

# CCLS

## Energy Law Institute Review

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# In this first issue.



**Maria Taylor**  
Energy Law Institute

Welcome to the first edition of the CCLS Energy Law Institute Review.

The review provides our LLM students, alumni, academics, members and supporters with the opportunity to publish articles on topics based around the research and activities of the Energy Law Institute. The Review will be published, electronically, twice a year in autumn and summer.

The Energy Law Institute is in its seventh year. Today our curriculum, shaped by industry participants, is taught in London and Paris and has attracted students from 61 different countries and five continents. The Institute's LLM is ranked in the top 10 LL.M. programs for Energy Law. Our students benefit from access to sponsorship opportunities, intern and mentoring programmes, lectures from leading industry practitioners and a Forum that promotes academically led discussion on current legal issues. We have received invaluable support from across the industry, which has enabled the Institute to grow and thrive.

The Energy Law Institute Review seeks to build upon our existing activities and to bring together in a single publication the work of our Institute's community. Our purpose is to develop the Institute's research output focusing on the live legal issues of the sector.

We are launching the Energy Law Review as CCLS approaches its 40th anniversary in 2020. How fitting then that our first article, by Professor James Dallas, is a look back at his 40 year career in Energy Law, a period of enormous change and challenge for the sector.

The challenges of the sector are reflected in the four articles we have included by our alumni on decommissioning, energy transition, fracking and climate change. Each article provides an interesting perspective. The financing of oil and gas decommissioning is examined through a comparison between the different legal frameworks of the UK and USA. Energy efficiency is examined from a Portuguese angle. Climate Change is analysed through the principle of estoppel in the enforcement of Small Island Developing States' right to climate finance. The focus of the paper on fracking is the compensation regime.

We are delighted to include an interview by Professor Loukas Mistelis, one of the founding members of the ELI, with retired High Court judge Sir David Steel and their discussion is wide ranging and gives an insight to the evolution of energy law.

A regular event for the Institute is the Energy Forum that meets three times a year to debate a major legal issue impacting the energy sector. Each year we hold an additional forum for our students, the "New Voices Forum" where the students select the topic and invite a panel to lead the discussion. Two of our LLM students wrote a review of their New Voices Forum on Nuclear Energy which we are pleased to include.

Our next edition will include papers discussed at our Conference in June 2020, which will be hosted by the Energy Law Institute on the 2nd and 3rd June 2020 with the Queen Mary UNIDROIT Institute of Transnational Commercial Law on Energy Transition and Legal Changes. The conference will explore in depth legal aspects associated with energy transition, with input from a wide range of disciplines to provide commercial and market informed discussion. It promises to be a very interesting and lively event providing the opportunity to debate and share ideas on one of the most challenging periods of change in the energy markets.

We will also include the winner of the 2019 Lord Browne Essay prize and a review of our Annual Lecture sponsored by Clifford Chance Lecture that will be given by the President of COP26 Claire Perry, on February 13th 2020.

The emphasis of this first edition is on our students and alumni and we are very appreciative of all the hard work that they have undertaken. We would like to thank the mentors who have guided the authors through the publication process, and our two interns Sacha Dekeyser and Mariana Paul who contributed towards the peer review process.

We are very grateful to all **our members** and **Steering Group**. The support we receive from them is central to what we do and a partnership that is valued by the Institute and all our students.

# Recurrent themes in a 40 year career in law in the energy sector.

Professor James Dallas, BA Jurisprudence (Oxon), MA Jurisprudence (Oxon), Solicitor



**Professor James Dallas**

In the forty years I have been practising law I have witnessed profound changes socially, economically and in the legal sphere, both in the United Kingdom and globally. The most significant macroeconomic and social changes I would highlight that have occurred during the period are the collapse of communism and the breakup of the USSR; the development of the worldwide web and the exponential growth in the capacity of computers; the globalisation of trade anchored in these technological changes; and the economic changes prompted by economic liberalism, which has given rise to unprecedented growth in the East and the emergence of China as a superpower.

As regards the law and my career in it, there are any number of themes I could have highlighted but for the purposes of this article I have chosen, somewhat eclectically, three. The first is privatisation because it had such a significant effect on the UK, taking it out of the post-World War II doldrums (but not without some adverse social consequences) and spawning an economic revolution far beyond the UK's shores. The second is the rise in awareness of the damaging consequences of unchecked development, accompanied by a spiralling world population, most keenly expressed through the climate change movement, which is giving rise to unprecedented challenges for public international law. Finally I would like to talk about the rule of law, its enduring importance to civil society, and the threats to its integrity that have emerged over the period.

So let me begin with privatisation. The privatisation programme undertaken by Margaret Thatcher's UK government in the 1980s and 1990s had a lasting effect upon the economy in general and on the energy sector in particular. It was accompanied by the deregulation of the City's financial institutions, paving the way for enormous growth in the financial sector and placing the UK's service sectors - principally banking, but also related sectors such as insurance, accounting and legal - in pole position to take advantage of the growing global market.

The 1970s had seen a period of economic stagnation. Globally the Middle Eastern petro-economies, led by Saudi Arabia, had begun to flex their muscles following the humiliation of the Yom Kippur war of 1973 when Israel defeated the Arabs, led by Egypt and Syria. They set about revising the over-generous oil concessions granted in the 1920s and 1930s, which were then beginning to expire and, through concerted effort amongst the major producers of OPEC (the Organisation of the Petroleum Exporting Countries formed in 1960), pushed the oil price up

from US\$3 per barrel to US\$12. Oil prices were again put under pressure with the Iranian Revolution in 1979, which led to a second oil crisis to end the decade. All this had the effect of severely dampening the economies of the developed world who were heavily reliant on oil to fuel their industries and, in the case of the US, the war effort in Vietnam.

As a consequence, both the US and the UK entered the 1980s in recession with high unemployment and high inflation. In the UK Margaret Thatcher began a programme of restructuring the economy, which was then dominated by large government-owned, highly unionised businesses, many of which - judged by today's perspective - had no place in public ownership, such as Rolls Royce and Amersham (a manufacturer of radiopharmaceutical products). The notion of breaking up these public sector corporations and introducing more effective management from the private sector took hold, alongside the notion of wider share ownership by the public. In the vanguard was telecommunications, a sector ripe for overhaul given the technological changes that were occurring at the same time. The energy sector saw first the privatisation of British Gas (best remembered for its 'Tell Sid' advertising campaign) in 1986. This was followed by the sale of the government's share of BP, which was excruciatingly badly timed to coincide with a stock market crash. Then in 1989 came the break up and privatisation of the power sector in the UK. The CEGB (the holder of all power generation capacity and the high voltage power lines) was broken up into four parts: nuclear (not then privatised), National Power, Powergen and the National Grid. In addition the 14 regional electricity supply companies were converted from public corporations into public limited companies (limited liability companies with shares) and floated on the stock market.

The privatisation process was not solely focused on a change in ownership. What taking these businesses out of their public corporation status and into the arena of privately owned limited liability companies did was shift emphasis away from being engineering-led to a focus on profit/economic optimisation. Secondly, their change of corporate status exposed them for the first time to the consequences of failure and liquidation. Finally the privatisation process was accompanied by the creation of independent regulators (now OFGEM for both gas and electricity, then OFGAS and OFFER), supposedly less susceptible to political interference, with the goal of exposing the non-natural monopolies to competition (though not immediately in the case of British Gas, which retained its legal monopoly on the supply of gas for some time until it was removed in the late 1990s).

The privatisation programme had a lasting effect on the business environment. Many see the programme as the catalyst for the globalisation of the equity markets. It gave access to the private sector to undertake projects in the energy sector such as building power stations, hitherto the exclusive domain of the public sector. It also attracted foreign companies and skills, and released an unexpected pool of talent dormant in the public sector. It resulted in cheaper electricity with no obvious sacrifice of reliability and, eventually, cheaper gas prices. It also gave energy lawyers a vastly expanded playing field: there were no power lawyers in the UK pre-privatisation! It was an extraordinary time to be an energy lawyer and to be part of this revolution.

The second theme I would like to focus on is climate change. The evolution of thinking in relation to the environmental impact of energy generation and consumption over the period has been marked. It will have as great an impact on the sector and our lives as did the discovery and exploitation of fossil fuels on previous generations in the twentieth century.

At the time I left school in the early 1970s the environmental debate was given greater prominence by the publication of a polemical paper on the future of the planet and man's place in it: 'A Blueprint for Survival', written by Edward Goldsmith. It was published in a special edition of the Ecologist and was signed by a number of leading scientists and environmental activists of the day, including Sir Julian Huxley and the ornithologist Sir Peter Scott. Its thesis was that society needed radical reforming to coalesce around smaller decentralised human-scale communities: 'If current trends are allowed to persist, the breakdown of society and the irreversible disruption of the life-support systems on this planet, possibly by the end of this century, certainly within the lifetimes of our children, are inevitable.' 'Radical change is both necessary and inevitable because the present increases in human numbers [then 4.1 billion, now, in 2019, 7.7 billion] and per capita consumption, by disrupting ecosystems and depleting resources, are undermining the very foundations of survival.'

It drew attention to the dangers of current practices and consumption habits, and the unsustainability of the economics of continuous growth. A point made in the paper that drew particular attention was that fossil fuels would likely be exhausted by the end of the century. (It certainly got my attention, as I recall it well today!)

In Appendix D on renewable resources the paper posited that 'if these rates [of consumption] continue to grow exponentially [...] then natural gas will be exhausted within 14 years and petroleum within 20'. The paper then went on to suggest that nuclear energy could replace energy from fossil fuels but the limits on quantities of uranium, the adverse consequences of disposing of nuclear waste and, most importantly, the effect on the ecosphere of heat generated by actual consumption of electricity would, ignoring the waste heat produced by power stations, ultimately overload the ecosphere.

It is interesting for a number of reasons. It was enormously farsighted. Its focus on the world's population and its consumption levels was the first time I became aware of the cost of man's relentless urge for development. Its predictions are even more worrying since the world's population is now almost double the size it was in 1972. Furthermore, this population growth has been accompanied by faster industrialisation outside the developed world than would have been anticipated then.

It is also interesting to note that the shift away from fossil fuels has not been prompted by exhaustion (there are now, thanks to improved detection and extraction techniques, enough fossil fuel reserves to enable current levels of consumption to continue for half a century or more) but by a warming of the ecosphere - but not for the reasons predicted back in 1972.

While the science may not always have been accurate back then, the siren call was nonetheless hugely important in beginning to alert the scientific and wider world to the perils of unchecked industrial growth.

'A Blueprint for Survival' was published shortly before the UN convened the first conference dedicated to the environment, the United Nations Conference on the Human Environment held in Stockholm in June 1972. The conference was troubled. The Soviet Union and the Warsaw Pact countries boycotted it. Furthermore the divide between developed and developing countries emerged. Nevertheless it produced a declaration that outlined 26 principles and an action plan. Among the principles were the need to safeguard natural resources and to ensure pollution does not exceed the environment's capacity to heal itself. Contrary to the thrust of 'A Blueprint for Survival' the principles continued to espouse the importance of development and growth, particularly as regards the alleviation of poverty.

But it was not until the 1980s that discussions about climate change caused by the emission of greenhouse gases, most notably CO<sub>2</sub>, gained international attention. In 1988 the Intergovernmental Panel on Climate Change was formed to gather data and advise the UN on climate change. This was followed by their first report, which concluded that warming was occurring. This was then followed by the Earth Summit in Rio in 1992 (chaired by my old boss at International Energy Development Corporation, Maurice Strong), which established the legal architecture for tackling the problem internationally with the conclusion of the UN Framework Convention on Climate Change (the UNFCCC). The UNFCCC has, in turn spawned the Kyoto Protocol and the Paris Agreement as the parties to the UNFCCC have sought to elaborate and refine the problem and establish steps to mitigate the problem and/or adapt to its adverse consequences.

The challenges of establishing a programme internationally to combat climate change, reconciling the competing claims of developing countries versus developed, Small Island Developing States and petroleum-producing economies, and the current generation versus future generations, are immense. Notwithstanding the euphoria post the Paris Agreement, progress has been worryingly slow judged by the declared nationally determined contributions. The flow of financial support from developed to developing countries has fallen well short of promises. Yet if the Committee on Climate Change (the independent body that provides advice to the UK government on climate change policy) has accurately anticipated the changes required in order to achieve their recommended target of net zero greenhouse gas emissions by 2050, we are facing a period of monumental upheaval to meet the climate change imperatives: it will eclipse anything experienced to date. The Committee on Climate Change anticipates the UK needing to cease the use of gas for heating and cooking, abandon the use of petrol and diesel cars by 2035 or earlier, reduce the consumption of meat, eliminate certain harmful agricultural practices, and plant 1.5 billion trees.

It is noticeable that the report is careful to emphasise that the new target is achievable while delivering it 'alongside improvements in people's lives'. The pragmatic reality is that few, if any, governments around the world are ready to sacrifice economic growth and continual improvements in standards of living, to combat global warming. But if the scientists are right I am sure this sacrifice will have to be made – particularly if developing countries continue to assert, quite understandably, that they must be allowed to catch up developmentally. The future of this area for all of us and for the law will be deeply

stressful. It is a testament to the gravity of the problem that I have practised in the energy sector for nearly 40 years and yet only now is it beginning to really change the landscape. Yet the challenges posed by climate change are immense – on a scale not hitherto faced for the law. Laws have predominantly been developed nationally, with the benefit of a framework for legislation, policing, dispute resolution and enforcement. In public international law that architecture is either lacking or nascent. The challenges of climate change will test the fabric of international law to breaking point.

The final area I would like to briefly examine is the rule of law. I have been lucky that, by and large, throughout my career the legal profession in the UK has been held in relatively high regard – in general attracting talented, motivated and honest people doing a worthwhile job and doing it well. I believe this positivity is reflected more widely by the respect in which the UK legal system (both civil as well as criminal) is held internationally. This is evident from the use made by international business, and particularly finance, of English law and the growth in the reference of disputes for settlement in the UK courts and London-based arbitration.

For me the rule of law embraces a multitude of elements: the independence of the judiciary; the speed of and access to the courts; equal treatment under the law; transparency of the legal process; clarity of the law; and the flexibility of its legal principles to accommodate and move with changing times.

Despite the enormous amount I believe is good about the UK legal system a number of events over the period are stark reminders that there is no room for complacency. The 1990s saw the overturning of the convictions of the Guildford Four and the Birmingham Six – alleged IRA terrorists found guilty of pub bombings that killed over 25 people. Bombing incidents in the period, known colloquially as 'the troubles', brought huge pressure on the system, and particularly the police, to find and punish the perpetrators. Notwithstanding this, it was shaming that these convictions were made, given the discrepancies and inadequacies that subsequently emerged in the evidence upon which the convictions were founded. It was perhaps partially redemptive that the system was able to put these injustices right (albeit some 14 years later).

The second threat to the rule of law I have observed was posed by the use of the Guantanamo Bay Detention Camp. The US has throughout my lifetime been the richest and most powerful country in the world. More importantly, it has also been the leader of the Western world and therefore the key holder of democracy – an example to be followed. This is underpinned by its respect for the importance of the rule of law. While I fully recognise the enormity of the tragedy of the destruction of the Twin Towers and the threat posed by terrorism, I cannot but feel the use of Guantanamo Bay to circumvent one's own laws strikes a body blow to the rule of law and with it the respect for the US as the champion of democracy. Habeas corpus has been a shared foundation stone of our legal systems. In the UK when a practice was developed by Charles II's first minister, the Earl of Clarendon, to remove prisoners to parts of the kingdom where habeas corpus did not apply, the law was changed (albeit not at the first attempt): the Habeas Corpus Amendment Act 1679 was introduced to ensure that no one should be deprived of the right to challenge their detention.

The UK too has been guilty of qualifying fundamental principles that underpin the rule of law, in the face of the threat posed by terrorism. In the Anti-Terrorism, Crime and Security Act 2001 the law permitted indefinite detention without trial of non-national suspects. It has since been revised.

A further threat to the rule of law in the UK is posed simply by the volume of legislation produced by Parliament. There are two aspects that concern me. First the sheer scale of legislation; it means no one can be expected to know all the laws or be able to advise with confidence on them. The tax code in the UK is over 11,000 pages - longer than in any other country in the world. Is this necessary or desirable? The second feature of modern legislation is the relentless use of subordinate legislation; that is, legislation by statutory instrument. This legislation gets little proper scrutiny by Parliament - none in the case of statutory instruments (SIs), which are subject to the negative procedure and only limited in relation to those that are subject to the affirmative procedure. Annually there are some 3,500 SIs of which approximately 1,000 are subject to the affirmative procedure. All of this leads to a world in which the accountability of the executive is impaired. There is simply too much legislation, much of it poorly drafted, subject to too little review.

The divisive debate that has engaged the country for the last four years over whether to leave the EU and on what terms has also fostered a new threat to the rule of law. In the heat of the volleys exchanged between 'Brexiters' and 'Remainers' a case was brought by Gina Miller, a business woman, and others against the Secretary of State for Exiting the European Union in 2017. They challenged the ability of the executive to file an Article 50 notice to leave the EU without an Act of Parliament. The Supreme Court held that an Act of Parliament was necessary, since it involved the removal or cessation of rights granted to UK citizens by an Act of Parliament (The European Communities Act 1972). In the passage of the dispute through the courts the hearing in the High Court was criticised by the Daily Mail who printed photographs of the three judges (including one of the 'openly-gay', as they described him, ex-Olympic fencer Sir Terence Etherington) under the heading 'Enemies of the People' - adopting the phrase coined by the Norwegian playwright Henrik Ibsen.

Finally in the UK we have seen the government defeated by an unprecedented 11-0 decision of the judges of the Supreme Court over the legitimacy of the government's proposed 5 week suspension of Parliament. Such an unequivocal outcome suggests that the executive's attitude to the rule of law, evidenced through the manner in which it exercises its executive powers, is changing.

I do not know whether these markedly different challenges to the rule of law represent a trend or are simply reminders of the darker forces that are always present in society ready to unpick the fabric of the rule of law when it is found to be inconvenient. What I do know from 40 years of working around the world, particularly in the Middle East, Africa and Asia, is that where the rule of law is least cherished, development and prosperity suffer and the greatest victims are always the poor, and the weak.

## Biography

**Professor James Dallas** joined Queen Mary University of London as Executive Director of the Energy Law Institute in 2014. James was also a partner at Dentons until earlier this year and has more than 35 years experience in energy and infrastructure during which he has worked for a wide range of clients across the world.

James has a BA and MA from Oxford University in Jurisprudence. He trained to be a solicitor with Herbert Smith Freehills. In his early career he joined an oil exploration company involving him in upstream transactions around the world, particularly in the Middle East and Africa.

James returned to private practice in 1984 with Denton Hall (now Dentons), a firm with a leading energy practice, where he was Chairman from 1996-2009.

He was also a non-executive director of AMEC plc from October 1999 to May 2007 and was Chairman of their Remuneration Committee for six years.

# Financing offshore oil and gas decommissioning in the United States and the United Kingdom.

Rosemary E Hambright <sup>1</sup>



Rosemary E Hambright

## Introduction

Offshore decommissioning of oil and gas projects, out-of-sight and out-of-mind to many, is a steadily growing problem worldwide with an enormous price tag.<sup>2</sup> Decommissioning is an imperative because of the risks that deteriorating structures and disused wells pose to ship navigation, environmental integrity and the economies of coastal communities.<sup>3</sup> Leaving abandoned platforms in place or temporarily plugging wells for extended periods of time is insufficient to address these problems. Unfortunately, decommissioning is extremely expensive. In the United States, decommissioning costs in the Gulf of Mexico are estimated to be \$38.2 billion.<sup>4</sup> Across the pond, decommissioning in the United Kingdom continental shelf is projected to cost £51 billion.<sup>5</sup>

Platforms are challenging to remove because they are incredibly large and were designed to withstand intense storms and collisions.<sup>6</sup> During the decommissioning phase, the platform is no longer generating a stream of revenue to support decommissioning activities. The financial burden to

plug wells and remove platforms, equipment and pipelines falls on the taxpayer if the involved private parties do not have enough money to pay. Funding decommissioning is a critical issue globally because thousands of platforms and wells will need to be decommissioned in the next decades, particularly off the coasts of Southeast Asia, Latin America, West Africa and the Arabian Gulf.<sup>7</sup> The US and the UK are of particular interest because these two countries have comprehensive decommissioning regimes, experience in undertaking decommissioning, and many structures that will need to be decommissioned in the next ten years.<sup>8</sup>

## I. Legal framework

Decommissioning is an international legal obligation of the US and the UK in their capacity as states, which is passed onto oil and gas operators and lessees through domestic law.<sup>9</sup> The countries have divergent approaches in their procedural requirements for decommissioning, as well as how they ensure that oil and gas operators and lessees will be able to afford decommissioning.

<sup>1</sup> The author would like to thank Sam Dunkley, Dr Tibusay Morgandi and Harry W Sullivan Jr for their guidance, review and recommendations for this article.

<sup>2</sup> Eric Oudenot, Philip Whittaker and Martha Vasquez, 'Preparing for the Next Wave of Offshore Decommissioning' (BCG, 11 April 2018) <[www.bcg.com/publications/2018/preparing-for-next-wave-offshore-decommissioning.aspx](http://www.bcg.com/publications/2018/preparing-for-next-wave-offshore-decommissioning.aspx)> accessed 4 April 2019.

<sup>3</sup> Evan J Atkinson, 'Growing Concerns Over Decommissioning and Temporarily Plugging Offshore Rigs Off the Coast of the United States and the United Kingdom' (2017) 47 Tex Envtl LJ 179, 180-82.

<sup>4</sup> US Government Accountability Office, *Information on Infrastructure Decommissioning and Federal Financial Risk* (GAO-17-642T, 2017) 20 (GAO Report).

<sup>5</sup> Oil and Gas Authority, *UKCS Decommissioning 2019 Cost Estimate Report* (2019) 5.

<sup>6</sup> Ann Scarbrough Bull and Milton S Love, 'Worldwide Oil and Gas Platform Decommissioning: A Review of Practices and Reefing Options' (2019) 168

Ocean & Coastal Mgmt 274.

<sup>7</sup> Oudenot, Whittaker and Vasquez (n 2).

<sup>8</sup> Bureau of Safety and Environmental Enforcement, 'Decommissioning' <[www.bsee.gov/what-we-do/research/tap-categories/decommissioning](http://www.bsee.gov/what-we-do/research/tap-categories/decommissioning)> accessed 9 October 2019; Oil & Gas UK, *Decommissioning Insight 2018* (2018) 36.

<sup>9</sup> Convention on the Continental Shelf (adopted 29 April 1958, entered into force 10 June 1964 27 April 1958) 499 UNTS 311 (US is a signatory); Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 30 August 1975) 1046 UNTS 120 (US is a signatory); United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 1 November 1994) 1833 UNTS 397 (UK is signatory); Oslo/Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67 (UK is a signatory).



## A. US legal framework

Domestically, the Outer Continental Shelf Lands Act (OCSLA) establishes the US federal government's sovereign rights over the minerals in the outer continental shelf (OCS) seaward of state territorial waters.<sup>10</sup> The territorial sea of all but three states extends three international nautical miles seaward from the baseline; for example, the territorial sea of Texas, one of the exceptions, extends three marine leagues (approximately nine nautical miles) from the baseline.<sup>11</sup> OCSLA authorises the Department of the Interior (DOI) to regulate offshore oil and gas activity on the OCS.<sup>12</sup> Before the Macondo well blowout and *Deepwater Horizon* disaster in 2010, DOI did this through the Mineral Management Services (MMS).<sup>13</sup> MMS came under scrutiny for corruption, and one month after the tragedy DOI split MMS into three new organisations: the Office of Natural Resources Revenue, the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety and Environmental Enforcement (BSEE).<sup>14</sup> In relation to decommissioning, BSEE is the primary regulator and BOEM promulgates rules on bonding requirements.<sup>15</sup> In addition to formal regulations, BSEE and BOEM are authorised to periodically issue Notices to Licensees (NTLs), which also function to regulate offshore oil and gas activities.<sup>16</sup>

## B. UK legal framework

The UK Parliament passed the Petroleum Act in 1998 (Petroleum Act), partly to fulfil its international obligations under Decision 98/3 of the 1972 Oslo/Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and also to establish the objective of maximising economic recovery for the UK.<sup>17</sup> Due to a steep fall in production since the late 1990s, in 2013 the Secretary of State for the Department of Energy and Climate Change (DECC) requested Sir Ian Wood to conduct an independent assessment and make recommendations on how to maximise economic recovery for the UK.<sup>18</sup> Based on his suggestion to create 'a new arm's length regulatory body',<sup>19</sup> the 2016 Energy Act established an independent government company, the Oil and Gas Authority (OGA), tasked with carrying out the Maximising Economic Recovery Strategy for the UK.<sup>20</sup> However, the lead regulator for offshore decommissioning is the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) within the Department for Business, Energy and Industrial Strategy (BEIS), which superseded DECC in 2016.<sup>21</sup>

## II. Comparative analysis

The decommissioning regulatory regimes of the US and the UK are quite complex with multiple moving parts. This section will comparatively analyse these regimes in light of (a) liability structure among past and present owners and operators for decommissioning; (b) government authority to review financial ability and demand additional security; and (c) cost management of decommissioning.

### A. Liability structure

The US and the UK have very similar liability structures in principle, but they administer them differently.

#### 1. US liability structure

From the time decommissioning responsibilities accrue until they are completed, *lessees and owners of operating rights* are jointly and severally liable for obligations arising from leases, and *right-of-way holders* are jointly and severally liable for obligations arising from rights-of-way.<sup>22</sup> Decommissioning responsibilities accrue upon a party when they: drill a well; install a platform, pipeline, or other obstruction on the OCS; '[a]re or become a lessee or the owner of operating rights of a lease on which there is a well that has not been permanently plugged [. . .], a platform, a lease term pipeline, or other facility'; or '[a]re or become the holder of a pipeline right-of-way on which there is a pipeline, platform, or other facility.'<sup>23</sup> Note that because one triggering event of accruing joint and several liability is to 'become' a lessee, owner or pipeline right-of-way holder,<sup>24</sup> the newest lessees and owners are liable for previously accrued obligations, whereas a person or entity who assigns their rights remains liable for their accrued liability, but is not responsible for future liabilities.<sup>25</sup> The regulations also state that previous and current *record title owners* and *operating rights owners* have joint and several liability in regard to non-monetary obligations, including the completion of decommissioning, accrued during ownership.<sup>26</sup> Furthermore, BSEE and BOEM have discretion to require assignors to fulfil the lease obligation liabilities accrued to them if subsequent assignees are unable to perform them.<sup>27</sup> Decommissioning must commence when facilities are 'no longer useful for operations'<sup>28</sup> and be completed within one year of the termination of a lease.<sup>29</sup> The regulations are silent on responsibility for ongoing concerns after a well is plugged, such as monitoring for leaks.

<sup>10</sup> Outer Continental Shelf Lands Act of 1953 (OCSLA) 43 USC §§ 1331 et seq.

<sup>11</sup> The three exceptions are Florida, Louisiana and Texas. Bureau of Ocean Energy Management, 'Outer Continental Shelf' <[www.boem.gov/Outer-Continental-Shelf/](http://www.boem.gov/Outer-Continental-Shelf/)> accessed 30 March 2019.

<sup>12</sup> OCSLA, 43 USC §§ 1331-56.

<sup>13</sup> Christopher M Hannan, 'Lost in Their Own Streets' and at Sea: The New Regulatory Reality After Macondo' (2018) 92 Tulane L Rev 993, 995.

<sup>14</sup> *ibid* 996.

<sup>15</sup> *ibid*.

<sup>16</sup> 30 CFR §§ 250.101, 550.101.

<sup>17</sup> Petroleum Act 1998 (UK); Decision 98/3 on the Disposal of Disused Offshore Installations Oslo/Paris Convention (adopted 22-23 July 1998, entered into force 9 February 1999).

<sup>18</sup> Department of Energy and Climate Change, *Implementing the Wood Review Recommendations* (URN 15D/105, 2015) 4.

<sup>19</sup> Sir Ian Wood, UKCS *Maximising Recovery Review Final Report* (2014).

<sup>20</sup> Energy Act 2016, c 20, ss 1-2; Oil and Gas Authority, *The Maximising Economic Recovery Strategy for the UK* (2016).

<sup>21</sup> The Secretaries of State for Business, Energy and Industrial Strategy, for International Trade and for Exiting the European Union and the Transfer of Functions (Education and Skills) Order 2016, SI 2016/992.

<sup>22</sup> 30 CFR § 250.1701(a)-(c).

<sup>23</sup> 30 CFR § 250.1702.

<sup>24</sup> *ibid*.

<sup>25</sup> 30 CFR §§ 556.604(d), 556.713, 556.807. See also Dane E Dupre and Rick M Shelby, 'Trending Risks and Liabilities on the OCS: What Happens When a Party Can No Longer Pay to Play?' (61st Mineral Law Institute conference, Baton Rouge, April 2014) 382-83.

<sup>26</sup> 30 CFR §§ 556.604(d). See also 30 CFR §§ 556.710, 556.805.

<sup>27</sup> 30 CFR §§ 556.710, 556.805.

<sup>28</sup> 30 CFR § 250.1703.

<sup>29</sup> 30 CFR §§ 250.1010(h), 250.1710, 250.1725(a).

If a lessee or owner goes bankrupt, their estate may still be liable for decommissioning. Although in some circumstances a bankrupt party may abandon their property,<sup>30</sup> in *Midatlantic*, the Supreme Court held that a trustee in bankruptcy may not abandon property if abandonment would violate legal obligations ‘reasonably designed to protect the public health or safety from identified hazards’.<sup>31</sup> However, case law is split on whether or not a debtor may abandon property if there is no ‘imminent and identified threat to public health or safety’.<sup>32</sup> Furthermore, in the interest of public health and safety, a bankruptcy court in Texas allowed an insolvent company to abandon a platform, wells and gathering facilities to clear the way for the government to instruct the previous owners to begin decommissioning.<sup>33</sup> The Fifth Circuit has held that decommissioning obligation costs are administrative expenses,<sup>34</sup> which are one of the first types of payments made to creditors from the remaining funds of an insolvent estate during a bankruptcy proceeding.<sup>35</sup> Granted, by the time decommissioning is completed, the likelihood that predecessors in interest will receive reimbursement from the insolvent estate may be non-existent.

