112

⁶³⁰ Cuadrilla Bowland Ltd, *Temporary Shale Gas Exploration Preston New Road, Lancashire Environmental Statement PNR_ES_Vol1_Environmental Statement May 2014*, ARUP; Cuadrilla Bowland Ltd, *Temporary Shale Gas Exploration Preston New Road, Lancashire Environmental Statement PNR_ES_Vol2_Environmental Statement May 2014*, ARUP

⁶³¹ The Planning Inspectorate, *Report to the Secretary of State for Communities and Local Government by Wendy McKay LLB 4 July 2016 Appeals under section 78 of the Town and Country Planning Act 1990 as amended by the Planning and Compensation Act 1991 made by Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd*

Environment Agency's competence is with regard to the handling and amount of wastewater that can be generated by a site's activities, whereas the planning authority has an overall competence as a waste authority and management of overall capacity and treatment. But in relation to an unconventional fossil fuel extraction site, neither the Environment Agency nor the planning authority were able to resolve the matter of capacity *in practice*. The permit given by the Environment Agency used a significant amount of the capacity available across a number of waste planning authorities, and the relevant waste planning authorities did not have the competence to refuse planning permission on the basis that there was insufficient waste capacity.⁶³² This is an example of where competence shapes the 'content' boundary of decision-making, and a gap is exposed. Waste capacity lies outside the 'content' boundary in this example. It would also be true of any new industrial or energy activity that produces wastewater in significant volumes.

On greenhouse gas emissions, the competency is split between two regulators – one concerned with the design and construction of the borehole, the Health and Safety Executive (HSE), and the other concerned with the 'emissions to air' and the industrial techniques used, the Environment Agency (EA) as described in Chapter 2. For example, flaring was proposed for the Preston New Road site.⁶³³ While one regulator checked the technology, the actual principle of greenhouse gas emissions and their impact on climate change was not perceived by the competent authorities as a specific regulator competence, but rather vested in the UK Government and relevant Ministries. In practice, while the Ministries do have competence in terms of issuing of policy, there is no direct competence in the regulation of individual sites or developments unless they are called in for decision through call-in or appeal.⁶³⁴

⁶³² Ibid.

⁶³³ Cuadrilla Bowland Ltd, *Temporary Shale Gas Exploration Preston New Road, Lancashire Environmental Statement PNR_ES_Vol1_Environmental Statement May 2014*, ARUP; Cuadrilla Bowland Ltd, *Temporary Shale Gas Exploration Preston New Road, Lancashire Environmental Statement PNR_ES_Vol2_Environmental Statement May 2014*, ARUP

⁶³⁴ See Chapter 2

Defining the regulatory authority role, in terms of defining their competence, was very much as specified by the relevant legislation in this view. By that, what is meant is the technical approach to the site regulation. The contents of wastewater, the estimated amounts of substances, how they are dealt with, could be interpreted as within the competency of a regulator. A regulator might therefore be seen as overseeing the smooth operation of facilities that require technical knowhow. However, a regulator may not see itself as taking care of the overall cumulative need of a particular industry as was expressed here: 'well outside of our sphere'.⁶³⁵

In contrast, a rather different approach to the concept of competency was taken in the Localism Act 2011. This conferred on local planning authorities in England a general power of competence.⁶³⁶ The general power of competence was meant to give encouragement to local authorities to not just do their duties, but also to do additional things that 'any individual may do'. It is not clear that local planning authorities have taken this general power of competence any further in relation to the environmental consequences of their decisions. It is rather perceived as a 'national' competence in relation to climate change by those interviewed. This was argued in one view because many decisions could or do contribute to greenhouse gas emissions: 'because it's much bigger thing than [...] we have an influence on'.⁶³⁷

How planning authorities may or may not see climate change within their competence can be examined through various indicators. The number of councils declaring climate emergencies has grown.⁶³⁸ But the number of councils who have local plans that deliver carbon emissions reduction is in doubt.⁶³⁹ No plan has yet been successfully challenged on the grounds that it

⁶³⁵ Transcript 003

⁶³⁶ 'The general power of competence is a new power available to local authorities in England to do "anything that individuals generally may do". It was provided for in the Localism Act 2011 and replaces the well-being powers in the Local Government Act 2000. It was brought into force for local authorities on 18 February 2012.' in M Sandford, *Research Briefing: The General Power of Competence* (HCL 2021)

⁶³⁷ Transcript 006

⁶³⁸ Climate Emergency UK, *Map of Local Council Declarations* (Undated)

⁶³⁹ TCPA, *Planning for the climate challenge? Understanding the performance of English local plans* (2016)

does not adhere to an overall reduction in greenhouse gas emissions.⁶⁴⁰ In some ways this exemplifies the issue of competence in relation to greenhouse gas emissions reductions. Local councils who sign up to climate emergency declarations in England may be doing so because it is a political act, but not necessarily an area where there is comprehensive competency for the council as there is no specific duty assigned in either the Climate or Planning Acts.

Self-awareness is demonstrated by the HSE of its perceived competence, expressing this as its 'regulatory remit'.⁶⁴¹ A deliberate position is taken by the regulator that it is not the 'gatekeeper of all things'. Historically, the role of the HSE has also changed from a prescriptive approach, to a best available techniques approach when it comes to the technology used.⁶⁴² Competency is described by the regulator itself in terms of the boreholes regulations⁶⁴³ it has responsibility for implementing, and more generally as 'adequately controlling risks to the health and safety of people, whether workers, contractors or members of the public'.⁶⁴⁴ An industry view was that Local Planning Authorities had limited competence in effect, as the technological aspects of hydrocarbon minerals extraction, in terms of fracking, were mainly controlled by other regulators: 'so actually what's left for the planning bit, actually is quite small in comparison'.⁶⁴⁵ Whether this view is common across industry was not within the auspices of this research study, however an examination of public relations documentation issued by a number of fossil fuel industry companies shows that a more 'technical' approach is favoured.⁶⁴⁶ It could also be intimated by the call for a 'single regulator' that this is their preferred approach.⁶⁴⁷

⁶⁴⁰ The Court of Appeal refusal of permission for Bioabundance CIC to apply for judicial review of the Council's decision to adopt the South Oxfordshire District Council's Local Plan 2035.

⁶⁴¹ HSE, *About HSE* (Undated)

⁶⁴² S Vaughan. *EU Chemicals regulation: new governance, hybridity and REACH* (Edward Elgar 2015)

⁶⁴³ The Borehole Sites and Operations Regulations 1995 No. 2038

⁶⁴⁴ Health and Safety Executive, *About Us* (Undated)

⁶⁴⁵ Transcript 001

⁶⁴⁶ Cuadrilla Resources UK, 'Media Releases' (*Cuadrilla Resources UK*, March 2011-present)

<http://cuadrillaresources.uk/media/19/> last accessed March 2022

⁶⁴⁷ Reuters Staff, 'Britain's Ineos calls for a change in 'unworkable' gas fracking rules' (*Reuters Online*, 4 February 2019)

<http://www.reuters.com/article/uk-britain-fracking-ineos-idUKKCN1PT19F> > Last accessed March 2022

The respective competences of the regulators as described by interviewees and identified in the documentary evidence, is perceived by the postholders themselves to be constraining. Effectively the perception of the competence is that it is a restraint on the substantive matters allowed within the frame of decision-making. From the data, both documentary and the fieldwork, it seemed that regulators did not consider climate change emissions reduction as their area of competence directly. These findings indicate that regulatory authorities competency on climate change is unclear or curbed, and calls for new duties for local government support the impression of a gap in duty and competence.⁶⁴⁸ On the pollution consequences the competence seem to be more nuanced in practice at site level. The issue there arises with the cumulative quantities of waste; and the perception of the relevant regulators with regards to the more strategic level issues.

5.2.3 Summary

To the extent that information was gathered through the field research, both these matters identified as crucial to respecting environmental limits, could be characterised according to the data as a competency gap in England. While nuanced by the aims of the regulatory framework (discussed further in the following section), the initial impression from the data is that the area of competence for the regulatory authorities did not specifically include direct responsibility for climate change emissions reduction. A gap also seems to have emerged between local waste authorities and the EA as a regulator of waste facilities and waste management on site. Neither seems to be responsible for the capacity to treat the waste on a cumulative basis. Competences relating to sustainability, climate change mitigation and pollution prevention belong to different regulators in their own view.

⁶⁴⁸ Comptroller and Auditor General, *Local Government and net zero in England* (16 July 2021) HC304, HM Government National Audit Office

One could also draw inferences from research around command and control regulatory systems,⁶⁴⁹ or small government versus big government,⁶⁵⁰ in relation to the competences that regulators hold with regard to environmental limits. The question that arises is whether it is axiomatic that greater recognition of limits requires stronger competences for regulators.⁶⁵¹ The competence seems to be shaping the 'content boundary' to the extent that only matters deemed to be within the various authorities' sphere of competence is inside the boundary of decision-making. While the authorities were aware of their competences, this did not prevent, and indeed may have contributed to the gaps arising between competences that could lead to gaps in recognising environmental limits in decision-making.

5.3 How do aims shape the content boundaries?

5.3.1 Introduction

Aims provide directions to 'content' boundaries whereas competences may be said to describe the broader scope or sphere of an area that is within the boundary. There are numerous and conflicting aims that pertain to decision-making under examination in the field research as described in Chapter 2 and 3. Sustainable development is an aim of the planning system in England that is set out in law and policy as described earlier. Although economic sustainability is encompassed within models of sustainable development, this aim comes into conflict with other law and policy aims on financial considerations and economic benefit.

Sustainable development is open to interpretation through policy given that the law does not contain a definition in England, and this creates uncertainty around the 'substantive matter' that is the subject of decision-making. The conflict in aims increases the fluidity of the 'content' boundary and creates a dependence upon the relative influence and power of those who are part of the process. These different perspectives, and the role of governance, are

⁶⁴⁹ A-K Bergquist and K Söderholm and H Kinneryd and M Lindmark and P Söderholm, 'Command-and-control revisited: Environmental compliance and technological change in Swedish industry 1970–1990' (2013) 85 *Ecological economics* 6

⁶⁵⁰ F W Powell, *The politics of civil society : big society and small government?* (2nd edn Policy Press 2013)

⁶⁵¹ S Owens and R Cowell, *Land and limits : interpreting sustainability in the planning process* (2nd edn, Routledge 2011)

further discussed in the following Chapter in relation to the ‘context’ of boundaries in decision-making. Here the broader issue thrown up by the data, that the wording of the aims in relation to sustainability in law and policy are shaping the ‘content’, is considered.

The field research and documentary evidence were analysed for the presence of the aims of sustainable development, climate change mitigation, economic benefit or growth, and pollution prevention as described in Chapter 2 and 3. These aims overlap and conflict, and the data findings serve to draw out the complexity of how these aims are shaping the ‘content’ boundary. The findings also show that this complexity results in inconsistency and the failures to address certain aims, because they are deprioritised or set aside in the balance.

5.3.2 The conflict in aims

5.3.2.1 Sustainability aim

An industry view failed to be drawn on the meaning of sustainable development in the field research even though it is an aim of law and policy in England in relation to decision-making on land use planning, and therefore fossil fuel extraction. Documentary evidence submitted in applications for development, generally in the Planning Statements submitted by the different companies, quoted the Written Ministerial Statement (WMS) of September 2015 that ‘having access to clean, safe and secure supplies of natural gas for years to come is a key requirement if the UK is to successfully transition in the longer term to a low carbon economy.’⁶⁵² The conflict in aims described earlier in Chapter 3 is exploited by both the UK Government Ministers and the industry to prioritise and support hydrocarbon minerals extraction as ‘sustainability’ despite the evidence to the contrary.⁶⁵³ From the fieldwork data and survey of the documentary evidence available through web sites, press releases and the industry body itself, there seemed to be no clear answer to the question on the meaning of

⁶⁵² Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

⁶⁵³ J Broderick and K Anderson, *Natural gas and climate change* (Tyndall Centre Manchester 2017)

sustainable development or its presence in the decision-making system except to say that there is a tension between national/central policy and local policy.

Regulators have different sustainable development aims enshrined in their relevant legal and policy framework. One clearly identified risk as part of their sustainability aim: 'it's not sustainable if it beyond that, causes harm to the workforce or causes harm to members of the public.'⁶⁵⁴ Whereas the other identified pollution control and environmental protection as their sustainability aims.⁶⁵⁵ This regulator also referred to the environmental and social aspects to sustainable development as an aim. A clear conflict could be felt with the 'economic growth' duty that is placed upon all public regulators. This means that in applying the sustainable development aim, this is tempered, or lessened in force by considerations of an economic nature. Policy issued by the regulator that details the substantive matter that is within the content boundary of decision-making, is shaped by this limitation on the sustainability aim by the economic growth aim, for example when new policies are formulated:

when we are introducing erm new erm new requirements for an industry sector to comply with certain regulations, we would have to do an economic impact assessment as part of that [economic growth duty, to determine whether what we were proposing was proportionate or not.⁶⁵⁶

Local planning authorities (LPAs) take the National Planning Policy Framework (NPPF) and associated guidance⁶⁵⁷ as a collective description of their sustainability aims. This is borne out by the consistent application of the policy in officer reports on applications for hydrocarbon minerals development.⁶⁵⁸ Individually however there is some personal concern over the achievement of sustainability in a system that is full of 'unsustainable development' that is environmentally damaging: 'we're just miles off trying to address these things, we are

⁶⁵⁴ Transcript 004

⁶⁵⁵ Transcript 006

⁶⁵⁶ Transcript 003

⁶⁵⁷ MHCLG, *National Planning Policy Framework* (Planning guidance, 2021); MHCLG *Online Planning Practice Guidance* (Planning guidance, 2021); *The Environmental Assessment of Plans and Programmes Regulations 2004*

⁶⁵⁸ Lancashire County Council, *Officer's Report Preston New Road Cuadrilla Planning Application* (LCC 2015)

just tinkering around the edges really'.⁶⁵⁹ This concern may indicate that the views of NGOs and communities gathered through the research that the policy aims are so in conflict with each other that the outcome is not sustainable, may also be a personal response that individuals may share despite their different roles in the process. As an individual (rather than professional) perspective another professional working in the decision-making process noted: 'you...can do whatever you want will be fine because something will turn up so it will all be alright in the future'.⁶⁶⁰ The ineffectual nature of sustainability aims because of the failure to have an 'agreed understanding'⁶⁶¹ of its meaning is something that professionals, i.e. experts within the process may have grasped. Another professional engaged in the system was of the view that the aim of sustainable development in law was to 'unlock development'.⁶⁶² This emphasis contained in the aim of sustainable development in planning policy in England affects the content boundary because it emphasises growth (or development) as different from either being neutral or emphasising environmental protection or limits.⁶⁶³ The UK Government concluded that the exploratory works applied for by Cuadrilla in Lancashire at the Preston New Road site is 'sustainable development' as set out in the final decision in October 2016 at paragraph 67:

As regards national policy, the Secretary of State considers that as assessed against the policies set out in paragraphs 18 to 219 of the NPPF, the proposal represents sustainable development. He considers that the development would have the support of the WMS.⁶⁶⁴

In considering this conclusion as set out by the Secretary of State at the time, there are two important factors to consider. The extraction of hydrocarbon minerals which are then 'used' have an inevitable impact on climate change. The second factor is the perspective of the UK Government (comprising of individual civil servants, advisors, Ministers – who may all hold

⁶⁵⁹ Transcript 006

⁶⁶⁰ Transcript 007

⁶⁶¹ Transcript 007

⁶⁶² Transcript 002

⁶⁶³ Andrea Ross, *Sustainable development law in the UK : from rhetoric to reality* (Earthscan 2012)

⁶⁶⁴ Secretary of State for Housing, Communities and Local Government, *Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision Letter and Inspector's Report on appeals relation to applications for planning permission* (6 October 2016)

slightly different views) in relation to the definition of sustainable development. The industry perspective is also not uniform as demonstrated by public relations commentary from the companies involved⁶⁶⁵ but commonalities emerge. The public and non-governmental sphere is then a different perspective as can be seen from their objections to planning applications, public comment, and public communications information.

Community activists commented on the sustainability aim as having the broadest interpretation and therefore the broadest framing of the 'content' boundary. Most activists interviewed were inevitably disappointed with the reality that they experienced in the way the substantive matters unfolded, given Government departments' and regulators' control over the 'content' boundary through law and policy aims.⁶⁶⁶ Community activists commented on the '*bizarre situation where residents have more power to block a wind turbine than a frack pad in the same location*'⁶⁶⁷ and that '*Planning policy is paying lip service to sustainability*',⁶⁶⁸ that it was a '*monstrosity*' in this policy.⁶⁶⁹ Sustainability could therefore be characterised as an internally inconsistent aim, that is affected by the procedural application of law and policy by the regulators.

The question that arises out of the data is whether if there was a more internally consistent meaning of sustainable development – that would that secure a better outcome?⁶⁷⁰ One could question the length of the definition of sustainability, given that the longer it is, the looser it is and the more that cherry-picking of its meaning becomes possible.⁶⁷¹ Likewise this materialises in the Planning Statements for applications fossil fuel developments submitted by the private sector, and focussing on the need for minerals, and the economic benefit, and

⁶⁶⁵ Third Energy, Igas, INEOS, Cuadrilla Resources, Coastal Oil and Gas.

⁶⁶⁶ Secretary of State for Housing, Communities and Local Government, *Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision Letter and Inspector's Report on appeals relation to applications for planning permission* (6 October 2016)

⁶⁶⁷ Transcript 002

⁶⁶⁸ Transcript 009

⁶⁶⁹ Transcript 009

⁶⁷⁰ Andrea Ross, *Sustainable development law in the UK : from rhetoric to reality* (Earthscan 2012)

⁶⁷¹ DCLG *National Planning Policy Framework* (Planning guidance, 2011), Chapter 1 set out the original definition as most of the paragraphs.

equating these to 'sustainable development'. Community activists picked up on this inconsistency, specifically in relation to climate change impacts by connecting the aims of sustainability and climate change and contending that it was not 'addressed properly'⁶⁷² by the planning framework. If the aim was internally consistent, so that it did not have conflicts that were pulling against each other such as 'economic growth' and 'sustainability', then what is within the content boundary could have more coherence. NGOs interviewed in the research also commented on the point about 'trade-offs'.⁶⁷³ Most community representatives felt that the activity of hydrocarbon mineral exploration simply did not fit within the aim of sustainable development: 'Local minerals plan and waste plans don't reflect sustainable development...If they were you wouldn't be looking at fracking'.⁶⁷⁴ This was also expressed as something that was about impact over time.⁶⁷⁵

In the reviewed officers' reports on fracking decisions, the sustainability aim was broadly interpreted. As the requirement for Environmental Impact Assessment (EIA) (where it applied) provided most of the environmental evidence on the extent to which the aims of the legislation and policy are being met or achieved, the categories of information as described in Schedule 4 made up the substantive matters.⁶⁷⁶ The field research indicated that regulators associated the sustainability aim with the precautionary approach. Some data indicated that this was a risk averse and cautious approach,⁶⁷⁷ rather than as an understanding of the precautionary principle that relies upon evidence.⁶⁷⁸ In terms of modifying the outcome of decisions, the influence of the letter of the law could be traced in the conditions attached to the decision notices on development,⁶⁷⁹ but the reality is that the

⁶⁷² Transcript 009

⁶⁷³ Transcript 019

⁶⁷⁴ Transcript 008

⁶⁷⁵ Transcript 005

⁶⁷⁶ UK, The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, (England), Schedule 4

⁶⁷⁷ Transcript 004

⁶⁷⁸ Joanne Hawkins, 'Fracking: Minding the gaps' (2015) 17 (1) Environmental Law Review 8

⁶⁷⁹ DCLG *Planning Practice Guidance for Onshore Oil and Gas* (Planning guidance, 2013) Annex D: Model planning conditions

conditions were practically unenforceable as there were only predictions rather than evidence to rely upon.

Two tentative conclusions can begin to be traced from these data findings – that there may be a discrepancy between the individual perspective and the perspective that is adopted in the role of a ‘professional’; and that the clarity of definition may affect the extent to which that definition influences the outcome.

5.3.2.2 Climate change mitigation aim

Climate change is more clearly defined in law than sustainable development. It is present in the Climate Change Act 2008 as a set of numbers, and articulated in specific legal duties for plan-making in England. Whether these duties are correctly placed to influence the outcome of decisions on fossil fuel extraction is partly explored through documentary evidence and partly through the data findings from the field research gathering perspectives from participants.

Firstly, considering the documentary evidence, the Environmental Report for the National Waste Plan for England was examined as an example of how climate change was being assessed and considered as part of policy ‘content’. Waste planning is relevant to shale gas extraction because of its waste implications.⁶⁸⁰ There is an implicit acceptance in the Report that there will be climate change impacts from waste management facilities.⁶⁸¹ Similarly, in terms of onshore oil and gas extraction, the Environmental Report for the UK’s 14th licensing round for onshore oil and gas relies on regulatory controls and best available techniques to mitigate the impact of emissions:

‘The existing regulatory controls on transport, power generation and gas flaring are regarded as adequate. Atmospheric emissions and contributions to climate change typically form key performance indicators for operators leading to internally driven pressure to control and reduce such emissions. During the period of plan application, further measures to promote energy efficiency and the reduction of greenhouses gas

⁶⁸⁰ M C O'Donnell and S M V Gilfillan and K Edlmann and C I McDermott, 'Wastewater from hydraulic fracturing in the UK: assessing the viability and cost of management' (2018) 4 Environ. Sci.: Water Res. Technol. 325

⁶⁸¹ DCLG *Strategic Environmental Assessment of the updated national waste planning policy* (July 2013)

emissions can be expected as part of UK and other initiatives in response to climate change concerns.⁶⁸²

This approach is again based on an assumption that there will be a level of emissions contribution. There is a risk that the cumulative impact of onshore oil and gas despite the existing regulatory controls, will increase climate changing emissions. The Climate Change Committee (CCC) recognised this risk in its report, commissioned by the UK Government in line with its obligations,⁶⁸³ on 'The compatibility of UK onshore petroleum with meeting the UK's carbon budgets',⁶⁸⁴ concluding that in order to meet the UK's carbon budgets, three tests needed to be met – emissions around the operation and decommissioning of wells needed to be strictly limited; gas consumption needs to be within budget; and shale gas production emissions would need to be offset by reductions in other areas of the economy. The question that remains unanswered is how a series of different decisions made by different authorities will apply these tests or achieve these outcomes. There is no identifiable mechanism by which these tests were to be applied at the time this report was published.

No Environmental Assessment under the SEA Directive was conducted on the National Planning Policy Framework for England. There is therefore no environmental report on the implications of the planning policy aims. If the conclusions of the report on the national waste plan, the licensing round, and the legislative requirement to consider the implications of shale gas development by the CCC are taken together however, a common thread is that there is a risk of emissions from shale gas development. This 'emissions risk' is therefore a part of the policy assessment at national level, although it is not comprehensive, it makes some attempt to consider the future implications of decisions. It does link directly to the determination of decisions made locally on each site. Nor does it allow for cumulative impact to be quantifiably identified – both because the level of activity that may ensue from licensing and planning

⁶⁸² DECC, *Onshore Oil & Gas Licensing Strategic Environmental Assessment for a 14th and Subsequent Onshore Oil & Gas Licensing Rounds Environmental Report* (July 2010) p82

⁶⁸³ Infrastructure Act 2015, s49

⁶⁸⁴ CCC, *The compatibility of UK onshore petroleum with meeting the UK's carbon budgets* (2016)

decisions is not necessarily assessed through scenarios or future casting. The CCC does make assessments through the Carbon Budget reporting, however this is manifested in its advice to the UK Government as carbon dioxide per kilowatt hour intensity measure.⁶⁸⁵ It identifies where emissions reductions may be possible, and where they are needed to achieve adopted budgets, but what that means for individual decisions on development is unclear.

Turning to the regulatory controls that exist at a licensing, land use planning and permitting level around the individual development of shale gas wells, reducing gas consumption and offsetting shale gas production emissions by reductions in other areas of the economy are not explicitly within the localised consent process for shale gas. As can be seen here in the Inspector's Report on the Kent Minerals and Waste Local Plan, the approach is that emissions from the end use of minerals does not (in his view) come within the scope of the local plan, despite the presence of a legal duty for plan-making on climate change:

The uses to which minerals may be put will not always be sustainable. For example, the use of gas or oil for energy production will result in the emission of greenhouse gases that may contribute to climate change. But that is outside the scope of this plan. However, the oil, gas and unconventional hydrocarbons policy (as modified) seeks to prevent unacceptable adverse environmental impacts from direct emissions of fugitive gases.⁶⁸⁶

This is one example of a minerals plan – other mineral plans, also assessed for the extent to which the legal duty to consider climate change in plan making, have similarly permissive approaches to development control policies that allow consideration of climate change, but set no limits on overall emissions within the plan.

There is no direct duty on the planning decision-maker to consider climate change in law in England.⁶⁸⁷ The first point of call is to consider whether or not the development is in line with the local plan.⁶⁸⁸ In looking at the documentary evidence of decision notices on shale gas

⁶⁸⁵ CCC, *Progress in reducing emission 2021 Report to Parliament* (June 2021)

⁶⁸⁶ Inspector's Report, *Kent Minerals and Waste Plan Main Modifications Report* (PINS, 2014)

⁶⁸⁷ Town and Country Planning Act 1990, s70

⁶⁸⁸ Planning and Compulsory Purchase Act 2004

decisions, most of these did not include a condition regarding greenhouse gas emissions. Officer's reports did include a consideration of climate change, as it is an accepted material consideration. The planning decision notice for the Kirby Misperton 8 well in Ryedale, North Yorkshire, although in a different minerals county planning area, contains a condition that monitors the emissions from the consented well:

The atmospheric emissions generated in the course of the development (including natural gas, hydrogen sulphide (H₂S), oxygen and carbon monoxide (CO)) shall be monitored in accordance with the Air Quality Monitoring Plan Revision 2 dated 17th September 2015, submitted to the County Planning Authority on 26th October 2015. The results of such monitoring should be submitted to the County Planning Authority within 28 days from collection of samples.⁶⁸⁹

However, there is no detail on what will happen if levels set out in the Air Quality Monitoring Plan are breached for example. From the Climate Change Act 2008, setting a national budget, to the plan-making duty, down to an actual decision notice, the aim of reducing carbon emissions becomes somewhat diluted in practice.

From the interview data, the background of regulator and private sector versus community activist correlated in part to views about how the aim to mitigate climate change could or should be dealt with. Community activists were concerned about climate change as an issue and linked the development to impact on a local metric. Regulators similarly linked the development to impact but did not weight the impact in the same way, using a national metric. Developers also made the link, but then set the impact within the same or an even broader metric, national or international. Community activists were concerned about the 'scope' of the climate change aim:

I have an element of frustration that progress with renewable energy is being undermined by Government policy at the same time there is the promotion of more extraction of fossil fuels ...seems to be a direct contravention of the Paris climate accord⁶⁹⁰

Other community activists noted that the lacunae in between the regulators:

⁶⁸⁹ North Yorkshire County Council (NYCC), *Supplementary Report NY20150233ENV - APPENDIX IV Schedule of Recommended Conditions* (20 May 2016)

⁶⁹⁰ Transcript 020

...taking control of emissions and whether climate change effecting emissions, I don't see any real urgency, the remit seems to be too tight and focussed, you could go and buy more certificates on the market and produce more emissions⁶⁹¹

The relative importance of the aim of climate change was something that also came up for community activists as described by one participant:

the impacts on global warming and climate change are in my view not properly dealt with...erm...even when we tried to bring this to the attention of the authority and the Environment Agency it was all just...easily dismissed and batted away...and so they weren't looking at this site as going into production would have more wells drilled on it, more erm emissions etc etc, it was like oh well we just look at this narrow little bit, looking at the most optimistic figures anyway. And when we actually raised the issue of climate change...at the er, at the k...planning committee stage you could actually see the chair of the committee glaze over [emphasis] with utter disinterest⁶⁹²

Comments from the regulators did not deny that climate change mitigation was a relevant policy aim. The issue was more with the link between each site and impact as it added up across sites:

you know four or five sites spread around Lancashire as a whole what they would do to climate change, then that would be difficult for us to er...argue that point, cause the sites are too far away, to have a...impact on each other really other than in the very highest sort of sense⁶⁹³

The selected views gathered in the field research were partly borne out by the documentary evidence in both Officer's reports to planning committees and Inspector's reports on appeal. Mitigating or preventing the impacts on climate change was either not the direct responsibility of the decision-maker; or it was an insufficient level of impact to trigger refusal given the metric used for assessment; or it was deemed to fit within the sustainability aim despite its impacts as clearly described by the government policy for England.⁶⁹⁴

5.3.2.3 Pollution prevention aim

Licensing and land use planning both have an element of strategic assessment of impacts, under the requirements of the Environmental Assessment of Plans and Programmes

⁶⁹¹ Transcript 022

⁶⁹² Transcript 005

⁶⁹³ Transcript 006

⁶⁹⁴ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

Directive (SEA).⁶⁹⁵ The 14th licensing round underwent an SEA⁶⁹⁶ and land use planning decisions are made in the context of local land use plans that are tested through an SEA process. In terms of waste permitting, the National Waste Plan for England also underwent an SEA process⁶⁹⁷. A SEA process is designed to consider the overall impact of a particular plan or programme. The Environmental Reports produced as part of the licensing, waste and minerals plan processes in England identify a range of environmental impacts relating to air, water and biodiversity. Reliance is placed within these strategic assessments on the ability of local regulatory frameworks for land use planning and permitting to 'mitigate' the environmental impacts of projects for example in the national waste plan's report:

Ensuring that conditions in a facility's Environmental Permit are sufficiently rigorous would appear to be the best way to mitigate localised impacts on water resources and quality.⁶⁹⁸

In the Onshore Oil and Gas report a similar approach is taken:

The location of surface waters and aquifers (especially those of potable water), their sensitivity and susceptibility to pollution are well known and their protection is effectively addressed through the approvals processes for exploration, production and export facilities.⁶⁹⁹

Turning to the strategic environmental assessment of local plans, objectives such as this example from the scoping report for the Kent Minerals and Waste Plan illustrate a format for policy-wording to comply with the pollution prevention aim and satisfy the requirements of the assessment: 'Maintain and improve the water quality of the Kent's rivers, ground waters and coasts, and achieve sustainable water resources management.'⁷⁰⁰ In the Inspector's Report on the Kent plan, a modification was required so that the final policy read as follows:

'Planning permission will be granted for proposals associated with the exploration, appraisal and development of oil, gas and unconventional hydrocarbons...subject to there being no unacceptable adverse impacts (in terms of quantity and quality) upon

⁶⁹⁵ The Environmental Assessment of Plans and Programmes Regulations 2004

⁶⁹⁶ DECC *Strategic Environmental Assessment for a 14th and Subsequent Onshore Oil & Gas Licensing Rounds Environmental Report* (Report, 2010)

⁶⁹⁷ Department for Environment, Food and Rural Affairs (DEFRA) *Waste Management Plan for England*, (Plan, 2013)

⁶⁹⁸ DEFRA *Waste Management Plan for England Post Adoption Statement* (Statement, 2013) p12

⁶⁹⁹ DECC *Strategic Environmental Assessment for a 14th and Subsequent Onshore Oil & Gas Licensing Rounds Environmental Report* (Report, 2010) p82

⁷⁰⁰ Scott Wilson and Kent County Council (KCC), *Kent Minerals and Waste Development Framework SA Scoping Report* (KCC 2010) table 1 p6

sensitive water receptors including groundwater, water bodies and wetland habitats'.⁷⁰¹

This plan policy then governs decision-making on individual site applications for development. Whilst this approach precludes 'unacceptable impacts' there may be unknown or 'acceptable' impacts associated with each proposal. It is a matter of judgement for the decision-maker and the mitigation of impacts to an acceptable level is implemented through conditions attached to any decision notice. Whether these conditions prevent unacceptable impacts then becomes a matter of enforcement, what is technologically possible, and whether the impacts will become known or understood within a timeframe that means that preventative action is possible or impossible.

Reviewing the extant planning decision notice conditions for seven drills into shale gas horizons that have been consented in England⁷⁰² shows that there is similarity on the attachment of conditions on different issues. The conditions set are remarkably similar for all the planning decision notices on waste, surface water and groundwater. Waste and surface water conditions control the surfacing, bunds and tanks used for the operations to prevent discharge into the surrounding environment, the collection of foul drainage water and provision for its disposal. The groundwater conditions do not set out specific measures, but require a scheme to be identified at a future date with the aim of 'protecting groundwater'.⁷⁰³ There were no conditions attached to the amount of wastewater that may be produced or limiting the amount of greenhouse gas emissions associated with the fossil fuels extracted in this sample.

Turning to the Environmental Permits, also required for drill sites, they are generally a mixture of standard rule and bespoke permits for high volume hydraulic fracturing

⁷⁰¹ Inspector's Report, *Kent Minerals and Waste Plan Main Modifications Report* (PINS, 2014)

⁷⁰² Preese Hall 1, Preston New Road 1, Grange Hill 1, Becconsall 1, Anna's Road 1, Ince Marshes 1, Kirby Misperton 8

⁷⁰³ MHCLG *National Planning Guidance Minerals Annex C: Model planning conditions for surface area* (Planning guidance, 2014) para 139; DBEIS *Hydraulic Fracturing Consent: Guidance on application for hydraulic fracturing consent (HFC) under section 4A of the Petroleum Act 1998 (inserted by section 50 of the Infrastructure Act 2015)* (Guidance, 2017)

activities.⁷⁰⁴ The Environmental Permit for the Preston New Road site,⁷⁰⁵ for example, does not specify a limit to the amount of radioactive (NORM)⁷⁰⁶ waste either through the on-site flare (used to control pressure and extraction activities associated with hydraulic fracturing), or the transfer of waste off-site to be disposed of. It also allows disposal in the rock formation 'adjacent to the borehole' of aqueous radioactive waste, consisting of the fracking fluid, and anything mobilised by the operation.⁷⁰⁷

Enforcement of the conditions set on the petroleum exploration and development licence (PEDL), land use planning decision notice and environmental permit vary. The Oil and Gas Authority (OGA) require detailed geological information from the licence holder but essentially it is not an environmental enforcement mechanism, except in the sense that if activity to 'maximise hydrocarbon extraction' does not take place then licensees are encouraged to drop or reduce their licence acreage. HSE require drilling operators to follow certain techniques and provide information, but enforcement action is only triggered under RIDDOR⁷⁰⁸ occurrences, where there is potential for injury or death. Local minerals planning authorities have varying enforcement policies.

Lancashire County Council's land use planning enforcement policy is set out as follows:

Where breaches of planning control are identified, it is our objective to remedy the breach and any problems caused. We would first attempt to achieve a negotiated solution, reserving the right to instigate formal enforcement action as necessary. Immediate formal enforcement action would usually only be taken if the breach was likely to cause significant harm to the environment or local amenity.⁷⁰⁹

The Preston New Road site had thirty five conditions in the decision notice.⁷¹⁰ In practice, under this enforcement policy, the conditions for example on transport have been 'breached' according to the community perspective, but the solution has been to amend the Transport

⁷⁰⁴ DCLG, *Planning Practice Guidance for Onshore Oil and Gas* (Planning guidance, 2013).

⁷⁰⁵ Cuadrilla Bowland Limited Permit with Introductory Note EPR/KB3395DE (EA, Undated)

⁷⁰⁶ Naturally Occurring Radioactive Materials, termed NORMs.

⁷⁰⁷ Environment Agency (EA), *Onshore Oil & Gas Sector Guidance version 1* (Guidance, 2016)

⁷⁰⁸ RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

⁷⁰⁹ Lancashire County Council (LCC), *Planning Enforcement Policy* (undated)

⁷¹⁰ Ministry of Housing, Communities & Local Government, 'Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision letter and Inspector's Report on appeals relating to applications for planning permission' (2016)

Management Plan required as part of the consent.⁷¹¹ This is where the condition sets a number on the limit e.g. of vehicle movements. The condition on waste does not set a number on the limit but sets out a management process. How far an aim is operationalised in practice is to a certain extent dependent on how conditions are adhered to.

The Environment Agency's enforcement policy on environmental permits is similarly based on bringing operators back within permit boundaries. The conflict in aims is exemplified by the added consideration of the economic growth duty required by the Deregulation Act 2015⁷¹² as set out in the guidance:

We will have regard to the growth duty and guidance. This means we will only take enforcement action or impose a sanction when we need to and in a proportionate way. We will mainly direct our regulatory effort: towards those whose activities cause or could cause the greatest risk of serious environmental damage; where the risks are least well controlled; where a breach undermines a regulatory framework; where we suspect deliberate or organised crime.⁷¹³

This policy allows a space for incremental, minor to medium deviations from any permit, as it applies a series of tests before enforcement action is taken. Such an approach could allow cumulative impacts to arise on top of those justified by the permit.

Reflecting upon the reality of the way this aim of 'pollution prevention' operates as evidenced by this data, shows that several environmental impacts can be identified as permissible within the 'mitigating' approach to planning consents and permits. Additional environmental impacts may arise through allowances for minor to medium breaches of controls that are not considered on a site by site basis to be 'serious' or 'significant'. An accumulation of these environmental impacts mainly of emissions to water and the production of waste on a scale proposed by the industry could be significant.

⁷¹¹ Ruth Hayhurst, *Preston New Road, Lancashire (DrillorDrop, regularly updated)* < drillordrop.com/preston-new-road-lancashire/ > Last accessed March 2022

⁷¹² Deregulation Act 2015

⁷¹³ EA *Enforcement and Sanctions Policy* (Policy, 2021)

5.3.3 Summary

The aims of the legal and policy framework as described in Chapter 2 and 3 are numerous and conflicting. Nevertheless, they describe what is within the content boundary and what is without. The relative weight that pertains to an aim prioritises some ‘content’ over other ‘content’. In the planning decision-making process this is referred to as the planning balance.⁷¹⁴ It is an aim set out in land use planning policy in England that minerals development, is ‘of great benefit to the economy’,⁷¹⁵ that in practice seems to outweigh the ‘need to rapidly reduce greenhouse gas emissions’⁷¹⁶ policy aim. When a decision is made on an application for extraction of unconventional fossil fuels, the reasoning of an Inspector’s report on a decision to recommend the consent of an application for extraction of unconventional fossil fuels via high volume hydraulic fracturing clearly shows the weighting of the different aims in play.⁷¹⁷ While councillors on planning committees have exercised judgement to weigh e.g. landscape impacts differently, and have been susceptible to greater community and political influence, Inspectors have tended to read the policy with greater technicality.

Findings arising from the data include the lack of definition used by industry, whether deliberate or not, which muddies the waters around what is meant by sustainability, already an opaque definition. In addition, the industry seemed to ascribe the meaning of sustainability to community – as in this was a concept that meant community acceptance rather than a strong-edged definition that could test outcomes. Sustainability was also connected to risk and the future – on the one hand, the basic definition of whether the activity can be continued with acceptable or no risk; and on the other hand, whether it could carry on in the future. From the documentary evidence, the subversion of the meaning of

⁷¹⁴ B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

⁷¹⁵ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

⁷¹⁶ *Ibid.*

⁷¹⁷ Ministry of Housing, Communities & Local Government, ‘Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision letter and Inspector’s Report on appeals relating to applications for planning permission”

sustainability by policy construction can be appreciated. The meaning of sustainable development if something agreed or shared by publics as well as regulators, may also be stronger than the neo-liberal version that seems to be preferred by policy-makers – while ‘a job’ might matter to a layperson, there is not that kow-towing to ‘the economy’ that happens at national level. To a layperson, the local environment, particularly in rural areas where shale gas is mainly being developed, is of more importance.⁷¹⁸

How these aims are being operationalised could be construed differently. Rather than being subject to broad interpretation and discretion, recognising limits could be more hard-edged. This is not meant in a quantitative sense, but rather to be more ‘externally’ consistent e.g. climate change emissions would always matter and be given weight, as would risk, rather than being diluted by comparison to some big number. This applies to both pollution prevention and the climate change mitigation aims.

Community activists also support regulation to secure sustainability, climate change mitigation and pollution prevention aims. The data also shows that communities are frustrated by the aims set out in the legal framework in England in relation to decision making on shale gas, finding them inconsistent and ineffective in protecting the environment. Further exploration of perspectives on content is considered in the section on asymmetries.

5.4 What are the asymmetries that exist in relation to content?

5.4.1 Introduction

In the responses gathered in the fieldwork, several themes emerged that indicated the flavour of a possible division between the regulator (and industry where this could be identified) and the public (community activists) perspective in terms of how different aspects were understood. Aspects of content such as space, level, scope, domain, temporal and metric were drawn out from the data findings as ways in which the content differed

⁷¹⁸ R A Howell, ‘UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy.’ (2018) 113 Energy Policy 721

depending on perspective. Such aspects are important when they impact upon the overall effectiveness of environmental decision-making. These aspects were not a shared symmetrical perspective across the participants, but hinted at a divide between a regulator grouping and a community activist grouping. Much research identifies the coalescence of views that may commonly be held by a certain set of stakeholders as opposed to say the public.⁷¹⁹ The aspects identified through the research are characterised as follows.

Space is the physical space in which the development activities are deemed to take place. A professional planner for example would consider this to be the red line site boundary on an Ordnance Survey map that is required as part of the legal documentation for gaining planning consent.⁷²⁰ Some community activists in these data findings seem to broadly perceive this as the space in which they live and how that is affected.⁷²¹

Level is the point at which the decision takes place. It can be national or local in relation to fossil fuel extraction. For some 'content' this level is national such as on climate change according to the regulators interviewed. But for community activists in these data findings the local level is important – that is the level at which they live and experience and to which they feel connected.⁷²²

Scope means what is within the purview of the decision. For the regulators this is specific – what is happening on the site and what are the activities for which permission is applied? Industry similarly is concerned with gaining consent for what is happening on the site. For community activists the broader scope is important. How does the activity fit into their society and community? How does the activity impact on the wider world?

⁷¹⁹ M Gottlieb and E Bertone Oehninger and G Arnold, "'No Fracking Way" vs. "Drill Baby Drill": A Restructuring of Who Is Pitted Against Whom in the Narrative Policy Framework' (2018) 46 (4) Policy Studies Journal 798

⁷²⁰ DCLG/MHCLG/DLUHC, *Guidance: Making an application* (Planning guidance, 2014-2021) online only

⁷²¹ C Howarth and L Parsons, 'Assembling a coalition of climate change narratives on UK climate action: a focus on the city, countryside, community and home' (2021) 164 (1/2) Climatic Change 1; S Sörlin, 'Wisdom of affect? Emotion, environment, and the future of resource extraction' (2021) 57 Polar Record 1

⁷²² S Oselin, 'Home Is Where Activism Thrives: Community Setting and Persistent Protest Participation' (2015) 38 Research in Social Movements, Conflicts and Change 173

Domain is the extent to which the issues are put within the context of cumulative impacts. For example the regulators limit the domain to where there is a clear infrastructure connection or specific physical interaction. Stokes introduces the idea of 'regulatory domain' in her analysis of shale gas regulation and characterisation of the Government's approach of a combination of 'domain' and 'dexterity'.⁷²³ In this research, domain is taken to mean the 'area ruled', where that area may be perceived differently. Such as where transport or movements may be using the same routes from two shale gas extraction sites. However, for the community there is an indication of an exponential domain. Shale gas extraction is seen as part of the industry estimates of thousands of wells⁷²⁴, and not as a one off or individual project, and infrastructure connections are myriad, and the interactions are holistic.

Metric is meant in the sense of the measurement that is used – in this characterisation as the comparative metric. For example, fossil fuels are an energy source, that are burnt to release the energy and result in emissions. Wind and solar radiation are also energy sources, that are harnessed through different technologies. Their similarity is that they are sources of energy that utilise technologies for extraction and human societal and economic use. Comparisons are utilised in planning decisions to compare like for like developments to see how they perform. Regulators will look at similar types of developments for comparison e.g. coal with coal, in order to make an assessment of the impacts of the development. A community who is interested in the outcome of a development is more likely however to consider the purpose of the development and possibly consider how a different technology may deliver the same output, but with different impacts. So, for example, comparing all energy technologies, rather than just those of the same type. The question is whether the type of comparison used has an impact on the outcome of the environmental decision.

⁷²³ E Stokes, 'Regulatory Domain and Regulatory Dexterity: Critiquing the UK Governance of 'Fracking'' (2016) 79 *Modern Law Review* 961

⁷²⁴ Institute of Directors, *Getting Shale Gas Working – Infrastructure for Business 2013 #6*, (IOD 2013)

This asymmetrical understanding of content as derived from the field work is summarised in the table below:

Table 7 Asymmetrical content

Regulator / Industry	Aspect	Community Activist
Restricted	Space	Relative
National	Level	Local
Specific	Scope	Broad
Present	Temporal	Future
Similar	Metric	Dissimilar
Limited	Domain	Exponential

Taking these aspects in turn, the asymmetries between the regulator and industry versus the community activist are explored.

5.4.2 The ‘space’ content boundary

When reading the documentary evidence, both policy and application documents, there is an acknowledgement of the physical boundary of the site itself – this is understood as ‘where’ the development takes place. This is the red line site boundary used on Ordnance Survey maps in land use planning in England and Wales. Red line site boundaries are familiar in planning law, connecting development activities that require consent with an actual physical place. Planning permission ‘runs with the land’ irrespective of the owner.

Regulators use this physical boundary in a concrete way to administer the regulation for which they are responsible. Offsite activities such as transport to and from the site are also well understood by planners, as highways and transport matters have long been local authority areas of control and concern. But the physical boundary for hydrocarbon minerals extraction is also unseen as the development activity takes place underground, and therefore partly in the imagination of all those concerned.⁷²⁵ In another way, imagination is also

⁷²⁵ R Bartel and J Carter, *Handbook on Space, Place and Law* (Edward Elgar 2021)

important because one must 'imagine' the emissions to air such as climate changing emissions as these are unseen. Spatially, the activity takes place within an area that is rich with local detail and physical interaction – unlike the white map with lines presented as part of the regulatory permit process, there is much more going on that is visible when one is in the geographical place. A spatial boundary is also therefore partially imaginary, as some of the space that is affected by the development is 'global' e.g. the atmosphere, and some local e.g. watercourses, groundwater, local air emissions. Things that happen offsite are contested – are they within the spatial boundary of the development? Communities have argued that they are e.g. the end use of the shale gas, where the water is treated. Regulators have argued that they are not, that they are concerned with the spatial and physical boundary of the site itself. The industry aligns with the regulator in this instance as in general their primary concern is the gaining of planning consent or pollution control permits – technical, evidence-based processes that are limited in scope.

Spatial physical boundaries with some exceptions circumscribe the relevant impacts of the development activities for which consent is being applied. Exceptions include transport movements associated with the activity. Relating the impacts that matter in the decision-making process to the activity taking place creates disjunction in relation to the extraction of raw materials that may be largely used 'off-site' as part of another consented activity. In the case of resource extraction, such as fossil fuels, the impact of the use of the fossil fuels is not considered as a matter of course as part of the consent to extract. Power stations that use the fossil fuels may have been consented without their full life cycle assessment of greenhouse gas emissions being assessed as part of the decision, or power stations may have had a much longer shelf life than was envisaged, or the issue of climate change emissions reduction may not have been considered so pertinent at the time. Existing infrastructure can therefore continue to Hoover up fossil fuels. Increasingly the issue of 'inevitable' and 'end-use' impacts is being raised at the point of planning consent for

extraction as evidenced by the headline issues in written objections. The decision on the Highthorn opencast coal mine in March 2018 struck a new note, first of all by explicitly setting the terms of the call in on the basis of the impact of the activities of the project on climate change policy, and secondly accepting 'end-use' emissions as part of the further information request for the accompanying Environmental Statement, and further by both the Inspector and the Secretary of State putting far more weight on the significance of the impacts on climate change.

From the data findings, a tentative distinction can be made between in the way that aspects of the *content* of decision are perceived and represented by the legal framework, by the regulators, and by the industry. In terms of *space* the data findings show a *restricted* standpoint is promoted by the framework and inhabited by the regulators and the industry. In contrast community activists standpoint for perception and advocacy is for a *relative* concept of space, that allows for invisible or distant albeit connected impacts to be brought within the content boundary.

5.4.3 The 'level' content boundary

The division between national and local of what matters can be considered in the shale gas decision could be characterised as uneven. The 'level' at which a matter has importance be it national or local, alters the content boundaries of decisions. This aspect of the content is not consistently utilised by the regulator or community activists. If economic benefit and climate change are compared, the level at which these issues matter is perceived differently by authorities and community activists.

In economic terms, economic benefit matters nationally, and has great weight in local planning decisions according to the authorities and the policy framework.⁷²⁶ Locally therefore, decisions on each development must take the 'great benefit to the economy' as a given.⁷²⁷

⁷²⁶ See wording of Ministerial Statement on Shale Gas, and the wording of the NPPF, MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

⁷²⁷ MHCLG *National Planning Policy Framework* (Planning guidance, 2021)

Yet this does not make sense based on the evidence for the applications within the purview of this case study. Only shale gas production at scale will have national economic benefits.⁷²⁸ Individually, exploration sites have few local economic benefits apart from security and local spend according to community objections,⁷²⁹ but the hypothetical benefit of production is counted as a 'benefit'. Community activists in the data findings reported on their view of economic benefits, emphasising the local level:

Economy, the developer, the economic benefit – we used their own ES to show that the economic impact was very slight – net twelve jobs over ten years...which is not what the rhetoric of Government policy was. Whole side of the negative economic impact wasn't covered and no evidence really put forward, the existing industries affected – agriculture and tourism effect.⁷³⁰

This exemplifies an issue that came up during the public inquiry – the local economic benefit was the 'level' at which community activists advocated as the content boundary.

Contrast this hypothetical national level economic benefit with the issue of climate change emissions reduction, an acknowledged national disbenefit of the development. At national level the UK Government is advised by the Committee on Climate Change (CCC) that shale gas is not compatible with carbon budgets unless some tests are met.⁷³¹ This does not change the national policy – there is no link made between the climate report and hydrocarbon minerals policy explicitly. So, this is a national disbenefit that is not properly acknowledged. When it comes down to the site exploration decision, climate change emissions' impact is measured against the national budget rather than the local budget⁷³² and therefore for an exploratory site this emissions impact looks small. This exemplifies how the impacts are judged differently at the different levels. Both the assessment level and the level at which impacts and benefits are assessed are complicated by the different approach being taken by authorities supported by the policy framework. Economic benefit is a national

⁷²⁸ International Energy Agency, *Golden Rules for a Golden Age of Gas: World Energy Outlook Special Report* (2013)

⁷²⁹ Department for Environment, Food and Rural Affairs (DEFRA) Rural Community Policy Unit, *Shale Gas Rural Economy Impacts* (Draft paper, 2014)

⁷³⁰ Transcript 019

⁷³¹ Committee on Climate Change (CCC) *Onshore Petroleum: the compatibility of UK onshore petroleum with meeting the UK's carbon budgets* (2016)

⁷³² MHCLG, *National Indicator 186, 185 Per capita CO2 emissions in the LA area* (2010)

level benefit being applied to a local decision, while climate change is a national disbenefit that is being judged as minimally impacted by a local decision. Community activists have the reverse view of the level at which content should reside – with local economic benefits deserving of more weight i.e. the correct level at which the content should be – and climate change counted as a local disbenefit if understood at a local level i.e. in comparison to local emissions. Regulators inhabit the national level space. From the evidence they seem to apply policies derived from national level to local issues, only incorporating the local where it is site specific. In this research, there was an indication in the data findings that consistency of policy and application is part of their role, and this perspective is borne out by the role that developer appeals and the Inspectorate play in fostering a conservative, precedent-led approach to land use planning.

Production is the aim of industry at a national level,⁷³³ however there is strong support for separating out exploration and exploitation in local level decisions on sites. This is due to the advantage in separating out the temporary exploration with its associated lesser impacts (and therefore greater ease with which planning consent could possibly be given) from the longer-term exploitation of more permanent impacts.

I will go to planning meetings and there will be a lot of discussion about well if you allow these guys to sink that exploration borehole, they'll come back in five years' time and ask for it to be fracked and you know it would be a bigger site etc (sigh) that is that is obviously impacting on us⁷³⁴

Planning committee meetings are held in public, can include public speaking, and elected members will effectively in the most part mostly be 'laypeople' rather than professionals. Concerns such as the ambiguity around the nature of the development resonate with the public and these members, but the industry response is a combination of practicality and technicality that could be considered somewhat disingenuous given the stated aim of the industry body is production. If shale gas is discovered and is economically viable to extract,

⁷³³ United Kingdom Onshore Oil and Gas (UKOOG)

⁷³⁴ Transcript 001

it is highly likely that existing well pads may transform into production. The scale of the site at Preston New Road operated by Cuadrilla could be considered several steps beyond merely exploration. The application itself is for four wells on a drill pad, with gas extraction planned to be fed into the grid. It was on this point that a challenge was made as these emissions were considered not to have been properly assessed.⁷³⁵ The industry perspective may be said to reinforce the sense that limitations on deliberations are being promoted in a pragmatic way.