## 2. UK liability structure

Petroleum Act section 29 authorises OPRED to issue a notice to any liable party to develop a decommissioning programme (DP) with OGA’s assistance and submit it to BEIS for approval (Section 29 Notice).<sup>36</sup> OPRED expects the last operator to lead in the development and execution of the DP.<sup>37</sup> All parties who receive a Section 29 Notice are jointly and severally liable to submit a DP.<sup>38</sup> All parties who submitted an approved DP are jointly and severally liable to see the plan through to completion.<sup>39</sup> OPRED’s ability to select parties to be jointly and severally liable for the DP was introduced in the Energy Act 2008 amendments to the Petroleum Act.<sup>40</sup> Liable parties are: the operator; licensees; owners of the installation, including parties who own any interest in an installation; parties to a Joint Operating Agreement or similar agreement; and pipeline owners.<sup>41</sup> OPRED may also issue a Section 29 Notice to a parent company or other affiliate upon finding that the other liable parties have not or cannot complete an acceptable DP.<sup>42</sup>

Petroleum Act section 34 allows OPRED to serve a Section 29 Notice on any potentially liable party who did not previously receive one.<sup>43</sup> This provision, perceived by industry as a

heavy-handed clawback power, and by OPRED as ‘a measure of last resort’, has never been invoked.<sup>44</sup> Also, a party who leaves a licence is still liable for the removal of any equipment added after they depart, if the equipment is added to an installation on which the party has decommissioning obligations.<sup>45</sup> Parties must also monitor any ‘deposits’ left after decommissioning.<sup>46</sup> Furthermore, all installation owners, pipeline owners, and Section 29 Notice holders retain residual liability in perpetuity and must report changes to company structure or domicile to OPRED.<sup>47</sup> Lastly, funds set aside for decommissioning in a security, even before a DP is approved, are protected from creditors and exempt from insolvency laws.<sup>48</sup> If liable parties do not submit or implement a DP, OPRED may do the work and recover the costs from all parties who were served a Section 29 Notice.<sup>49</sup>

## 3. Liability structure comparison

Both the US and UK liability structures are designed to ensure ‘a party with deep pockets’ covers the costs of decommissioning, and at first glance these structures appear to be successful.<sup>50</sup> A US industry group has claimed that ‘[t]he US taxpayer has never had to pay for the decommissioning of oil and gas offshore assets due to federal regulations’.<sup>51</sup> The use of joint and several liability and clear definitions of what liability a party retains even after transferring their interests in the project essentially mirror each other and are very good from the general taxpayer’s point of view.

Despite assigning liability in the same way in theory, the systems function differently in practice. The US approach is more hands-off than the UK scheme. In general, the US government does not select which parties develop and execute the decommissioning plan. One drawback of this approach is that it places a lot of faith in parties to proactively initiate decommissioning on their own, and it may result in the delay of decommissioning if the last owner and operator go bankrupt before the decommissioning deadline. However, under the ‘Idle Iron’ policy, BSEE will order a lessee, operator or pipeline right-of-way holder to permanently plug a well or remove a platform in the Gulf of Mexico if it poses a ‘hazard to safety or the environment’, or is ‘not useful for lease operations and is not capable of oil, gas or sulphur production in paying quantities’.<sup>52</sup> In contrast, the UK Section 29 Notice procedure involves direct government participation in decommissioning planning. The Section 29 Notice scheme may give some

<sup>30</sup> 11 USC §§ 365(a), 554(a).

<sup>31</sup> *Midatlantic Natl Bank v New Jersey Dept of Envtl Prot*, 474 US 494 (1986).

<sup>32</sup> *In re Howard*, 533 BR 523, 545-547 (Bankr SD Miss 2015).

<sup>33</sup> *In re ATP Oil & Gas Corp*, 2013 WL 3157567 (Bankr SD Tex 2013).

<sup>34</sup> 11 USC §§ 502(e)(1)(B), 503(b)(1)(A); *In the Matter of HLS Energy Co Inc*, 151 F3d 434 (5th Cir 1998). See also *In re American Coastal Energy Inc*, 399 BR 805 (Bankr SD Tex 2009).

<sup>35</sup> 11 USC § 507(a)(2).

<sup>36</sup> Petroleum Act 1998, ss 29-31.

<sup>37</sup> Department for Business, Energy & Industrial Strategy, *Guidance Notes Decommissioning of Offshore Oil and Gas Installations and Pipelines* (2018) para 3.8 (OPRED Guidance Notes).

<sup>38</sup> Petroleum Act 1998, ss 29(1)(b) and 31(6).

<sup>39</sup> *ibid*, s 36; OPRED Guidance Notes para 3.7.

<sup>40</sup> Energy Act 2008, c 23, pt 3, c 3.

<sup>41</sup> Petroleum Act 1998, ss 30 and 31; OPRED Guidance Notes paras 3.9, 3.12.

<sup>42</sup> Petroleum Act 1998, s 34.

<sup>43</sup> *ibid*.

<sup>44</sup> OPRED Guidance Notes para 3.26.

<sup>45</sup> *ibid* para 3.20.

<sup>46</sup> *ibid* para 11.6.

<sup>47</sup> *ibid* paras 17.1-17.3.

<sup>48</sup> Petroleum Act 1998, ss 38A and 38B.

<sup>49</sup> *ibid* s 37(3).

<sup>50</sup> Dupre and Shelby (n 25) 383.

<sup>51</sup> Phil Steed and Josh Sherman, ‘Despite Progress in BOEM NTL Requirements - New Capital Must Emerge’, *Offshore Network*, 16 February 2017) 5 <[www.offsnetwork.com/gulf-of-mexico/item/18-despite-progress-in-boem-ntl-requirements-new-capital-must-emerge](http://www.offsnetwork.com/gulf-of-mexico/item/18-despite-progress-in-boem-ntl-requirements-new-capital-must-emerge)> accessed 13 April 2019.

<sup>52</sup> 30 CFR § 250.1711(a); Bureau of Safety and Environmental Enforcement, *Idle Iron Decommissioning Guidance for Wells and Platforms* (NTL No 2018-G-3, 2018) (2018 Idle Iron Policy). See also Bureau of Safety and Environmental Enforcement, *Decommissioning Guidance for Wells and Platforms* (NTL No

industry participants a false sense of security that they will not have to help pay if they did not receive a Section 29 Notice in the first instance. Any criticism of OPRED's ability to issue a Section 29 Notice to previously unnoticed parties through Petroleum Act section 34 overlooks the fact that exited parties should already be well aware that the decommissioning liabilities accrued during their participation in the project stayed with them.

In addition, bankruptcy's role in liability is much more straightforward in the UK than in the US. In the UK, it is statutorily established that decommissioning funds are exempt from insolvency laws,<sup>53</sup> but in the US, courts are developing different interpretations on how decommissioning obligations fit within US bankruptcy laws. Also, the UK's approach addresses post-removal risk and assigns liability for monitoring plugged wells even after decommissioning is complete, which the US model does not address at all. For these reasons, of the two equally strong liability structures, the UK model is even more clear and comprehensive.

## B. Financial review and additional security

The US and the UK both authorise regulatory authorities to evaluate a private party's financial wellbeing and to require financial assurances in some circumstances.

### 1. US financial review and additional security

In the US, BOEM requires bond requirements at specific amounts before it will issue a lease, approve an exploration plan, approve a development and production plan, and approve a lease assignment.<sup>54</sup> In addition, BOEM may require supplementary financial assurances to ensure a lessee or owner is able to meet the requirements of their lease and the law, including decommissioning obligations.<sup>55</sup> BOEM's enforcement options for failure to provide additional security when requested are assessing penalties, requesting operational suspension, or initiating lease cancellation.<sup>56</sup>

In 2015, the US Government Accountability Office reported that BOEM had required only \$2.9 billion in bonds and financial assurances for decommissioning liabilities in the Gulf of Mexico estimated to cost \$38.2 billion.<sup>57</sup> Oil prices plummeted in 2015 and 2016,<sup>58</sup> and 114 North American oil production companies initiated bankruptcy proceedings

by the end of 2016.<sup>59</sup> Against this backdrop, BOEM significantly increased its financial assurance requirements for decommissioning obligations in July 2016 by issuing NTL No. 2016-N01.<sup>60</sup> This notice (i) announced the new practice of annual reviews of financial ability; (ii) required supplemental assurances from previously exempt companies; and (iii) changed BOEM's assessment method from a single lease perspective to an evaluation of all liabilities on all leases held by a particular company.<sup>61</sup> This guidance was criticised for its potential to have a chilling effect on offshore drilling projects.<sup>62</sup> Indeed, many small offshore oil and gas companies lacked adequate collateral to find enough credit to meet the demands of NTL No. 2016-N01.<sup>63</sup> In December 2016, BOEM sent orders to 'sole liability properties' to provide additional security because 'sole liability properties represent the greatest programmatic risk to the American taxpayer',<sup>64</sup> but withdrew them in February 2017 to allow the new Trump administration to review the programme.<sup>65</sup>

In April 2017, President Trump signed Executive Order 13795, Implementing an America-First Offshore Energy Strategy, and called for NTL 2016-01 to be reviewed in the light of 'minimising unnecessary regulatory burdens'.<sup>66</sup> BOEM indefinitely postponed the implementation of NTL 2016-01 in June 2017.<sup>67</sup> At present, there is uncertainty about how BOEM plans to assess additional financial security requirements. Despite the price of oil making a recovery, offshore drilling has not regained much popularity, due in part to the success of cheaper onshore fracking opportunities.<sup>68</sup>

### 2. UK financial review and additional security

The UK's OGA considers 'financial capability' as a single factor in determining whether to award a licence, approve a licence transfer or change in control, consent to a well or field development, or authorise pipeline works.<sup>69</sup> Financial capability includes 'financial viability' - whether an entity is solvent and will remain so - as well as an entity's 'financial capacity' to fulfil current and future obligations under the lease.<sup>70</sup> Financial capability may be demonstrated through a guarantee or alternative funding methods.<sup>71</sup> OGA may choose to share this information with OPRED.<sup>72</sup> The 2008 Energy Act modified the Petroleum Act to authorise OPRED to gather financial information from parties subject to decommissioning liability, and, upon finding an 'unacceptable' risk to taxpayers,

2010-G05, 2010) (2010 Idle Iron Policy).

<sup>53</sup> Petroleum Act 1998, ss 38A and 38B.

<sup>54</sup> 30 CFR §§ 556.520(a)(4), 556.900-556.907.

<sup>55</sup> 30 CFR § 556.901(d).

<sup>56</sup> 30 CFR §§ 250.173, 550.1400-550.1497, 556.1102.

<sup>57</sup> GAO Report (n 4) 20.

<sup>58</sup> 'Brent Crude oil prices from 2014 to 2020' (*Statista*, 2019) <[www.statista.com/statistics/409404/forecast-for-uk-brent-crude-oil-prices/](http://www.statista.com/statistics/409404/forecast-for-uk-brent-crude-oil-prices/)> accessed 13 April 2019.

<sup>59</sup> Haynes and Boone LLP, *Oil Patch Bankruptcy Monitor* (2019) 8-9.

<sup>60</sup> Bureau of Ocean Energy Management, *Requiring Additional Security* (NTL No 2016-N01, 2016) 1.

<sup>61</sup> *ibid*.

<sup>62</sup> Josh Sherman, 'New BOEM regulations threaten independent Gulf of Mexico operators' (*Opportune*, 12 September 2016) <[www.offshore-mag.com/articles/print/volume-76/issue-9/departments/regulatory-perspectives/new-boem-regulations-threaten-independent-gulf-of-mexico-operators.html](http://www.offshore-mag.com/articles/print/volume-76/issue-9/departments/regulatory-perspectives/new-boem-regulations-threaten-independent-gulf-of-mexico-operators.html)> accessed 12 April 2019.

<sup>63</sup> Steed and Sherman (n 51).

<sup>64</sup> Bureau of Ocean Energy Management, 'BOEM Prioritizes Implementation of Risk Management and Financial Assurance Program' (2017) <[www.boem.gov/note01062017/](http://www.boem.gov/note01062017/)> accessed 13 April 2019.

<sup>65</sup> Bureau of Ocean Energy Management, 'BOEM Withdraws Sole Liability Orders' (2017) <[www.boem.gov/note02172017/](http://www.boem.gov/note02172017/)> accessed 13 April 2019.

<sup>66</sup> Exec Order No 13795, 82 Fed Reg 20815, 20816 (28 April 2017).

<sup>67</sup> Bureau of Ocean Energy Management 'BOEM Extends Review Timeline for Notices to Lessees No. 2016-N01' (2017) <[www.boem.gov/note06222017/](http://www.boem.gov/note06222017/)> accessed 22 June 2017.

<sup>68</sup> Nathalia Jewell and Anne-Fluer Plassais, 'Medium- to long-term offshore rig outlook' (*McKinsey & Company*, April 2018) <[www.mckinsey.com/industries/oil-and-gas/our-insights/medium-to-long-term-offshore-rig-outlook-a-case-for-optimism-despite-shale-growth](http://www.mckinsey.com/industries/oil-and-gas/our-insights/medium-to-long-term-offshore-rig-outlook-a-case-for-optimism-despite-shale-growth)> accessed 13 April 2019.

<sup>69</sup> Oil and Gas Authority, *Financial Guidance* (2018) paras 3.1-3.2, 3.12.

<sup>70</sup> *ibid* para 3.4.

<sup>71</sup> *ibid* paras 3.7-3.8.

<sup>72</sup> *ibid* para 3.6.

to require additional decommissioning security.<sup>73</sup> OPRED's stated priority is to monitor licences with the 'highest risk of unfunded liabilities', which generally means those that were never previously owned by a major corporation.<sup>74</sup> Not responding to a request for information from OPRED or providing false information is an offence.<sup>75</sup> As of January 2019, OPRED has ordered a total of £844 million to be set aside for decommissioning costs.<sup>76</sup>

### 3. Financial review and additional security comparison

The US and the UK are similar in that a company's finances are important for acquiring permission to take the next step in an oil and gas project. Although the US typically requires set bonds, they are quite low and do not inquire into the likelihood of the company staying solvent or its ability to meet future responsibilities. For example, the bond for a single new lease is \$50,000.<sup>77</sup> The UK model does not require set bond amounts but takes a much more rigorous look into a company's financial health. On this provision alone, the UK model is better suited to predicting a party's ability to pay for decommissioning.

Nonetheless, both the US and UK authorise regulatory authorities to make more in-depth financial reviews and require additional financial assurances to ensure that a private party will pay for decommissioning instead of the taxpayer. Although additional financial assurances are criticised for their dampening effect on the industry, as discussed in the next section both the US and UK use a number of policies to assist parties with reducing decommissioning costs and to incentivise continued investment. As a final thought on financial assurances, even though BOEM's NTL 2016-01 was controversial and its fate is unclear, it was at least an effective wake-up call to industry take a careful look at their decommissioning liabilities and plan for the future. The UK currently prioritises the examination of the most high-risk leases, and the US previously also pursued this policy. Both also give broad discretion to their regulatory bodies to require additional financial assurances.<sup>78</sup> Nevertheless, the level of discretion that BOEM and OPRED exercise may differ considerably in practice.

## C. Decommissioning cost management

The US and UK have introduced a number of policies that are designed or function to reduce decommissioning costs for private parties.

### 1. US decommissioning cost management

The US has no direct regulations on cost minimisation strategies for a decommissioning plan and does not require a cost estimate to be in a decommissioning application.<sup>79</sup> However, a summary of expenditure for decommissioning, including the removal of pipelines, must be filed after decommissioning is complete.<sup>80</sup> Nevertheless, there are policies in place that claim to or actually result in decommissioning cost savings. A few years after Hurricane Katrina and Hurricane Rita destroyed many platforms in the Gulf of Mexico, BOEM established the 'Idle Iron' policy in NTL 2010-G05, which states that platforms and wells damaged by storms are more expensive to decommission.<sup>81</sup> NTL 2010-G05, applicable to the Gulf of Mexico, requires wells that are no longer useful to be permanently plugged within three years and platforms that have been destroyed or are no longer useful to be removed within five years.<sup>82</sup> A 'loophole' used by many companies was to claim that a particular well may be used in the future so the well would not need to be permanently plugged until the end of its lease, which may be as long as 70 years.<sup>83</sup> This loophole was somewhat eroded in 2018 when BOEM updated the Idle Iron policy via NTL 2018-G03 to clarify that BSEE may still require a downhole zonal isolation plug on a well that is determined to have a future use if it is idle.<sup>84</sup>

In addition, the BSEE highly encourages operators to participate in state 'Rigs to Reefs' programmes when possible, which is considerably less expensive than complete removal.<sup>85</sup> Under these programmes, more than 500 platforms have been repurposed as reefs in the Gulf of Mexico.<sup>86</sup> And finally, accrual basis taxpayers may deduct costs for decommissioning after performance.<sup>87</sup>

### 2. UK decommissioning cost management

The Energy Act 2016 requires DPs to be developed in consultation with OGA to reduce decommissioning costs and consider alternative uses for the structures before the DP is submitted to BEIS for approval.<sup>88</sup> A proposed DP must include the estimated cost.<sup>89</sup> After decommissioning, a close out report with actual costs and explanations for differences in projected and actual costs must be submitted within one year of the completion of decommissioning.<sup>90</sup>

The tax regime provides some cost minimisation for licensees. In order to encourage oil and gas production in the UK

<sup>73</sup> OPRED Guidance Notes paras 2.17, 3.28.

<sup>74</sup> National Audit Office, *Oil and gas in the UK - Offshore Decommissioning* (HC 1870, 2019) para 3.13 (UK Audit Report).

<sup>75</sup> Petroleum Act 1998, s 38(2A)(3).

<sup>76</sup> UK Audit Report 4; OPRED Guidance Notes para 6.27.

<sup>77</sup> 30 CFR § 556.900(a)(1).

<sup>78</sup> Bureau of Ocean Energy Management, 'BOEM Prioritizes Implementation of Risk Management and Financial Assurance Program' (2017) <[www.boem.gov/note01062017/](http://www.boem.gov/note01062017/)> accessed 13 April 2019; Department for Business, Energy and Industrial Strategy, *Assessing the Financial Capability of Offshore Oil and Gas Companies to Deliver Decommissioning Obligations* (2018) 6-10 (draft).

<sup>79</sup> 30 CFR § 250.1727.

<sup>80</sup> 30 CFR § 250.1704 T(i).

<sup>81</sup> 2010 Idle Iron Policy 1.

<sup>82</sup> *ibid* 2, 4.

<sup>83</sup> Zoë Schlanger, 'Since BP Oil Spill, the Number of Gulf Oil Wells Abandoned with Temporary Seals Has Risen' (Newsweek, 20 July 2015) <[www.newsweek.com/oil-wells-gulf-left-only-temporary-seals-1950s-355370](http://www.newsweek.com/oil-wells-gulf-left-only-temporary-seals-1950s-355370)> accessed 30 March 2019.

<sup>84</sup> 2018 Idle Iron Policy 3.

<sup>85</sup> Bureau of Safety and Environmental Enforcement, 'Rigs-to-Reefs' Policy (IPD No. 2013-07, 2013) para 5. See also Bull and Love (n 6) 279, 281.

<sup>86</sup> Bureau of Safety and Environmental Enforcement, 'Rigs to Reefs' <[www.bsee.gov/what-we-do/environmental-focuses/rigs-to-reefs](http://www.bsee.gov/what-we-do/environmental-focuses/rigs-to-reefs)> accessed 8 October 2019.

<sup>87</sup> 'Oil and gas taxation in the United States' (Deloitte) <[www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/dttl-er-US-oilandgas-guide.pdf](http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/dttl-er-US-oilandgas-guide.pdf)> accessed 12 April 2019.

<sup>88</sup> Petroleum Act 1998, s 29(2A)(a).

<sup>89</sup> Petroleum Act, s 29(4)(a).

<sup>90</sup> OPRED Guidance Notes paras 14.1-14.2.



continental shelf and to avoid a chilling effect on asset trading, the UK has special decommissioning provisions for corporation tax and petroleum revenue tax.<sup>91</sup> Oil and gas companies may deduct decommissioning costs against corporate taxes paid since 2002.<sup>92</sup> In 2013, Her Majesty's Treasury introduced Decommissioning Relief Deeds (DRDs), which guarantee licensees that they will receive the same tax relief as was available in 2013 even if another liable party is unable to fund its portion of the decommissioning costs.<sup>93</sup> DRDs are contractual stabilisation mechanisms that overcome the problem of changes in the UK offshore tax regime and are reflected in the related Decommissioning Security Agreements among the parties to the relevant Joint Operating Agreement. DRDs have received heavy criticism from non-governmental organisations. For example, it was publicised in April 2019 that Mitsubishi subsidiaries will receive £400 million from the UK under the terms of its DRD.<sup>94</sup> Additionally, as of November 2018, under some situations the purchaser of an oil and gas license may also receive the seller's tax history and offset decommissioning costs against this.<sup>95</sup> As for petroleum revenue tax, operators are charged 0% on fields that were commissioned before 1993; this rate was reduced from 50% in 2016.<sup>96</sup> Her Majesty's Revenue and Customs estimates that these tax structures will result in £12.9 billion in taxes being repaid to operators and £11.1 billion of lost future revenue from company's profits being decreased by decommissioning costs.<sup>97</sup> The industry defends these tax structures on the basis that offshore petroleum projects have been generating revenue and jobs for the UK for decades, including almost £330 billion in production taxes.<sup>98</sup>

### 3. Comparison of decommissioning cost management

Both the US and UK have introduced a number of interesting and creative policies to reduce decommissioning costs for private parties, but they are not equally effective. The UK's required consultation with OGA to develop cost minimisation strategies is heavy-handed in comparison to the US, which does not require that parties conduct any cost analysis beforehand. One would imagine that parties with decommissioning obligations will be amply motivated by their own bottom line to reduce costs and the additional government intervention is unnecessary; although perhaps the lack of government oversight contributes to increased environmental and safety risks. Interestingly, the amount of government involvement at this stage is reflected in the vastly different fees for filing an application to commence decommissioning. The US charges \$4,684 to process an application to decommission a platform and between \$1,142 and \$2,170 for a pipeline.<sup>99</sup> The UK charges between £50,000 and £250,000 to review a proposed DP.<sup>100</sup> On the other hand, given OGA's mission is to reduce costs and it reviews every DP, a consultation with OGA is in all likelihood quite helpful for a company transitioning from decades of production to the entirely different task of dismantling their equipment.

The US's Idle Iron policy is based in part on the principle that removing structures before storms is more cost-effective than removing them after they are damaged. From an operator's point of view, however, it is always better to defer costs, and so the unintended effect of the Idle Iron policy as introduced in 2010 was a 25% increase in the number of temporarily plugged wells from 2010 to 2015 because parties took advantage of the future use loophole.<sup>101</sup> The 2018 update to the Idle Iron policy may provide more environmental protection, but it remains to be seen if it will result in lower decommissioning costs for some operators. Whether or not the Idle Iron policy has resulted in cost savings is not easily quantifiable. However, the Rigs to Reefs programmes are much more easily recognised for their effectiveness at decreasing decommissioning costs.<sup>102</sup> The UK's ability to implement such a programme on a wide-scale is subject to the requirements of the OSPAR Convention and would not be a simple task.<sup>103</sup>

As for taxes, the UK model is clearly more tailored than the US version to support the smaller operators who typically work on late-life leases. The DRDs reassure late-life operators that the taxpayer will share the burden of funding decommissioning. The system works to keep licensees financially able to stay in business and perform decommissioning, so it seems a small price to pay.

## Conclusion

The US and the UK both have sophisticated regimes relating to the funding of decommissioning. The UK version is more comprehensive and entails much greater government involvement, although its tax relief measures equate to partial taxpayer-funded decommissioning. This approach is mindful of the future and tailored to the realities of industry practice on the continental shelf. The US model has a lighter touch, but currently has an unclear policy on financial assurance requirements. It also has no provisions for monitoring wells after they have been plugged. As such, this presents financial risk to the federal government (and the general taxpayer) as well as environmental risk to the outer continental shelf and coastal communities. The US should not 'kick the can down the road' and address these shortcomings in its approach.

## Biography

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<sup>91</sup> UK Audit Report paras 2.10-2.11, 2.13.

<sup>92</sup> *ibid* para 2.11.

<sup>93</sup> *ibid* para 2.13.

<sup>94</sup> Allister Thomas, 'Exclusive: Treasury paying £400m decommissioning relief

to Japanese giant Mitsubishi' (*Energy Voice*, 8 April 2019) <[www.energyvoice.com/oilandgas/north-sea/196533/exclusive-treasury-paying-400m-in-north-sea-decom-relief-to-japanese-giant-mitsubishi/](http://www.energyvoice.com/oilandgas/north-sea/196533/exclusive-treasury-paying-400m-in-north-sea-decom-relief-to-japanese-giant-mitsubishi/)> accessed 12 April 2019.

<sup>95</sup> UK Audit Report para 2.16.

<sup>96</sup> *ibid* para 2.11.

# Principle of Estoppel in the enforcement of small island developing states' right to climate finance.

Mohammad Hazrati and Frosina Antonovska



**Mohammad Hazrati**



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## Introduction

Climate change is one of the biggest challenges facing humanity today.<sup>1</sup> It affects all countries and its impacts are felt<sup>2</sup> in both extreme events,<sup>3</sup> such as hurricanes and floods, and slow-onset events, such as ocean acidification.<sup>4</sup> The Small Island Developing States (SIDS)<sup>5</sup> is one group that is particularly affected by climate change. Even though they only contribute 1% of global greenhouse gas emissions,<sup>6</sup> they are the most

exposed group<sup>7</sup> to climate change<sup>8</sup> because of their size, isolation and very limited financial capability<sup>9</sup> to respond to this threat.<sup>10</sup>

By contrast, developed states have historically contributed the largest share of global emissions and are continuing to do so.<sup>11</sup> However, recognising this, they have acknowledged the need to support SIDS by promising funds to meet their adaptation and

<sup>1</sup> ECOSOC, Climate Change Statistics: Report of the Secretary-General (E/CN.3/2016/15, 18 December 2015) 2.

<sup>2</sup> Global Programme on Risk Assessment and Management for Adaptation to Climate Change, 'Climate Change Realities in Small Island Developing States in the Caribbean' (2017) 3.

<sup>3</sup> Such as storms, hurricanes, floods, landslides and heatwaves.

<sup>4</sup> Such as sea level rise, increasing temperatures, ocean acidification, melting of glaciers and related impacts, salinisation, land and forest degradation, loss of biodiversity and desertification.

<sup>5</sup> During the 1992 Earth Summit, the international community recognised them as a distinct group of countries with 'peculiar social, environmental and economic vulnerabilities'. SIDS comprise the following 35 UN member states: Antigua and Barbuda, Bahamas, Barbados, Belize, Cabo Verde, Comoros, Cuba, Dominica, Dominican Republic, Fiji, Grenada, Guinea-Bissau, Guyana, Haiti, Jamaica, Kiribati, Maldives, Marshall Islands, Mauritius, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tomé and Principe, Seychelles, Singapore, Solomon Islands, Suriname, Timor-Leste, Tonga, Trinidad and Tobago, and Tuvalu.

<sup>6</sup> See more: UNFCCC, 'Climate Change: Small Island Developing States' (2005).

<sup>7</sup> First, since a third of their population live on land less than five meters below sea level, they are existentially threatened by the sea level rise, storm surges and coastal destruction. In addition, from a developmental aspect, most SIDS are small territories with growing population density, remoteness

and susceptibility to natural disasters, as well as lack of money. See more: UNDP, 'Responding to Climate Change in Small Island Developing States' (2010); 'Small Island Nations at the Front Line of Climate Action' (UNDP, 18 Sept 2018) < [www.undp.org/content/undp/en/home/presscenter/pressreleases/2017/09/18/small-island-nations-at-the-frontline-of-climate-action-.html](http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2017/09/18/small-island-nations-at-the-frontline-of-climate-action-.html) > accessed 3 September 2018; Raúl Alfaro-Pelico, 'Small Island Developing States and Climate Change: Effects, Responses and Positions beyond Durban' (2012) Real Instituto Elcano Working Paper 1/2012 < [www.realinstitutoelcano.org/wps/portal/rielcano\\_en/contenido?WCM\\_GLOBAL\\_CONTEXT=/elcano/elcano\\_in/zonas\\_in/climate-change/dt1-2012](http://www.realinstitutoelcano.org/wps/portal/rielcano_en/contenido?WCM_GLOBAL_CONTEXT=/elcano/elcano_in/zonas_in/climate-change/dt1-2012) > accessed 10 November 2018.

<sup>8</sup> WHO, 'Special Initiative: Climate Change and Health in Small Island Developing States' (2017) < [www.who.int/globalchange/sids-initiative/about/en/](http://www.who.int/globalchange/sids-initiative/about/en/) > accessed 12 October 2018.

<sup>9</sup> The associated development challenges from sea level rise, altered rainfall patterns, and storm surges are even suspected to 'reverse progress made towards the Millennium Development Goals now and in the future'. See more: UNDP, 'Responding to Climate Change in Small Island Developing States' (2010).

<sup>10</sup> UNDP and Alliance of Small Island States (AOSIS), 'Rising Tides, Rising Capacity: Supporting a Sustainable Future for Small Island Developing States' (2017).

<sup>11</sup> UN General Assembly Res 48/189, (20 January 1994) UN Doc A/RES/48/189, preamble.

mitigation costs. This narrative has been consistently pursued in public debate and affirmed in climate change negotiations ever since 1992.<sup>12</sup> Developed states have subsequently expressed a number of financial commitments,<sup>13</sup> culminating in the establishment of the US\$100 billion annual target for financing climate change mitigation and adaptation programmes (the Copenhagen pledge) by 2020.<sup>14</sup> In 2015, as a result of the Copenhagen pledge, the Paris Agreement recognised a financial obligation to support SIDS mitigation and adaptation programmes (Article 9).