A complex picture is beginning to emerge of the difference between the level at which the content is situated in the decision-making process. There is also an indication of how this aspect is differentiated between the regulator/industry and the community activist – between the national benefits of the development compared to the local benefits of development as the two standpoints.

5.4.4 The 'scope' content boundary

Regulators from the data findings frequently reference the specificity of regulation, where technical procedure and process are specified and provide the scaffold for their role.

Regulators can 'hide' behind it where necessary and use it as a 'tool' to amend and influence industry proposals. A specific scope emerges as a preference for the regulator and industry, and the narrower and more limited this scope, the easier it is to manage. In contrast, publics are concerned with the question of what is all the regulation adding up to? What does it look like when something has 'been regulated'? Community activists in the fieldwork are interested in what they perceive as gaps, particularly on issues such as waste treatment. They inhabit a wide scope, being interested in how global issues matter at a local level, how the issues that matter at a local level count in the local decision-making process and so on. They move freely between these levels, applying a broad scope in their responses.

⁷³⁵ *Preston New Road Action Group v Frackman & Ors* [2017] EWHC 808 (Admin) (12 April 2017)

For industry, the current regulatory system is viewed as a ‘high level of regulation,’⁷³⁶ as one commentator put it, with the main part of the regulation being taken up by technical regulation such as the issuing of permits. Emphasising the ‘technicality’ of such developments moves the deliberation in decision-making towards the scientific and specific scope of each development.⁷³⁷ The advantage for industry in this emphasis is that they are the holders of most of the expertise and the main providers of information. Industrial development in the unconventional oil and gas sphere is led by the private sector, with many of the companies applying for development offshoots of a multi-national operation. On a technocratic expertise basis, such as the way in which the HSE or the EA operates, the system is about controls set out in permits, based on technological solutions and methods – such as well design or apparatus connected to the well to control emissions. This could suit the industry approach as they have developed the technology in pursuit of extraction. Assuming a technocratic approach narrows the bigger picture to the specific scope that is defined by the legal framework and this has in turn been shaped by the industry development of technology.⁷³⁸

Magnifying the importance of expertise and minimising the political and emotional could also be characterised as an industry response. For example, as in the expressed frustration with what is perceived to be driving the outcomes of the process, so that ‘when decisions are made, they’re quite often made around non-planning matters.’⁷³⁹ For context a review of the decision notices issued by local planning authorities in England shows that the reasons are on ‘planning matters’, although the point of contention may be on the severity or otherwise of the impact associated with the reasons given. However the industry contention is concerned with the political nature of the decisions following the politicisation of fracking following the rise in community protest. This is not to be confused with the standpoint of the industry and

⁷³⁶ Transcript 003

⁷³⁷ Transcript 001

⁷³⁸ S Vaughan, *EU Chemicals regulation : new governance, hybridity and REACH* (Edward Elgar 2015)

⁷³⁹ Transcript 016

regulators that the scope of the matters within the decision-making process should be technical and limited. Politically, there is a reaction to the mixture of emotive and wide scope of matters that are important to community activists and broader publics. For a community activist it seems 'disingenuous' not to include a wide scope to the issues that need to be assessed, such as public health impacts.

5.4.5 The 'temporal' content boundary

Time is an important aspect of the content boundary in decision-making. Decisions can be made wholly in the present, can be made on the basis of the past, or can be made with the aim of securing, or attempting to secure a certain future. People inhabiting positions of authority or employed in the industry, or living near a proposed development will have a different individual perception of time and what it means. Time in planning decisions is a consideration that is partly recognised by those in authority. Decisions are made at a moment in time with the information available at the time. The planning history of a development and or place play a role in those decisions. Considerations of what is required for the future (given the development is for something in the future) are also key in land use planning and well understood. However, the temporal aspect that came out of these data findings is how time is differentiated by being something that manifests as 'the present' for authorities and industry, and as 'the future' for community activists.

Each decision to consent exploration and/or extraction of fossil fuels is made at a moment in time, considering what is known at that time. Assessment of future sustainability impacts is part of the decision-making process (for example as required by Environmental Impact Regulations), but there are limits imposed by the timeframes of the legal processes involved. Parallel processes may not be known to the applicant or decision-maker; and there is no central mechanism that enables the various decision-makers to understand the place and interaction of the decision within the wider tapestry of similar decisions taking place elsewhere. Authorities acknowledge the temporal factor of cumulative developments:

if there were proposals to have large, large scale developments, then I think we would need to look in detail at the potential of cumulative impacts...of having lots of developments particularly in the same area⁷⁴⁰

In contrast community activists expressed a desire to consider the future in the present decision rather than in the future:

how do you suddenly stop an industry that operates on a huge scale, a huge carbon footprint, if you start these exploratory sites and they're on there, and they've started the development, they've changed a green site, greenfield site into a brownfield site, then how do you turn round and say no not doing any more.⁷⁴¹

The question is whether these differing aspects to time by authorities and by community activists also lead to different outcomes in terms of environmental protection. Arguably, it could be extrapolated that the moment in the country wide development of fossil fuel extraction at which the authority might start to consider future impacts is when there is a significant number of developments that interact – while the community activist approach to considering the future, at an in-principle exploration stage would result in greater environmental protection, given that it could provide a better basis on which to consider the limit to future development that avoids unnecessary exploration.

5.4.6 The 'metric' content boundary

Metric as a content description is taken here to mean the comparator, or the measure that delineates the boundary. Comparing unconventional fossil fuels with other unconventional fossil fuels in assessing impact throws light only on matters such as 'best available techniques' in a 'like for like' comparison. It does not elucidate the relative impacts of the development in relation to a policy aim such as energy security, as unless the geology is very different, largely the same techniques are expected to be utilised e.g. in hydraulic fracturing for shale gas, and the same resource is produced. Renewable energy can also deliver 'energy security', in terms of generating an electricity resource. The decision-making space could therefore allow for comparison of different energy generation technologies.

⁷⁴⁰ Transcript 003

⁷⁴¹ Transcript 005

Authorities clearly prefer the metric of like for like comparison, and this is in the grain of the regulatory framework. This is described as the 'similar' approach to this aspect of the content. However, community activists seem to prefer the 'dissimilar' approach to the metric. This was expressed in two ways – firstly that the technology of shale gas extraction is in a basket of energy production technologies and should be measured as such, and how this was seen as 'the duplicity about how they can in effect ban windfarms on land and allow fracking, you know I mean that should never be going on in planning.'⁷⁴² It was deeply felt that what was in effect energy production technologies were being treated very differently within the planning framework.

Considering the impact that the metric could have on the outcome of the decision-making process in terms of environmental limits is most obvious if the climate change and pollution impacts of fossil fuels versus renewable technologies are compared. If the framework encouraged a comparison, significant impacts would be highlighted by the alternative technology.

5.4.7 The 'domain' content boundary

Domain as an aspect of content is suggested as the extent to which the issues are put within context of cumulative impacts, the bigger, holistic picture. For example, the regulators and industry assert that there is a limited purview of matters within the content boundary delineated by the decision-making framework. It is a classic planning approach, where the merits or otherwise of the development application in front of the decision maker have a limited domain that is also subject to other boundaries such as space, level, scope and time. It is an application that must be considered on its own merits. Cumulative impacts may be assessed if they are deemed to be connected to this application, but only with a specific connection such as that explored in terms of scope and space in the earlier aspects.

⁷⁴² Transcript 005

What is not counted as part of the domain according to the regulatory or the industry, but which is within the domain from the standpoint of the community activist, is the cumulative impact of the development that may come after this exploratory development. For the community activist, there is an awareness that could indicate an exponential domain, 'so the planning frameworks and process and what you are allowed to do doesn't help to get over how it will truly impact.'⁷⁴³ Shale gas extraction is seen as part of the industry estimates of thousands of wells,⁷⁴⁴ and not as a one off or individual project, and infrastructure connections are myriad, and the interactions are holistic. The notion of domain in relation to the content boundary is used to describe the conceptual sphere that those involved in the decision-making process.

Consequently, the question of domain arises in relation to principle. If in-principle assumptions are made – so that approval for a certain type of development is a given or assumed – at least two issues arise. Firstly, the issue as to whether public participation and democratic accountability operate in relation to the national in-principle approval of certain types of development that cannot then be questioned on individual applications; and secondly whether this in-principle approval has been assessed for its impact on planetary concerns in relation to climate change. Nor has there been assessment of England's energy policy that counts the cost of a range of possible lifecycle impacts in several scenarios of development. This is because the policy itself is worded in a way that is market-led rather than 'command and control' or target-led. As the development system is discretionary, there is no means within the existing regulatory framework to add up the impact of individual development consents that are issued. It is only the planning consent that engages for the community activists, the in-principle question of development – the other regulators such as the HSE, EA and OGA are essentially regulating the technology and the operations – that is the perceived domain boundary. The push towards avoiding the 'in-principle' question for

⁷⁴³ Transcript 009

⁷⁴⁴ Institute of Directors, *Getting Shale Gas Working – Infrastructure for Business 2013 #6* (IOD 2013)

each individual development has long been a trend in planning reform in England and led to the major reforms in 2008.⁷⁴⁵ Moreover the neo-liberal economic trend has also driven the infiltration of the market led approach into the original ideas behind the first town and country planning acts.⁷⁴⁶

The role of the planning authority, where judgement is exercised and discretion and democratic accountability reside, is downplayed by industry.⁷⁴⁷ Climate change is mentioned as a topic which 'may not necessarily be in the offices' of the planning decision-makers,⁷⁴⁸ despite this being a matter that is clearly within the remit of sustainable development and specifically part of the plan-making legal framework.⁷⁴⁹ By reinforcing the site specific approach over the big picture approach, industry may again have an advantage in the decision-making process by emphasising technological solutions (e.g. road traffic management or drainage on site that are reasonable to implement) while failing to engage with a broader planetary concern that is relevant at a local level, and yet is pushed up to the national level.⁷⁵⁰

The aspect described as domain is about what is within the purview of the content boundary. The data findings indicate that regulators and industry consider the purview to be a combination of limited and specific standpoints taken across the space, level, scope, temporal and metric boundaries of the content. Community activists find themselves frustrated by the inability to consider global, big picture, cumulative environmental issues that demand a much more principled approach to the implications of individual decisions.

⁷⁴⁵ B Clifford, 'British local authority planners, planning reform and everyday practices within the state' (2022) 37 (1) Public Policy and Administration 84

⁷⁴⁶ H Campbell and M Tait and C Watkins, 'Is There Space for Better Planning in a Neoliberal World?' (2016) Readings in Planning Theory 187

⁷⁴⁷ Transcript 001

⁷⁴⁸ Transcript 006

⁷⁴⁹ Planning and Compulsory Purchase Act 2004, Section 19 as amended by Planning Act 2008

⁷⁵⁰ Transcript 001, 006, 017

5.4.8 Summary

What the data findings show is that there is an asymmetry between the different aspects of the *content* that is counted within the decision-making process. This leads to fundamentally different outcomes as the legal framework directing the content of decision-making, emphasising certain aspects over other aspects. Consequently, this shapes the content boundaries of the decision-making process. The relationship between the aspects solidified by the framework over the aspects that are of concern to lay people and community activists also goes to the 'context' of decision-making, where the influence of process over the outcomes is explored through the data findings particularly on the nature of the evidential inputs, the differing perspectives, and overall governance.

5.5 Conclusion

Examining the data findings in terms of thinking about the boundary of the content present in the decision-making processes in the case study areas, in relation to three cases on shale gas developments has provided some insight into the role and limitations of current competences; the impact of the conflict between aims; and the way that authorities and community activists take different standpoints on aspects of content. These insights help to gain a deeper understanding of why the boundary, the shape of content is important in whether environmental limits are being recognised.

Competence can act as a limiting factor, as it curtails the sphere of what the authorities perceive as their role in relation to the decisions, which was borne out by the data findings. This curtailment leads to a gap where there is no specifically designated competence, exemplified in relation to wastewater pollution treatment and cumulative climate change emissions. Inconsistent and incoherent aims detract from one another – this may be obvious in theory, but is also borne out by the data findings, where both documentary evidence such as decision notices, officer's reports, and interview data supported the impression of environmental limits being assigned less weight in the outcome than other issues.

Sustainability 'means' something different to laypeople and professionals, to all the individuals interviewed, subject to the time of day the interview took place, their background, the context for the interview, their immediate and previous experiences. Laypeople are nervous, and unconfident about the 'meaning' of sustainability – it is described in lots of different ways by community (activists), many of them emotional, or with emotional connections, as big picture ideas. Sometimes it is about a local connection to the natural world and sometimes it is about what they have read (some laypeople referenced where they had found the definition of sustainable development). The main difference between laypeople and professionals engaged in the legal process, is that most laypeople felt that the sustainability as defined in a policy document within the process did not necessarily accurately reflect what sustainability meant to them – or at least it was confused because many activities were labelled as 'sustainable development' that were patently not considered to be sustainable – of which fossil fuel extraction was one. So, the word was met with ambivalence and confusion.

In terms of the professionals, taking a policy approach, meant reading the words as they were put together and if the words said that shale gas was sustainable, then that is how they considered it. Regulators were not keen on putting their own values or interpretations or beliefs to the 'meaning' of sustainable development, even if that meant constructing a theory as to how something that on the face of it is 'unsustainable' in terms of environmental impacts, can be made into something sustainable. Usually this is done by compartmentalising and boxing up the impacts. Each impact is looked at separately and conditioned for separately in the legal document. The legal document manages & controls activities & sets limits on emissions. But many conditions are simply unenforceable, and it is hard to know if they are breached or not as with the condition on 'no pollution to groundwater'. Regulators have essentially applied what in their view is a legal precautionary principle or a legal environmental protection, which links to the meaning of 'sustainable

development' and securing 'sustainable development outcomes'. But to the layperson a shale gas site has been approved and that does not equate to a sustainable development outcome.

In legal process, science and public reason are constructed, with the difference between the reality as perceived by participants in the process of decision-making, versus the abstract text of policy and regulation, is becoming key to understanding the effectiveness of the law in achieving sustainable development outcomes. Current political dynamics, the rise of ideologically-driven policy, the attendant public protest for fossil fuel extraction in a period when climate change awareness is becoming increasingly inescapable at least in the media, has put pressure on the relevant legal, planning and democratic systems of consent in England and Wales. As the UK Government has sought to exert control over outcomes, and obfuscated and hollowed out the meaning of sustainable development, so the regulators, industry and the public have fought over the construction of science and reasoning in the decision-making process. Decisions continue to be made, but their policy and evidential basis resists consensus. Divergent meanings of sustainable development further complicate the way governance plays out, as different voices compete to impose their meaning or interpretation alongside the actual written policy. It is important to understand whether this divergence of meaning limits the achievement of sustainable development outcomes or supports them, as this has implications for the way law and policy is devised.

The asymmetry between six aspects of content identified through the interviews result in further food for thought in how content manifests itself, as Beebeejaun has also explored, in terms of at what scale issues are dealt with.⁷⁵¹ Whether space is considered as relative or restricted could result in a different outcome. The level at which a policy issue is placed can work in very different ways for example whether it is of national importance or local

⁷⁵¹ Y Beebeejaun, 'Questioning the local: environmental regulation, shale gas extraction, and the politics of scale' (2019) 24 *The International Journal of Justice and Sustainability* 8

importance, and again the inconsistency of application of which level to apply for a given issue seems to be more a political choice rather than a rational or evidence-based one. Much has already been discussed in research on Environmental Impact Assessment with regard to scope, and the data findings bear out the experience across planning decisions that the authorities take a more specific rather than broad approach to scope. This narrowing of content continues to be a distinguishing factor between authorities and community activists throughout the aspects that the data findings brought out. Both time (past, present, future) and metric (comparison) demonstrated the division between authorities being in the present and like for like, with communities being much more concerned about the future, and about choice. In the final aspect of domain, the main finding of this research that the current legal framework is unable to deal with cumulative impacts – as a ‘death by a thousand cuts’ scenario – starts to emerge.

Considering the future setting for projects, rather than relying on the present reality, through the use of forecasting and scenarios, could help strengthen the effectiveness of regulation for sustainability outcomes. It is also clear in comparing the standpoints of authorities versus community activists in relation to the aspects, that it is community activists who express a greater sense of responsibility towards environmental protection, despite the power assigned to authorities. Having looked at the content boundary, the examination of the context boundary – what influence the process has on the content - now follows.

Chapter 6: How are 'context' boundaries shaping outcomes?

6.1 Introduction

This Chapter considers how the contours of 'context' boundaries are shaped by what is 'real' in the process, how power and responsibility are assigned, and the shape of procedural and substantive rights. What is happening in and around the process of decision-making? Having accepted that the way that any decision-making process is structured has a direct and indirect impact on the outcome, and in accepting the norm that public participation in decision-making is beneficial for environmental protection outcomes to a greater or lesser degree, the data findings deliver some insights into the views and perspectives of the participants in the processes of decision making. Procedural and substantive rights as legal challenges steered the initial analysis of the data findings presented here, with the addition of the question of what is 'real' and what is 'true,' as determined by the process revealed as a compelling topic of concern, particularly for community activists.

When thinking about power and responsibility, the relationship between the governed and those governing, as governance is characterised by Evans,⁷⁵² underpins the socio-legal research method employed in this investigation. In assessing the effectiveness of rules and regulations in achieving sustainable development, exploring the range of perspectives of those involved in the process is crucial to understanding how 'in the real world', these rules and regulations operate – how they are understood, interpreted, applied, adapted or ignored.

Dryzek notes:

the essence of judgement and decision-making becomes not the automatic application of rules or algorithms but a process of deliberation which weighs beliefs, principles, and actions under conditions of multiple frames for the interpretation and evaluation of the world.⁷⁵³

⁷⁵² Bob Evans and Marko Joas and Susan Sundback and Kate Theobald, *Governing Sustainable Cities* (Earthscan 2005)

⁷⁵³ John S Dryzek, *Deliberative Democracy and Beyond: Liberals, Critics, Contestations* (OUP 2002)

Both this 'process of deliberation' and Jasanoff's theory of 'public reasoning',⁷⁵⁴ where the achievement of reason in decision-making processes is a combination of culturally-influenced performance, the underwriting of power by scientific and technical expertise, the legal framework, and its construction through the 'small mundane action and inactions',⁷⁵⁵ offer complementary theoretical approaches to critiquing the decision making on unconventional fossil fuels. Pedersen uses the concept of 'policy framing' to examine regulatory choices, and how these choices by institutions shapes 'legal reasoning' in judicial decisions on shale gas development.⁷⁵⁶ As Pedersen points out, the 'deferential approach' taken by the Courts serves only to reinforce the Government position and leaves little space for alternative frames or the evidential basis demanded by communities,⁷⁵⁷ a view that is borne out in the commentary by community activists discovered in this research. One community activist observed that 'by the time you get to judicial review the court is not interested in looking at the underlying evidence',⁷⁵⁸ a view that tacitly implies the paucity of a process often concerned with whether procedures were missed to an extent that the decision needs to be remade. Both public reasoning and legal reasoning are at work in the decisions to consent unconventional fossil fuels. Public reasoning is a broader concept applying to what happens within the process with all participants where scientific knowledge is being used, and legal reasoning is that which is happening in the judicial process, discussed earlier in Chapter 3.

Learning and scientific understanding, broadly contemplated as a result of social process in science and technology studies,⁷⁵⁹ are nuanced in a development decision-making process. Lay understandings of science are quite profound, and more seated in the real world, whereas scientists understand the science but not necessarily the context in which the

⁷⁵⁴ Sheila Jasanoff, *Science and Public Reason* (Routledge 2012)

⁷⁵⁵ *Ibid*

⁷⁵⁶ O W Pedersen and A R Zito, 'Fracking frames and the courts' (2018) 20 (4) *Environmental Law Review* 202

⁷⁵⁷ *Ibid*

⁷⁵⁸ Transcript 002

⁷⁵⁹ Sheila Jasanoff, 'A Field of Its Own: The Emergence of Science and Technology Studies' in R Frodeman (ed.) *The Oxford Handbook of Interdisciplinarity* (2nd edn OUP 2017)

science is then applied.⁷⁶⁰ Taking inspiration from Jasanoff's theory of co-production, that 'scientific knowledge...both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments and institutions',⁷⁶¹ this provides an entry point for examining the way evidence manifests in the shale gas decision-making process. Here, consideration is made of the differing perspectives of varied participants in the process on the evidence that is being utilised, and whether this evidential knowledge is 'co-produced' or remains dissonant. The question is how science, in the form of evidence, is being used in a highly politicised and contested decision-making process, where environmental protection and economic growth aims collide.

Drawing upon thinking on the interaction between science and governance, the shale gas exploration and extraction decision-making process, as governed by a plethora of rules and regulations, provides the opportunity to examine the 'reasoning' that is taking place within this fora.⁷⁶² Reasoning could be described as the process of reaching conclusions using publicly shared values, whereas decision-making is the conclusion based on judgement.⁷⁶³ The object of investigation is how this reasoning is faring in securing environmental protection, as the value placed upon different bodies of evidence is heavily contested. One of the aims of the research is to consider the extent to which middle ground and mediated solutions emerge that may not have been built on completely scientific basis.⁷⁶⁴ Co-production allows for a lack of data, whilst describing a process where a consensus can be reached and has some form of social licence attached to the basis of decision-making.⁷⁶⁵

⁷⁶⁰ A. Saltelli and M. Giampetro, 'What is wrong with evidence based policy, and how can it be improved?' (2017) 91 *Futures* 62

⁷⁶¹ Sheila Jasanoff (ed), *States of Knowledge* (Routledge 2004) p 3.

⁷⁶² Sheila Jasanoff, *Science and Public Reason* (Routledge 2012) p5; and J Rawls, *A Theory of Justice* (Harvard University Press, 1971) on public reason.

⁷⁶³ P. N. Johnson-Laird and E. Shafir, 'The interaction between reasoning and decision making: an introduction' (1993) 49 *Cognition* 1

⁷⁶⁴ Sheila Jasanoff, *Science and Public Reason* (Routledge 2012) p15

⁷⁶⁵ Y. Rydin and L. Natarajan and M. Lee and S. Lock, 'Black-boxing the Evidence: Planning Regulation and Major Renewable Energy Infrastructure Projects in England and Wales' (2018) 19 (2) *Planning Theory & Practice* 218-234; R. G. Boutilier, 'Frequently asked questions about the social licence to operate' (2014) 32 (4) *Impact Assessment and Project Appraisal* 263

The values that are placed upon private or corporate 'expertise' may or may not result in the co-production of knowledge depending on whether consensus can be built.⁷⁶⁶

In the field work, research participants were asked about the information supplied in the decision-making process, and this uncovered a wealth of commentary on what was felt to be true or real from a community activist perspective, and what was felt to be the same from a regulator or industry perspective. As one community activist commented: '*Inevitably there is conflicting information...industry says one thing, protestors say another*'.⁷⁶⁷ From the data findings it became clear that the process, the *context* in which information was provided had an influence on the outcome. The disjunct in between what the community activists perceived as the 'reality' of the situation and the 'truth' outside the process, and what was the 'reality' and 'truth,' as manifested inside the process forms an important part of the data analysis. Tate has proposed learning from health practice to inform planning practice with one suggestion being the 'realist review,'⁷⁶⁸ and the respect for 'complexity' goes to the issue perceived by the different participants of what is reality. The 'dualism' present in the arguments between proponents and objectors to development as described by Mordue, Moss and Johnston tells of the 'subjective discourses' that dominate contentious developments that impact on communities, and suggests that 'collective responsibility' needs to be sought.⁷⁶⁹ In the findings set out below, a closer look is taken at how process influences issues of complexity and responsibility.

The discussion then moves on to a consideration of how governance, meaning the relationship between the governed and the governing, affects the concepts of power and responsibility as observed by the research participants. Turning to procedural rights and the

⁷⁶⁶ A Lis and K Kama and L Reins, 'Co-producing European knowledge and publics amidst controversy: The EU expert network on unconventional hydrocarbons' (2019) 46 (5) *Science & public policy* 721

⁷⁶⁷ Transcript 020

⁷⁶⁸ L E Tate, 'Should Planners Create Hierarchies of Evidence? Learning from Health and Choosing Our Own Path' (2020) 21 (4) *Planning Theory & Practice* 635

⁷⁶⁹ T Mordue and O Moss and L Johnston, 'The impacts of onshore-windfarms on a UK rural tourism landscape: objective evidence, local opposition, and national politics' (2020) 28 (11) *Journal of Sustainable Tourism* 1882

absence of substantive environmental rights, the way in which context (i.e. process) is shaped by the legal framework is considered in light of the data findings.

6.2 How process affects ‘reality’ and ‘truth’ in decision making

6.2.1 Introduction

The reality within the process is different to the external reality. A community activist commented on this perception of the inability to consider development impacts and the influence of regulatory systems from other countries as ‘contrary to reality’⁷⁷⁰

And in this difference, this gap, environmental impacts could multiply. Another community activists noted that:

Through freedom of information, and lots of questions/answers (no answers) because no data was collected until 2015...so they [the regulators] have no evidence on which to base a lot of their decision-making.⁷⁷¹

The idea of an external reality, in terms of the ‘public health and societal impact’⁷⁷² was mentioned in several interviews, with another commenting that ‘you never get the full story’.⁷⁷³ The difference between ‘real life’⁷⁷⁴ as understood from the perspective of a holistic view as discussed in the domain content boundary,⁷⁷⁵ goes to the heart of different realities inside and outside the process. The context shaped by the legal framework and policy, usage, convention and framing, is effectively a boundary between the two.

6.2.2 What are the ‘facts’?

The contention is that the shape of the decision-making process to a greater or lesser extent shapes the ‘facts’ on which decisions are based. An examination of the perspectives of both governmental and non-governmental participants in environmental decision-making through

⁷⁷⁰ Transcript 014

⁷⁷¹ Transcript 011

⁷⁷² Transcript 002

⁷⁷³ Transcript 012

⁷⁷⁴ Transcript 019

⁷⁷⁵ Chapter 5, Subsection 5.4.7

the case study fieldwork has highlighted some gaps and weaknesses in relation to these 'facts'. Information and evidence are treated differently depending on the process rules and governance of decision-making.

While the establishment of 'fact' in the rules based decision-making processes that abound in Europe have not descended into an 'alternative' universe,⁷⁷⁶ in highly contentious areas of decision-making such as that on shale gas, the entry of political ideology into the policy frame has caused some discomfort.⁷⁷⁷ Assessing the policy frame shows that some shale gas development rules such as those in England on land use planning have been driven by political motivation and not necessarily consistently with the whole body of relevant evidence.⁷⁷⁸ Similar development consent processes on extraction within the EU and UK more broadly rely upon information largely generated by the private sector as the basis for making decisions that will impact upon environmental objectives, such as reducing climate changing emissions and pollution.⁷⁷⁹ Policy frames such as that for shale gas in England emphasise some evidence while ruling out other evidence pertaining to environmental impact.⁷⁸⁰ As Holder notes: 'a better balance between the information resources held by developers and those of other groups may also be encouraged by securing public participation'⁷⁸¹ but it remains far from ideal, and the difficulties in establishing the environmental basis have not been resolved.

When combined with the use of evidence from the promoter of the project, the key question arises as to the extent to which this constellation undermines the robustness of this and other similar processes for the purpose of securing environmental protection outcomes? And how

⁷⁷⁶ K Conway, Counselor to the US President, phrase coined in an interview on January 22, 2017 with *Meet the Press*, a weekly television news programme on NBC.

⁷⁷⁷ M Cotton, 'Stakeholder perspectives on shale gas fracking: a Q-method study of environmental discourses' (2015) 47 *Environment and Planning* 1944

⁷⁷⁸ DCLG, *Planning Practice Guidance for Onshore Oil and Gas* (Planning guidance, 2013)

⁷⁷⁹ Mediating conflicting interests through land use planning see B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006) p4

⁷⁸⁰ Amber Rudd Secretary of State for Energy and Climate Change, *Shale Gas and Oil Policy* (WMS HCWS202 16 September 2015)

⁷⁸¹ J Holder, *Environmental Assessment: The Regulation of Decision Making* (OUP 2006) p295

could this impact on the role of law in transitioning towards sustainable solutions in this area? A community activist commented on the characterisation of 'shale gas [as] beneficial and part of transition to the low carbon economy...[as a] complete reversal of the fact',⁷⁸² and while this is a matter of perspective, there is also relevant evidence that may or may not be taken into account in the formulation of policy that guides decision-making. Further commentary from the same perspective considered that refusal of shale gas development was 'going against the full force of the NPPF and the NPPF is regarded as 'fact'. Whereas other evidence is not given its full scientific weight.'⁷⁸³ One community activist referred to the experience of being 'told by inspector to not use the word fracking',⁷⁸⁴ whether in an attempt by the regulator to ensure accurate descriptions of the permission being applied for, or whether it was for political reasons was not ascertained at the time and therefore remains speculative. It is also relevant to consider how in terms of behavioural decision theory⁷⁸⁵ participants shape the facts that create 'context' boundaries. For example, this restriction on terminology could on the one hand indicate that a certain limit is being put on the heuristic behaviour of participants who are naming and identifying and learning about the issue during a process. On the other hand it could also be merely that the Inspector in this case was ensuring a description of the activity as conveyed by the applicant was the extant definition within the context of the decision process.

With regard to decision-making development within the EU and UK, the matter of the scientific evidence basis for these decisions becomes very important. Observed scientific data collected from the environment tells us that it is changing – that there is less biodiversity, that there is pollution of environmental media: the air, land, water and sea. It is also obvious that this trend is in one direction – there is less and less biodiversity broadly speaking, and there is more pollution, even if the increase in pollution is slowing in some

⁷⁸² Transcript 014

⁷⁸³ Transcript 014

⁷⁸⁴ Transcript 009

⁷⁸⁵ D N Kleinmuntz, 'Human Decision Processes: Heuristics and Task Structure' (1987) 47 *Advances in Psychology* 123

areas.⁷⁸⁶ This could be considered a ‘reality’ in the empirical sense.⁷⁸⁷ Between this ‘reality’ of environmental degradation, and the ‘reality’ on which decisions are based, there is a gap. This gap arises because of what is taken into account, and what is not, in a decision-making process, as demarcated by the rules. These rules may exclude information not on a scientific basis but on a political basis.

Reaching consensus on knowledge is an important part of establishing a basis for decision making. In shale gas cases, where the development is hotly contested,⁷⁸⁸ the gap between ‘reality’ and ‘truth’ in the decision-making frame may hinder the co-production of knowledge. Essentially promoters and objectors do not agree on whether or not shale gas reduces emissions overall (by replacing other more polluting sources of fossil fuels)⁷⁸⁹ or whether it is an additional source of emissions,⁷⁹⁰ with an unknown set of risks of greater polluting emissions.⁷⁹¹ The same goes for water pollution impacts, with promoters and objectors failing to agree on the level of risk of groundwater pollution,⁷⁹² and on the ability of the regulatory system to deal with the waste water produced.⁷⁹³

The relevant rules, conventions and biases operate as a construct that loosens the connection between observed environmental data and for example, a development decision. What is ‘truth’ in the bounded space of the decision, may not be the ‘whole truth’ given the omission and negation of some matters through virtue of the rules governing the process. Understanding the nature, origin and limitations of the evidence, both scientific and lay, ‘the truth’ upon which decisions are made, as well as the artificial constructs of what is relevant or

⁷⁸⁶ European Environment Agency, *The European environment — state and outlook 2020* (2019)

⁷⁸⁷ L Webley, ‘Qualitative approaches to empirical legal research’ in P Cane and H Kritzer (eds) *The Oxford Handbook of Empirical Legal Research* (OUP 2010)

⁷⁸⁸ Y Beebeejaun, ‘Questioning the local: environmental regulation, shale gas extraction, and the politics of scale’ (2019) 24 (8) *Local Environment* 777

⁷⁸⁹ UKOOG, *General Emissions* (undated); David J C MacKay and Timothy J Stone, *Potential Greenhouse Gas Emissions Associated with Shale Gas Extraction and Use* (DECC 2013)

⁷⁹⁰ J Broderick and K Anderson, *Natural gas and climate change* (Tyndall Centre 2017)

⁷⁹¹ R Howarth and R Santoro and A Ingraffea, ‘Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations’ (2011) 106 *Climatic Change* 679

⁷⁹² BBC, ‘Fracking ‘could put gas and chemicals’ in drinking water’ (*BBC*, 19 July 2013)

⁷⁹³ Friends of the Earth, *Consultation response – objection to Preston New Road application* (2015)

not relevant for the constructed 'reality' of a particular decision, has implications for processes that must radically transform in order to secure sustainable solutions.⁷⁹⁴

Community activists raised concerns about developers 'marking their own homework',⁷⁹⁵ and raised the issue of verification. There was a sense that there were 'half-truths and weasel words',⁷⁹⁶ the question of 'what isn't somebody saying?' from a community activist who was also a local, political representative. This lack of trust led some community activists to have a reliance upon scientific reports that were 'peer-reviewed'. In an elaboration on Jasanoff's theory on public reasoning,⁷⁹⁷ the scepticism evinced by many activists, given the apparent silences remaining unfilled by the process requirements of the framework, did not work towards an agreed reasoning. It seems that instead of coming to a settlement, the process was exposing the cracks and divergences between the participants.

The lack of specialist knowledge where this was given specific status in the process for example in the way that statutory consultees are referred to individually and reported on separately for example in an officer's report on the decision, indicates one of the ways in which the process weighs the 'facts' in the process. Whether these facts amounted to the truth was contested by community activists who felt their own lack of expertise could lead to a lack of rigour.⁷⁹⁸ In the voice of one community activist that 'words become truth'⁷⁹⁹ in relation to the content of the NPPF on shale gas development. Another aspect of what is 'truth' and how language is being given new and obscure meaning was commented on by several, with one participant saying that this vocabulary and definitions 'would not be used by the ordinary person.'⁸⁰⁰ Indeed, while it is not just that words were becoming truth by virtue of where they were found, but also that as one community activist pointed out that there were

⁷⁹⁴ K J Neville and E Weintal, 'Mitigating Mistrust? Participation and Expertise in Hydraulic Fracturing Governance' (2016) 33 (6) Review of Policy Research 578

⁷⁹⁵ Transcript 008

⁷⁹⁶ Transcript 016

⁷⁹⁷ Sheila Jasanoff, *Science and Public Reason* (Routledge 2012)

⁷⁹⁸ Transcript 010

⁷⁹⁹ Transcript 014

⁸⁰⁰ Transcript 022

‘not just failures of information, it is lying about what is the truth.’⁸⁰¹ What this means for the process is that the participants are questioning and distrustful of what is being brought into the process by the rules of the legal framework and by the policy framing of Government, by the responsibilities assigned to the applicant in the process (of submitting the evidence in the Environmental Statement). The implications that this has for the outcome is that the community activists’ concerns could be borne out in that there are matters that have not been considered adequately; and that the construction of policy itself mandates environmental impacts.

6.2.3 The notion of limits in relation to facts

The environment has been impacted substantially, and on an increasingly accelerated pace since the industrial revolution. Within the EU, despite policy development on environmental protection across all sectors, the issues of biodiversity loss and diffuse pollution, including from climate changing emissions, remain as persistent and severe challenges.⁸⁰² The European Environment Agency (EEA) has identified ‘serious gaps between the state of the environment and existing EU near- and long-term policy targets’,⁸⁰³ suggesting that the existing and proposed political system capacity to deal with the environmental problems faced by the EU and its Member States is inadequate. In this context, it is incumbent to consider the shortcomings of the existing policy system if improvements are to be made to reverse current trends with the urgency required.⁸⁰⁴ Given the state of the environment, it is argued that environmental law needs a continuing assessment of its impact and effectiveness in securing sustainable outcomes.

An examination of the evidence on which decisions rely provides a useful entry point to test the basis of certain types of environmental decisions. Consider the energy infrastructure

⁸⁰¹ Transcript 017

⁸⁰² European Environment Agency, *The European environment — state and outlook 2020* (2019)

⁸⁰³ *Ibid*, p7

⁸⁰⁴ T M Lenton and J Rockström and O Gaffney and S Rahmstorf and K Richardson and W Steffen and H J Schellnhuber, ‘Climate tipping points — too risky to bet against’ (2019) 575 *Nature* 7784

decision-making process: is it sufficient to rely upon information largely generated by the private sector in making decisions that will impact upon environmental objectives such as greenhouse gas emissions reduction? While each Member State has their own rules and regulations concerning decision-making, the general neo-liberal trend for decision-making in England has become less reliant on command and control development and more on inviting market input.⁸⁰⁵ Expertise for energy infrastructure development is largely held by the private sector, and this affects the value placed on lay input in decision-making processes.⁸⁰⁶

Unconventional fossil fuels are an evolving example of a publicly contested emerging technology that engages what Jasanoff has termed 'technologies of humility'. This calls for:

different expert capabilities and different forms of engagement between experts, decision-makers, and the public than were considered needful in the governance structures of high modernity. They require not only the formal mechanisms of participation but also an intellectual environment in which citizens are encouraged to bring their knowledge and skills to bear on the resolution of common problems.'

This is a useful interpretive approach with which to consider the forums and spaces provided by the land-use planning system(s) in the UK – one of the key components of the decision-making framework for unconventional fossil fuels. In these planning systems, public consultation, planning committees and public inquiries provide structures in and around which knowledge is produced and contested by the public, scientists, industry, policy-makers and decision-makers. Plural viewpoints are brought to bear in these spaces, but these are unequally valued. In building a 'co-production' account, as championed by Jasanoff in *States of Knowledge*, questions that arise are: what emerges in the process? What is contested?

⁸⁰⁵ H Campbell and R Marshall, 'Moral Obligations, Planning, And The Public Interest: A Commentary On Current British Practice' (2000) 27 (2) *Environment and Planning* 297; A Lord and H Tewdwr-Jones, 'Is Planning "Under Attack"? Chronicking The Deregulation Of Urban And Environmental Planning In England' (2014) 22 (2) *European Planning Studies* 345; P Allmendinger and G Haughton, 'The Evolution And Trajectories Of English Spatial Governance: 'Neoliberal' Episodes In Planning' (2013) 28 (1) *Planning Practice & Research* 6

⁸⁰⁶ M Aitken, 'Wind Power Planning Controversies And The Construction Of 'Expert' And 'Lay' Knowledges' (2009) 18 (1) *Science As Culture* 47

What is standardized? Are new cultural norms being acquired? Political and emotional responses to extraction – including the ‘frack free’ and ‘frack off’ campaigns, the concerns around health, pollution, earthquakes, safety and the future that could be characterised in the industry’s perception as ‘non-planning matters’, but these form the opposition to industry, and there is also a scientific basis to the opposition.

Knowledge is graded by the agents deployed through the regulatory framework - the officers of the planning authority or statutory agency. Expertise is associated with professionalism: for example, the planning inquiry process requires a description of expertise as part of the proofs of evidence submitted by witnesses. This is a ‘higher order’ of knowledge in comparison to that submitted by the community, as demonstrated by the presentation and consideration of respective evidence in the Inspector’s report and Officer’s report for the Preston New Road site. Knowledge is also nurtured and enhanced outside the regulatory framework – as public knowledge and public opinion has risen in line with public concern.

In terms of public participation and the bulk of the evidence that comes into play on decisions, planning permission and environmental permits are the most important processes. The ‘role of participation in the provision and interrogation of evidence’ is recognised in good environmental governance as key to testing the information to ensure that it is robust.⁸⁰⁷

Much has been made over the years of the evidence-based approach to land-use planning decision-making,⁸⁰⁸ a view that has been strengthened by the role of Environmental Impact Assessment (EIA)⁸⁰⁹ in Europe in elucidating the various environmental impacts associated with any given development. Environmental assessment in this form plays a key role in making authorities ‘think’.⁸¹⁰ It has become evident that EIA has limitations, not least that

⁸⁰⁷ L Squintani and J Darpo and L Lavrysen and Stoll (eds), *Managing Facts And Feelings In Environmental Governance*, (Edward Elgar 2019)

⁸⁰⁸ B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

⁸⁰⁹ R K Morgan, ‘Environmental Impact Assessment: The State Of The Art’ (2012) 30 (1) *Impact Assessment And Project Appraisal* 5

⁸¹⁰ J Holder and D McGillivray, ‘Taking Stock’, In *Taking Stock Of Environmental Assessment: Law, Policy And Practice* (Routledge 2007); J De Mulder, ‘The Protocol On Strategic Environmental Assessment: A Matter Of Good Governance’ (2011) 3 *RECIEL* 20

while these assessments contribute to a better understanding of environmental impacts, the evidence presented can also be selective,⁸¹¹ and could even in some circumstances be considered biased especially where the promoter of the project also commissions this environmental assessment, such as in the UK.⁸¹² The relative weight that evidence carries in a decision-making process can also be undermined by the treatment of this evidence by authorities, and by the Courts.⁸¹³

Socio-legal research into decision-making on nationally significant renewable energy infrastructure projects in England and Wales,⁸¹⁴ has found that Examining Authorities had ‘significant freedom to shape the evidence that is provided in the examination’ by requesting types of information, and a preference for ‘technical forms of knowledge’ with ‘less-formalised knowledge’ from lay and public sources not generally relied upon.⁸¹⁵ Freedom to shape the information brought into the process has to be set in the context that the process itself is already excluding some matters, such as the question of ‘need’ from detailed examination.⁸¹⁶ This change reverses the previous trend where increasing levels of scientific evidence were informing policy such as England’s Planning Policy Statement 1 Supplement on Climate Change.⁸¹⁷

The role of risk, analysis and expertise in governance is critical to understanding what has the greatest influence on the outcome; who is involved in the production of risk ‘values’; who is providing the analysis and the expertise; and in what ways; and whether the contributors have a bearing on the level of influence that the analysis and expertise may have. Risk is a

⁸¹¹ See for example, North Yorkshire County Council, ‘Officer’s Report For The Planning And Regulatory Functions Committee C3/15/00971/Cpo (Ny/2015/0233/Env) - Planning Application To Hydraulically Stimulate And Test The Various Geological Formations By Third Energy’, (May 2016)

⁸¹² The Town And Country Planning (Environmental Impact Assessment) Regulations 2017 (England) s18(5)(A)-(B)

⁸¹³ J Litton, *EIA and SEA Update Presentation* (Landmark Chambers, 2019)

⁸¹⁴ M Lee and S Lock and L Natarajan and Y Rydin, *Evidence, Publics And Decision-Making For Major Renewable Energy Infrastructure* (UCL 2017)

⁸¹⁵ M Lee and S Lock and L Natarajan and Y Rydin, ‘Decision-Making For Major Renewable Energy Infrastructure’ (2018) 5 JPEL 507

⁸¹⁶ K Barker, *Barker Review of Land Use Planning Final Report – Recommendations* (HM Treasury, 2006)

⁸¹⁷ CLG *Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1* (Planning guidance, 2007)

matter that is downplayed by the UK Government. A claim to ‘gold standard’ in regulation⁸¹⁸ is made by national level political representatives and industry, deliberately evoking solidity, reliability and trustworthiness. In opposition to this promulgated ‘view’ of regulation, public and society evoke images of risk, and powerlessness e.g. referring to themselves as ‘guinea pigs’ in some sort of ‘experiment’.

The regulatory system for shale gas in England consists of several different legal requirements as follows – an exclusive licence must be granted to the operator to drill in that area,⁸¹⁹ then planning permission⁸²⁰ and environmental permits⁸²¹ need to be obtained. Well design must be approved,⁸²² and be independently examined. There must be notification of the intent to drill,⁸²³ and only when such conditions are all met will a hydraulic fracture consent be issued by the Oil and Gas Authority.⁸²⁴ Planning permission is normally issued by the Minerals Planning Authority, and, if it is not a delegated decision,⁸²⁵ then elected Members (councillors) on the Planning Committee will make the decision, based on the officer’s report and recommendation for approval or refusal. In the case of the environmental permits, some are issued under standard rules where there is no consultation;⁸²⁶ there is a three-week consultation on others, and on ‘high public interest’ developments there are longer consultation periods.⁸²⁷ Policy guidance is issued by several UK Government departments attached to these regulations, as well as the Minerals Plan⁸²⁸ and guides officers and decision-makers. As a community activist opined:

⁸¹⁸ Hansard, 12 Sep 2012 : Column 282 Q14. [120398] Mark Menzies (Fylde) (Con)

⁸¹⁹ This is a Petroleum Exploration and Development License, otherwise called a PEDL and is issued by the Department for Business, Energy and Industrial Strategy.

⁸²⁰ By the Minerals Planning Authority, the County Council in a two tier council area, or the Unitary Council.

⁸²¹ These Environmental Permits cover waste and emissions controls, much of which is derived from European Directives and are issued by the Environment Agency in England.

⁸²² This approval is carried out by the Health and Safety Executive in the UK.

⁸²³ This notification is sent to the British Geological Society.

⁸²⁴ UK’s Oil and Gas Authority, now the North Sea Transition Authority.

⁸²⁵ Powers to approve land use development can be ‘delegated’ to the responsible officers who are civil servants employed by the authority for certain types of development if the Council has passed an order to that effect.

⁸²⁶ Environment Agency (EA) *Standard rules : environmental permitting* (Guidance, 2014)

⁸²⁷ EA, *Legal operator and competence requirements for environmental permits* (Guidance, Undated)

⁸²⁸ A legal document adopted by the Council’s elected members through a specific process set out in primary and secondary legislation following an examination by an independent Government agency, The Planning Inspectorate for England and Wales.

I think the problem is that the policies that control development don't reflect the evidence...so shale gas policy is in contrast with the evidence...so there is a conflict there in an evidence based process⁸²⁹

This astute interrogation of the inherent logic failure in applying a policy that is not evidence based, while purporting to be an evidence-based decision, strikes a chord across a number of the responses in the data findings. What this means for the outcome of such a process is that context is very important in assessing the extent to which environmental limits could be recognised and addressed in an outcome. National planning policy in England is conspicuous by being a powerful instrument without the public participation safeguards afforded by SEA, or a right to be heard afforded to local plans, or a parliamentary scrutiny process such as that which applies to National Policy Statements (NPS). Another community activist observed that the process of plan-making did not have the same process of testing as is found at public inquiries with cross-examination, remarking that participants in that process were 'able to make certain assertions, and unless the Inspector is very expert, then a lot of those assertions can go unchallenged.'⁸³⁰ The implication of a failure to test or challenge 'assertions' is that these may not be exposed for their flaws or assumptions. These flaws or assumptions may become magnified in the outcome – for example if the amount of waste produced on a site is assumed to be less radioactive than it proves to be in practice, or more is produced than was anticipated, or when vehicle movements are assessed on the basis of the adoption of certain technologies that prove in practice not to be the standard utilised. Regulators, familiar with the REACH Directive, are comfortable with the development of more stringent requirements over time, seeing this as part and parcel of the development of technology and activity. The industry view is that the absence of evidence is part and parcel of exploratory development and therefore part and parcel of how development as a whole needs to proceed – in the knowledge that by its nature it requires this gathering of

⁸²⁹ Transcript 019

⁸³⁰ Transcript 015

information through consented activity.⁸³¹ Whether or not this exploratory activity leads to the breaching of environmental limits is an unknown, and the policy response to that is the precautionary principle, and how that manifests in regulation as discussed by Hawkins.⁸³²

6.2.4 Conflict in relation to the facts

Where the matter for decision has recognised environmental impacts, as with shale gas, conflict arises as the opposition to the development will focus on the environmental (and social and economic) impacts, while the promoters of the development (in this case Government or Industry as broad groups) focus on the economic benefits and seek to minimise the environmental impacts so that they are publicly acceptable. This conflict was recognised in the findings by politicians as a 'judgement call'⁸³³ and by the lay people involved, many of whom cited a lack of trust in the information presented by the industry,⁸³⁴ as a concern that the environmental impacts are being 'underplayed'.⁸³⁵ To an extent this is axiomatic given the promoter will have an interest in the project being approved and is likely therefore to be tempted to downplay impacts, but the decision-making process should allow for the testing of evidence.⁸³⁶ This depends on the available resources of the regulatory authorities being available to critically analyse, engage and even bring in other expert evidence to elucidate any areas where conflict over the level of environmental impact emerges in that process. One regulator perspective was that the communities protesting against the development were not engaging in 'a very evidence-based discussion; it tends to be very assertion-based and opinion-based'.⁸³⁷ While the type of knowledge held by the community is likely to be self-acquired, possibly in response to a perceived threat, rather than professionally acquired, and may not have been rigorously critiqued, it is also valid to question the industry evidence. As one of the interviewed professionals pointed out, the

⁸³¹ Transcript 001

⁸³² Joanne Hawkins, 'Fracking: Minding the gaps' (2015) 17 (1) *Environmental Law Review* 8

⁸³³ Transcript 020

⁸³⁴ Transcript 008

⁸³⁵ Transcript 009

⁸³⁶ B Cullingworth and V Nadin, *Town and Country Planning in the UK*, (14th ed. Routledge 2006)

⁸³⁷ Transcript 004

stereotyping of responses – ‘they would say that wouldn’t they’ is used to critically dismiss community or lay responses, while the same stereotyping is not used by regulators to similarly dismiss industry responses.⁸³⁸ Conflict therefore remains in the sphere of knowledge in the shale gas decision-making process, a conflict that could translate into a greater environmental impact of the development as the technocratic approach (that favours industry) wins out over the emotional approach (that favours environmental protection).

In the ‘to and fro’ of evidence that occurs in the decision-making process, one lay person explained that their perception was that ‘documents are produced [by developers] to discredit what I would consider valid community evidence’.⁸³⁹ This may be more than a case of agreeing to disagree. The conflict may be more fundamental in that communities are concerned about impacts on climate change,⁸⁴⁰ wastewater,⁸⁴¹ and local impacts such as seismicity,⁸⁴² noise,⁸⁴³ and transport,⁸⁴⁴ while industry promoters minimise these impacts in their evidence.⁸⁴⁵ There may be a limited prospect of the conflict being resolved as the fundamental principle of the project is contested, even if a decision mediated through the process is arrived at. Shale gas remains a source of emissions on the face of it, and its impacts can only be minimised rather than removed entirely.

Establishing the ‘facts’ in this example is contested. It can also be seen that the conflict over the establishment of ‘facts’ derives in part from the different perceptions of the environmental outcomes and impacts of the development decision-making process, and therefore undermines the achievement of objectively sustainable solutions.

⁸³⁸ Transcript 007

⁸³⁹ Transcript 022

⁸⁴⁰ Ruth Hayhurst, ‘More criticism of council advice on Preston New Road fracking plans’ (*Drillordrop*, 28 June 2015)

</drillordrop.com/2015/06/28/more-criticism-of-council-advice-on-preston-new-road-fracking-plans/> Last accessed May 2020

⁸⁴¹ Lancashire County Council (LCC), *Annex 2: Summary of Representations to LCC/2014/0096 Preston New Road, Little Plumpton, Fylde* (LCC, 2015); M C O’Donnell and S M V Gilfillan and K Edmann and C I McDermotta, ‘Wastewater from hydraulic fracturing in the UK: assessing the viability and cost of management’ (2018) 4 *Environment Science: Water Resource Technology* 325

⁸⁴² Ruth Hayhurst, ‘Lancashire tremors push fracking opposition to record high’ (*Drillordrop*, 7 November 2019)

<https://drillordrop.com/2019/11/07/lancashire-tremors-push-fracking-opposition-to-record-high/> last accessed May 2020

⁸⁴³ Transcript 015

⁸⁴⁴ Lancashire County Council, Development Control Committee, *Minutes of the Meeting held on 23, 24, 25 and 29 June 2015 at 10.00 am in Council Chamber, County Hall, Preston* (LCC, 2015)

⁸⁴⁵ UK Onshore Oil and Gas, *Developing shale gas and maintaining the beauty of the British countryside* (2017), UKOOG.

6.2.5 The origin and sifting of facts

The source of the information, the evidence, in the decision-making process, can be said to lend some shape to the way in which it manifests and is treated.⁸⁴⁶ Across the research findings, there was consistent awareness that most of the evidence came from the developer.⁸⁴⁷ Whilst applicants for fossil fuel exploration or exploitation projects are visibly submitting information in the documentation that '*touch on all the elements of sustainability including environmental sustainability*,'⁸⁴⁸ as acknowledged by a regulator, the influence or impact of this origination was not specifically interrogated by the regulator in the data findings of this research. This is not to say that this origination of 'facts' is not in environmental decision-making processes questioned by regulators, but it was not touched upon in these findings. The depth and breadth of expertise available in a process does have an impact on how that evidence is treated, and the 'author' of such expertise is also influential.⁸⁴⁹

In the planning process in England, this is because the evidence is submitted by the applicant for development as part of the Environmental Statement, if EIA applies, and if not, in the Planning Statement and any other information requested by the planning authority. For the environmental permits, these all tend to be even more technocratic, with some permits not even requiring a public consultation,⁸⁵⁰ and therefore solely based on information from the applicant combined with the 'in-house' sources of information or expertise of the regulator. This is not to say that there is not an understanding or awareness of possible bias given the origin of the information, but it seemed to be a pragmatic approach from the regulator perspective, and one that is in the grain of the regulatory framework, which places a responsibility on the applicant to produce the information.