Yet, four years on, the flow of climate finance remains limited and needs to be scaled up. For instance, after the so-called 'initial resource mobilisation' of US\$10.24 billion<sup>15</sup> to the Green Climate Fund (GCF) - established to allocate resources to developing countries, including SIDS - allocations to the GCF have dried up. A strong replenishment is a crucial step towards achieving the Paris goals. In addition, although most developed states have submitted their nationally determined contributions (NDCs), their cumulative effect is insufficient to be able to maintain the global average temperature within 2°C above pre-industrial levels (notwithstanding the fact that the 2018 IPCC report warned states that the target should be reduced to 1.5°C). On top of this, some countries, such as the US, have announced their intention to reduce their level of ambition<sup>16</sup> and/or withdraw from the Paris Agreement altogether.<sup>17</sup> All this brings into question the extent to which SIDS have a legal right they can rely on in relation to financial support.

This article focuses on the legal right of SIDS to financial support. We argue that if there is a breach of the financial obligation set out in Article 9 but SIDS are unable, for any reason, to rely on such breach alone, they may nevertheless achieve redress by invoking the doctrine of estoppel. To do so, SIDS would need to demonstrate their detrimental reliance upon developed states' extensive and longstanding public statements and conduct.

## 1. The obligation of developed states to provide financial assistance to SIDS

### 1.1. Longstanding commitment

The obligation of developed states to provide financial assistance to SIDS has its roots in a longstanding commitment to support SIDS in general. As far back as 1992, developed states were committed to addressing the problems of SIDS, as noted

in Chapter 17 of Agenda 21 - the action plan on sustainable development adopted at the United Nations Conference on Environment and Development (1992 UNCED Rio Earth Summit).<sup>18</sup> This was followed by programmes of action and other implementation measures<sup>19</sup> aimed at promoting mechanisms for raising the capacity of SIDS to effectively plan and manage climate change impacts.<sup>20</sup>

Within the UN Climate Change Regime, a financial mechanism for the provision of financial resources was established under the 1992 United Nations Framework Convention on Climate Change (UNFCCC). Article 11 of the Convention states that 'the developed country Parties may also provide and developing country Parties avail themselves of, financial resources related to the implementation of the Convention through bilateral, regional and other multilateral channels.'<sup>21</sup> It was not until the Copenhagen Accord, adopted at the 2009 Conference of the Parties (COP 15), that developed countries made a non-legally binding, but clear political commitment to:

[...] provide new and additional resources, [...] approaching USD 30 billion for the period 2010–2012, with a balanced allocation between adaptation and mitigation; funding for adaptation will be prioritized for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa [emphasis added]. In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries [emphasis added]. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. New multilateral funding for adaptation will be delivered through effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries. A significant portion of such funding should flow through the Copenhagen Green Climate Fund [emphasis added].<sup>22</sup>

So, at COP 15 it was agreed that 37 developed countries plus the European Union would 'mobilise' a combined US\$100 billion dollars in climate finance from both the private and the public sectors for developing countries by 2020.<sup>23</sup> However, the Copenhagen Accord, as a non-binding political agreement, was no more than a roadmap for the future of climate finance.<sup>24</sup>

<sup>12</sup> The Barbados Programme of Action adopted in 1994, further complemented by The Mauritius Strategy of Implementation of 2005 and MSI+5 outcome document, recognised that SIDS have their own peculiar vulnerabilities and characteristics, differentiating them from other developing countries in general. The 'Future We Want' outcome document adopted at the 2012 Rio+20 Conference reinforced that the unique vulnerability of SIDS is due to 'their small size, remoteness, narrow resource and export base, and exposure to global environmental challenges' (UN General Assembly, The Future We Want, A/RES/66/288).

<sup>13</sup> Agenda 21; BPOA; SAMOA; SIDS Partnership Framework; 2030 Agenda.

<sup>14</sup> UNFCCC 2009d Decision 2/CP.15 Copenhagen Accord.

<sup>15</sup> 'Status of Pledges and Contributions made to the Green Climate Fund', <[www.greenclimate.fund/documents/20182/24868/Status\\_of\\_Pledges.pdf?eef538d3-2987-4659-8c7c-5566ed6afd19](http://www.greenclimate.fund/documents/20182/24868/Status_of_Pledges.pdf?eef538d3-2987-4659-8c7c-5566ed6afd19)> accessed 27 May 2019.

<sup>16</sup> Johannes Urpelainen and Thijs Van de Graaf, 'United States Non-Cooperation and the Paris Agreement' (2018) 18(7) Climate Policy 839-51.

<sup>17</sup> Elliot Smilowitz, 'Trump: We Are Getting Out of Paris Climate Deal' (*The Hill*, 1 June 2017) <<https://thehill.com/policy/energy-environment/335955-trump-pulls-us-out-of-paris-climate-deal>> accessed 1 September 2018.

<sup>18</sup> Agenda 21 Chapter 17(1)(g).

<sup>19</sup> Barbados Programme of Action of 1994, Barbados Programme of Action +5 of 1999, Johannesburg Plan of Implementation of 2002, Mauritius Strategy of Implementation of 2005, Mauritius Strategy of Implementation +5 of 2010, Future We Want of 2012, SIDS Accelerated Modalities of Action (SAMOA) Pathway (2014), SIDS Partnership Framework, 2030 Agenda.

<sup>20</sup> Agenda 21; BPOA; SAMOA; SIDS Partnership Framework; 2030 Agenda.

<sup>21</sup> UN General Assembly Res 48/189, 20 January 1994, A/RES/48/189, art 11(5).

<sup>22</sup> Copenhagen accord, para 8.

<sup>23</sup> Chris Mooney, 'Days Before Trump's Inauguration, State Dept. Sends \$500 million to United Nations Climate Fund' (*Washington Post*, 17 January 2017) <[www.washingtonpost.com/news/energy-environment/wp/2017/01/17/days-before-trumps-inauguration-state-dept-sends-500-million-to-united-nations-climate-fund/?utm\\_term=.10519770090f](http://www.washingtonpost.com/news/energy-environment/wp/2017/01/17/days-before-trumps-inauguration-state-dept-sends-500-million-to-united-nations-climate-fund/?utm_term=.10519770090f)> accessed 5 October 2018.

<sup>24</sup> See more at Liane Schalatek, Neil Bird and Jessica Brown, 'Where's the Money? The Status of Climate Finance Post-Copenhagen' (2010) ODI Climate Finance Policy Brief 1 <[www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/5844.pdf](http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/5844.pdf)>.

The following year, at the COP held in Cancun, the parties established the so-called Green Climate Fund (GCF) as a mechanism for the allocation of funds to developing states (including SIDS) for climate change mitigation and adaptation. The GCF was established to give effect to Article 11 of the UNFCCC. Later, in 2015, at COP21 held in Paris, the GCF (together with the pre-existing Global Environment Facility,<sup>25</sup> Special Climate Change Fund and the Least Developed Countries Fund)<sup>26</sup> was ‘entrusted with the operation of the Financial Mechanism’ of the UNFCCC.<sup>27</sup>

In addition, at COP 21 in 2015, developed states’ longstanding commitment to provide financial support to developing states (including SIDS) was finally codified and given a legally binding effect. Article 9(1) of the Paris Agreement states that: ‘Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention [italics added].’<sup>28</sup> Further on, paragraph 4 seeks to strike a balance between mitigation and adaptation measures and the priorities and needs of most vulnerable groups, including SIDS (which are also often least developed countries). Article 9(3) clarifies that climate finance should come from a variety of sources, with public funds playing a significant role. It also highlights that such mobilisation should come with ‘a progression beyond previous efforts.’<sup>29</sup>

Although the Paris Agreement itself does not contain a quantified commitment, the decision adopting the Paris Agreement (as well as the 2018 Paris Rulebook<sup>30</sup>) reaffirmed the existing commitment to jointly mobilise assistance for developing countries of US\$100 billion per year by 2020. In the decision, the COP:

Resolves to enhance the provision of urgent and adequate finance, technology and capacity-building support by developed country Parties in order to enhance the level of ambition of pre-2020 action by Parties, and in this regard strongly urges developed country Parties to scale up their level of financial support, with a concrete roadmap to achieve the goal of jointly providing USD 100 billion annually by 2020 for mitigation and adaptation while significantly increasing adaptation finance from current levels and to further provide appropriate technology and capacity-building support.<sup>31</sup>

Further on, the decision adopting the Paris Agreement recites that developed countries intend to continue their existing collective mobilisation goal of US\$100 billion per year until 2025. It also notes that prior to 2025,<sup>32</sup> the COP, which serves as the meeting of the parties to the Paris Agreement, shall set a new collective quantified goal from a floor of the previously set

US\$100 billion per year, considering the needs and priorities of developing countries.<sup>33</sup>

This article argues that the obligation for financial support stipulated in Article 9(1) of the Paris Agreement needs to be interpreted in light of the quantification of the developed countries’ effort spelled out in the decision adopting the Agreement. At a multilateral conference, it is common practice to draw up a ‘Final Act’,<sup>34</sup> such as the given decision, which clearly should be treated as part of the context for the purpose of interpreting the treaty, as per Article 31(2)(a) of the Vienna Convention.<sup>35</sup> Hence, the decision adopting the Paris Agreement is regarded as part of the applicable context for the purpose of interpreting the treaty i.e. Article 9 of the Paris Agreement.

## 1.2 Article 9 of the Paris Agreement: Content and legal nature of the obligation to provide financial assistance

So where does the Paris Agreement leave SIDS in terms of their legal entitlement to receive funding for climate action? Articles 3, 4(5) and 7(13) of the Paris Agreement clearly reference that support is required by developing countries. Article 9(1) states it is the developed countries that will provide this support. It reaffirms the legally binding commitments under the Convention to provide financial resources to developing countries, drawing a distinction between the obligatory nature of support from developed countries, and support from other parties that is described as voluntary.<sup>36</sup>

However, in order to establish the nature of the obligation for financial support, this carefully negotiated text requires a detailed analysis of the wording used. Article 31 of the Vienna Convention on the Law of Treaties establishes the general rule of interpretation of treaties: ‘a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.’<sup>37</sup> The context includes the preamble, annexes and any agreement or instrument between the parties related to the conclusion of a treaty.<sup>38</sup> A special meaning is given to the term of treaty only if the parties so intended.<sup>39</sup>

In view of the above, we maintain that the obligation codified in Article 9(1) of the Paris Agreement is (a) a collective obligation and (b) an obligation of result.

(a) Article 9(1) uses the term ‘developed country Parties’ and thus creates a collective rather than an individual obligation for developed country parties to the Agreement. As Article 9(3) introduces the broad concept of mobilisation of climate finance, which includes ‘a wide variety of sources, instruments and channels’ described as a ‘global effort’, it can be interpreted as a common commitment of all developed country parties.<sup>40</sup>

<sup>25</sup> The Global Environment Facility (GEF) has served as an operating entity of the financial mechanism since the Convention’s entry into force in 1994. See more at <<https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>> accessed 23 May 2019

<sup>26</sup> Regarding the Adaptation Fund (established under the Kyoto Protocol in 2001) serving the Paris Agreement negotiations are underway.

<sup>27</sup> COP 21 Paris decision 1/CP.21, para 58.

<sup>28</sup> UNFCCC, Paris Agreement, 12 December 2015, art 9(1).

<sup>29</sup> Paris Agreement, art 9(3).

<sup>30</sup> COP 24 Katowice Climate Package: Decision FCCC/PA/CMA/2018/3/Add.1

<sup>31</sup> FCCC/CP/2015/10/Add.1, para 114.

<sup>32</sup> *ibid*, para 53.

<sup>33</sup> UNFCCC, ‘Climate Finance’ <<https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations>> accessed 5 October 2018.

<sup>34</sup> Richard Gardiner, *Treaty Interpretation* (2nd Edition, OUP 2015) 87.

<sup>35</sup> Vienna Convention on the Law of Treaties, 23 May 1969.

<sup>36</sup> As per Paris Agreement art 9(2).

<sup>37</sup> United Nations, Vienna Convention on the Law of Treaties, 23 May 1969, art 31(1).

<sup>38</sup> *ibid* art 31(2).

<sup>39</sup> *ibid* art 31(4).

<sup>40</sup> Christina Voigt and Felipe Ferreira, ‘Dynamic Differentiation: The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement’ (2016) 5(2) TEL 299-300.



(b) The Convention makes the choice between the imperative verb 'shall' and the milder 'should' in different subparagraphs of Article 9, clearly drawing the distinction between imperative requirements and statements of intent or desired outcome.

<sup>41</sup> Articles 9(1) and 9(5), for example, state that developed countries 'shall provide financial resources' and 'shall biennially communicate indicative quantitative and qualitative information', respectively. Article 9(1) and 9(5) thus codify obligations of result for developed states. Conversely, Articles 9(4) and 9(9) stipulate the desired disposition of the scaled-up financial resources. Namely, they state they 'should be aiming towards' a balance between adaptation and mitigation, and support for developing countries. In addition, they 'shall aim to ensure efficient access to financial resources'. The provisions do not state an explicit obligation for the achievement of a particular result. Therefore, they only constitute obligations of conduct.

The fact that Article 9 creates a collective obligation of result for developed countries, raises the question of the nature of their liability in case of failure to provide the stipulated finance. Should SIDS hold a single developed country accountable for its breach of commitment, or should all developed states share liability? When discussing climate change liability, some authors<sup>42</sup> dismiss the notion of joint and several liability for greenhouse gas emitters. However, following the concept of protection of global commons<sup>43</sup> as a longstanding concern of the international community, some conventions intended to protect global commons,<sup>44</sup> such as the liability regime developed to protect the outer space, have already endorsed the concept of joint and several liability.<sup>45</sup> Joint and several liability regimes are commonly combined with rights of contribution among those 'in debt'.<sup>46</sup> The usual argument for the endorsement of joint and several liability<sup>47</sup> is that it is highly relevant where any conduct causing harm is a result

of states acting together and where responsibility cannot be easily attributed to a single state alone. Moreover, it is considered to maximise the likelihood of harm being properly and fully compensated. Yet, the study of shared responsibility in international law is limited,<sup>48</sup> and the principles of international law on the basis of which responsibility (or liability)<sup>49</sup> among multiple actors is allocated are indistinct. Hence the applicability of joint and several liability under the Paris Agreement is a topic for separate investigation and exceeds the scope of the argument of this article.

Regardless of the type of liability, it is indisputable that developed states have committed to jointly mobilise US\$100 billion a year in climate finance by 2020. Furthermore, in Paris, they agreed to continue mobilising finance at this level until 2025. Owing to the diverse sources and instruments of climate finance, it is difficult to determine the exact moment when the full amount will be met, and this is also not the focus of this article. What is crucial is that Article 9 provides clear legal entitlement of SIDS to the pledged financial support by developed states. This is especially so since in all likelihood the situation will worsen for SIDS exposed to tropical storms.<sup>50</sup> Data show that 2017 was one of the warmest years on record with the most costly hurricane season contributing to the highest documented economic losses<sup>51</sup> related to weather and climate. Moreover, the first half of the 2018 summer was also marked by extreme weather,<sup>52</sup> pointing to a continuing trend of climate impact.<sup>53</sup> Therefore, it is of utmost importance that SIDS are able to enforce their right to financial support.

Developed states have also committed to individually and biennially communicate indicative quantitative and qualitative information about their contributions. Thus, their compliance with their pledges can be easily tracked. For instance, the GCF provides a pledge tracker,<sup>54</sup> which indicates that 39 developed countries and 9 developing states have already made their

<sup>41</sup> See more: T Morgandi and J Viñuales, 'Legal Aspects of Energy Policy' (2017) C-EENRG Working Paper 2017-5, 1-15.

<sup>42</sup> Martin Spitzer and Bernhard Burtcher, 'Liability for Climate Change: Cases, Challenges and Concepts' (2017) 2 JETL 137-76.

<sup>43</sup> International law traditionally defines five global commons: high seas, the deep-sea bed, the atmosphere, Antarctica and Outer Space. As the resources in the global commons fall outside the domain of jurisdictions of individual states, the need becomes pressing for collective, coherent decision-making mechanisms on how to govern the global commons. These areas have historically been guided by the principle of the common heritage of humankind - the open access doctrine or the *mare liberum* (free sea for everyone) in the case of the High Seas. See more: UNEP, 'International Environmental Governance of the Global Commons, Division of Environmental Law and Conventions' (2015) <<https://cil.nus.edu.sg/wp-content/uploads/2015/12/Ses4-7.-UNEP-Division-of-Environmental-Law-and-Conventions-Global-Commons.pdf>> accessed 24 December 2018.

<sup>44</sup> Meher Nigar, 'Environmental Liability and Global Commons: A Critical Study' (2018) 60(2) IJLM 435, 443.

<sup>45</sup> The Convention on International Liability for Damage Caused by Space Objects 1972 art IV.

<sup>46</sup> Daryl J Levinson, 'Collective Sanctions' (2003) 56(2) SLR 345-428.

<sup>47</sup> See more: Roland Pierik, 'Shared Responsibility in International Law: A Normative-Philosophical Analysis' in André Nollkaemper and Dov Jacobs (eds) *Distribution of Responsibilities in International Law* (CUP 2015).

<sup>48</sup> Andre Nollkaemper and Dov Jacobs, 'Shared Responsibility in International Law: A Conceptual Framework' (2013) 34 MJIL 359, 362-63.

<sup>49</sup> Some treaties still use the terms responsibility and liability interchangeably, although the decision of the ILC is to reserve the term liability for obligations with respect to injury arising from acts not prohibited by international law.

It appears that many of the cases where the term (joint) liability is used it refers specifically to the obligation to provide compensation for damage.

<sup>50</sup> For example, Dominica's total damages and losses from hurricane Maria in 2017 have been estimated at US\$1.3 billion - about 226% of the country's GDP. And losses for Anguilla, Bahamas, BVI, St Maarten, and Turks and Caicos following hurricanes Irma and Maria have been estimated at US\$5.4 billion. See more: Regina Asariotis '2018 Demonstrates Extreme Weather's Impact on Development' (UNCTAD 31 August 2018) <[http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1840&Sitemap\\_x0020\\_Taxonomy=UNCTAD%20Blogs;#2197;#Transport,%20Climate%20Change%20Impacts%20and%20Adaptation;#20;#UNCTAD%20Home](http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1840&Sitemap_x0020_Taxonomy=UNCTAD%20Blogs;#2197;#Transport,%20Climate%20Change%20Impacts%20and%20Adaptation;#20;#UNCTAD%20Home)> accessed 5 October 2018.

<sup>51</sup> Approximately US\$320 billion. See more: Regina Asariotis '2018 Demonstrates Extreme Weather's Impact on Development' (n 50).

<sup>52</sup> Including record temperatures, heatwaves, droughts, wildfires and devastating rainfalls. See more: Asariotis (n 50).

<sup>53</sup> Recent research suggests a very likely increase in the global average 100-year extreme sea levels of 0.34-0.76 m under a moderate-emission-mitigation-policy scenario and of 0.58-1.72 m under a 'business as usual' scenario between 2000 and 2100. From 2050 onwards, under these scenarios, large swathes of the tropics will be exposed annually to the present-day 100-year event. By the end of the century this could be the case for most of the global coastline, implying unprecedented flood risk levels unless timely adaptation measures are taken. Climate-related extreme events and disasters are projected to also result in significant economic costs. A recent study indicates that by 2100 global flood damages due to sea level rise (and related extreme events) might amount to up to US\$27 trillion per year - about 2.8% of global GDP in 2100. See more: Asariotis (n 50).

<sup>54</sup> Status of Pledges and Contributions Made to the Green Climate Fund (n 15).

pledges, as of January 2019, and the combined funds amount to US\$10.3 billion. The Seventh Report of the GCF to the COP to the UNFCCC lists 46 projects in SIDS that have already been approved for 2018.<sup>55</sup>

In light of this, the announcement of reduced contribution and a possible withdrawal from the Paris Agreement by a developed country, such as the US,<sup>56</sup> adds pressure to the issue of SIDS' reliance on this funding scheme. However, under Article 28 of the Paris Agreement, even if withdrawal takes place, it can only be effective after one year from the receipt of a notification of withdrawal, and it cannot be lodged earlier than three years from the date on which the Paris Agreement entered into force. As the Paris Agreement entered into effect on 4 November 2016, the effective withdrawal of a state, US included, cannot be earlier than 4 November 4 2020. Considering the defined timeframe under the Convention, the states' complete contributions ought to be 'due' by 2020.

All this leads to the question of how SIDS can secure the financial support promised by developed countries. This article argues that the obligation of result in Article 9 is merely a codification of a course of conduct of state practice that is binding by itself. Therefore, even if SIDS were unable to claim there had been a breach of the obligation under Article 9, they could rely on the doctrine of estoppel to establish that a binding commitment exists.

## 2. Can SIDS hold developed states accountable for the violation of the obligation to provide financial assistance?

SIDS have reasonably come to expect their climate change mitigation and adaptation costs to be funded by developed states. This is as a result of the consistent line of public statements made by developed states in the international arena, supported by a course of conduct, including the establishment of funding mechanisms and the allocation of funds. In the following section, this article will argue that if developed states fail to fulfil their obligation under Article 9 of the Paris Agreement and SIDS cannot rely on such breach alone, they could achieve redress by the complementary application of the international principle of estoppel.

The idea that a party should not benefit from his or her own inconsistency (*allegans contraria non audiendus est*) is

considered as the principle underlying estoppel.<sup>57</sup> Accordingly, the clearly expressed developed states' acceptance of predominant responsibility for the greenhouse gases already present in the atmosphere and their explicit and repeated pledging of financial support for SIDS as a result, should estop any later contradictory declarations and actions. The fact that any failure to meet that pledge would have a detrimental effect on the states entitled to rely on their support, especially in the pressing need for adaptation, makes the invocation of estoppel legitimate. The doctrine of estoppel, in international law,<sup>58</sup> exists to protect legitimate expectations of states induced by the conduct of other states.<sup>59</sup> In the present scenario, estoppel could be relied upon to ensure developed states fulfil their obligations to provide financial assistance, in line with their commitments throughout the climate negotiating process since 1992, irrespective of whether or not they are planning to withdraw from the Paris Agreement.

## 3. Application of the principle of estoppel

Before the International Court of Justice, different parties have invoked estoppel in order to oblige another party 'to be consistent in its attitude to a given factual or legal situation'.<sup>60</sup> As Ovchar notes, such a demand has the potential to encourage finality, stability and predictability in international relations,<sup>61</sup> which becomes an imperative at a time when cooperation in many fields is essential.<sup>62</sup> This is especially true when it comes to the global action to combat climate change.

Although the principle of estoppel in public international law is still developing, there is plenty of material available to identify its essential features.<sup>63</sup> The main requirements for the principle of estoppel to be successfully invoked are the following: (a) a clear and consistent statement of fact; (b) which is voluntary, unconditional and authorised; and (c) which is relied on in good faith to the detriment of the other party or to the advantage of the party making the statement.<sup>64,64</sup>

The following subsections examine each of the three requirements of estoppel in the case of SIDS' entitlement to financial support under the Paris Agreement. As may already be evident, the first and second requirements in the context at hand would be hard to challenge. The last requirement, however, is the most contentious precondition and it calls for careful and detailed examination.

<sup>55</sup> Green Climate Fund, 'Seventh Report of the Green Climate Fund to the Conference of the Parties to the United Nations Framework Convention on Climate Change' GCF/B.20/15, 8 June 2018.

<sup>56</sup> Joe Thwaites, 'US Climate Finance Improves with 2019 Budget, But There's Still a Long Way to Go' (WRI 20 February 2019) <[www.wri.org/blog/2019/02/us-climate-finance-improves-2019-budget-theres-still-long-way-go](http://www.wri.org/blog/2019/02/us-climate-finance-improves-2019-budget-theres-still-long-way-go)> accessed 6 June 2019.

<sup>57</sup> *Temple of Preah Vihear (Cambodia v Thailand)* (Merits) [1962] ICJ Rep 6, 39 (Separate Opinion of Judge Alfaro) ('Temple of Preah Vihear'); *North Sea Continental Shelf (Denmark v Federal Republic of Germany; Netherlands v Federal Republic of Germany)* [1969] ICJ Rep 4, 120 (Separate Opinion of Judge Ammoun) ('North Sea Continental Shelf').

<sup>58</sup> Estoppel principle in international law stems from common and Anglo-American law, without being identical.

<sup>59</sup> Cottier-Müller, 'Estoppel' (2017) Max Plank Encyclopaedia of International Law, para 1.

<sup>60</sup> Iain MacGibbon, 'Estoppel in International Law' (1958) 7 International and Comparative Law Quarterly 458, 468.

<sup>61</sup> Alexander Ovchar, 'Estoppel in the Jurisprudence of the ICJ: A Principle Promoting Stability Threatens to Undermine It' (2009) 21(1) Bond Law Review 5.

<sup>62</sup> *Nuclear Tests (Australia v France)* (Judgment) [1974] ICJ Rep 253.

<sup>63</sup> Christian Eckart, *Promises of States Under International Law* (Hart Publishing 2012) 278.

<sup>64</sup> Since there is no general agreement about the source of public international law that estoppel properly falls into, there are also disagreements about the requirements of estoppel in international law. The two main approaches to determine the requirements of estoppel are extensive and restrictive approaches. While the former sees estoppel as a general rule that requires states to be consistent in their attitude towards legal and factual situations, the latter assumes that estoppel may be raised only when one party has made a representation towards another, inducing the latter to rely on the representation and change its position or suffer some detriment. Here, a restrictive approach is adopted, which is more common in international practice.

### 3.1 Clear and consistent statement of facts

The first requirement for the application of estoppel is that a state can only rely upon the act or declaration of another state if it is consistent, as well as clear and unambiguous in its meaning.<sup>66</sup> In order to elicit a clear statement of fact from any convention, either parties of that convention must ratify the convention, or they must evince their acceptance by a definite, consistent course of conduct.<sup>67</sup> In order for states' declarations to be regarded as unequivocal, they must not only be given publicly and with intent to be bound, but also be followed by a consistent course of conduct.<sup>68</sup> In these circumstances, neither a subsequent acceptance of the declaration nor even a reply from other states is required for the declaration to take effect.<sup>69</sup> In the case at hand, developed states codified their financial commitment in the text of the Paris Agreement (COP 21 Decision 1/CP.21). They signed and ratified the treaty, and also followed it with a subsequent course of conduct, which will be elaborated further below.

As far as SIDS' entitlement to financial support is concerned, developed state parties have clearly and consistently declared their intention to financially support SIDS. In the Copenhagen Accord the developed countries made a non-legally binding but political commitment to jointly mobilise US\$100 billion a year in climate finance by 2020.<sup>70</sup> This pledge was later formalised<sup>71</sup>

under the Cancun agreement.<sup>72</sup> More recently, in the COP 21 Decision 1/CP.21,<sup>73</sup> developed states have again reaffirmed their pledged amount of climate finance.<sup>74</sup> A total of US\$10.2 billion equivalent has been signed and announced by different countries as part of the so-called 'initial resource mobilisation' of the GCF (from 2015 to 2018),<sup>75</sup> and by the end of December 2018, US\$7.9 billion equivalent had been paid.<sup>76</sup>

The conduct of developed states affirms the serious steps taken to meet their commitment. Although parties have not agreed on a common methodology for reporting climate finance, especially for reporting mobilised private finance,<sup>77</sup> they have fulfilled their agreed obligation to biennially communicate the indicative quantitative and qualitative information related to climate finance.<sup>78</sup> Moreover, estimations have shown significant progress in meeting the goal.<sup>79</sup> OECD's estimation in 2015 showed that the aggregate volume of public and private climate finance mobilised by developed states for developing countries reached US\$62 billion in 2014, up from US\$52 billion in 2013.<sup>80</sup> In 2016 the OECD projected an increase in the levels of public climate finance - bilateral and multilateral - to close to US\$67 billion by 2020 compared to approximately US\$38 billion in 2013 and US\$44 billion in 2014.<sup>81</sup> Thus, developed state parties not only see the US\$100 billion of climate finance as a clear commitment on their shoulders, but they are also acting in compliance with it.

<sup>66</sup> Derek W Bowett, 'Estoppel Before International Tribunals and Its Relation to Acquiescence' (1957) Year Book International Law 188-94; These principles have been repeated in many different cases and studies with different languages, eg *Chagos Marine Protected Area Arbitration (Mauritius v United Kingdom)* Final Award, ICGJ 486 (PCA 2015), 18th March 2015, Permanent Court of Arbitration [PCA]; James Crawford, Brownlie's Principles of Public International Law (8th edn, OUP 2012) 420; Eva Kassoti, 'Unilateral Legal Acts Revisited: Common Law v. Civil Law Approaches and Lessons from the International Law Commission's (Failed) Attempt to Codify Unilateral Acts of States' in Nikos Lavranos (ed), *Hague Year Book of International Law* (Brill Nijhoff 2013) 178; Alexander Ovchar, 'Estoppel in Jurisprudence of the ICJ A Principle Promoting Stability Threatens to Undermine It' (2009) 21(1) Bond Law Review. Also, ICJ in different cases such as *the North Sea Continental Shelf case*, *Land and Maritime Boundary and Military and Parliamentary Activities* has recognised these conditions.

<sup>67</sup> Megan L Wagner, 'Jurisdiction by Estoppel in International Court of Justice' (1986) 74 (5) California Law Review 1777, 1783.

<sup>68</sup> *ibid*; *North Sea Continental Shelf (Federal Republic of Germany v. Denmark)* Report of Judgment 1969, p27. para 28.

<sup>69</sup> *Nuclear Test (Australia v France)* 1974, p267, para 43.

<sup>70</sup> *Nuclear Test (Australia v France)* 1974, p267, para 43 and p269, para 50.

<sup>71</sup> UNFCCC, 2/CP. 15, Copenhagen Accord, art 8. The Copenhagen Accord is a non-legal political document. In the following year, the COP in Cancun officially adopted many elements of the Accord in the Cancun Agreement, including the quantified financial commitments by developed countries.

<sup>72</sup> The course of conduct of the developed states since the adoption of 1992 UNFCCC goes in line with providing financial support for the developing states, with concrete references to SIDS. Namely, at every COP meeting developed states reaffirmed the necessity for their support, evolving from support given to developing states to comply with the undertaken climate change commitments for mitigation purposes through the expressed need for adaptation in the Cancun Agreement and establishment of the adaptation financing mechanism within its framework, to the recognition of the GCF as a finance mechanism of the Paris Agreement. That is in line with the Court's decision of the Legal Status of Eastern Greenland case, where the Court held that a statement made by the Norwegian Minister of Foreign Affairs in 1919 effectively 'recognised the whole of Greenland as Danish', which gave rise to an estoppel because the statement was clear and consistent with previous Norwegian declarations.

<sup>73</sup> UNFCCC, 1/CP.16, Cancun Agreement, art 98.

<sup>74</sup> UNFCCC, 1/cp.21, Adoption of the Paris Agreement, paras 53 and 114.

<sup>75</sup> Green Climate Fund, 'Strategic Programming for the Green Climate Fund: First Replenishment' (1 February 2019) < [https://www.greenclimate.fund/documents/20182/1424894/GCF\\_B.22\\_Inf.12\\_-\\_Strategic\\_Programming\\_for\\_the\\_Green\\_Climate\\_Fund\\_First\\_Replenishment.pdf/9933d93d-2673-022c-8c1b-cd5213973674](https://www.greenclimate.fund/documents/20182/1424894/GCF_B.22_Inf.12_-_Strategic_Programming_for_the_Green_Climate_Fund_First_Replenishment.pdf/9933d93d-2673-022c-8c1b-cd5213973674)> accessed 4 August 2019.

<sup>76</sup> Green Climate Fund, 'How We Work: Resource Mobilization' < <https://www.greenclimate.fund/how-we-work/resource-mobilization>> accessed 30 October 2018.

<sup>77</sup> Green Climate Fund, 'Status of the Initial Resource Mobilization Process' (1 February 2019) < [https://www.greenclimate.fund/documents/20182/1424894/GCF\\_B.22\\_Inf.05\\_-\\_Status\\_of\\_the\\_initial\\_resource\\_mobilization\\_process.pdf/16366aed-554d-1038-cb2e-ff1734aafd7f](https://www.greenclimate.fund/documents/20182/1424894/GCF_B.22_Inf.05_-_Status_of_the_initial_resource_mobilization_process.pdf/16366aed-554d-1038-cb2e-ff1734aafd7f)> accessed 4 August 2019. The main shortfall can be explained by missing contributions from the US of the size of US\$2 billion. The US pledged \$3 billion to the Green Climate Fund in 2014 and had transferred \$1 billion by early 2017. However, the Trump administration says it will not contribute to the Green Climate Fund.

<sup>78</sup> Nicolina Lamhauge and Raphael Jachnik, 'Tracking Climate Finance: Progress and Challenges' (OECD Observer, 25 June 2018) < <https://www.oecd-ilibrary.org/docserver/f685d437-en.pdf?expires=1565091618&id=id&accname=guest&checksum=BC139B7523A99D8428C03298060D098C>> accessed 6 August 2019.

<sup>79</sup> Paris Agreement, art 9(5).

<sup>80</sup> For instance, developed country parties prepared a road map to reach their financial commitment. It has been clearly stated that, in the road map, the committed states are confident to meet the commitment and they will take all necessary actions to do so. 'Road Map to US\$100 Billion' (UNFCCC 2016) < [http://www4.unfccc.int/Submissions/Lists/OSPSubmissionUpload/261\\_295\\_131233554162587561-Roadmap%20to%20the%20US\\$100bn%20\(UNFCCC\).pdf](http://www4.unfccc.int/Submissions/Lists/OSPSubmissionUpload/261_295_131233554162587561-Roadmap%20to%20the%20US$100bn%20(UNFCCC).pdf)> accessed 18 October 2018.

<sup>81</sup> Since there are different ways through which the commitment can be met including public, private, bilateral and multilateral finance, and each one has various institutions and instruments, exact estimation of the mobilised amount is too challenging. OECD, 'Climate finance in 2013-14 and the USD 100 billion goal' (2015) < <http://www.oecd.org/env/climate-finance-in-2013-14-and-the-usd-100-billion-goal-9789264249424-en.htm>> accessed 19 October 2018.

<sup>82</sup> It must be noted that this amount is only for public climate finance, whereas the previous one was for both public and private climate finance. '2020 projections of Climate Finance towards the USD 100 billion goal: Technical Note', (OECD 2016) < <http://www.oecd.org/environment/cc/Projecting%20Climate%20Change%202020%20WEB.pdf>> accessed 24 May 2019.

As the first requirement provides, for a statement to be considered clear and consistent, it must be followed by a consistent course of conduct.<sup>82</sup> In the present case, developed states clearly meet this precondition because they: 1) reaffirmed their longstanding promise for financial support by codifying an obligation in Article 9 of the Paris Agreement; 2) signed and ratified it; and 3) have undertaken regular and serious steps to mobilise finance to meet the committed funding, and also to report on the progress made.

### 3.2 Voluntary, unconditional, and authorised

The second requirement of estoppel is that a representation must be made voluntarily and unconditionally, by an authorised entity.<sup>83</sup> This is irrefutably met in the present case.<sup>84</sup>

The representation of developed states regarding their climate finance obligations must be seen as a voluntary one, made without any pressure, fraud or duress, following long-term negotiations of experts and state representatives.<sup>85</sup>

It must be noted that a representation is considered unconditional, unless it is made in the course of negotiations or is subject to specific conditions.<sup>86</sup> In examining the developed states' climate finance commitment in the Paris Agreement (Article 9), no such conditions are evident.

As to whether representation is made by authorised persons,<sup>87</sup> the Vienna Convention states that heads of state, heads of government, foreign affairs ministers, heads of diplomatic missions, and representatives accredited by states to an international conference are authorised persons.<sup>88</sup> Developed countries have been represented at COP meetings by high-level government representatives who fall within the required categories. The Paris Agreement was signed by representatives who declared that 'the undersigned, being duly authorised to that effect, have signed this Agreement.'<sup>89</sup> In addition,

subsequently, the responsible and authorised department of each country has signed the contributions agreements between the GCF and developed states, which was part of the total financial commitment.<sup>90</sup>

### 3.3 Detrimental reliance

The last requirement of estoppel is that a party invoking it must have relied upon the statements or conduct of the other party, either to its detriment or to the other's advantage.<sup>91</sup> This requirement is also met in the case of SIDS because if the obligation made by developed states in Article 9(1) of the Paris Agreement is not duly implemented, the lack of financial support will cause imminent and serious detrimental effects on SIDS.

It is generally accepted that climate change mitigation and adaptation measures are critical for SIDS. Failure of such measures threatens the habitability of homelands.<sup>92</sup> As previously mentioned, given the small size of SIDS' economies,<sup>93</sup> they have out of necessity relied heavily on developed state parties' climate finance.<sup>94</sup> Twelve multilateral climate funds are active in SIDS. Between 2003 and 2017, SIDS have received a total of US\$1.3 billion for 210 projects from the multilateral climate funds.<sup>95</sup> In 2017 alone, US\$228 million was approved for 20 projects in SIDS by the multilateral climate funds.<sup>96</sup> Fifty-six per cent of climate finance (US\$775 million) provided to SIDS contributes to adaptation, which is consistent with SIDS' urgent needs.<sup>97</sup>

This can be illustrated in the case of Samoa. Samoa is one of SIDS in the Pacific. It has been heavily impacted by increasingly severe tropical storms. A project of 'Integrated Flood Management' is planned to strengthen adaptive capacity and reduce exposure to climate risks faced by vulnerable communities and infrastructure in the Vaisigano River

<sup>82</sup> This issue was declared in the case of the North Sea Continental Shelf where it was stated that 'the mere fact of taking part in the drafting of the Convention and acting in accordance with it was not enough to satisfy this criterion - only "a very definite, very consistent course of conduct" on the part of the Federal Republic of Germany could have given rise to an estoppel in the circumstances'. See: *North Sea Continental Shelf (Federal Republic of Germany v. Denmark)* Report of Judgment 1969.

<sup>83</sup> The Court has been consistent when testing the second element of estoppel that a representation must be both authorised and unconditional. In the case of the Legal Status of Eastern Greenland, the Court held that: 'a reply of this nature, given by the Minister for Foreign Affairs on behalf of his Government in response to a request by the diplomatic representative of a foreign Power in regard to a question falling within his province, is binding upon the country to which the Minister belongs.'

<sup>84</sup> Kate Parlett, 'State Conduct in Territorial Disputes Beyond Effectives: Recognition, Acquiescence, Renunciation and Estoppel' in Marcelo G Kohen and Mamadou Hebie (eds), *Research Handbook on Territorial Disputes in International Law* (Edward Elgar 2018) 188.

<sup>85</sup> Vienna Convention, art 51.

<sup>86</sup> Teerawat Wongkaew, *Protection of Legitimate Expectations in Investment Treaty Arbitration: A Theory of Detrimental Reliance* (CUP 2019) 40; Ovchar (n 61).

<sup>87</sup> (*Liechtenstein v Guatemala*) (Second Phase) [1955] ICJ Rep 4; and *Delimitation of the Maritime Boundary in the Gulf of Maine Area (Canada/ United States of America)* [1984] ICJ Rep 24.

<sup>88</sup> Vienna Convention, art 7.

<sup>89</sup> Paris Agreement 2015, art 29. Also, the agreement was ratified by the EU Council of the European Union on behalf of all EU countries on 5 October 2016, and in the case of the US, the former president of the US adopted the agreement by executive order.

<sup>90</sup> 'Resource Mobilisation' (GCF 2018) < <https://www.greenclimate.fund/how-we-work/resource-mobilization> > accessed 31 October 2018.

<sup>91</sup> *Temple of Preah Vihear*, (Separate Opinion of Judge Fitzmaurice) 63.

<sup>92</sup> Samir S Patel, 'A Sinking Feeling' (2006) 440 (7085) *Nature* 734-736.

<sup>93</sup> Carola Betzold, 'Adapting to Climate Change in Small Island Developing States' (2015) 133 *Climatic Change*.

<sup>94</sup> 'Joint AOSIS Opening Statement Bangkok' (AOSIS September 2018) < <http://aosis.org/joint-aosis-opening-statement-bangkok-thailand-september-2018/> > accessed 19 October 2018.

<sup>95</sup> In order to avoid confusion, it must be noted that a part of this amount had been made before the time that the US\$100 billion financial commitments was made in 2009. The Green Climate Fund (GCF) has been the largest contributor during the same years. However, the amount that has been provided after announcing the climate finance commitment (for the first time in 2009) is being calculated as part of the promised US\$100 billion.

<sup>96</sup> Between 2003 and 2017, the GCF has also been the largest contributor by funding US\$409 million to SIDS. See: Charlene Watson, Neil Bird, Liane Schalatek and Katharina Keil, 'Climate Finance Regional Briefing: Small Island Developing State' (Climate Finance Update, December 2017) < [www.odi.org/sites/odi.org.uk/files/resource-documents/12094.pdf](http://www.odi.org/sites/odi.org.uk/files/resource-documents/12094.pdf) > accessed 17 October 2018.

<sup>97</sup> The Adaptation Fund, itself, has been the fifth largest contributor with about US\$110.45 million funding during the same years. See: Charlene Watson, Neil Bird, Liane Schalatek and Katharina Keil, 'Climate Finance Regional Briefing: Small Island Developing State' (Climate Finance Update, December 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/12094.pdf> accessed 17 October 2018.



catchment area. The project aims to reduce vulnerability to flood-related risks, render key infrastructure flood-proof, and upgrade downstream areas to increase river capacity.<sup>98</sup> This project will directly benefit approximately 26,528 people in the area and indirectly benefit 37,000 people.<sup>99</sup> It is estimated that the project will cost US\$65 million, equivalent to around 10% of the country's GDP in 2012. The proposal is that the GCF will finance around US\$57 million of the amount, and the government of Samoa will provide about US\$8 million.<sup>100</sup> The duration of the project is six years (it started in 2017 and it is supposed to end in July 2023), and the GCF grant is planned to be paid in six instalments in each year of the project. So far, only US\$4.7 million of the GCF grant has been paid, which is less than 9% of the total.<sup>101</sup> Clearly, the project started in reliance on the GCF fund, which in turn relied on developed states meeting their financial commitments. If the funding is not provided, the project will not be completed. Furthermore, the resources spent so far in terms of time, money and effort will be wasted. Finally, alternative cheaper preventive measures have been deferred and may be compromised as a result. This is true of many of the projects being undertaken that rely on the availability of funds from developed countries.

Another way in which developed states' financial commitment is influencing SIDS, and subsequently creating legitimate expectations, is by changing their priorities and plans to respond to the climate change threat. In general, the huge investments and adaptation projects in SIDS create among islanders legitimate expectation that they could rely on these projects as their main response to climate change effects. If from the outset ten years ago there had been no climate change finance commitment by developed states, SIDS would have had to find other ways to protect themselves from the threat of climate change (albeit probably less effective or more onerous) and allocate their resources differently. Moreover, as regards timing, adaptation can be anticipatory or reactive. Early anticipatory adaptation is generally more cost-effective than reactive action.<sup>102</sup> For instance, one way to deal with climate change as an adaptation strategy, especially for low-lying islands, is relocation or migration. However, it could either be a long-term plan of voluntary migration, as in Kiribati,<sup>103</sup> or if delayed, an emergency plan involving forced displacement creating a refugee crisis, with all the negative consequences this entails. Reliance on the developed states' commitment has caused many SIDS not to make long-term migration a priority, and as time passes by and populations grow, relocation to higher ground or beyond national borders will be increasingly difficult and costly.<sup>104</sup> This change of priorities and planning for SIDS - which have limited financial resources and time to react to the real dangers of climate change - can also be considered

as fulfilment of the third requirement of estoppel, i.e. reliance on the other states' clear act or statements to their detriment.<sup>105</sup>

It is evident that SIDS have rightfully relied on the developed states' financial support secured by Article 9(1) of the Paris Agreement. Disruption of developed states' financial commitments - such as the US pledging US\$3 billion and transferring only US\$1 billion - results in shortages in the expected mobilised climate funds, which could result in many of the projects started in SIDS being jeopardised. This would cause detrimental effects on SIDS, either through wasting their time, money and effort on uncompleted or postponed projects, or by preventing or compromising the adoption of cheaper (but less attractive) alternative plans, such as planned migration.

## Conclusion

Climate change presents one of the biggest global challenges for humankind today. SIDS are particularly vulnerable to its worst and most devastating impacts. Developed states, recognising their larger contribution to the global emissions of greenhouse gases, have undertaken to provide financial aid to these developing economies that lack sufficient resources to finance optimal mitigation and adaptation measures. Subsequent promises and expressed commitment were codified under Article 9 of the Paris Agreement, which outlines the clear commitment of developed states to provide financial resources. With the climate fund already established and projects being implemented by SIDS that rely on promised funding, any failure to provide financial support by developed states or withdrawal from the Paris Agreement would mean a breach of their obligation and cause detrimental effects to SIDS. This article argues that in consequence, under international law, SIDS could in the absence of other enforcement measures, rightfully invoke the application of the principle of estoppel to secure compliance by developed states.

As described above, SIDS fulfil all three requirements for successful application of the doctrine of estoppel. First, developed states provided subsequent and clear statement of facts in the Copenhagen Accord (COP 15), the Cancun Agreement (COP 16) and the COP 21 'Decision to Adopt' to jointly mobilise long-term finance of US\$100 billion per year by 2020 (and continue this through 2025) with the intent to be bound. This is affirmed through conduct directed towards mobilising the committed amount: contributions made by developed countries and their regular progress reporting. Second, developed states' representations were irrefutably voluntary, unconditional and made by authorised representatives. Third, in the event of developed states' failure to comply with their financial commitments, SIDS' legitimate

<sup>98</sup> Green Climate Fund, 'GCF Projects: Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa' <<https://www.greenclimate.fund/-/integrated-flood-management-to-enhance-climate-resilience-of-the-vaisigano-river-catchment-in-samoa>> accessed 30 October 2018.

<sup>99</sup> UNDP, 'Project Overview' <<http://adaptation-undp.org/projects/gcf-samoa>> accessed 30 October 2018.

<sup>100</sup> UNDP, 'Project Document Template for Nationally Implemented Projects Financed by the Green Climate Fund (GCF)' <[http://www.adaptation-undp.org/sites/default/files/resources/undp\\_gcf\\_prodod\\_samoa\\_signed\\_21jul2017.pdf](http://www.adaptation-undp.org/sites/default/files/resources/undp_gcf_prodod_samoa_signed_21jul2017.pdf)> accessed 30 October 2018.

<sup>101</sup> *ibid*

<sup>102</sup> Heather Lazrus, 'Sea Change: Island Communities and Climate Change' (2012) 41 *Annual Review of Anthropology* 285-301, 292.

<sup>103</sup> Kiribati recently completed a land purchase from Fiji, to relocate islanders under threat from rising sea levels. Iian Kelman, 'Difficult Decisions: Migration from Small Islands Developing States Under Climate Change' (2015) 3 *Earth's Future*, 133-142, 134.

<sup>104</sup> 'Small Island Developing States in Numbers: Climate Change Edition' (UN-OHRLS 2015) <[https://sustainabledevelopment.un.org/content/documents/2189SIDS-IN-NUMBERS-CLIMATE-CHANGE-EDITION\\_2015.pdf](https://sustainabledevelopment.un.org/content/documents/2189SIDS-IN-NUMBERS-CLIMATE-CHANGE-EDITION_2015.pdf)> accessed 19 October 2018.

<sup>105</sup> (*Nicaragua v United States of America*) (Jurisdiction) [1984] ICJ Rep 392, 414.

reliance upon this support will undeniably have detrimental effects on them - either through wasting their time, money and effort on uncompleted or delayed projects, or by preventing or compromising the adoption of cheaper alternative plans, such as planned migration.

Therefore, even if SIDS are unable, for any reason, to rely on a breach of the financial obligation set out in Article 9 of the Paris Agreement to hold developed states liable, they may nevertheless achieve redress by invoking the doctrine of estoppel.

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### **Biography**

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# In conversation.

## Professor Loukas Mistelis and Sir David Steel



**Sir David Steel**



**LM:** Welcome Sir David and thank you for agreeing to do our first ‘in conversation’ piece for the launch of our Energy Law Institute Review.

“Your career has been so long and diverse. You’ve been a judge, an arbitrator, of course you’ve been adviser, a member of the IFC court.”

What is very interesting is how long and diverse your career has been. You’ve been a judge, an arbitrator, and of course an adviser, and a member of the IFC court. Of all of these professions, which did you enjoy most?

**DS:** Well, I think I enjoyed being a barrister most of all. I started a long time ago in 1970, in what I suppose, in traditional language, would be called an Admiralty set of chambers, where the focus was on shipping disputes. Essentially, non-contractual shipping disputes: collisions, tort, salvage, oil pollution. The chambers had some very good people in it, and so its appetite spread, moving away from wet shipping into dry shipping work, which in the 1970s was the big commercial interest: disputes on the bills of lading charter parties, sales of ships, contractual claims in the shipping world, insurance claims and so on.

But then in the 1980s and 1990s my emphasis changed. I started to appear regularly in the courts in Hong Kong, and again my tastes spread to work in corporate disputes and white-collar crime - not in the criminal courts but in civil proceedings. Then in 1998 I became a judge of the Commercial and Admiralty Courts, where the diet was, in a

sense, much the same: shipping, insurance, commodities, and banking, of course.

I retired from the bench in 2011, and put up my plate as an arbitrator. There was a similar spread of work but a bit more emphasis on joint ventures, disputes involving Russians, Kazakhstanis and so on, a fair bit of oil and gas work in the West Indies and the US, and a lot of big insurance claims arising from the US. I also became a member of the board of the Dubai International Finance Centre (DIFC).

**LM:** So it would seem that being a barrister gave you mobility, both in terms of where you would practice and the areas you would cover?

**DS:** Well, it was a very significant teacher of commercial law practice, in that it was international in nature. There were very few British litigators in the Commercial Court. They were a rarity. And so we attracted business from all around the world.

**LM:** But you never considered doing the other law profession, being a law professor? When I read some of your judgements, there is creative and profound thinking.

**DS:** Well, I think I’m not a natural academic, in the sense that I prefer to work with people than sit in front of a piece of paper. I find writing judgements very hard work, but I do it. When I was at university, it never actually crossed my mind to become an academic. I wanted to get into the world.

“The tentacles of energy reach out to all sorts of areas of commercial activity.”

**LM:** So have you encountered energy law matters? You certainly have had some interesting cases.

**DS:** Nobody could suggest that I was an energy law specialist, and nor would anybody suggest that a significant proportion of my practice, whether as a judge or barrister or arbitrator, had been in the energy law field. The energy cases tend to be slightly one off. I've been involved in a couple of arbitrations involving energy disputes in the West Indies, particularly concerning Trinidad. I've also been involved in energy disputes in relation to Texas and New York, but less so in relation to Europe.

**LM:** I suppose the question is: what is energy law? Of course there is the very old energy law, which was farming contracts and joint operating agreements, PSAs and so forth. And then of course there are a lot of areas that are not pure energy law - energy transport, shipping or construction pipelines - but have an energy element. So it depends how you cast your net.

I think from our perspective, we see that a lot of the energy work has moved from being contractual or transactional to bringing a high level of regulatory issues. A lot of disputes seem to have a regulatory trend.

**DS:** Well, I think essentially most of the disputes are contractual in nature, but, of course, the tentacles of energy reach out to all sorts of areas of commercial activity. One example is a dispute between Russians and Ukrainians about the supply of generators in the oil industry. Eventually, the essential question became whether one of the parties was creaming off the profits of the enterprise by false forms of auditing on the rather surprising pretence that they'd been told to do it.

It is interesting that the nationalities that particularly favoured using the Commercial Court were Kazakhstan, then Russia, and way down the list came England, the US and France. So much of economic activity in Russia and Kazakhstan focuses on petroleum and gas. It is part of the energy dispute system.

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“The English common law has an element of dynamism that makes it more adaptable to complex contracts.”

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**LM:** It is very difficult to compartmentalise energy, and it is very much a credit to the English judiciary that they are able to provide solutions that are both technically correct and creative, rather than a narrow application of law to the facts that you find, for example, in the Continental legal system.

**DS:** One of the features of the DIFCC was a recognition by the ruler of Dubai that, if he wished to attract what one might call business activity in its broadest sense, he was not going to gain the confidence of the business community while their disputes were solved in the normal courts of Dubai. In the last 10 years the enthusiasm for English law has increased. It is the Lex Franca, frankly, now. It's rare to come across a case that

is governed by French law or Swiss law. Even if the dispute emerges from a contract executed in Singapore, Hong Kong or the US, very often the governing law is English law.

**LM:** It is fascinating. Having trained as a civil lawyer, I'm amazed by the proliferation of common law courts in civil law jurisdictions, such as the various IFCs in Dubai, Qatar, Kazakhstan, etc. Of course, whenever I survey, particularly in the context of arbitration, there's a clear dominance of common law jurisdiction and substantive common law. There's a bit of a market for civil law, particularly in Switzerland and France, but the dominance of the common law is actually quite amazing, and it has not diminished.

**DS:** It hasn't diminished and I think that the common law is winning, if there is a battle at all. I don't think Paris or Zurich or Frankfurt have really begun to make inroads into arbitration.

**LM:** I'm wondering also, in the context of energy, whether the English common law has an element of dynamism that makes it more adaptable to complex contracts, while, if you think within a German or French law context, you have a relatively old and reasonably clear codification. The law doesn't develop as quickly as does common law.

**DS:** Well, I think the common law still demonstrates its flexibility and its adaptability. The great attraction, I think, from the business community point of view, is that the common lawyer is looking for two things really: certainty, but also commercial common sense. The common lawyer is anxious to achieve certainty, but he wants to do it on the basis of what is being agreed. Usually it's a contracted dispute, which must make commercial sense, and, I have to say, one doesn't find much enthusiasm for identifying commercial good sense outside the common law. The civilian lawyers are less adaptable on that front, I'm sure.

**LM:** It's also interesting in the UK, which had a role in the creation of the Oil and Gas Law, with the development of North Sea reserves and offshore drilling and also with the emergence of renewable energy, how English law and English business has developed.

In renewables we have seen an increase in disputes concerning state treatment of investment, and disputes relating to construction.

Some of the changes to energy law have not been ideological, but it begs the question, having been a judge and an arbitrator, do you think that the law can really have an impact on, say, something like climate change?

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“It's easier for an academic to stand back and look at a group of cases or a particular arena and to start forming a view of where things are going. On the other hand, most judges are focusing on one case, one case alone.”

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**DS:** The short answer must be yes. A statutory enactment can have a significant impact on the production of materials that are adverse to climate change. I'm rather doubtful whether what I call the 'arbitrator judge' can have much impact on what might be called the 'political question' as to whether climate change is a topic to be tackled and how. There is a world of difference between the political positions of, say, judges in England compared with judges in the US.

I think judges can be influenced, of course, by discussion of the way in which matters might best proceed. They don't live in a complete vacuum. When it comes to construction of a contract, where you're looking for what seems to be the commercial sensible meaning of words that could have several meanings, one no doubt will be influenced to some extent by considerations such as global warming, but it's not going to be a particularly significant ingredient, I don't think.

**LM:** The way I see it is that there are two challenges related to energy: one is where you might have a pure energy contract with, say, a pricing dispute, but, as you have indicated, there are a lot of energy disputes that have to do with a bit of finance or a bit of shipping - what we would call the broader commercial contracts arena.

The other is where you interact with public law, what I will call human rights, environmental protection, and climate change considerations. There, of course, the fear for most lawyers is that their view will be obscured by this public law consideration. There is a contract that the parties have negotiated.

**DS:** It's an interesting debate, partly because it's easier for an academic to stand back and look at a group of cases, or a particular arena, and to start forming a view of where things are going. On the other hand, most judges are focusing on one case, one case alone, and they will obviously have some understanding of the potential impact of a decision going one way rather than another, but they won't be approaching that from the point of view of some public policy consideration or from the point of view of some political evaluation. They will be, in so many of these cases, simply looking at a contract and trying to construe it in a sensible way. Even if occasionally these contracts are so stupid you have to hold that it's almost meaningless. So I think judges are, in that sense - and it is important to recognise it - entirely incremental.

**LM:** That's actually very important to know. The argument is that arbitration is suitable for some of these disputes because they do not allow non-disputing parties to have an influence one way or another - you can really contain the dispute to what it is, and just do your best to resolve it. Once you open up, either because there's state involvement or public sector involvement, then it's potentially very difficult. I think judges are good at managing the pressure. I'm not entirely sure, in the way we see arbitration developing, whether arbitrators are as good at handling the pressure from external sources.

**DS:** No, I think arbitrators are sometimes in a very uncomfortable position. I think that is why the standard system of having three arbitrators is being maintained. Occasionally there's a single arbitrator, which is quite rare. Yes,

in a sense, a limitation of arbitration is that you can't allow a non-contractual party to participate. It's pretty rare, too, in the courts for there to be a non-contractual party, a party that has simply come to assist the court. It happens in the Supreme Court sometimes where there is significant what might be called 'public policy interest', but in the Commercial Court I can't think of an example.

**LM:** So if you are to single out a case you've done as a barrister that you thought was the most fascinating, what would that case be?

**DS:** As a barrister, let me think. Well, of course, a great spread of cases comes across one's mind. I think I would identify something reflecting a class of case that was peculiarly interesting and exciting in the commercial shipping law field - what is rather unattractively called a 'scuttling case'. This is where the ship owner is accused by the underwriter of having deliberately sunk his ship to obtain the insurance money. Now, those cases were relatively common in the late 1960s, through the 1970s and into the early 1980s, and I did one or two of them. It was, it is, a fascinating forensic exercise, which I always rather enjoyed.

Now, as a judge, what else? Well, of the cases I did as a judge, two stand out. One was the dispute between Kuwait Airways and Iraq Airways about the damage to the Kuwait air fleet when they were bombed during the first Gulf War. The process ended up with me holding that, actually, the decision of the House of Lords had been obtained by fraud, which was an unusual position to be in. It all centred on whether documents had been forged, tampered with, lost, or deliberately withheld. I came to the conclusion that a lot of documents were forged and a lot had been deliberately withheld, and nobody knew where they were. There was a certain entertainment about it because, after the end of the first Gulf War, of course, came the second Gulf War and the determination to find weapons of mass destruction. There was a very exciting moment for the Americans and English when a container was found buried in the sand somewhere outside Baghdad, which made them think 'My goodness me, this must be the weapon of mass destruction', but it wasn't. It had the documents that had been withheld, which was quite funny.

Then my last case was closer to the world of energy - the Buncefield explosion, which was the biggest explosion in Europe since the First World War. Again, this was a fascinating enquiry into an event that caught everybody by surprise. It was an astonishing explosion in which there were no fatalities. It took place in a very strange, scientific way, and caused an enormous amount of damage.

In the public sphere, in the DIFC, I think the most interesting case was a claim by a Kuwaiti who invested 250 million of his money into a Swiss private bank. He alleged, I held correctly, that he'd been negligently advised. It involved examining the way in which the DIFC had been set up and the way in which financial transactions were governed by the local rules. It really brought into clear focus a jurisdiction that was determined to establish a strong economic structure, which would encourage people to invest in their country.

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“It seems difficult to understand why people would flee from London simply because the UK had decided to withdraw from the European Union. I think that London will hold its own.”

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**LM:** I’ve read that you enjoy sitting in New York, that that’s your favourite arbitration seat.

**DS:** Yes, I have a great liking for New York. I lived there for a year and a half, and I’ve been there fairly regularly ever since. New York enlivens me, it cheers me up.

**LM:** I feel the same way.

Looking at how Singapore and Hong Kong are developing, do you think, perhaps post-Brexit, that London will keep its role as a hub for disputes?

**DS:** Well, it’s very difficult without actually knowing what Brexit means, but it seems difficult to understand why people would flee from London simply because the UK had decided to withdraw from the European Union. I think that London will hold its own. Hong Kong and Singapore have done well, I think, to develop their particular geographical position, but we’ll see.