⁸⁴⁶ E J Rykiel et al, 'Science and Decision-making' in R Costanza and S E Jorgensen (eds) *Understanding and solving environmental problems in the 21st century: Toward a new, integrated "Hard Problem Science"* (Elsevier 2002) p153

⁸⁴⁷ Transcript 022

⁸⁴⁸ Transcript 002

⁸⁴⁹ S Owens, 'Experts and the Environment—The UK Royal Commission on Environmental Pollution 1970—2011' (2012) 24 (1) *Journal of Environmental Law* 1

⁸⁵⁰ Environment Agency, *Standard Rules for the Environmental Permitting Regulations – Consultation No. 11 Summary of consultation responses February 2016* (Consultation response, 2016)

Given that the regulation, most demonstrably in REACH (chemicals regulation) is also informed by the industry,⁸⁵¹ as the best available techniques are themselves based largely on industry information,⁸⁵² this could be considered an internally reinforcing system. Community perspectives generally treat information coming from the developer with caution, considering the information as weighted towards economic benefits. The NGO perspective was that regulators put more weight on economic benefits rather than environmental and social impacts,⁸⁵³ emphasised by the regulators growth duty.⁸⁵⁴ Regulators themselves were aware of the tilt within the system towards the developer. In the sphere of extraction health and safety, this was presented as a pragmatic approach as it is commercial companies that explore and exploit resources of fossil fuels and consequently possess the information associated with those activities. A number of community and lay perspectives commented on the 'inequality of arms' where it was simply not possible for them to provide the same type of information as the developer due to time, resources and expertise.⁸⁵⁵ One community activist noted that it 'comes back to who has the money',⁸⁵⁶ a charge that exposes the sense that increased access to financial means is a contributing factor to this inequality. Inevitably these different sorts of information are then treated differently within the process.

Sifting the evidence occurs both in the overall context of the decision-making process and inside it. A community perspective expressed the view that 'Government has chosen to look at one type of evidence'.⁸⁵⁷ The failure of the UK Government to consult on its policy for shale gas extraction originally meant an opaque policy-making process, where it was unclear what evidence had been brought to bear. Many community perspectives in the research expressed concern at the equation of shale gas extraction with sustainability, sometimes relying on the evidence of polluting impacts from extensive extraction in the USA to question

⁸⁵¹ EEA, *EU Best Available Techniques reference documents (BREFs)* (Undated)

⁸⁵² Transcript 003

⁸⁵³ Transcript 019

⁸⁵⁴ Deregulation Act 2015 s108

⁸⁵⁵ Transcript 002

⁸⁵⁶ Transcript 016

⁸⁵⁷ Transcript 014

this equation, and broader questioning around the issue of climate change.⁸⁵⁸ One perspective pointed out that ‘the policies that control development don’t reflect the evidence’,⁸⁵⁹ so what happens is that, when that evidence is then part of the later decision-making process, either the evidence is disregarded or it is deemed out of the policy frame. An example of this is the issue of climate changing emissions, on which the most obvious candidate for regulatory scrutiny, the land use planning system, is not allowed in practice to control it.⁸⁶⁰ As one professional pointed out, for the decision-makers, ‘the extent to which they can square that circle with the scientific evidence against the policy background is a question’.⁸⁶¹ This also goes to the question of what is the truth or the reality in this process as discussed earlier.

6.2.6 The development of lacunae in relation to facts

New developments and technologies inevitably bring a level of risk given their unknown impacts. This could be termed a knowledge lacuna. Industry perspectives on this were in favour of exploring for gas in order to acquire the necessary information.⁸⁶² Community perspectives tended to be more concerned at the experimental nature of exploration in terms of the lack of evidence or information available before activities commenced. Concern extended to the ability of the regulators to deal with new technologies without the information that would be available with established and well-understood activities, and the extent to which a precautionary approach is applied.⁸⁶³ Regulator perspectives on this emphasised their approach to be restrictive initially so as to minimise possible impacts.^{864 865}

Lacuna can emerge in these conditions because the research is not conducted on an unbiased basis (i.e. there is a commercial interest), and that the way regulation is developed

⁸⁵⁸ Transcript 005

⁸⁵⁹ Transcript 019

⁸⁶⁰ Department for Communities and Local Government (DCLG), *Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Eelswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016)*, (Correspondence, 6 October 2016)

⁸⁶¹ Transcript 002

⁸⁶² Transcript 001

⁸⁶³ Joanne Hawkins, ‘Fracking: Minding the gaps’ (2015) 17 (1) *Environmental Law Review* 8.

⁸⁶⁴ Transcript 004

⁸⁶⁵ Transcript 003

is in close relationship with the regulated industry, which may mean a lack of other perspectives. The other lacuna that arose during the process was the absence of certain types of information in parts of the process – for examples the lack of chemicals information in the planning process.⁸⁶⁶ NGOs in their objections to planning applications noted the lack of EIAs in the early decisions on shale gas in England and Wales, and Broderick also commented on the gap around environmental information because of the discretionary nature of certain size developments.⁸⁶⁷ Kotsakis notes further gaps including in well examination that is focussed on health and safety rather than environmental impacts and risks around the injection of fracturing fluid considering this to point towards ‘a business-friendly regulatory environment bewitched by the shale gas revolution’.⁸⁶⁸ Chemical safety reports for those used in shale gas development may also not be fit for purpose, as they have been developed for other uses.⁸⁶⁹

For example in relation to the Cuadrilla planning application at Little Plumpton, Lancashire⁸⁷⁰ for up to four wells, hydraulic fracturing and testing for hydrocarbons, in the officer’s report the following issues were all considered material considerations: air quality; archaeology and cultural heritage; greenhouse gas emissions (climate change); community and socio economics; ecology; hydrogeology and ground gas; induced seismicity; land use; landscape and visual amenity; lighting; noise; resources and waste; transport; water resources and public health.⁸⁷¹ What was not considered a material consideration was impact on house

⁸⁶⁶ Transcript 019

⁸⁶⁷ J Broderick et al., *Shale Gas: An Updated Assessment of Environmental and Climate Change Impacts* (Tyndall Centre 2011) pp118–119

⁸⁶⁸ A Kotsakis, ‘The Regulation of the Technical, Environmental and Health Aspects of Current Exploratory Shale Gas Extraction in the United Kingdom: Initial Lessons for the Future of European Union Energy Policy’ (2012) 21 *RECIEL* 3

⁸⁶⁹ J Broderick et al., *Shale Gas: An Updated Assessment of Environmental and Climate Change Impacts* (Tyndall Centre 2011) pp118–119

⁸⁷⁰ Cuadrilla Bowland Ltd, *Construction and operation of a site for drilling up to four exploration wells, hydraulic fracturing of the wells, testing for hydrocarbons, abandonment of the wells and restoration, including provision of an access road and access onto the highway, security fencing, lighting and other uses ancillary to the exploration activities, including the construction of a pipeline and a connection to the gas grid network and associated infrastructure to land to the north of Preston New road, Little Plumpton* (Lancashire County Council: Application No LCC/2014/0096, 2014)

⁸⁷¹ Lancashire County Council (LCC) *Officer Report for Council Planning Committee Meeting 28 January 2015* (2015)

prices as this is deemed a 'private' interest.⁸⁷² Each of these considerations were dealt with by considering the relevant evidence submitted with the planning application.

A community activist noted that it was difficult to see how local planning authorities, could take account of '*what it means for the country as a whole*,⁸⁷³ in terms of development, and this could arguably be perceived as a gap in decision making processes. On the other hand, an assessment of national impact could be made at a national level, but the question is whether this would still lead to a gap in the 'facts' in front of a decision-maker on an individual development. The contextual impact – setting precedent, or exploring for a resource that cannot be exploited if limits are applied to emissions, or if its considered in relation to need – are all possible consequences if the principle of the development is not considered holistically.

The second matter that could be a lacunae, is linked to the unfamiliar and novel nature of a technology, that is also utilised underground. This was picked up by a number of community activists concerned about the unknowns, and 'no answers' to some of their concerns, or what is perceived as 'no evidence' in some areas such as waste, health impacts and groundwater pollution.⁸⁷⁴ The 'balance' of information in front of decision makers was a matter for concern that was also raised,⁸⁷⁵ and this was noted as a specific issue in relation to the 'system' and how it is 'structured'.⁸⁷⁶ Identification of the structure of the system, as a contributing factor to the development of lacunae by participants in the process, lends further significance to the effect of context boundaries on the outcome. Gaps may be mandated by the system either purposively or inadvertently.

⁸⁷² Ibid, 'It is not possible to quantify what impacts a proposal of this nature would have on either property values or the market, but these are not material planning considerations.' (page 35)

⁸⁷³ Transcript 008

⁸⁷⁴ Transcript 011

⁸⁷⁵ Transcript 002

⁸⁷⁶ Transcript 002

6.2.7 Summary

Themes that emerge from the data that allow for reflection on what is meant by posing the question on 'reality and truth' in the decision-making process on fossil fuel extraction.

The first of these is the theme of 'conflicting information' where information from lay participants, in communities affected by development is contrary or different in some regard to that presented by the industry. The second of these themes is the matter of 'origin of information' where the information is coming from, who is presenting it, and the variation of sources. The third theme is the 'sifting of information' where some information is discarded or ruled out of frame. This can happen where either the policy rules put weight on certain issues and/or guide decision-makers away from other issues. Fourthly, there is the 'lacuna of information', where evidence is simply unavailable, either because it does not exist (where the technology is novel) or because it does not form part of the decision-making process.

On the factual, information basis for the legal decision-making process, in terms of why these facts are important, and how the factual basis influences the outcome, the data findings show that the participants in the process are aware of these issues. There are differing opinions, and some concern over the scientific basis for decisions. Facts that make up the evidence in the process is not uniform, accepted science – rather it is made up of views, opinions, reasonable assumptions, prior experience – an agglomeration of sources that are recognisably influencing the outcome of a decision. What is meant by scientific basis is becoming ever more important with febrile politics and global threats such as climate change and pandemic disease. Unlike the response in 2019 and 2020 to the global pandemic, where 'the science' became the mantra for justifying decisions and budget, climate change impacts have struggled to make 'the science' the driving force behind action. Much legal framework has acknowledged the impacts and sought to measure in some way the impacts, however the Committee on Climate Change do not share a daily or weekly platform with the Prime Minister on what is being done to address the crisis. The immediate and grave

consequences of a rapidly evolving pandemic on a weakened and limited health service with no margin has led to high mortality rates that have shaken UK society to its core.⁸⁷⁷ Climate change may be similarly out of control, but does not have the same influence or merit a similar response yet. The science of climate change could therefore be said to lack the leverage that a global pandemic commands, and this means that environmental law strains after more accepted ‘facts’ on which to base decision-making.

6.3 How process weaves power and responsibility

6.3.1 Introduction

Both power and responsibility are important dynamics to consider in governance, and this was borne out of the data findings in this research. In analysing the boundaries of the context for a decision-making process, where power and responsibility manifests and how it manifests can have an impact on the outcome. Governments hold power, and those acting in the role of government are also powerful. This power is assigned through the legal framework and the procedures required for decisions as discussed in the sections on competences, aims and rights. Responsibility may manifest in different ways, depending on how it is performed and perceived by authorities, stakeholders and participants in the process. For example, in a shale gas development with environmental, social and economic impacts, it may be that while governmental authorities and industry holds power in relation to determining environmental outcomes, it is communities who may ‘take on’ responsibility for those outcomes.

6.3.2 Balance of power

While acknowledging that ‘it is right that local people have a say in these things and that local politicians have a view on it,’⁸⁷⁸ the recognition is that local councillors are ‘very much restricted by national policy.’⁸⁷⁹ The balance of power therefore was broadly understood by

⁸⁷⁷ HM Government, *Analysis of the health, economic and social effects of COVID-19 and the approach to tiering* (2020)

⁸⁷⁸ Transcript 006

⁸⁷⁹ Transcript 020

the research participants to be in favour of the national policy makers. The ‘fight to get heard in initial hearings’ and ‘inspectors expect a two-sided debate,’⁸⁸⁰ was reported by a community activist involved in a local plan making process. This speaks to an experience of disadvantage as well as a perception. As another community activist put it ‘community groups are at the bottom,’⁸⁸¹ but the question is what this balance of power means for the outcome of the decisions.

The local level for making decisions was generally supported across the participants surveyed, despite the differing opinions around the outcomes of decisions. A community activist noted the conflicting views of the process – heavily regulated from an industry perspective – whereas the initial applications for shale gas development were dealt with by officers under delegated powers under a more light touch process.⁸⁸² The question this raises is whether more regulation leads to clearer boundaries for the context of these decisions, and furthermore whether these clearer context boundaries could be important for outcomes that better recognise environmental limits.

The increasing amount of effort required for the process was also recognised by most participants surveyed. The regulators also noted that the ‘rules were really tested’ only once the public interest had sparked and that level of interest was ‘*out of all proportion*’ to what had previously happened. The effort expended was also perceived to be intensifying from a community activist perspective:

If we didn’t fight it then, then fracking would be taking place all over...look at what is happening to our roads, infrastructure, water, air, roads...if you didn’t fight it then it would just be so unfair⁸⁸³

By placing it in the broader context of environmental damage, the community activist’s words show how in their view the prevention of damaging development is a fight, one that intimates

⁸⁸⁰ Transcript 014

⁸⁸¹ Transcript 008

⁸⁸² Transcript 013

⁸⁸³ Transcript 008

their role as a defender. There is energy in the word 'fight' that creates the impression of strong emotion being involved. Impacts are controlled by both local plans and national guidance but objectors have limited means to challenge national guidance, as there is wide discretion afforded to Government Ministers. From the data findings, it seems that regulators tend to look at the integrity of the elements of an application and see overlaps rather than gaps. Community activists tend to see gaps rather than overlaps.

There is also the acknowledgement that there is a power imbalance between national policy level and the local communities:

government policy at the moment is, is in favour of our industry, erm alongside other industries, but when you get down to local decision-making, er, its, its created a very difficult tension, erm, between the views of local communities compared to the views of national government.⁸⁸⁴

On this community activists complained that there had been 'no intention' to consult on Ministerial statements promoting fracking in 2015. A consultation would have given a public a voice, and a consultation in and of itself is an opportunity to influence, which creates a measure of power.

Another community activist commented that:

the balance of views is in favour of development from the start, as a community group or environmental group need to have powerful and overwhelming evidence as to why something shouldn't happen⁸⁸⁵

This speaks for itself in terms of a perception of imbalance in the system, and that both power and balance are concepts that are apparent to a participant, and experienced through the process. There is also an element here that speaks to the nature of the 'reasoning' that is happening within the process, that it is not necessarily happening on a level playing field. It could be speculated this uneven basis could lead to more damaging environmental outcomes.

⁸⁸⁴ Transcript 001

⁸⁸⁵ Transcript 015

A number of community activists commented on the difference in financial support 'we have to raise 50,000 to put up effort against multi-billion pound industry,'⁸⁸⁶ and finances are seen as crucial to the technocratic nature of the process relying on technical expertise: 'the person with the most money wins.'⁸⁸⁷ On the one hand, it is clear that more funding can access more expert information, or even the potential to challenge a decision, and to merely take part in the process as an objector or an applicant. On the other hand, the call for 'more power to be given to communities'⁸⁸⁸ could be construed as broader than financial means, and more in the nature of power, perhaps in the decision-making role, that would then change balance for communities from being supplicants to being actively empowered. Tipping the balance the other way are the policy rules set by Government and the cost of refusal, so for local authorities the balance of power is with developers who can appeal against a refusal and where costs could be allocated to the local authority if they lose at appeal.

The final comment on balance of power came from an observation about the police presence, and how it 'ensured that the protestors obeyed the law, but didn't stop the frackers from failing to adhere to planning conditions.'⁸⁸⁹ The connection between those upholding the law in terms of societal behaviour and implications for public safety, and the activities consented through planning permission is an interesting one, in reflecting on what might be a more broadly held view on the recourse for when things go amiss, and where that behaviour tips off questions around the nature of being 'law-abiding'. What the protestors did comment on was the use of police force to close down protest, in effect using public money to silence concerns held by some members of the public. This is not a focus for this research, but it does have a bearing on the 'balance of power' in terms of how the public are empowered or disempowered by both process and by state authorities. If the public are protesting to protect the environment and to voice social concerns about environmental limits, then if the balance

⁸⁸⁶ Transcript 009

⁸⁸⁷ Transcript 010

⁸⁸⁸ Transcript 011

⁸⁸⁹ Transcript 017

of power is tipped away from the ability to voice this protest, there is a question as to whether this leads to poorer and spatially unjust environmental outcomes.⁸⁹⁰

6.3.3 How 'responsibility' manifests

Members of the community who had in common proximity to a shale gas development and their involvement with the regulatory framework were interviewed in a various different geographical areas. Most experienced regulators voiced concerns around trust and legitimacy. The perspective on industry was fairly distrustful, but this is most likely due to the greater likelihood of public involvement in decision-making processes to object on unwanted development.⁸⁹¹ They care about the big picture issues such as water pollution, climate change, earthquakes, impact on public health, and display emotive, big picture responses to individual developments. One can contrast this with the snapshot of industry and regulatory responses that are very much defined by the rules and by the red line site boundary – the small picture.

There is also the sense of a piecemeal system. Many of the community perspectives were about seeing a shale gas development as a whole in itself where different elements are given permission by different regulators, and yet the principle of the development does not enter into these decisions. Another significant theme was the view of each shale gas development as a part of something much bigger such as that envisaged by industry.⁸⁹²

A not unexpected division between the participants sets the regulators on one side, and laypeople/communities on the other. This is because the perspective of the regulators is that their job, their role, is to implement the regulations and the policy. They also have the view that they are doing the best they can, and there isn't much questioning (critical analysis) of

⁸⁹⁰ N P Simpson and C Basta, 'Sufficiently capable for effective participation in environmental impact assessment?' (2018) 70 *Environmental Impact Assessment Review* 57

⁸⁹¹ John Sturzaker, 'Can Community Empowerment Reduce Opposition to Housing? Evidence from Rural England' (2011) 26 (5) *Planning Practice & Research* 555; G Ellis, 'Discourses of objection: Towards an understanding of third-party rights in planning' (2004) 36 (9) *Environment and planning* 1549

⁸⁹² P Whitelaw and C N Uguna and L A Stevens and W Meredith and C E Snape and C H Vane and V Moss-Hayes and A Carr, 'Shale gas reserve evaluation by laboratory pyrolysis and gas holding capacity consistent with field data' (2019) 10 *Nature Communications* 3659; Institute of Directors, *Getting Shale Gas Working – Infrastructure for Business 2013 #6* (IOD 2013)

the construct of the regulation. Laypeople see the outcomes and the process differently. They need to expend a great deal of effort to get involved, and have to teach themselves about the issues, self-study and self-educate from a position that starts as an emotional, broad-brush response, and then when they get into the process, they find that arbitrary (in their view) rules apply, such as what matters, what counts, and what is more important. They then see the outcomes as largely negative – the development is approved, and the conditions set on the development are regularly amended to make it easier for the development to operate. This is seen as ‘practical’ and ‘reasonable’ from a regulator’s point of view (and from industry); whereas communities see this as undermining further the protection of environmental, social and economic outcomes.

Regulators are responsible for consenting and permitting development, but do not in this case seem to perceive themselves as responsible for the big picture issues such as climate change. Communities on the other hand do not have the responsibility to refuse or consent in legal terms but do communicate a strong sense of responsibility about the wellbeing of society and the need to tackle climate change. Industry was difficult to draw out on sustainability issues – tending to avoid the issue and to emphasise the robustness of the decision-making process and the regulatory framework.

For the regulators administering the legal frameworks for unconventional fossil fuels, there is a clear acceptance of the system as it is. Their role as perceived by themselves in this instance is to concern themselves with the law and policy as it is before them that pertains to their role and to be responsible for implementing that to the best of their ability. Regulators in this version are there to act for and within the legal framework, to uphold that structure in the individual cases before them. While in any occurrence the individuals who are in the role of the regulator as officers may have beliefs and principles regarding to the developments before them in the process, there is an artificial construction of the legal and policy framework around the decisions which is consciously used a means of excluding personal

concerns (to a lesser or greater extent) from what could be termed a professional decision. This position differentiates the regulator's view from the community view, who are much more likely to express their personal values, beliefs and principles in relation to the development.

It is also a largely technocratic approach to shale gas development that is encouraged by the legal framework. This is not merely in the sense of the technology involved in the decision, but in the way that the issues, during the course of the decision-making process, are dealt with and procedures followed. The technocratic approach focussing on the technical expertise seems to have the effect of excluding some of the more emotional, human, visceral responses to the development, which may also have relevance in terms of wider societal, environmental or economic concerns, but are crowded out by technical expertise. The segmentation of issues in planning and permitting systems makes it difficult for any participant to raise big picture cumulative issues. Locally based planning decision processes struggle to accommodate, report and refer to global impacts in a way that is meaningful in the outcome. Community activists in the planning system find it hard to understand why objections based on global concerns seem to lack traction.

In commenting on public responses a regulatory representative commented: 'it tends not to be a, a very evidence-based discussion, it tends to be very assertion-based and opinion based,⁸⁹³ however this may be rather too blunt characterisation of lay public input. Even if these responses are assertions and opinions, the difference is the level of knowledge that is assumed to lie behind such assertions and opinions in contrast to those offered by experts.

6.3.4 Democratic accountability

As described in Chapter 2 concerning regulatory controls, there are two clear points where democratic accountability is widely visible. First, at local council level for making the decision whether or not to consent a shale gas development, and secondly in relation to the Secretary

⁸⁹³ Transcript 004

of State in the event of a call-in. There is an issue as to whether public participation and democratic accountability operate in relation to the national level in-principle approval of certain types of development via the NPPF that cannot then be questioned on individual applications, and this has implications that have been discussed elsewhere in relation to evidence and information (the content boundaries).

In the data findings there was some interesting commentary on how political the decisions were 'quite a big influence on members', as these local elected politicians were faced with a 'barrage of objections.'⁸⁹⁴ As Grant has argued 'planning occurs within a web of social, political and economic relations between people,' it is a 'drama' and planning is the 'play'.⁸⁹⁵ Motivations for people to become involved are 'complex and varied', and on top of that, democracy is both promoted and hindered by planning disputes.⁸⁹⁶

The connection between the election of councillors and the pressure that their constituents and public opinion have on their actions is a well-researched topic in political studies. In highly contentious developments, they are by nature observed in a political light as matters for public debate. That accountability is an axiomatic consequence of the democratic nature of these roles as elected members, but the extent to which that accountability operates can be dependent on matters such as political party dominance at council level, turnover, and voting practices. In environmental protection terms, it is this democratic accountability that can lead to environmental limits being recognised in outcomes if consents are refused in large part due to public pressure over the possible impacts. This could be seen across shale gas decisions.

Bottom up 'is good' in the words of one community activist, going on to comment that 'local people know best and know a lot more about their area,'⁸⁹⁷ pointing out the tension between

⁸⁹⁴ Transcript 006

⁸⁹⁵ J Grant, *The Drama of Democracy: Contention and Dispute in Community Planning* (University of Toronto Press 1994)

⁸⁹⁶ *Ibid*, p214

⁸⁹⁷ Transcript 011

the support for local democracy, and that 'more power needs to be given to communities.'⁸⁹⁸

The support for local democracy is tempered by the fact that local democracy is limited to the rules set for decisions which has limited the influence of local communities as discussed in relation to asymmetries in content and 'facts' earlier.

Democracy is also reflected in the perception of one community activist that they are 'being heard at local level but not being heard at national level.'⁸⁹⁹ This could be because of the constituency disconnect, or because of the representative gap, or because of the role of Government which is more broadly accountable to voters and Parliament rather than to constituencies in a general description.

There is also a gap between agencies that do not have direct democratic accountability such as the Environment Agency, the Health and Safety Executive, the Oil and Gas Authority to name a few, as compared to a local council governed by elected members. What this gap means in practice was not a matter that came out in these data findings, but the focus of the participants' commentary on local councils made it clear where community activists considered the most fruitful area for engagement and influence, which could be an indication that the democratic accountability of those institutions lends itself to more community engagement. This would require further exploration and testing in research, specifically to explore whether there is a difference between outcomes or practices due to the structure of different bodies.

6.3.5 Summary

The distribution of power and responsibility in the governance of unconventional fossil fuels is a contributing factor to the failure to recognise environmental limits. Sustainable outcomes may not be guaranteed despite a legal framework that embodies principles of sustainability and duties on climate change or environmental protection.

⁸⁹⁸ Transcript 011

⁸⁹⁹ Transcript 009

Add to this hierarchical issue, the asymmetric distribution of power and responsibility where those concerned with sustainable development (and who therefore take on responsibility) do not possess the power to make changes to outcomes within the legal framework that can capture the cumulative impact of the many decisions that could be made.

Both power and responsibility are important dynamics to consider in governance. In analysing the boundaries of the context for a decision-making process, where power and responsibility lies can have an impact on the outcome. Governments often hold power, and those acting in the role of government are also powerful. Responsibility may manifest in different ways, depending on how it is performed and perceived. For example, in a shale gas development with environmental, social and economic impacts, it may be that while governmental authorities and industry holds power in relation to determining environmental outcomes, it is communities who take on responsibility for those outcomes. This played out in the data findings under examination.

6.4 Procedural and substantive rights and the shaping of process

6.4.1 Introduction

Having examined how the 'context' in this regulatory process has affected the factual or evidential foundation on which decisions are made, and subsequently having considered the operation of power and responsibility, the data findings on rights are now considered.

Procedural rights are key in shaping the context boundaries of the decision-making process. If the process is visualised as a linear process, the opportunities for public consultation or the right to be heard can be imagined as areas where a burst of information changes the boundary of the decision, expanding it and pulling it in new directions. While substantive rights have the potential to continue the process, by creating a new opportunity for public intervention and to radically create an extension to the context boundary, these are largely absent in the UK corpus, apart from where EIA and SEA regulation may provide more substantive hooks, and therefore there is only conjecture based on practice in other countries

as to what this might mean for the context boundary. In brief the data findings explore how procedural rights have been used to shape this boundary, and whether there is any emerging understanding of substantive rights and what this could denote.

6.4.2 Public participation

Public participation and democratic accountability go the heart of good governance. The data findings expose some fault lines in the context boundary. One community activist commented that the process 'seems to be moulded more to the applicant than anyone who wishes to inform themselves and oppose the applicant.'⁹⁰⁰ This is part of much of the commentary in the data that described barriers to involvement including opportunities for intervention, time for intervening, the rules around intervention and how that circumscribed the intervention, and the level of resources that could oil the wheels of 'public' interventions.

In terms of effectiveness as to what intervening and getting involved could achieve, one community activist noted that the process is 'not effective in achieving sustainable development, but it is effective in allowing voice to be heard.'⁹⁰¹ This view was further strengthened by a critique of the UK Government who were perceived as characterising the planning process as unfit, whereas the community activist noted that they 'would rather spend all this time doing and having involvement in it, than not having a say.'⁹⁰² In general this is borne out by all of the community activists who are using their rights to be involved, as evidenced by the written responses and participation in hearings, examinations and inquiries, while at the same time critical of the amount of influence their voice might have: 'The frustrating thing is how effective those objections are because of the presumption in favour of development.'⁹⁰³ This is a comment on the policy rule that creates a 'tilted balance' in decisions. Support for being involved in the 'dialogue itself'⁹⁰⁴ is another important factor in

⁹⁰⁰ Transcript 009

⁹⁰¹ Transcript 008

⁹⁰² Transcript 008

⁹⁰³ Transcript 015

⁹⁰⁴ Transcript 008

an effective framework as this dialogue is key to both gaining a broad range of pertinent input, but also ensuring that the process is not exclusive. Whether or not the process is inclusive is a question for further research on how inclusivity relates to, or influences, outcomes.

The regulatory perspective commented that on ‘any planning application there’s always people who are vehemently against them,’⁹⁰⁵ but this is a perception that only the most engaged and concerned members of the public would get involved, so that the views of these objectors is not necessarily representative of the public view. Though this is a valid observation, whether or not the view of different objectors is representative is not necessarily cogent to the question of whether there is an improved chance of securing recognition of environmental limits in the outcome if it is representative. It may be that interested parties who are engaged in the issues play a significant role in changing the context of the decision by merely raising these issues, whether or not they are a majority view. It is certainly not a measure for the submissions of industry or agencies as to whether those inputs are representative of public opinion, although whether they are representative of broad scientific opinion is a rational assessment to make in the circumstances.

A community activist commented on the lack of dialogue – in terms of a response to input – ‘explain more about why things are the way they are,’⁹⁰⁶ and an industry commentator agreed that explanation by decision makers and agencies would be helpful in the process. This goes to the concept of reasoning as well – that the explanations help to mediate and support a common understanding. Others felt that the process was piecemeal with different people from different perspectives and that these were not necessarily coming together in the process, which was undermining the process itself.

⁹⁰⁵ Transcript 006

⁹⁰⁶ Transcript 008

The opportunity to challenge decisions was supported by community activists, planning professional and lawyers, with a common belief that this public right was important to keep the process respected, and that it went some way to redress the uneven nature of rights,⁹⁰⁷ as there is no third party right of appeal on decisions to consent development in England and Wales. Developers have a right to appeal the refusal of consent, but this has no mirrored public right. Judicial review was perceived to be generally lacking as far as the field data could elicit, in that the rules do not allow for the merits of the case to be examined, and the general trend is for a rather narrow interpretation rather than a more purposive interpretation of the germane procedures. In a view expressed by one commentator from an industry perspective there was little support for judicial review as having ‘added’ to the decision-making process, rather pointing out that the majority of challenges had failed to date. A community activist in contrast pointed out an example of how a challenge had resulted in beneficial (to activists concerned about the environmental impacts of shale gas development) policy changes at national level.

Many of the issues identified with public participation commented on the amount of information, the lack of online accessibility, and the level of awareness within communities of plans or applications.⁹⁰⁸ This is relevant to the outcome of the process – if public participation is cumbersome or ineffectual from the point of view of participants, then how does this impact the outcome of such decisions? Many activists commented on ‘representative involvement on behalf of others: ‘not just doing it for your community, but for all the other communities...backing up behind you.’⁹⁰⁹ This perception of acting for others or on behalf of those silent or not willing or interested enough to be engaged but perhaps affected is a different take on the point about whether or not the view is representative.

⁹⁰⁷ Transcript 007

⁹⁰⁸ Transcript 019

⁹⁰⁹ Transcript 008

6.4.2 Right to a healthy environment

As noted before, there is no explicit substantive right to a healthy environment in the UK corpus. In terms of the data findings, a community activist commented on the perceived erosion of rights and another commented on the inequality between developers' rights and public rights in terms of appeal. The absence of rights was perceived to have implications for environmental protection, as that is what the community activists were engaged in – protection of their local environment, and the global environment, as across the board climate change was cited as an issue.

As one community activist put it: 'you want to feel that you have some control over your own future...where you live how you live...feels like human rights...our basic human rights to live our lives and have access to clean air, clean water'⁹¹⁰ in relation to how rights might be one way of defining an individual's relationship to the place in which they live in a fundamental way. Another community activist agreed that a legal principle was need that gave 'proper protection to the environment and to put that head of simple goals of development.'⁹¹¹ What emerges here is a number of viewpoints that related to how the decisions on shale gas development brought up wider issues around rights and environmental protection and questioned the status quo, implying that the current situation does not convey that sense of control or influence or recognition of environmental limits that were of importance.

Further examination of the role and possible impacts of a right to a healthy environment such as that found for example in the South African Constitution (discussed in Chapter 4) is necessary to research specifically. These data findings demonstrate that responses reflect and are intertwined with the system in front of regulators, industry, professionals, politicians and community activists, and that the interview questions that asked whether or not the system is fit for purpose were hampered by the unfamiliarity of imagining alternative rights or

⁹¹⁰ Transcript 008

⁹¹¹ Transcript 014

duties, or even alternative systems of consent, as this re-imagining is both demanding and uncommon.

6.4.3 Summary

Procedural rights are the basis for much of these data findings. The opportunities to be involved change the context boundaries of decision-making, and changed the 'facts' on which decisions were made. The presence of procedural rights weighed in favour of environmental protection, because those participating generally focussed on bringing in these concerns, and in fact were motivated by these concerns. The right to participate is therefore an essential part of a legal framework that seeks to recognise environmental limits in outcomes, but these data findings elicit that long identified barriers to public participation remain, despite which, in the examination of shale gas decision-making, these public participation rights were crucial in bringing in the concept of limits to the discussion. Substantive environmental rights were largely absent from the data findings as there was no clear indication that these were perceived to be absent across the range of participants in the process, and while there was some commentary in the findings about the link between rights and environment, these were not consistently clearly articulated.

6.5 Conclusion

From these data findings, the contours of the context are revealed in greater detail. The process of decision-making creates a set of contextual boundaries – what is inside the process and what is outside. Here, the contrast between the reality of the lived experience of shale gas decision-making – how the law plays out in the social interactions that occur, how it is shaped by individuals, perceived by those participating or playing a role or actively engaged in using the process to facilitate activities. It is substantiated in terms of how values are brought to bear in the interpretation of policy, evidence is utilised and what evidence, and how this makes up the reality of what is happening on the ground.

The examination of the 'facts' within the process shows what impact the process has on what counts as a 'fact' for the purpose of making the decision. Following discussion around the notion of limits, there is a sense of the intertwining nature of what is 'fact' inside the process, and what is 'fact' outside the process, which analysis showed that this was being prompted by four factors of the notion of limits, the conflict between different facts, the origin and sifting of facts, and the lacunae in facts (absences). Climate change impacts and waste impacts exemplifies these findings, being defined as a certain set of facts within the process and another set of facts outside the process. Inside the process, climate change demonstrated the issue of conflict, where different participants in the process were in conflict over the composition of the facts. The origination of facts and the sifting of facts were also driven by the way the rules of procedure regulated proceedings, putting emphasis on applicant sources in contrast to community sources, and assigning greater weight to some facts over others.

Power and responsibility further exemplify the dynamics of how context boundaries are shaped. Assigning more power to community representatives through the legal framework would change the context boundary, by creating more space within the process, and therefore a greater amount of influence or input into the outcome. Those powerful in the process, the authorities and applicants, are not evidenced in these data findings as having a strong sense of concern with regard to environmental limits. Instead, it seems that community activists have evidenced a strong sense of responsibility for environmental limits. Those with power do not have a correlating sense of responsibility, and those without power have a strong sense of responsibility.

Chapter 7: Conclusion

7.1 Making Limits Matter

7.1.1 Introduction

As the pollution effects of fossil fuels become increasingly widespread, damaging, and visible, societal concern has increased.⁹¹² Media coverage, public protest and international scientific reports warning of the dangers of continuing fossil fuel extraction rise exponentially, and it is no longer a fringe issue to consider the phase out of fossil fuels.⁹¹³ Despite these issues of pollution and impact, instead of turning away from fossil fuels, energy security issues and previous development decisions have locked societies into a reliance on sources such as gas.⁹¹⁴

While new supplies have reformed the energy supply landscape in the US, home of the shale gas boom,⁹¹⁵ leading it to becoming a net coal exporter and reducing its oil imports,⁹¹⁶ the same cannot be said for the UK. Shale gas has effectively stalled in the UK as of 2019 (although recent energy security issues have re-opened the debate somewhat),⁹¹⁷ and the prospect of shale gas extraction did not discernibly arise out of the England's coal phase out policy that was already in train.⁹¹⁸ North Sea gas and oil production continues to decline,⁹¹⁹ and while these sources have shaped the UK's energy infrastructure development for the last fifty years, this is now changing slowly due to the imperative of climate change mitigation requirements, driven by the adoption of increasingly lower carbon budgets by the UK Government.⁹²⁰ New sources of fossil fuels such as the recent Cumbrian coal mine and the

⁹¹² ONS, *Data on public attitudes to the environment and the impact of climate change* (2021)

⁹¹³ G7, *Climate and Environment: Ministers' Communiqué*, London, 21 May 2021

⁹¹⁴ European Parliamentary Research Service (EPRS), *Shale gas and EU Energy Security* (Briefing Note, 2014)

⁹¹⁵ R Yan Chen and Jintao Xu, 'The shale gas boom in the US: Productivity shocks and price responsiveness' (2019) 229 *Journal of Cleaner Production* 399

⁹¹⁶ J Broderick and K Anderson, 'Has US Shale Gas Reduced CO2 Emissions? Examining recent changes in emissions from the US power sector and traded fossil fuels' (Tyndall Centre 2012)

⁹¹⁷ BBC News, 'Ukraine war in maps: Tracking the Russian invasion' (BBC News, 4 July 2022) < [//www.bbc.co.uk/news/world-europe-60506682](https://www.bbc.co.uk/news/world-europe-60506682) > Last accessed July 2022

⁹¹⁸ C Littlecott, 'Briefing Paper: UK Coal Phase Out: The International Context' (E3G 2016)

⁹¹⁹ National Statistics, *Digest of UK Energy Statistics (DUKES)* (2019)

⁹²⁰ National Grid, *Future Energy Scenarios* (2021)

Cambo oil field⁹²¹ are currently under scrutiny and delay, as decisions on extraction are being more closely connected to climate change emissions reduction commitments.

Rising electricity demand can be observed as the UK and the EU respond to more stringent targets⁹²² to reduce greenhouse gas emissions. Zero carbon targets, even with the issues of negative emissions⁹²³ and the prospect of carbon capture and storage,⁹²⁴ are largely accepted to mean a majority reduction in the extraction and use of fossil fuels. These targets have also driven debate about lower emission fossil fuels, for example the emissions difference in between coal, conventional gas, and unconventional gas. There is considerable research on the climate change impacts of 'fracking', the extraction of shale gas, given its widespread deployment as a technology and the economic impact it has had in the US.⁹²⁵

In this context, the key question was asked by this research:

To what extent are environmental limits recognised in decision-making on hydrocarbon resource extraction?

It is established that the climate change impacts caused by fossil fuels are recognised in discourse, but not yet reflected coherently in the law. Currently it could be characterised as largely focussed on mitigating limited climate changing emissions, if at all, and in any case, there remain gaps in the framework that give rise to the issue of cumulative impacts as the exploitation emissions impacts are not explicitly within the framework,⁹²⁶ and therefore these accumulated emissions risk the breaching of limits. While Reins⁹²⁷ and Fleming⁹²⁸ discuss the coherence and propose structures for the architecture of energy and environmental law,

⁹²¹ T Sheldrick, *Opponents of Cumbria coal mine welcome Prime Minister's comments on coal* (ITV, 10 August 2021) < [//www.itv.com/news/border/2021-08-10/opponents-of-cumbria-coal-mine-welcome-prime-ministers-comments-on-coal](http://www.itv.com/news/border/2021-08-10/opponents-of-cumbria-coal-mine-welcome-prime-ministers-comments-on-coal) > last accessed March 2022; BBC, *Nicola Sturgeon: Cambo oil field should not get green light* (BBC, 16 November 2021) < [//www.bbc.com/news/uk-scotland-scotland-politics-59312510](http://www.bbc.com/news/uk-scotland-scotland-politics-59312510) > last accessed March 2022

⁹²² Climate Change Act 2008, amended in 2019 to increase the target to 100% reduction by 2050

⁹²³ K Anderson and G Peters, 'The trouble with negative emissions: Reliance on negative-emission concepts locks in humankind's carbon addiction' (2016) 354 (6309) *Science* 182

⁹²⁴ R S Haszeldine and S Flude and G Johnson and V Scott, 'Negative emissions technologies and carbon capture and storage to achieve the Paris Agreement commitments' (2018) *Philosophical Transactions of the Royal Society*

⁹²⁵ R G Newell and D Raimi, 'Implications of Shale Gas Development for Climate Change' (2014) 48 (15) *Environmental Science & Technology*

⁹²⁶ Sometimes characterised as Scope 3 emissions.

⁹²⁷ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

⁹²⁸ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

this research has added to this scholarship by uncovering the reliance upon technology within the legal frameworks to achieve stated aims. This technology, carbon capture and storage, is not common or mainstream or widely available, or in many cases, economically viable. Attempts have been made to connect technological requirements to decisions, but this does not materially affect the outcome of increased emissions if the technology is deployed at some unspecified time in the future. It is most exemplified in decisions that rely upon other decisions in other legal jurisdictions that have no legal connection to the extraction decision being made. For example, to extract fossil fuels in this country on the basis that this will preclude fossil fuels being extracted elsewhere. Or that there will be carbon capture and storage deployed at the point where the fuel extracted is inevitably utilised for energy generation. It is self evident that there is no legal connection between the extraction of shale gas for example and the power station in which it might be burnt. Therefore there is currently little mitigation of cumulative climate change emissions in the legal construction of the decision to extract within the current architecture of environmental law.

7.1.2 Research reflections

Through the data findings, using an inductive approach, it was possible to discern different views, and dissatisfaction, with regard to the existing regulatory framework concerning 'sustainable development', and the extent to which environmental limits were respected in outcomes. In examining this data it was possible to group the findings into the areas of *content* and *context* boundaries of decision-making. The *content* and *context* boundaries organise the data findings into the *grist* being fed into the decision-making process, and the *filters* being applied to that decision-making process. This is not the whole story however, as the *content* and *context* boundaries of the decision-making process may both contribute to or detract from the overall type of regulatory framework, characterised as either deterministic or stochastic or exhibiting features of both.

In an addition to the existing legal scholarship, the research suggests the insight that a possible method of characterising the architecture of environmental law can be described through the categorisation into deterministic and stochastic structures. The ‘determined’ legal framework in the sense that the provisions (perimeter values) are set, could be characterised as a deterministic model, where the regulatory framework needs to remain within ‘acceptable limits.’⁹²⁹ The regulatory framework for fossil fuel extraction is however only partly deterministic, as discretionary decision-making forms a large part of the framework, where evidence, judgement and politics mix. This can be characterised as a more stochastic framework, which goes both to the nature of environment as a commons,⁹³⁰ as well as the discretionary nature of the decision. A deterministic legal framework could be construed as one where law and policy push the decision-maker towards a narrower set of decision-possibilities.⁹³¹ Or in the case of a legal ban, such as the one proposed in the Republic of Ireland,⁹³² or Wales’s reluctance to licence hydrocarbon minerals⁹³³ – the legal framework is more solidly deterministic, in that the outcome can be predicted with greater certainty. In terms of analysis, it was possible to explore in greater depth the ‘hierarchical’ form of the environmental regulation under scrutiny.⁹³⁴

In Chapter 4, the described substantive and procedural rights introduce the ‘inherent randomness’⁹³⁵ of public participation in the legal framework. Whether these rights are used or not is not pre-determined by their existence. Nor is the way these rights produce inputs pre-determined. The inputs are dependent on who is exercising them, as well as who is exercising the authority of the decision-maker. Land use planning regulation seems therefore

⁹²⁹ J De Waal and A Muntendam-Bos and J Roest, ‘From checking deterministic predictions to probabilities, scenarios and control loops for regulatory supervision’ (2017) 96 (5) *Netherlands Journal of Geosciences* 17

⁹³⁰ X Cao and G Jiong, ‘The tradeoff of the commons under stochastic use’ (2017) 145 *Journal of Public Economics* 150

⁹³¹ E Nadelmann, ‘Global prohibition regimes: The evolution of norms in international society’ (1990) 44 (4) *International Organization* 479

⁹³² Oireachtas Prohibition of Fossil Fuels (Keep it in the Ground) Bill 2017 [No 136 of 2017]

⁹³³ The Town and Country Planning (Notification) (Unconventional Oil and Gas) (Wales) Direction 2015 (nawm 1)

⁹³⁴ R W W Wurzel and A R Zito and A J Jordan, *Environmental Governance in Europe: A Comparative Analysis of New Environmental Policy Instruments* (Edward Elgar 2013)

⁹³⁵ N W Jager and J Newig and E Challies and E Kochskämper, ‘Pathways to Implementation: Evidence on How Participation in Environmental Governance Impacts on Environmental Outcomes’ (2020) 30 (3) *Journal of Public Administration Research & Theory* 383

by its nature to be more of the stochastic model, as it relies upon balancing policy, making professional and political judgements, considering the evidence, and taking account of public participation inputs. Most of the elements of the decision-making process on land use planning introduce an element of randomness into the outcome through public participation rights and the exercise of discretion and judgement by democratically elected members. Successive governments in England and Wales have sought to cut out this randomness out through assigning weight to policy for example, such as the putting greater emphasis on need, or raising the bar for decisions to be made otherwise, by using terms such as 'significantly outweigh'.⁹³⁶ The review of aims in Chapter 3, and the data findings in Chapter 5 and 6, suggest that there is a constraint to how much the exercise of these rights modify the outcome of the legal framework, which is aimed at determining and securing a preferred outcome.

In the data findings of Chapter 5, the *content* boundary emerges as asymmetrical between authority/industry and those community activists who have taken on responsibility for environmental matters. The first insight is that environmental law should be drawn tighter in relation to aspects of space, level, scope, time, metric, and domain, in order to reduce the gap on how environmental limits matter in the decision-making process.

The second insight is that co-production is not necessarily operating as has been explored in other decision-making processes, and that this is based upon the possibly unique nature of climate change as an issue in decisions. From the research, which would have to be further verified in more studies, there is an indication that despite the accepted science, the forces of policy, politics and power culminate in a failure to "co-produce", and that instead the basis of the decision remains as contested at the end of process as it began.

⁹³⁶ Department for Communities and Local Government (DCLG), *National Planning Policy Framework* (Planning guidance, 2011)

The third insight is the necessity of reducing the conflict between aims, by strengthening the regulatory framework so that aims are clearer and more measurable when it comes to environmental limits. Competences should also be extended to cover the gap pertaining to cumulative impacts. To incorporate 'planetary boundaries' the architecture of environmental law must take on an overarching deterministic structure, while retaining stochastic structures as the main corpus, which contributes to the existing legal scholarship on legal architecture.

In Chapter 6, on *context*, what emerges from the findings is the presence of a series of conflicts in the 'reality' shaped by the process and the 'other reality' outside the boundaries of the process.

From the data findings, a number of insights emerge that add to existing legal scholarship, summarised as follows:

- there is a gap in competences;
- the aims are unequal;
- substantive environmental rights are weak;
- there is an asymmetrical approach to content;
- there is a selective approach to the facts; and
- there is an imbalance of power and responsibility between regulators, industry and the public.

These, collectively, contribute to a failure to recognise cumulative impact since:

- there is no competence for an authority to add up the emissions across all unconventional fossil fuel developments and to compare this to the emissions space;
- there is no policy or legislative definition or requirement to recognise environmental limits;
- there is no specific right for an individual to bring redress concerning a failure to limit emissions and therefore climate change;
- the content boundaries are restrained leading to matters not being dealt with;
- the context boundaries confine and disempower community input;
- power is not applied to take responsibility for recognising environmental limits.

Environmental law, as observed in this regulatory framework, is failing to recognise planetary limits in part, but not exclusively or exhaustively, symptomatic of a wider malaise caused by the prioritisation of economic growth. Notwithstanding the introduction of new environmental

laws in England and Wales,⁹³⁷ there are still outstanding issues in relation to causality and duties that constrain the scope of environmental law in recognising limits in relation to fossil fuel extraction. The Climate Change Act 2008 can be considered as a tightening limit with its targets and budgetary mechanism. The cumulative impact of climate change could already be termed significant.⁹³⁸ Through European law the Groundwater Directive could also be characterised as an example of a 'limiting' environmental law.⁹³⁹ However, the regulatory framework scrutinised here does not have a clear set of limits at every level that can bite upon the issue of cumulative impact. Both the question about whether there are environmental limits, and needing environmental limits to be recognised in law, so that self-same law does not fail to protect the environment, is at the heart of this research. Combining these insights together, it becomes apparent that addressing cumulative environmental impacts in order to recognise environmental limits, namely the limits on greenhouse gas emissions, by considering exploitation at point of extraction, and considering consequential and related impacts, is currently a structural gap in the framework.

7.1.2 The effectiveness of regulation

In understanding the operation of law in practice to understand its effectiveness.⁹⁴⁰ By 'effectiveness' what is meant is the degree to which a desired result is achieved.⁹⁴¹ The desired result of the regulation that is the focus of this research, is the extent to which sustainable development incorporating the recognition of environmental limits and therefore environmental protection is achieved.

Law sets the framework of the development decision-making process. In general, policy controlling development mitigates environmental, social and economic impacts – that is its

⁹³⁷ Environment Act 2021; Wellbeing of Future Generations (Wales) Act 2015

⁹³⁸ C H Eccleston, 'Assessing Cumulative Significance of Greenhouse Gas Emissions: Resolving The Paradox--The Sphinx Solution' (2010) 12 (2) Environmental Practice 105

⁹³⁹ Council Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration [2006] OJ L 372/19

⁹⁴⁰ D Nelken, 'Law in action or living law? Back to the beginning in sociology of law' (1984) 4 (2) Legal Studies 157

⁹⁴¹ L Squintani, 'Addressing the (Lack of) Effectiveness of Environmental Law and the Gap between Law in the Books and Law in Action' (2020) 17 (2) Journal for European Environmental & Planning Law 133

stated purpose.⁹⁴² Sir John Harman suggested that the aim of environmental regulation in producing measurable improvements in the environment should be critically examined in the 21st century.⁹⁴³ Harman asks whether there too much regulation and too little focus on the outcome.⁹⁴⁴ Extant statistical observed data that is publicly available shows that there have not been improvements in environmental outcomes in general,⁹⁴⁵ and this premise is adopted as an assumption at the outset of the research in Chapter 1. Some of the outcomes, the decisions made under the regulatory framework scrutinised here, may not yet have actualised in the real world due to the timeframes involved. As Harman posits, the outcome is crucial to assessing the effectiveness of the regulation.⁹⁴⁶ If the outcomes are not securing environmental protection, then this could be a reflection upon the legal framework itself. It can already be inferred from the decision notices issued in the regulatory framework that aspects of environmental protection are absent.

Identifying cause and effect through the operation of the legal framework, resulting in a decision document and subsequent activities, allows for a connection to be traced. This provides an insight into the effectiveness of the regulatory system under examination from which broader lessons about regulatory effectiveness can be drawn. Faure discusses the evidence on the measure of 'effective instruments',⁹⁴⁷ and reminds researchers that 'design' of the instrument in question is as important an issue to consider as delving into the empirical evidence on environmental impact that the regulation is intended for. Hence this research has sought to consider the way in which the regulatory framework was constructed and the possible impacts of the outcomes in terms of cumulative emissions. Louka's connection between effectiveness and 'success',⁹⁴⁸ considers how national instruments can lend

⁹⁴² W Upton, 'What is the Purpose of Planning Policy? Reflections on the Revised National Planning Policy Framework 2018', (2019) 31 JEL 135

⁹⁴³ J Harman, 'Environmental Regulation in the 21st Century' (2004) 6 (3) Environmental Law Review 141

⁹⁴⁴ Ibid

⁹⁴⁵ European Environment Agency (EEA), *The European environment — state and outlook 2020* (2019)

⁹⁴⁶ J Harman, 'Environmental Regulation in the 21st Century' (2004) 6 (3) Environmental Law Review 141

⁹⁴⁷ M Faure, 'Effectiveness of environmental law: what does the evidence tell us' (2011) 36 William and Mary Environmental Law Policy Review 293

⁹⁴⁸ E Louka, 'International Environment Law : Fairness, Effectiveness and World Order' (2007) 31 (4) Natural Resources Forum 324

themselves internationally, a notion that is apposite when it comes to the global issue of climate change. Likewise, the application of international agreements such as the Paris Agreement, and how they are formulated in national instruments has also been brought in to decision making on the extraction of fossil fuels by community activists.

Stokes has shown how the Government shifts the regulatory framework through 'domain and dexterity' to achieve their stated preference for the extraction of unconventional fossil fuels through hydraulic fracturing.⁹⁴⁹ This is pertinent as it indicates how a preferred outcome was promoted, utilising a deterministic approach, based on a 'neo-liberal' stance.⁹⁵⁰ A deterministic approach could also be based upon a more 'command and control' approach, such as a ban on extraction. While these could be characterised as more effective in terms of achieving a stated outcome, it could also be less effective if measured in terms of environmental protection. Permissive regimes, and even the 'Energy Trias' as suggested by Fleming,⁹⁵¹ may imply more cumulative impact, given that the quantum of development that may come through the system is unknown under a permissive regulatory framework. This unknown quantum causes uncertainties in terms of impact assessment, as the quantum of environmental impact is in turn unknown. Stochastic, or discretionary decision-making, may be both more effective in terms of environmental protection, because of the greater element of democracy in the decision-making process, or less effective as decisions are less certain. When environmentally damaging developments are regulated by environmental law, the extent to which environmental law can be effective is always tempered by the relevant corpus of law, as well as the construction, implementation and enforcement of that law.⁹⁵² In identifying the effectiveness of environmental law, the extent to which conflicting aims exist

⁹⁴⁹ E Stokes, 'Regulatory Domain and Regulatory Dexterity: Critiquing the UK Governance of 'Fracking'' (2016) 79 *Modern Law Review* 961

⁹⁵⁰ P Allmendinger, *Neoliberal spatial governance* (Routledge 2016); T Marshall, *The Politics and Ideology of Planning* (Policy Press 2020)

⁹⁵¹ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

⁹⁵² R. Macrory, *Regulation, Enforcement and Governance in Environmental Law* (2nd edn Hart 2010)

within the corpus of the law leads to impacts on the desired result. This is because an inevitable balancing operation comes into play when aims are conflicting or opposing, such as has been explored in other areas of law.⁹⁵³ The same can be said of the fabric of the competences that the relevant authorities are implementing through their functions. If gaps and overlaps arise in this competency fabric, there is the potential for the law to become ineffective.⁹⁵⁴ This is not because of a balancing operation, but because of a lack of responsibility, oversight, and authority.⁹⁵⁵ The competence simply is not part of the process by not being present. Woven together, these conflicting aims and absent competences undermine the effectiveness of environmental law on fossil fuel extraction.⁹⁵⁶

Substantive and procedural rights shape the outcomes of decision-making in different ways to competences and aims. They also need to be examined from a socio-legal perspective, as they effectively bring to bear an 'in practice' setting for the framework that is even more fluid and possibly unpredictable than the carrying out of competences and aims of the regulatory framework by civil servants in authorities.⁹⁵⁷ Similarly to competences and aims, substantive and procedural rights contribute to the effectiveness of environmental law, but this contribution is made in a different way.