**LM:** And on that positive note, Sir David, thank you for such an interesting and engaging conversation that gave us such a fascinating insight into your diverse and prestigious career.

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# Financing energy efficiency: An assessment of the Portuguese energy efficiency national fund.

Gustavo Rochette



**Gustavo Rochette**

## I. Introduction

In this article we look critically at the Portuguese Energy Efficiency National Fund. The Fund is the main energy efficiency financing instrument in Portugal. It was established in 2008 as part of the European Union Directive 2006/32/EC.<sup>1</sup> The article summarises the background to the establishment of the Fund, examining the European and national legal frameworks; highlights the main issues with the Fund; and provides a comparative analysis with the United Kingdom's Green Deal.

## II. The EU influence on EE policy and financing

In 1986, Resolution 86/C 241/01<sup>2</sup> identified the improvement of energy efficiency (EE) as a horizontal and sectorial objective for the European Union (then known as the European Economic Community). It aimed for 'even greater energy efficiency in all sectors' with an improvement of at least 20% by 1995.<sup>3</sup>

Resolution 86/C 241/01 may be the first expression of the Principle of Europeanisation in EE policy. This principle is the 'embodiment of the European project by a legal route that has a special visibility in the energy domain and, in particular, in EE'.<sup>4</sup> According to Tavares da Silva, EE, aimed at reducing final consumption of energy, is instrumental in advancing one

of the three objectives of the European energy regulation: environmental and climate policy.<sup>5</sup>

The Resolution was followed by Directive 93/76/EEC.<sup>6</sup> Aimed at 'limiting carbon dioxide emissions by improving energy efficiency', this Directive intended to create in all Member States (MS) wide national programmes in several EE areas,<sup>7</sup> namely energy certification of buildings, thermal insulation of new buildings or energy audits of undertakings with high energy consumption.

The European Council also intended to create a third-party financing mechanism to help operationalise EE programmes in MS. Third-party financing was defined as 'the overall provision of auditing, installation, operation, maintenance and financing services for an energy efficiency investment, with recovery of the cost of these services being contingent, either wholly or in part, on the level of energy savings'.<sup>8</sup> The Council did not define the nature of the third party, allowing financing by governments or EU programmes, international public investment banks or private banks.

This legislation remained in place until 2006, when it was revised by Directive 2006/32/EC. The aim of this Directive was 'enhancing the cost-effectiveness of improving end-use energy efficiency in MS'.<sup>9</sup> The objective was for MS to draw up

<sup>1</sup> Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC [2006] OJ L114/64.

<sup>2</sup> Council Resolution of 16 September 1986 concerning new Community energy policy objectives for 1995 and convergence of the policies of the Member States (86/C 241/01) [1986] OJ C241/1.

<sup>3</sup> *Ibid.*, para 6, subpara (a).

<sup>4</sup> Suzana Tavares da Silva, 'The Legal Principles of the Energy Efficiency Law' in *Energy Efficiency Law* (Legal Institute of the Faculty of Law of the University of Coimbra 2017) 143-69

<sup>5</sup> *Ibid.*, 146-147. The other two objectives of European regulation of energy are instrumental to the common market policy and to the external and trade policies.

<sup>6</sup> Council Directive 93/76/EEC of 13 September 1993 to limit carbon dioxide emissions by improving energy efficiency (SAVE) [1993] OJ L237/28.

<sup>7</sup> Directive 93/76/EEC, art 1.

<sup>8</sup> *Ibid.*, art 2(4).

<sup>9</sup> Directive 2006/32/EC, art 1.

programmes and measures<sup>10</sup> enabling them to achieve the national indicative energy savings target of 9% by 2015.<sup>11</sup> This was the first EU energy efficiency resource standard: ‘a policy structure that sets mandatory reduction targets with “teeth” or allows utilities to profit from the system’s increased economic efficiency,<sup>12</sup> where charges or incentives are used to motivate MS to comply with the targets.<sup>13</sup>

In the text of Directive 2006/32/EC, the definition of third-party financing is different to the previous Directive. It is considered an innovative practice<sup>14</sup> consisting of ‘a contractual arrangement involving a third party - in addition to the energy supplier and the beneficiary of the energy efficiency improvement measure - that provides the capital for that measure and charges the beneficiary a fee equivalent to a part of the energy savings achieved as a result of the energy efficiency improvement measure’.<sup>15</sup>

This new concept clarifies the purpose of third-party financing, which seems to be suitable for the three parties involved. However, it may still be inadequate ‘[b]ecause, as a result of the diminishing magnitude of energy savings associated with each increment of efficiency improvement, the incremental cost of the efficiency improvement is eventually greater than the incremental savings provided by the corresponding reductions in energy use’.<sup>16</sup>

By reducing the amount of money saved with the EE investment, the beneficiary would not immediately feel the monetary effects of that investment in full. A consumer with reduced energy literacy would have no immediate incentive to improve the EE of its home using third-party financing.

Conversely, the third-party financing method might work well when used on enclosure efficiency - i.e. the EE gained by using more efficient techniques and materials when a building is built or renovated. In this case, the improvements ‘are not just measured in terms of direct reductions in energy use but also in terms of additional savings in first costs due to reductions in equipment size’.<sup>17</sup> The beneficiary would better understand the energy savings gained on the cost of equipment such as air conditioning. The problem is how to calculate the capital repayment to the third party for a new building.

Directive 2006/32/EC was repealed by Directive 2012/27/EU<sup>18</sup>, which renewed the EU EE resource standard to a reduction of 20% of the EU primary energy consumption by 2020.<sup>19</sup> Therefore, MS were encouraged to apply bold measures to finance EE. These included creating financing facilities used ‘for EE improvement measures to maximise the benefits of multiple streams of financing’.<sup>20</sup> This Directive also incentivised MS to create a distinct financing facility - an Energy Efficiency National Fund proposed to ‘support national energy efficiency initiatives’.<sup>21</sup>

### III. The Portuguese EE policy and Fund

#### a. The EE plan 2008-2015

Based on research by the World Bank suggesting that governments should try to boost the use of efficient technology options by investors,<sup>22</sup> Portugal tried to implement the measures included in the EU Directive by creating the Portuguese Energy Efficiency National Fund. The Fund was first mentioned in national legislation in 2008, following Directive 2006/32/EC, as an ‘innovative programme’<sup>23</sup> ‘to be created’.<sup>24</sup>

The Fund was created to finance the 2008–2015 National Action Plan for Energy Efficiency (EE plan 2008), although it wasn’t implemented until two years later.<sup>25</sup> This plan was an ‘aggregator of a set of EE programmes and measures’ facilitating energy savings of 1,792 tonnes of oil equivalent per year by 2015, exceeding the EU target by approximately 20% with efficiency contributions distributed by several sectors.<sup>26</sup> This was expected to be done through two main lines of action:<sup>27</sup>

- Supporting primarily technological projects in the specific areas of transportation, buildings and services, industry and public sector;<sup>28</sup> and
- Supporting EE inductor events on the cross-cutting areas of behaviours, tax and incentives, and financing.<sup>29</sup>

It also aimed to finance other projects not included in the EE plan 2008 but that demonstrably contributed to EE.<sup>30</sup>

As a public initiative, the Fund organisation is composed of several representatives of public bodies. Its strategic board

<sup>10</sup> Ibid, art 4(3).

<sup>11</sup> Ibid, art 4(1).

<sup>12</sup> Theodore G Hesser, ‘Energy Efficiency Finance: A Silver Bullet Amid the Buckshot?’ in Fereidoon P Sioshansi (ed) *Energy Efficiency: Towards the End of Demand Growth* (Elsevier 2013) 519-39.

<sup>13</sup> Ibid, 524.

<sup>14</sup> Although it had already been mentioned in Directive 93/76/EEC.

<sup>15</sup> Directive 2006/32/EC, art 2(k).

<sup>16</sup> Ren Anderson, Dave Mooney and Steven Hauser, ‘Energy Convergence: Integrating Increased Efficiency with Increased Penetration of Renewable Generation’ in Fereidoon P Sioshansi (ed) *Energy Efficiency: Towards the End of Demand Growth*, (Elsevier 2013) 495-517

<sup>17</sup> Ibid 502.

<sup>18</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC [2012] OJ 315/1.

<sup>19</sup> Presidency Conclusions of the European Council of 8 and 9 March 2007, 20;

Presidency Conclusions of the European Council of 17 June 2010, 8, 11.

<sup>20</sup> Directive 2012/27/EU, art 20(1).

<sup>21</sup> Ibid, art 20(3).

<sup>22</sup> Robert P Taylor, *Financing Energy Efficiency: Lessons from Brazil, China, India, and Beyond* (World Bank, 2006) 3

<sup>23</sup> National Action Plan for Energy Efficiency - 2015, annexed to the Resolution of the Cabinet no 80/2008, foreword of the Executive Summary.

<sup>24</sup> Resolution of the Cabinet no 80/2008, para 5.

<sup>25</sup> Decree-Law 50/2010 of 20 May.

<sup>26</sup> Suzana Tavares da Silva and others, ‘The National Instruments for Planning, Regulating and Financing Energy Efficiency: in Particular the National Action Plan for Energy Efficiency’, in *Energy Efficiency Law* (Legal Institute of the Faculty of Law of the University of Coimbra, 2017) 97-142.

<sup>27</sup> Decree-Law 50/2010, art 2(1).

<sup>28</sup> Ministerial Order 1316/2010 of 28 December.

<sup>29</sup> Ibid, art 1(2).

<sup>30</sup> Decree-Law 50/2010, art 2(2); Decree-Law 68-A/2015 of 30 April.

is composed of seven ministers and both presidents of the autonomous regions,<sup>31</sup> while its executive board is composed of members of eleven public entities and one private entity under the supervision of the government.<sup>32</sup> The government also nominate a fund director to work with the executive board<sup>33</sup> to develop new funding programmes.

As such, the Fund is more of a government policy instrument than a financial instrument. In our opinion, this political influence may bring transparency issues. The financing process could also be obstructed because of policy (and electoral) reasons. A simpler and independent management structure may bring more efficiency and regularity to EE investments and policy.

Despite the suggestions of the EU Directives, the Fund programmes did not use third-party financing. The Fund mostly used non-refundable subsidies, subject to 'the fulfilment of energy saving and reduction of energy intensity objectives'<sup>34</sup> to be communicated annually<sup>35</sup> as contractually determined. Although subsidies are the most common form of EE public finance, it can also be a profitable investment,<sup>36</sup> Fawkes says, and opinion which we agree with.

The use of non-refundable subsidies does not seem a good choice for an EE fund. Choosing not to directly recover the investment brings two challenges:

- If in any one year the revenue from other sources of income is limited, the Fund may not be able function;
- The level of investment is relatively limited as there is no money recovered that can be reinvested.

Furthermore, a study from 1998 by Aspen Systems Corp. and the USA Environmental Protection Agency said EE investments are 'relatively high-return/low-risk investments'<sup>37</sup> with easy and fast returns and great savings. These circumstances made it common to call EE investments 'low hanging fruit',<sup>38</sup> which the Fund was not ambitious enough to 'pick'.

## b. EE plan 2016

The changes brought by Directive 2012/27/EU on the EE resource standard resulted in a review of the EE plan 2008. This led to the creation of the 2016-2020 National Action Plan for Energy Efficiency (EE plan 2016)<sup>39</sup> in 2013, aimed at 'assuring the substantial improvement of the EE of the country'.<sup>40</sup> This plan focused on strengthening the Fund and consolidating it with the other EE support programmes.

The Portuguese government sought to boost public investment in EE but the decision of giving EE competences to other instruments is questionable. The Fund was not enough to fulfil all EE targets. At the same time, increasing the revenue or the allocation of funds to the Fund was not an option.

Although the new EE plan intended to reinforce interest in EE and created the possibility of a common action for all public-held funds with competences in the field, the results of both plans were 60% and 44% of targets met, respectively.<sup>41,42</sup> The ambition of the Portuguese government was considerable; however, EE is not measured in ambition, but in results. Also, the EE gap - the gap between the cost-minimising level of EE and the level actually realised<sup>43</sup> - is always a problem, as it represents a large share of energy use and reduces win-win opportunities.<sup>44</sup>

The 2014 revision of the EU targets aimed to reduce greenhouse gas emissions by at least 40% by 2030, compared with 1990. Extending these targets to the Intended Nationally Determined Contributions of the EU and its Member States has not yet brought any changes to the Fund.

## IV. The main challenges of the Fund

### a. Lack of capital

The initial allocation of finance to the Fund was €1.5 million.<sup>45</sup> Although the intention was commendable and Portugal was in the middle of the financial crisis then, this amount was clearly insufficient to accomplish the EU targets and Portugal's own EE objectives. Moreover, ten sources of revenue<sup>46</sup> were attributed to the Fund. These were mostly rates, penalties and fines,<sup>47</sup> which tend to be irregular.

The amount of capital clearly shows a short-term vision of what the Fund could become as well as the priority given to EE on national policy. But this is a transnational problem due to a number of factors, including:<sup>48</sup>

1. Limited understanding and know-how around EE in the public sector;
2. EE's association with conservation or getting by with less, which is not a popular political message;
3. The 'ribbon problem', i.e. EE it is not politically saleable because it is invisible. The result of it is to have less of something, and its hardware is not photogenic and is rarely (if ever) suitable as a backdrop for a political photo opportunity;

<sup>31</sup> Ministerial Order 1316/2010, art 3(1).

<sup>32</sup> Ibid, art 4(1).

<sup>33</sup> Ibid, art 5(1,2)

<sup>34</sup> Ibid, art 12(1)

<sup>35</sup> Ibid, art 13(1)

<sup>36</sup> Steven Fawkes, *Energy Efficiency: The Definitive Guide to the Cheapest, Cleanest, Fastest Source of Energy* (Routledge 2013) 161

<sup>37</sup> Ibid, 176.

<sup>38</sup> For example: 'Energy Efficient Prosperity: Low-Hanging Fruits' (IEA, 12 October 2016) <[www.iea.org/newsroom/news/2016/october/energy-efficient-prosperity-low-hanging-fruits.html](http://www.iea.org/newsroom/news/2016/october/energy-efficient-prosperity-low-hanging-fruits.html)>; 'Energy Efficiency: Low-Hanging Fruit' (*Sustainable Energy For All*, 24 Feb 2015) <[www.seforall.org/2015\\_02\\_24\\_energy-efficiency-low-hanging-fruit](http://www.seforall.org/2015_02_24_energy-efficiency-low-hanging-fruit)>.

<sup>39</sup> Resolution of the Cabinet 20/2013. This document also included the

National Action Plan for Renewable Energy 2020 (PNAER 2020).

<sup>40</sup> Resolution of the Cabinet 20/2013, foreword.

<sup>41</sup> 'Enquadramento' (PNAEE) <[www.pnaee.pt/pnaee#enquadramentopnaee](http://www.pnaee.pt/pnaee#enquadramentopnaee)>

<sup>42</sup> John C Dernbach and Marianne Tyrrell, 'Federal Energy Efficiency and Conservation Law' in Michael B Gerrard (ed) *The Law of Clean Energy: Efficiency and Renewables* (American Bar Association 2011) 25-56.

<sup>43</sup> Hunt Allcott and Michael Greenstone 'Is there an Energy Efficiency Gap' (2012) 26(1) *Journal of Economic Perspectives* 3-28.

<sup>44</sup> Ibid, 4.

<sup>45</sup> Decree-Law 50/2010 of 20 May, foreword.

<sup>46</sup> Decree-Law 50/2010 of 20 May, art 3.

<sup>47</sup> For a specification about all sources of revenue, see Tavares da Silva (n 26) 131-32

<sup>48</sup> Fawkes (n 36) 193-94

4. The small size and budget of traditional EE projects and the fragmentation of the EE industry;
5. Hard to measure benefits of EE;
6. Lack of disaggregated data on important questions;
7. The limited level of understanding on EE behavioural change.

The reduced capital of the Fund also implies low allocation of resources to the projects around ‘transportation, buildings and services, industry and public sector’ that are included in the EE plans. In an analysis from 2017<sup>49</sup> it is evident that the capital available was limited for the EE plan’s objectives, as shown in Table 1. The total investment made by the Fund was around €18 million, which corresponds to an average annual amount of €3 million. This is ‘insufficient to respond to the financing needs of the EE plan’.<sup>50</sup> It would have been a better strategic decision to focus on only one area, allowing a stronger allocation of resources and improving results.

Sector	Number of initiatives	Budget (€ million)
Residential	4	6.10
Industry	6	6.19
State	3	2.35
Transportation	4	2.20
Services	2	0.90
Hotels	1	0.40
<b>Total</b>	<b>20</b>	<b>18.14</b>

(Table 1)

At the same time, as the table shows, initiatives on ‘behaviours, tax and incentives, and financing’ as well as ‘other projects not included on the [EE plan’s] but that demonstrably contributed to EE’ were non-existent. Although it is understandable that the focus was mainly on initiatives where the results can be easily measured, it is regrettable that change of behaviour was not a priority. The real impact of behaviour change by citizens is unknown, but there is no doubt that it would affect Portugal’s energy saving targets. As an example, USA surveys from 2010 advocate that inefficient behaviour accounts for up to 21% of residential energy.<sup>51</sup>

### b. Institutional struggles

According to Taylor, ‘all energy efficiency financing mechanisms must successfully incorporate two functions: 1) marketing, project development and technical design function to efficiently package good projects; and 2) financing function’.<sup>52</sup> Taylor says that EE financing programmes are inadequate when there is a disequilibrium between these two functions.<sup>53</sup>

As mentioned above, the Fund’s financing function was compromised by the lack of available funds. But when it comes to the first function, the complexity of the management of the Fund was also an issue. It was too complex, with the two top bodies - the strategic board and the executive board - institutionally too far apart from each other.

Moreover, the executive board managed the technical part, while the Directorate-General of the Treasury and Finances was responsible for the financial part. The director was always dependent on approval from the executive board as well as from the Directorate-General when spending was needed. This led to inefficient management, compromising the ‘marketing, project development and technical design’ applicable to EE financial products.

The Fund could be made more agile by reducing the number of government and public sector representatives for the execution of the Fund competences and responsibilities. This does not mean reducing control and scrutiny of Fund management’s spending and action but simplifying the decision-making process and reducing the number of approvals needed. Giving more competences and management autonomy to the director could prove equally helpful.

### c. Lack of social understanding and knowledge of the needs of the beneficiaries

As mentioned above, the most common financing mechanism used by the Fund was non-refundable subsidies. These subsidies were usually given as a percentage of the total amount of the investment to be made by the beneficiary. The percentage value would vary in each initiative according to the type of project and the type of beneficiary. The Fund would also cap the maximum amount of expenditure to incur in each of its initiatives.

This method may be valuable for those who have capital and are knowledgeable enough to understand the value of EE. Unfortunately, the segments of the Portuguese population who have both these characteristics are limited. Therefore, while the aim of the Fund is to improve the level of general EE, the financial aid is not accessible to everyone.

First we will consider those who have neither the capital nor the energy literacy needed to understand EE. These are mainly people with low incomes but not low enough to be beneficiaries of social aid.<sup>54</sup> Usually, these people live in the less efficient buildings, typically owning or renting old houses or flats, with low thermal insulation due to the low quality of construction material.

The Fund had no specific programme for this group. None of the five programmes directed at residential buildings specifically considered low-income families as a beneficiary group or had any provision including such specifications. Despite acknowledging the perverse incentive to EE in the

<sup>49</sup> Tavares da Silva (n 26) 136; we could only find one other Fund initiative launched since 2017, for the residential sector (see <www.pnaee.pt/aviso-fee>).

<sup>50</sup> Tavares da Silva (n 26) 136.

<sup>51</sup> Alex Laskey and Bruce Syler, ‘The Ultimate Challenge: Getting Consumers

Engaged in Energy Efficiency’ in Fereidoon P Sioshansi (ed) *Energy Efficiency: Towards the End of Demand Growth* (Elsevier 2013) 591-612

<sup>52</sup> Taylor (n 22) 5

<sup>53</sup> Ibid.



relationship between landlords and tenants,<sup>55</sup> nothing should stop the Fund from including initiatives with social aims directed at low-income people. Social perspective is also needed in EE, enabling it to increase living standards and the income available to less privileged citizens.

However, this problem is not exclusive to the Fund. Tavares da Silva has already acknowledged that the EU institutions tend to disregard this perspective when defining EE targets. She refers to this as a lacuna of the legal principle of Sustainability of Energy Efficiency<sup>56</sup> in European Law, which 'prevents a significant number of people [from being] able to participate actively in EE policy'.<sup>57</sup>

The Clean Energy for All legislation package recognised this shortcoming and sought to tackle the problem. Directive (EU) 2018/844<sup>58</sup> identified the need to 'promote equal access to funding to worst performing segments of the national building stock'. Likewise, Directive (EU) 2018/2002<sup>59</sup> aimed to 'ensure that EE measures reduced energy poverty'.

Secondly, there is the group of people who are sufficiently energy literate to understand the importance of EE but have no available capital to invest. We consider this to be the majority of the Portuguese middle-class population, which is informed or has access to information about the EE benefits, but does not have sufficient funds to improve the EE of their house, even with the help of the Fund.

In these cases, the choice is clear: it is cheaper (in the short-term) to increase energy consumption to improve the comfort of the household than to invest in EE with high up-front costs, despite acknowledging that it would be reimbursed quickly. This is an example of the 'status quo bias'.<sup>60</sup>

The middle class would probably be more strongly encouraged to use the Fund financing to improve the EE of their home if, in place of subsidies, the Fund used payable loans with no or little interest that could transform high up-front costs of an EE investment into monthly payments. This would solve the problem of lack of capital for the high up-front costs that EE investments require and incentivise the middle-class to improve the EE of their homes.

<sup>54</sup> These people would be financially supported by other public financing programmes.

<sup>55</sup> Tom Tietenberg, 'Reflections - Energy Efficiency Policy: Pipe Dream or Pipeline to the Future?' (2009) 3 *Review of Environmental Economics and Policy* 304-20. The *perverse incentive* consists in the landlord having the responsibility to invest in EE but a prospective tenant, who commonly pays the bill, not having the annual energy consumption data to make an informed decision, usually disregarding the EE improvements of the property. In this case, 'the landlord's incentive is to underinvest in energy efficiency because of the inability to charge a sufficiently high rent to recover the cost'. *Idem* Tietenberg 307-8

<sup>56</sup> Tavares da Silva (n 3) 151

<sup>57</sup> *Ibid* 153

<sup>58</sup> Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency [2018] OJ L318/210.

<sup>59</sup> Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency [2018] OJ L156/75.

<sup>60</sup> Tietenberg (n 55) 309.

<sup>61</sup> Energy Act 2011, recital. The Green Deal was seen as an important measure to accomplish the carbon emissions' reduction objective of 80% by 2050, compared with 1990. See Climate Change Act 2008 1(1), 5(1a).

## V. The United Kingdom's Green Deal - a comparative approach

### a. Overview of the Green Deal

In parallel to the Portuguese EE National Fund, the Government of the United Kingdom adopted the Green Deal with the Energy Act 2011. This Act, among other things, aimed to enable the 'arrangement and financing of energy efficiency improvements to be made to properties by owners and occupiers',<sup>61</sup> as well as to privately rented properties.

The Green Deal intended to 'capture some of the estimated £3 billion per year in energy cost-saving opportunities for UK households and businesses, reduce carbon emissions and reduce fuel poverty'<sup>62</sup> by improving the EE of both residential and commercial edifices, aiming to upgrade 14 million homes all over the UK.

The Green Deal was a financial mechanism<sup>63</sup> that intended to "establish a framework to enable private firms to offer consumers EE improvements to their homes, community spaces and businesses at no upfront cost, and recoup payments through a charge in instalments in energy bills".<sup>64</sup> This meant that consumers could see the decrease in energy use corresponding to the EE charge, which generated overall savings in their energy bill.<sup>65</sup> It also seems to be a mechanism close to the idea third-party financing included in the Directive 2006/32/EC.

If the bill-payer moved out of the property, their position in relation to the EE improvements would end, with the financial obligation transferred to the next bill-payer<sup>66</sup> ('the charge is only paid whilst the benefits are enjoyed').<sup>67</sup> This made the Green Deal loans different from personal loans, where 'borrowers have to keep repaying even if they are no longer enjoying the benefits'.<sup>68</sup> This measure tried to solve the problem of the perverse incentive of the EE improvements.<sup>69</sup>

Consequently, the Green Deal was not a conventional loan programme - as 'the bill-payer is not liable for the full capital cost of the measures, only the charges due whilst they are the bill-payer'<sup>70</sup> - while being a market mechanism, funded by private capital.<sup>71</sup> A private-sector consortium formed the Green

<sup>62</sup> S. Retallack and others., 'Energy Efficiency Finance Programs: Best Practices to Leverage Private Green Finance' (2018) Asian Development Bank Institute Working Paper 877 <[www.adb.org/publications/energy-efficiency-finance-programs-private-green-finance](http://www.adb.org/publications/energy-efficiency-finance-programs-private-green-finance)> accessed 10 September 2019.

<sup>63</sup> Department of Energy and Climate Change, 'Green Deal and Energy Company Obligation' (2016), 18 <[www.nao.org.uk/wp-content/uploads/2016/04/Green-Deal-and-Energy-Company-Obligation.pdf](http://www.nao.org.uk/wp-content/uploads/2016/04/Green-Deal-and-Energy-Company-Obligation.pdf)> accessed 11 September 2019.

<sup>64</sup> Department of Energy and Climate Change, 'The Green Deal: A Summary of the Government's Proposals' (2010) <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47978/1010-green-deal-summary-proposals.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47978/1010-green-deal-summary-proposals.pdf)> accessed 10 September 2019

<sup>65</sup> See Energy Act 2011 section 1(6b).

<sup>66</sup> See Energy Act 2011 s 1(6a).

<sup>67</sup> Department of Energy and Climate Change, 'The Green Deal: A Summary of the Government's Proposals' (n 65) 5

<sup>68</sup> *Ibid*, 15.

<sup>69</sup> Tietenberg (n 55) 307.

<sup>70</sup> *Ibid*, 5

<sup>71</sup> *Ibid*

Deal Finance Company to provide the needed capital.<sup>72</sup>

These two measures tried to respond to the capital budgeting impediment of EE improvements,<sup>73</sup> allowing any consumer to borrow money for EE investments.

For this programme to work, the Green Deal had to focus on EE measures with ‘expected financial savings [...] greater than the costs attached to the energy bill’.<sup>74</sup> This was called the golden rule. It had to incorporate the total cost of the intervention, including the labour and financing costs.<sup>75</sup> The existence of this rule considerably limited the amount of financing that could be provided, based on the expected savings of the installed EE measures.<sup>76</sup>

The downside of this type of loan was that the government was unable to guarantee the promised savings to consumers. Since energy consumption of a property was and is solely controlled by the consumer,<sup>77</sup> nothing would prevent increasing energy consumption. This phenomenon is known as the *rebound effect*.<sup>78</sup>

The UK government recognised the need for improving low-income and vulnerable households. Special support had been planned, owing to the size and relevance of the interventions needed and how these households may suffer from fuel and/or energy poverty. In these cases, the government intended to create a new Energy Company Obligation<sup>79</sup> focusing energy companies on improving the EE of vulnerable and lower-income households,<sup>80</sup> allowing them to improve their living conditions inexpensively.

The UK government also recognised the practical barriers to installing EE appliances, and possible solutions. The barriers were ‘the upfront cost of measures [which are considered to be one of the most important perceived barriers to uptake], the length of time required for measures to pay back in savings, and the “hassle” involved in planning and carrying out work’.<sup>82</sup>

The repayment of the loan via energy bills was seen as a solution for having no upfront costs, increasing ‘the incentive for owner-occupiers, tenants and landlords to take action’.<sup>83</sup>

The issues involved in planning and carrying out work were run by the government through the creation of a special guided procedure for customers, aiming to ‘remove the lack of information [and] uncertainty, [as well as] hidden costs barriers’.<sup>84</sup>

Although the goals were ambitious, the Green Deal was cancelled during 2015 as it was not even close to fulfilling what was proposed, with energy supply in only 14,000 homes improved by the end of that year.<sup>85</sup>

Retallack and others explained the causes for the failure of the Green Deal. Firstly, the payback period offered for the improvements of the Green Deal was not attractive enough for property owners.<sup>86</sup> Secondly, the scheme failed to ‘address the lack of technical understanding of the bankability of energy efficiency projects in the financial sector’<sup>87</sup> resulting in high interest rates in financing (around 7%). Thirdly, consequently, the length of loan payback periods increased.<sup>88</sup>

Fourthly, the characterisation of the funding as ‘loans’ did not incentivise property owners to improve their EE as they were unwilling to incur further debt.<sup>89</sup> Lastly, ‘the technical assistance that property owners received was conservative in its estimation of which energy efficiency technologies would satisfy the golden rule, limiting the pipeline of viable projects’.<sup>90</sup>

## **b. The Green Deal and the Portuguese National EE Fund - a comparative analysis**

After analysing the Portuguese National EE Fund and the Green Deal it is difficult to find resemblances between these two programmes, apart from both being unsuccessful in their objectives.

However, the criticisms we have made to the Portuguese Fund are not applicable to the Green Deal. Firstly, as the Green Deal was a financial scheme directed to the private sector, the lack of funds does not seem to be an issue. By being sustained by the golden rule and allowing homeowners to borrow money, everyone should, in principle, have had the means to install EE improvements in their houses. The scheme seemed to have

<sup>72</sup> Candice Howarth and Ben M Roberts, ‘The Role of the UK Green Deal in Shaping Pro-Environmental Behaviours: Insights from Two Case Studies’ (2018) 10(6) *Sustainability* 1-18

<sup>73</sup> Michael Gerrard (ed), *The Law of Clean Energy: Efficiency and Renewables* (American Bar Association 2011) 8

<sup>74</sup> Department of Energy and Climate Change, ‘The Green Deal: A Summary of the Government’s Proposals’ (n 65) 10.

<sup>75</sup> See Energy Act 2011 s 4(4,5)

<sup>76</sup> Howarth and Roberts (n 72) 5

<sup>77</sup> Department of Energy and Climate Change, ‘The Green Deal: A Summary of the Government’s Proposals’ (n 65) 6.

<sup>78</sup> ‘The *rebound effect* refers to an increase in the supply of energy services with a corresponding decrease in the effective price, the size of which depends upon the underlying cost structure. This in turn may result in an increase in demand in response to these price decreases.’ Lorna A Greening, David L Greene and Carmen Difiglio, ‘Energy Efficiency and Consumption - the Rebound Effect - a Survey’ (2000) 28 (6-7) *Energy Policy* 389-401.

<sup>79</sup> ‘Through the *Energy Company Obligation*, the Department [of Energy and Climate Change] requires the largest energy suppliers to install measures in homes that will cumulatively reduce CO2 emissions by a certain amount. Suppliers face penalties if they do not comply. Suppliers can install measures, or contract installers, either directly or through public

auctions over a ‘brokerage platform’. The suppliers pass on their costs to all their customers through energy bills. The government has obligated suppliers to improve homes’ energy efficiency in this way for more than 20 years.’ Department of Energy and Climate Change, ‘Green Deal and Energy Company Obligation’ (n 63) 5

<sup>80</sup> Department of Energy and Climate Change ‘The Green Deal: A Summary of the Government’s Proposals’ (n 64) 6.

<sup>81</sup> Howarth and Roberts (n 72) 5.

<sup>82</sup> Department of Energy and Climate Change ‘The Green Deal: A Summary of the Government’s Proposals’ (n 64) 8

<sup>83</sup> *Ibid.*

<sup>84</sup> Howarth and Roberts (n 72) 5

<sup>85</sup> This data can be confirmed in Department of Energy and Climate Change, ‘Green Deal and Energy Company Obligation’ (n 66) 4.

<sup>86</sup> Retallack (n 62) 10.

<sup>87</sup> *Ibid.*

<sup>88</sup> *Ibid.*

<sup>89</sup> *Ibid.*

<sup>90</sup> *Ibid.*



been financially well-structured, tackling the issues of third-party financing.<sup>91</sup>

However, as discussed by Retallack and others, as it was a privately financed scheme, the inability of the government to forecast how much money a consumer would save or evaluate the financial health and background of the consumer, plus the existence of the golden rule, resulted in high interests and lengthy paying periods. This was not a matter of funds, but of risk. Financing parties were concerned over consumers' ability to pay back their loans, raising the 'price' of the loaned capital.

Secondly, the institutional simplicity of the Green Deal is evident. The Department for Energy and Climate Change seemed to be in the position of facilitator or stimulator of the private sector for the creation of an EE market, and not as a financier or player in the market. As such, by merely determining the rules of the Green Deal and serving as a facilitator, the government gave freedom to the private market to grab 'the low hanging fruit' (although this did not happen).

Thirdly, the existence of an Energy Company Obligation clearly shows some social understanding and knowledge of the needs of the beneficiaries, which was not evident in the Portuguese Fund.

In contrast to the Portuguese Fund, the problems raised by the Green Deal were not structural but sectorial and circumstantial. Apart from the problem with technical assistance given to the homeowners, which was an information dysfunctionality, the other reasons for the lack of success of the Green Deal had more to do with the financial structure of EE investments than with the understanding the citizens, companies and the government EE needs, which seems to be the main problem with the Portuguese Fund.

## VI. Conclusion

As is shown in the analysis above, it is not possible to state unanimously that the Portuguese EE National Fund was a well-implemented EU policy. The Fund was a policy instrument with too high ambitions for its own means. It seems that despite focusing on EE as a priority, the legislator did not manage to prioritise its uptake among the population.

Firstly, it had too few resources to achieve its legally determined objectives. A fund created to invest cannot be successful if it does not have enough capital. In addition, the investment mechanism used was not designed to increase the amount of capital available. The government did not give the priority needed to finance EE, and the management of the fund, without any apparent motive, did not contemplate the idea of raising its resources.

Secondly, the management structure was inefficient. The executive board was not centralised, with executive powers separate from the financial decision-making and too dependent on political will. Moreover, the director had few competences and probably had its initiatives blocked by

the deliberative process, which was too complex due to the number of players involved and the objectives of the Fund.

The lack of social awareness was another problem with the Fund. By not analysing and adapting its investment policy to the Portuguese energy consumption structure, the Fund's management seems to have been completely detached from the country's reality. The objective of the Fund (and both EE plans) was to increase energy savings. That does not mean that: 1) addressing energy poverty should stop being a priority; 2) any public institution should have a social conscience; and 3) in the welfare state 'organised power [should] deliberately [be] used in an effort to modify the play of market forces'.<sup>92</sup> Owing to policy or management choices, the Fund was not an instrument of the welfare state established to end energy poverty.

The poor results of both Portuguese EE action plans as well as the new EU energy saving targets for 2030, reaffirmed and reinforced in the common EU National Determined Contribution and the Clean Energy for All legislation package, should bring several changes to the functioning of the Fund. However, because of the implementation procedure and timeline of EU Directives, it remains to be seen whether it will become successful in the future.

### Biography

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<sup>91</sup> *Vide* page 2-3

<sup>92</sup> John Veit-Wilson, 'States of Welfare: A Conceptual Challenge' (2000) 34(1) *Social Policy & Administration* 1-25

# For the public benefit: An evaluation of the landowner compensation regime application to fracking in England.

Abeer Sharma

## Introduction

The Conservative-led government's push to adopt hydraulic fracturing ('fracking') in the United Kingdom has sprung up several onshore shale gas exploration wells in England. The proliferation of these sites has unsurprisingly been met with strong resistance from opposition political parties, NGOs, local authorities and civil society stakeholders for a variety of reasons, ranging from environmental concerns to governance jurisdiction struggles. One group of stakeholders has unfortunately been left out of much of the media and academic limelight: private landowners who occupy property in the vicinity of fracking wells. This paper addresses the currently inadequate statutory compensation regime that exists to protect the interests of private property owners injured by the establishment of fracking sites and recommends an updated regime.

Part I introduces the practical backdrop for this legal issue.

Part II explains why and how the relevant legal controversies surrounding compensation can arise from the introduction of commercial fracking in England. It details the statutory changes (the Infrastructure Act 2015) that were enacted to circumvent the traditional common law principles of trespass that served as hurdles to large-scale adoption of fracking.

Part III analyses the legal regime pertaining to landowner compensation after the enactment of the Infrastructure Act 2015. It highlights the importance of a framework that adequately addresses the needs of affected individuals and stresses that the traditional English approach of communal compensation is not only unjust, but also imprudent.

Part IV prescribes recommendations for the improvement of the compensation regime, stressing in particular the need for a compensation code and proposing some principles that this code should be based upon.

Part V provides concluding remarks for this paper.

## I. Background

Westby-with-Plumpton is a sleepy little parish in western Lancashire. With a population of barely over a thousand people, almost a third of whom are retired, it was unlikely that this inconspicuous locality would ever be in the national media limelight.<sup>1</sup> However, this is precisely what has happened ever since the oil and gas company Cuadrilla obtained a licence from the Secretary of State to explore the Preston New Road area for shale gas in October 2016. The exploration license - which was initially rejected by the Lancashire county council citing 'visual impact and noise' - was granted after Cuadrilla appealed to the Communities Secretary of the UK government.<sup>2</sup> This sleepy parish has since been transformed into a political battleground, with protestors ranging from parliamentarians and local residents groups to international environmental organisations joining forces to resist Cuadrilla's operations, with several risking criminal prosecution.<sup>3</sup> In a bid to alleviate some of this hostility, Cuadrilla announced that it would implement a lucrative voluntary scheme to compensate households in the locality affected by its shale exploration activities. One such proposed payout took place in late 2017, with households receiving between £150 and £2,070 depending on their distance from the entry site. This purportedly lucrative payout did not placate the drilling site's opponents, with affected households criticising the level of compensation or labelling it 'blood money'.<sup>4</sup>

The hydraulic fracturing of shale rock to extract gas ('fracking') has been the subject of growing debate and scrutiny over the past few years, particularly as progressively increasing energy consumption fuels the demand for new power sources and stresses the world's natural resources. Fracking has seen the most success in the USA, where the 'shale boom' has seemingly transformed the energy market.<sup>5</sup> The UK has a somewhat complicated position towards onshore hydraulic fracturing. The Conservative Party-led government has repeatedly pushed for the country to embrace the process

<sup>1</sup> 'Westby-with-Plumpton Parish - Local Area Report' (Nomis) <[www.nomisweb.co.uk/reports/localarea?compare=1170215025](http://www.nomisweb.co.uk/reports/localarea?compare=1170215025)> accessed 12 December 2018.

<sup>2</sup> Adam Vaughan, 'Fracking in UK given go-ahead as Lancashire council rejection overturned' (*The Guardian*, 6 October 2016) <[www.theguardian.com/environment/2016/oct/06/uk-fracking-given-go-ahead-as-lancashire-council-rejection-is-overturned](http://www.theguardian.com/environment/2016/oct/06/uk-fracking-given-go-ahead-as-lancashire-council-rejection-is-overturned)> accessed 13 December 2018.

<sup>3</sup> See eg Damien Gayle, Frances Perraudin and Owen Bowcott, 'Fracking protesters walk free after court quashes "excessive" sentences' (*The Guardian*, 17 Oct 2018) <[www.theguardian.com/environment/2018/oct/17/court-quashes-excessive-sentences-of-fracking-protesters](http://www.theguardian.com/environment/2018/oct/17/court-quashes-excessive-sentences-of-fracking-protesters)> accessed 14 December 2018.

<sup>4</sup> Andy Bounds, 'UK households near Cuadrilla fracking site to get £2,000 each' (*Financial Times*, 7 November 2017) <[www.ft.com/content/ce78547a-c31a-11e7-b2bb-322b2cb39656](http://www.ft.com/content/ce78547a-c31a-11e7-b2bb-322b2cb39656)> accessed 12 December 2018; Adam Vaughan, 'Fracking firm to give first households £2,000 payouts' (*The Guardian*, 6 November 2017) <[www.theguardian.com/environment/2017/nov/06/fracking-payouts-shale-gas-cuadrilla-lancashire](http://www.theguardian.com/environment/2017/nov/06/fracking-payouts-shale-gas-cuadrilla-lancashire)> accessed 12 December 2018.

<sup>5</sup> Richard S Middleton and others, 'The shale gas revolution: Barriers, Sustainability, and Emerging Opportunities' (2017) 199 *Applied Energy* 88 ('Shale gas and hydraulic refracturing has revolutionized the US energy sector in terms of prices, consumption, and CO2 emissions').

in order to emulate the USA's success with fracking.<sup>6,7</sup> The devolved governments of the UK, however, have been more cautious. The Welsh government has adopted the policy to 'not undertake any new petroleum licensing in Wales, or support applications for hydraulic fracturing petroleum licence consents'.<sup>8</sup> Similarly, the Scottish government, following a series of consultations with the public, reaffirmed its preferred policy position that it does not support the development of unconventional oil and gas in Scotland.<sup>9</sup> In Northern Ireland, petroleum licences are granted by the Department of Economy, and '[t]he Strategic Planning Policy Statement for Northern Ireland creates a "presumption against" the extraction of unconventional hydrocarbons "until there is sufficient and robust evidence on all environmental impacts"'.<sup>10</sup>

It appears that onshore hydraulic fracturing in the UK will remain a phenomenon confined to England for the foreseeable future. A number of areas in England have been identified as appropriate hosts for fracking sites, including swathes of Yorkshire and Lancashire.<sup>11</sup> However, even in England, the industry is highly controversial. Objections by opponents to the UK government's fracking policy include concerns over health risks from air and water pollution,<sup>12</sup> water wastage,<sup>13</sup> seismic risk from drilling operations<sup>14</sup> and criticism that the UK government's push for fracking is robbing local authorities and communities of the ability to make decisions regarding issues that greatly affect their fate, as evidenced by the Communities Secretary's decision that sparked protests in Preston New Road.<sup>15</sup>

Although these debates are undoubtedly important, there is one issue that has unfortunately not garnered as much media limelight: that of compensation payable to landowners situated at or near fracking exploration and production sites.

Industrialization and development generally does not equally benefit all affected parties, especially in populated areas. Some residents may have to relocate because their land has been acquired. Others may be forced to accept easements over their property (such as a right-of-way) in order to facilitate the construction and operation of a large-scale project. Some residents may feel that the industrial developments have led to undesirable sights and sounds, which affects the use and enjoyment of their property and crashes the market value of their houses.

Most jurisdictions recognize, at least theoretically, that adversely affected residents deserve some degree of compensation for the inconvenience or damage caused to them due to state-imposed public works or planning decisions. In practice, however, the beneficiaries of such compensation mostly tend to be private individuals whose tangible control over the property has been compromised (i.e. due to deprivation of land or a grant of easements over their land). There are also residents who in principle acknowledge the potential benefits that will accrue to society at large from the construction of an infrastructural project, but do not want these benefits to spring from their locality. Such individuals are known as NIMBYs (an abbreviation for 'not-in-my-backyard'), and tend to organize around the single issue of opposition that unites them.<sup>16</sup> NIMBYs around the world are a thorn in the side of policymakers and developers due to their perceived 'selfish' collective opposition to the siting of an otherwise economically beneficial project.<sup>17</sup> Several proposals have been formulated over the years in an attempt to diffuse NIMBY-oriented conflicts, but empirical studies note that direct monetary compensation, while arousing suspicion, 'yields the most effective outcome'.<sup>18</sup>

Local opponents of fracking sites in England have often been described as NIMBYs by commentators and proponents of

<sup>6</sup> See 'Guidance on Fracking: Developing Shale Gas in the UK' (*Gov.uk*, 11 October 2018) <[www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk](http://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk)> accessed 12 December 2018; See also eg Boris Johnson, 'Ignore the Doom Merchants, Britain Should Get Fracking' (*The Telegraph*, 09 December 2012) <[www.telegraph.co.uk/comment/columnists/borisjohnson/9733518/Ignore-the-doom-merchants-Britain-should-get-fracking.html](http://www.telegraph.co.uk/comment/columnists/borisjohnson/9733518/Ignore-the-doom-merchants-Britain-should-get-fracking.html)> accessed: 12 December 2018; Roger Harrabin, 'Gas fracking: Ministers approve shale gas extraction' (*BBC*, 13 December 2012) <[www.bbc.co.uk/news/uk-20707574](http://www.bbc.co.uk/news/uk-20707574)> accessed 12 December 2018.

<sup>7</sup> It must also be noted that the UK was instrumental in defeating the European Union's attempts to set legally binding regulations over the shale gas industry. See Damian Carrington, 'UK defeats European bid for fracking regulations' (*The Guardian*, 14 January 2014) <[www.theguardian.com/environment/2014/jan/14/uk-defeats-european-bid-fracking-regulations](http://www.theguardian.com/environment/2014/jan/14/uk-defeats-european-bid-fracking-regulations)> accessed 12 December 2018.

<sup>8</sup> Welsh Government, 'Petroleum Extraction Policy Consultation: Response' (Number: WG36695, 2018) <<https://beta.gov.wales/sites/default/files/consultations/2018-12/foreword-conclusion-petroleum-extraction-in-wales.pdf>> accessed 12 December 2018.

<sup>9</sup> Scottish Government, 'A consultation on the Scottish Government's preferred policy position on unconventional oil and gas (UOG), the Strategic Environmental Assessment (SEA) Environmental Report, and partial Business and Regulatory Impact Assessment (BRIA)' (*Gov.scot*) <<https://consult.gov.scot/energy-and-climate-change-directorate/preferred-policy-position-on-uog/>> accessed: 2 October 2019.

<sup>10</sup> Sara Priestley, 'Shale Gas and Fracking' (2018) House of Commons Library Briefing Paper Number CBP 6073 <<https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06073>> accessed 12 December 2018, citing Northern Ireland Strategic Planning Policy Statement (SPPS) para 6.157.

<sup>11</sup> Office of Unconventional Oil and Gas, 'Onshore Oil and Gas Activity - Interactive Map' (*Oil and Gas Authority*, 2018) <<https://ogauthority.maps.arcgis.com/apps/webappviewer/index.html?id=29c31fa4b00248418e545d222e57ddaa>> accessed 13 December 2018.

<sup>12</sup> See eg Nicola Davis, 'Pollutants from fracking could pose health risk to children, warn researchers' (*The Guardian*, 25 October 2017) <[www.theguardian.com/environment/2017/oct/25/pollutants-from-fracking-could-pose-health-risk-to-children-warn-researchers](http://www.theguardian.com/environment/2017/oct/25/pollutants-from-fracking-could-pose-health-risk-to-children-warn-researchers)> accessed 12 December 2018; Gayathri Vaidyanathan, 'Fracking Can Contaminate Drinking Water' (*Scientific American*, 4 April 2016) <[www.scientificamerican.com/article/fracking-can-contaminate-drinking-water/](http://www.scientificamerican.com/article/fracking-can-contaminate-drinking-water/)> accessed 12 December 2018.

<sup>13</sup> Andrew J Kondash, Nancy E Lauer and Avner Vengosh, 'The intensification of the water footprint of hydraulic fracturing' (2018) 4(8) *Science Advances*.

<sup>14</sup> Priestley (n 10) 31-33.

<sup>15</sup> See eg Vaughan, 'Fracking given UK go-ahead as Lancashire council rejection overturned' (n 2); *Preston New Road Action Group v Secretary of State for Communities and Local Government* [2018] EWCA Civ 9.

<sup>16</sup> The term 'generally describes resistance to siting specific projects close to one's area of residence while exhibiting acceptance of similar projects elsewhere.' See Maria A Petrova, 'NIMBYism revisited: public acceptance of wind energy in the United States' (2013) 4 *WIREs Climate Change* 575.

<sup>17</sup> Kate Burningham, Julie Barnett and Diana Thrush, 'The limitations of the NIMBY concept for understanding public engagement with renewable energy technologies: a literature review' (2006) School of Environment and Development, University of Manchester Working Paper 1.3, 4.

<sup>18</sup> Chang-Tay Chiou, Joanna Lee and Tung Fung, 'Negotiated Compensation for NIMBY Facilities: Siting of Incinerators in Taiwan' (2011) 28 *Asian Geographer* 105, 108.

fracking,<sup>19</sup> so perhaps a targeted compensation strategy may be useful in helping the UK government meet its policy goals - particularly because the politically volatile nature of fracking renders diffusing NIMBYism a high priority.

This paper explores a relatively narrow aspect of landowner compensation. The ensuing discussion assumes that the entire hydraulic fracturing exploration and production process goes smoothly, without a glitch. It will not discuss compensation for environmental damage or health hazards arising out of mishaps related to shale gas exploration or production, as such incidents are comprehensively covered by the existing framework of tortious or criminal liability.

## II. How does hydraulic fracturing affect private landowners?

Shale rock is an impermeable sedimentary rock with high organic content. The natural gas trapped inside shale rock is released by breaking apart the rock using a method called hydraulic fracturing, a process that essentially involves drilling down to the rock formation and injecting it with a pressurized mixture of water, sand and chemicals. This creates hair-sized cracks, which release the natural gas sealed away inside the rock.<sup>20</sup>

### Vertical vs horizontal drilling

While the safety, environmental and seismic concerns associated with onshore hydraulic fracturing are certainly relevant to local communities surrounding the exploration and production sites, this does not entirely explain why adjacent landowners would require compensation. The

hydraulic fracturing process is directly relevant to their legal right over the underlying land due to a technological innovation known as horizontal drilling. ‘Traditional’ wells involve vertical drilling. They comprise a borehole at the surface that extends straight down to the targeted reservoir of oil or natural gas. Vertical wells are used predominantly for conventional fossil fuel sources but were also used in fracking up until the late 1980s.<sup>21</sup> Vertical drilling is not economically viable for extracting gas trapped inside shale rock, as ‘[t]he shale deposits are relatively thin (albeit deep under the ground) layers, but cover massive (multi-state) horizontal areas and a vertical drill only engages with a tiny area of the rock.’<sup>22</sup>

Horizontal drilling was devised to overcome the shortcomings associated with vertical drilling. Similar to vertical wells, the process involves drilling down to the level of the shale formation from a point on the surface. However, once it gets deep enough, directional drilling technology is used to make the wellbore ‘turn to the side and follow along [the] huge area of horizontally laid sedimentary shale rock... It is not unusual to extend the fracture a full horizontal mile, reaching all of the shale that would have gone untapped in a vertical drilling operation’.<sup>23</sup> Horizontal drilling thus makes hydraulic fracturing commercially attractive due to the drill’s increased contact area with shale rock.<sup>24</sup> The directional drilling mechanism causes less surface disruption, as only one entry point is necessary to access resources spread over a wide area, which would otherwise require multiple vertical wells. Horizontal drilling thus allows for the extraction of higher volumes of gas at lower cost.

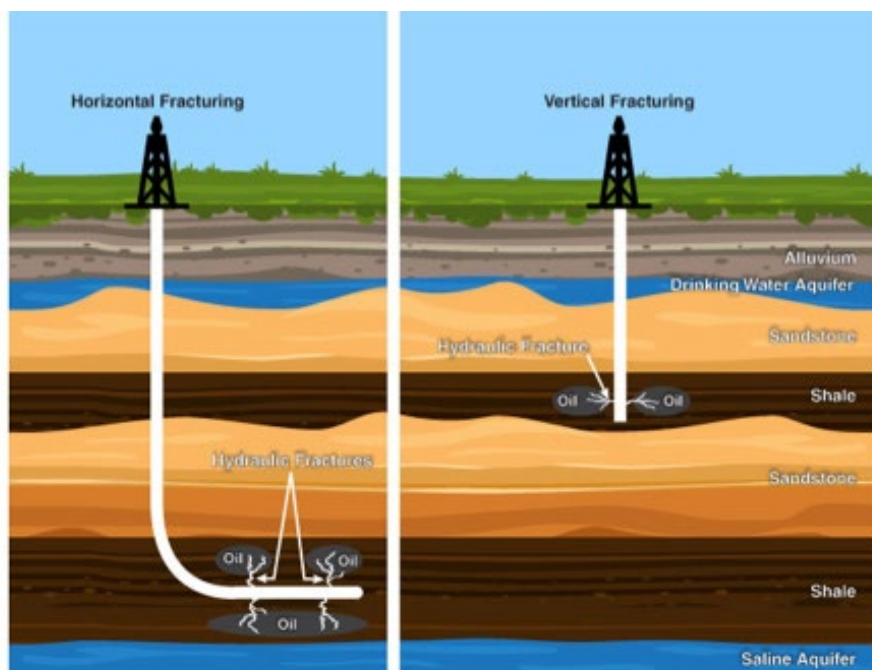


Figure : An illustrative comparison between vertical and horizontal hydraulic fracturing.

Source: ‘Hydraulic Fracturing: How It Works and Recent State Oversight Actions’ (Legislative Analyst’s Office, 1 December 2016) <<https://lao.ca.gov/Publications/Report/3513>> accessed 1418

<sup>19</sup> See eg Frances Drake, ‘Risk Society and Anti-Politics in the Fracking Debate’ (2018) 7 Social Sciences 222, 223-24.

<sup>20</sup> Ground Water Protection Council and ALL Consulting, *Modern Shale Gas Development in the United States: A Primer* (US Department of Energy 2009) 56-62 <[www.energy.gov/sites/prod/files/2013/03/f0/ShaleGasPrimer\\_Online\\_4-2009.pdf](http://www.energy.gov/sites/prod/files/2013/03/f0/ShaleGasPrimer_Online_4-2009.pdf)> accessed 14 December 2018.

<sup>21</sup> Kalyani Robbins, ‘Awakening the Slumbering Giant: How Horizontal Drilling Technology Brought the Endangered Species Act to Bear on Hydraulic

Fracturing’ (2013) 63(4) Case Western Reserve Law Review 1143, 1146.

<sup>22</sup> *ibid* 1146-1147.

<sup>23</sup> *ibid*

<sup>24</sup> Jeff Brady, ‘Focus On Fracking Diverts Attention From Horizontal Drilling’ (NPR, 27 January 2013) <[www.npr.org/2013/01/27/170015508/focus-on-fracking-diverts-attention-from-horizontal-drilling](http://www.npr.org/2013/01/27/170015508/focus-on-fracking-diverts-attention-from-horizontal-drilling)> accessed 14 December 2018.

However, while the energy company only needs to get access rights over a single plot of land in order to build a drilling rig on the surface, horizontal drilling technology allows them to drill deep under surrounding land over which they have not obtained any surface rights. This becomes a legally complicated situation if the exploration site is surrounded by privately owned land. Such a scenario is not merely academic. In fact some areas currently licensed for hydraulic fracturing in Lancashire and Yorkshire contain a settled human presence.

### English land ownership and trespass in the non-drilling context

Under Common Law, the Crown is the ultimate owner of all land located in England and Wales.<sup>25</sup> The Crown's radical title over land allows parliament to empower the executive to compulsorily purchase land from private owners where doing so is in the public benefit. The 'public benefit' may often be interpreted broadly, and the compulsory purchase regime has been statutorily incorporated for several purposes, ranging from the construction of highways<sup>26</sup> to redeveloping football stadiums.<sup>27</sup>

However, disregarding the Crown's radical title and the compulsory purchase regime, the traditional approach to land ownership rights under English law for centuries corresponded to the *ad coelum* doctrine: 'To whomsoever it belongs, it is his all the way to the heavens and all the way to hell'.<sup>28</sup> This notionally meant that third parties required the permission of the landowner to pass through the allotted territory; failure to do so would render them liable for trespass, even if the surface itself remained unharmed.<sup>29</sup> However, there are certain instances where liability does not apply, including cases where statutory law empowers certain individuals or entities to access privately owned land.<sup>30</sup>

For instance, the power of landowners to control access to the airspace above their land was gradually tempered by the development of air transport. In the United Kingdom, this was statutorily clarified by the 1982 Civil Aviation Act, which specified that landowners could not exclude access to areas higher than 500-1000 feet above roof level as such an area is incapable of being used by the landowner.

Similarly, certain provisions in various laws were implemented to deprive private landowners of absolute control over their

surface and sub-surface land where to do so is in the public interest, but compulsorily purchasing the affected land is unnecessary. Examples of such incursions into private ownership include the laying down of water and sewage pipelines<sup>31</sup> and the maintenance of the electricity grid.<sup>32</sup>

Nearly all avenues for obtaining compulsory rights over private land include some form of compensation payable to the affected occupier or landowner. Most of the concerned laws provide for payment in case the compulsorily acquired rights put some sort of financial burden on the owner or occupier, cause damage to land or other property<sup>33</sup> or cause a depreciation in the value of the land.<sup>34</sup> The access regime provided for in the Coal Industry Act 1994 sticks out as an oddity in this sense. It does not provide for any statutory compensation payable to the owner of subsurface land from which the mining company has the authority to extract coal. This feature of the coal mining regime was a direct influence in the legislative changes enacted by the UK parliament to facilitate better underground drilling for the energy industry.

### Trespass in the underground drilling context: Bocado and the amendment of the Infrastructure Act 2015

Ownership of onshore petroleum resources, regardless of where they are located, are vested in the Crown.<sup>35,36</sup> Anyone seeking to exploit these resources is required to obtain a licence for exploration and production from the Secretary of State.<sup>37,38</sup> This is quite a different scenario from the approach of the US to land ownership, where a private landowner owns all the subsurface resources contained within the relevant parcel of land as well. As onshore petroleum exploration and development licences (PEDLs) are granted over blocks of land,<sup>39</sup> it is possible for a privately owned parcel of land to be under the ambit of a petroleum licence owned by a different party - a scenario that birthed a landmark legal controversy in *Star Energy vs Bocado*.<sup>40</sup>

In this case, an oil company had obtained a license to explore for petroleum resources in the Palmer Woods Oil Field, a subsurface reservoir of petroleum and petroleum gas underlying land at Godstone in Surrey. The apex point of this reservoir, which is where petroleum extraction is most efficient, was located in land owned by another private company named Bocado. The oil company, which owned surface rights at the entry point, drilled diagonally to this

<sup>25</sup> Kevin J Gray and Susan F Gray, *Elements of Land Law* (5th edn, OUP 2008) 60-65; HC Deb 11 February 2009, vol 487, col 2093W.

<sup>26</sup> See eg Highways England, 'Your property and compulsory purchase' <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/645151/Your\\_property\\_and\\_compulsory\\_purchase.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/645151/Your_property_and_compulsory_purchase.pdf)> accessed 14 December 2018.

<sup>27</sup> See eg Jack Pitt-Brooke, 'Chelsea's proposed Stamford Bridge stadium upgrade moves closer with council's compulsory purchase order' (*The Independent*, 16 January 2018). <[www.independent.co.uk/sport/football/premier-league/chelsea-proposed-redevelopment-stamford-bridge-compulsory-purchase-order-a8161066.html](http://www.independent.co.uk/sport/football/premier-league/chelsea-proposed-redevelopment-stamford-bridge-compulsory-purchase-order-a8161066.html)> accessed 14 December 2018.

<sup>28</sup> 'Cuius est solum, eius est usque ad coelum et ad inferos' (In Latin). See Aaron Fellmeth and Maurice Horwitz, *Guide to Latin in International Law* (OUP 2009); *Mitchell v Mosley* [1914] 1 Ch 438, 450-451 (CA).

<sup>29</sup> See *Kelsen v Imperial Tobacco Co* [1957] 2 QB 334 (an injunction was granted against the defendant for trespassing upon the plaintiff's airspace).

<sup>30</sup> Michael A Jones, Anthony M Dugdale, Mark Simpson (eds), *Clerk and Lindsell on Torts* (22nd edn, Sweet & Maxwell 2017) [19-32]-[19-37].

<sup>31</sup> See eg Water Industry Act 1991 s 159; Water Resources Act 1991 s 160.

<sup>32</sup> See eg Electricity Act 1989 sch 4.

<sup>33</sup> See eg Water Resources Act s 161B; Electricity Act 1989 sch 4(7); Pipelines Act 1962 s 14.

<sup>34</sup> eg Depreciation of value of any interest in land is explicitly noted as a potential claim for compensation in the Water Industry Act sch 12 and the Pipelines Act 1962 s 14.

<sup>35</sup> Petroleum Act 1998 s 2.

<sup>36</sup> Section 1 of the Petroleum Act 1998 includes underground shale gas under the ambit of 'petroleum'.