Substantive rights exist only where environmental procedural rights are clearly outlined such as in Environmental Impact Assessment and Environmental Assessment, or where pollution limits are engaged such as air quality,⁹⁵⁸ and therefore the option of remedying deficiencies of the law through the exercise of a substantive right to a healthy environment is not currently an option that has a strong legal basis. Substantive rights could be said to have the potential,

⁹⁵³ M Ferrari, 'Reflexive Governance for Infrastructure Resilience and Sustainability' (2020) 12 Sustainability 10224

⁹⁵⁴ L Krämer (ed) *Enforcement of environmental law* (Edward Elgar 2016); T Madebwe, 'Re-visiting old ideas in order to craft an effective modern international environmental law regulatory framework.' (2015) 17 (2) ELR 100

⁹⁵⁵ G Ashworth, *The role of local government in environmental protection: first line defence* (Longman 1992); O Lomas, 'Predicting the Unpredictable' (2008) 20 (1) Journal of Environmental Law 7

⁹⁵⁶ F McGowan, 'Regulating innovation: European responses to shale gas development' (2014) 23 (1) Environmental Politics 41

⁹⁵⁷ I Lyhne and H Nielsen and S B Aaen, 'What Determines the Substantive Influence of Public Participation? An Investigation of Planners' Views on Conditions for Participatory Practices in Denmark' (2016) 31 (3) Planning Practice & Research 311

⁹⁵⁸ U Taddei, 'A right to clean air in EU law? Using litigation to progress from procedural to substantive environmental rights.' (2016) 18 (1) Environmental Law Review 3

but not the current legal basis to improve the effectiveness of the regulation. Some of the findings point towards community activists' aspiration for these rights.⁹⁵⁹ The potential for substantive environmental rights to strengthen environmental law framework and/or remedy the incoherence of incremental decisions in environmental law is broadly accepted at international level.⁹⁶⁰

The acceptance of the contribution of 'public participation' to better environmental outcomes, lies behind international conventions such as the Aarhus Convention⁹⁶¹ and the Rio Declaration.⁹⁶² There is extensive research on the contribution that public participation makes to enhancing the effectiveness of the law in terms of environmental protection outcomes.⁹⁶³ Participation, as in the exercise of procedural rights, influences the decision-making process – what matters are discussed, what is emphasised or brought into the process. In this way, public participation can assist the decision, and therefore the outcome, making it more robust in terms of environmental protection, and therefore effectiveness.

In discussing the effectiveness of regulation, the key research question implicitly measures effectiveness in relation to the extent to which environmental limits are recognised in decision-making on fossil fuel extraction. A measure of effectiveness relates to both purpose and achievement, and this is the frame in which the findings are discussed further.

7.2 How does the *content* of decision-making augment or diminish the effectiveness of regulation?

Having gathered the data findings into an exploration of the *content* of decision making, in terms of how the boundaries are shaping outcomes in Chapter 4, the threads are pulled together here in order to draw some conclusions about the nature of the weave, and how that

⁹⁵⁹ E Cima, 'The right to a healthy environment: Reconceptualizing human rights in the face of climate change' (2022) 31 (1) RECIEL 38

⁹⁶⁰ UN News, 'The right to a healthy environment: 6 things you need to know' (*UN News*, 15 October 2021) <news.un.org/en/story/2021/10/1103082>; K E Makuch and M R Aczel and S Zaman, 'Do children want environmental rights? Ask the children' (2020) 1 (43) *Electronic Green Journal* 1A

⁹⁶¹ UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (1998)

⁹⁶² United Nations Rio Declaration (1992), Principle 10

⁹⁶³ J Jendroška and M Bar (eds) *Procedural environmental rights : Principle X in theory and practice* (Intersentia 2017)

pertains to the extent of the effectiveness of the regulation. Following the earlier choice to present the data as *content* and *context*, notwithstanding the interwoven nature of the decision-making process under scrutiny, fuzzy edges are acknowledged where they arise.

In the substance of decision-making, the data findings indicate that competences, aims, substantive rights, three of the five legal challenges identified at the outset of this research, had an influence on the substantive matter of the outcome. In addition, the data findings indicate that alongside these legal challenges, two other threads were an important part of the weave. These two threads are the factual basis on which decisions are made, and the asymmetrical aspects of the content in terms of the substance of the matter.

7.2.1 How are competences impacting on the effectiveness of regulation?

Areas of competency connected to the functions of the authorities involved in the regulatory framework for fossil fuel extraction are set out in Chapter 2. Understanding these competences, as in what power to perform a designated function the authorities have, assists with understanding how the *content* of decision-making is shaped.

While nuanced by the aims of the regulatory framework (discussed further in the following section), the data findings indicate that those in the competent authorities were clearly aware of ‘their’ area of competence. Some of these authorities indicated awareness of others’ areas of competence.⁹⁶⁴ Less clear was whether laypeople understood the competences of different authorities carrying out public functions in relation to the regulatory system. The question is then how competences provide a clear framework for action, and whether when competences are unclear or absent, how this influences the effectiveness of environmental regulation.

In regulating fossil fuel extraction, regulatory authorities have competences in the areas of licensing; land use; pollution control; and health and safety. As identified in the regulatory

⁹⁶⁴ Chapter 5

exposition, there is overlap in between competences mainly between the land use competence and the other three main competences of licensing, pollution control and health and safety. The local planning authority is perhaps the most powerful regulator in terms of having the broadest competence and discretionary authority.

The data shows that the lack of clearly defined competences can impact upon the effectiveness of regulation. The most obvious inference of an ill-defined competence is that an area may be excluded from oversight by any competent authority. If the relevant authority does not have sufficient competence over an area, then by default that area may fall outside the boundaries of environmental law. This absent competency creates a vacuum in environmental law because 'no-one' is responsible. In the data findings this is apparent for the following key environmental impacts: the quantum and occurrence of waste production; occurrence of methane leakage; and accumulation of GHGs across all fossil fuel extraction activities.

While the UK has an unwritten constitution and common law structure, similarly in countries with constitutions and legal systems that flow from that, absent competences may be undermining the effectiveness of environmental law.⁹⁶⁵ Absent competences may therefore not be easily ascribed only as a consequence arising from the overall setting for environmental law, constitutional or common law. The data here hints that they arise where science and novel technologies, overtake the competences within the environmental law framework. They may also arise where the political composition undermines or overrides the environmental law framework, reducing the reach of the competences held by different authorities in the regulatory framework.⁹⁶⁶

⁹⁶⁵ E Emeseh, 'Mainstreaming Enforcement for the Victims of Environmental Pollution: Towards Effective Allocation of Legislative Competence under a Federal Constitution.' (2012) 14 (3) *Environmental Law Review* 185

⁹⁶⁶ N Carter, *The Politics of the Environment: Ideas, Activism, Policy* (CUP 2001)

Methane leakage is a real-world outcome⁹⁶⁷ where competences could be considered as absent. It is an uncertain outcome, so the precautionary principle applies. But even if the Environment Agency or Natural Resources Wales could be said to apply the precautionary principle as an 'aim' or consider it as part of their environmental protection competence, these authorities have no specified competence to control methane leakage from fracking activities. Nor do either currently have the resources to carry out this function as a public authority.⁹⁶⁸

The science of climate change in terms of understanding the links between emissions and impacts is demonstrably urgent as the IPCC reports show.⁹⁶⁹ Yet the competences of public authorities in the environmental law framework have not grown or changed to be commensurate at the pace at which the science moves on. Competence over overall climate change emissions is a Departmental responsibility within the UK, with devolved responsibilities to Wales, Scotland and Northern Ireland Governments. The UK Government's advisor, the Committee on Climate Change advises the UK Government on the extent to which its policies will achieve or not the carbon budgets. The Climate Change Act 2008 sets out the legislative framework. The first issue in relation to fossil fuel extraction decision-making is that the area of competence for the regulatory authorities did not specifically include direct responsibility for climate change emissions reduction. The local authority did not view themselves as responsible – it was viewed as a national level responsibility. The question that this research has identified from the data as a gap is 'who has competence over cumulative emissions when individual decisions are being made?'

The functions of the Environment Agency did not include capping or otherwise limiting the extent of greenhouse gas emissions that would occur at the end use of the project. This was

⁹⁶⁷ R Howarth and R Santoro and A Ingraffea, 'Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations' (2011) 106 *Climatic Change* 679

⁹⁶⁸ Environment Agency, *How we'll use the money we have for the people we serve* (15 March 2022)

⁹⁶⁹ IPCC, *Climate Change 2021: The Physical Science Basis*, the Working Group I contribution to the Sixth Assessment Report on 6 August 2021

considered as controlled by a different set of permits issued for the actual power generating station and regulated under European directives. The national departmental and ministerial level do not have specific competences on climate change conferred by legislation. This is one of the failures of the Climate Change Act 2008 as discussed earlier – the limitation of competence to the relevant Minister to a reporting and budget setting function. In contrast the Welsh Ministers requested competence over the licensing arrangements for hydrocarbon minerals, and then went on to issue an effective change to the licensing regime and to national planning policy to draw climate change within the competency of the decision-maker on fossil fuel extraction. While these new competences remain untested, there is a less of a competence gap than exists in England, since the policies have broadened the scope to include national climate change mitigation targets, linking the extraction of fossil fuels with these targets.

The Environment Agency in England and Natural Resources Wales competence extends to regulating the on-site emissions – through the flares, limiting venting, or the expected releases due to surface mining in the case of coal. Separately, oil refineries, coal and gas fired power stations and industrial processes that might use fossil fuels, gain a set of environmental permits that specify technology and limits per site operation. Except at no point does an authority have a competency and function that has the purpose of being able to apply a cap or a limit to a specific site activity based on existing similar activities either nationally or globally. However the practical implications of each of these separate consents and permissions are complex – is it the end use that is regulated more tightly such as under the emissions permits,⁹⁷⁰ and do they add up to a number that is within the carbon budget, or should the actual extraction of the fossil fuels have considered the ‘unburnable carbon’ basis?⁹⁷¹ On the first point, there are two matters that have to be considered. One is whether the emissions permits impose a reasonable limit that respects the relevant environmental

⁹⁷⁰ Commission ‘The Industrial Emissions Directive’ (8 June 2016)

⁹⁷¹ M Jakob and J Hilaire, ‘Unburnable fossil-fuel reserves’ (2015) 517 (7533) *Nature* 150

protection law, in this case the Climate Change Act 2008. The second is whether the decision whether or not to extract is done in the knowledge of what permits exist? The situation currently in England and Wales is that that links are promoted by concerned communities and third sector organisations, such as with regard to Aberthaw coal fired power station and the extraction of coal at Nant y Llesg in Caerphilly, Wales.⁹⁷² But on both of the matters it is no part of the legal or policy framework that the regimes of planning and permitting are sufficiently closely intertwined to afford the opportunity to make these links. With the second point, what matters is the cumulative amount of emissions over that period of time, rather than whether or not there are zero emissions in 2050.⁹⁷³

Permitted development rights privatise a 'public right',⁹⁷⁴ axiomatically limiting the competence of a local planning authority. What was previously within the planning authority's competence is no longer within its gift. The idea of creating permitted development rights around shale gas,⁹⁷⁵ was in order to remove the activity from the competency of the local planning authority. If this had been enacted, extrapolating from that to the numbers of wells that private companies had suggested might be drilled,⁹⁷⁶ could have had real world consequences in terms of environmental pollution that could have undermined the effectiveness of environmental regulation.

As far as this data indicates, it seems that competences held by authorities shape the 'content boundary' to the extent that only matters deemed to be within the various authorities' sphere of competence is inside the boundary of the decision-making process. A conclusion could be drawn that the spheres of competence to make up an effective regulatory system

⁹⁷² Lancashire County Council (LCC), *Officer Report for Council Planning Committee Meeting 28 January 2015*

⁹⁷³ S Fankhauser and S M Smith and M Allen et al, 'The meaning of net zero and how to get it right.' (2022) 12 Nat. Clim. Chang. 15

⁹⁷⁴ G Parker and E Street and M Wargent, 'The rise of the private sector in fragmentary planning in England' (2018) 19 (5) Planning Theory and Practice 734; B Clifford and P Canelas and J Fern and N Livingstone and A Lord and R Dunning, *Research into the quality standard of homes delivered through change of use permitted development rights* (July 2020)

⁹⁷⁵ MHCLG *Government response to the permitted development for shale gas exploration consultation*. (Government response, 2019)

⁹⁷⁶ Institute of Directors, *Getting Shale Gas Working – Infrastructure for Business 2013 #6*, (IOD, 2013)

for protecting the environment should not allow substantive gaps between or within competences to arise.

7.2.2 How are aims impacting on the effectiveness of regulation?

The aims of the legal and policy framework in England and Wales as described in Chapter 3 are numerous and conflicting. Nevertheless, they still describe what is within the ‘content boundary’ and what is without. The relative weight that pertains to an aim prioritises that content over other content and as such is an important consideration when analysing the effectiveness of environmental regulation.

From the data (in the England context), it seems that the participants involved in the decision-making process under scrutiny perceived that the policy aims were in some cases contradictory. This led to an impression from the data that this conflict was impacting the effectiveness of the regulation because it was not possible to achieve all the different aims. In terms of reflecting upon the effectiveness of environmental law, it was not the environmental protection aims that were prioritised in the balance of most of the decisions more generally. The reasoning utilised by decision-makers weighted economic priorities over environmental priorities in the balance. This is not an uncommon result, rather the uncommon result was the discretionary refusal of some applications for hydraulic fracturing that were made by Councillors exercising their discretionary judgement,⁹⁷⁷ and making rather more political decisions.

Findings arising from the data also include the lack of definition used by industry in relation to the sustainability aim. Whether deliberate or not, this muddied the waters around what is meant by sustainability, already an opaque definition in the relevant policy. The industry seemed to ascribe the meaning of sustainability as ‘community’ – as in this was a concept

⁹⁷⁷ See planning decisions cited earlier.

that meant community acceptance rather than a strong-edged definition that could test outcomes against measurable environmental impact.

Sustainability was also connected to risk and the future in the data findings – on the one hand, the basic definition of whether the activity can be continued with acceptable or no risk; and on the other hand, whether it could carry on in the future. From the documentary evidence, the subversion of the meaning of sustainability by policy construction is revealed. The meaning of sustainable development as shared by laypeople as well as environmental regulators, evidenced greater links to the concept of environmental limits.

The economic aim is more strongly worded in national policy and ‘economic growth’ is a duty of public sector regulators in England as described earlier. While ‘a job’ matters to a layperson, there is not that kow-towing to ‘the economy’ that happens at national level in the data findings. ‘The economy’ at national level also seems to equate more and more to the interest of some private companies, rather than to the functioning of the economy as a whole. From a layperson’s perspective, the local environment, and the local economy, particularly in rural areas where shale gas is mainly being developed, is of more importance, than the interests of national companies and the associated industry.

From the data it also seems that community activists are concerned about both now and the future. The ‘big picture’ is referenced in their responses. Community activists also support regulation, so as to secure sustainability, climate change mitigation and pollution prevention aims. Nevertheless, the data shows that communities are frustrated by the aims set out in the legal framework in England in relation to decision making on shale gas, finding them inconsistent and ineffective in protecting the environment, even if they are present in some form.

How these aims are being operationalised with the current observed results also gives some indication of how the aims could be construed differently. Rather than being subject to broad

interpretation and discretion, recognising limits could be more hard-edged. This is not meant in a quantitative sense, but rather to be more ‘externally’ consistent e.g. climate change emissions would always matter and be given weight, as would risk, rather than being diluted by comparison to some big number. This applies to both pollution prevention and the climate change mitigation aims. It is about linking cause and effect and being able to prove clearly that an aim is not being met by the decision. But if there is little perceived impact on the aim, then the aim may still be perceived as having been met. This for example occurs in relation to emissions, where the comparative metric is so large as to render the impact negligible on the aim.

7.2.3 How are substantive rights impacting upon the effectiveness of the regulation?

Substantive rights are largely absent in the environmental framework on fossil fuel extraction in England and Wales. The aspiration towards more substantive environmental rights was a limited lay perspective, not shared by either regulators or the industry. Judicial reviews with an element of climate change demonstrate an ‘interested activist’ desperation in relation to a regulatory system that is ‘not working’ to reduce climate change emissions, on such a scale that the last resort of challenge is being actively taken up. These challenges are not fully realised substantive environmental rights, but they point towards an aspiration toward a substantive right to protect the environment.⁹⁷⁸

The recent case in the Coroner’s court in London in relation to air quality specifically listed as one of the causes of death of a child is ground-breaking.⁹⁷⁹ A right to breathe clean air would be a substantive environmental right that was not available then, and is still not available now. The regulation of air quality including European Directives, policy and legislation, duties held by DEFRA and others has failed to secure clean air so far, although the operation of the

⁹⁷⁸ R (Plan B Earth and others) v Secretary of State for Transport and others [2020] EWCA Civ 214; Plan B Earth v Secretary of State for Transport [2020] EWCA Civ 214 (27 February 2020); R (on the application of Friends of the Earth Ltd and others) (Respondents) v Heathrow Airport Ltd (Appellant) UK SC 2020/0042; R (Clientearth) v SSBEIS [2020] JPL 1438; R (Vince, Monbiot, Good Law Project) v SSBEIS

⁹⁷⁹ P Barlow, Assistant Coroner, *Regulation 28 Report To Prevent Future Deaths* (20 April 2021)

Environment Act 2021 is yet to be felt.⁹⁸⁰ The conclusion that can be drawn is that to some extent the past regulatory framework for air quality has been ineffective – it has not achieved its stated outcome. The Clean Air Acts that so radically changed smog-infested London and cleaned up other cities were effective.⁹⁸¹ But these did not include substantive rights, so it is not necessarily about whether or not substantive rights are afforded, it is about whether the causes of the pollution require substantive rights to generate adequate environmental protection for people.

Where the regulatory framework for the environment is effective, it may be where a deterministic structure is used, outcomes are more certain with regard to the control of certain technologies. Where environmental impacts are more diffuse, and the utilisation of technology is widespread, it may be that substantive environmental rights provide a more effective means of regulation, because it is at the point of outcome that redress needs to be enabled, rather than trying to control the legal framework on a predictive basis.

Absence can speak volumes, and whereas substantive environmental rights in order to be effective need to be enforceable,⁹⁸² it could be speculated that their absence is due to the relative strength such a right may have to curtail or curb the operation of a capitalist market system when it comes to the extraction of fossil fuels. Further research on how substantive rights could operate as part of an effective legal framework for environmental protection could be informed by the aspirations on climate change that these data findings have revealed, including where they are augmented by the most recent developments on climate litigation. The climate and ecological emergency are generating such broad levels of societal concern that the absence of substantive environmental rights becomes a more obvious

⁹⁸⁰ The Air Quality Standards Regulations 2010 No 1001; Environment Act 2021

⁹⁸¹ J W S Longhurst and J H Barnes and T J Chatterton and E T Hayes and W B Williams, 'Progress with air quality management in the 60 years since the UK clean air act, 1956. Lessons, failures, challenges and opportunities' (2016) 11 (4) *International Journal of Sustainable Development and Planning* 491

⁹⁸² L Krämer (ed), *Enforcement of environmental law* (Edward Elgar 2016)

omission in the achievement of environmental protection when existing systems seem to be failing.

7.2.4 How do the asymmetrical aspects of the content impact upon the effectiveness of the regulation?

What the data findings indicate is that there is an asymmetry between the different aspects, and that this leads to fundamentally different outcomes as the regulators and industry possess more control over the outcomes than the community activists and laypeople.

Chapter 5 explores the asymmetrical aspects of the content as it emerges from the data findings. Limiting the boundaries of the imagination has not only be identified with regard to the physical and spatial, but also in terms of what is important – what matters to laypeople, the people affected by proximity to the development, but also within the area of the development (their county, their district, their country). Stakeholders are imagining the development as part of something bigger, a larger story with all sort of implications; whereas the imagination of the regulators is limited to that which is set out in policy and law.

When thinking about the development from a community perspective, there is an acknowledgement of the physical boundary of the site itself – this is broadly understood as ‘where’ the development takes place. Regulators use this physical boundary in a concrete way to administer the regulation for which they are responsible. Offsite activities such as transport to and from the site are also well understood by planners, as highways and transport matters have long been local authority areas of control and concern. But the physical boundary is also unseen as for shale gas, the development activities takes place underground, and therefore partly in the imagination of all those concerned. In another way, imagination is also important because one has to ‘imagine’ the emissions to air such as climate changing emissions as these are unseen. Spatially, the activity takes place within an area that is rich with local detail and interaction – unlike the white map with lines presented as part of the regulatory permit process, there is much more going on that is visible when one is actually in the place. A spatial boundary is also therefore partially imaginary, as some

of the 'space' that is affected by the development is 'global' e.g. the atmosphere, and some local e.g. landscape, watercourses, groundwater, local air emissions. Things that happen 'offsite' are contested – are they within the spatial boundary of the development?

Communities might argue that they are being concerned about - the end use of the shale gas, or where the water is treated. Regulators will argue that they are not, that they are concerned with the spatial and physical boundary of the site itself.

The result of this technical approach is that it limits the matters that are considered, or put it another way, do not fall to be within the responsibility of the regulator such as expressed here:

there's the, planning law is, each site on their own merits, so in terms of cumulative impacts of erm developments, it's difficult to do in terms of...in terms of climate change impacts⁹⁸³

Climate change impacts provide a classic case in point of this limitation of responsibility. In the regulator's perspective, a view expressed it as follows:

what we do is just part of the bigger picture, erm I think it's really for Government to er...look at this and enable, to make decisions in the overall Climate Change Act sort of targets⁹⁸⁴

The red line around the site boundary of the planning application becomes the red line around the imagination of those engaged in the decision-making process when it comes to planetary concerns. Increasing the significance of environmental limits in the decision-making process contributes to the effectiveness of regulation for sustainable development outcomes.

7.3 How does the *context* of decision-making augment or diminish the effectiveness of regulation?

Following the exploration of the *content* of decision making, in terms of how the boundaries are shaping outcomes in Chapter 5 the *context* of decision-making, in terms of how the

⁹⁸³ Transcript 007

⁹⁸⁴ Transcript 016

process is shaping outcomes as presented in Chapter 6 is now examined in relation to the effectiveness or otherwise of the regulation under scrutiny.

7.3.1 How does the distribution of power and responsibility impact the effectiveness of regulation?

Michael Foucault's analysis of law challenged the limitations of understanding law as structures (institutions, states) and 'agents of action'. Gerald Turkel explains that Foucault has developed an analytical approach to the law that looks at its 'internal relations of power and knowledge as well as its relations to other discourses and sources of power'.⁹⁸⁵ He summarises Foucault's conceptualisation of power 'as it is exercised, as multiple and decentralised, and as productive of social structures and knowledge'.⁹⁸⁶ Such a conceptualisation requires thinking about the ways in which law 'combines with power in various locations in ways that expand patterns of social control, knowledge' that places the 'individual as the *locus* of ever greater networks of administrative control'.⁹⁸⁷ Regulatory frameworks within the UK provide a set of rules by which the public can participate in the consenting process around unconventional fossil fuels activity. These frameworks provide a rational context within which the various actors operate as described in Chapter 2

The data findings indicate that the parties to the environmental decision-making process under examination on fossil fuel extraction are not taking part on an 'equal' basis.⁹⁸⁸

Similarly, research has shown that the reflection of 'public input' could be characterised as lacking in similar jurisdictions.⁹⁸⁹ Highly socially and politically contested development challenges existing regulatory contexts and rules.⁹⁹⁰ Public engagement is influential on the law as it is operated, on law-making, on regulatory authorities conduct, and of course on

⁹⁸⁵ G Turkel, 'Michael Foucault: Law, Power and Knowledge' (1990) 17 J.L. & Society 170

⁹⁸⁶ *Ibid*

⁹⁸⁷ *Ibid*

⁹⁸⁸ C Abbot, 'Losing the local? Public participation and legal expertise in planning law.' (2020) 40(2) Legal Studies 269

⁹⁸⁹ S Colville and J Steen and R Gosine, 'Do public review processes reflect public input? A study of hydraulic fracturing reviews in Australia and Canada' (2021) 155 Energy Policy 112303

⁹⁹⁰ J Patterson and K Schulz and J Vervoort and S van der Hel and O Widerberg and C Adler and M Hurlbert and K Anderton and M Sethi and A Barau, 'Exploring the governance and politics of transformations towards sustainability' (2017) 24 Environmental Innovation and Societal Transitions 1

political decision-makers. Challenges come from both within the legal framework and outside it, by those in society exercising Aarhus Convention rights – to information, to participate in environmental decision-making, and to challenge via judicial review.⁹⁹¹ At each level within the legal framework – local and national – societal input changes the power dynamic and influences real-world outcomes.

Power is assigned by the regulatory framework on unconventional fossil fuels – to the decision-makers, the consultees, the developers and the public. These powers are unevenly assigned and exercised within the framework. There is much more power vested in the state (controlling the activity) and the developer (leading the activity), whereas the consultees and public (interested in the activity) have varying degrees of influence over the development. Power also lies outside these structures – in protest and social and political debate – and the threat of this power is most aptly demonstrated by the legal measures initiated to curb it – such as blanket injunctions against demonstrations, and the sentencing of protestors.⁹⁹² Power is therefore exercised in multiple ways at multiple levels and examining this power dynamic is part of examining the extent to which the effectiveness of environmental regulation in achieving environmental protection can be supported. It is axiomatic that the powerful vested interests of private companies may detract from the public interest of environmental regulation and that therefore too much power towards company and private interests in the process will undermine the effectiveness of environmental protection.