<sup>37</sup> Petroleum Act 1998 ss 3-4.

<sup>38</sup> This is in addition to any other planning and environmental permissions that an energy company may be required to obtain. See 'Licensed Areas' (UKOOG) <[www.ukoog.org.uk/onshore-extraction/where-we-operate](http://www.ukoog.org.uk/onshore-extraction/where-we-operate)> accessed 14 December 2018.

<sup>39</sup> See generally 'License Data' (*UK Oil and Gas Authority*) <[www.ogauthority.co.uk/data-centre/data-downloads-and-publications/licence-data/](http://www.ogauthority.co.uk/data-centre/data-downloads-and-publications/licence-data/)> accessed 14 December 2018.

<sup>40</sup> [2010] UKSC 35.



apex point without obtaining Bocardo's consent or applying for compulsory access under the relevant statutory regime.<sup>41</sup> Bocardo eventually filed a suit for trespass on land against the oil company in a case that ultimately found itself in the UK Supreme Court. The five-judge bench of the Supreme Court unanimously agreed with both the trial court and Court of Appeal in holding that a case of actionable secondary trespass had taken place, thus confirming the applicability of the *ad coelem* doctrine. The subject of disagreement, however, was the quantum of damages payable to Bocardo. The majority of the Supreme Court bench held that because the drills passed through the plaintiff's land at depths ranging from 800 to 2,900 feet, they did not negatively affect Bocardo's use or enjoyment of its land and thus awarded nominal damages amounting to £1,000.<sup>42</sup> According to the majority, this amount was extremely generous, as compulsory purchase principles pursuant to section 8(2) of the Mines (Working Facilities and Support) Act 1966 would have assessed the compensation at no more than £82.50. This assessment value included the amount of money that the sliver of trespassed-upon land would have likely sold for on the open market as well as a 10% uplift mandated by section 3(2)(b) of the Petroleum Act 1934, which provided for an extra allowance of compensation due to the fact that the purchase was made compulsorily without the landowner's consent.<sup>43,44</sup> The dissenting judges, Lords Hope and Clarke, disagreed with the majority's assessment of damages, holding that the damages should be computed on the basis of a percentage of the value of the oil that the company extracted from the relevant portion of the reservoir located under Bocardo's land, considering that it would have come into play as a pricing factor had the oil company approached Bocardo to negotiate a wayleave.<sup>45</sup>

The government considered the ruling in *Star Energy v Bocardo* a hindrance to the development of the shale gas industry, as its implications required horizontal drillers to negotiate access rights with all affected individual landowners, no matter how far below the surface such drilling would be taking place. Even though the Supreme Court established that the damages payable for such a trespass would be nominal, the precedent provided the possibility for opponents of fracking to buy up ransom strips of land and refuse to grant access to petroleum licensees. Moreover, the existing compulsory access regime for cases where negotiation with landowners is found to be impossible or undesirable was considered inadequate to address this roadblock.<sup>46</sup> The licensee would first be required to refer the matter to the

Secretary of State, who would ascertain whether the case was fit to be heard in the courts based on certain necessary statutory criteria.<sup>47,48</sup> Once the Secretary was satisfied with the eligibility of the dispute, it would go through the courts - a process that could take years, despite the fact that courts were likely to grant the access rights as the projects benefit the public interest.<sup>49</sup> The existing regime was considered outdated and ill-adapted to technological innovations exploiting resources at subsurface depths that were otherwise unusable for private landowners.<sup>50</sup>

As a result, the UK parliament enacted the Infrastructure Act 2015, a key feature of which was to grant licensees a right to drill through to subsurface land deeper than 300 metres without running afoul of trespass laws.<sup>51</sup> While the decision sparked outrage among various stakeholders - particularly landowners - the government justified this by echoing the finding of the UK Supreme Court in *Bocardo*: subsurface land at such depths was for all practical purposes unusable by private landowners, and their use by energy companies would not affect the right or enjoyment to land 'one iota'.<sup>52,53</sup>

### III. Dissecting fair compensation

#### Framework for compensation payable to landowners post-Infrastructure Act 2015

While the Infrastructure Act 2015 removed the ability of fracking opponents to buy up ransom strips of land, it does recognise the possibility of landowners requiring compensation for non-consensual drilling or extraction taking place under their land. Section 45 empowers the Secretary of State to formulate regulations requiring energy companies to make appropriate monetary payments to any adversely affected stakeholders deemed deserving of such payments. Sections 47(5)-(7) further impose an obligation on the Secretary of State to periodically review any regulations laid down pursuant to the powers granted by Section 45 and update them.

Despite the rather comprehensive powers bestowed by the Infrastructure Act upon the Secretary of State to ensure fair compensation to affected landowners, no regulations have - at the time of writing - been implemented. The reason for this regulatory lacuna is that the shale industry stepped up with a voluntary compensation scheme of its own in a bid to make the development of fracking sites appealing to local communities.<sup>54</sup>

<sup>41</sup> *ibid* 2 (Namely, the Mines (Working Facilities and Support) Act 1966 or the Pipelines Act 1962).

<sup>42</sup> *Bocardo* [2010] UKSC (n 40) 19-22 (Lord Walker), 22-36 (Lord Brown), 36-39 (Lord Collins).

<sup>43</sup> The 1934 Act has since then been replaced by the Petroleum Act 1998, which does not contain any similar provision.

<sup>44</sup> Section 8(2) of the concerned Act states the following: 'The compensation or consideration in respect of any right, including a right to enforce restrictions, shall be assessed by the court on the basis of what would be fair and reasonable between a willing grantor and a willing grantee, having regard to the conditions subject to which the right is or is to be granted.'

<sup>45</sup> *Bocardo* [2010] UKSC (n 40) 16-19 (Lord Hope), 43, 48 (Lord Clarke).

<sup>46</sup> See generally, Department of Energy and Climate Change, *Consultation on Proposal for Underground Access for the Extraction of Gas, Oil or Geothermal Energy* (URN 14D/099, 2014) 21.

<sup>47</sup> See generally *ibid* 19-21.

<sup>48</sup> See Section 3 of the Mines (Working Facilities and Support) Act 1966, incorporated by section 7 of the Petroleum Act 1998 1966 in order to grant ancillary rights (including rights of compulsory access) to petroleum licensees.

<sup>49</sup> DECC, '*Consultation on Underground Access*' (n 46) 20.

<sup>50</sup> DECC, *Government Response to the Consultation on Proposal for Underground Access for the Extraction of Gas, Oil or Geothermal Energy* (URN 14D/365, 2014) 19-20.

<sup>51</sup> Sections 43-44.

<sup>52</sup> *Bocardo* [2010] UKSC (n 40) 21, 23, 42 (quoting Peter Smith J from the first instance court).

<sup>53</sup> DECC, *Government Response to the Consultation on Underground Access* (n 50) 28.

<sup>54</sup> *ibid* 47.

The United Kingdom Onshore Operators Group (UKOOG) - the representative body of the UK onshore oil and gas industry - released a Community Engagement Charter in which it made several commitments, including undertakings to:

- Provide benefits to local communities at the exploration/appraisal stage of £100,000 per well site where hydraulic fracturing takes place;
- Provide a share of proceeds at the production stage of 1% of revenues, allocated approximately two-thirds to the local community and one-third at the county level.<sup>55</sup>

The government supported these commitments, maintaining that the payouts would be higher than affected landowners could get under existing compensation laws.<sup>56</sup> They indicated a strong preference for the money to be paid out to the community rather than to individual households, as the former would be more efficient and meaningful.<sup>57</sup>

Cuadrilla, in fact, opted to go above this minimum voluntary undertaking set by the industry and promised to pay out £100,000 for every individual well drilled in a fracking site. It followed through on its promises in Preston New Road by paying out £200,000 for two exploration wells drilled in 2017.<sup>58</sup> The payout for the first exploration was allotted to an independent Community Benefit Fund for use in local community projects. Following a consultation with householders in the Westby-with-Plumpton parish, the money for the second well was paid directly to households<sup>59</sup> - a payout that, once shared between all relevant beneficiaries, was not considered very satisfactory.

In addition to these voluntary schemes, the government is also in the process of setting up a Shale Wealth Fund, which is designed to ensure that proceeds of fracking are adequately shared with the local communities that host production sites. The proposed fund allegedly 'has community and individual decision-making at its heart [...] where the interest of local people is paramount' and it aims to funnel 10% of shale production tax revenues to such local communities.<sup>60</sup>

The government confirmed that local communities hosting fracking sites will control how the fund is spent to uplift their public welfare. They will also have the ability to choose whether money should be allotted to the wider region or used to make individual, household-level payments. These powers were delegated to the affected communities partly due to mixed feedback regarding the desirability of such payments

from respondents to the government's consultation on the Shale Wealth Fund.<sup>61</sup>

### Assessment of the existing framework for landowner compensation

Between the voluntary schemes and the Shale Wealth Fund, the government has repeatedly tried to reframe the fracking debate to focus on the benefits that the production process will provide to communities.

Certainly, if local communities stand to earn up to a billion pounds over 25 years,<sup>62</sup> it makes sense to allow a comparatively trivial discussion on landowner compensation arising from non-consensual underground drilling to take a backseat. However, it must be recognised that the fundamental concept of 'compensation' is different to that of a 'reward' or 'bonus', and must always be considered separately. It is imprudent for the government to conflate these concepts and greenlight the proliferation of fracking sites in populated areas without laying out minimum mandatory rules and policies regarding landowner compensation.

Both the Shale Wealth Fund and the revenue-sharing component of the voluntary scheme are contingent upon shale exploration sites successfully moving into the commercial production stage, a process that not only requires additional rounds of regulatory hurdles,<sup>63</sup> but is also associated with further political tensions regarding the logistics, construction and location of the production site. Even if a site is earmarked as a viable location after a comprehensive exploration phase, unforeseen circumstances may indefinitely suspend progression into the production phase, as is happening in the Preston New Road site at the time of writing.<sup>64</sup>

Another potential issue lies in the 'communal compensation' approach adopted - the 'traditional' method of compensating those affected by development.<sup>65</sup> The rationale behind it is to empower the local community to funnel the allocation and investment of the payouts for the public benefit and thereby prevent an undesirable situation of divisive, unequal growth, and ensure some degree of sustainability. However, the disproportionate costs that infrastructural projects will impose on different stakeholders of the community (depending, for instance, on their property's physical proximity to the fracking machinery or the particular businesses they run) gives rise to a potential misalignment of interests.<sup>66</sup> Ultimately, the government's support for the existing compensation

<sup>55</sup> UKOOG, 'Community Engagement Charter - Oil and Gas from Unconventional Reservoirs' (2013) <[www.ukoog.org.uk/images/ukoog/pdfs/communityengagementcharterversion6.pdf](http://www.ukoog.org.uk/images/ukoog/pdfs/communityengagementcharterversion6.pdf)> accessed 23 December 2018.

<sup>56</sup> DECC, *Government Response to the Consultation on Underground Access* (n 50) 50.

<sup>57</sup> *ibid* 51.

<sup>58</sup> It must be noted that Cuadrilla has permission to drill up to four exploration wells in the Preston New Road site. See 'Preston New Road' (*Cuadrilla Resources*) <<https://cuadrillaresources.com/site/preston-new-road/>> accessed 3 January 2019.

<sup>59</sup> 'Local Residents Choose to Share £100,000 Preston New Road Shale Gas Exploration Payment' (*Cuadrilla Resources*, 6 Nov 2017) <<https://cuadrillaresources.com/media-resources/press-releases/local-residents-choose-share-100000-exploration-payment/>> accessed 30 December 2018.

<sup>60</sup> HM Treasury, 'Shale Wealth Fund: Response to the Consultation' (November 2017) 3.

<sup>61</sup> *ibid* 10-11.

<sup>62</sup> *ibid* 5.

<sup>63</sup> DECC, 'Onshore oil and gas exploration in the UK: regulation and best practice' (Dec 2015) 6-7 <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/503067/Onshore\\_UK\\_oil\\_and\\_gas\\_exploration\\_England\\_Dec15.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/503067/Onshore_UK_oil_and_gas_exploration_England_Dec15.pdf)> accessed 4 January 2019.

<sup>64</sup> See 'Cuadrilla pauses gas fracking again following more tremors' (Reuters, 14 Dec 2018) <<https://uk.reuters.com/article/uk-britain-cuadrilla/cuadrilla-pauses-gas-fracking-again-following-more-tremors-idUKKBN10D200>> accessed: 14 December 2018

<sup>65</sup> Novella Bottini, Miguel Coelho and Jennifer Kao, 'Infrastructure and Growth - Launch Version' (*LSE Growth Commission*) 27 <[www.lse.ac.uk/researchAndExpertise/units/growthCommission/documents/pdf/SecretariatPapers/Infrastructure.pdf](http://www.lse.ac.uk/researchAndExpertise/units/growthCommission/documents/pdf/SecretariatPapers/Infrastructure.pdf)> accessed 5 January 2019.

<sup>66</sup> *ibid* 26.

framework returns to the argument that whatever individual payouts households and landowners will obtain under the existing legal framework would be miniscule compared to whatever they may obtain from the voluntary schemes or the Wealth Fund. There is thus some merit in analysing whether the existing legal framework for compensation itself has rendered the interests of the individual as an afterthought to some broadly defined measure of ‘public welfare.’

### **The mismatch between the compensation framework and individual welfare.**

The concept of ‘compensation’ arises constantly in legal theory and practice. In the words of one commentator:

To compensate someone for something is... to provide that person with ‘a full and perfect equivalent’ for that thing... The aim is to bring him up to some baseline of well-being. That baseline to be used for reckoning the adequacy of compensation will typically be identified by reference to some *status quo ante*...<sup>67</sup>

If this rationale is followed to its logical conclusion, then it would appear incontestable that in case landowners are adversely impacted by property values (or affiliated expenses such as insurance costs) due to some act sanctioned or forbidden by the state, the landowners deserve to be returned to their baseline positions by receiving money that makes up for the reduced value or higher costs. However, this is not guaranteed under the existing framework.

The concept of fair compensation is enshrined in the European human rights regime. Article 8 of the European Convention of Human Rights (‘Convention’)<sup>68</sup> guarantees everyone the right to respect for their private and family life, their homes and their correspondence.<sup>69</sup> Public authorities may only interfere with this right ‘in accordance with the law and [if it] is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.’ Article 1 of the first Protocol to the Convention<sup>70</sup> similarly reiterates the importance of the right to peaceful enjoyment of one’s possessions, prohibiting states from interfering with the right of peaceful possession guaranteed to all natural and legal persons except where the public interest and applicable legal principles justify such interference.

The text of the Convention framework does not delve into the issue of compensation and it would be futile to oppose the changes brought about by the Infrastructure Act 2015 on the basis that they violate the protection of private property, because European Court of Human Rights (‘ECtHR’) jurisprudence has adopted a flexible view of ‘public interest.’<sup>71</sup> As regards compensation, while the Court has passed judgments stressing the need for *reasonable* compensation where an owner is deprived of property,<sup>72</sup> it does not require *full* compensation to be paid in every instance, recognising that ‘legitimate objectives of “public interest”, such as pursued in measures of economic reform or measures designed to achieve greater social justice, may call for less than reimbursement of the full market value.’<sup>73</sup> The ECtHR has not received any applications regarding the Infrastructure Act 2015, but analogical evidence renders it likely that the Court would not object to the changes laid down by the Act.

For instance, the United Kingdom has a long history of local authorities’ legitimate planning decisions negatively affecting the value of privately owned land. Compensation is usually not awarded for value depreciation arising from such planning decisions in all but the most extreme of circumstances,<sup>74</sup> and commentators have noted that the ECtHR would not find such non-compensation a violation of the Convention text.<sup>75</sup> Further, ‘[t]he closest that United Kingdom law gets to providing for compensation for an adverse development control decision, is the mechanism of the purchase notice.’<sup>76</sup> A purchase notice is a provision made for instances where a planning decision negatively affects the existing and permitted uses of the land. It facilitates a procedure by which a landowner can require a local authority to purchase the land affected. However, ‘successful purchase notices are extremely rare’<sup>77</sup> and are theoretically possible only where the planning decision is so restrictive that it essentially renders the land worthless.

It is not this paper’s purpose to undertake a technical assessment or survey of land use potential. Even assuming, as the government has argued, that drilling more than 300 metres under the surface does not affect the actual use and enjoyment of most fracking community residents’ surface land to a discernible degree, the traditional English approach to landowner compensation is inappropriate. At present, devaluation of property or ancillary costs imposed on individuals alone do not merit full compensation when affected by regulations and activities in the ‘public interest’,

<sup>67</sup> Robert E Goodin, ‘Theories of Compensation’ (1989) 9(1) Oxford Journal of Legal Studies 56, 59 (citations omitted).

<sup>68</sup> European Convention on Human Rights, Nov 4, 1950, 213 UNTS 222.

<sup>69</sup> Article 8 has in the years since become famous in public discourse for serving as a shield to safeguard individuals against the breach of privacy. However, a holistic reading of the article reveals that it covers more than just privacy. It is in fact a highly flexible provision, extending to issues such as the right to peaceful enjoyment of property or the right to live in a clean environment. See generally, ECtHR, “Guide on Article 8 of the European Convention on Human Rights” (Council of Europe, 31 Aug 2019) <[https://www.echr.coe.int/Documents/Guide\\_Art\\_8\\_ENG.pdf](https://www.echr.coe.int/Documents/Guide_Art_8_ENG.pdf)> accessed: 01 November 2019

<sup>70</sup> Protocol to the European Convention for the Protection of Human Rights and Fundamental Freedoms, Mar 20, 1952, 213 UNTS 262.

<sup>71</sup> See eg *James v United Kingdom* 8793/79 (1986) 8 EHRR 123 para 39 (‘a taking of property effected in pursuance of legitimate social, economic or other policies may be “in the public interest”, even if the community at large

has no direct use or enjoyment of the property taken’).

<sup>72</sup> See eg *Lithgow v United Kingdom* 9006/80; 9262/81; 9263/81 (1986) 8 EHRR 329 paras 121-122.

<sup>73</sup> *ibid* para 121; *James v United Kingdom* (n 70) para 54; See also generally Laurent Sermet, *The European Convention on Human Rights and Property Rights* (revised edn, Council of Europe 1998) 38-45.

<sup>74</sup> Michael Purdue, ‘The Law on Compensation Rights for Reduction in Property Values Due to Planning Decisions in the United Kingdom’ (2006) 5(3) Washington University Global Studies Law Review 493.

<sup>75</sup> *ibid* 495; See also generally *Trailer & Marina (Leven) Ltd. v Secretary of State for the Environment, Food and Rural Affairs, English Nature* [2004] EWCA Civ 1580 (CA) (The Court of Appeal held that a legislative change which removed the right to compensation for an interference with land that did not amount to a taking did not violate Article 1 of the First Protocol).

<sup>76</sup> Purdue (n74) 502-503 (citations omitted).

<sup>77</sup> *ibid* 503.



and it is presumed that communal payments obviate the need for individual payments. Such a situation is at odds with the entire rationale behind compensation and the protection of private property.

A common thread of concern among property owners is the link between fracking and the value of their property. The evidence on the issue seems to be mixed: in the United States, one research study found that the perceived groundwater risks associated with the development of drilling wells 'lead to a large and significant reduction in property values. These reductions offset any gains to the owners of groundwater-dependent properties from lease payments or improved local economic conditions, and may even lead to a net drop in prices.'<sup>78</sup> The study also found that this property devaluation can extend up to 2,000 metres from a well site.<sup>79</sup> Similarly, several real estate appraisers and surveyors in both the USA and the UK have mentioned that being located at a fracking site may significantly reduce the value of the property due to complications ranging from environmental risks to the increased number of lorries entering the area. Some appraisers in the USA have lowered property valuations by as much as 75%.<sup>80</sup> Experts in the UK have noted that property prices in Lancashire have dropped since shale exploration began in the region and that homes in Yorkshire could be devalued by as much as 15–20%.<sup>81</sup> In the US, the shale boom has affected residential mortgage lending. The Federal Housing Administration refuses to finance any property that is located within 300 feet of an area with an active or planned drilling site.<sup>82</sup> Lender pessimism has potential implications such as an increased likelihood of foreclosure and the triggering of a housing market collapse.<sup>83</sup> However, this trend has not been consistently pessimistic. The US experience also reveals a flip side to this story in certain communities. For example, while property prices initially dropped in the erstwhile farming community of Williston, North Dakota following the construction of shale gas drilling rigs, the city was transformed into a thriving centre of energy production, which was followed with an appreciation of property values

- in some cases tripling house prices.<sup>84</sup> A 2017 study even found that fracking lowered mortgage credit risk, reducing the likelihood of mortgage defaults and raising house prices at the county level.<sup>85</sup>

There are similar fears about buildings insurance rates, with several insurance industry experts stating that insurance companies are likely to increase their premiums or policy excess amounts in fracking areas.<sup>86</sup> Insurance industry reports have mentioned the potential of widespread fracking to affect insurance rates not only because of direct damage caused by fracking, such as increased seismicity, but also the increased possibility of indirect damage, such as vibrations from heavy vehicles or vandalism from anti-fracking protests.<sup>87</sup>

The question of whether the establishment of a fracking site devalues the surrounding property is not something that can be definitively answered by a blanket statement and is outside this paper's scope. However, the conduct of the English government in this context has been less than ideal, contributing immensely to the pessimistic outlook. The Department of Environment, Food and Rural Affairs (Defra) produced an internal report about the effect of fracking on the rural economy in 2014, which was released to the public in heavily redacted form following a Freedom of Information request.<sup>88</sup> The government's censorship of data was met with criticism and calls for transparency, which the government resisted.<sup>89</sup> The full unredacted report<sup>90</sup> was published only after a second Freedom of Information request where the Information Commissioner found that the government had incorrectly withheld environmental information.<sup>91</sup>

The unredacted report - while identifying certain benefits such as the creation of jobs - painted a less-than-rosy picture of the economic consequences of fracking, including conclusions that it would lead to increased noise and congestion, negatively affect local businesses, and reduce property values by as much as 7%.<sup>92</sup> It was discovered that the government was trying to delay the release of the report until after

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<sup>78</sup> Lucija Muehlenbachs, Elisheba Spiller and Christopher Timmins, 'Shale Gas Development and Property Values: Differences across Drinking Water Sources' (2012) NBER Working Paper No 18390, 30.

<sup>79</sup> *ibid* 29-30.

<sup>80</sup> See eg 'Impacts of Fracking – Economic Impacts' (*Catskill Mountainkeeper*) <[www.catskillmountainkeeper.org/our-programs\\_fracking\\_what-wrong-with-fracking-2\\_economics](http://www.catskillmountainkeeper.org/our-programs_fracking_what-wrong-with-fracking-2_economics)> accessed 9 January 2019.

<sup>81</sup> See generally 'Property prices look set to fall in fracking locations' (*The Yorkshire Post*, 11 Nov 2017) <[www.yorkshirepost.co.uk/lifestyle/homes-gardens/property-prices-look-set-to-fall-in-fracking-locations-1-8847135](http://www.yorkshirepost.co.uk/lifestyle/homes-gardens/property-prices-look-set-to-fall-in-fracking-locations-1-8847135)> accessed 9 January 2019.

<sup>82</sup> See Tompkins County Council Of Governments (TCCOG) - Task Force on Gas Drilling Assessment and Land Valuation Subcommittee, 'Gas and Oil Leases as They Relate to Residential Lending' (*TompkinsCountyNY.gov*) <[http://tompkinscountyny.gov/files2/tccog/Gas\\_Drilling/Public%20Hearing%20Comments/Individual%20Comments/chock,%20carol.pdf](http://tompkinscountyny.gov/files2/tccog/Gas_Drilling/Public%20Hearing%20Comments/Individual%20Comments/chock,%20carol.pdf)> accessed 9 January 2019.

<sup>83</sup> Roger Drouin, 'How the Fracking Boom Could Lead to a Housing Bust' (*City Lab*, 19 Aug 2013) <[www.citylab.com/equity/2013/08/how-fracking-boom-could-lead-housing-bust/6588/](http://www.citylab.com/equity/2013/08/how-fracking-boom-could-lead-housing-bust/6588/)> accessed 10 January 2019; See also Muehlenbachs, Spiller and Timmins (n 81) (fn 1), 31.

<sup>84</sup> Graham Norwood, 'US property: how fracking can cut house prices – and raise them' (*Financial Times*, 20 Dec 2013) <[www.ft.com/content/eab073de-60d1-11e3-b7f1-00144feabdc0](http://www.ft.com/content/eab073de-60d1-11e3-b7f1-00144feabdc0)> accessed 10 January 2019.

<sup>85</sup> See generally, Chris Cunningham, Kristopher Gerardi and Yannan Shen, 'Fracking and Mortgage Default' (2017) Federal Reserve Bank of Atlanta Working Paper Series 2017-4.

<sup>86</sup> See generally Chris Burn, 'Fracking could see home insurance premiums rise for thousands in Yorkshire' (*The Yorkshire Post*, 23 Feb 2018) <[www.yorkshirepost.co.uk/news/fracking-could-see-home-insurance-premiums-rise-for-thousands-in-yorkshire-1-9033713](http://www.yorkshirepost.co.uk/news/fracking-could-see-home-insurance-premiums-rise-for-thousands-in-yorkshire-1-9033713)> accessed 7 January 2019.

<sup>87</sup> See generally 'Insurance Implications of Fracking' (Chartered Insurance Institute, 27 Mar 2017) <[www.cii.co.uk/media/7546549/new\\_gen\\_fracking\\_report.pdf](http://www.cii.co.uk/media/7546549/new_gen_fracking_report.pdf)> accessed 3 January 2019.

<sup>88</sup> Defra, *Shale Gas Rural Economy Impacts* (Rural Community Policy Unit, March 2014) <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/337654/RF16751\\_Draft\\_Shale\\_Gas\\_Rural\\_economy\\_impact\\_report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/337654/RF16751_Draft_Shale_Gas_Rural_economy_impact_report.pdf)> accessed 7 January 2019.

<sup>89</sup> Ruth Hayhurst, 'Government refuses to publish unredacted fracking report' (*Drill or Drop*, 13 January 2014) <<https://drillordrop.com/2015/01/13/government-refuses-to-publish-redacted-fracking-report/>> accessed 10 January 2019.

<sup>90</sup> Defra, *Draft Shale Gas Rural Economy Impacts Paper* (Rural Community Policy Unit, March 2014) <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/440791/draft-shale-gas-rural-economy-impact-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/440791/draft-shale-gas-rural-economy-impact-report.pdf)> accessed 10 January 2019.

<sup>91</sup> Information Commissioner's Office, 'Environmental Information Regulations 2004 (EIR) Decision notice' (Reference: FER0562043, 8 Jun 2015) <[https://ico.org.uk/media/action-weve-taken/decision-notices/2015/1431897/fer\\_0562043.pdf](https://ico.org.uk/media/action-weve-taken/decision-notices/2015/1431897/fer_0562043.pdf)> accessed 10 January 2019.

important planning decisions regarding fracking in Lancashire had been made.<sup>93</sup> The government rejected the validity of the report, claiming that it was an early draft with flawed methodology and was ‘not analytically robust’.<sup>94</sup>

Perhaps the report was indeed fundamentally flawed, but the handling of the situation did not reassure rural community stakeholders about the government’s attention towards their welfare. Regardless of how the government chooses to repair its reputation, the legal framework contributes to this through the existing compensation regime. As stated before, the majority of the UK Supreme Court in *Star Energy v Bocardo* concluded that the application of compulsory purchase principles (including a 10% uplift) would have only awarded Bocardo £82.50.<sup>95</sup> Since this judgment is the analytical foundation of the government’s argument that the voluntary industry payouts are more than fair, it is necessary to explore whether solely relying on compulsory acquisition principles as a reference point is consistent with the teleology of compensation.

Section 5 of the Land Compensation Act 1961 prescribes applicable rules for calculating land compensation, in particular specifying that ‘[t]he value of land shall ... be taken to be the amount which the land if sold in the open market by a willing seller might be expected to realise’<sup>96</sup> and that the cost of equivalent reinstatement of land may be ordered by the Lands Tribunal if it is satisfied that the land is used for a particular purpose and ‘that there is no general demand or market for land for that purpose’.<sup>97</sup>

If the issue of underground drilling access is looked at purely from the perspective of landowners losing a tiny strip of deep-level subsurface land that they would never use, then certainly they do not have much to lose. However, such an approach is divorced from the contemporary context of fracking.

Hydraulic fracturing is one of the most controversial topics today, with government surveys revealing that public support for fracking has fallen consistently every year. The last official public attitude tracker published by the Department for Business, Energy and Industrial Strategy revealed that support had fallen to an all-time low of 16% in 2017.<sup>98</sup> It is speculated that dwindling support led the government to stop tracking public attitudes to fracking altogether in its subsequent surveys.<sup>99</sup>

In addition to the government’s attempt to stifle the publication of the Defra report, it has engaged in other actions that have hurt its legitimacy in the eyes of rural communities. Despite the government promising that local authorities would have a say in whether or not fracking sites could be set up in their jurisdiction, Sajid Javid, then the Secretary of State for Communities and Local Government, overruled the Lancashire County Council and authorised Cuadrilla’s fracking site in Lancashire after the Council refused to allow test drilling, sparking a legal dispute that eventually reached the Court of Appeal.<sup>100</sup> There are also ongoing discussions in the government and parliament to (a) bring fracking under the Nationally Significant Infrastructure Projects (NSIP) regime, and (b) classify non-hydraulic fracturing of shale rock as ‘permitted development’, both of which would substantially weaken the power of local authorities to exert control over onshore oil and gas production.<sup>101</sup>

Although there may not be much in the way of legal hurdles to challenge such policies, from a purely neutral ethical standpoint it does seem like the government has relegated the sentiments and interests of rural communities to the backseat in its bid to establish the UK as a global hub of oil and gas. Even if a shale gas revolution does eventually transform the fortunes of shale-rich communities, a democratic government must strive to respect their interests and goals as best as possible. Even assuming that the national interest must outweigh the interests of local communities, and that giving communities a final and binding say over the siting of infrastructure projects is an untenable proposition, the very least that the government could do to respect the interests and goals of local communities is formulate a minimum mandatory compensation policy that does not solely rely on restrictive compulsory purchase principles as its backdrop, but instead expands its ambit to reflect the controversial context of hydraulic fracturing. Such an approach is politically expedient, considering the government’s clumsy approach to handling the fracking debate up until now, which has bolstered feelings of resentment in its citizens.

‘In the current UK system, monetary compensation directed at individuals is widely viewed as inadequate.’<sup>102</sup> Empirical evidence indicates that effective monetary compensation schemes can shape public attitudes towards support for the siting of low to moderate-risk hazardous facilities such

<sup>92</sup> Defra, Unredacted Report (n 90) 10-15.

<sup>93</sup> Ruth Hayhurst, ‘Government delayed release of shale impact report until after Lancashire fracking decisions – read the emails’ (Drill or Drop, 25 Nov 2016) <<https://drillordrop.com/2016/11/25/government-delayed-release-of-shale-impact-report-until-after-lancashire-fracking-decision-read-the-emails/>> accessed 10 January 2019; See also Ruth Hayhurst, ‘Reaction to release of Defra rural fracking report’ (Drill or Drop, 2 Jul 2015) <<https://drillordrop.com/2015/07/02/reaction-to-release-of-defra-rural-fracking-report/>> accessed 10 January 2019.

<sup>94</sup> Defra, Unredacted Report (n 90) covering note.

<sup>95</sup> *Bocardo* [2010] UKSC (n 41) 36.

<sup>96</sup> Section 5(2).

<sup>97</sup> Section 5(3).

<sup>98</sup> Department for Business, Energy and Industrial Strategy, ‘Energy and Climate Change Public Attitude Tracker: Wave 22’ (August 2017) 5 <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/634723/pat-wave-22-summary-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/634723/pat-wave-22-summary-report.pdf)> accessed 9 January 2019.

<sup>99</sup> Adam Vaughan, ‘UK government drops fracking question from public attitude tracker’ (*The Guardian*, 16 Aug 2018) <[www.theguardian.com/environment/2018/aug/16/uk-government-drops-fracking-question-from-public-attitude-tracker](http://www.theguardian.com/environment/2018/aug/16/uk-government-drops-fracking-question-from-public-attitude-tracker)> accessed 9 January 2019.

<sup>100</sup> *Preston New Road Action Group v Secretary of State* (n 15); Vaughan, ‘Fracking in UK given go-ahead as Lancashire council rejection overturned’ (n 2).

<sup>101</sup> See generally Department for Business, Energy and Industrial Strategy, *Inclusion of Shale Gas Production Projects in the Nationally Significant Infrastructure Project Regime* (OGL, July 2018) <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/727044/NSIP\\_Consultation\\_Document\\_Final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727044/NSIP_Consultation_Document_Final.pdf)> accessed 10 January 2019; Ministry of Housing, Communities and Local Government, *Permitted development for shale gas exploration - Consultation* (OGL, July 2018) <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/726916/Consultation\\_document\\_-\\_shale\\_gas\\_permitted\\_development.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/726916/Consultation_document_-_shale_gas_permitted_development.pdf)> accessed 11 January 2019.

<sup>102</sup> Bottini, Coelho and Kao (n 65) 27.

as prisons or landfills, 'but it is subject to serious limitations when it comes to facilities that the public regards as particularly risky or of questionable legitimacy (e.g. radioactive waste repositories). For these facilities the more important remedial measures involve addressing the public's safety concerns (through mitigation).'<sup>103,104</sup>

Perhaps the UK could take inspiration from the Netherlands, whose compensation schemes 'indicate that effective use of compensation techniques can shift attitudes and give residents and communities a stronger incentive to support development':<sup>105</sup>

Cash compensation to individual residents [in Holland] is available to individuals affected by planning decisions. Such compensation is determined by independent experts at the moment planning is approved. Compensation is paid by the local authority, but in practice there are voluntary agreements with developers who reimburse the municipalities for these costs. With major infrastructure projects, it is the central government that is responsible for paying out the compensation.<sup>106</sup>

While the 10% of tax revenues from the Shale Wealth Fund and the voluntary 1% revenue commitment from the fracking industry may well make shale-rich localities prosper, allotting an arbitrary amount of £100,000 to the community to allocate at its discretion ignores the property rights of an individual and renders an individual's entitlement to compensation contingent on the approval of said individual's peers. This creates a risky situation for the worst-affected individuals in the community. In the best-case scenario, there is no fundamental misalignment of interests among community stakeholders. This may be because the worst-affected individuals have enough clout to safeguard their interests or because the community has certain shared values that prioritise making each stakeholder 'whole' again. In the worst-case scenario, however, this might lead to exploitation or alienation of the worst-affected individuals as the community opts to use its compensation package for alternatives that are deemed more collectively attractive.

Allowing communities to control how an individual is compensated is patently unfair, as it essentially sacrifices individual rights at the altar of community interests. For example, in a situation where communal compensation is the norm, the community may choose to dedicate the funds received to develop a sports stadium - something that may not be agreeable to a blind landowner whose property value took a nosedive due to the siting of a fracking well; he would possibly have preferred the money to be invested in improving pedestrian facilities for the physically handicapped. No matter how successful and 'publicly beneficial' the stadium becomes, it can hardly be said that the blind landowner was adequately compensated for a planning decision that substantially reduced his net worth.

Allowing such unfair scenarios to arise without rectification grates against the very ethos of a society that safeguards individual property rights - an ideal whose moral precedent in English land law can be traced all the way back to the Magna Carta of 1215.<sup>107</sup> Although stakeholders have voiced concerns about divisiveness and sustainability of household-level payments, these issues can be avoided if the concepts of 'reward' and 'compensation' are kept separate. The current status quo is hardly less divisive. For instance, the decision of Allan Wensley, a dairy farmer, to lease his land to Cuadrilla in order for them to set up its Preston New Road exploration site turned him into 'the most hated man in the village'. While the other residents around the site received between £150 and £2,070 - regardless of how much their property value depreciated - it is speculated that Mr Wensley gets paid between £30,000 and £50,000 a year.<sup>108</sup> While it would be naive to suggest that a compensation framework focusing more on individuals would reduce tensions or conflicts of interest involved in such circumstances, it does demonstrate that there is an inequitable distribution of incentives between those who support and those who oppose or are apathetic to the establishment of fracking sites. An individual who opts to lease his land to an oil company has the opportunity to make well over a million pounds during the lifetime of the well while his neighbours do not even have a minimum statutory guarantee that any financial burden imposed upon them by his decision will be adequately alleviated.

It must not be forgotten that a community is not a homogeneous entity; rather, it is ultimately comprised of individuals. If the government desires to protect a local community's collective happiness or harmony in its quest to promote fracking, it must respect the basic rights to compensation of the individuals that comprise such a community.

#### IV. Recommendations

It would be advisable for the Secretary of State to exercise the powers conferred by Section 45 of the Infrastructure Act 2015 to devise a proper minimum compensation code in order to ensure that the individual economic welfare of private citizens is not unfairly compromised by infrastructural development decisions or government-endorsed private investments.

Comprehensively fleshing out the details of the compensation code would require interdisciplinary input, but it could at least include the compensation principles discussed below.

##### Relevant compensation factors

The fair market value of property may decrease due to being located near a fracking site (regardless of whether the exploration drill actually passes through its subsurface).<sup>109</sup> The value of such affected property should be assessed as a whole and the calculations should factor in the context of how the establishment of the fracking site has depreciated the

<sup>103</sup> Howard Kunreuther and Doug Easterling, 'The Role of Compensation in Siting Hazardous Facilities' (1996) 15(4) *Journal of Policy Analysis and Management* 601, 615.

<sup>104</sup> Of course, convincing the public that a fracking site is low-to-moderate risk in nature is contingent on proper engagement and stakeholder education, which is especially tricky in light of the fear and outrage manufactured by anti-fracking activists. This would require more than just compensation to solve, but adequate compensation could help alleviate some of the associated outrage. See Bottini, Coelho and Kao (n 65) 28, 39.

<sup>105</sup> Bottini, Coelho and Kao (n 65) 28.

<sup>106</sup> *ibid* 29.

<sup>107</sup> Jelena Ristik, 'Right To Property: From Magna Carta To The European Convention On Human Rights' (2015) 11(1) *SEEU Review* 145.

<sup>108</sup> Ben Webster, 'Fracking farmer refuses to be intimidated' (*The Times*, 11 Mar 2017) <<https://www.thetimes.co.uk/article/fracking-farmer-refuses-to-be-intimidated-tvqlc5hqw>> accessed 10 January 2019.

entire real estate location. This property valuation may involve several variables - ranging from light and noise to perceived seismic risk to increased truck traffic. This valuation should be undertaken by independent experts and not paid for by the affected landowner.

This recommendation superficially mirrors the content of the Land Compensation Act 1973, which, in Part I, governs compensation payable in cases where the use of public works causes a reduction in property value due to specific physical factors but where no land is actually acquired.

However, the content of the 1973 Act is highly restrictive in that it only identifies seven physical factors that are compensable:<sup>110</sup> noise, fumes, vibration, smell, smoke, artificial light, and discharge onto the land of any solid or liquid substance.

This means that non-physical factors that affect the valuation of the property, such as the loss of a view, are non-compensable under the 1973 Act.<sup>111</sup> The limitations to physical factors are inadequate and they are fundamentally misaligned with how the property market values real estate.

The code should also compensate residents for any active inconvenience or discomfort that affects them beyond a mere reduction in property value. These are known as mitigation effects, and are meant to reduce the impact of a development scheme on neighbouring properties. It is unlikely that a fracking site will require much mitigation work to be done, but it is possible that properties bordering the drilling wells may need soundproofing or insulation work.<sup>112</sup> Businesses are generally not eligible for mitigation work, which is only extended to residential properties.<sup>113</sup> However, within the fracking context it may be a good idea to bring parity between residential and business properties. Considering the government and industry's repeated promotion of fracking as a safe, non-disruptive method of energy production, it would be viewed as hypocritical if they opposed extending the applicability of mitigation works to business premises, as any message about the harmlessness of fracking would be directly undermined if local businesses had to close because they could not afford to adapt to their new environment.

In a similar vein, the compensation code should also factor in the fracking site's impact on buildings' insurance premiums and policy excess amounts, and compensate individuals of the community accordingly.

### Date of valuation

Establishing the date of property valuation for the purposes of calculating compensation payable for depreciation is an important factor. Two dates, just a few months apart, may render immensely different amounts. What makes valuation tricky is that, if the market anticipates changes, the property values may shift well in advance of a development 'officially' taking place.<sup>114</sup> In the fracking context, it is possible that property values start decreasing the moment a fracking company obtains the relevant permits from the environmental regulator but before the Minerals Planning Authority has made a final decision on the company's application.<sup>115</sup> It would therefore be advisable to peg the valuation date at the day the fracking application process commences. The good news here is that if the market believes there will be an adequate compensation scheme in place to respond to the anticipated developments/changes, it is realistic to expect that the property valuation will not see any discernible declines before the anticipated developments/changes are officially passed, due to the future compensation being 'capitalised into the property price.'<sup>116</sup>

### Geographic extent of compensation

Delineating the relevant area affected by a fracking site is an issue currently being explored by the government with regard to the Shale Wealth Fund. Several ideas have been proposed to measure the territorial limits of what constitutes a 'local community' for the purposes of the fund. This issue is complicated by the fact that '[u]ntil shale production begins, [there will not be] a full picture of precisely which areas will host shale developments, and how the communities associated with a particular development should be defined.' This could range from relying on existing Parish Council boundaries to setting a measured radius around a fracking site.<sup>118</sup>

The most favourable course of action among consultation respondents was to adopt a case-by-case approach to territorial demarcation. However, around a third of respondents opposed this option due to the potential confusion and administrative burdens it would create, with some such proposals recommending the development of a set of principles to ensure consistency instead.<sup>119</sup>

Whatever the conclusion of this specific debate is, pegging individual compensation to the territorial limits ascribed by the Shale Wealth Fund would be a rational approach that avoids any inconsistencies. However, regardless of the extent

<sup>109</sup> Cyrus Grout, Andrew J Plantingay and William K Jaegerz, 'Pay or Waive: An Economic Assessment of Property Owner Compensation Laws in the United States' (2014) 8(1) *Review of Environmental Economics and Policy* 103, 109 ('Fair market value is defined as the price that willing and well-informed sellers and buyers would agree on for an exchange of property. Under perfect competition and risk neutrality, this price will be the sum of all the future expected incomes generated by the property discounted back to the present.').

<sup>110</sup> Section 1(2).

<sup>111</sup> See 'Compulsory Purchase and Compensation: Compensation to Residential Owners and Occupiers' (Department of Local Communities and Government, Apr 2010) 27.

<sup>112</sup> See generally *Compulsory Purchase and Compensation: Reducing the Adverse Effects of Public Development Mitigation Works* (Office of the Deputy Prime Minister, Oct 2004).

<sup>113</sup> Unless the business premises has some residential component. See *Compulsory Purchase and Compensation: Compensation to Business Owners and Occupiers* (Office of the Deputy Prime Minister) 27

<sup>114</sup> See Grout, Plantingay and Jaegerz (n 109) 112-13.

<sup>115</sup> In fact, considering that the Government has a track record of green-lighting fracking despite the local authority's opposition, it is highly possible that the market will anticipate the imminent emergence of shale exploration the moment all national-level authorities grant permits.

<sup>116</sup> See Grout, Plantingay and Jaegerz (n 109) (in the context of land-use planning regulatory changes).

<sup>117</sup> HM Treasury (n 60) 13.

<sup>118</sup> *ibid.*

<sup>119</sup> *ibid.* 14.

of the Shale Wealth Fund, there may need to be a relevant cut-off where the economic loss is so marginal that administering compensation is a wasteful act.<sup>120</sup>

### Relocation aid

English law enables property owners to issue 'blight notices' in response to planning decisions or developments. Blight occurs when property values are reduced because of major public works and the owners are unable to sell them at market value.<sup>121</sup> A blight notice functions as a reverse compulsory purchase order where the relevant acquiring authority is forced to purchase the property at a value that disregards any depreciation that took place due to the impugned developments. It is unlikely that fracking will give rise to any successful blight notices as individuals serving blight notices must be able to demonstrate that 'they are unable to sell their interests except at prices that are "substantially lower" than what they might otherwise have been reasonably sold'.<sup>122</sup> Although there is no definitive guidance on what specifically constitutes a 'substantially lower' price,<sup>123</sup> owners will only be deprived of the absolute right to control access to deep subsurface land, which cannot feasibly be interpreted as a substantial loss. The heaviest hit properties would be those with groundwater access, where the US example shows that devaluation could be as high as 24%.<sup>124</sup> However, it is unlikely to be enough to convince a court that the land has been blighted.

There is one subsidiary aspect of the blight notice practice that is worth discussing in the fracking context: relocation expenses. The status of hydraulic fracturing as a volatile subject and the hostility its development attracts from opponents, coupled with the government's alienation of negatively affected stakeholders, may inspire residents to move out from the locality, even if their property has not devalued to a large extent. This response may be emotionally fuelled and governed by irrational panic; and although the government must make efforts to educate the populace and reduce fear-mongering, they would also be advised to facilitate such decisions as best as practicably possible, as a measure of good faith, rather than risk alienating frustrated citizens further. One option would be for the compensation code to grant individuals the reasonable costs of moving. The compensation principles already used in the compulsory purchase regime can be perfectly mirrored for this purpose:

Residential occupiers and owners are allowed a disturbance compensation intended to facilitate relocation of residential occupiers by entitling them to the 'costs and expenses

reasonably incurred in vacating [the compulsorily purchased property]. The claim can include the costs of acquiring a replacement property (but not the cost of the property) and the costs of moving in to the property.<sup>125</sup>

Business owners are also entitled to reasonable relocation costs and expenditure where their property has been hit by compulsory purchase orders. There is no exhaustive list of losses that are compensable, and '[e]very loss should be considered on its merits and should be recoverable if a natural, direct and reasonable consequence of being disturbed'.<sup>126</sup> As an indicative list, however, it could include the following:<sup>127</sup> removal expenses; professional fees arising from the acquisition of a replacement property (i.e. architect, surveyor and legal fees); temporary loss of profits during the period of the move; diminution of goodwill following the move; and depreciation in the value of stock.

### Where does the money come from?

All of this money clearly needs to come from somewhere. A natural tendency would be to point the finger at the drilling company, considering that it could earn billions of pounds from a single productive fracking site. However, delegating the entire cost of payment to a single company brings with it a higher risk of default and insolvency, as the entire scale of operation - from applying for necessary permits to extracting subsurface gas - is capital-intensive and is not guaranteed to be successful due to exploration risk.<sup>128</sup> In fact, despite the American shale boom, exploration and production companies have mountains of aggregate net debt to pay off, ballooning to as much as US\$200 billion in 2015.<sup>129</sup> The speculative risk of operator default was also recognised by the government - albeit in the context of tortious damage caused by hydraulic fracturing. In its response to the consultation on underground access drilling, the government stated that it was 'working with the [UKOOG] to develop an industry scheme to provide cover should these circumstances arise'.<sup>130</sup> There is no reason a similar industry scheme could not be set up to provide non-tortious compensation as well.

From a moral perspective, it is not solely private industry that has a vested financial interest in the long-term success of commercialised fracking. The UK government stands to gain an immense amount of money from tax revenues and a stronger balance of trade account.<sup>131</sup> It has made no pretence about its desire to achieve commercially viable production as soon as possible, even at the risk of being accused of stifling the voices of local communities. Perhaps a combined fund, where members of the UKOOG and the UK government both contribute money in specified shares, could adequately hedge

<sup>120</sup> eg section 7 of the Land Compensation Act 1973 excludes all claims less than £50.

<sup>121</sup> *Your Property and Blight* (Highways England 2017) 6 <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/645162/Your\\_property\\_and\\_blight\\_booklet.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/645162/Your_property_and_blight_booklet.pdf)> accessed 9 January 2019.

<sup>122</sup> Purdue (n 74) 509.

<sup>123</sup> *ibid*.

<sup>124</sup> See generally Muehlenbachs, Spiller and Timmins (n 78).

<sup>125</sup> *Compulsory Purchase and Compensation: Compensation to Residential Owners and Occupiers* (n 113) 17; Land Compensation Act 1973 section 38.

<sup>126</sup> *Compulsory Purchase and Compensation: Compensation to Residential Owners and Occupiers* (n 113) 18.

<sup>127</sup> *ibid*.

<sup>128</sup> Petroleum exploration risk refers to the hazard that a planned petroleum extraction project may not come to fruition or be commercially successful. Reasons for this failure may be economic, political, technical or geologic. See generally I Lerche, 'Risk and Uncertainty in Petroleum Exploration' (1996) 14 *Energy Exploration and Exploitation* 503.

<sup>129</sup> Amir Azar, 'Reserve Base Lending and the Outlook for Shale Oil and Gas Finance' (*Center on Global Energy Policy*, May 2017) <<https://energypolicy.columbia.edu/sites/default/files/CGEPReserveBaseLendingAndTheOutlookForShaleOilAndGasFinance.pdf>> 11

<sup>130</sup> DECC, *Government Response to the Consultation on Underground Access* (n 50) 31.

<sup>131</sup> Priestley (n 10) 8.



the default risk as well as compel the biggest proponents of fracking to ‘put their money where their mouth is’.

## V. Conclusion

English law tends to lag behind other jurisdictions when it comes to compensating private individuals for harm to their property arising from government-backed decisions or activities in cases other than an outright taking - a concern that was voiced by Lord Nicholls in *Marcic v Thames Water Utilities* (a case where a household was flooded with sewage water due to the local water company’s wilful neglect in maintaining the sewers).<sup>132</sup> Perhaps it is indeed time for the English legal system to reshape its entire compensation policy at the core legislative level. While the merits or demerits of such a drastic overhaul are a discussion for another time, the fracking regime seems to be the perfect candidate for such an improvement. Commercial shale fracking has not begun and yet its brief history in the UK tells a tale of conflict, heedlessness and possible deceit. With public support for fracking at an all-time low and the government being accused of undemocratically throwing its weight around to suppress the voices of local communities, it is probably time to roll out some structural changes in how the government’s legal regime related to planning and infrastructure operates. Once again, it must be stressed that the purpose here is not to debate the commercial development of hydraulic fracturing. Fracking may revolutionise the UK’s economy and make energy more affordable and sustainable for the entire world, and perhaps fracking opponents are mistaken about how harmful the production process is, but this does not justify the elevation of community interests, to buy acquiescence, at the expense of private property interests.

Sandwiched in between all the discussions related to fracking’s impacts on the environment, social development and public health is a purely legal and ethical issue relating to the right approach towards individual compensation. This paper has argued that the current compensation framework lacks accountability, transparency and objectivity and it should be improved - especially considering that parliament has no inclination to mirror the USA and bestow petroleum rights upon landowners.<sup>133</sup> The use of adequate compensation to reduce NIMBY opposition to infrastructural projects is an experiment that has paid off in jurisdictions such as the Netherlands and France, and the UK has made some progress moving in the same direction in the recent past.<sup>134</sup> The government must sustain this progress and create a bespoke fracking compensation code that addresses the circumstances

and requirements of individuals, rather than one just aimed at paying off communities.

An ideal compensation code respects that individual households and businesses are different from the communities of which they are a part and attempts to bring individuals back to their *status quo ante* as far as possible. This is the best way to go forward regardless of what the implications of commercial fracking are. If the concerns are overblown and property values, insurance rates, etc. are not subject to major negative impact, then neither the drilling companies nor the government need to fret about losing too much money. If, however, the losses suffered are major, then it would only be fair to compensate local individuals for the losses they have suffered, especially if the site does not end up becoming commercially viable for whatever reason. Ultimately, while it may be wise to not miss the forest for the trees, it is equally wise to ensure that individual rights are not thrown under the bus ‘for the public benefit’.

### Biography

**Abeer Sharma** is an India-qualified lawyer with practice experience in litigation and international commercial and investment arbitration, with research interests in energy law, investment law, commercial law, and technology law. He possesses a BA and LLB from Delhi University and an LLM from Queen Mary University of London.

<sup>132</sup> See eg *Marcic v Thames Water Utilities Limited* 2003 WL 22769550 (HL) [45] (Lord Nicholls) (The Law Lord observed that the statutory compensation scheme available for households affected by such cases of neglect were concerningly low and requested the water regulator to consider increasing the compensation payable to the plaintiff in the present case).

<sup>133</sup> While such a scenario might alleviate community resentment towards the Government, it may just preserve the conflict and redirect it between

individual neighbours. See eg Peter Applebome, ‘Drilling Debate in Cooperstown, N.Y., Is Personal’ (*New York Times*, 29 Oct 2011) <[www.nytimes.com/2011/10/30/nyregion/in-cooperstowns-fight-over-gas-drilling-civility-is-fading.html](http://www.nytimes.com/2011/10/30/nyregion/in-cooperstowns-fight-over-gas-drilling-civility-is-fading.html)> accessed 11 January 2019.

<sup>134</sup> Bottini, Coelho and Kao (n 65) 29-30.

# Energy forum review: Opportunities and challenges of nuclear energy.

Juan Ignacio Aguirre and Sagal Farah

## Introduction

The Energy Law Institute organised its spring forum event on 19 April 2018 at the Centre for Commercial Law Studies, Queen Mary University of London. This was part of the 'New Voices Energy Forum' series fostering academic discussion among younger lawyers on economic and legal challenges of the energy sector. The topic of the event was 'Opportunities and Challenges of Nuclear Energy'.

A multidisciplinary panel of leading practitioners, academics and engineers analysed the opportunities and challenges of nuclear energy, in particular whether 'nuclear energy is a solution to growing energy demands or an accident waiting to happen?'

The Forum was moderated by Mr Matt McGhee, Barrister at 20 Essex Street, and the members of the panel were:

- Mr Tony Roulstone, Cambridge Nuclear Energy Centre, University of Cambridge
- Dr Philip Johnston, Research Fellow, University of Sussex
- Mr Anthony Johnson, Partner, Ashurst
- Ms Hannah Roscoe, Senior Associate, Herbert Smith Freehills
- Mr Biplab Rakshi, Managing Director, Atomic Acquisitions

The panel addressed many aspects of the nuclear industry but several main themes emerged:

- (1) energy transition and the role of nuclear power;
- (2) government involvement and regulation in the post-Fukushima era;
- (3) financing of nuclear projects, and the possible move towards small modular reactors (SMRs) in particular for developing nations; and
- (4) the Hinckley C experience.

## 1. Energy transition

There are strategic reasons why countries build nuclear power plants and promote development of nuclear technologies. Energy security and environmental considerations are key. Nuclear is a low-carbon-intensive form of generation, which is an important consideration as countries attempt to reduce their emissions. It was agreed that to achieve the Paris Agreement targets natural gas should be reduced to the role of

balancing power demand. Consequently, the nuclear portion in the power generation mix needs to be enlarged.

The paradigm shift that the world is experiencing in terms of energy production is dramatic. Less than 20 years ago, renewables were marginal, but today they are the new conventional power source. Nuclear energy could prove critical to solve the challenges of intermittency of renewable generation. Thus, building more nuclear capacity to ensure clean baseload generation capacity will be a priority in the short term. The UK Government White Paper of 2008 suggested that nuclear should have a role to play in power generation, alongside other low-carbon technologies, to address the challenges of climate change. Studies have indicated that renewable generation and storage will not produce sufficient capacity to meet demand, so nuclear will still form part of the energy mix.

## 2. Government involvement and regulation

According to the panel, the UK nuclear industry has not made much progress in terms of investment in new projects and innovation, even after regulatory changes were implemented. The government aimed to transition from a state-backed approach to one led by private investment. In the next 10 years, 85% of nuclear reactors will close in the UK, and the government's plan is to have new facilities constructed to achieve 15 GW of capacity.

However, the growth of the industry has been slower than expected. Three main reasons were identified. Specifically, nuclear developments are:

- too big to fund for a single utility or engineering company;
- often large and too slow to construct; and
- too risky to be a promising investment.

Clarity and certainty of regulation will help the industry. In addition, the government should guarantee that abrupt changes to legislation will not be implemented in the future. Without government involvement, it is likely natural gas will be used as a transition fuel as it will continue to be more cost-efficient than nuclear. The panel all agreed on the importance of political will to foster development of nuclear energy. In order to achieve the target of lowering costs, time and risks, the public sector should aim to diminish political risks. Post Fukushima, it has been difficult for governments to find popular acceptance of the development of nuclear projects. After the Fukushima accident, companies determined that

their reactors were safe to continue operation, implementing new safety enhancements related to extreme events and severe accidents. But while big or small nuclear projects continue to be ‘politically incorrect’, it will be very difficult to attract the necessary investment in the industry. Hinckley C, as an example, would not have been possible without government support.

### 3. Financing of nuclear projects and SMRs

The main challenge identified by the panel was the difficulty in securing the financing of a nuclear power plant. It is difficult to make nuclear energy competitive and attractive to investors. The huge cost over-runs in the construction of Flamanville in France and Olkiluoto in Finland have not helped the nuclear sector. Can nuclear projects be delivered at lower costs? Some proposals to reduce costs include the concept of standardisation, improvement of technology, and a redesign of how projects are funded. There was debate as to whether a state in a liberalised market should directly finance projects or just provide financial and regulatory guarantees in order to reduce risks. Funds could be better spent on other technology, such as storage technologies, which may displace nuclear investments.

Developing countries have difficulty with transmission and investment in grid infrastructure, which hampers low-carbon transition. Nuclear SMRs do not need huge amounts of investment in transmission - they can be located where capacity is required. SMRs, the panel agreed, offer lower costs, lower terms of construction and lower risks. Mr Johnston, who studied the policy process of facilitating Hinckley C, argued that there is no market for SMRs in the UK. So in order to reduce prices, the government must be involved. The objective should be to get to the point where production is standardised and projects are constructed in three years.

### 4. The Hinckley C experience

The Hinckley C project in the UK is now a joint venture of EDF Energy and CGN (China General Nuclear), and its economic, technical and political complexities were discussed.

There was a lack of private sector development in the UK nuclear industry prior to the development of Hinckley C. No nuclear facility had been built since 1995, so know-how and standards were limited. The participants in the projects had to work closely with the government on many aspects, including public permits, standards and safety. Existing regulations had never been tested before. A good example was the decommissioning arrangement, drafted without any precedent. This agreement consists of a robust agreement for a period of 120 years. The lawyers wanted to reduce political risk as much as possible.

The financing of Hinckley C was also a challenge. There had been no previous examples of project financing in the UK’s nuclear sector. Difficulties arose due to the timeframe, bankers’ lack of expertise in these kinds of projects, and the project risks that had to be addressed. The scale of potential liabilities are almost impossible to bear by the private sector or by the public (taxpayers). Therefore, the need to limit risks should be urgently assessed by improving technology and setting specific safety standards and obligations.

It was agreed by the panel that the Hinckley C project would provide at least a starting point for future new developments. The legislation that was created during the Hinckley C experience will be useful and is unlikely to change in the next few years. The Hinckley C precedents, such as on project financing and contractual models, will give a useful starting position for future projects.

### Conclusion

The energy transition from fossil fuel to more efficient, clean and sustainable energy generation is a global challenge. Policy concerning low-carbon technology development will be critical to whether many countries meet the targets they have set. Nuclear energy could play a central role in this evolution. Although the panel were all in agreement on this point, there was little consensus on government involvement and managing nuclear decommissioning, accidents and waste. Some states have adopted different approaches to nuclear projects after the Fukushima incident, such as Germany and the UK. France, China and Russia also continue to back nuclear projects, with most of the new builds being constructed in China, India, the Middle East and Russia. This raises an important issue with regard to energy security: who will control energy generation in the future? It was clear that nuclear investments raise important cultural, technical and financial challenges. There is a long way to go in terms of nuclear development, but the recent Hinckley C experience will provide guidance for future projects.

#### Biography

**Juan Ignacio Aguirre** works at Gas Strategies Group Limited in London as a Consultant. Previously, he worked at Sinopec China and Enel in Argentina. He finished his LLM in Energy and Natural Resources at QMUL with Distinction in 2018/2019.

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