Activism has a powerful role in environmental law. It is environmental activism that has changed the nature and scale of shale gas development in England and Wales – rather than the structure of the legal framework. For effective environmental legal frameworks, the

⁹⁹¹ UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (1998)

⁹⁹² W Jackson and H Monk et al., 'Policing the UK's anti-fracking movement : facilitating peaceful protest or facilitating the industry?' (2020) *Peace Human Rights Governance* 349

conclusion could be drawn that activism is an essential part of governance that is able to recognise environmental limits.

7.3.2 How does ‘reality and truth’ impact the effectiveness of regulation?

The foundation on which decisions are made affect the extent to which regulation can be said to achieve its stated objectives. Drawing some conclusions as follows from the data findings on the concepts of reality and truth, the relative importance of knowledge, the treatment and assignment of expertise, and what drives the composition of the factual basis on which decisions are made, uncovers some of the workings behind the extent to which effectiveness could be hindered or promoted.

Knowledge is graded by the agents deployed through this regulatory framework - the officers of the planning authority or statutory agency. Expertise is associated with professionalism – for example the planning inquiry process requires a description of expertise as part of the proofs of evidence submitted by witnesses.⁹⁹³ There may also be differences of opinion in as held by ‘experts’. Expertise is not uniform but dependent on a number of factors and circumstances.⁹⁹⁴ This is a ‘higher order’ of knowledge in comparison to that submitted by the community, as demonstrated by the presentation and consideration of respective evidence in the Inspector’s report and Officer’s report⁹⁹⁵ for the Preston New Road site. Knowledge is also nurtured and enhanced outside the regulatory framework – public knowledge and public opinion has risen in line with public concern, as greater media attention is given to the topic.

Unconventional fossil fuels are an evolving example of a publicly contested emerging innovation that engages what Jasanoff has termed ‘technologies of humility’.⁹⁹⁶ This calls for:

different expert capabilities and different forms of engagement between experts, decision-makers, and the public than were considered needful in the governance structures of high modernity. They require not only the formal mechanisms of

⁹⁹³ Planning Inspectorate (PINS) *Guidance for Rule 6 parties* (Undated)

⁹⁹⁴ H Thorén and N Soinen and N Kotamäki, ‘Scientific models in legal judgements: The relationship between law and environmental science as problem-feeding’ (2021) 124 *Environmental Science & Policy* 478

⁹⁹⁵ Secretary of State for Housing, Communities and Local Government, *Recovered appeals: Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd (refs: 3134386, 3130923, 3134385 and 3130924 - 6 October 2016) Decision Letter and Inspector’s Report on appeals relation to applications for planning permission* (6 October 2016)

⁹⁹⁶ Sheila Jasanoff, ‘Technologies of Humility: Citizen Participation in Governing Science’ (2003) 41 *Minerva* 223

participation but also an intellectual environment in which citizens are encouraged to bring their knowledge and skills to bear on the resolution of common problems.⁹⁹⁷

This is a useful interpretive approach with which to consider the forums and spaces provided by the land-use planning system(s) in the UK – one of the key components of the decision-making framework for unconventional fossil fuels. In these planning systems, public consultation, planning committees and public inquiries provide structures in and around which knowledge is produced and contested by the public, scientists, industry, policy makers and decision makers. Plural viewpoints are brought to bear in these spaces, but these are unequally valued. In building a ‘co-production’ account as championed by Jasanoff in *States of Knowledge*,⁹⁹⁸ questions that arise are: what emerges in the process? What is contested? What is standardized? Are new cultural norms being acquired?

If we take these questions and apply them to a consideration of the extent to which the process of decision-making can extend or detract from the effectiveness of regulation, it could be posited that the knowledge in decision-making is augmented by the process if it is underpinned by public participation. In the data findings, there are numerous instances that can be identified where public participation has brought new matters into the decision-making process – such as climate change, pollution or public health – that are essential when dealing with the unknown or untested impacts of new technologies, or of vested interest and outdated technologies where new evidence is required. In addition, local knowledge is vital to understanding the site-specific impacts of a decision.

Fisher, Scotford and Barritt make a case for the disruptive nature of climate change as an issue where environmental ‘facts’ are the basis of disputes and posit that there is therefore a need for change in legal frameworks, despite their nature being deeply imbued with principles of stability.⁹⁹⁹ As Fisher has pointed out, ‘scientific uncertainty and socio-political

⁹⁹⁷ Ibid, p227

⁹⁹⁸ Sheila Jasanoff (ed), *States of Knowledge* (Routledge 2004)

⁹⁹⁹ E Fisher and E Scotford and E Barritt, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80 (2) MLR 173 at 181

conflict make it difficult to develop a robust factual base for decision-making'.¹⁰⁰⁰ If the basis of decision making is weak rather than robust, then the contested nature of the development will remain, and negative environmental consequences such as have already been noted with regard to climate change emissions will persist.¹⁰⁰¹ For example, the scientific evidence on what is required to secure sufficient climate mitigation with the intention of remaining within the limits set by the Paris Agreement,¹⁰⁰² should theoretically inform the relevant decision-making process. In real world situations, such as the decision on the Highthorn coal mine in Northumbria, the basis for making such decisions with regard to climate change impacts is contested.¹⁰⁰³

Environmental regulation is marked by barriers to achieving the object of environmental protection and recognising limits. The governance gaps identified through the data findings could be contributing to ineffective environmental regulation. These gaps are a perceived deficiency in public participation rights in relation to the development of national policy, in relation to democratic accountability and enforcement, where the more deterministic policy frames apply, the pace at which decision-making is set, and between perspectives.

7.4 How coherent is environmental decision-making?

7.4.1 Introduction

The integrity of the law was posed as a legal challenge at the outset of the research to assist with the analysis of the data findings. In the findings, coherence emerges as a problematic issue for the regulatory framework.¹⁰⁰⁴ Coherence is important in identifying how far regulation can achieve environmental protection objectives in real world outcomes.

Examining how and why coherence and incoherence arises in a mix of a deterministic and a

¹⁰⁰⁰ E Fisher, 'Environmental Law as "Hot" Law' (2013) 25 (34) JEL 350

¹⁰⁰¹ N Luhde-Thompson, 'Changing Decisions on Energy Generating Infrastructure: Can the European Union's New Energy Package Deliver the Radical Transformation Needed?' (2019) 3 OGEL

¹⁰⁰² Adoption of the Paris Agreement under the United Nations Framework Convention on Climate Change, Decision 1/CP.21, entered into force on 4 November 2016.

¹⁰⁰³ Ministry of Housing Communities and Local Government (MHCLG), APP/P2935/V/16/3158266 Town And Country Planning Act 1990 – Section 77 Application Made By HJ Banks & Company Ltd Land At Highthorn, Widdrington, Northumberland NE61 5EE Application Ref: 15/03410/CCMEIA 8 September 2020

¹⁰⁰⁴ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

stochastic decision-making structure of regulation, leads to an understanding that can inform the development of thinking in environmental law.

Howlett and Rayner¹⁰⁰⁵ propose a set of ‘design principles for policy mixes’ and while the example in their research is different, the idea of designing ‘coherence’ into a framework for the regulation of fossil fuels is compelling to build upon, given the existing examination of policy coherence, for example across the EU by Nilsson et al,¹⁰⁰⁶ looking at three levels of objectives, instruments and implementation practices, where they found coherence at higher levels but more conflict at implementation level. In policy coherence on fossil fuel extraction, coherence is not found at the legislative or national policy level (as explored in Chapter 2 and 3), while practice (explored in Chapter 5 in terms of content) seems to embody even more divergence. Kurze and Lenschow¹⁰⁰⁷ argue that a focus on ‘shifting problem definitions’ in the example of the European Union’s policy on energy and climate leads to a positioning of CCS as a central plank in an attempt to secure an integrated approach, but that this is at the expense of ‘coherence’. As Hayward explains, ‘Other relevant questions are whether interpretations in practice are coherent with aims in principle, and whether implementation and enforcement are adequate; these questions invoke criteria –‘coherence’ and ‘adequacy’ – that make implicit reference to basic social values that are politically chosen’.¹⁰⁰⁸ While Hayward was possibly thinking of the need for constitutional environmental provisions, and substantive environmental rights in the UK context, the questions are ones that are relevant to this research inquiry, given similar matters are under scrutiny.

With this in mind, it is reasonable consider coherence as a way of examining how the regulatory framework appears to be constructed (or not) from the law and policy; reflecting

¹⁰⁰⁵ M Howlett and J Rayner, ‘Design Principles for Policy Mixes: Cohesion and Coherence in ‘New Governance Arrangements’, (2007) 26 (4) *Policy and Society* 1

¹⁰⁰⁶ M Nilsson et al, ‘Understanding Policy Coherence: Analytical Framework and Examples of Sector–Environment Policy Interactions in the EU’ (2012) 22 (6) *Environmental Policy & Governance* 395

¹⁰⁰⁷ K Kurze and A Lenschow, ‘Horizontal policy coherence starts with problem definition: Unpacking the EU integrated energy-climate approach’ (2018) 28 (5) *Environmental Policy & Governance* 329

¹⁰⁰⁸ T Hayward T, ‘Constitutional Environmental Rights: A Case for Political Analysis’ (2000) 48 (3) *Political Studies* 558

upon the way Fleming constructed a ‘new trias’¹⁰⁰⁹ and Reins analysed the incoherence of energy and environmental law at EU level.¹⁰¹⁰ The perspectives of those engaged in this decision-making process exemplifies the way the differences in the way the problem is perceived, and how that contributes to incoherence in law and policy.

7.4.2 The coherence of regulation

Coherent is meant in terms of the extent to which the outcomes can be said to ‘cohere as a whole’. Incoherent outcomes are meant in terms of the extent to which the outcomes detract from each other. A coherent outcome can be characterised as an outcome that achieves environmental protection as the object of environmental law – the integrity of the law. An incoherent outcome can be characterised as a failure to an extent to achieve the object of environmental law. As one community activist characterised the issue:

it’s this piecemeal looking at you know five years development as opposed to the whole production, because you know the Courts will say I’ve got, look at this, it’s only for five years, and there’s no, you know, there’s no real evidence about how this has wider impacts.¹⁰¹¹

Cumulative impacts arise from an incoherence in the law – so the structure of the regulatory framework prevents an adequate assessment of the impacts, both because of the asymmetries in the ‘content’ and the conflict between the ‘facts’ and the tension between ‘power’ and ‘responsibility.’

A further query is the extent to which a deterministic or stochastic structure, or combination of both, supports coherence in regulation. As discussed earlier, the law in relation to fossil fuel extraction can be deterministic (e.g. a ban), but land use planning law, which governs permission for the development of hydrocarbon minerals can be characterised as stochastic in England and Wales as it contains provisions to protect individual discretionary judgments, and therefore flexibility in outcomes – decisions are not predicated at the outset.

¹⁰⁰⁹ Ruven Fleming, *Shale gas, the environment and energy security : a new framework for energy regulation* (Edward Elgar 2017)

¹⁰¹⁰ Leonie Reins, *Regulating Shale Gas: The challenge of coherent environmental and energy regulation* (Edward Elgar 2017)

¹⁰¹¹ Transcript 005

The findings suggests that the issue of ‘coherence’ in relation to individual development decisions is what leads to the cumulative environmental impact despite there being environmental legislative provisions specifically concerning the issue of cumulative impacts.¹⁰¹² This is because the legal framework on fossil fuel extraction is structured in such a way that decision-makers can fail to address *content* issues as identified in the data findings, and supported by other research.¹⁰¹³ Nor is the governance, the *context* of the decision-making process, sufficiently robust to counter the dissociation of the decision from the relevant content. The findings indicate that procedural rights struggle to address the cumulative impact of decisions at the ‘moment in time’ of the decision, and that substantive rights are largely absent and therefore do not provide an opportunity to redress the matter either. As Holder concluded, environmental assessment has still failed to materialise as the an ‘impelling means’ of dealing with limits.¹⁰¹⁴

Decisions on fossil fuel extraction have so far failed to add up on a cumulative basis to a ‘sustainable development that recognises environmental limits’ outcome. Each decision has environmental impacts embedded in the activities that are not prevented or mitigated on a cumulative basis. It is ‘death by a thousand cuts’.¹⁰¹⁵ There is no limit to the amount of fossil fuel extraction that can be cumulatively consented one by one. Every time fossil fuel extraction is consented it adds to a climate change and pollution impact. There is no practical and affordable technological solution¹⁰¹⁶ at the point of decision making that removes those impacts for that specific decision. Nor can these decisions be offset by reducing such activities elsewhere by some sort of legal connection. International environmental regulation does not exist that connects decisions in different jurisdictions at the level of project activities

¹⁰¹² A Warnback and T Hilding-Rydevik, ‘Cumulative effects in Swedish EIA practice — difficulties and obstacles’ (2009) 29 (2) *Environmental Impact Assessment Review* 107; J Blakley and J Russell, ‘International progress in cumulative effects assessment: a review of academic literature 2008-2018’ (2022) 65 (2) *Journal of Environmental Planning and Management* 186
¹⁰¹³ T S Kirkfeldt and A M Hansen and P Olesen and L Mortensen and K Hristova and A Welsch, ‘Why cumulative impacts assessments of hydrocarbon activities in the Arctic fail to meet their purpose’ (2016) 17 (3) *Regional Environmental Change* 725
¹⁰¹⁴ Holder, J, *Environmental Assessment: The Regulation of Decision Making* (OUP 2006), Conclusions
¹⁰¹⁵ J T Dales, ‘Death by a thousand cuts : incorporating cumulative effects in Australia’s Environment Protection and Biodiversity Conservation Act’ (2011) 20 (1) *Pacific Rim Law & Policy Journal* 149
¹⁰¹⁶ While CCS exists and there are a few pilot projects, it is not a widely available technology.

such as extraction of coal, gas or oil. Attempts to connect such decisions to the Paris Agreement have failed because of the indirect, diffuse force of such international treaties.¹⁰¹⁷

Cumulative impact is a problem that is well understood in terms of the environment. Both the SEA¹⁰¹⁸ and EIA Directives¹⁰¹⁹ include cumulative impact for environmental assessment in the description of types of impact. Assessing cumulative impact may not of itself provide the solutions to address it, if other matters are considered a greater priority or of greater weight, or if the evidence is lacking, and if an overall limit for the impact is not imposed. As one community activist remarked:

Local authority have to ultimately come up with the goods really, but I just don't think their plans take any account of shale gas extraction and what that means for the country as whole...don't think the Government has either...not actually looking or talking about what that means for the UK as a whole...authorities are working in isolation.¹⁰²⁰

This is one aspect of the regulatory framework – as it is not just a mismatch, but an incoherence in the frameworks that are present that has been identified in this research. The way this incoherence manifests is not unique to the legal framework governing fossil fuel extraction but could also manifest in other environmental frameworks.

Exploration for shale gas in the UK has caused public controversy around issues including climate change, pollution, public health and the economy. These issues do not form part of a coherent outcome for the environmental decision-making where they can be regarded as having been dealt with as a whole. Nor does the structure of decision-making in the four regulatory regimes under scrutiny automatically lead to coherent outcomes. These regimes operate separately, touching at certain points, but containing within their structure different competences, aims, and public rights. From both the *content* and *context* landscape of data

¹⁰¹⁷ Karlsson-Vinkhuyzen, S. I., Groff, M., Tamás, P.A., Dahl, A. L., Harder, M., Hassall, G., 'Entry into force and then? The Paris agreement and state accountability.' (2018) *Climate Policy* (Earthscan), Vol.18 (5), p.593-600

¹⁰¹⁸ Commission, 'Strategic Environmental Assessment – SEA'

¹⁰¹⁹ Council Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment [2012] OJ L 26/1

¹⁰²⁰ Transcript 008

findings as presented, there a number of themes which bear being drawn out to dissect the level of coherence in environmental decision-making on fossil fuel extraction.

The question is, has in-principle approval been assessed for its impact on planetary concerns in relation to climate change? If not, then the impact is unknown – although it could be extrapolated or assessed through scenarios for scales of development. Nor has there been assessment of England’s energy policy, as a whole, that counts the cost of a range of possible lifecycle impacts in a number of scenarios of development. This is because the policy itself is worded in a way that is market-led rather than ‘command and control’ or target-led. An aim to promote fossil fuel extraction is in conflict with an aim to mitigate climate change, compounded by the extra weight laid upon the extraction aim. As national planning policy is not assessed for environmental impacts there is no informed understanding by policy-makers or decision-takers of the implication of such a policy. It is apparent that this may lead to an incoherent outcome, as each decision taken under such a possible adds up a cumulative impact.

There is no means within the existing regulatory framework in England and Wales to add up the impact of individual development consents that are issued. At the higher, national ‘scale’ impact is not properly accounted for. It is only the planning consent that engages the in-principle question of development – the other regulators such as the HSE, EA and OGA are essentially regulating the technology and the operations. The push towards avoiding the ‘in-principle’ question for each individual development has long been a trend in planning reform in England and led to the major reforms in 2008.¹⁰²¹

Taking the planning and permitting consent system in England as a whole, a number of environmental impacts can be identified as permissible within the ‘mitigating’ approach to

¹⁰²¹ K Barker, *Barker Review of Land Use Planning: final report recommendations* (2006)

consents and permits guided by the aims. This could then result in a cumulative impact as there is no limit imposed on this incremental approach.

The asymmetries drawn out of the data findings imply that there could be different outcomes, as the legal framework directing the 'content' of the decision-making emphasises certain aspects over other aspects. These asymmetries also imply that there are aspects of content that are not being drawn into the process but rather excluded because these aspects are promoted and supported by the public inputs more generally, in contrast to those aspects promulgated by the regulators in decision-making that together offer a more limited, restricted content boundary for the decision.

Cumulative issues in outcomes is also shaped by the nature of the facts upon which these decisions rely. If some decisions are made upon a selection of the facts, this could result in the outcome being incoherent, simply because some matters were never part of the decision-making process. This is further compounded by the power imbalance between regulator, private sector and the public, where the 'expert' and 'authority' is prioritised over lay input. Hence an impression of cognitive dissonance persists, as the internal conflict between viewpoints and evidence from sources within the process, reflects the outer dissonance between a stated aim of environmental protection and a system that grants consent to developments with environmental impacts, without a sense of an overall limit.

In considering the extent to which environmental decision-making on fossil fuel extraction can be termed coherent, the data findings point to a number of conclusions. These are that the scope of competences affect coherence where there are absences such as that found in terms of reducing climate change emissions. The other is that the conflict between aims within the respective regulatory regimes detract from coherence as inevitably some aims are weighted above others. Then the asymmetries on the aspects of the substantive matters on which the process is deciding show that this is not an uncontested or accepted set of matters, but rather one where one aspect of these matters is taking precedence over an

alternative, sometimes opposite aspect. Also the nature of the facts, the knowledge on which these decisions rely affect whether or not the outcome is coherent or whether cumulative impacts accrue. Furthermore, the governance gaps are affecting the coherence of the outcomes, mainly through weakening the regulatory system on enforcement and accountability.

While Fleming's trias¹⁰²² conveys an impression of control and neatness, an examination of the practice of unconventional fossil fuel development at a site level is a rather messier affair. Jasanoff calls on us to 'design new participatory strategies to offer publics greater access to scientific resources and official political institutions at all levels of policymaking.'¹⁰²³ In designing these 'new strategies' it is incumbent to consider the power and responsibility distribution, and not just the procedural (the context) but also the substantive basis (the content), given the need to make environmental limits matter.

7.5 Further research directions

In Europe and the UK, a focus for research should now be on how, in the next ten to fifteen years, the use and therefore demand for, extraction of fossil fuels will have to radically decrease in the broad context of achieving a zero-carbon economy as part of achieving sustainable development within planetary boundaries. How and to what extent legal frameworks are supporting or hindering that transition is the motivation for this research. Introducing bans on fossil fuel extraction across the globe would solve the problem of emissions, and would be very powerful and effective environmental law, but would have far reaching economic and social implications, leading to complex politics such as those seen around war and energy security issues. Is it possible to create any sort of environmental law that allows for discretion, but can still recognise planetary limits? What sort of need is there for "net zero law"? Or is prohibition of fossil fuel extraction the only means to achieve climate

¹⁰²² Ruven Fleming, *Shale gas, the environment and energy security: a new framework for energy regulation* (Edward Elgar 2017)

¹⁰²³ Sheila Jasanoff, 'Just transitions: A humble approach to global energy futures' (2018) 35 *Energy research & social science* 11

change mitigation on the scale that the science indicates is required? There is a wider question of a just transition in energy systems, and the ideological hindrances to solutions being collective or corporate, breeding self-sufficiency or relying on global trade, will become more pressing in the coming decades.

A constitutional change that renews democracy and empowers people to act to make environmental limits matter in decisions is also deserving of further investigation. The gaps identified in this research demonstrate that despite public pressure and public debate, and despite scientific evidence, legal frameworks and democratic systems are failing to respond to the existential threat of climate change. Whether or not the solution lies in a democratic and constitutional renewal could be further explored as the emergency becomes ever more urgent. Without public support, mandate, or influence, or consent, it is difficult to see how democracies triumph in face of the pressures that climate change will place on society. Therefore the empowerment of publics is necessary to embed societal changes, given the systemic transformation required.

7.6 Conclusion

The question is then why there needs to be environmental limits in relation to damaging developments, where is the limit, and to what extent has environmental law failed if there are no limits?

In answer to the first on the need to recognise environmental limits, there is a basic scientific consensus on the state of the global environment. Climate change, pollution, and biodiversity loss are clearly over the limits of what can be sustained for human societies to flourish into the future, notwithstanding broader issues around the rights of nature or other concepts around the relationship of human societies with planet Earth. It is accepted in the research that there are limits in the environmental carrying capacity for human society.¹⁰²⁴

¹⁰²⁴ J Rockström and W Steffen and others, 'Planetary boundaries: Exploring the safe operating space for humanity' (2009) 14 *Ecol. Soc.* 32

Environmental law clearly has a role to play in recognising and protecting the environment so that these limits are not breached.

In terms of targets, there are limits set out to emissions in UK law, supported by international commitments. These limits do not bite upon individual decisions in law. Nor is there competence for an authority to add up the emissions across all unconventional fossil fuel developments and to compare this to the emissions space set out in budgets. More broadly, there is no policy or legislative definition or requirement to recognise environmental limits extant. Pursuing clearer definitions in law would lend more weight to community activist concerns.

The findings show that the restraint on the *content* of decision-making has an impact on the ability to incorporate environmental limits into decision-making. Planning procedures fail to adequately take account of cumulative impacts and the climate risk they engender. The space in which the development happens is not the same as the space in which environmental impacts occur. Nor is the level at which decisions made congruent with the level at which benefits or disbenefits are perceived – either it is all local or all national, or it is both. A wide scope may be unwieldy but it also prevents gaps from opening up so that issues are not inadvertently left ‘unregulated’. Time is also an important aspect – the lifetime of developments, the delay between consent and impact, the delayed response of the climate to emissions – all of these can add up to a gap. If the metric is similar, then only marginal emissions benefits can be achieved through comparing similar technologies – but if the metric is dissimilar and fossil fuel technology is compared to renewables, then a different outcome emerges, one that is much more cognisant of environmental limits. The domain of decisions, whether it is case by case, or whether the cases are added up, would result in very different outcomes depending on approach, given that the latter would enable cumulative impact to be accounted for in an effective way.

The findings on the *context* of decision-making show that the ‘facts’ on which decisions are made are contested, with different evidence leading to different conclusions, where the origination of ‘facts’ has an impact on its importance or relative influence for the basis of the decision, and where there are lacunae in relation to the facts, that are accepted as part of the process. The confining and disempowering of community or lay input is not necessarily a new finding, but the manner and realisation of the way this has been observed in this process contributes to the research in this area.¹⁰²⁵ The largely absent substantive right to a healthy environment, one that would allow for redress in a failure to limit emissions or to prevent cumulative impact, indicates one route through which cumulative impact could be addressed in relation to a crucial decision, if the incremental or majority of decisions could not be ascertained as having a contributory role. Finally, the imbalance between power and responsibility is a broader insight that is worthy of further research exploration.

While the regulators have the power, they do not seem to ‘feel’ the responsibility; communities lack the power but ‘feel’ the responsibility, and the question that remains is does this finding play out more widely? What implications does it have for the recognition of environmental limits in decision-making in other sectors? The legal framework assigns power but does not go so far as to ensure comprehensive responsibility for the environment. Communities are relatively disempowered in comparison to private sector companies when it comes to environmental law as it stands, but implement their sense of responsibility through the procedural rights available to them. A rebalance of this power and responsibility may be most clearly indicated by a strengthening of substantive environmental rights which are largely absent. New discussions around constitutionalism and rights in the UK could lead to further thinking such as that around the previous analysis on the shape of rights conducted

¹⁰²⁵ N Luhde-Thompson, ‘Why Reality and Truth Matter in Environmental Law’ in M Boeve and S Akerboom and C Backes and M van Rijswijk (eds), *Environmental Law for Transitions to Sustainability* (Intersentia 2021)

by Pedersen,¹⁰²⁶ although in acknowledgement that this is not the sole answer to the issue of incorporating environmental limits into decision-making.

In securing greater recognition of environmental limits, as the global environmental situation becomes more pressing, the extent to which environmental law may be more effective in terms of outcome if it was more deterministic, such as a ban or prohibition becomes more pertinent. The determination of the outcome is hindered by the conflict in aims of the existing regulatory framework for fossil fuel extraction. There has to be a 'first among equals' approach to the environment aim that recognises that economy and society have to operate within the planetary environmental boundaries. Pollution control regulation is more deterministic as can be seen through the use of a fairly automated permit system for some pollution controls on fossil fuel extraction, that lacks both procedural rights and the exercise of democracy, and yet it is focussed on enabling rather than curbing activity.

These conclusions show that the problem of 'coherence' of individual development decisions is what leads to cumulative environmental impact. While this research data is limited to this chosen framework and area of study, the claim made following these reflections upon effectiveness and coherence of the regulation is that this insight has a broader application where decision-making exhibits similar regulatory construction. Deliberating on the nature and shape of competences, aims, substantive and procedural rights, and the coherence of the law in this research, creates possibilities for related research into other frameworks. More than one substantive reform could be required to address the technical and legal role of decision makers and to respond to the extraordinary nature of broad societal community activism such as that seen in Preston New Road. The paucity of the hooks in the Climate Change Act 2008 for community rights or powers is shown to be an issue when so many need to be part of the solution. Since these challenges are common across a spectrum of legal frameworks, including in other jurisdictions, it would be similarly legitimate to consider

¹⁰²⁶ O W Pedersen, 'A bill of rights, environmental rights and the UK constitution.' (2011) 3 Public Law 577

to what extent they impact upon the effectiveness and coherence of regulation with the purpose of making limits matter.

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